

# Amphenol

Amphenol-Tuchel Electronics GmbH

**Serie heavy|mate - C 146**

Schwere Steckverbinder

**Series heavy|mate - C 146**

Heavy duty connectors



### Das Unternehmen

Amphenol-Tuchel Electronics GmbH ist ein Unternehmen der US-amerikanischen Amphenol Corporation. Unsere eigenständige globale Präsenz im Hinblick auf Entwicklung, Produktion und Vertrieb ermöglicht es uns, für unsere Kunden außergewöhnliche technische Lösungen und einen optimalen Service zu bieten. Amphenol-Tuchel Electronics GmbH ist seit Jahren ein erfolgreicher Partner seiner Kunden und setzt Maßstäbe in der Verbindungstechnik.

### The Company

*Amphenol-Tuchel Electronics GmbH is a member of the USA based Amphenol Corporation. With our own global presence we offer our customers exceptional technical support and service in the areas of development, production and distribution. Amphenol-Tuchel Electronics GmbH has a successful history as a partner to our customers and sets standards for connector technology.*



### Allgemeine Hinweise

Diese Steckverbinder sind in Übereinstimmung mit der Niederspannungsrichtlinie (73/23/EWG) und des Gerätesicherheitsgesetzes entwickelt und gefertigt und entsprechen im besonderen den Normen DIN EN 61984 (VDE 0627); IEC 60664-1 (VDE 0110-1) und IEC 60529.

Die Steckverbinder dürfen nur entsprechend den angegebenen Bemessungsgrößen eingesetzt werden.

Die angegebenen Bemaßungen bei den Montageausschnitten stellen Anhaltswerte dar und sind im konkreten Anwendungsfall auf die Produkte abzustimmen.

Die Überprüfung, ob in speziellen, von uns nicht vorgesehenen Anwendungsbereichen die in diesem Katalog gezeigten Bauelemente anderen als den angegebenen Vorschriften entsprechen, obliegt dem Anwender. Konstruktionsänderungen aufgrund von Qualitätsverbesserungen, Weiterentwicklungen oder Fertigungsforderungen behalten wir uns vor. Mit den Angaben im Katalog werden die Bauelemente spezifiziert, nicht Eigenschaften zugesichert. Weiterverwertung dieser Katalogunterlagen in jeder Form ist nur mit unserer schriftlichen Genehmigung gestattet (URHG, UWG, BGB).








### General information

*These connectors are designed and produced in conformity with the low voltage directive (73/23/EWG) respectively Gerätesicherheitsgesetz (German law) and are especially in accordance with the standards DIN EN 61984 (VDE0627); IEC 60664-1 (VDE 0110-1) and IEC 60529.*

*The connectors may be used only within the technical ratings.*

*The indicated dimensions with the panel cut-outs represent reference values and are in the concrete application with products to be co-ordinated.*

*It is the users responsibility to check whether the components illustrated in this catalogue comply with different regulations from those stated in special fields of application which we are unable to foresee. We reserve the right to modify designs in order to improve quality, keep pace with technological advancement or meet particular requirements in production. This catalogue must not be used in any form or manner without our prior approval in writing (Copyright Law, Fair Trading Law, Civil Code).*

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| <b>Serie C 146 D</b>       |  <ul style="list-style-type: none"> <li>• Bemessungsspannung 250 V</li> <li>• Bemessungsstrom 10 A ... 16 A</li> <li>• Anschlussart: crimpen</li> <li>• Kontaktdurchmesser 1,6 mm</li> <li>• Nach DIN EN 175 301 801 (DIN 43652)</li> <li>• Polzahl: 7, 15, 25, 40, 50, 64, 128</li> </ul> | <ul style="list-style-type: none"> <li>• <i>Rated voltage 250 V</i></li> <li>• <i>Rated current 10 A ... 16 A</i></li> <li>• <i>Termination: crimp</i></li> <li>• <i>Contact diameter 1,6 mm</i></li> <li>• <i>According to DIN EN 175 301 801 (DIN 43652)</i></li> <li>• <i>Number of contacts: 7, 15, 25, 40, 50, 64, 128</i></li> </ul> | <b>5</b>                                                                                            |           |
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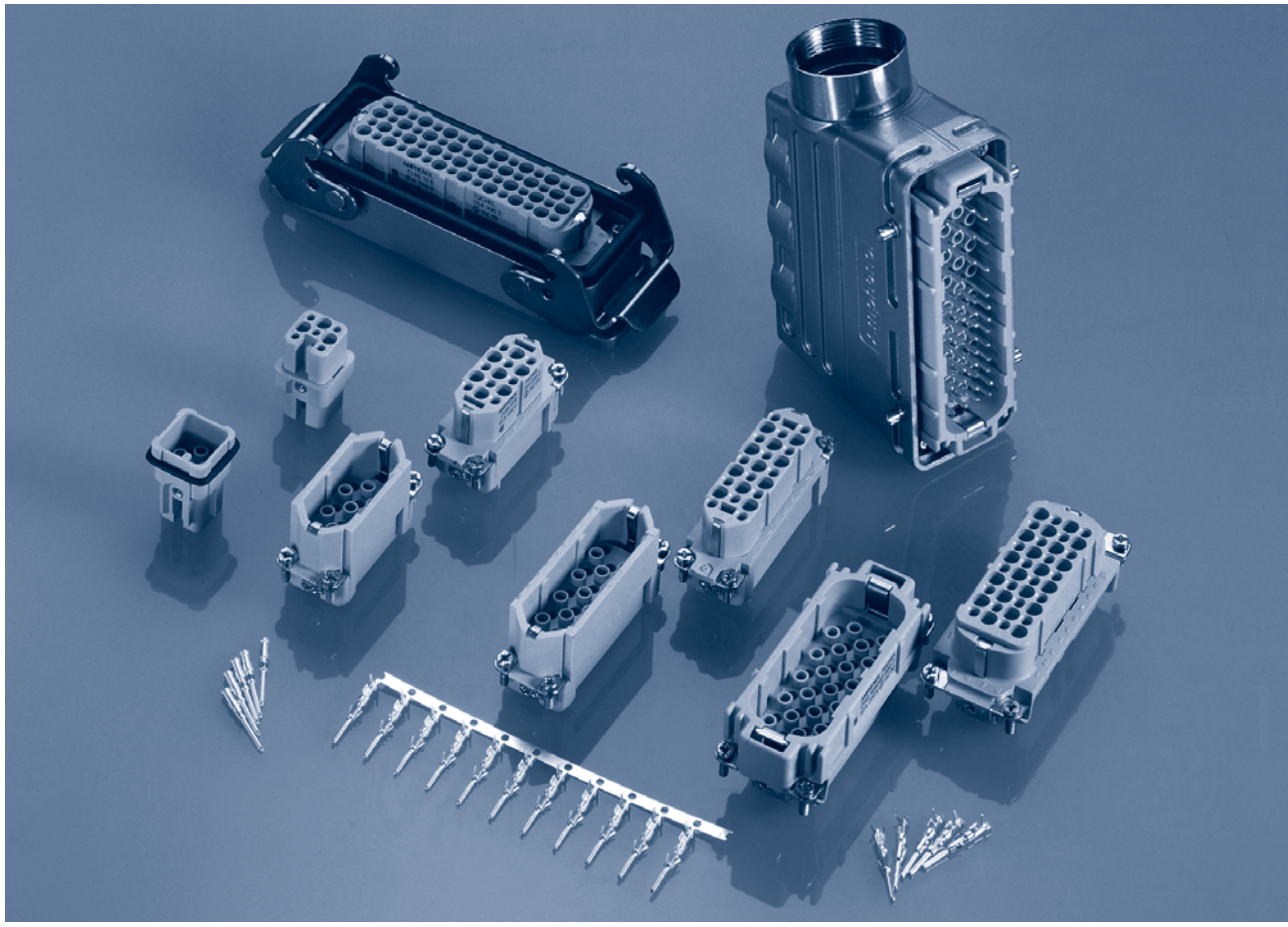
**Kontakteinsätze, Gehäuse / Contact inserts, housing**




|    | <b>C146</b><br>1)                     | <b>10A</b><br>2) | <b>007</b><br>3) | <b>000</b><br>4) | <b>2</b><br>5)                                                                                                                                                                                                                                                                       | <b>C</b><br>6) |
|----|---------------------------------------|------------------|------------------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| 1) | Serie<br>Series                       |                  |                  |                  |                                                                                                                                                                                                                                                                                      |                |
| 2) | Type<br>Type                          |                  |                  |                  | A = Stifteinsatz / male insert<br>B = Buchseneinsatz / female insert<br>F = Gehäuseunterteil, PG / housing, PG<br>N = Gehäuseunterteil, metrisch / housing, metric<br>G = Gehäuseoberteil, PG / hood, PG<br>R = Gehäuseoberteil, metrisch / hood, metric<br>Z = Schutzdeckel / cover |                |
| 3) | Polzahl<br>Number of contacts         |                  |                  |                  | z. B. 007 = 7 pol<br>e. g. 007 = 7 contacts                                                                                                                                                                                                                                          |                |
| 4) | Ausführungsvariante<br>Design version |                  |                  |                  |                                                                                                                                                                                                                                                                                      |                |
| 5) | Serie<br>Series                       |                  |                  |                  | 1 = E Serie / E series + FE / KO Serie / FE / KO series<br>2 = D Serie / D series<br>3 = HVE Serie / HVE series<br>4 = A Serie / A series<br>5 = HSE Serie / HSE series<br>6 = S Serie / S series<br>8 = M Serie / M series<br>9 = DD Serie / DD series<br>10 = EE Serie / EE series |                |
| 6) | Verpackungseinheit<br>Packing unit    |                  |                  |                  | X = 10<br>C = 100<br>M = 1000                                                                                                                                                                                                                                                        |                |


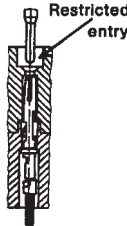

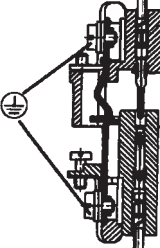

**Kontakte / Contacts**

|    | <b>V</b><br>1)                        | <b>N 01</b><br>2) | <b>016</b><br>3) | <b>0002</b><br>4) | <b>(1)</b><br>5)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|----|---------------------------------------|-------------------|------------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1) | Lieferausführung:<br>Supplied as:     |                   |                  |                   | V = Einzelkontakt 100 Stück<br>Single pack 100 pcs.<br><br>Z = Bandkontakt mit 100, 200 oder 500 Kontakten<br>Contacts on reel 100, 200 or 500 contacts<br><br>H = Bandkontakte mit 2000 Kontakten für Crimpmaschinen (Kontaktzuführung rechts)<br>Contacts on reel with 2000 contacts for crimping machines (contact feeding right hand side)<br><br>T = Bandkontakte mit 2000 Kontakten für Crimpmaschinen (Kontaktzuführung links)<br>Contacts on reel with 2000 contacts for crimping machines (contact feeding left hand side) |
| 2) | Kontaktart:<br>Type of contact:       |                   |                  |                   | N 01 = Kontaktstift / male contact<br>N 02 = Kontaktbuchse / female contact                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 3) | Kontaktgröße<br>Contact size          |                   |                  |                   | z. B. 016 = 1,6 mm<br>e. g. 016 = 1,6 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 4) | Ausführungsvariante<br>Design version |                   |                  |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 5) | Oberfläche:<br>Plating:               |                   |                  |                   | (1) = versilbert / silver plated<br>(2) = vergoldet (auf Anfrage) / gold plated (upon request)                                                                                                                                                                                                                                                                                                                                                                                                                                      |

# C 146 D

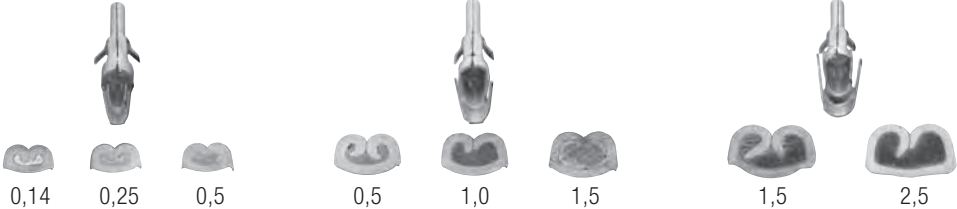

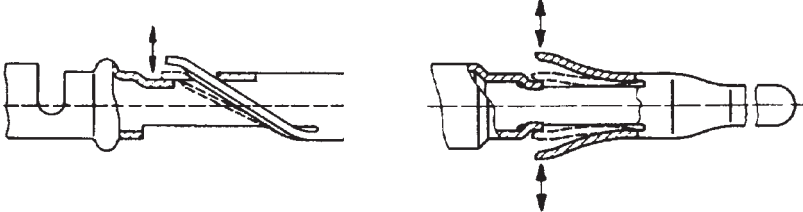

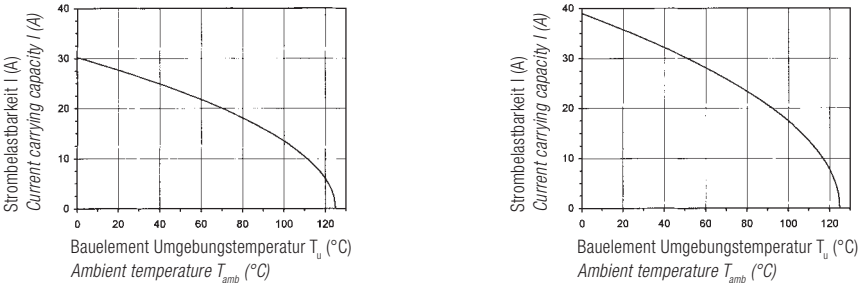


| Hauptmerkmale                                                                                                                                                                                                                                                                             |                                                                                     | Main characteristics                                                                                                                                                                                                                                                                             |                                  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| <ul style="list-style-type: none"> <li>• Bemessungsspannung 250 V</li> <li>• Bemessungsstrom 10 A ... 16 A</li> <li>• Anschlussart: crimpen</li> <li>• Kontaktdurchmesser 1,6 mm</li> <li>• nach DIN EN 175 301-801 (DIN 43652)</li> <li>• Polzahl: 7, 15, 25, 40, 50, 64, 128</li> </ul> |                                                                                     | <ul style="list-style-type: none"> <li>• Rated voltage 250 V</li> <li>• Rated current 10 A ... 16 A</li> <li>• Termination: crimp</li> <li>• Contact diameter 1,6 mm</li> <li>• According to DIN EN 175 301-801 (DIN 43652)</li> <li>• Number of contacts: 7, 15, 25, 40, 50, 64, 128</li> </ul> |                                  |
| Zulassungen / Approvals<br>Prüfstelle / Testhouse                                                                                                                                                                                                                                         |                                                                                     | Kennwerte / Characteristics                                                                                                                                                                                                                                                                      | Zulassungs-Nummer / Approval-No. |
| SEV                                                                                                                                                                                                                                                                                       |  | 250 V, 10 A                                                                                                                                                                                                                                                                                      |                                  |
| UL                                                                                                                                                                                                                                                                                        |  | 600 V, 10 A<br>600 V, 15 A (Hochstrom / High current)                                                                                                                                                                                                                                            | E 63093                          |
| CSA                                                                                                                                                                                                                                                                                       |  | 600 V, 10 A                                                                                                                                                                                                                                                                                      | 48932                            |
| <p>Zulassungen beziehen sich im allgemeinen auf repräsentative Ausführungen der Steckverbinderserie. Prüfumfang und Prüfvorschrift auf Anfrage.</p>                                                                                                                                       |                                                                                     | <p><i>In general approvals refer to representative versions of the connector series. Extent and specification of tests upon request.</i></p>                                                                                                                                                     |                                  |

|                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Allgemeine Hinweise</p>  <p>General information</p>           | <ul style="list-style-type: none"> <li>• Kontakteinsätze ohne Crimpkontakte, Crimpwerkzeuge siehe separater Katalog „Werkzeuge“.</li> <li>• Kontakte müssen separat bestellt werden, Verarbeitungs- und Montagehinweise siehe Katalog „Werkzeuge“.</li> <li>• Für die Einsätze der Serie C 146 D werden die hohen Gehäusebauformen empfohlen.</li> <li>• Steckverbinder der Serie C 146 D dürfen unter Spannung, jedoch nicht unter Strom betätigt werden. Werden die Steckverbinder unter Last gesteckt und getrennt, ist der Strom auf 15 % des Bemessungsstroms zu begrenzen.</li> <li>• Für Kontakteinsätze für gedrehte Kontakte werden Führungsstifte und Führungsbuchsen empfohlen (siehe Seite 174).</li> <li>• Bei Verwendung der Kontakteinsätze mit zwei PE-Anschlüssen ohne Gehäuse ist darauf zu achten, dass jeweils die gegenüberliegenden PE-Anschlüsse miteinander verbunden werden.</li> </ul> <p><i>• Contact inserts without crimp contacts, crimping tools see separate catalogue „Tools“.</i></p> <p><i>• Contacts must be ordered separately, processing instructions see catalogue „Tools“.</i></p> <p><i>• We recommend using the high profile housings / hoods for the C146 D inserts.</i></p> <p><i>• Connectors series C146 D may be engaged or disengaged when live but without electrical load.</i></p> <p><i>If these connectors are mated or unmated under load, the load shall be reduced to 15 % of the rated current.</i></p> <p><i>• For contact inserts for turned contacts, guide pins and guide socket are recommended (see page 174).</i></p> <p><i>• By using contact inserts with two PE-connections without hoods, it is necessary to connect the facing of each PE-connection.</i></p> |
| <p>Genormte Steckverbinder nach DIN EN 175 301 - 801 (DIN 43652)</p> <p>Standardised connectors according to DIN EN 175 301 - 801 (DIN 43652)</p> | <p>Steck- und austauschbar mit allen Fremdfabrikaten nach Norm.</p> <p>a) Kontakteinsatz/Kontakteinsatz 15, 25, 40, 64 pol.<br/>b) Kontakteinsatz/Gehäuse 15, 25, 40, 64 pol.</p> <p><i>Interchangeable with all other products which are according to the standard.</i></p> <p><i>a) Contact insert to contact insert 15, 25, 40, 64 way.</i></p> <p><i>b) Contact insert to housing 15, 25, 40, 64 way.</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <p>Hoher Schutz vor Fehlsteckungen</p> <p>High protection against mismatching</p>                                                                 | <p>Buchsenkontakteinsatz mit trichterförmiger, verengter Stecköffnung. Hohe Steck- und Kontaktsicherheit mit gestanzten Kontakten.</p> <p><i>Female inserts with funnel shaped contact entry avoids mismatching with stamped contacts.</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <p>Kontakteinsätze für gestanzte Kontakte und für gedrehte Kontakte</p> <p>Contact inserts for stamped contacts and for turned contacts</p>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <p>Voreilender Schutzkontakt</p> <p>First-to-mate last-to-break protective ground contact</p>                                                     | <p>Bei Verwendung von Schutzleitern mit Querschnitten <math>&lt;1\text{mm}^2</math> ist ein geeigneter Kabelschuh zu verwenden.</p> <p><i>When using PE wire with a cross section <math>&lt;1\text{mm}^2</math>, a cable lug should be used.</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <p>Große Gehäuseauswahl in 2 Bauhöhen (ab Seite 107)</p> <p>Large range of housings in 2 different heights (see page 107)</p>                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

**Crimp Technik**  
*Crimp technology*

**Hauptmerkmale der gestanzten Crimpkontakte**  
*Main characteristics of the stamped crimp contacts*

|                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Großer Crimpbereich<br/><i>Large range of wire gauges</i></p> <p>Gasdichte Verbindung<br/>(Kaltverschweißung)<br/><i>Gas-tight (coldwelding)</i></p>                                                                                    | <p>.N01 016 0003 (1) <sup>1)</sup>      .N01 016 0002 (1) <sup>1)</sup>      .N01 016 0005 (1) <sup>1)</sup></p>  <p>0,14   0,25   0,5      0,5   1,0   1,5      1,5   2,5</p>                                                                                                                                              |
| <p>Gestanzte Crimpkontakte mit Isolierungshalterung um mechanische Beanspruchung von der Crimpverbindung fernzuhalten<br/><i>Stamped crimp contacts with insulation crimp, to absorb mechanical stress from the crimped connection</i></p> |  <p>Isolierungshalterung<br/><i>Insulation grip</i></p>                                                                                                                                                                                                                                                                     |
| <p>Mechanischer Rasthakenanschlag bei Buchsen- und Stiftkontakt<br/><i>Mechanical retention spring stop on female and male contact</i></p> <p>Einfache Montage<br/><i>Easy assembly</i></p>                                                | <p>Buchsenkontakt<br/><i>Female contact</i></p> <p>Stiftkontakt<br/><i>Male contact</i></p>                                                                                                                                                                                                                               |
| <p>Kostengünstige, einfache Verarbeitung<br/>Werkzeuge siehe Katalog „Werkzeuge“<br/><i>Economical and easy processing</i><br/><i>Tools see catalogue „Tools“</i></p>                                                                      |  <p>Service-Anwendungen<br/><i>Service application</i></p> <p>Einzel-Fertigung<br/><i>Single production</i></p> <p>Kleinserie<br/><i>Small series</i></p> <p>Serie<br/><i>Series</i></p>                                                                                                                                  |
| <p>Hohe Strombelastbarkeit (siehe Derating Kurven)<br/><i>High current carrying capacity (see derating curves)</i></p>                                                                                                                     | <p>Beispiel Einzelkontakt / <i>Example single contact</i></p>  <p>Standardkontakt, Anschlussquerschnitt 2,5 mm<sup>2</sup><br/><i>Standard contact, wire gauge 2.5 mm<sup>2</sup></i></p> <p>Hochstromkontakt, Anschlussquerschnitt 2,5 mm<sup>2</sup><br/><i>High current contact, wire gauge 2.5 mm<sup>2</sup></i></p> |

<sup>1)</sup> Erläuterung der Bestell-Nr. für die Kontakte siehe Seite 4

<sup>1)</sup> Explanation of the Part No. for contacts see page 4



**Kontakteinsätze / Connector inserts**

| <b>Allgemeine Kennwerte</b>            | <b>General Characteristics</b>         | <b>Norm / Standard</b>         | <b>Wert / Value</b>                                            |                     |            |            |                        |              |               |  |
|----------------------------------------|----------------------------------------|--------------------------------|----------------------------------------------------------------|---------------------|------------|------------|------------------------|--------------|---------------|--|
| Polzahl                                | Number of contacts                     |                                | 7+PE/8                                                         | 15                  | 25         | 40         | 50<br>2 x 25           | 64           | 128<br>2 x 64 |  |
| Kontaktanordnung                       | Contact arrangement                    | DIN EN 175 301-801 (DIN 43652) |                                                                | •                   | •          | •          |                        | •            |               |  |
| Anschlusstechnik                       | Termination technique                  |                                | crimpen / crimp, wire wrap                                     |                     |            |            |                        |              |               |  |
| Max. Leiterdurchmesser                 | Max. wire diameter                     |                                | 4,1 mm                                                         |                     |            |            |                        |              |               |  |
| Brennbarkeit                           | Flammbarkeit                           | UL 94                          | V-0                                                            |                     |            |            |                        |              |               |  |
| <b>Elektrische Kennwerte</b>           | <b>Electrical Characteristics</b>      |                                |                                                                |                     |            |            |                        |              |               |  |
| Bemessungsspannung <sup>3)</sup>       | Rated voltage                          | IEC 60664-1                    | 250 V~ (400 V~ <sup>1)</sup> ) (600 V UL / CSA <sup>5)</sup> ) |                     |            |            |                        |              |               |  |
| Verschmutzungsgrad                     | Pollution degree                       | IEC 60664-1                    | 3                                                              |                     |            |            |                        |              |               |  |
| Überspannungskategorie                 | Installation (overvoltage) category    | IEC 60664-1                    | III                                                            |                     |            |            |                        |              |               |  |
| Isolierstoffgruppe                     | Material group                         | IEC 60664-1                    | III b                                                          |                     |            |            |                        |              |               |  |
| Bemessungs-Stoßspannung                | Rated impulse withstand voltage        | IEC 60664-1                    | 4 kV                                                           |                     |            |            |                        |              |               |  |
| Spannungsfestigkeit                    | Voltage proof                          | IEC 60512-2; Test 4 a          | 2,2 kV                                                         |                     |            |            |                        |              |               |  |
| Strombelastbarkeit                     | Rated current                          | IEC 60512-3; Test 5 b          | siehe Derating Kurven / see derating curves                    |                     |            |            |                        |              |               |  |
| Bemessungsstrom T <sub>u</sub> = 40 °C | Rated current T <sub>amb</sub> = 40 °C |                                | 16 A                                                           | 12 A                | 12 A       | 10 A       | 10 A                   | 10 A         | 10 A          |  |
| Isolationswiderstand                   | Insulation resistance                  | IEC 60512-2; Test 3 a          | ≥ 10 <sup>12</sup> Ω <sup>4)</sup>                             |                     |            |            |                        |              |               |  |
| Luftstrecke                            | Clearance                              | IEC 60664-1                    | > 3,5 mm                                                       |                     |            |            |                        |              |               |  |
| Kriechstrecke                          | Creepage                               | IEC 60664-1                    | > 4,6 mm                                                       |                     |            |            |                        |              |               |  |
| <b>Klimatische Kennwerte</b>           | <b>Climatical Characteristics</b>      |                                |                                                                |                     |            |            |                        |              |               |  |
| Prüfklasse                             | Climatic category                      | IEC 60068-1                    | 40 / 125 / 21                                                  |                     |            |            |                        |              |               |  |
| Obere Grenztemperatur                  | Upper temperature                      | IEC 60512-6; Test 11 i         | + 125 °C / 1000 h                                              |                     |            |            |                        |              |               |  |
| Untere Grenztemperatur                 | Lower temperature                      | IEC 60512-6; Test 11 i         | - 40 °C                                                        |                     |            |            |                        |              |               |  |
| <b>Mechanische Kennwerte</b>           | <b>Mechanical Characteristics</b>      |                                |                                                                |                     |            |            |                        |              |               |  |
| Steck- und Ziehkraft                   | Insertion and withdrawal forces        | IEC 60512-7; Test 13 b         | 10-15<br>N                                                     | 20-30<br>N          | 40-60<br>N | 60-90<br>N | 80-120<br>N            | 100-150<br>N | 200-300<br>N  |  |
| IP-Schutzart Stifteinsatz              | IP-degree of protection pin insert     | IEC 60529                      | ungesteckt/unmated<br>IP00                                     |                     |            |            | gesteckt/mated<br>IP20 |              |               |  |
| IP-Schutzart Buchseneinsatz            | IP-degree of protection socket insert  | IEC 60529                      | ungesteckt/unmated<br>IP20                                     |                     |            |            | gesteckt/mated<br>IP20 |              |               |  |
| Gewicht Stifteinsatz                   | Weight pin insert                      |                                | 8 g                                                            | 28 g                | 34 g       | 53 g       | 68 g                   | 65 g         | 130 g         |  |
| Gewicht Buchseneinsatz                 | Weight socket insert                   |                                | 8 g                                                            | 30 g                | 38 g       | 64 g       | 76 g                   | 82 g         | 164 g         |  |
| Mechanische Lebensdauer                | Mechanical operation                   | IEC 60512-5; Test 9 a          | ≥ 500 Steckzyklen / mating cycles                              |                     |            |            |                        |              |               |  |
| <b>Werkstoffe</b>                      | <b>Materials</b>                       |                                |                                                                |                     |            |            |                        |              |               |  |
| Kontakteinsatz                         | Insert                                 |                                | PBTP                                                           | PC GV <sup>2)</sup> |            |            |                        |              |               |  |
| Farbe                                  | Colour                                 |                                | grau / grey                                                    |                     |            |            |                        |              |               |  |

<sup>1)</sup> bei modifizierter Kontaktanordnung, siehe Seite 24 / modified contact arrangement, see page 24

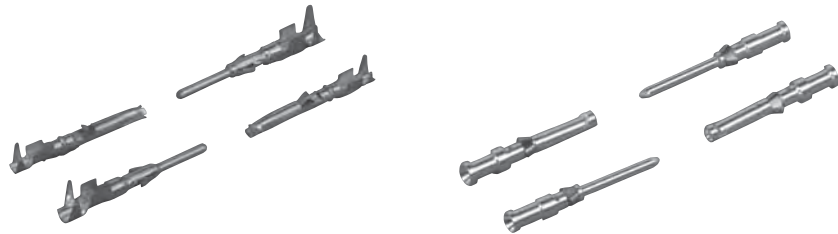
<sup>2)</sup> Polycarbonat-glasfaserverstärkt / polycarbonat-glas fibre filled

<sup>3)</sup> Einschränkung für 8 pol mit Metallgehäuse siehe Seite 10 / Restriction for 8 contacts in metal housing see page 10

<sup>4)</sup> bei Beanspruchung > 10 <sup>10</sup> Ω / Under operating condition > 10 <sup>10</sup> Ω

<sup>5)</sup> Hinweisschild für CSA-Anwendung siehe Seite 176 / Label for CSA application see page 176



**Gestanzte Crimpkontakte / Stamped crimp contacts**

| <b>Elektrische Kennwerte</b> | <b>Electrical Characteristics</b> |                        |                                   |
|------------------------------|-----------------------------------|------------------------|-----------------------------------|
| Durchgangswiderstand         | Contact resistance                | IEC 60512-2; Test 2 a  | ≤ 5 m Ω                           |
| Kapazität Kontakt-Kontakt    | Capacity contact-contact          | IEC 60512-9; Test 22 a | ≥ 2 p F                           |
| Kapazität Kontakt-Gehäuse    | Capacity contact-housing          | IEC 60512-9; Test 22 a | ≥ 3,2 p F                         |
| <b>Klimatische Kennwerte</b> | <b>Climatical Characteristics</b> |                        |                                   |
| Obere Grenztemperatur        | Upper temperature                 | IEC 60512-6; Test 11 i | + 125 °C                          |
| Untere Grenztemperatur       | Lower temperature                 | IEC 60512-6; Test 11 i | - 40 °C                           |
| <b>Mechanische Kennwerte</b> | <b>Mechanical Characteristics</b> |                        |                                   |
| Mechanische Lebensdauer      | Mechanical operation              | IEC 60512-5; Test 9 a  | ≥ 500 Steckzyklen / mating cycles |
| <b>Werkstoffe</b>            | <b>Materials</b>                  |                        |                                   |
| Stiftkontakt                 | Male contact                      |                        | Cu Zn (Messing / brass)           |
| Buchsenkontakt               | Female contact                    |                        | Cu Sn (Zinnbronze / Tin bronze)   |
| Kontaktoberfläche            | Contact plating                   |                        | Ag (silber / silver)              |

**Gedrehte Crimpkontakte / Turned crimp contacts**

| <b>Elektrische Kennwerte</b> | <b>Electrical Characteristics</b> |                       |                                   |
|------------------------------|-----------------------------------|-----------------------|-----------------------------------|
| Durchgangswiderstand         | Contact resistance                | IEC 60512-2           | ≤ 5 m Ω                           |
| <b>Klimatische Kennwerte</b> | <b>Climatical Characteristics</b> |                       |                                   |
| Obere Grenztemperatur        | Upper temperature                 | IEC 60512-6           | + 100 °C                          |
| Untere Grenztemperatur       | Lower temperature                 | IEC 60512-6           | - 40 °C                           |
| <b>Mechanische Kennwerte</b> | <b>Mechanical Characteristics</b> |                       |                                   |
| Mechanische Lebensdauer      | Mechanical operation              | IEC 60512-5; Test 9 a | ≥ 500 Steckzyklen / mating cycles |
| <b>Werkstoffe</b>            | <b>Materials</b>                  |                       |                                   |
| Stiftkontakt                 | Male contact                      |                       | Cu Zn (Messing / brass)           |
| Buchsenkontakt               | Female contact                    |                       | Cu Zn (Messing / brass)           |
| Kontaktoberfläche            | Contact plating                   |                       | Ag (silber / silver)              |

C 146 D




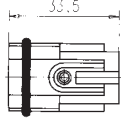
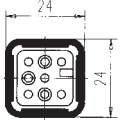
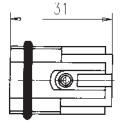
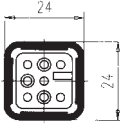


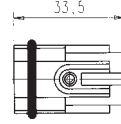
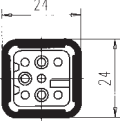
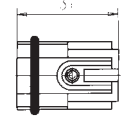
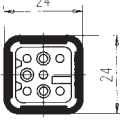
7 + , 8

Steckverbinder  
Connectors

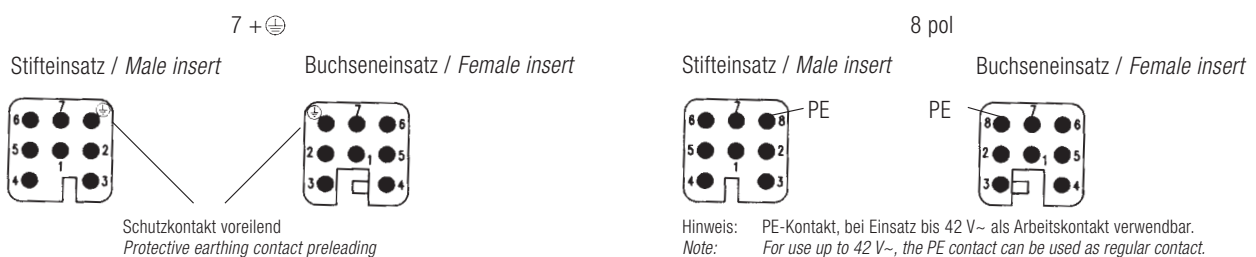
250 V~ in Kunststoffgehäuse  
in thermoplastic housings

42 V~ in Metallgehäuse  
in metal housings

Gehäuse siehe Seite 110-113  
Housings see page 110-113

| Bezeichnung - Abbildung<br>Description - Figure                                                                                                                                                                                                                                                                                                                                                          | Maßzeichnung<br>Drawing                                                                                                                                                                                | Bestell Nr. / Part No.                                                                           |                                                                                                  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                        | Stifteinsatz / Male insert                                                                       | Buchseneinsatz / Female insert                                                                   |
| Kontakteinsatz / Contact insert<br>7 + <br><br><br><br><br><br>250 V ~<br><b>nur für Kunststoffgehäuse</b><br><i>only for thermoplastic housings</i> | Stifteinsatz<br>Male insert<br>      | C146 10A007 000 2 <sup>1)</sup><br>(für gestanzte Crimpkontakte)<br>(for stamped crimp contacts) | C146 10B007 000 2 <sup>1)</sup><br>(für gestanzte Crimpkontakte)<br>(for stamped crimp contacts) |
|                                                                                                                                                                                                                                                                                                                                                                                                          | Stifteinsatz<br>Male insert<br>      | C146 10A007 500 2<br>(für gedrehte Crimpkontakte)<br>(for turned crimp contacts)                 | C146 10B007 500 2<br>(für gedrehte Crimpkontakte)<br>(for turned crimp contacts)                 |
| Kontakteinsatz / Contact insert<br>8 pol<br><br><br><br><br><br>42 V ~                                                                                                                                                             | Stifteinsatz<br>Male insert<br>  | C146 10A008 000 2<br>(für gestanzte Crimpkontakte)<br>(for stamped crimp contacts)               | C146 10B008 000 2<br>(für gestanzte Crimpkontakte)<br>(for stamped crimp contacts)               |
|                                                                                                                                                                                                                                                                                                                                                                                                          | Stifteinsatz<br>Male insert<br>  | C146 10A008 500 2<br>(für gedrehte Crimpkontakte)<br>(for turned crimp contacts)                 | C146 10B008 500 2<br>(für gedrehte Crimpkontakte)<br>(for turned crimp contacts)                 |

Kontaktanordnung / Contact arrangement



<sup>1)</sup> auch erhältlich als Großpackung, 100 Stück ... 000 2, „C“ / also available for big volume, 100 pcs. ... 000 2, „C“

C 146 D

7 +  ,8

**Crimpkontakte**  
*Crimp contacts*

Gestanzte Einzelkontakte  
*Stamped single contacts*



Gedrehte Einzelkontakte  
*Turned single contacts*



Gestanzte Bandkontakte für Crimpzangen  
*Stamped contacts on reel for hand crimping tools*



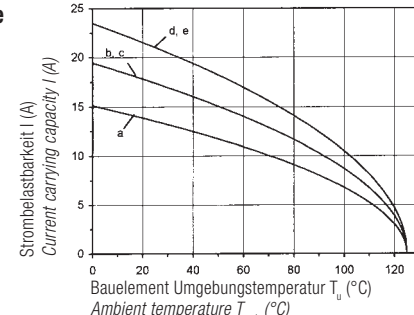
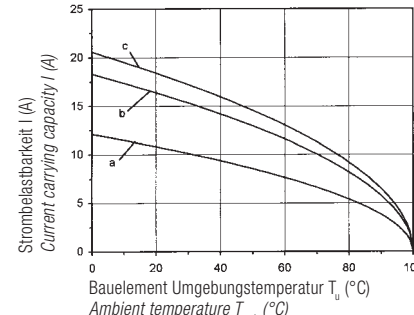
200 / 100 Stück  
200 / 100 pcs

Gestanzte Bandkontakte für Crimpmaschinen  
*Stamped contacts on reel for crimp machines*



2000 Stück  
(Zuführung links oder rechts)  
2000 pcs  
(feeding left or right hand side)

D

| Lieferform<br><i>Supplied as</i>                                                                                                         | für Leiter-<br>querschnitt<br><i>for wire gauge</i> | AWG                             | Stück-<br>zahl<br><i>Pieces</i> | Bestell Nr. <sup>1)</sup><br>Stiftkontakt<br><i>Male contact</i>                                                                         | Part No. <sup>1)</sup><br>Buchsenkontakt<br><i>Female contact</i> | Bestell Nr. <sup>1)</sup><br>Stiftkontakt<br><i>Male contact</i> | Part No. <sup>1)</sup><br>Buchsenkontakt<br><i>Female contact</i> |
|------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|---------------------------------|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|------------------------------------------------------------------|-------------------------------------------------------------------|
| Gestanzte Einzelkontakte / <i>Stamped single contacts</i>                                                                                |                                                     |                                 |                                 | versilbert / <i>silver plating</i>                                                                                                       |                                                                   | vergoldet / <i>gold plating</i>                                  |                                                                   |
| Standard<br>Hochstrom<br><i>High current</i>                                                                                             | 0,14 - 0,5 mm <sup>2</sup>                          | 26 - 20                         | 100                             | VN01 016 0003 (1)                                                                                                                        | VN02 016 0003 (1)                                                 | VN01 016 0003 (2)                                                | VN02 016 0003 (2)                                                 |
|                                                                                                                                          | 0,5 - 1,5 mm <sup>2</sup>                           | 20 - 16                         | 100                             | VN01 016 0002 (1)                                                                                                                        | VN02 016 0002 (1)                                                 | VN01 016 0002 (2)                                                | VN02 016 0002 (2)                                                 |
|                                                                                                                                          | 1,5 - 2,5 mm <sup>2</sup>                           | 16 - 14                         | 100                             | VN01 016 0005 (1)                                                                                                                        | VN02 016 0005 (1)                                                 | VN01 016 0005 (2)                                                | VN02 016 0005 (2)                                                 |
|                                                                                                                                          | 0,5 - 1,5 mm <sup>2</sup>                           | 20 - 16                         | 100                             | VN01 016 0015 (1)                                                                                                                        | VN02 016 0015 (1)                                                 |                                                                  |                                                                   |
|                                                                                                                                          | 1,5 - 2,5 mm <sup>2</sup>                           | 16 - 14                         | 100                             | VN01 016 0016 (1)                                                                                                                        | VN02 016 0016 (1)                                                 |                                                                  |                                                                   |
| Gestanzte Bandkontakte für Crimpzangen / <i>Stamped Contacts on reel for hand crimp tools</i>                                            |                                                     |                                 |                                 |                                                                                                                                          |                                                                   |                                                                  |                                                                   |
| Standard<br>Hochstrom<br><i>High current</i>                                                                                             | 0,14 - 0,5 mm <sup>2</sup>                          | 26 - 20                         | 200                             | ZN01 016 0003 (1)                                                                                                                        | ZN02 016 0003 (1)                                                 | ZN01 016 0003 (2)                                                | ZN02 016 0003 (2)                                                 |
|                                                                                                                                          | 0,5 - 1,5 mm <sup>2</sup>                           | 20 - 16                         | 200                             | ZN01 016 0002 (1)                                                                                                                        | ZN02 016 0002 (1)                                                 | ZN01 016 0002 (2)                                                | ZN02 016 0002 (2)                                                 |
|                                                                                                                                          | 1,5 - 2,5 mm <sup>2</sup>                           | 16 - 14                         | 100                             | ZN01 016 0005 (1)                                                                                                                        | ZN02 016 0005 (1)                                                 | ZN01 016 0005 (2)                                                | ZN02 016 0005 (2)                                                 |
|                                                                                                                                          | 0,5 - 1,5 mm <sup>2</sup>                           | 20 - 16                         | 200                             | ZN01 016 0015 (1)                                                                                                                        | ZN02 016 0015 (1)                                                 |                                                                  |                                                                   |
|                                                                                                                                          | 1,5 - 2,5 mm <sup>2</sup>                           | 16 - 14                         | 100                             | ZN01 016 0016 (1)                                                                                                                        | ZN02 016 0016 (1)                                                 |                                                                  |                                                                   |
| Gestanzte Bandkontakte für Crimpmaschinen / <i>Stamped contacts on reel for crimp machines</i>                                           |                                                     |                                 |                                 |                                                                                                                                          |                                                                   |                                                                  |                                                                   |
| Kontaktzuführung rechts<br><i>Contact feeding right hand side</i>                                                                        | 0,14 - 0,5 mm <sup>2</sup>                          | 26 - 20                         | 2000                            | HN01 016 0003 (1)                                                                                                                        | HN02 016 0003 (1)                                                 | HN01 016 0003 (2)                                                | HN02 016 0003 (2)                                                 |
|                                                                                                                                          | 0,5 - 1,5 mm <sup>2</sup>                           | 20 - 16                         | 2000                            | HN01 016 0002 (1)                                                                                                                        | HN02 016 0002 (1)                                                 | HN01 016 0002 (2)                                                | HN02 016 0002 (2)                                                 |
|                                                                                                                                          | Standard<br>1,5 - 2,5 mm <sup>2</sup>               | 16 - 14                         | 2000                            | HN01 016 0005 (1)                                                                                                                        | HN02 016 0005 (1)                                                 | HN01 016 0005 (2)                                                | HN02 016 0005 (2)                                                 |
|                                                                                                                                          | Hochstrom<br>1,5 - 2,5 mm <sup>2</sup>              | 16 - 14                         | 2000                            | HN01 016 0015 (1)                                                                                                                        | HN02 016 0015 (1)                                                 |                                                                  |                                                                   |
| Kontaktzuführung links<br><i>Contact feeding left hand side</i>                                                                          | 0,14 - 0,5 mm <sup>2</sup>                          | 26 - 20                         | 2000                            | TN01 016 0003 (1)                                                                                                                        | TN02 016 0003 (1)                                                 | TN01 016 0003 (2)                                                | TN02 016 0003 (2)                                                 |
|                                                                                                                                          | 0,5 - 1,5 mm <sup>2</sup>                           | 20 - 16                         | 2000                            | TN01 016 0002 (1)                                                                                                                        | TN02 016 0002 (1)                                                 | TN01 016 0002 (2)                                                | TN02 016 0002 (2)                                                 |
|                                                                                                                                          | Standard<br>1,5 - 2,5 mm <sup>2</sup>               | 16 - 14                         | 2000                            | TN01 016 0005 (1)                                                                                                                        | TN02 016 0005 (1)                                                 | TN01 016 0005 (2)                                                | TN02 016 0005 (2)                                                 |
|                                                                                                                                          | Hochstrom<br>1,5 - 2,5 mm <sup>2</sup>              | 18 - 14                         | 2000                            | TN01 016 0015 (1)                                                                                                                        | TN02 016 0015 (1)                                                 |                                                                  |                                                                   |
| Gedrehte Crimpkontakte / <i>Turned crimp contacts</i>                                                                                    |                                                     |                                 |                                 |                                                                                                                                          |                                                                   |                                                                  |                                                                   |
| Einzelkontakt<br><i>Single contact</i>                                                                                                   | 0,14 - 0,37 mm <sup>2</sup>                         | 26 - 22                         | 100                             | VN01 016 0024 (1)C                                                                                                                       | VN02 016 0024 (1)C                                                | VN01 016 0024 (2)C                                               | VN02 016 0024 (2)C                                                |
|                                                                                                                                          | 0,5 mm <sup>2</sup>                                 | 20                              | 100                             | VN01 016 0025 (1)C                                                                                                                       | VN02 016 0025 (1)C                                                | VN01 016 0025 (2)C                                               | VN02 016 0025 (2)C                                                |
|                                                                                                                                          | 0,75 - 1,0 mm <sup>2</sup>                          | 20 - 16                         | 100                             | VN01 016 0026 (1)C                                                                                                                       | VN02 016 0026 (1)C                                                | VN01 016 0026 (2)C                                               | VN02 016 0026 (2)C                                                |
|                                                                                                                                          | 1,5 mm <sup>2</sup>                                 | 16 - 15                         | 100                             | VN01 016 0027 (1)C                                                                                                                       | VN02 016 0027 (1)C                                                | VN01 016 0027 (2)C                                               | VN02 016 0027 (2)C                                                |
|                                                                                                                                          | 2,5 mm <sup>2</sup>                                 | 14                              | 100                             | VN01 016 0028 (1)C                                                                                                                       | VN02 016 0028 (1)C                                                | VN01 016 0028 (2)C                                               | VN02 016 0028 (2)C                                                |
| Derating Kurven / <i>Derating curves</i>                                                                                                 |                                                     |                                 |                                 |                                                                                                                                          |                                                                   |                                                                  |                                                                   |
| <b>Gestanzte Kontakte</b><br><i>Stamped contacts</i>  |                                                     |                                 |                                 | <b>Gedrehte Kontakte</b><br><i>Turned contacts</i>  |                                                                   |                                                                  |                                                                   |
| <b>Kurve / Curve</b>                                                                                                                     | <b>Kontakt / Contact</b>                            | <b>Querschnitt / Wire gauge</b> |                                 | <b>Kurve / Curve</b>                                                                                                                     | <b>Kontakt / Contact</b>                                          | <b>Querschnitt / Wire gauge</b>                                  |                                                                   |
| a                                                                                                                                        | Standard gestanzte                                  | 0,5 mm <sup>2</sup>             |                                 | a                                                                                                                                        | Standard gedrehte                                                 | 0,5 mm <sup>2</sup>                                              |                                                                   |
| b                                                                                                                                        | Standard gestanzte                                  | 1,5 mm <sup>2</sup>             |                                 | b                                                                                                                                        | Standard gedrehte                                                 | 1,5 mm <sup>2</sup>                                              |                                                                   |
| c                                                                                                                                        |                                                     | 2,5 mm <sup>2</sup>             |                                 | c                                                                                                                                        |                                                                   | 2,5 mm <sup>2</sup>                                              |                                                                   |
| d                                                                                                                                        | Hochstrom gestanzte                                 | 1,5 mm <sup>2</sup>             |                                 |                                                                                                                                          |                                                                   |                                                                  |                                                                   |
| e                                                                                                                                        | Hochstrom gestanzte                                 | 2,5 mm <sup>2</sup>             |                                 |                                                                                                                                          |                                                                   |                                                                  |                                                                   |

<sup>1)</sup> Erläuterung der Bestell-Nr. für die Kontakte siehe Seite 4  
<sup>1)</sup> Explanation of the Part No. for contacts see page 4

Abisolierlängen siehe S. 198  
Stripping length see p. 198


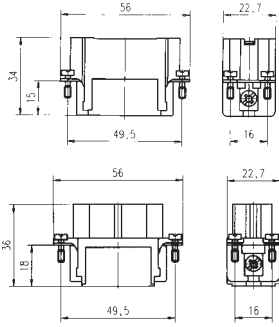
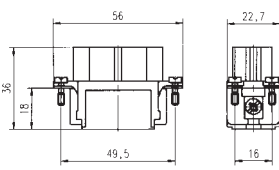
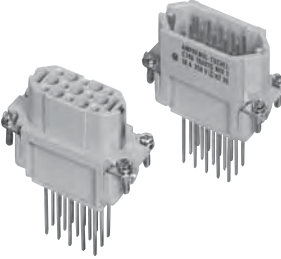
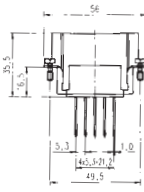
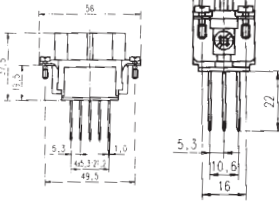

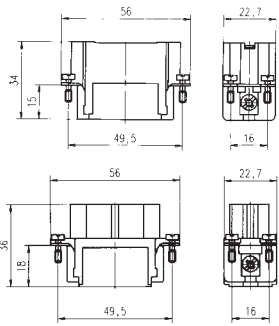
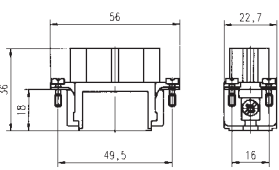
C 146 D

15 + 

Steckverbinder  
Connectors

250 V~ 10 A/15 A DIN EN 175 301-801 (DIN 43652)

Gehäuse siehe Seite 114-117  
Housings see page 114-117

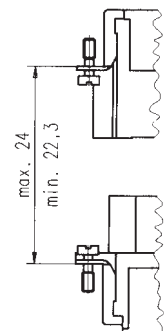
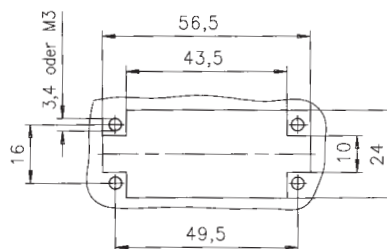
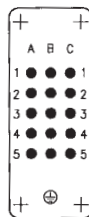
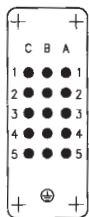
| Bezeichnung - Abbildung<br>Description - Figure                                                                                                                                         | Maßzeichnung<br>Drawing                                                                                                                                                                                                                    | Bestell Nr. / Part No.                                                                                                                                                                   |                                                                                                                                                                                          |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                         |                                                                                                                                                                                                                                            | Stifteinsatz / Male insert                                                                                                                                                               | Buchseinsatz / Female insert                                                                                                                                                             |
| Kontakteinsatz<br>Contact insert<br>                                                                   | Stifteinsatz<br>Male insert<br><br>Buchseinsatz<br>Female insert<br>     | <b>C146 10A015 000 2</b><br>(für gestanzte Crimpkontakte)<br>(for stamped crimp contacts)<br><br><b>C146 10A015 500 2</b><br>(für gedrehte Crimpkontakte)<br>(for turned crimp contacts) | <b>C146 10B015 000 2</b><br>(für gestanzte Crimpkontakte)<br>(for stamped crimp contacts)<br><br><b>C146 10B015 500 2</b><br>(für gedrehte Crimpkontakte)<br>(for turned crimp contacts) |
| Wickelanschluss <sup>2)</sup><br>Wire wrap termination<br>                                            | Stifteinsatz<br>Male insert<br><br>Buchseinsatz<br>Female insert<br>   | <b>C146 10A015 009 2</b>                                                                                                                                                                 | <b>C146 10B015 009 2</b>                                                                                                                                                                 |
| Kontakteinsatz 2 X PE Anschluss <sup>1)</sup><br>Contact insert 2 X PE termination <sup>1)</sup><br> | Stifteinsatz<br>Male insert<br><br>Buchseinsatz<br>Female insert<br> | <b>C146 10A015 060 2</b><br>(für gestanzte Crimpkontakte)<br>(for stamped crimp contacts)                                                                                                | <b>C146 10B015 060 2</b><br>(für gestanzte Crimpkontakte)<br>(for stamped crimp contacts)                                                                                                |

Montageanleitung, Ansicht von Steckverbinder-Anschlussseite  
Assembly instructions, view from termination side

Stifteinsatz  
Male insert

Buchseinsatz  
Female insert

Montageausschnitt (Kontaktträger)  
Panel cut out (insert)



<sup>1)</sup> Beim Einbau der Steckverbinder in nicht leitende Gehäuse sind beide Schutzleiter (Ausführung 2 x PE) anzuschließen.  
If connectors are mounted in non conductive housings both protective earthing terminals shall be mounted.

<sup>2)</sup> IP-Schutzart im Anschlussbereich IP 00  
IP-degree of protection on termination side IP 00

C 146 D

15 + 

**Crimpkontakte**  
Crimp contacts

Gestanzte Einzelkontakte  
Stamped single contacts



Gedrehte Einzelkontakte  
Turned single contacts



Gestanzte Bandkontakte für Crimpzangen  
Stamped contacts on reel for hand crimping tools



200 / 100 Stück

200 / 100 pcs

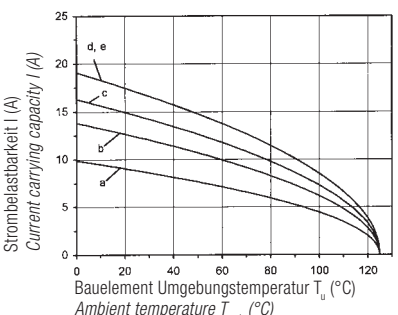
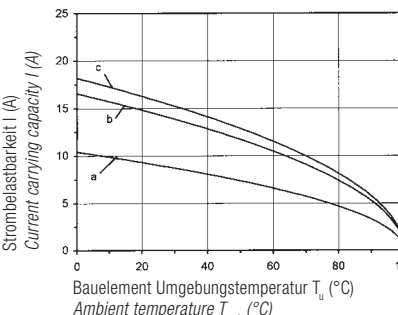
Gestanzte Bandkontakte für Crimpmaschinen  
Stamped contacts on reel for crimp machines



2000 Stück  
(Zuführung links  
oder rechts)

2000 pcs  
(feeding left or  
right hand side)

D

| Lieferform<br>Supplied as                                                               | für Leiter-<br>querschnitt<br>for wire gauge | AWG                             | Stück-<br>zahl<br>Pieces | Bestell Nr. <sup>1)</sup><br>Stiftkontakt<br>Male contact                             | Part No. <sup>1)</sup><br>Buchsenkontakt<br>Female contact | Bestell Nr. <sup>1)</sup><br>Stiftkontakt<br>Male contact | Part No. <sup>1)</sup><br>Buchsenkontakt<br>Female contact |
|-----------------------------------------------------------------------------------------|----------------------------------------------|---------------------------------|--------------------------|---------------------------------------------------------------------------------------|------------------------------------------------------------|-----------------------------------------------------------|------------------------------------------------------------|
| Gestanzte Einzelkontakte / Stamped single contacts                                      |                                              |                                 |                          | versilbert / silver plating                                                           |                                                            | vergoldet / gold plating                                  |                                                            |
| Standard<br>Hochstrom<br>High current                                                   | 0,14 - 0,5 mm <sup>2</sup>                   | 26 - 20                         | 100                      | VN01 016 0003 (1)                                                                     | VN02 016 0003 (1)                                          | VN01 016 0003 (2)                                         | VN02 016 0003 (2)                                          |
|                                                                                         | 0,5 - 1,5 mm <sup>2</sup>                    | 20 - 16                         | 100                      | VN01 016 0002 (1)                                                                     | VN02 016 0002 (1)                                          | VN01 016 0002 (2)                                         | VN02 016 0002 (2)                                          |
|                                                                                         | 1,5 - 2,5 mm <sup>2</sup>                    | 16 - 14                         | 100                      | VN01 016 0005 (1)                                                                     | VN02 016 0005 (1)                                          | VN01 016 0005 (2)                                         | VN02 016 0005 (2)                                          |
|                                                                                         | 0,5 - 1,5 mm <sup>2</sup>                    | 20 - 16                         | 100                      | VN01 016 0015 (1)                                                                     | VN02 016 0015 (1)                                          |                                                           |                                                            |
|                                                                                         | 1,5 - 2,5 mm <sup>2</sup>                    | 16 - 14                         | 100                      | VN01 016 0016 (1)                                                                     | VN02 016 0016 (1)                                          |                                                           |                                                            |
| Gestanzte Bandkontakte für Crimpzangen / Stamped Contacts on reel for hand crimp tools  |                                              |                                 |                          |                                                                                       |                                                            |                                                           |                                                            |
| Standard<br>Hochstrom<br>High current                                                   | 0,14 - 0,5 mm <sup>2</sup>                   | 26 - 20                         | 200                      | ZN01 016 0003 (1)                                                                     | ZN02 016 0003 (1)                                          | ZN01 016 0003 (2)                                         | ZN02 016 0003 (2)                                          |
|                                                                                         | 0,5 - 1,5 mm <sup>2</sup>                    | 20 - 16                         | 200                      | ZN01 016 0002 (1)                                                                     | ZN02 016 0002 (1)                                          | ZN01 016 0002 (2)                                         | ZN02 016 0002 (2)                                          |
|                                                                                         | 1,5 - 2,5 mm <sup>2</sup>                    | 16 - 14                         | 100                      | ZN01 016 0005 (1)                                                                     | ZN02 016 0005 (1)                                          | ZN01 016 0005 (2)                                         | ZN02 016 0005 (2)                                          |
|                                                                                         | 0,5 - 1,5 mm <sup>2</sup>                    | 20 - 16                         | 200                      | ZN01 016 0015 (1)                                                                     | ZN02 016 0015 (1)                                          |                                                           |                                                            |
|                                                                                         | 1,5 - 2,5 mm <sup>2</sup>                    | 16 - 14                         | 100                      | ZN01 016 0016 (1)                                                                     | ZN02 016 0016 (1)                                          |                                                           |                                                            |
| Gestanzte Bandkontakte für Crimpmaschinen / Stamped contacts on reel for crimp machines |                                              |                                 |                          |                                                                                       |                                                            |                                                           |                                                            |
| Kontaktzuführung rechts<br>Contact feeding right hand side                              | 0,14 - 0,5 mm <sup>2</sup>                   | 26 - 20                         | 2000                     | HN01 016 0003 (1)                                                                     | HN02 016 0003 (1)                                          | HN01 016 0003 (2)                                         | HN02 016 0003 (2)                                          |
|                                                                                         | 0,5 - 1,5 mm <sup>2</sup>                    | 20 - 16                         | 2000                     | HN01 016 0002 (1)                                                                     | HN02 016 0002 (1)                                          | HN01 016 0002 (2)                                         | HN02 016 0002 (2)                                          |
|                                                                                         | 1,5 - 2,5 mm <sup>2</sup>                    | 16 - 14                         | 2000                     | HN01 016 0005 (1)                                                                     | HN02 016 0005 (1)                                          | HN01 016 0005 (2)                                         | HN02 016 0005 (2)                                          |
|                                                                                         | 0,5 - 1,5 mm <sup>2</sup>                    | 20 - 16                         | 2000                     | HN01 016 0015 (1)                                                                     | HN02 016 0015 (1)                                          |                                                           |                                                            |
|                                                                                         | 1,5 - 2,5 mm <sup>2</sup>                    | 16 - 14                         | 2000                     | HN01 016 0016 (1)                                                                     | HN02 016 0016 (1)                                          |                                                           |                                                            |
| Kontaktzuführung links<br>Contact feeding left hand side                                | 0,14 - 0,5 mm <sup>2</sup>                   | 26 - 20                         | 2000                     | TN01 016 0003 (1)                                                                     | TN02 016 0003 (1)                                          | TN01 016 0003 (2)                                         | TN02 016 0003 (2)                                          |
|                                                                                         | 0,5 - 1,5 mm <sup>2</sup>                    | 20 - 16                         | 2000                     | TN01 016 0002 (1)                                                                     | TN02 016 0002 (1)                                          | TN01 016 0002 (2)                                         | TN02 016 0002 (2)                                          |
|                                                                                         | 1,5 - 2,5 mm <sup>2</sup>                    | 16 - 14                         | 2000                     | TN01 016 0005 (1)                                                                     | TN02 016 0005 (1)                                          | TN01 016 0005 (2)                                         | TN02 016 0005 (2)                                          |
|                                                                                         | 0,5 - 1,5 mm <sup>2</sup>                    | 20 - 16                         | 2000                     | TN01 016 0015 (1)                                                                     | TN02 016 0015 (1)                                          |                                                           |                                                            |
|                                                                                         | 1,5 - 2,5 mm <sup>2</sup>                    | 18 - 14                         | 2000                     | TN01 016 0016 (1)                                                                     | TN02 016 0016 (1)                                          |                                                           |                                                            |
| Gedrehte Crimpkontakte / Turned crimp contacts                                          |                                              |                                 |                          |                                                                                       |                                                            |                                                           |                                                            |
| Einzelkontakt<br>Single contact                                                         | 0,14 - 0,37 mm <sup>2</sup>                  | 26 - 22                         | 100                      | VN01 016 0024 (1)C                                                                    | VN02 016 0024 (1)C                                         | VN01 016 0024 (2)C                                        | VN02 016 0024 (2)C                                         |
|                                                                                         | 0,5 mm <sup>2</sup>                          | 20                              | 100                      | VN01 016 0025 (1)C                                                                    | VN02 016 0025 (1)C                                         | VN01 016 0025 (2)C                                        | VN02 016 0025 (2)C                                         |
|                                                                                         | 0,75 - 1,0 mm <sup>2</sup>                   | 20 - 16                         | 100                      | VN01 016 0026 (1)C                                                                    | VN02 016 0026 (1)C                                         | VN01 016 0026 (2)C                                        | VN02 016 0026 (2)C                                         |
|                                                                                         | 1,5 mm <sup>2</sup>                          | 16 - 15                         | 100                      | VN01 016 0027 (1)C                                                                    | VN02 016 0027 (1)C                                         | VN01 016 0027 (2)C                                        | VN02 016 0027 (2)C                                         |
|                                                                                         | 2,5 mm <sup>2</sup>                          | 14                              | 100                      | VN01 016 0028 (1)C                                                                    | VN02 016 0028 (1)C                                         | VN01 016 0028 (2)C                                        | VN02 016 0028 (2)C                                         |
| <b>Gestanzte Kontakte</b><br>Stamped contacts                                           |                                              |                                 |                          | <b>Gedrehte Kontakte</b><br>Turned contacts                                           |                                                            |                                                           |                                                            |
|      |                                              |                                 |                          |  |                                                            |                                                           |                                                            |
| <b>Kurve / Curve</b>                                                                    | <b>Kontakt / Contact</b>                     | <b>Querschnitt / Wire gauge</b> |                          | <b>Kurve / Curve</b>                                                                  | <b>Kontakt / Contact</b>                                   | <b>Querschnitt / Wire gauge</b>                           |                                                            |
| a                                                                                       | Standard gestanzte                           | 0,5 mm <sup>2</sup>             |                          | a                                                                                     | Standard gedrehte                                          | 0,5 mm <sup>2</sup>                                       |                                                            |
| b                                                                                       | Standard gestanzte                           | 1,5 mm <sup>2</sup>             |                          | b                                                                                     | Standard gedrehte                                          | 1,5 mm <sup>2</sup>                                       |                                                            |
| c                                                                                       |                                              | 2,5 mm <sup>2</sup>             |                          | c                                                                                     |                                                            | 2,5 mm <sup>2</sup>                                       |                                                            |
| d                                                                                       | Hochstrom gestanzte                          | 1,5 mm <sup>2</sup>             |                          |                                                                                       |                                                            |                                                           |                                                            |
| e                                                                                       | High current, stamped                        | 2,5 mm <sup>2</sup>             |                          |                                                                                       |                                                            |                                                           |                                                            |

<sup>1)</sup> Erläuterung der Bestell-Nr. für die Kontakte siehe Seite 4

<sup>1)</sup> Explanation of the Part No. for contacts see page 4

Abisolierlängen siehe S. 198

Stripping length see p. 198


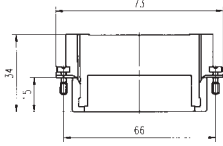
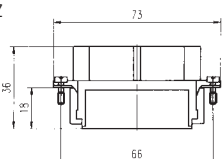

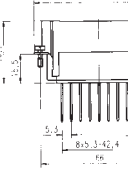
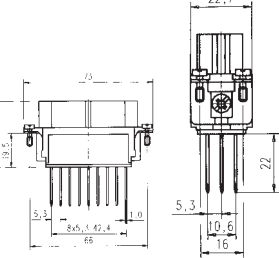

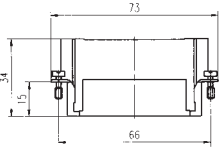
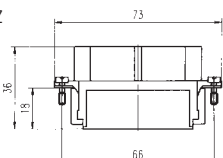
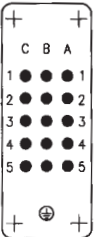
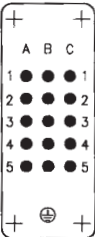
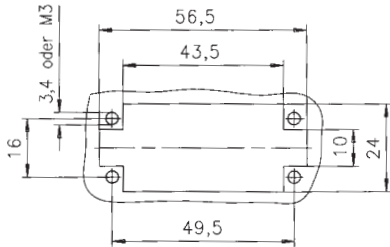
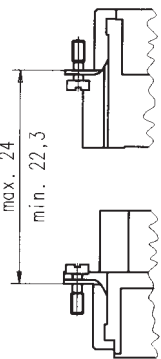
C 146 D

25 + 

Steckverbinder  
Connectors

250 V~ 10 A/15 A DIN EN 175 301-801 (DIN 43 652)

Gehäuse siehe Seite 118-121  
Housings see page 118-121

| Bezeichnung - Abbildung<br>Description - Figure                                                                                                                                         | Maßzeichnung<br>Drawing                                                                                                                                                                                                                    | Bestell Nr. / Part No.                                                                                                                                                                   |                                                                                                                                                                                          |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                         |                                                                                                                                                                                                                                            | Stifteinsatz / Male insert                                                                                                                                                               | Buchseinsatz / Female insert                                                                                                                                                             |
| Kontakteinsatz<br>Contact insert<br>                                                                   | Stifteinsatz<br>Male insert<br><br>Buchseinsatz<br>Female insert<br>     | <b>C146 10A025 000 2</b><br>(für gestanzte Crimpkontakte)<br>(for stamped crimp contacts)<br><br><b>C146 10A025 500 2</b><br>(für gedrehte Crimpkontakte)<br>(for turned crimp contacts) | <b>C146 10B025 000 2</b><br>(für gestanzte Crimpkontakte)<br>(for stamped crimp contacts)<br><br><b>C146 10B025 500 2</b><br>(für gedrehte Crimpkontakte)<br>(for turned crimp contacts) |
| Wickelanschluss <sup>2)</sup><br>Wire wrap termination<br>                                            | Stifteinsatz<br>Male insert<br><br>Buchseinsatz<br>Female insert<br>   | <b>C146 10A025 009 2</b>                                                                                                                                                                 | <b>C146 10B025 009 2</b>                                                                                                                                                                 |
| Kontakteinsatz 2 X PE Anschluss <sup>1)</sup><br>Contact insert 2 X PE termination <sup>1)</sup><br> | Stifteinsatz<br>Male insert<br><br>Buchseinsatz<br>Female insert<br> | <b>C146 10A025 060 2</b><br>(für gestanzte Crimpkontakte)<br>(for stamped crimp contacts)                                                                                                | <b>C146 10B025 060 2</b><br>(für gestanzte Crimpkontakte)<br>(for stamped crimp contacts)                                                                                                |
| Montageanleitung, Ansicht von Steckverbinder-Anschlussseite<br>Assembly instructions, view from termination side                                                                        |                                                                                                                                                                                                                                            |                                                                                                                                                                                          |                                                                                                                                                                                          |
| Stifteinsatz<br>Male insert<br>                                                                      | Buchseinsatz<br>Female insert<br>                                                                                                                       | Montageausschnitt (Kontaktträger)<br>Panel cut out (insert)<br>                                       |                                                                                                     |

<sup>1)</sup> Beim Einbau der Steckverbinder in nicht leitende Gehäuse sind beide Schutzleiter (Ausführung 2 x PE) anzuschließen.  
If connectors are mounted in non conductive housings both protective earthing terminals shall be mounted.

<sup>2)</sup> IP-Schutzart im Anschlussbereich IP 00  
IP-degree of protection on termination side IP 00

C 146 D

25 + 

**Crimpkontakte**  
**Crimp contacts**

Gestanzte Einzelkontakte  
*Stamped single contacts*



Gedrehte Einzelkontakte  
*Turned single contacts*



Gestanzte Bandkontakte für Crimpzangen  
*Stamped contacts on reel for hand crimping tools*



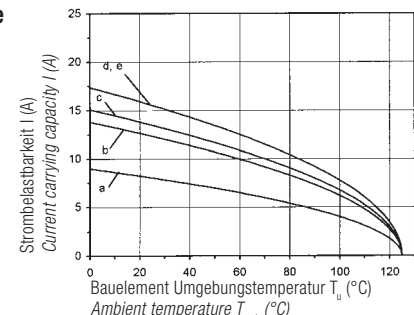
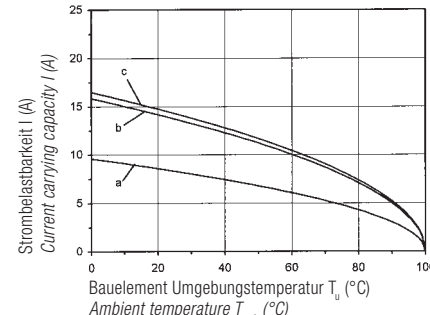
200 / 100 Stück

200 / 100 pcs

Gestanzte Bandkontakte für Crimpmaschinen  
*Stamped contacts on reel for crimp machines*



D

| Lieferform<br><i>Supplied as</i>                                                                                                         | für Leiter-<br>querschnitt<br><i>for wire gauge</i> | AWG                             | Pieces | Bestell Nr. <sup>1)</sup><br>Stiftkontakt<br><i>Male contact</i>                                                                         | Part No. <sup>1)</sup><br>Buchsenkontakt<br><i>Female contact</i> | Bestell Nr. <sup>1)</sup><br>Stiftkontakt<br><i>Male contact</i> | Part No. <sup>1)</sup><br>Buchsenkontakt<br><i>Female contact</i> |
|------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|---------------------------------|--------|------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|------------------------------------------------------------------|-------------------------------------------------------------------|
| Gestanzte Einzelkontakte / <i>Stamped single contacts</i>                                                                                |                                                     |                                 |        | versilbert / <i>silver plating</i>                                                                                                       |                                                                   | vergoldet / <i>gold plating</i>                                  |                                                                   |
| Standard<br>Hochstrom<br><i>High current</i>                                                                                             | 0,14 - 0,5 mm <sup>2</sup>                          | 26 - 20                         | 100    | VN01 016 0003 (1)                                                                                                                        | VN02 016 0003 (1)                                                 | VN01 016 0003 (2)                                                | VN02 016 0003 (2)                                                 |
|                                                                                                                                          | 0,5 - 1,5 mm <sup>2</sup>                           | 20 - 16                         | 100    | VN01 016 0002 (1)                                                                                                                        | VN02 016 0002 (1)                                                 | VN01 016 0002 (2)                                                | VN02 016 0002 (2)                                                 |
|                                                                                                                                          | 1,5 - 2,5 mm <sup>2</sup>                           | 16 - 14                         | 100    | VN01 016 0005 (1)                                                                                                                        | VN02 016 0005 (1)                                                 | VN01 016 0005 (2)                                                | VN02 016 0005 (2)                                                 |
|                                                                                                                                          | 0,5 - 1,5 mm <sup>2</sup>                           | 20 - 16                         | 100    | VN01 016 0015 (1)                                                                                                                        | VN02 016 0015 (1)                                                 |                                                                  |                                                                   |
|                                                                                                                                          | 1,5 - 2,5 mm <sup>2</sup>                           | 16 - 14                         | 100    | VN01 016 0016 (1)                                                                                                                        | VN02 016 0016 (1)                                                 |                                                                  |                                                                   |
| Gestanzte Bandkontakte für Crimpzangen / <i>Stamped Contacts on reel for hand crimp tools</i>                                            |                                                     |                                 |        |                                                                                                                                          |                                                                   |                                                                  |                                                                   |
| Standard<br>Hochstrom<br><i>High current</i>                                                                                             | 0,14 - 0,5 mm <sup>2</sup>                          | 26 - 20                         | 200    | ZN01 016 0003 (1)                                                                                                                        | ZN02 016 0003 (1)                                                 | ZN01 016 0003 (2)                                                | ZN02 016 0003 (2)                                                 |
|                                                                                                                                          | 0,5 - 1,5 mm <sup>2</sup>                           | 20 - 16                         | 200    | ZN01 016 0002 (1)                                                                                                                        | ZN02 016 0002 (1)                                                 | ZN01 016 0002 (2)                                                | ZN02 016 0002 (2)                                                 |
|                                                                                                                                          | 1,5 - 2,5 mm <sup>2</sup>                           | 16 - 14                         | 100    | ZN01 016 0005 (1)                                                                                                                        | ZN02 016 0005 (1)                                                 | ZN01 016 0005 (2)                                                | ZN02 016 0005 (2)                                                 |
|                                                                                                                                          | 0,5 - 1,5 mm <sup>2</sup>                           | 20 - 16                         | 200    | ZN01 016 0015 (1)                                                                                                                        | ZN02 016 0015 (1)                                                 |                                                                  |                                                                   |
|                                                                                                                                          | 1,5 - 2,5 mm <sup>2</sup>                           | 16 - 14                         | 100    | ZN01 016 0016 (1)                                                                                                                        | ZN02 016 0016 (1)                                                 |                                                                  |                                                                   |
| Gestanzte Bandkontakte für Crimpmaschinen / <i>Stamped contacts on reel for crimp machines</i>                                           |                                                     |                                 |        |                                                                                                                                          |                                                                   |                                                                  |                                                                   |
| Kontaktzuführung rechts<br><i>Contact feeding right hand side</i>                                                                        | 0,14 - 0,5 mm <sup>2</sup>                          | 26 - 20                         | 2000   | HN01 016 0003 (1)                                                                                                                        | HN02 016 0003 (1)                                                 | HN01 016 0003 (2)                                                | HN02 016 0003 (2)                                                 |
|                                                                                                                                          | 0,5 - 1,5 mm <sup>2</sup>                           | 20 - 16                         | 2000   | HN01 016 0002 (1)                                                                                                                        | HN02 016 0002 (1)                                                 | HN01 016 0002 (2)                                                | HN02 016 0002 (2)                                                 |
|                                                                                                                                          | Standard<br>1,5 - 2,5 mm <sup>2</sup>               | 16 - 14                         | 2000   | HN01 016 0005 (1)                                                                                                                        | HN02 016 0005 (1)                                                 | HN01 016 0005 (2)                                                | HN02 016 0005 (2)                                                 |
|                                                                                                                                          | Hochstrom<br>1,5 - 2,5 mm <sup>2</sup>              | 20 - 16                         | 2000   | HN01 016 0015 (1)                                                                                                                        | HN02 016 0015 (1)                                                 |                                                                  |                                                                   |
|                                                                                                                                          | 1,5 - 2,5 mm <sup>2</sup>                           | 16 - 14                         | 2000   | HN01 016 0016 (1)                                                                                                                        | HN02 016 0016 (1)                                                 |                                                                  |                                                                   |
| Kontaktzuführung links<br><i>Contact feeding left hand side</i>                                                                          | 0,14 - 0,5 mm <sup>2</sup>                          | 26 - 20                         | 2000   | TN01 016 0003 (1)                                                                                                                        | TN02 016 0003 (1)                                                 | TN01 016 0003 (2)                                                | TN02 016 0003 (2)                                                 |
|                                                                                                                                          | 0,5 - 1,5 mm <sup>2</sup>                           | 20 - 16                         | 2000   | TN01 016 0002 (1)                                                                                                                        | TN02 016 0002 (1)                                                 | TN01 016 0002 (2)                                                | TN02 016 0002 (2)                                                 |
|                                                                                                                                          | Standard<br>1,5 - 2,5 mm <sup>2</sup>               | 16 - 14                         | 2000   | TN01 016 0005 (1)                                                                                                                        | TN02 016 0005 (1)                                                 | TN01 016 0005 (2)                                                | TN02 016 0005 (2)                                                 |
|                                                                                                                                          | Hochstrom<br>0,5 - 1,5 mm <sup>2</sup>              | 20 - 16                         | 2000   | TN01 016 0015 (1)                                                                                                                        | TN02 016 0015 (1)                                                 |                                                                  |                                                                   |
|                                                                                                                                          | 1,5 - 2,5 mm <sup>2</sup>                           | 18 - 14                         | 2000   | TN01 016 0016 (1)                                                                                                                        | TN02 016 0016 (1)                                                 |                                                                  |                                                                   |
| Gedrehte Crimpkontakte / <i>Turned crimp contacts</i>                                                                                    |                                                     |                                 |        |                                                                                                                                          |                                                                   |                                                                  |                                                                   |
| Einzelkontakt<br><i>Single contact</i>                                                                                                   | 0,14 - 0,37 mm <sup>2</sup>                         | 26 - 22                         | 100    | VN01 016 0024 (1)C                                                                                                                       | VN02 016 0024 (1)C                                                | VN01 016 0024 (2)C                                               | VN02 016 0024 (2)C                                                |
|                                                                                                                                          | 0,5 mm <sup>2</sup>                                 | 20                              | 100    | VN01 016 0025 (1)C                                                                                                                       | VN02 016 0025 (1)C                                                | VN01 016 0025 (2)C                                               | VN02 016 0025 (2)C                                                |
|                                                                                                                                          | 0,75 - 1,0 mm <sup>2</sup>                          | 20 - 16                         | 100    | VN01 016 0026 (1)C                                                                                                                       | VN02 016 0026 (1)C                                                | VN01 016 0026 (2)C                                               | VN02 016 0026 (2)C                                                |
|                                                                                                                                          | 1,5 mm <sup>2</sup>                                 | 16 - 15                         | 100    | VN01 016 0027 (1)C                                                                                                                       | VN02 016 0027 (1)C                                                | VN01 016 0027 (2)C                                               | VN02 016 0027 (2)C                                                |
|                                                                                                                                          | 2,5 mm <sup>2</sup>                                 | 14                              | 100    | VN01 016 0028 (1)C                                                                                                                       | VN02 016 0028 (1)C                                                | VN01 016 0028 (2)C                                               | VN02 016 0028 (2)C                                                |
| <b>Gestanzte Kontakte</b><br><b>Stamped contacts</b>  |                                                     |                                 |        | <b>Gedrehte Kontakte</b><br><b>Turned contacts</b>  |                                                                   |                                                                  |                                                                   |
| <b>Kurve / Curve</b>                                                                                                                     | <b>Kontakt / Contact</b>                            | <b>Querschnitt / Wire gauge</b> |        | <b>Kurve / Curve</b>                                                                                                                     | <b>Kontakt / Contact</b>                                          | <b>Querschnitt / Wire gauge</b>                                  |                                                                   |
| a                                                                                                                                        | Standard gestanzte                                  | 0,5 mm <sup>2</sup>             |        | a                                                                                                                                        | Standard gedrehte                                                 | 0,5 mm <sup>2</sup>                                              |                                                                   |
| b                                                                                                                                        | Standard gestanzte                                  | 1,5 mm <sup>2</sup>             |        | b                                                                                                                                        | Standard gedrehte                                                 | 1,5 mm <sup>2</sup>                                              |                                                                   |
| c                                                                                                                                        |                                                     | 2,5 mm <sup>2</sup>             |        | c                                                                                                                                        |                                                                   | 2,5 mm <sup>2</sup>                                              |                                                                   |
| d                                                                                                                                        | Hochstrom gestanzte                                 | 1,5 mm <sup>2</sup>             |        |                                                                                                                                          |                                                                   |                                                                  |                                                                   |
| e                                                                                                                                        | Hochstrom gestanzte                                 | 2,5 mm <sup>2</sup>             |        |                                                                                                                                          |                                                                   |                                                                  |                                                                   |

<sup>1)</sup> Erläuterung der Bestell-Nr. für die Kontakte siehe Seite 4  
<sup>1)</sup> Explanation of the Part No. for contacts see page 4

Abisolierlängen siehe S. 198  
Stripping length see p. 198

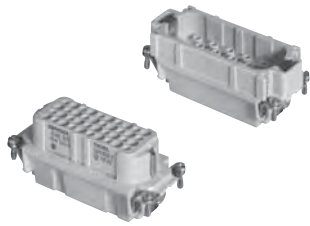
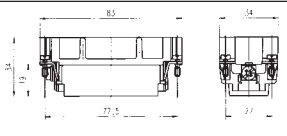
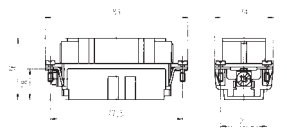
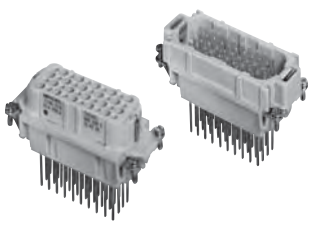
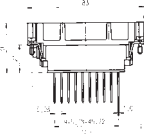
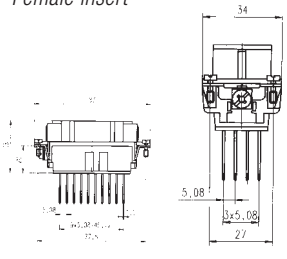
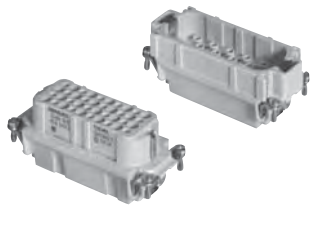
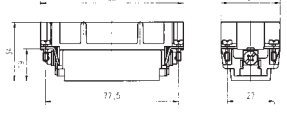
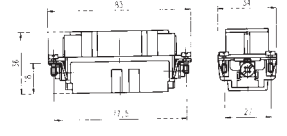
C 146 D

40 + 

Steckverbinder  
Connectors

250 V~ 10 A/15 A DIN EN 175 301-801 (DIN 43 652)

Gehäuse siehe Seite 138–145  
Housings see page 138–145

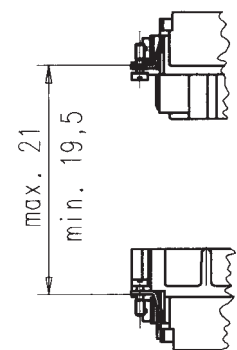
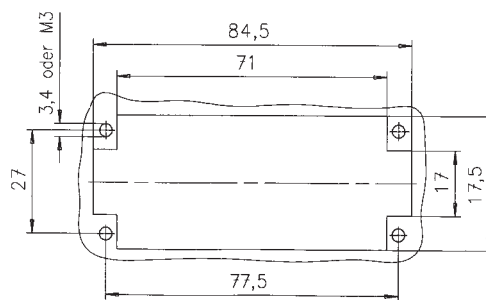
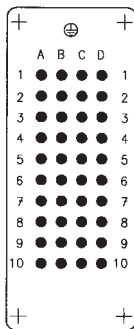
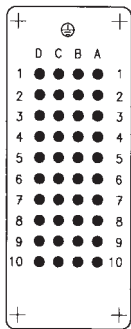
| Bezeichnung - Abbildung<br>Description - Figure                                                                                                                                             | Maßzeichnung<br>Drawing                                                                                                  | Bestell Nr. / Part No.                                                                                                  |                                                                                    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
|                                                                                                                                                                                             |                                                                                                                          | Stifteinsatz / Male insert                                                                                              | Buchseinsatz / Female insert                                                       |
| Kontakteinsatz<br>Contact insert<br><br>                                                                   | Stifteinsatz<br>Male insert<br><br>     | C146 10A040 000 2<br>(für gestanzte Crimpkontakte)<br>(for stamped crimp contacts)                                      | C146 10B040 000 2<br>(für gestanzte Crimpkontakte)<br>(for stamped crimp contacts) |
|                                                                                                                                                                                             | Buchseinsatz<br>Female insert<br><br>   | C146 10A040 500 2<br>(für gedrehte Crimpkontakte)<br>(for turned crimp contacts)                                        | C146 10B040 500 2<br>(für gedrehte Crimpkontakte)<br>(for turned crimp contacts)   |
| Wickelanschluss <sup>3)</sup><br>Wire wrap termination<br><br>                                            | Stifteinsatz<br>Male insert<br><br>    | Buchseinsatz<br>Female insert<br><br> | C146 10A040 009 2<br><br>C146 10B040 009 2                                         |
| Kontakteinsatz 2 X PE Anschluss <sup>1)</sup><br>Contact insert 2 X PE termination <sup>1)</sup><br><br> | Stifteinsatz<br>Male insert<br><br>   | C146 10A040 060 2<br>(für gestanzte Crimpkontakte)<br>(for stamped crimp contacts)                                      | C146 10B040 060 2<br>(für gestanzte Crimpkontakte)<br>(for stamped crimp contacts) |
|                                                                                                                                                                                             | Buchseinsatz<br>Female insert<br><br> |                                                                                                                         |                                                                                    |

Montageanleitung, Ansicht von Steckverbinder-Anschlussseite / Assembly instructions, view from termination side

Stifteinsatz  
Male insert

Buchseinsatz  
Female insert

Montageausschnitt (Kontaktträger)  
Panel cut out (insert)



<sup>1)</sup> Beim Einbau der Steckverbinder in nicht leitende Gehäuse sind beide Schutzleiter (Ausführung 2 x PE) anzuschließen.  
If connectors are mounted in non conductive housings both protective earthing terminals shall be mounted.

<sup>2)</sup> Für Gehäuse mit niedriger Bauform / for low profile housings

<sup>3)</sup> IP-Schutzart im Anschlussbereich IP 00  
IP-degree of protection on termination side IP 00



C 146 D

40 + 

**Crimpkontakte**  
*Crimp contacts*

Gestanzte Einzelkontakte  
*Stamped single contacts*



Gedrehte Einzelkontakte  
*Turned single contacts*



Gestanzte Bandkontakte für Crimpzangen  
*Stamped contacts on reel for hand crimping tools*



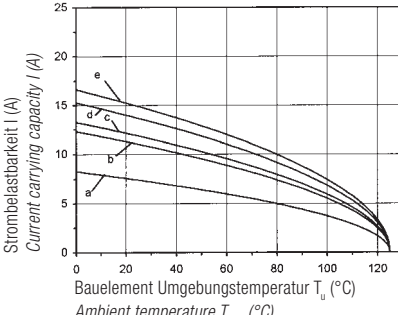
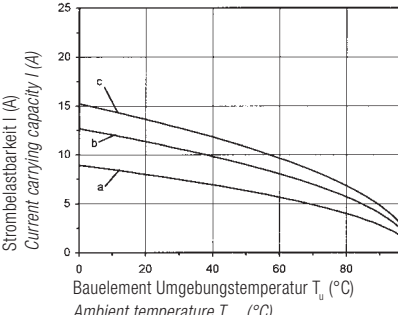
200 / 100 Stück  
200 / 100 pcs

Gestanzte Bandkontakte für Crimpmaschinen  
*Stamped contacts on reel for crimp machines*



2000 Stück  
(Zuführung links  
oder rechts)  
2000 pcs  
(feeding left or  
right hand side)

D

| Lieferform<br><i>Supplied as</i>                                                               | für Leiter-<br>querschnitt<br><i>for wire gauge</i> | AWG                             | Stück-<br>zahl<br><i>Pieces</i> | Bestell Nr. <sup>1)</sup><br>Stiftkontakt<br><i>Male contact</i>                      | Part No. <sup>1)</sup><br>Buchsenkontakt<br><i>Female contact</i> | Bestell Nr. <sup>1)</sup><br>Stiftkontakt<br><i>Male contact</i> | Part No. <sup>1)</sup><br>Buchsenkontakt<br><i>Female contact</i> |
|------------------------------------------------------------------------------------------------|-----------------------------------------------------|---------------------------------|---------------------------------|---------------------------------------------------------------------------------------|-------------------------------------------------------------------|------------------------------------------------------------------|-------------------------------------------------------------------|
| <b>Gestanzte Einzelkontakte / Stamped single contacts</b>                                      |                                                     |                                 |                                 | <i>versilbert / silver plating</i>                                                    |                                                                   | <i>vergoldet / gold plating</i>                                  |                                                                   |
| Standard<br>Hochstrom<br><i>High current</i>                                                   | 0,14 - 0,5 mm <sup>2</sup>                          | 26 - 20                         | 100                             | VN01 016 0003 (1)                                                                     | VN02 016 0003 (1)                                                 | VN01 016 0003 (2)                                                | VN02 016 0003 (2)                                                 |
|                                                                                                | 0,5 - 1,5 mm <sup>2</sup>                           | 20 - 16                         | 100                             | VN01 016 0002 (1)                                                                     | VN02 016 0002 (1)                                                 | VN01 016 0002 (2)                                                | VN02 016 0002 (2)                                                 |
|                                                                                                | 1,5 - 2,5 mm <sup>2</sup>                           | 16 - 14                         | 100                             | VN01 016 0005 (1)                                                                     | VN02 016 0005 (1)                                                 | VN01 016 0005 (2)                                                | VN02 016 0005 (2)                                                 |
|                                                                                                | 0,5 - 1,5 mm <sup>2</sup>                           | 20 - 16                         | 100                             | VN01 016 0015 (1)                                                                     | VN02 016 0015 (1)                                                 |                                                                  |                                                                   |
|                                                                                                | 1,5 - 2,5 mm <sup>2</sup>                           | 16 - 14                         | 100                             | VN01 016 0016 (1)                                                                     | VN02 016 0016 (1)                                                 |                                                                  |                                                                   |
| <b>Gestanzte Bandkontakte für Crimpzangen / Stamped Contacts on reel for hand crimp tools</b>  |                                                     |                                 |                                 |                                                                                       |                                                                   |                                                                  |                                                                   |
| Standard<br>Hochstrom<br><i>High current</i>                                                   | 0,14 - 0,5 mm <sup>2</sup>                          | 26 - 20                         | 200                             | ZN01 016 0003 (1)                                                                     | ZN02 016 0003 (1)                                                 | ZN01 016 0003 (2)                                                | ZN02 016 0003 (2)                                                 |
|                                                                                                | 0,5 - 1,5 mm <sup>2</sup>                           | 20 - 16                         | 200                             | ZN01 016 0002 (1)                                                                     | ZN02 016 0002 (1)                                                 | ZN01 016 0002 (2)                                                | ZN02 016 0002 (2)                                                 |
|                                                                                                | 1,5 - 2,5 mm <sup>2</sup>                           | 16 - 14                         | 100                             | ZN01 016 0005 (1)                                                                     | ZN02 016 0005 (1)                                                 | ZN01 016 0005 (2)                                                | ZN02 016 0005 (2)                                                 |
|                                                                                                | 0,5 - 1,5 mm <sup>2</sup>                           | 20 - 16                         | 200                             | ZN01 016 0015 (1)                                                                     | ZN02 016 0015 (1)                                                 |                                                                  |                                                                   |
|                                                                                                | 1,5 - 2,5 mm <sup>2</sup>                           | 16 - 14                         | 100                             | ZN01 016 0016 (1)                                                                     | ZN02 016 0016 (1)                                                 |                                                                  |                                                                   |
| <b>Gestanzte Bandkontakte für Crimpmaschinen / Stamped contacts on reel for crimp machines</b> |                                                     |                                 |                                 |                                                                                       |                                                                   |                                                                  |                                                                   |
| Kontaktzuführung rechts<br><i>Contact feeding right hand side</i>                              | 0,14 - 0,5 mm <sup>2</sup>                          | 26 - 20                         | 2000                            | HN01 016 0003 (1)                                                                     | HN02 016 0003 (1)                                                 | HN01 016 0003 (2)                                                | HN02 016 0003 (2)                                                 |
|                                                                                                | 0,5 - 1,5 mm <sup>2</sup>                           | 20 - 16                         | 2000                            | HN01 016 0002 (1)                                                                     | HN02 016 0002 (1)                                                 | HN01 016 0002 (2)                                                | HN02 016 0002 (2)                                                 |
|                                                                                                | Standard<br>1,5 - 2,5 mm <sup>2</sup>               | 16 - 14                         | 2000                            | HN01 016 0005 (1)                                                                     | HN02 016 0005 (1)                                                 | HN01 016 0005 (2)                                                | HN02 016 0005 (2)                                                 |
|                                                                                                | Hochstrom<br>1,5 - 2,5 mm <sup>2</sup>              | 16 - 14                         | 2000                            | HN01 016 0015 (1)                                                                     | HN02 016 0015 (1)                                                 |                                                                  |                                                                   |
|                                                                                                | 1,5 - 2,5 mm <sup>2</sup>                           | 16 - 14                         | 2000                            | HN01 016 0016 (1)                                                                     | HN02 016 0016 (1)                                                 |                                                                  |                                                                   |
| Kontaktzuführung links<br><i>Contact feeding left hand side</i>                                | 0,14 - 0,5 mm <sup>2</sup>                          | 26 - 20                         | 2000                            | TN01 016 0003 (1)                                                                     | TN02 016 0003 (1)                                                 | TN01 016 0003 (2)                                                | TN02 016 0003 (2)                                                 |
|                                                                                                | 0,5 - 1,5 mm <sup>2</sup>                           | 20 - 16                         | 2000                            | TN01 016 0002 (1)                                                                     | TN02 016 0002 (1)                                                 | TN01 016 0002 (2)                                                | TN02 016 0002 (2)                                                 |
|                                                                                                | Standard<br>1,5 - 2,5 mm <sup>2</sup>               | 16 - 14                         | 2000                            | TN01 016 0005 (1)                                                                     | TN02 016 0005 (1)                                                 | TN01 016 0005 (2)                                                | TN02 016 0005 (2)                                                 |
|                                                                                                | Hochstrom<br>0,5 - 1,5 mm <sup>2</sup>              | 20 - 16                         | 2000                            | TN01 016 0015 (1)                                                                     | TN02 016 0015 (1)                                                 |                                                                  |                                                                   |
|                                                                                                | 1,5 - 2,5 mm <sup>2</sup>                           | 18 - 14                         | 2000                            | TN01 016 0016 (1)                                                                     | TN02 016 0016 (1)                                                 |                                                                  |                                                                   |
| <b>Gedrehte Crimpkontakte / Turned crimp contacts</b>                                          |                                                     |                                 |                                 |                                                                                       |                                                                   |                                                                  |                                                                   |
| Einzelkontakt<br><i>Single contact</i>                                                         | 0,14 - 0,37 mm <sup>2</sup>                         | 26 - 22                         | 100                             | VN01 016 0024 (1)C                                                                    | VN02 016 0024 (1)C                                                | VN01 016 0024 (2)C                                               | VN02 016 0024 (2)C                                                |
|                                                                                                | 0,5 mm <sup>2</sup>                                 | 20                              | 100                             | VN01 016 0025 (1)C                                                                    | VN02 016 0025 (1)C                                                | VN01 016 0025 (2)C                                               | VN02 016 0025 (2)C                                                |
|                                                                                                | 0,75 - 1,0 mm <sup>2</sup>                          | 20 - 16                         | 100                             | VN01 016 0026 (1)C                                                                    | VN02 016 0026 (1)C                                                | VN01 016 0026 (2)C                                               | VN02 016 0026 (2)C                                                |
|                                                                                                | 1,5 mm <sup>2</sup>                                 | 16 - 15                         | 100                             | VN01 016 0027 (1)C                                                                    | VN02 016 0027 (1)C                                                | VN01 016 0027 (2)C                                               | VN02 016 0027 (2)C                                                |
|                                                                                                | 2,5 mm <sup>2</sup>                                 | 14                              | 100                             | VN01 016 0028 (1)C                                                                    | VN02 016 0028 (1)C                                                | VN01 016 0028 (2)C                                               | VN02 016 0028 (2)C                                                |
| <b>Gestanzte Kontakte<br/>Stamped contacts</b>                                                 |                                                     |                                 |                                 | <b>Gedrehte Kontakte<br/>Turned contacts</b>                                          |                                                                   |                                                                  |                                                                   |
|             |                                                     |                                 |                                 |  |                                                                   |                                                                  |                                                                   |
| <b>Kurve / Curve</b>                                                                           | <b>Kontakt / Contact</b>                            | <b>Querschnitt / Wire gauge</b> |                                 | <b>Kurve / Curve</b>                                                                  | <b>Kontakt / Contact</b>                                          | <b>Querschnitt / Wire gauge</b>                                  |                                                                   |
| a                                                                                              | Standard gestanzte                                  | 0,5 mm <sup>2</sup>             |                                 | a                                                                                     | Standard gedrehte                                                 | 0,5 mm <sup>2</sup>                                              |                                                                   |
| b                                                                                              | Standard gestanzte                                  | 1,5 mm <sup>2</sup>             |                                 | b                                                                                     | Standard gedrehte                                                 | 1,5 mm <sup>2</sup>                                              |                                                                   |
| c                                                                                              |                                                     | 2,5 mm <sup>2</sup>             |                                 | c                                                                                     |                                                                   | 2,5 mm <sup>2</sup>                                              |                                                                   |
| d                                                                                              | Hochstrom gestanzte                                 | 1,5 mm <sup>2</sup>             |                                 |                                                                                       |                                                                   |                                                                  |                                                                   |
| e                                                                                              | Hochstrom gestanzte                                 | 2,5 mm <sup>2</sup>             |                                 |                                                                                       |                                                                   |                                                                  |                                                                   |

<sup>1)</sup> Erläuterung der Bestell-Nr. für die Kontakte siehe Seite 4  
<sup>1)</sup> Explanation of the Part No. for contacts see page 4

Abisolierlängen siehe S. 198  
Stripping length see p. 198


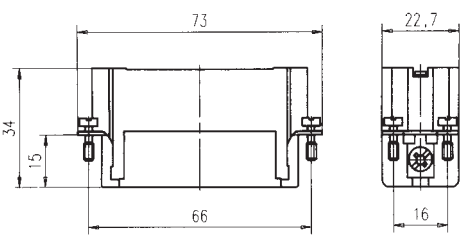

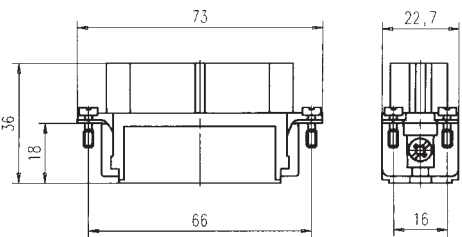
C 146 D

50 + 

Steckverbinder  
Connectors

250 V~ 10 A/15 A

Gehäuse siehe Seite 122-125  
Housings see page 122-125

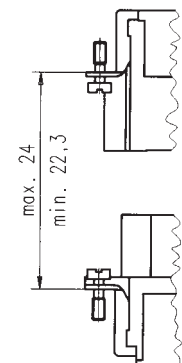
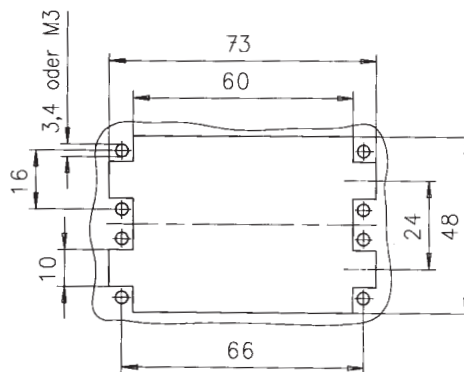
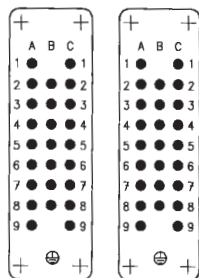
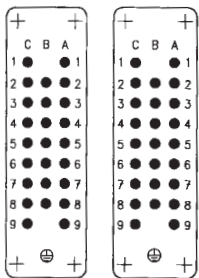
| Bezeichnung - Abbildung<br>Description - Figure                                                                           | Maßzeichnung<br>Drawing                                                                                                  | Bestell Nr. / Part No.                                                                                                                                                                                                         |                                                                                                                                                                                                                                |
|---------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                           |                                                                                                                          | Stifteinsatz / Male insert                                                                                                                                                                                                     | Buchseinsatz / Female insert                                                                                                                                                                                                   |
| Kontakteinsatz<br>Contact insert<br><br> | Stifteinsatz<br>Male insert<br><br>     | C146 10A025 000 2<br>+<br>C146 10A025 005 2<br>(für gestanzte Crimpkontakte)<br>(for stamped crimp contacts)<br><br>C146 10A025 500 2<br>+<br>C146 10A025 505 2<br>(für gedrehte Crimpkontakte)<br>(for turned crimp contacts) | C146 10B025 000 2<br>+<br>C146 10B025 005 2<br>(für gestanzte Crimpkontakte)<br>(for stamped crimp contacts)<br><br>C146 10B025 500 2<br>+<br>C146 10B025 505 2<br>(für gedrehte Crimpkontakte)<br>(for turned crimp contacts) |
|                                         | Buchseinsatz<br>Female insert<br><br> |                                                                                                                                                                                                                                |                                                                                                                                                                                                                                |

Montageanleitung, Ansicht von Steckverbinder-Anschlussseite / Assembly instructions, view from termination side

Stifteinsatz  
Male insert

Buchseinsatz  
Female insert

Montageausschnitt (Kontaktträger)  
Panel cut out (insert)



C 146 D

50 + 

**Crimpkontakte**  
Crimp contacts

Gestanzte Einzelkontakte  
Stamped single contacts



Gedrehte Einzelkontakte  
Turned single contacts



Gestanzte Bandkontakte für Crimpzangen  
Stamped contacts on reel for hand crimping tools



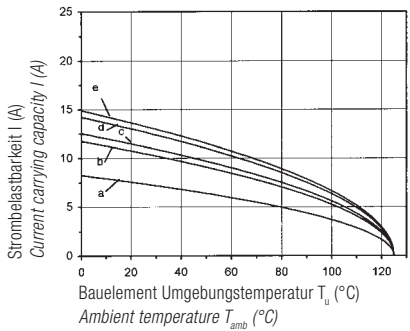
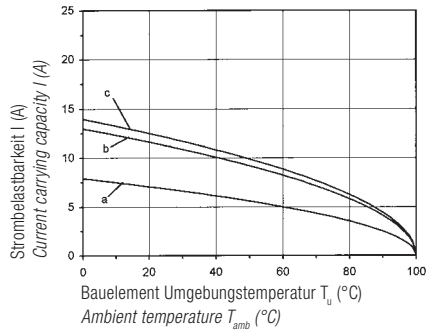
200 / 100 Stück  
200 / 100 pcs

Gestanzte Bandkontakte für Crimpmaschinen  
Stamped contacts on reel for crimp machines



2000 Stück  
(Zuführung links  
oder rechts)  
2000 pcs  
(feeding left or  
right hand side)

D

| Lieferform<br>Supplied as                                                                           | für Leiter-<br>querschnitt<br>for wire gauge | AWG                             | Stück-<br>zahl<br>Pieces | Bestell Nr. <sup>1)</sup><br>Stiftkontakt<br>Male contact                             | Part No. <sup>1)</sup><br>Buchsenkontakt<br>Female contact | Bestell Nr. <sup>1)</sup><br>Stiftkontakt<br>Male contact | Part No. <sup>1)</sup><br>Buchsenkontakt<br>Female contact |
|-----------------------------------------------------------------------------------------------------|----------------------------------------------|---------------------------------|--------------------------|---------------------------------------------------------------------------------------|------------------------------------------------------------|-----------------------------------------------------------|------------------------------------------------------------|
| Gestanzte Einzelkontakte / Stamped single contacts                                                  |                                              |                                 |                          | versilbert / silver plating                                                           |                                                            | vergoldet / gold plating                                  |                                                            |
| Standard<br>Hochstrom<br>High current                                                               | 0,14 - 0,5 mm <sup>2</sup>                   | 26 - 20                         | 100                      | <a href="#">VN01 016 0003 (1)</a>                                                     | <a href="#">VN02 016 0003 (1)</a>                          | <a href="#">VN01 016 0003 (2)</a>                         | <a href="#">VN02 016 0003 (2)</a>                          |
|                                                                                                     | 0,5 - 1,5 mm <sup>2</sup>                    | 20 - 16                         | 100                      | <a href="#">VN01 016 0002 (1)</a>                                                     | <a href="#">VN02 016 0002 (1)</a>                          | <a href="#">VN01 016 0002 (2)</a>                         | <a href="#">VN02 016 0002 (2)</a>                          |
|                                                                                                     | 1,5 - 2,5 mm <sup>2</sup>                    | 16 - 14                         | 100                      | <a href="#">VN01 016 0005 (1)</a>                                                     | <a href="#">VN02 016 0005 (1)</a>                          | <a href="#">VN01 016 0005 (2)</a>                         | <a href="#">VN02 016 0005 (2)</a>                          |
|                                                                                                     | 0,5 - 1,5 mm <sup>2</sup>                    | 20 - 16                         | 100                      | <a href="#">VN01 016 0015 (1)</a>                                                     | <a href="#">VN02 016 0015 (1)</a>                          |                                                           |                                                            |
|                                                                                                     | 1,5 - 2,5 mm <sup>2</sup>                    | 16 - 14                         | 100                      | <a href="#">VN01 016 0016 (1)</a>                                                     | <a href="#">VN02 016 0016 (1)</a>                          |                                                           |                                                            |
| Gestanzte Bandkontakte für Crimpzangen / Stamped Contacts on reel for hand crimp tools              |                                              |                                 |                          |                                                                                       |                                                            |                                                           |                                                            |
| Standard<br>Hochstrom<br>High current                                                               | 0,14 - 0,5 mm <sup>2</sup>                   | 26 - 20                         | 200                      | <a href="#">ZN01 016 0003 (1)</a>                                                     | <a href="#">ZN02 016 0003 (1)</a>                          | <a href="#">ZN01 016 0003 (2)</a>                         | <a href="#">ZN02 016 0003 (2)</a>                          |
|                                                                                                     | 0,5 - 1,5 mm <sup>2</sup>                    | 20 - 16                         | 200                      | <a href="#">ZN01 016 0002 (1)</a>                                                     | <a href="#">ZN02 016 0002 (1)</a>                          | <a href="#">ZN01 016 0002 (2)</a>                         | <a href="#">ZN02 016 0002 (2)</a>                          |
|                                                                                                     | 1,5 - 2,5 mm <sup>2</sup>                    | 16 - 14                         | 100                      | <a href="#">ZN01 016 0005 (1)</a>                                                     | <a href="#">ZN02 016 0005 (1)</a>                          | <a href="#">ZN01 016 0005 (2)</a>                         | <a href="#">ZN02 016 0005 (2)</a>                          |
|                                                                                                     | 0,5 - 1,5 mm <sup>2</sup>                    | 20 - 16                         | 200                      | <a href="#">ZN01 016 0015 (1)</a>                                                     | <a href="#">ZN02 016 0015 (1)</a>                          |                                                           |                                                            |
|                                                                                                     | 1,5 - 2,5 mm <sup>2</sup>                    | 16 - 14                         | 100                      | <a href="#">ZN01 016 0016 (1)</a>                                                     | <a href="#">ZN02 016 0016 (1)</a>                          |                                                           |                                                            |
| Gestanzte Bandkontakte für Crimpmaschinen / Stamped contacts on reel for crimp machines             |                                              |                                 |                          |                                                                                       |                                                            |                                                           |                                                            |
| Kontaktzuführung rechts<br>Contact feeding right hand side<br>Standard<br>Hochstrom<br>High current | 0,14 - 0,5 mm <sup>2</sup>                   | 26 - 20                         | 2000                     | <a href="#">HN01 016 0003 (1)</a>                                                     | <a href="#">HN02 016 0003 (1)</a>                          | <a href="#">HN01 016 0003 (2)</a>                         | <a href="#">HN02 016 0003 (2)</a>                          |
|                                                                                                     | 0,5 - 1,5 mm <sup>2</sup>                    | 20 - 16                         | 2000                     | <a href="#">HN01 016 0002 (1)</a>                                                     | <a href="#">HN02 016 0002 (1)</a>                          | <a href="#">HN01 016 0002 (2)</a>                         | <a href="#">HN02 016 0002 (2)</a>                          |
|                                                                                                     | 1,5 - 2,5 mm <sup>2</sup>                    | 16 - 14                         | 2000                     | <a href="#">HN01 016 0005 (1)</a>                                                     | <a href="#">HN02 016 0005 (1)</a>                          | <a href="#">HN01 016 0005 (2)</a>                         | <a href="#">HN02 016 0005 (2)</a>                          |
|                                                                                                     | 0,5 - 1,5 mm <sup>2</sup>                    | 20 - 16                         | 2000                     | <a href="#">HN01 016 0015 (1)</a>                                                     | <a href="#">HN02 016 0015 (1)</a>                          |                                                           |                                                            |
|                                                                                                     | 1,5 - 2,5 mm <sup>2</sup>                    | 16 - 14                         | 2000                     | <a href="#">HN01 016 0016 (1)</a>                                                     | <a href="#">HN02 016 0016 (1)</a>                          |                                                           |                                                            |
| Kontaktzuführung links<br>Contact feeding left hand side<br>Standard<br>Hochstrom<br>High current   | 0,14 - 0,5 mm <sup>2</sup>                   | 26 - 20                         | 2000                     | <a href="#">TN01 016 0003 (1)</a>                                                     | <a href="#">TN02 016 0003 (1)</a>                          | <a href="#">TN01 016 0003 (2)</a>                         | <a href="#">TN02 016 0003 (2)</a>                          |
|                                                                                                     | 0,5 - 1,5 mm <sup>2</sup>                    | 20 - 16                         | 2000                     | <a href="#">TN01 016 0002 (1)</a>                                                     | <a href="#">TN02 016 0002 (1)</a>                          | <a href="#">TN01 016 0002 (2)</a>                         | <a href="#">TN02 016 0002 (2)</a>                          |
|                                                                                                     | 1,5 - 2,5 mm <sup>2</sup>                    | 16 - 14                         | 2000                     | <a href="#">TN01 016 0005 (1)</a>                                                     | <a href="#">TN02 016 0005 (1)</a>                          | <a href="#">TN01 016 0005 (2)</a>                         | <a href="#">TN02 016 0005 (2)</a>                          |
|                                                                                                     | 0,5 - 1,5 mm <sup>2</sup>                    | 20 - 16                         | 2000                     | <a href="#">TN01 016 0015 (1)</a>                                                     | <a href="#">TN02 016 0015 (1)</a>                          |                                                           |                                                            |
|                                                                                                     | 1,5 - 2,5 mm <sup>2</sup>                    | 18 - 14                         | 2000                     | <a href="#">TN01 016 0016 (1)</a>                                                     | <a href="#">TN02 016 0016 (1)</a>                          |                                                           |                                                            |
| Gedrehte Crimpkontakte / Turned crimp contacts                                                      |                                              |                                 |                          |                                                                                       |                                                            |                                                           |                                                            |
| Einzelkontakt<br>Single contact                                                                     | 0,14 - 0,37 mm <sup>2</sup>                  | 26 - 22                         | 100                      | <a href="#">VN01 016 0024 (1)C</a>                                                    | <a href="#">VN02 016 0024 (1)C</a>                         | <a href="#">VN01 016 0024 (2)C</a>                        | <a href="#">VN02 016 0024 (2)C</a>                         |
|                                                                                                     | 0,5 mm <sup>2</sup>                          | 20                              | 100                      | <a href="#">VN01 016 0025 (1)C</a>                                                    | <a href="#">VN02 016 0025 (1)C</a>                         | <a href="#">VN01 016 0025 (2)C</a>                        | <a href="#">VN02 016 0025 (2)C</a>                         |
|                                                                                                     | 0,75 - 1,0 mm <sup>2</sup>                   | 20 - 16                         | 100                      | <a href="#">VN01 016 0026 (1)C</a>                                                    | <a href="#">VN02 016 0026 (1)C</a>                         | <a href="#">VN01 016 0026 (2)C</a>                        | <a href="#">VN02 016 0026 (2)C</a>                         |
|                                                                                                     | 1,5 mm <sup>2</sup>                          | 16 - 15                         | 100                      | <a href="#">VN01 016 0027 (1)C</a>                                                    | <a href="#">VN02 016 0027 (1)C</a>                         | <a href="#">VN01 016 0027 (2)C</a>                        | <a href="#">VN02 016 0027 (2)C</a>                         |
|                                                                                                     | 2,5 mm <sup>2</sup>                          | 14                              | 100                      | <a href="#">VN01 016 0028 (1)C</a>                                                    | <a href="#">VN02 016 0028 (1)C</a>                         | <a href="#">VN01 016 0028 (2)C</a>                        | <a href="#">VN02 016 0028 (2)C</a>                         |
| <b>Gestanzte Kontakte</b><br>Stamped contacts                                                       |                                              |                                 |                          | <b>Gedrehte Kontakte</b><br>Turned contacts                                           |                                                            |                                                           |                                                            |
|                  |                                              |                                 |                          |  |                                                            |                                                           |                                                            |
| <b>Kurve / Curve</b>                                                                                | <b>Kontakt / Contact</b>                     | <b>Querschnitt / Wire gauge</b> |                          | <b>Kurve / Curve</b>                                                                  | <b>Kontakt / Contact</b>                                   | <b>Querschnitt / Wire gauge</b>                           |                                                            |
| a                                                                                                   | Standard gestanzte                           | 0,5 mm <sup>2</sup>             |                          | a                                                                                     | Standard gedrehte                                          | 0,5 mm <sup>2</sup>                                       |                                                            |
| b                                                                                                   | Standard gestanzte                           | 1,5 mm <sup>2</sup>             |                          | b                                                                                     | Standard gedrehte                                          | 1,5 mm <sup>2</sup>                                       |                                                            |
| c                                                                                                   |                                              | 2,5 mm <sup>2</sup>             |                          | c                                                                                     |                                                            | 2,5 mm <sup>2</sup>                                       |                                                            |
| d                                                                                                   | Hochstrom gestanzte                          | 1,5 mm <sup>2</sup>             |                          |                                                                                       |                                                            |                                                           |                                                            |
| e                                                                                                   | Hochstrom gestanzte                          | 2,5 mm <sup>2</sup>             |                          |                                                                                       |                                                            |                                                           |                                                            |

<sup>1)</sup> Erläuterung der Bestell-Nr. für die Kontakte siehe Seite 4  
<sup>1)</sup> Explanation of the Part No. for contacts see page 4

Abisolierlängen siehe S. 198  
Stripping length see p. 198

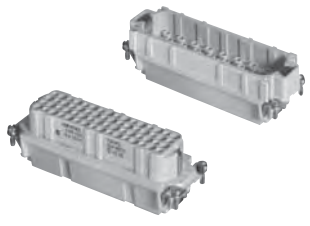
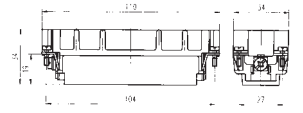
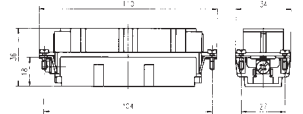
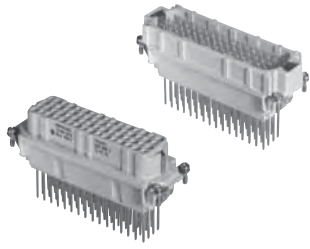
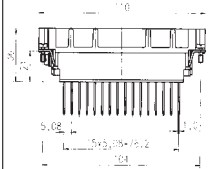
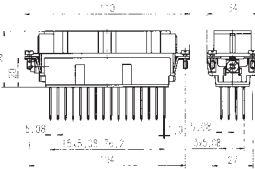
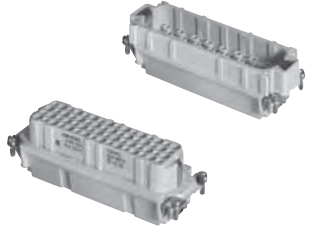
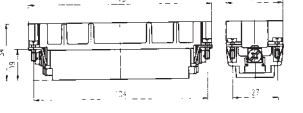
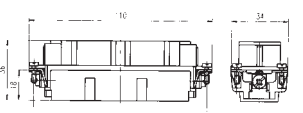
C 146 D

64 + 

Steckverbinder  
Connectors

250 V~ 10 A/15 A DIN EN 175 301-801 (DIN 43 652)

Gehäuse siehe Seite 146-153  
Housings see page 146-153

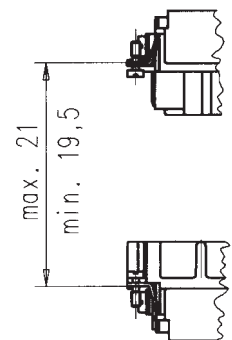
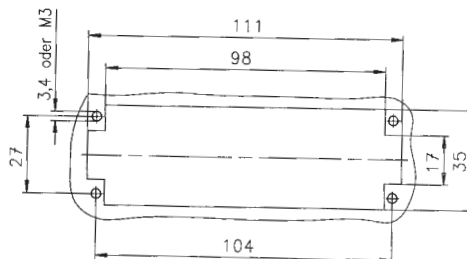
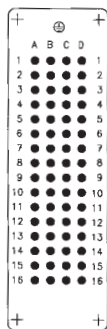
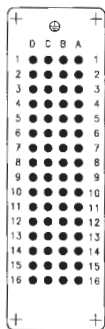
| Bezeichnung - Abbildung<br>Description - Figure                                                                                                                                             | Maßzeichnung<br>Drawing                                                                                                                                                                                                                                | Bestell Nr. / Part No.                                                             |                                                                                    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
|                                                                                                                                                                                             |                                                                                                                                                                                                                                                        | Stifteinsatz / Male insert                                                         | Buchseinsatz / Female insert                                                       |
| Kontakteinsatz<br>Contact insert<br><br>                                                                   | Stifteinsatz<br>Male insert<br><br><br><br>Buchseinsatz<br>Female insert<br><br>     | C146 10A064 000 2<br>(für gestanzte Crimpkontakte)<br>(for stamped crimp contacts) | C146 10B064 000 2<br>(für gestanzte Crimpkontakte)<br>(for stamped crimp contacts) |
|                                                                                                                                                                                             |                                                                                                                                                                                                                                                        | C146 10A064 500 2<br>(für gedrehte Crimpkontakte)<br>(for turned crimp contacts)   | C146 10B064 500 2<br>(für gedrehte Crimpkontakte)<br>(for turned crimp contacts)   |
| Wickelanschluss <sup>3)</sup><br>Wire wrap<br>termination<br><br>                                         | Stifteinsatz<br>Male insert<br><br><br><br>Buchseinsatz<br>Female insert<br><br>   | C146 10A064 009 2                                                                  | C146 10B064 009 2                                                                  |
| Kontakteinsatz 2 X PE Anschluss <sup>1)</sup><br>Contact insert 2 X PE termination <sup>1)</sup><br><br> | Stifteinsatz<br>Male insert<br><br><br><br>Buchseinsatz<br>Female insert<br><br> | C146 10A064 060 2<br>(für gestanzte Crimpkontakte)<br>(for stamped crimp contacts) | C146 10B064 060 2<br>(für gestanzte Crimpkontakte)<br>(for stamped crimp contacts) |

Montageanleitung, Ansicht von Steckverbinder-Anschlussseite / Assembly instructions, view from termination side

Stifteinsatz  
Male insert

Buchseinsatz  
Female insert

Montageausschnitt (Kontaktträger)  
Panel cut out (insert)



<sup>1)</sup> Beim Einbau der Steckverbinder in nicht leitende Gehäuse sind beide Schutzleiter (Ausführung 2 x PE) anzuschließen.  
If connectors are mounted in non conductive housings both protective earthing terminals shall be mounted.

<sup>2)</sup> Für Gehäuse mit niedriger Bauform / for low profile housings

<sup>3)</sup> IP-Schutzart im Anschlussbereich IP 00  
IP-degree of protection on termination side IP 00

C 146 D

64 + 

**Crimpkontakte**  
*Crimp contacts*

Gestanzte Einzelkontakte  
*Stamped single contacts*



Gedrehte Einzelkontakte  
*Turned single contacts*



Gestanzte Bandkontakte für Crimpzangen  
*Stamped contacts on reel for hand crimping tools*



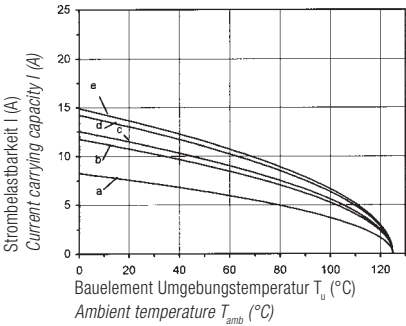
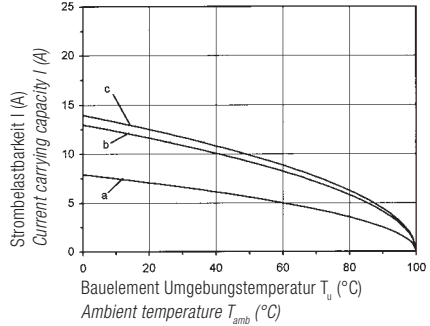
200 / 100 Stück  
200 / 100 pcs

Gestanzte Bandkontakte für Crimpmaschinen  
*Stamped contacts on reel for crimp machines*



2000 Stück  
(Zuführung links oder rechts)  
2000 pcs  
(feeding left or right hand side)

D

| Lieferform<br><i>Supplied as</i>                                                               | für Leiter-<br>querschnitt<br><i>for wire gauge</i> | AWG                             | Stück-<br>zahl<br><i>Pieces</i> | Bestell Nr. <sup>1)</sup><br>Stiftkontakt<br><i>Male contact</i>                      | Part No. <sup>1)</sup><br>Buchsenkontakt<br><i>Female contact</i> | Bestell Nr. <sup>1)</sup><br>Stiftkontakt<br><i>Male contact</i> | Part No. <sup>1)</sup><br>Buchsenkontakt<br><i>Female contact</i> |
|------------------------------------------------------------------------------------------------|-----------------------------------------------------|---------------------------------|---------------------------------|---------------------------------------------------------------------------------------|-------------------------------------------------------------------|------------------------------------------------------------------|-------------------------------------------------------------------|
| Gestanzte Einzelkontakte / <i>Stamped single contacts</i>                                      |                                                     |                                 |                                 | versilbert / <i>silver plating</i>                                                    |                                                                   | vergoldet / <i>gold plating</i>                                  |                                                                   |
| Standard<br>Hochstrom<br><i>High current</i>                                                   | 0,14 - 0,5 mm <sup>2</sup>                          | 26 - 20                         | 100                             | VN01 016 0003 (1)                                                                     | VN02 016 0003 (1)                                                 | VN01 016 0003 (2)                                                | VN02 016 0003 (2)                                                 |
|                                                                                                | 0,5 - 1,5 mm <sup>2</sup>                           | 20 - 16                         | 100                             | VN01 016 0002 (1)                                                                     | VN02 016 0002 (1)                                                 | VN01 016 0002 (2)                                                | VN02 016 0002 (2)                                                 |
|                                                                                                | 1,5 - 2,5 mm <sup>2</sup>                           | 16 - 14                         | 100                             | VN01 016 0005 (1)                                                                     | VN02 016 0005 (1)                                                 | VN01 016 0005 (2)                                                | VN02 016 0005 (2)                                                 |
|                                                                                                | 0,5 - 1,5 mm <sup>2</sup>                           | 20 - 16                         | 100                             | VN01 016 0015 (1)                                                                     | VN02 016 0015 (1)                                                 |                                                                  |                                                                   |
|                                                                                                | 1,5 - 2,5 mm <sup>2</sup>                           | 16 - 14                         | 100                             | VN01 016 0016 (1)                                                                     | VN02 016 0016 (1)                                                 |                                                                  |                                                                   |
| Gestanzte Bandkontakte für Crimpzangen / <i>Stamped Contacts on reel for hand crimp tools</i>  |                                                     |                                 |                                 |                                                                                       |                                                                   |                                                                  |                                                                   |
| Standard<br>Hochstrom<br><i>High current</i>                                                   | 0,14 - 0,5 mm <sup>2</sup>                          | 26 - 20                         | 200                             | ZN01 016 0003 (1)                                                                     | ZN02 016 0003 (1)                                                 | ZN01 016 0003 (2)                                                | ZN02 016 0003 (2)                                                 |
|                                                                                                | 0,5 - 1,5 mm <sup>2</sup>                           | 20 - 16                         | 200                             | ZN01 016 0002 (1)                                                                     | ZN02 016 0002 (1)                                                 | ZN01 016 0002 (2)                                                | ZN02 016 0002 (2)                                                 |
|                                                                                                | 1,5 - 2,5 mm <sup>2</sup>                           | 16 - 14                         | 100                             | ZN01 016 0005 (1)                                                                     | ZN02 016 0005 (1)                                                 | ZN01 016 0005 (2)                                                | ZN02 016 0005 (2)                                                 |
|                                                                                                | 0,5 - 1,5 mm <sup>2</sup>                           | 20 - 16                         | 200                             | ZN01 016 0015 (1)                                                                     | ZN02 016 0015 (1)                                                 |                                                                  |                                                                   |
|                                                                                                | 1,5 - 2,5 mm <sup>2</sup>                           | 16 - 14                         | 100                             | ZN01 016 0016 (1)                                                                     | ZN02 016 0016 (1)                                                 |                                                                  |                                                                   |
| Gestanzte Bandkontakte für Crimpmaschinen / <i>Stamped contacts on reel for crimp machines</i> |                                                     |                                 |                                 |                                                                                       |                                                                   |                                                                  |                                                                   |
| Kontaktzuführung rechts<br><i>Contact feeding right hand side</i>                              | 0,14 - 0,5 mm <sup>2</sup>                          | 26 - 20                         | 2000                            | HN01 016 0003 (1)                                                                     | HN02 016 0003 (1)                                                 | HN01 016 0003 (2)                                                | HN02 016 0003 (2)                                                 |
|                                                                                                | 0,5 - 1,5 mm <sup>2</sup>                           | 20 - 16                         | 2000                            | HN01 016 0002 (1)                                                                     | HN02 016 0002 (1)                                                 | HN01 016 0002 (2)                                                | HN02 016 0002 (2)                                                 |
|                                                                                                | Standard<br>1,5 - 2,5 mm <sup>2</sup>               | 16 - 14                         | 2000                            | HN01 016 0005 (1)                                                                     | HN02 016 0005 (1)                                                 | HN01 016 0005 (2)                                                | HN02 016 0005 (2)                                                 |
|                                                                                                | Hochstrom<br>1,5 - 2,5 mm <sup>2</sup>              | 20 - 16                         | 2000                            | HN01 016 0015 (1)                                                                     | HN02 016 0015 (1)                                                 |                                                                  |                                                                   |
|                                                                                                | 1,5 - 2,5 mm <sup>2</sup>                           | 16 - 14                         | 2000                            | HN01 016 0016 (1)                                                                     | HN02 016 0016 (1)                                                 |                                                                  |                                                                   |
| Kontaktzuführung links<br><i>Contact feeding left hand side</i>                                | 0,14 - 0,5 mm <sup>2</sup>                          | 26 - 20                         | 2000                            | TN01 016 0003 (1)                                                                     | TN02 016 0003 (1)                                                 | TN01 016 0003 (2)                                                | TN02 016 0003 (2)                                                 |
|                                                                                                | 0,5 - 1,5 mm <sup>2</sup>                           | 20 - 16                         | 2000                            | TN01 016 0002 (1)                                                                     | TN02 016 0002 (1)                                                 | TN01 016 0002 (2)                                                | TN02 016 0002 (2)                                                 |
|                                                                                                | Standard<br>1,5 - 2,5 mm <sup>2</sup>               | 16 - 14                         | 2000                            | TN01 016 0005 (1)                                                                     | TN02 016 0005 (1)                                                 | TN01 016 0005 (2)                                                | TN02 016 0005 (2)                                                 |
|                                                                                                | Hochstrom<br>0,5 - 1,5 mm <sup>2</sup>              | 20 - 16                         | 2000                            | TN01 016 0015 (1)                                                                     | TN02 016 0015 (1)                                                 |                                                                  |                                                                   |
|                                                                                                | 1,5 - 2,5 mm <sup>2</sup>                           | 18 - 14                         | 2000                            | TN01 016 0016 (1)                                                                     | TN02 016 0016 (1)                                                 |                                                                  |                                                                   |
| Gedrehte Crimpkontakte / <i>Turned crimp contacts</i>                                          |                                                     |                                 |                                 |                                                                                       |                                                                   |                                                                  |                                                                   |
| Einzelkontakt<br><i>Single contact</i>                                                         | 0,14 - 0,37 mm <sup>2</sup>                         | 26 - 22                         | 100                             | VN01 016 0024 (1)C                                                                    | VN02 016 0024 (1)C                                                | VN01 016 0024 (2)C                                               | VN02 016 0024 (2)C                                                |
|                                                                                                | 0,5 mm <sup>2</sup>                                 | 20                              | 100                             | VN01 016 0025 (1)C                                                                    | VN02 016 0025 (1)C                                                | VN01 016 0025 (2)C                                               | VN02 016 0025 (2)C                                                |
|                                                                                                | 0,75 - 1,0 mm <sup>2</sup>                          | 20 - 16                         | 100                             | VN01 016 0026 (1)C                                                                    | VN02 016 0026 (1)C                                                | VN01 016 0026 (2)C                                               | VN02 016 0026 (2)C                                                |
|                                                                                                | 1,5 mm <sup>2</sup>                                 | 16 - 15                         | 100                             | VN01 016 0027 (1)C                                                                    | VN02 016 0027 (1)C                                                | VN01 016 0027 (2)C                                               | VN02 016 0027 (2)C                                                |
|                                                                                                | 2,5 mm <sup>2</sup>                                 | 14                              | 100                             | VN01 016 0028 (1)C                                                                    | VN02 016 0028 (1)C                                                | VN01 016 0028 (2)C                                               | VN02 016 0028 (2)C                                                |
| <b>Gestanzte Kontakte</b><br><i>Stamped contacts</i>                                           |                                                     |                                 |                                 | <b>Gedrehte Kontakte</b><br><i>Turned contacts</i>                                    |                                                                   |                                                                  |                                                                   |
|             |                                                     |                                 |                                 |  |                                                                   |                                                                  |                                                                   |
| <b>Kurve / Curve</b>                                                                           | <b>Kontakt / Contact</b>                            | <b>Querschnitt / Wire gauge</b> |                                 | <b>Kurve / Curve</b>                                                                  | <b>Kontakt / Contact</b>                                          | <b>Querschnitt / Wire gauge</b>                                  |                                                                   |
| a                                                                                              | Standard gestanzte                                  | 0,5 mm <sup>2</sup>             |                                 | a                                                                                     | Standard gedrehte                                                 | 0,5 mm <sup>2</sup>                                              |                                                                   |
| b                                                                                              | Standard gestanzte                                  | 1,5 mm <sup>2</sup>             |                                 | b                                                                                     | Standard gedrehte                                                 | 1,5 mm <sup>2</sup>                                              |                                                                   |
| c                                                                                              |                                                     | 2,5 mm <sup>2</sup>             |                                 | c                                                                                     |                                                                   | 2,5 mm <sup>2</sup>                                              |                                                                   |
| d                                                                                              | Hochstrom gestanzte                                 | 1,5 mm <sup>2</sup>             |                                 |                                                                                       |                                                                   |                                                                  |                                                                   |
| e                                                                                              | Hochstrom gestanzte                                 | 2,5 mm <sup>2</sup>             |                                 |                                                                                       |                                                                   |                                                                  |                                                                   |

<sup>1)</sup> Erläuterung der Bestell-Nr. für die Kontakte siehe Seite 4  
<sup>1)</sup> Explanation of the Part No. for contacts see page 4

Abisolierlängen siehe S. 198  
Stripping length see p. 198

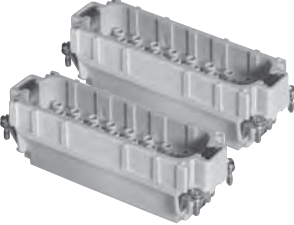
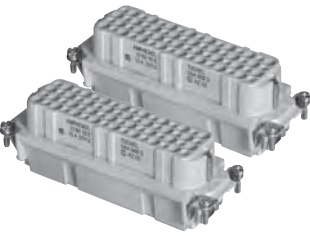
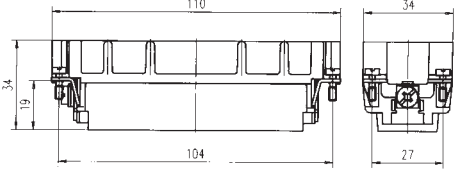
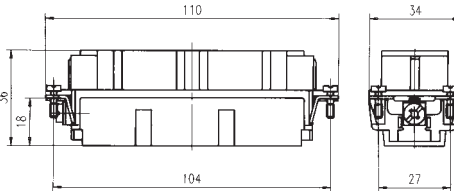
C 146 D

128 + 

250 V~ 10 A/15 A

Steckverbinder  
Connectors

Gehäuse auf Anfrage  
Housings upon request

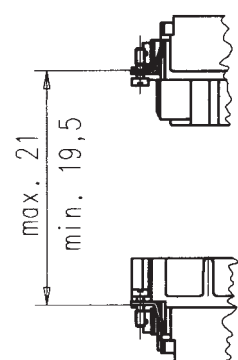
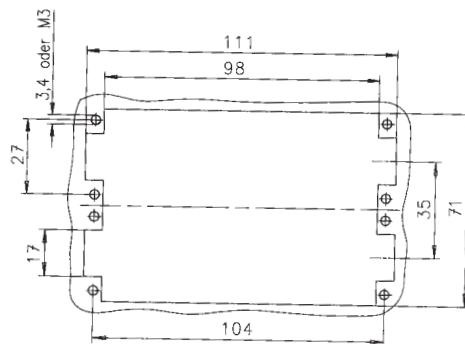
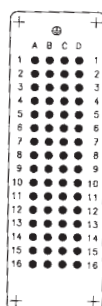
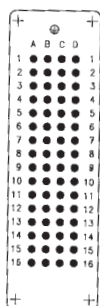
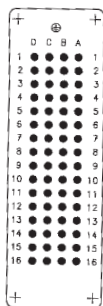
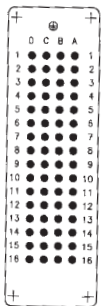
| Bezeichnung - Abbildung<br>Description - Figure                                                                                                                                                                      | Maßzeichnung<br>Drawing                                                                                                                                                                                                                              | Bestell Nr. / Part No.                                                                                                                                                                                                         |                                                                                                                                                                                                                                |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                      | Stifteinsatz / Male insert                                                                                                                                                                                                     | Buchseinsatz / Female insert                                                                                                                                                                                                   |
| Kontakteinsatz<br>Contact insert<br><br><br><br> | Stifteinsatz<br>Male insert<br><br><br><br>Buchseinsatz<br>Female insert<br><br> | C146 10A064 000 2<br>+<br>C146 10A064 005 2<br>(für gestanzte Crimpkontakte)<br>(for stamped crimp contacts)<br><br>C146 10A064 500 2<br>+<br>C146 10A064 505 2<br>(für gedrehte Crimpkontakte)<br>(for turned crimp contacts) | C146 10B064 000 2<br>+<br>C146 10B064 005 2<br>(für gestanzte Crimpkontakte)<br>(for stamped crimp contacts)<br><br>C146 10B064 500 2<br>+<br>C146 10B064 505 2<br>(für gedrehte Crimpkontakte)<br>(for turned crimp contacts) |

Montageanleitung, Ansicht von Steckverbinder-Anschlussseite / Assembly instructions, view from termination side

Stifteinsatz  
Male insert

Buchseinsatz  
Female insert

Montageausschnitt (Kontaktträger)  
Panel cut out (insert)



C 146 D

128 + 

**Crimpkontakte**  
*Crimp contacts*

Gestanzte Einzelkontakte  
*Stamped single contacts*



Gedrehte Einzelkontakte  
*Closed turned single contacts*



Gestanzte Bandkontakte für Crimpzangen  
*Stamped contacts on reel for hand crimping tools*



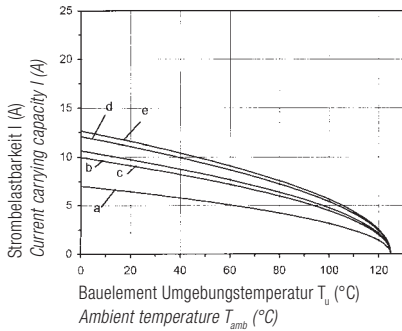
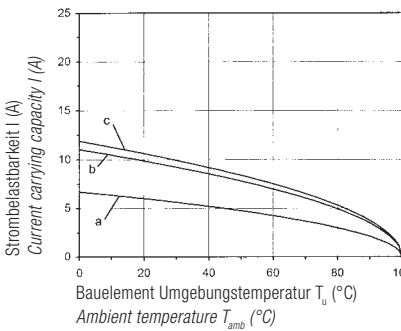
200 / 100 Stück  
200 / 100 pcs

Gestanzte Bandkontakte für Crimpmaschinen  
*Stamped contacts on reel for crimp machines*



2000 Stück  
(Zuführung links  
oder rechts)  
2000 pcs  
(feeding left or  
right hand side)

D

| Lieferform<br><i>Supplied as</i>                                                               | für Leiter-<br>querschnitt<br><i>for wire gauge</i> | AWG                             | Stück-<br>zahl<br><i>Pieces</i> | Bestell Nr. <sup>1)</sup><br>Stiftkontakt<br><i>Male contact</i>                      | Part No. <sup>1)</sup><br>Buchsenkontakt<br><i>Female contact</i> | Bestell Nr. <sup>1)</sup><br>Stiftkontakt<br><i>Male contact</i> | Part No. <sup>1)</sup><br>Buchsenkontakt<br><i>Female contact</i> |
|------------------------------------------------------------------------------------------------|-----------------------------------------------------|---------------------------------|---------------------------------|---------------------------------------------------------------------------------------|-------------------------------------------------------------------|------------------------------------------------------------------|-------------------------------------------------------------------|
| Gestanzte Einzelkontakte / <i>Stamped single contacts</i>                                      |                                                     |                                 |                                 | versilbert / <i>silver plating</i>                                                    |                                                                   | vergoldet / <i>gold plating</i>                                  |                                                                   |
| Standard<br>Hochstrom<br><i>High current</i>                                                   | 0,14 - 0,5 mm <sup>2</sup>                          | 26 - 20                         | 100                             | VN01 016 0003 (1)                                                                     | VN02 016 0003 (1)                                                 | VN01 016 0003 (2)                                                | VN02 016 0003 (2)                                                 |
|                                                                                                | 0,5 - 1,5 mm <sup>2</sup>                           | 20 - 16                         | 100                             | VN01 016 0002 (1)                                                                     | VN02 016 0002 (1)                                                 | VN01 016 0002 (2)                                                | VN02 016 0002 (2)                                                 |
|                                                                                                | 1,5 - 2,5 mm <sup>2</sup>                           | 16 - 14                         | 100                             | VN01 016 0005 (1)                                                                     | VN02 016 0005 (1)                                                 | VN01 016 0005 (2)                                                | VN02 016 0005 (2)                                                 |
|                                                                                                | 0,5 - 1,5 mm <sup>2</sup>                           | 20 - 16                         | 100                             | VN01 016 0015 (1)                                                                     | VN02 016 0015 (1)                                                 |                                                                  |                                                                   |
|                                                                                                | 1,5 - 2,5 mm <sup>2</sup>                           | 16 - 14                         | 100                             | VN01 016 0016 (1)                                                                     | VN02 016 0016 (1)                                                 |                                                                  |                                                                   |
| Gestanzte Bandkontakte für Crimpzangen / <i>Stamped Contacts on reel for hand crimp tools</i>  |                                                     |                                 |                                 |                                                                                       |                                                                   |                                                                  |                                                                   |
| Standard<br>Hochstrom<br><i>High current</i>                                                   | 0,14 - 0,5 mm <sup>2</sup>                          | 26 - 20                         | 200                             | ZN01 016 0003 (1)                                                                     | ZN02 016 0003 (1)                                                 | ZN01 016 0003 (2)                                                | ZN02 016 0003 (2)                                                 |
|                                                                                                | 0,5 - 1,5 mm <sup>2</sup>                           | 20 - 16                         | 200                             | ZN01 016 0002 (1)                                                                     | ZN02 016 0002 (1)                                                 | ZN01 016 0002 (2)                                                | ZN02 016 0002 (2)                                                 |
|                                                                                                | 1,5 - 2,5 mm <sup>2</sup>                           | 16 - 14                         | 100                             | ZN01 016 0005 (1)                                                                     | ZN02 016 0005 (1)                                                 | ZN01 016 0005 (2)                                                | ZN02 016 0005 (2)                                                 |
|                                                                                                | 0,5 - 1,5 mm <sup>2</sup>                           | 20 - 16                         | 200                             | ZN01 016 0015 (1)                                                                     | ZN02 016 0015 (1)                                                 |                                                                  |                                                                   |
|                                                                                                | 1,5 - 2,5 mm <sup>2</sup>                           | 16 - 14                         | 100                             | ZN01 016 0016 (1)                                                                     | ZN02 016 0016 (1)                                                 |                                                                  |                                                                   |
| Gestanzte Bandkontakte für Crimpmaschinen / <i>Stamped contacts on reel for crimp machines</i> |                                                     |                                 |                                 |                                                                                       |                                                                   |                                                                  |                                                                   |
| Kontaktzuführung rechts<br><i>Contact feeding right hand side</i>                              | 0,14 - 0,5 mm <sup>2</sup>                          | 26 - 20                         | 2000                            | HN01 016 0003 (1)                                                                     | HN02 016 0003 (1)                                                 | HN01 016 0003 (2)                                                | HN02 016 0003 (2)                                                 |
|                                                                                                | 0,5 - 1,5 mm <sup>2</sup>                           | 20 - 16                         | 2000                            | HN01 016 0002 (1)                                                                     | HN02 016 0002 (1)                                                 | HN01 016 0002 (2)                                                | HN02 016 0002 (2)                                                 |
|                                                                                                | Standard<br>1,5 - 2,5 mm <sup>2</sup>               | 16 - 14                         | 2000                            | HN01 016 0005 (1)                                                                     | HN02 016 0005 (1)                                                 | HN01 016 0005 (2)                                                | HN02 016 0005 (2)                                                 |
|                                                                                                | Hochstrom<br>1,5 - 2,5 mm <sup>2</sup>              | 16 - 14                         | 2000                            | HN01 016 0015 (1)                                                                     | HN02 016 0015 (1)                                                 |                                                                  |                                                                   |
|                                                                                                | 1,5 - 2,5 mm <sup>2</sup>                           | 16 - 14                         | 2000                            | HN01 016 0016 (1)                                                                     | HN02 016 0016 (1)                                                 |                                                                  |                                                                   |
| Kontaktzuführung links<br><i>Contact feeding left hand side</i>                                | 0,14 - 0,5 mm <sup>2</sup>                          | 26 - 20                         | 2000                            | TN01 016 0003 (1)                                                                     | TN02 016 0003 (1)                                                 | TN01 016 0003 (2)                                                | TN02 016 0003 (2)                                                 |
|                                                                                                | 0,5 - 1,5 mm <sup>2</sup>                           | 20 - 16                         | 2000                            | TN01 016 0002 (1)                                                                     | TN02 016 0002 (1)                                                 | TN01 016 0002 (2)                                                | TN02 016 0002 (2)                                                 |
|                                                                                                | Standard<br>1,5 - 2,5 mm <sup>2</sup>               | 16 - 14                         | 2000                            | TN01 016 0005 (1)                                                                     | TN02 016 0005 (1)                                                 | TN01 016 0005 (2)                                                | TN02 016 0005 (2)                                                 |
|                                                                                                | Hochstrom<br>0,5 - 1,5 mm <sup>2</sup>              | 20 - 16                         | 2000                            | TN01 016 0015 (1)                                                                     | TN02 016 0015 (1)                                                 |                                                                  |                                                                   |
|                                                                                                | 1,5 - 2,5 mm <sup>2</sup>                           | 18 - 14                         | 2000                            | TN01 016 0016 (1)                                                                     | TN02 016 0016 (1)                                                 |                                                                  |                                                                   |
| Gedrehte Crimpkontakte / <i>Turned crimp contacts</i>                                          |                                                     |                                 |                                 |                                                                                       |                                                                   |                                                                  |                                                                   |
| Einzelkontakt<br><i>Single contact</i>                                                         | 0,14 - 0,37 mm <sup>2</sup>                         | 26 - 22                         | 100                             | VN01 016 0024 (1)C                                                                    | VN02 016 0024 (1)C                                                | VN01 016 0024 (2)C                                               | VN02 016 0024 (2)C                                                |
|                                                                                                | 0,5 mm <sup>2</sup>                                 | 20                              | 100                             | VN01 016 0025 (1)C                                                                    | VN02 016 0025 (1)C                                                | VN01 016 0025 (2)C                                               | VN02 016 0025 (2)C                                                |
|                                                                                                | 0,75 - 1,0 mm <sup>2</sup>                          | 20 - 16                         | 100                             | VN01 016 0026 (1)C                                                                    | VN02 016 0026 (1)C                                                | VN01 016 0026 (2)C                                               | VN02 016 0026 (2)C                                                |
|                                                                                                | 1,5 mm <sup>2</sup>                                 | 16 - 15                         | 100                             | VN01 016 0027 (1)C                                                                    | VN02 016 0027 (1)C                                                | VN01 016 0027 (2)C                                               | VN02 016 0027 (2)C                                                |
|                                                                                                | 2,5 mm <sup>2</sup>                                 | 14                              | 100                             | VN01 016 0028 (1)C                                                                    | VN02 016 0028 (1)C                                                | VN01 016 0028 (2)C                                               | VN02 016 0028 (2)C                                                |
| <b>Gestanzte Kontakte</b><br><i>Stamped contacts</i>                                           |                                                     |                                 |                                 | <b>Gedrehte Kontakte</b><br><i>Turned contacts</i>                                    |                                                                   |                                                                  |                                                                   |
|             |                                                     |                                 |                                 |  |                                                                   |                                                                  |                                                                   |
| <b>Kurve / Curve</b>                                                                           | <b>Kontakt / Contact</b>                            | <b>Querschnitt / Wire gauge</b> |                                 | <b>Kurve / Curve</b>                                                                  | <b>Kontakt / Contact</b>                                          | <b>Querschnitt / Wire gauge</b>                                  |                                                                   |
| a                                                                                              | Standard gestanzt                                   | 0,5 mm <sup>2</sup>             |                                 | a                                                                                     | Standard gedreht                                                  | 0,5 mm <sup>2</sup>                                              |                                                                   |
| b                                                                                              | Standard gestanzt                                   | 1,5 mm <sup>2</sup>             |                                 | b                                                                                     | Standard gedreht                                                  | 1,5 mm <sup>2</sup>                                              |                                                                   |
| c                                                                                              |                                                     | 2,5 mm <sup>2</sup>             |                                 | c                                                                                     |                                                                   | 2,5 mm <sup>2</sup>                                              |                                                                   |
| d                                                                                              | Hochstrom gestanzt                                  | 1,5 mm <sup>2</sup>             |                                 |                                                                                       |                                                                   |                                                                  |                                                                   |
| e                                                                                              | High current, stamped                               | 2,5 mm <sup>2</sup>             |                                 |                                                                                       |                                                                   |                                                                  |                                                                   |

<sup>1)</sup> Erläuterung der Bestell-Nr. für die Kontakte siehe Seite 4  
<sup>1)</sup> Explanation of the Part No. for contacts see page 4

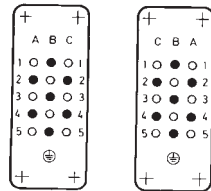
Abisolierlängen siehe S. 198  
Stripping length see p. 198

Modifizierte Kontaktanordnung für Bemessungsspannungen von 400 V

Modified contact arrangement for rated voltages of 400 V

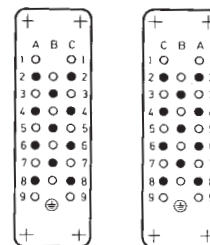
- = Arbeitskontakt  
full load contact
- = Leerstelle  
unoccupied

(15) → 7 + ⊕



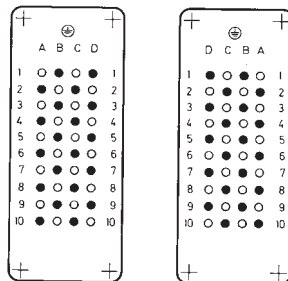
Buchseneinsatz Female insert      Stifteinsatz Male insert

(25) → 11 + ⊕



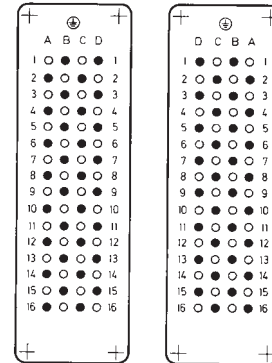
Buchseneinsatz Female insert      Stifteinsatz Male insert

(40) → 20 + ⊕



Buchseneinsatz Female insert      Stifteinsatz Male insert

(64) → 32 + ⊕



Buchseneinsatz Female insert      Stifteinsatz Male insert

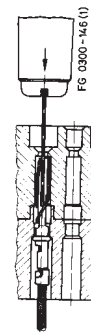
Lösen der Kontakte <sup>1)</sup>

Removal of contacts <sup>1)</sup>

Demontage von Steckseite / front releas



- Prinzip:
- gestanzte Stiftkontakte  
Stamped male contacts
  - gedrehte Kontakte  
Turned contacts



- gestanzte Buchsenkontakte  
Stamped female contacts

Werkzeuge / Tools <sup>1)</sup>

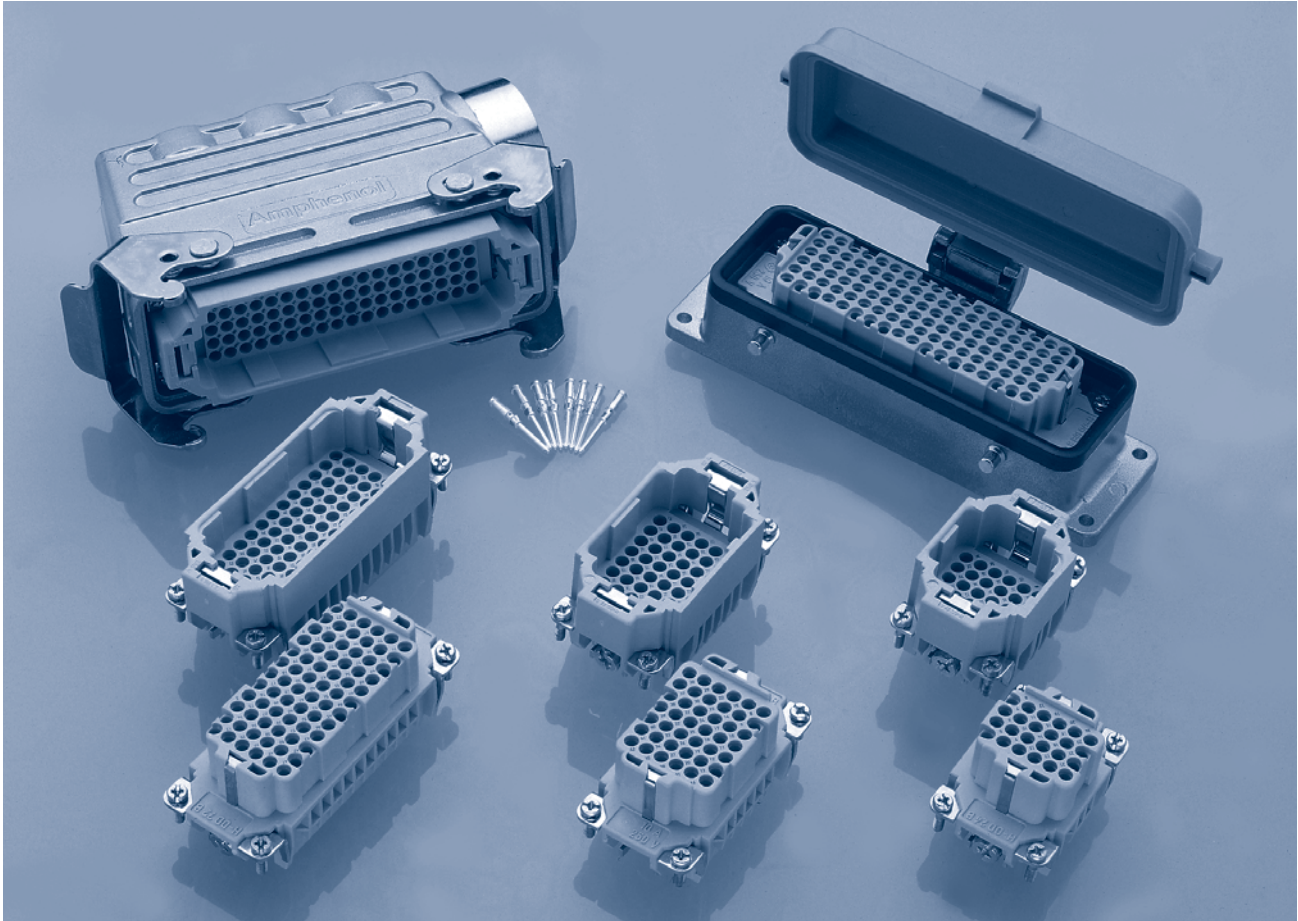
| Bezeichnung / Description                                          | für Leiterquerschnitt<br>for wire gauge                                              | Bestell Nr. / Part No.                                      |                                           | Werkzeuge / Tools  |
|--------------------------------------------------------------------|--------------------------------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------|--------------------|
|                                                                    |                                                                                      | Kontaktaufnahme / Contact locator                           | Crimpbacken / Crimping dies               |                    |
| Lösewerkzeug für Kontakte<br>Removal tool for contacts             | —                                                                                    | —                                                           | —                                         | FG 0300 146 1      |
| Service Crimpzange<br>Service crimping tool                        | 0,14 - 0,5 mm <sup>2</sup><br>0,5 - 1,5 mm <sup>2</sup>                              | —                                                           | —                                         | TA 0100 146        |
| Crimpzange für Einzelkontakte<br>Crimping tool for single contacts | 0,14 - 0,5 mm <sup>2</sup><br>0,5 - 1,5 mm <sup>2</sup><br>1,5 - 2,5 mm <sup>2</sup> | TA 0001 146 000 1<br>TA 0002 146 000 1<br>TA 0007 146 000 3 | TA 0000 202<br>TA 0000 163<br>TA 0000 141 | TA 0000<br>TA 0500 |




<sup>1)</sup> Weitere Informationen siehe Katalog „Werkzeuge“ / Further information see catalogue „Tools“




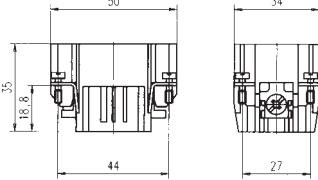
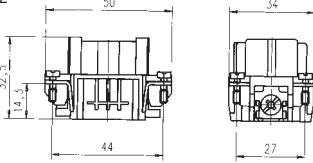
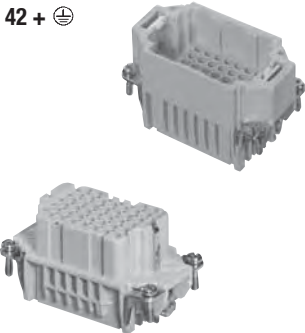
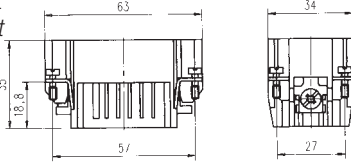
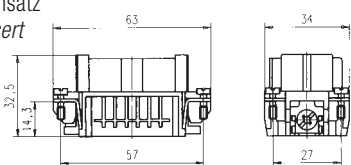
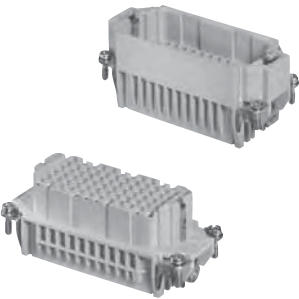
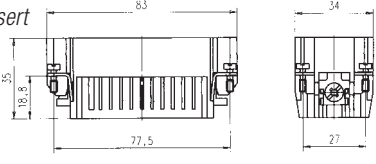
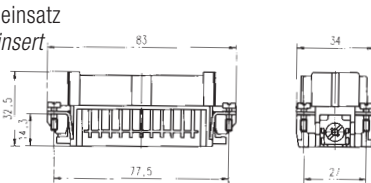
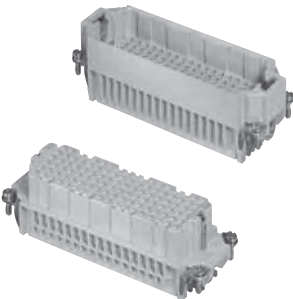
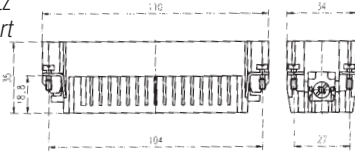
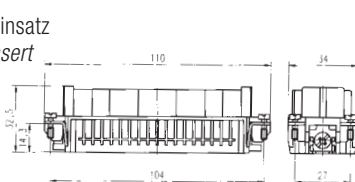
# C 146 DD

DD



| <b>Hauptmerkmale</b>                                                                                                                                                                     |                                                                                     | <b>Main characteristics</b>                                                                                                                                                               |                                         |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| <ul style="list-style-type: none"> <li>• Bemessungsspannung 250 V</li> <li>• Bemessungsstrom 8 A ... 9 A</li> <li>• Anschlussart: crimpen</li> <li>• Polzahl: 24, 42, 72, 108</li> </ul> |                                                                                     | <ul style="list-style-type: none"> <li>• Rated voltage 250 V</li> <li>• Rated current 8 A ... 9 A</li> <li>• Termination: crimp</li> <li>• Number of contacts: 24, 42, 72, 108</li> </ul> |                                         |
| <b>Zulassungen / Approvals</b>                                                                                                                                                           | <b>Prüfstelle / Testhouse</b>                                                       | <b>Kennwerte / Characteristics</b>                                                                                                                                                        | <b>Zulassungs-Nummer / Approval-No.</b> |
| SEV                                                                                                                                                                                      |  | 250 V, 10 A                                                                                                                                                                               |                                         |
| UL                                                                                                                                                                                       |  | 600 V, 8,5 A                                                                                                                                                                              | E 63093                                 |
| CSA                                                                                                                                                                                      |  | 600 V, 20 A                                                                                                                                                                               | LR 700721                               |
| <p>Zulassungen beziehen sich im allgemeinen auf repräsentative Ausführungen der Steckverbinderserie. Prüfumfang und Prüfvorschrift auf Anfrage.</p>                                      |                                                                                     | <p><i>In general approvals refer to representative versions of the connector series. Extent and specification of tests upon request.</i></p>                                              |                                         |

**C 146 DD****250 V~ 8 / 9 A****Steckverbinder  
Connectors****für gedrehte Kontakte  
for turned contacts****Gehäuse siehe Seite 126-153  
Housings see page 126-153**

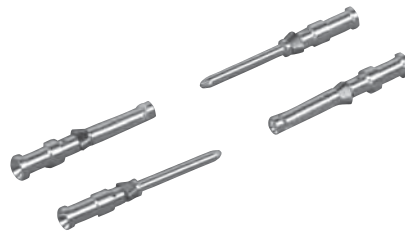
| Bezeichnung - Abbildung<br>Description - Figure                                                                                           | Maßzeichnung<br>Drawing                                                                                                                                                                                                                    | Bestell Nr. / Part No.     |                              |
|-------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|------------------------------|
|                                                                                                                                           |                                                                                                                                                                                                                                            | Stifteinsatz / Male insert | Buchseinsatz / Female insert |
| Kontakteinsatz<br>Contact insert<br><b>24 + ⊕</b><br>    | Stifteinsatz<br>Male insert<br><br>Buchseinsatz<br>Female insert<br>     | C146 10A024 000 9          | C146 10B024 000 9            |
| Kontakteinsatz<br>Contact insert<br><b>42 + ⊕</b><br>   | Stifteinsatz<br>Male insert<br><br>Buchseinsatz<br>Female insert<br>  | C146 10A042 000 9          | C146 10B042 000 9            |
| Kontakteinsatz<br>Contact insert<br><b>72 + ⊕</b><br>  | Stifteinsatz<br>Male insert<br><br>Buchseinsatz<br>Female insert<br> | C146 10A072 000 9          | C146 10B072 000 9            |
| Kontakteinsatz<br>Contact insert<br><b>108 + ⊕</b><br> | Stifteinsatz<br>Male insert<br><br>Buchseinsatz<br>Female insert<br> | C146 10A108 000 9          | C146 10B108 000 9            |

# C 146 DD

Steckverbinder  
Connectors

Crimpkontakte  
Crimp contacts

Gedrehte 1,6 mm Kontakte  
Turned 1,6 mm contacts



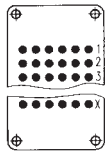
DD

| Bezeichnung - Abbildung<br>Description - Figure      | Maßzeichnung<br>Drawing                                                  | Bestell Nr. / Part No.                      |                                             |
|------------------------------------------------------|--------------------------------------------------------------------------|---------------------------------------------|---------------------------------------------|
|                                                      |                                                                          | Stifteinsatz / Male insert                  | Buchseinsatz / Female insert                |
| Kontakteinsatz<br>Contact insert<br><b>216 +</b><br> | Stifteinsatz<br>Male insert<br><br><br>Buchseinsatz<br>Female insert<br> | C146 10A108 000 9<br>+<br>C146 10A108 005 9 | C146 10B108 000 9<br>+<br>C146 10B108 005 9 |

| Lieferform<br>Supplied as                        | für Leiterquerschnitt<br>for wire gauge | AWG     | Stückzahl<br>Pieces | Bestell Nr. <sup>1)</sup>    |                                  | Bestell Nr. <sup>1)</sup>    |                                  |
|--------------------------------------------------|-----------------------------------------|---------|---------------------|------------------------------|----------------------------------|------------------------------|----------------------------------|
|                                                  |                                         |         |                     | Stiftkontakt<br>Male contact | Buchsenkontakt<br>Female contact | Stiftkontakt<br>Male contact | Buchsenkontakt<br>Female contact |
| Gedrehte Einzelkontakte / Turned single contacts |                                         |         |                     | versilbert / silver plating  |                                  | vergoldet / gold plating     |                                  |
| Einzelkontakt<br>Single contact                  | 0,14 - 0,37 mm <sup>2</sup>             | 26 - 22 | 100                 | VN01 016 0024 (1)C           | VN02 016 0024 (1)C               | VN01 016 0024 (2)C           | VN02 016 0024 (2)C               |
|                                                  | 0,5 mm <sup>2</sup>                     | 20      | 100                 | VN01 016 0025 (1)C           | VN02 016 0025 (1)C               | VN01 016 0025 (2)C           | VN02 016 0025 (2)C               |
|                                                  | 0,75 - 1,0 mm <sup>2</sup>              | 20 - 16 | 100                 | VN01 016 0026 (1)C           | VN02 016 0026 (1)C               | VN01 016 0026 (2)C           | VN02 016 0026 (2)C               |
|                                                  | 1,5 mm <sup>2</sup>                     | 16 - 15 | 100                 | VN01 016 0027 (1)C           | VN02 016 0027 (1)C               | VN01 016 0027 (2)C           | VN02 016 0027 (2)C               |
|                                                  | 2,5 mm <sup>2</sup>                     | 14      | 100                 | VN01 016 0028 (1)C           | VN02 016 0028 (1)C               | VN01 016 0028 (2)C           | VN02 016 0028 (2)C               |

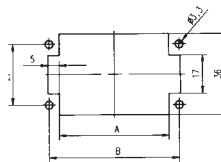
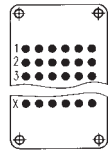
Montageanleitung, Steckbild / Assembly instruction, pin layout

Stifteinsatz  
Male insert

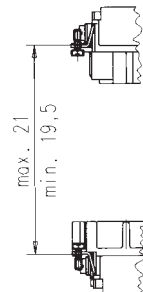


X = 4 ( 24 pol. )  
7 ( 42 pol. )  
12 ( 72 pol. )  
18 ( 108 pol. )

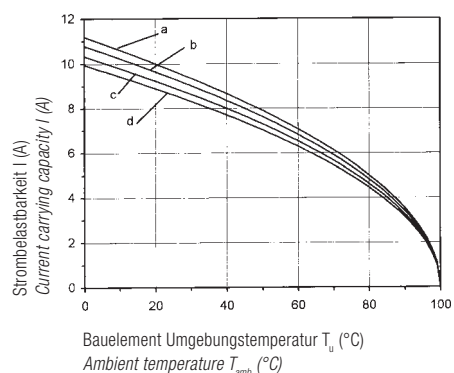
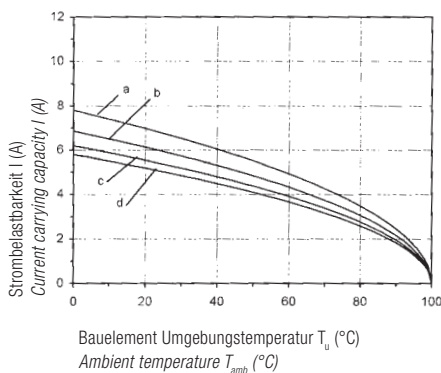
Buchseinsatz  
Female insert



| Pol | A  | B    |
|-----|----|------|
| 24  | 35 | 44   |
| 42  | 48 | 57   |
| 72  | 69 | 77,5 |
| 108 | 95 | 104  |



Derating Kurven / Derating curves



| Kurve / Curves | Polzahl / Contacts | Querschnitt / Wire gauge | Kurve / Curves | Polzahl / Contacts | Querschnitt / Wire gauge |
|----------------|--------------------|--------------------------|----------------|--------------------|--------------------------|
| a              | 24                 | 0,75 mm <sup>2</sup>     | a              | 24                 | 1,5 mm <sup>2</sup>      |
| b              | 42                 | 0,75 mm <sup>2</sup>     | b              | 42                 | 1,5 mm <sup>2</sup>      |
| c              | 72                 | 0,75 mm <sup>2</sup>     | c              | 72                 | 1,5 mm <sup>2</sup>      |
| d              | 108                | 0,75 mm <sup>2</sup>     | d              | 108                | 1,5 mm <sup>2</sup>      |

<sup>1)</sup> Erläuterung der Bestell-Nr. für die Kontakte siehe Seite 4  
<sup>1)</sup> Explanation of the Part No. for contacts see page 4

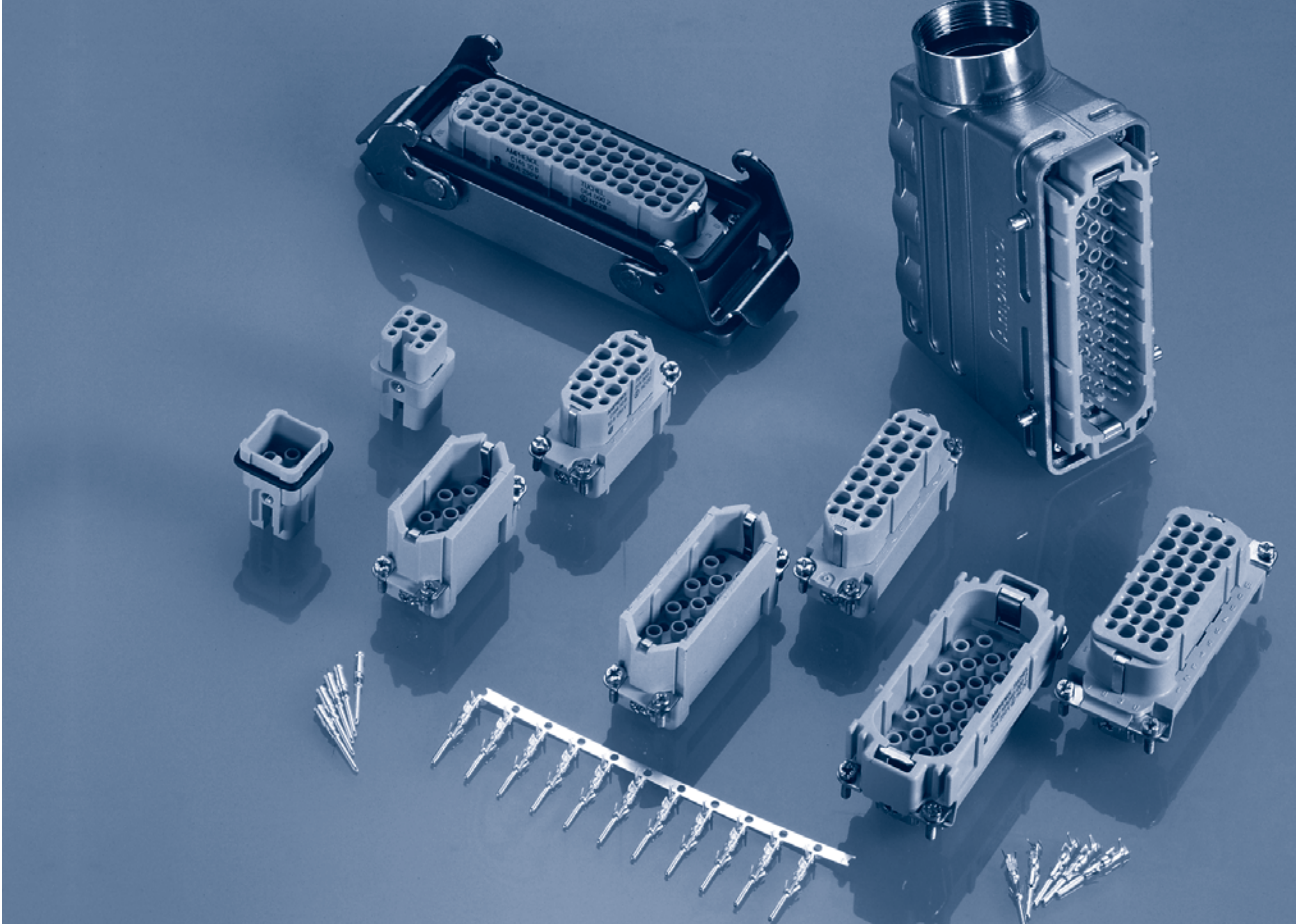
Abisolierlängen siehe S. 198  
Stripping length see p. 198





| Allgemeine Kennwerte                 | General Characteristics                | Norm / Standard        | Wert / Value                                                         |        |                        |         |
|--------------------------------------|----------------------------------------|------------------------|----------------------------------------------------------------------|--------|------------------------|---------|
| Polzahl                              | Number of contacts                     |                        | 24 + ⊕                                                               | 42 + ⊕ | 72 + ⊕                 | 108 + ⊕ |
| Anschluss technik                    | Termination technique                  |                        | crimpen / crimp                                                      |        |                        |         |
| Anschlussquerschnitt                 | Wire gauge                             |                        | 0,14 mm <sup>2</sup> - 2,5 mm <sup>2</sup>                           |        |                        |         |
| Brennbarkeit                         | Flammability                           | UL 94                  | V-0                                                                  |        |                        |         |
| Elektrische Kennwerte                | Electrical Characteristics             |                        |                                                                      |        |                        |         |
| Bemessungsspannung                   | Rated voltage                          | IEC 60664-1            | 250 V (600 V UL / CSA)                                               |        |                        |         |
| Verschmutzungsgrad                   | Pollution degree                       | IEC 60664-1            | 2 (3 in gestecktem + verriegeltem Zustand)<br>2 (3 mated and locked) |        |                        |         |
| Überspannungskategorie               | Installation (overvoltage) category    | IEC 60664-1            | III                                                                  |        |                        |         |
| Isolierstoffgruppe                   | Material group                         | IEC 60664-1            | III b                                                                |        |                        |         |
| Bemessungs-Stoßspannung              | Rated impulse withstand voltage        | IEC 60664-1            | 4 kV                                                                 |        |                        |         |
| Spannungsfestigkeit                  | Voltage proof                          | IEC 60512-2; Test 4 a  | 2 kV                                                                 |        |                        |         |
| Strombelastbarkeit                   | Current carrying capacity              | IEC 60512-3; Test 5 b  | siehe Derating Kurven / see derating curves                          |        |                        |         |
| Bemessungsstrom $T_u = 40\text{ °C}$ | Rated current $T_{amb} = 40\text{ °C}$ |                        | 9 A                                                                  | 9 A    | 8 A                    | 8 A     |
| Durchgangswiderstand                 | Contact resistance                     | IEC 60512-2; Test 2 a  | ≤ 5 m Ω                                                              |        |                        |         |
| Isolationswiderstand                 | Insulation resistance                  | IEC 60512-2; Test 3 a  | ≥ 10 <sup>12</sup> Ω <sup>1)</sup>                                   |        |                        |         |
| Luftstrecke                          | Clearance                              | VDE 0627               | > 2,5 mm                                                             |        |                        |         |
| Kriechstrecke                        | Creepage                               | VDE 0627               | > 4 mm                                                               |        |                        |         |
| Klimatische Kennwerte                | Climatical Characteristics             |                        |                                                                      |        |                        |         |
| Prüfklasse                           | Climatic category                      | IEC 60068-1            | 40 / 100 / 21                                                        |        |                        |         |
| Obere Grenztemperatur                | Upper temperature                      | IEC 60512-6; Test 11 i | + 100 °C / 1000 h                                                    |        |                        |         |
| Untere Grenztemperatur               | Lower temperature                      | IEC 60512-6; Test 11 i | - 40 °C                                                              |        |                        |         |
| Mechanische Kennwerte                | Mechanical Characteristics             |                        |                                                                      |        |                        |         |
| Gewicht Stifteinsatz                 | Weight pin insert                      |                        | 44 g                                                                 | 50 g   | 63 g                   | 86 g    |
| IP-Schutzart Stifteinsatz            | IP-degree of protection pin insert     | IEC 60529              | ungesteckt/unmated<br>IP00                                           |        | gesteckt/mated<br>IP20 |         |
| IP-Schutzart Buchseneinsatz          | IP-degree of protection socket insert  | IEC 60529              | ungesteckt/unmated<br>IP20                                           |        | gesteckt/mated<br>IP20 |         |
| Gewicht Buchseneinsatz               | Weight socket insert                   |                        | 41 g                                                                 | 50 g   | 67 g                   | 88 g    |
| Mechanische Lebensdauer              | Mechanical operation                   | IEC 60512-5; Test 9 a  | ≥ 500 Steckzyklen / mating cycles                                    |        |                        |         |
| Werkstoffe                           | Materials                              |                        |                                                                      |        |                        |         |
| Kontakteinsatz                       | Insert                                 |                        | PBT                                                                  |        |                        |         |
| Kontakte                             | Contacts                               |                        | CuZn (Messing / brass)                                               |        |                        |         |
| Kontaktoberfläche                    | Contact plating                        |                        | Ag                                                                   |        |                        |         |
| Farbe                                | Colour                                 |                        | grau / grey                                                          |        |                        |         |


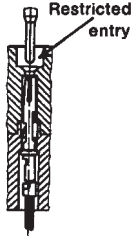
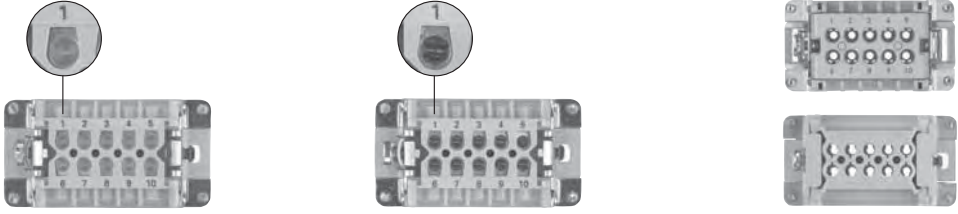
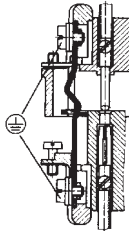

<sup>1)</sup> Bei Beanspruchung > 10<sup>10</sup> Ω / Under operating conditions > 10<sup>10</sup> Ω

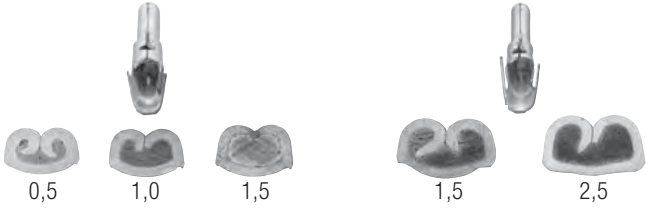

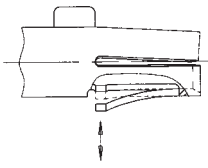
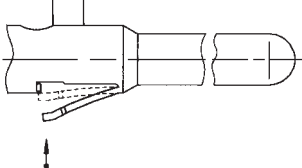



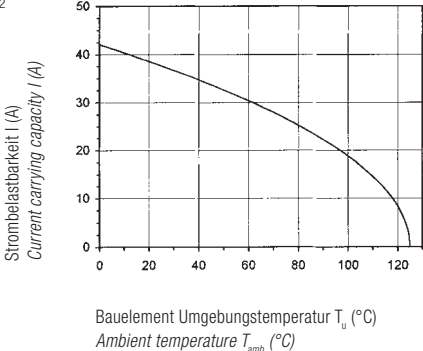
# C 146 E

E



| Hauptmerkmale                                                                                                                                                                                                                                    |                                                                                     | Main characteristics                                                                                                                                                                                                                       |                                  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| <ul style="list-style-type: none"> <li>• Bemessungsspannung 400 V</li> <li>• Bemessungsstrom 16 A ... 22 A</li> <li>• Anschlussart: schrauben oder crimpen</li> <li>• Kontaktdurchmesser 2,5 mm</li> <li>• Polzahl: 6, 10, 16, 24, 48</li> </ul> |                                                                                     | <ul style="list-style-type: none"> <li>• Rated voltage 400 V</li> <li>• Rated current 16 A ... 22 A</li> <li>• Termination: screw or crimp</li> <li>• Contact diameter 2,5 mm</li> <li>• Numbers of contacts: 6, 10, 16, 24, 48</li> </ul> |                                  |
| Zulassungen / Approvals<br>Prüfstelle / Testhouse                                                                                                                                                                                                |                                                                                     | Kennwerte / Characteristics                                                                                                                                                                                                                | Zulassungs-Nummer / Approval-No. |
| SEV                                                                                                                                                                                                                                              |  | 400 V, 16 A                                                                                                                                                                                                                                |                                  |
| UL                                                                                                                                                                                                                                               |  | 600 V, 10 A                                                                                                                                                                                                                                | E 63093                          |
| CSA                                                                                                                                                                                                                                              |  | 600 V, 15 A                                                                                                                                                                                                                                | 48932                            |
| DB                                                                                                                                                                                                                                               |  | 400 V, 16 A                                                                                                                                                                                                                                | BN 74 018                        |
| <p>Zulassungen beziehen sich im allgemeinen auf repräsentative Ausführungen der Steckverbinderserie. Prüfumfang und Prüfvorschrift auf Anfrage.</p>                                                                                              |                                                                                     | <p>In general approvals refer to representative versions of the connector series. Extent and specification of tests upon request.</p>                                                                                                      |                                  |

|                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Allgemeine Hinweise</p>  <p>General information</p>                                                                           | <ul style="list-style-type: none"> <li>• Kontakteinsätze ohne Crimpkontakte (bei Kontakteinsatz mit Crimpanschluss).</li> <li>• Steckverbinder der Serie C 146 E dürfen unter Spannung, jedoch nicht unter Strom betätigt werden. Werden die Steckverbinder unter Last gesteckt und getrennt, ist der Strom auf 10 % des Bemessungsstromes zu begrenzen.</li> <li>• Crimpwerkzeuge und Verarbeitungshinweise siehe separater Katalog „Werkzeuge“.</li> <li>• Für die Einsätze der Serie C 146 E können sowohl niedrige, wie auch hohe Gehäusebauformen verwendet werden.</li> <li>• Bei Verwendung von Aderendhülsen, sind Schraubanschlüsse ohne Drahtschutz zu bevorzugen.</li> </ul> <ul style="list-style-type: none"> <li>• <i>Contact inserts without crimp contacts.</i></li> <li>• <i>Connectors series C146 E may be engaged or disengaged when live but without electrical load. If these connectors are mated or unmated under load, the load shall be reduced to 10 % of the rated current.</i></li> <li>• <i>Crimping tools and processing instructions see separate catalogue „Tools“.</i></li> <li>• <i>Low and high profile housings are usable.</i></li> <li>• <i>If wire ferrule are used, screw terminals without wire protection are preferred.</i></li> </ul> |
| <p>Nicht genormte Steckverbinder, aber:</p> <p>No standard for this series, but:</p>                                                                                                                              | <p>Steck- und austauschbar mit Fremdfabrikaten</p> <p>Gehäuse nach DIN EN 175 301 - 801</p> <p>a) Kontakteinsatz/Kontakteinsatz 6, 10, 16, 24 pol.<br/>b) Kontakteinsatz/Gehäuse 6, 10, 16, 24 pol.</p> <p><i>Interchangeable with other products</i></p> <p><i>Housings are designed according to DIN EN 175 301 - 801</i></p> <p>a) <i>contact insert to contact insert 6, 10, 16, 24 contacts</i><br/>b) <i>contact insert to housing 6, 10, 16, 24 contacts</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <p>Hoher Schutz vor Fehlsteckungen</p> <p>High protection against mismatching</p>                                                                                                                                 | <p>Buchsenkontakteinsatz mit trichterförmiger, verengter Stecköffnung. (Hohe Steck- und Kontaktsicherheit)</p> <p><i>Female inserts with funnel shaped contact entry avoids mismatching.</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <p>Kontakteinsätze für Schraubanschluss, Schraubanschluss mit Drahtschutz und für Crimptechnik</p> <p>Contact inserts for screw termination, screw termination with wire protection and for crimp termination</p> |  <p>Schraubanschluss<br/><i>Screw termination</i></p> <p>Schraubanschluss mit Drahtschutz<br/><i>Screw termination with wire protection</i></p> <p>Crimpanschluss<br/><i>Crimp termination</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <p>Voreilender Schutzkontakt</p> <p>First-to-mate last-to-break protective ground contact</p>                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <p>Große Gehäuseauswahl in 2 Bauhöhen (ab Seite 126)</p> <p>Large range of housings in 2 different heights (see page 126)</p>                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

| <p>Großer Crimpbereich<br/>Gasdichte Verbindung<br/>(Kaltverschweißung)</p> <p><i>Large range of wire gauges<br/>Gas-tight (coldwelding)</i></p>                                                                                               | <p>.N01 025 0001 (1) <sup>1)</sup>                      .N01 025 0010 (1) <sup>1)</sup></p>  <p>0,5      1,0      1,5                      1,5      2,5</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                  |                                                                                                                      |                                 |   |    |    |    |    |    |    |    |    |    |     |    |     |    |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|---------------------------------|---|----|----|----|----|----|----|----|----|----|-----|----|-----|----|
| <p>Gestanzte Crimpkontakte mit Isolierungshalterung um mechanische Beanspruchungen von der Crimpverbindung fernzuhalten</p> <p><i>Stamped crimp contacts with insulation crimp to absorb mechanical stress from the crimped connection</i></p> |  <p>Isolierungshalterung<br/><i>Insulation grip</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                  |                                                                                                                      |                                 |   |    |    |    |    |    |    |    |    |    |     |    |     |    |
| <p>Mechanischer Rasthakenanschlag bei Buchsen- und Stiftkontakt</p> <p><i>Mechanical retention spring stop on female and male contact</i></p>                                                                                                  | <p>Buchsenkontakt<br/><i>Female contact</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <p>Stiftkontakt<br/><i>Male contact</i></p>  |                                                                                                                      |                                 |   |    |    |    |    |    |    |    |    |    |     |    |     |    |
| <p>Kostengünstige, einfache Verarbeitung.<br/>Werkzeuge siehe Katalog „Werkzeuge“</p> <p><i>Economical and easy processing.<br/>Tools see catalogue „Tools“</i></p>                                                                            |  <p>Einzel-Fertigung<br/><i>Single production</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  <p>Kleinserie<br/><i>Small series</i></p>   |  <p>Serie<br/><i>Series</i></p> |                                 |   |    |    |    |    |    |    |    |    |    |     |    |     |    |
| <p>Hohe Strombelastbarkeit (siehe Derating Kurven)</p> <p><i>High current carrying capacity (see derating curves)</i></p>                                                                                                                      | <p>Beispiel Einzelkontakt, Anschlussquerschnitt 2,5 mm<sup>2</sup></p> <p><i>Example single contact, wire gauge 2.5 mm<sup>2</sup></i></p>  <p>Strombelastbarkeit I (A)<br/><i>Current carrying capacity I (A)</i></p> <p>Bauelement Umgebungstemperatur T<sub>u</sub> (°C)<br/><i>Ambient temperature T<sub>amb</sub> (°C)</i></p> <table border="1"> <caption>Derating Curve Data (Approximate)</caption> <thead> <tr> <th>Ambient Temperature T<sub>amb</sub> (°C)</th> <th>Current Carrying Capacity I (A)</th> </tr> </thead> <tbody> <tr><td>0</td><td>45</td></tr> <tr><td>20</td><td>40</td></tr> <tr><td>40</td><td>35</td></tr> <tr><td>60</td><td>30</td></tr> <tr><td>80</td><td>25</td></tr> <tr><td>100</td><td>20</td></tr> <tr><td>120</td><td>10</td></tr> </tbody> </table> |                                                                                                                                  | Ambient Temperature T <sub>amb</sub> (°C)                                                                            | Current Carrying Capacity I (A) | 0 | 45 | 20 | 40 | 40 | 35 | 60 | 30 | 80 | 25 | 100 | 20 | 120 | 10 |
| Ambient Temperature T <sub>amb</sub> (°C)                                                                                                                                                                                                      | Current Carrying Capacity I (A)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                  |                                                                                                                      |                                 |   |    |    |    |    |    |    |    |    |    |     |    |     |    |
| 0                                                                                                                                                                                                                                              | 45                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                  |                                                                                                                      |                                 |   |    |    |    |    |    |    |    |    |    |     |    |     |    |
| 20                                                                                                                                                                                                                                             | 40                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                  |                                                                                                                      |                                 |   |    |    |    |    |    |    |    |    |    |     |    |     |    |
| 40                                                                                                                                                                                                                                             | 35                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                  |                                                                                                                      |                                 |   |    |    |    |    |    |    |    |    |    |     |    |     |    |
| 60                                                                                                                                                                                                                                             | 30                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                  |                                                                                                                      |                                 |   |    |    |    |    |    |    |    |    |    |     |    |     |    |
| 80                                                                                                                                                                                                                                             | 25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                  |                                                                                                                      |                                 |   |    |    |    |    |    |    |    |    |    |     |    |     |    |
| 100                                                                                                                                                                                                                                            | 20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                  |                                                                                                                      |                                 |   |    |    |    |    |    |    |    |    |    |     |    |     |    |
| 120                                                                                                                                                                                                                                            | 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                  |                                                                                                                      |                                 |   |    |    |    |    |    |    |    |    |    |     |    |     |    |

<sup>1)</sup> Erläuterung der Bestell-Nr. für die Kontakte siehe Seite 4 / *Explanation of the Part No. for contacts see page 4*


**Technische Daten**  
**Characteristics**
**Kontakteinsätze / Connector inserts**

| <b>Allgemeine Kennwerte</b>                                                                                                                    | <b>General Characteristics</b>                                                                                                              | <b>Norm / Standard</b> | <b>Wert / Value</b>                         |                              |                              |                                |                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|------------------------|---------------------------------------------|------------------------------|------------------------------|--------------------------------|----------------------------------|
| Polzahl                                                                                                                                        | Number of contacts                                                                                                                          |                        | 6 +⊕                                        | 10 +⊕                        | 16 +⊕                        | 24 +⊕                          | 48 +⊕                            |
| Anschlussstechnik                                                                                                                              | Termination technique                                                                                                                       |                        | crimpen / schrauben                         |                              | crimp / screw                |                                |                                  |
| Anschlussquerschnitt: crimpen, schrauben                                                                                                       | Wire gauge: crimp, screw                                                                                                                    |                        | 0,5 - 4 mm <sup>2</sup>                     |                              | 0,25 - 2,5 mm <sup>2</sup>   |                                |                                  |
| Brennbarkeit                                                                                                                                   | Flammability                                                                                                                                | UL 94                  | V-0                                         |                              |                              |                                |                                  |
| <b>Elektrische Kennwerte</b>                                                                                                                   | <b>Electrical Characteristics</b>                                                                                                           |                        |                                             |                              |                              |                                |                                  |
| Bemessungsspannung                                                                                                                             | Rated voltage                                                                                                                               | IEC 60664-1            | 400 V (600 V UL / CSA <sup>2)</sup> )       |                              |                              |                                |                                  |
| Verschmutzungsgrad                                                                                                                             | Pollution degree                                                                                                                            | IEC 60664-1            | 3                                           |                              |                              |                                |                                  |
| Isolierstoffgruppe                                                                                                                             | Material group                                                                                                                              | IEC 60664-1            | III b                                       |                              |                              |                                |                                  |
| Überspannungskategorie                                                                                                                         | Installation (overvoltage) category                                                                                                         | IEC 60664-1            | III                                         |                              |                              |                                |                                  |
| Bemessungs-Stoßspannung                                                                                                                        | Rated impulse withstand voltage                                                                                                             | IEC 60664-1            | 6,0 kV                                      |                              |                              |                                |                                  |
| Spannungsfestigkeit                                                                                                                            | Voltage proof                                                                                                                               | IEC 60512-2; Test 4 a  | 2,8 kV                                      |                              |                              |                                |                                  |
| Strombelastbarkeit                                                                                                                             | Current carrying capacity                                                                                                                   | IEC 60512-2; Test 5 b  | siehe Derating Kurven / see derating curves |                              |                              |                                |                                  |
| Bemessungsstrom (T <sub>u</sub> = 40 °C)                                                                                                       | Rated current (T <sub>amb</sub> = 40 °C)                                                                                                    |                        | 22 A                                        | 19 A                         | 19 A                         | 18 A                           | 18 A                             |
| Durchgangswiderstand                                                                                                                           | Contact resistance                                                                                                                          | IEC 60512-2; Test 2 a  | < 5 mΩ                                      |                              |                              |                                |                                  |
| Isolationswiderstand                                                                                                                           | Insulation resistance                                                                                                                       | IEC 60512-2; Test 2 a  | ≥ 10 <sup>12</sup> Ω <sup>1)</sup>          |                              |                              |                                |                                  |
| Luftstrecke                                                                                                                                    | Clearance                                                                                                                                   | DIN VDE 0627           | > 4,0 mm                                    |                              |                              |                                |                                  |
| Kriechstrecke                                                                                                                                  | Creepage                                                                                                                                    | DIN VDE 0627           | > 6,3 mm                                    |                              |                              |                                |                                  |
| <b>Klimatische Kennwerte</b>                                                                                                                   | <b>Climatical Characteristics</b>                                                                                                           |                        |                                             |                              |                              |                                |                                  |
| Prüfklasse                                                                                                                                     | Climatic category                                                                                                                           | IEC 60068-1            | 40 / 125 / 21                               |                              |                              |                                |                                  |
| Obere Grenztemperatur                                                                                                                          | Upper temperature                                                                                                                           | IEC 60512-6; Test 11 i | + 125 °C / 1000 h                           |                              |                              |                                |                                  |
| Untere Grenztemperatur                                                                                                                         | Lower temperature                                                                                                                           | IEC 60512-6; Test 11 i | - 40 °C                                     |                              |                              |                                |                                  |
| <b>Mechanische Kennwerte</b>                                                                                                                   | <b>Mechanical Characteristics</b>                                                                                                           |                        |                                             |                              |                              |                                |                                  |
| Gesamt Steck- und Ziehkraft<br>crimpen<br>schrauben                                                                                            | Insertion and withdrawal forces:<br>crimp<br>screw                                                                                          | IEC 60512-7; Test 13 b | 10-20 N<br>20-30 N                          | 30-40 N<br>40-50 N           | 45-60 N<br>80-100 N          | 70-100 N<br>100-120 N          | 140-200 N<br>200-240 N           |
| <sup>3)</sup> IP-Schutzart Stifteinsatz                                                                                                        | IP-degree of protection pin insert                                                                                                          | IEC 60529              | ungesteckt/unmated<br>IP00                  |                              | gesteckt/mated<br>IP20       |                                |                                  |
| <sup>3)</sup> IP-Schutzart Buchseneinsatz                                                                                                      | IP-degree of protection socket insert                                                                                                       | IEC 60529              | ungesteckt/unmated<br>IP20                  |                              | gesteckt/mated<br>IP20       |                                |                                  |
| Gewicht:<br>Stifteinsatz crimp (gestanzte Kontakte)<br>Buchseneinsatz crimp (gest. Kontakte)<br>Stifteinsatz schraub<br>Buchseneinsatz schraub | Weight:<br>male insert crimp (f. stamped contacts)<br>female insert crimp (f. stamped contacts)<br>male insert screw<br>female insert screw |                        | 33 g<br>33 g<br>43 g<br>43 g                | 39 g<br>39 g<br>57 g<br>57 g | 45 g<br>49 g<br>78 g<br>78 g | 55 g<br>62 g<br>105 g<br>106 g | 110 g<br>124 g<br>210 g<br>212 g |
| Mechanische Lebensdauer                                                                                                                        | Mechanical operation                                                                                                                        | IEC 60512-5; Test 9 a  | > 500 Steckzyklen / mating cycles           |                              |                              |                                |                                  |
| <b>Werkstoffe</b>                                                                                                                              | <b>Materials</b>                                                                                                                            |                        |                                             |                              |                              |                                |                                  |
| Kontakteinsatz                                                                                                                                 | Insert                                                                                                                                      |                        | PC GV (Polycarbonat)                        |                              |                              |                                |                                  |
| Schraubkontakte                                                                                                                                | Screw contacts                                                                                                                              |                        | CuZn (Messing/brass)                        |                              |                              |                                |                                  |
| Kontaktoberfläche                                                                                                                              | Contact plating                                                                                                                             |                        | Ag (silber/silver)                          |                              |                              |                                |                                  |
| Farbe                                                                                                                                          | Colour                                                                                                                                      |                        | grau / grey                                 |                              |                              |                                |                                  |

<sup>1)</sup> Bei Beanspruchung > 10<sup>10</sup> Ω / Under operating conditions 10<sup>10</sup> Ω    <sup>2)</sup> Hinweisschild für CSA-Anwendungen siehe Seite 176 / Label for CSA application see page 176

<sup>3)</sup> IP-Schutzart im Anschlussbereich der Schraubausführung IP 10 / IP-degree of protection on termination side of screw version IP 10




**Technische Daten**  
*Characteristics*
**Gestanzte Crimpkontakte / Stamped crimp contacts**

| <b>Elektrische Kennwerte</b> | <b>Electrical Characteristics</b> |                        |                                   |
|------------------------------|-----------------------------------|------------------------|-----------------------------------|
| Durchgangswiderstand         | Contact resistance                | IEC 60512-2; Test 2 a  | < 5 m Ω                           |
| Kapazität Kontakt-Kontakt    | Capacity contact-contact          | IEC 60512-9; Test 22 a | ≥ 2 p F                           |
| Kapazität Kontakt-Gehäuse    | Capacity contact-housing          | IEC 60512-9; Test 22 a | ≥ 3,2 p F                         |
| <b>Mechanische Kennwerte</b> | <b>Mechanical Characteristics</b> |                        |                                   |
| Mechanische Lebensdauer      | Mechanical operation              | IEC 60512-5; Test 9 a  | ≥ 500 Steckzyklen / mating cycles |
| <b>Werkstoffe</b>            | <b>Materials</b>                  |                        |                                   |
| Stiftkontakt                 | Male contact                      |                        | CuZn (Messing / brass)            |
| Buchsenkontakt               | Female contact                    |                        | CuSn (Zinnbronze / Tin bronze)    |
| Kontaktoberfläche            | Contact plating                   |                        | Ag                                |

**Gedrehte Crimpkontakte / Turned crimp contacts**

| <b>Elektrische Kennwerte</b> | <b>Electrical Characteristics</b> |                       |                                   |
|------------------------------|-----------------------------------|-----------------------|-----------------------------------|
| Durchgangswiderstand         | Contact resistance                | IEC 60512-2           | ≤ 5 m Ω                           |
| <b>Klimatische Kennwerte</b> | <b>Climatical Characteristics</b> |                       |                                   |
| Obere Grenztemperatur        | Upper temperature                 | IEC 60512-6           | + 100 °C                          |
| Untere Grenztemperatur       | Lower temperature                 | IEC 60512-6           | - 40 °C                           |
| <b>Mechanische Kennwerte</b> | <b>Mechanical Characteristics</b> |                       |                                   |
| Mechanische Lebensdauer      | Mechanical operation              | IEC 60512-5; Test 9 a | ≥ 500 Steckzyklen / mating cycles |
| <b>Werkstoffe</b>            | <b>Materials</b>                  |                       |                                   |
| Stiftkontakt                 | Male contact                      |                       | CuZn (Messing / brass)            |
| Buchsenkontakt               | Female contact                    |                       | CuZn (Messing / brass)            |
| Kontaktoberfläche            | Contact plating                   |                       | Ag                                |

C 146 E

6 + 

Steckverbinder  
Connectors



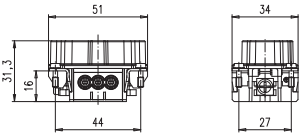
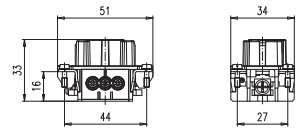


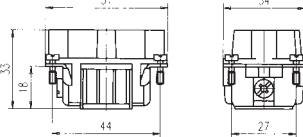
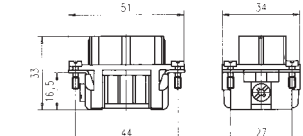


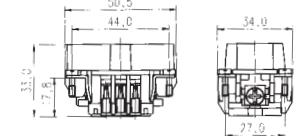
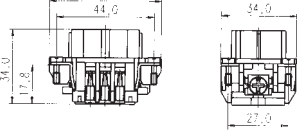
400 V~ Kontakteinsatz für gestanzte Kontakte /  
Contact insert for stamped contacts

500 V~ Kontakteinsatz für Schraubanschluss und für gedrehte Kontakte /  
Contact insert for screw termination and for turned contacts

16 / 22 A

Gehäuse siehe Seite 126-129

Housings see page 126-129

| Bezeichnung - Abbildung<br>Description - Figure                                                                                                                                                                                                                       | Maßzeichnung<br>Drawing                                                                                                                                                                                                                                | Bestell Nr. / Part No.                                                                      |                                                                                             |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                        | Stifteinsatz / Male insert                                                                  | Buchseinsatz / Female insert                                                                |
| Kontakteinsatz Schraubanschluss<br>Contact insert screw termination<br><br><br><br>                 | Stifteinsatz<br>Male insert<br><br><br><br>Buchseinsatz<br>Female insert<br><br>     | C146 10A006 002 1<br><br><br>C146 10A006 102 1<br>(mit Drahtschutz<br>with wire protection) | C146 10B006 002 1<br><br><br>C146 10B006 102 1<br>(mit Drahtschutz<br>with wire protection) |
| Kontakteinsatz für gestanzte<br>Kontakte<br>Contact insert for stamped contacts<br><br><br><br> | Stifteinsatz<br>Male insert<br><br><br><br>Buchseinsatz<br>Female insert<br><br> | C146 10A006 000 1                                                                           | C146 10B006 000 1                                                                           |
| Kontakteinsatz für gedrehte<br>Kontakte<br>Contact insert for turned contacts<br><br><br><br>   | Stifteinsatz<br>Male insert<br><br><br><br>Buchseinsatz<br>Female insert<br><br> | C146 10A006 500 1                                                                           | C146 10B006 500 1                                                                           |

C 146 E

6 +

**Crimpkontakte**  
**Crimp contacts**

Gestanzte Einzelkontakte / Stamped single contacts

Gestanzte Bandkontakte für Crimpzangen / Stamped contacts on reel for hand crimping tools

Gestanzte Bandkontakte für Crimpmaschinen / Stamped contacts on reel for crimp machines



Gedrehte Einzelkontakte / Turned single contacts



200 / 100 Stück

200 / 100 pcs



2000 Stück  
(Zuführung links oder rechts)

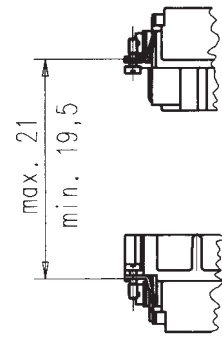
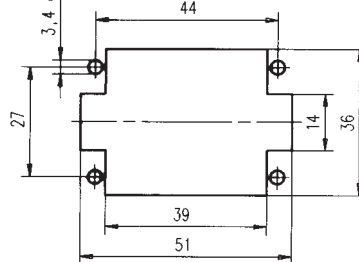
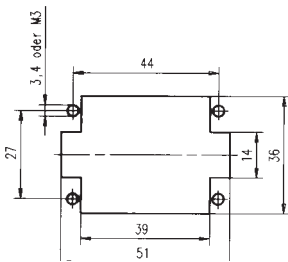
2000 pcs  
(feeding left or right hand side)

| Lieferform<br><i>Supplied as</i>                                                               | für Leiter-<br>querschnitt<br><i>for wire gauge</i> | AWG     | Stück-<br>zahl<br><i>Pieces</i> | Bestell Nr. <sup>1)</sup><br>Stiftkontakt<br><i>Male contact</i> | Part No. <sup>1)</sup><br>Buchsenkontakt<br><i>Female contact</i> | Bestell Nr. <sup>1)</sup><br>Stiftkontakt<br><i>Male contact</i> | Part No. <sup>1)</sup><br>Buchsenkontakt<br><i>Female contact</i> |
|------------------------------------------------------------------------------------------------|-----------------------------------------------------|---------|---------------------------------|------------------------------------------------------------------|-------------------------------------------------------------------|------------------------------------------------------------------|-------------------------------------------------------------------|
| Gestanzte Einzelkontakte / <i>Stamped single contacts</i>                                      |                                                     |         |                                 | versilbert / <i>silver plating</i>                               |                                                                   | vergoldet / <i>gold plating</i>                                  |                                                                   |
|                                                                                                | 0,5 - 1,5 mm <sup>2</sup>                           | 20 - 16 | 100                             | VN01 025 0001 (101)                                              | VN02 025 0001 (101)                                               | VN01 025 0001 (102)                                              | VN02 025 0001 (102)                                               |
|                                                                                                | 1,5 - 2,5 mm <sup>2</sup>                           | 16 - 14 | 100                             | VN01 025 0010 (101)                                              | VN02 025 0010 (101)                                               | VN01 025 0010 (102)                                              | VN02 025 0010 (102)                                               |
| Gestanzte Bandkontakte für Crimpzangen / <i>Stamped Contacts on reel for hand crimp tools</i>  |                                                     |         |                                 |                                                                  |                                                                   |                                                                  |                                                                   |
|                                                                                                | 0,5 - 1,5 mm <sup>2</sup>                           | 20 - 16 | 200                             | ZN01 025 0001 (1)                                                | ZN02 025 0001 (1)                                                 | ZN01 025 0001 (2)                                                | ZN02 025 0001 (2)                                                 |
|                                                                                                | 1,5 - 2,5 mm <sup>2</sup>                           | 16 - 14 | 100                             | ZN01 025 0010 (1)                                                | ZN02 025 0010 (1)                                                 | ZN01 025 0010 (2)                                                | ZN02 025 0010 (2)                                                 |
| Gestanzte Bandkontakte für Crimpmaschinen / <i>Stamped contacts on reel for crimp machines</i> |                                                     |         |                                 |                                                                  |                                                                   |                                                                  |                                                                   |
| Kontaktzuführung rechts<br><i>Contact feeding right hand side</i>                              | 0,5 - 1,5 mm <sup>2</sup>                           | 20 - 16 | 2000                            | HN01 025 0001 (1)                                                | HN02 025 0001 (1)                                                 |                                                                  |                                                                   |
|                                                                                                | 1,5 - 2,5 mm <sup>2</sup>                           | 16 - 14 | 2000                            | HN01 025 0010 (1)                                                | HN02 025 0010 (1)                                                 |                                                                  |                                                                   |
| Kontaktzuführung links<br><i>Contact feeding left hand side</i>                                | 0,5 - 1,5 mm <sup>2</sup>                           | 20 - 16 | 2000                            | TN01 025 0001 (1)                                                | TN02 025 0001 (1)                                                 |                                                                  |                                                                   |
|                                                                                                | 1,5 - 2,5 mm <sup>2</sup>                           | 16 - 14 | 2000                            | TN01 025 0010 (1)                                                | TN02 025 0010 (1)                                                 |                                                                  |                                                                   |
| Gedrehte Crimpkontakte / <i>Turned crimp contacts</i>                                          |                                                     |         |                                 |                                                                  |                                                                   |                                                                  |                                                                   |
| Einzelkontakt<br><i>Single contact</i>                                                         | 0,5 mm <sup>2</sup>                                 | 20      | 100                             | VN01 025 0035 (1)C                                               | VN02 025 0035 (1)C                                                | VN01 025 0035 (2)C                                               | VN02 025 0035 (2)C                                                |
|                                                                                                | 0,75 - 1,0 mm <sup>2</sup>                          | 18      | 100                             | VN01 025 0036 (1)C                                               | VN02 025 0036 (1)C                                                | VN01 025 0036 (2)C                                               | VN02 025 0036 (2)C                                                |
|                                                                                                | 1,5 mm <sup>2</sup>                                 | 16      | 100                             | VN01 025 0037 (1)C                                               | VN02 025 0037 (1)C                                                | VN01 025 0037 (2)C                                               | VN02 025 0037 (2)C                                                |
|                                                                                                | 2,5 mm <sup>2</sup>                                 | 14      | 100                             | VN01 025 0038 (1)C                                               | VN02 025 0038 (1)C                                                | VN01 025 0038 (2)C                                               | VN02 025 0038 (2)C                                                |
|                                                                                                | 4,0 mm <sup>2</sup>                                 | 12      | 100                             | VN01 025 0039 (1)C                                               | VN02 025 0039 (1)C                                                | VN01 025 0039 (2)C                                               | VN02 025 0039 (2)C                                                |
| Montageanleitung, Steckbild / <i>Assembly instruction, pin layout</i>                          |                                                     |         |                                 |                                                                  |                                                                   |                                                                  |                                                                   |

Stifteinsatz  
*Male insert*

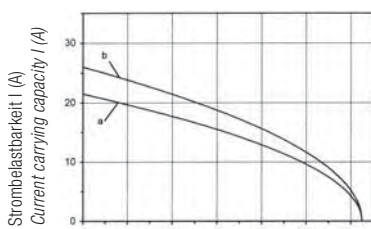
Buchseinsatz  
*Female insert*

Montageausschnitt (Kontaktträger)  
*Panel cut out (insert)*



Derating Kurven / *Derating curves*

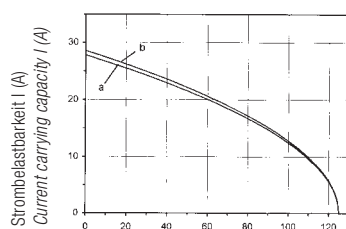
**Gestanzte Kontakte**  
**Stamped contacts**



Bauelement Umgebungstemperatur  $T_u$  (°C)  
Ambient temperature  $T_{amb}$  (°C)

**Kurve a:** 1,5 mm<sup>2</sup> Leiterquerschnitt  
**Curve a:** 1,5 mm<sup>2</sup> wire gauge

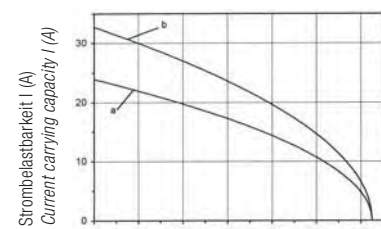
**Gedrehte Kontakte**  
**Turned contacts**



Bauelement Umgebungstemperatur  $T_u$  (°C)  
Ambient temperature  $T_{amb}$  (°C)

**Kurve b:** 2,5 mm<sup>2</sup> Leiterquerschnitt  
**Curve b:** 2,5 mm<sup>2</sup> wire gauge

**Schraubanschluss**  
**Screw termination**



Bauelement Umgebungstemperatur  $T_u$  (°C)  
Ambient temperature  $T_{amb}$  (°C)

<sup>1)</sup> Erläuterung der Bestell-Nr. für die Kontakte siehe Seite 4  
*Explanation of the Part No. for contacts see page 4*

Abisolierlängen siehe S. 198  
*Stripping length see p. 198*

C 146 E

10 + 

Steckverbinder  
Connectors



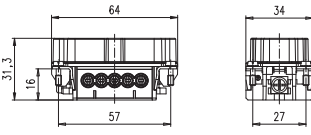
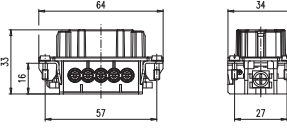


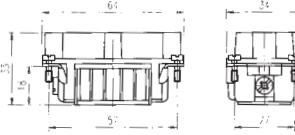
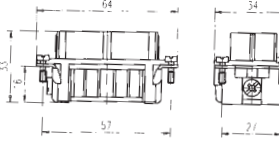


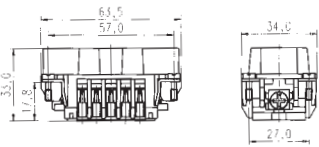
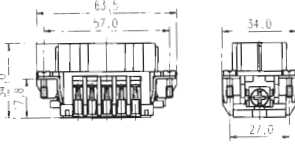
400 V~ Kontakteinsatz für gestanzte Kontakte /  
Contact insert for stamped contacts

500 V~ Kontakteinsatz für Schraubanschluss und für gedrehte Kontakte /  
Contact insert for screw termination and for turned contacts

16 / 22 A

Gehäuse siehe Seite 130-137

Housings see page 130-137

| Bezeichnung - Abbildung<br>Description - Figure                                                                                                                                                                                                                    | Maßzeichnung<br>Drawing                                                                                                                                                                                                                        | Bestell Nr. / Part No.                                                                  |                                                                                         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                | Stifteinsatz / Male insert                                                              | Buchseinsatz / Female insert                                                            |
| Kontakteinsatz Schraubanschluss<br>Contact insert screw termination<br><br><br><br>              | Stifteinsatz<br>Male insert<br><br><br>Buchseinsatz<br>Female insert<br>     | C146 10A010 002 1<br><br>C146 10A010 102 1<br>(mit Drahtschutz<br>with wire protection) | C146 10B010 002 1<br><br>C146 10B010 102 1<br>(mit Drahtschutz<br>with wire protection) |
| Kontakteinsatz für gestanzte Kontakte<br>Contact insert for stamped contacts<br><br><br><br> | Stifteinsatz<br>Male insert<br><br><br>Buchseinsatz<br>Female insert<br> | C146 10A010 000 1                                                                       | C146 10B010 000 1                                                                       |
| Kontakteinsatz für gedrehte Kontakte<br>Contact insert for turned contacts<br><br><br><br>   | Stifteinsatz<br>Male insert<br><br><br>Buchseinsatz<br>Female insert<br> | C146 10A010 500 1                                                                       | C146 10B010 500 1                                                                       |

C 146 E

10 + 

**Crimpkontakte**  
**Crimp contacts**

Gestanzte Einzelkontakte / Stamped single contacts

Gestanzte Bandkontakte für Crimpzangen / Stamped contacts on reel for hand crimping tools

Gestanzte Bandkontakte für Crimpmaschinen / Stamped contacts on reel for crimp machines



Gedrehte Einzelkontakte / Turned single contacts



200 / 100 Stück

200 / 100 pcs

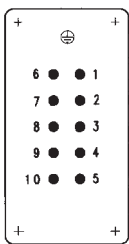


2000 Stück  
(Zuführung links oder rechts)

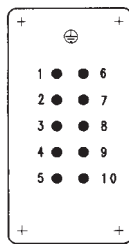
2000 pcs  
(feeding left or right hand side)

| Lieferform<br><i>Supplied as</i>                                                               | für Leiterquerschnitt<br><i>for wire gauge</i> | AWG     | Stückzahl<br><i>Pieces</i> | Bestell Nr. <sup>1)</sup><br>Stiftkontakt<br><i>Male contact</i> | Part No. <sup>1)</sup><br>Buchsenkontakt<br><i>Female contact</i> | Bestell Nr. <sup>1)</sup><br>Stiftkontakt<br><i>Male contact</i> | Part No. <sup>1)</sup><br>Buchsenkontakt<br><i>Female contact</i> |
|------------------------------------------------------------------------------------------------|------------------------------------------------|---------|----------------------------|------------------------------------------------------------------|-------------------------------------------------------------------|------------------------------------------------------------------|-------------------------------------------------------------------|
| Gestanzte Einzelkontakte / <i>Stamped single contacts</i>                                      |                                                |         |                            | versilbert / <i>silver plating</i>                               |                                                                   | vergoldet / <i>gold plating</i>                                  |                                                                   |
|                                                                                                | 0,5 - 1,5 mm <sup>2</sup>                      | 20 - 16 | 100                        | VN01 025 0001 (101)                                              | VN02 025 0001 (101)                                               | VN01 025 0001 (102)                                              | VN02 025 0001 (102)                                               |
|                                                                                                | 1,5 - 2,5 mm <sup>2</sup>                      | 16 - 14 | 100                        | VN01 025 0010 (101)                                              | VN02 025 0010 (101)                                               | VN01 025 0010 (102)                                              | VN02 025 0010 (102)                                               |
| Gestanzte Bandkontakte für Crimpzangen / <i>Stamped Contacts on reel for hand crimp tools</i>  |                                                |         |                            |                                                                  |                                                                   |                                                                  |                                                                   |
|                                                                                                | 0,5 - 1,5 mm <sup>2</sup>                      | 20 - 16 | 200                        | ZN01 025 0001 (1)                                                | ZN02 025 0001 (1)                                                 | ZN01 025 0001 (2)                                                | ZN02 025 0001 (2)                                                 |
|                                                                                                | 1,5 - 2,5 mm <sup>2</sup>                      | 16 - 14 | 100                        | ZN01 025 0010 (1)                                                | ZN02 025 0010 (1)                                                 | ZN01 025 0010 (2)                                                | ZN02 025 0010 (2)                                                 |
| Gestanzte Bandkontakte für Crimpmaschinen / <i>Stamped contacts on reel for crimp machines</i> |                                                |         |                            |                                                                  |                                                                   |                                                                  |                                                                   |
| Kontaktzuführung rechts<br><i>Contact feeding right hand side</i>                              | 0,5 - 1,5 mm <sup>2</sup>                      | 20 - 16 | 2000                       | HN01 025 0001 (1)                                                | HN02 025 0001 (1)                                                 |                                                                  |                                                                   |
|                                                                                                | 1,5 - 2,5 mm <sup>2</sup>                      | 16 - 14 | 2000                       | HN01 025 0010 (1)                                                | HN02 025 0010 (1)                                                 |                                                                  |                                                                   |
| Kontaktzuführung links<br><i>Contact feeding left hand side</i>                                | 0,5 - 1,5 mm <sup>2</sup>                      | 20 - 16 | 2000                       | TN01 025 0001 (1)                                                | TN02 025 0001 (1)                                                 |                                                                  |                                                                   |
|                                                                                                | 1,5 - 2,5 mm <sup>2</sup>                      | 16 - 14 | 2000                       | TN01 025 0010 (1)                                                | TN02 025 0010 (1)                                                 |                                                                  |                                                                   |
| Gedrehte Crimpkontakte / <i>Turned crimp contacts</i>                                          |                                                |         |                            |                                                                  |                                                                   |                                                                  |                                                                   |
| Einzelkontakt<br><i>Single contact</i>                                                         | 0,5 mm <sup>2</sup>                            | 20      | 100                        | VN01 025 0035 (1)C                                               | VN02 025 0035 (1)C                                                | VN01 025 0035 (2)C                                               | VN02 025 0035 (2)C                                                |
|                                                                                                | 0,75 - 1,0 mm <sup>2</sup>                     | 18      | 100                        | VN01 025 0036 (1)C                                               | VN02 025 0036 (1)C                                                | VN01 025 0036 (2)C                                               | VN02 025 0036 (2)C                                                |
|                                                                                                | 1,5 mm <sup>2</sup>                            | 16      | 100                        | VN01 025 0037 (1)C                                               | VN02 025 0037 (1)C                                                | VN01 025 0037 (2)C                                               | VN02 025 0037 (2)C                                                |
|                                                                                                | 2,5 mm <sup>2</sup>                            | 14      | 100                        | VN01 025 0038 (1)C                                               | VN02 025 0038 (1)C                                                | VN01 025 0038 (2)C                                               | VN02 025 0038 (2)C                                                |
|                                                                                                | 4,0 mm <sup>2</sup>                            | 12      | 100                        | VN01 025 0039 (1)C                                               | VN02 025 0039 (1)C                                                | VN01 025 0039 (2)C                                               | VN02 025 0039 (2)C                                                |
| Montageanleitung, Steckbild / <i>Assembly instruction, pin layout</i>                          |                                                |         |                            |                                                                  |                                                                   |                                                                  |                                                                   |

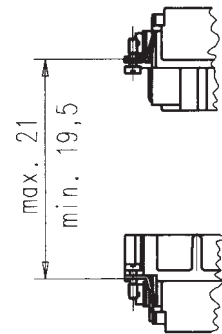
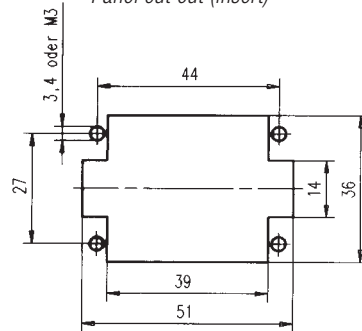
Stifteinsatz  
*Male insert*



Buchseinsatz  
*Female insert*

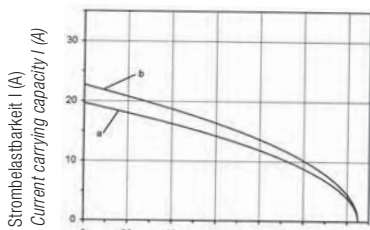


Montageausschnitt (Kontaktträger)  
*Panel cut out (insert)*



Derating Kurven / *Derating curves*

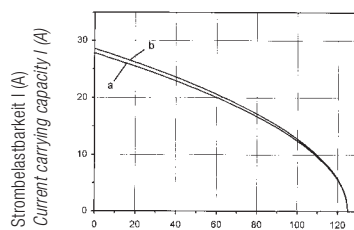
**Gestanzte Kontakte**  
**Stamped contacts**



Bauelement Umgebungstemperatur  $T_u$  (°C)  
Ambient temperature  $T_{amb}$  (°C)

**Kurve a:** 1,5 mm<sup>2</sup> Leiterquerschnitt  
**Curve a:** 1,5 mm<sup>2</sup> wire gauge

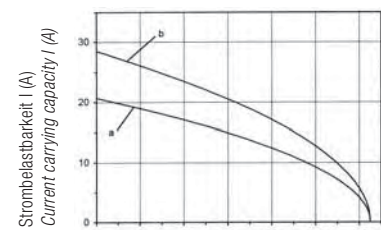
**Gedrehte Kontakte**  
**Turned contacts**



Bauelement Umgebungstemperatur  $T_u$  (°C)  
Ambient temperature  $T_{amb}$  (°C)

**Kurve b:** 2,5 mm<sup>2</sup> Leiterquerschnitt  
**Curve b:** 2,5 mm<sup>2</sup> wire gauge

**Schraubanschluss**  
**Screw termination**



Bauelement Umgebungstemperatur  $T_u$  (°C)  
Ambient temperature  $T_{amb}$  (°C)

<sup>1)</sup> Erläuterung der Bestell-Nr. für die Kontakte siehe Seite 4  
*Explanation of the Part No. for contacts see page 4*

Abisolierlängen siehe S. 198  
*Stripping length see p. 198*

C 146 E

16 + 

Steckverbinder  
Connectors

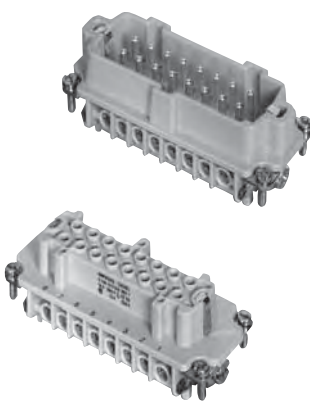
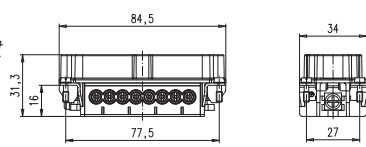
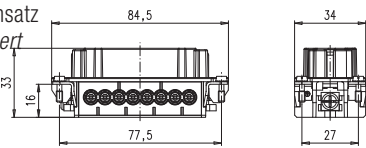

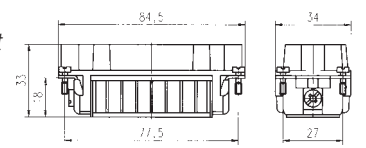
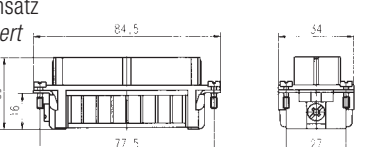
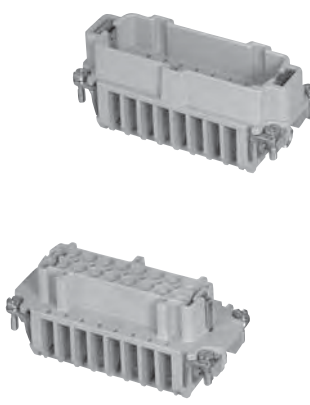
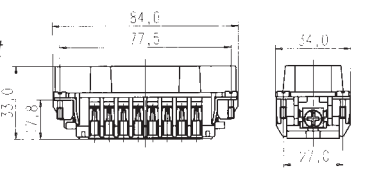
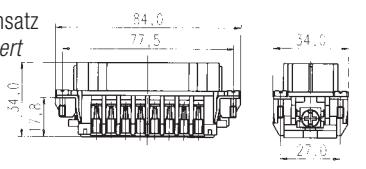
400 V~ Kontakteinsatz für gestanzte Kontakte /  
Contact insert for stamped contacts

500 V~ Kontakteinsatz für Schraubanschluss und für gedrehte Kontakte /  
Contact insert for screw termination and for turned contacts

16 / 22 A

Gehäuse siehe Seite 138-145

Housings see page 138-145

| Bezeichnung - Abbildung<br>Description - Figure                                                                                                                            | Maßzeichnung<br>Drawing                                                                                                                                                                                                                        | Bestell Nr. / Part No.                                                                  |                                                                                         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
|                                                                                                                                                                            |                                                                                                                                                                                                                                                | Stifteinsatz / Male insert                                                              | Buchseinsatz / Female insert                                                            |
| Kontakteinsatz Schraubanschluss<br>Contact insert screw termination<br><br>               | Stifteinsatz<br>Male insert<br><br><br>Buchseinsatz<br>Female insert<br>     | C146 10A016 002 1<br><br>C146 10A016 102 1<br>(mit Drahtschutz<br>with wire protection) | C146 10B016 002 1<br><br>C146 10B016 102 1<br>(mit Drahtschutz<br>with wire protection) |
| Kontakteinsatz für gestanzte<br>Kontakte<br>Contact insert for stamped contacts<br><br> | Stifteinsatz<br>Male insert<br><br><br>Buchseinsatz<br>Female insert<br> | C146 10A016 000 1                                                                       | C146 10B016 000 1                                                                       |
| Kontakteinsatz für gedrehte<br>Kontakte<br>Contact insert for turned contacts<br><br>   | Stifteinsatz<br>Male insert<br><br><br>Buchseinsatz<br>Female insert<br> | C146 10A016 500 1                                                                       | C146 10B016 500 1                                                                       |

C 146 E

16 + 

**Crimpkontakte**  
**Crimp contacts**

Gestanzte Einzelkontakte / Stamped single contacts

Gestanzte Bandkontakte für Crimpzangen / Stamped contacts on reel for hand crimping tools

Gestanzte Bandkontakte für Crimpmaschinen / Stamped contacts on reel for crimp machines



Gedrehte Einzelkontakte / Turned single contacts



200 / 100 Stück

200 / 100 pcs

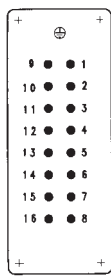


2000 Stück  
(Zuführung links oder rechts)

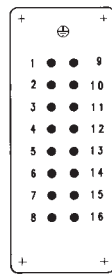
2000 pcs  
(feeding left or right hand side)

| Lieferform<br><i>Supplied as</i>                                                               | für Leiterquerschnitt<br><i>for wire gauge</i> | AWG     | Stückzahl<br><i>Pieces</i> | Bestell Nr. <sup>1)</sup><br>Stiftkontakt<br><i>Male contact</i> | Part No. <sup>1)</sup><br>Buchsenkontakt<br><i>Female contact</i> | Bestell Nr. <sup>1)</sup><br>Stiftkontakt<br><i>Male contact</i> | Part No. <sup>1)</sup><br>Buchsenkontakt<br><i>Female contact</i> |
|------------------------------------------------------------------------------------------------|------------------------------------------------|---------|----------------------------|------------------------------------------------------------------|-------------------------------------------------------------------|------------------------------------------------------------------|-------------------------------------------------------------------|
| Gestanzte Einzelkontakte / <i>Stamped single contacts</i>                                      |                                                |         |                            | versilbert / <i>silver plating</i>                               |                                                                   | vergoldet / <i>gold plating</i>                                  |                                                                   |
|                                                                                                | 0,5 - 1,5 mm <sup>2</sup>                      | 20 - 16 | 100                        | VN01 025 0001 (101)                                              | VN02 025 0001 (101)                                               | VN01 025 0001 (102)                                              | VN02 025 0001 (102)                                               |
|                                                                                                | 1,5 - 2,5 mm <sup>2</sup>                      | 16 - 14 | 100                        | VN01 025 0010 (101)                                              | VN02 025 0010 (101)                                               | VN01 025 0010 (102)                                              | VN02 025 0010 (102)                                               |
| Gestanzte Bandkontakte für Crimpzangen / <i>Stamped Contacts on reel for hand crimp tools</i>  |                                                |         |                            |                                                                  |                                                                   |                                                                  |                                                                   |
|                                                                                                | 0,5 - 1,5 mm <sup>2</sup>                      | 20 - 16 | 200                        | ZN01 025 0001 (1)                                                | ZN02 025 0001 (1)                                                 | ZN01 025 0001 (2)                                                | ZN02 025 0001 (2)                                                 |
|                                                                                                | 1,5 - 2,5 mm <sup>2</sup>                      | 16 - 14 | 100                        | ZN01 025 0010 (1)                                                | ZN02 025 0010 (1)                                                 | ZN01 025 0010 (2)                                                | ZN02 025 0010 (2)                                                 |
| Gestanzte Bandkontakte für Crimpmaschinen / <i>Stamped contacts on reel for crimp machines</i> |                                                |         |                            |                                                                  |                                                                   |                                                                  |                                                                   |
| Kontaktzuführung rechts<br><i>Contact feeding right hand side</i>                              | 0,5 - 1,5 mm <sup>2</sup>                      | 20 - 16 | 2000                       | HN01 025 0001 (1)                                                | HN02 025 0001 (1)                                                 |                                                                  |                                                                   |
|                                                                                                | 1,5 - 2,5 mm <sup>2</sup>                      | 16 - 14 | 2000                       | HN01 025 0010 (1)                                                | HN02 025 0010 (1)                                                 |                                                                  |                                                                   |
| Kontaktzuführung links<br><i>Contact feeding left hand side</i>                                | 0,5 - 1,5 mm <sup>2</sup>                      | 20 - 16 | 2000                       | TN01 025 0001 (1)                                                | TN02 025 0001 (1)                                                 |                                                                  |                                                                   |
|                                                                                                | 1,5 - 2,5 mm <sup>2</sup>                      | 16 - 14 | 2000                       | TN01 025 0010 (1)                                                | TN02 025 0010 (1)                                                 |                                                                  |                                                                   |
| Gedrehte Crimpkontakte / <i>Turned crimp contacts</i>                                          |                                                |         |                            |                                                                  |                                                                   |                                                                  |                                                                   |
| Einzelkontakt<br><i>Single contact</i>                                                         | 0,5 mm <sup>2</sup>                            | 20      | 100                        | VN01 025 0035 (1)C                                               | VN02 025 0035 (1)C                                                | VN01 025 0035 (2)C                                               | VN02 025 0035 (2)C                                                |
|                                                                                                | 0,75 - 1,0 mm <sup>2</sup>                     | 18      | 100                        | VN01 025 0036 (1)C                                               | VN02 025 0036 (1)C                                                | VN01 025 0036 (2)C                                               | VN02 025 0036 (2)C                                                |
|                                                                                                | 1,5 mm <sup>2</sup>                            | 16      | 100                        | VN01 025 0037 (1)C                                               | VN02 025 0037 (1)C                                                | VN01 025 0037 (2)C                                               | VN02 025 0037 (2)C                                                |
|                                                                                                | 2,5 mm <sup>2</sup>                            | 14      | 100                        | VN01 025 0038 (1)C                                               | VN02 025 0038 (1)C                                                | VN01 025 0038 (2)C                                               | VN02 025 0038 (2)C                                                |
|                                                                                                | 4,0 mm <sup>2</sup>                            | 12      | 100                        | VN01 025 0039 (1)C                                               | VN02 025 0039 (1)C                                                | VN01 025 0039 (2)C                                               | VN02 025 0039 (2)C                                                |
| Montageanleitung, Steckbild / <i>Assembly instruction, pin layout</i>                          |                                                |         |                            |                                                                  |                                                                   |                                                                  |                                                                   |

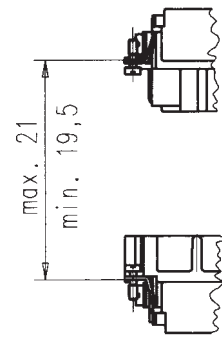
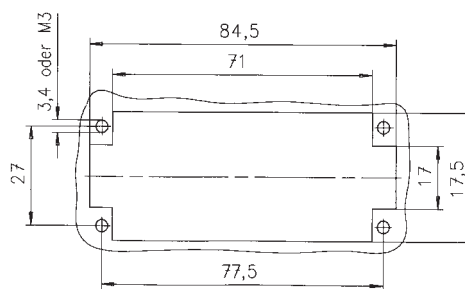
Stifteinsatz  
*Male insert*



Buchseinsatz  
*Female insert*

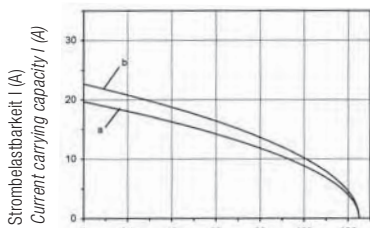


Montageausschnitt (Kontaktträger)  
*Panel cut out (insert)*



Derating Kurven / *Derating curves*

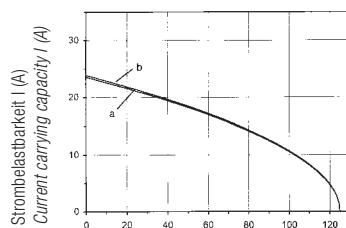
**Gestanzte Kontakte**  
**Stamped contacts**



Bauelement Umgebungstemperatur  $T_u$  (°C)  
Ambient temperature  $T_{amb}$  (°C)

**Kurve a:** 1,5 mm<sup>2</sup> Leiterquerschnitt  
**Curve a:** 1,5 mm<sup>2</sup> wire gauge

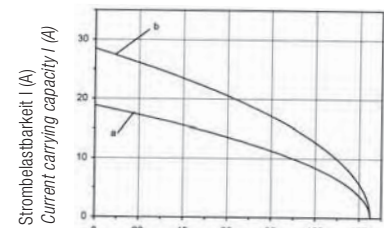
**Gedrehte Kontakte**  
**Turned contacts**



Bauelement Umgebungstemperatur  $T_u$  (°C)  
Ambient temperature  $T_{amb}$  (°C)

**Kurve b:** 2,5 mm<sup>2</sup> Leiterquerschnitt  
**Curve b:** 2,5 mm<sup>2</sup> wire gauge

**Schraubanschluss**  
**Screw termination**



Bauelement Umgebungstemperatur  $T_u$  (°C)  
Ambient temperature  $T_{amb}$  (°C)

<sup>1)</sup> Erläuterung der Bestell-Nr. für die Kontakte siehe Seite 4  
*Explanation of the Part No. for contacts see page 4*

Abisolierlängen siehe S. 198  
*Stripping length see p. 198*

C 146 E

24 + 

Steckverbinder  
Connectors

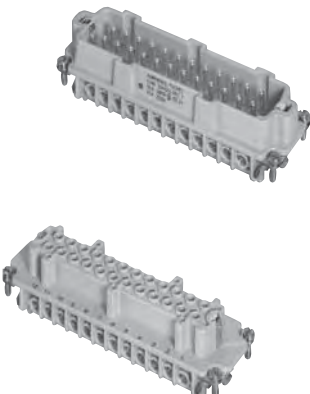
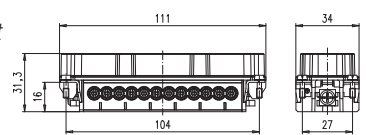
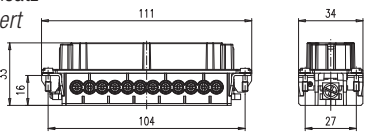
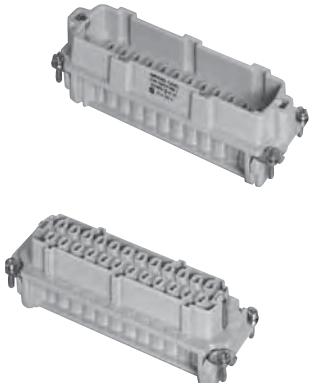
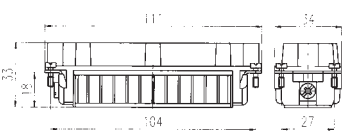
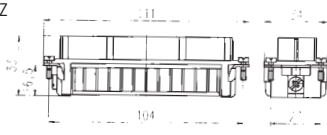
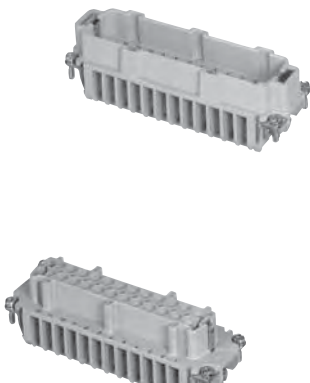
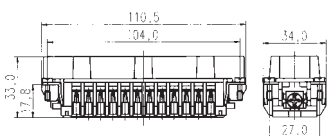
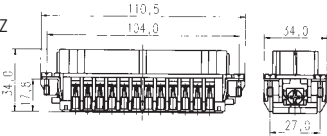
400 V~ Kontakteinsatz für gestanzte Kontakte /  
Contact insert for stamped contacts

500 V~ Kontakteinsatz für Schraubanschluss und für gedrehte Kontakte /  
Contact insert for screw termination and for turned contacts

16 / 22 A

Gehäuse siehe Seite 146-153

Housings see page 146-153

| Bezeichnung - Abbildung<br>Description - Figure                                                                                                                         | Maßzeichnung<br>Drawing                                                                                                                                                                                                                          | Bestell Nr. / Part No.                                                                  |                                                                                         |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
|                                                                                                                                                                         |                                                                                                                                                                                                                                                  | Stifteinsatz / Male insert                                                              | Buchseneinsatz / Female insert                                                          |
| Kontakteinsatz Schraubanschluss<br>Contact insert screw termination<br><br>            | Stifteinsatz<br>Male insert<br><br><br>Buchseneinsatz<br>Female insert<br>     | C146 10A024 002 1<br><br>C146 10A024 102 1<br>(mit Drahtschutz<br>with wire protection) | C146 10B024 002 1<br><br>C146 10B024 102 1<br>(mit Drahtschutz<br>with wire protection) |
| Kontakteinsatz für gestanzte Kontakte<br>Contact insert for stamped contacts<br><br> | Stifteinsatz<br>Male insert<br><br><br>Buchseneinsatz<br>Female insert<br> | C146 10A024 000 1                                                                       | C146 10B024 000 1                                                                       |
| Kontakteinsatz für gedrehte Kontakte<br>Contact insert for turned contacts<br><br>   | Stifteinsatz<br>Male insert<br><br><br>Buchseneinsatz<br>Female insert<br> | C146 10A024 500 1                                                                       | C146 10B024 500 1                                                                       |



C 146 E

24 + 

**Crimpkontakte**  
**Crimp contacts**

Gestanzte Einzelkontakte / Stamped single contacts

Gestanzte Bandkontakte für Crimpzangen / Stamped contacts on reel for hand crimping tools

Gestanzte Bandkontakte für Crimpmaschinen / Stamped contacts on reel for crimp machines



Gedrehte Einzelkontakte / Turned single contacts



200 / 100 Stück

200 / 100 pcs



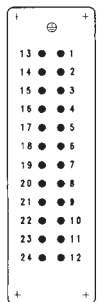
2000 Stück  
(Zuführung links oder rechts)

2000 pcs  
(feeding left or right hand side)

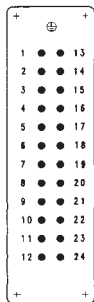
| Lieferform<br><i>Supplied as</i>                                                               | für Leiterquerschnitt<br><i>for wire gauge</i> | AWG     | Stückzahl<br><i>Pieces</i> | Bestell Nr. <sup>1)</sup><br>Stiftkontakt<br><i>Male contact</i> | Part No. <sup>1)</sup><br>Buchsenkontakt<br><i>Female contact</i> | Bestell Nr. <sup>1)</sup><br>Stiftkontakt<br><i>Male contact</i> | Part No. <sup>1)</sup><br>Buchsenkontakt<br><i>Female contact</i> |
|------------------------------------------------------------------------------------------------|------------------------------------------------|---------|----------------------------|------------------------------------------------------------------|-------------------------------------------------------------------|------------------------------------------------------------------|-------------------------------------------------------------------|
| Gestanzte Einzelkontakte / <i>Stamped single contacts</i>                                      |                                                |         |                            | versilbert / <i>silver plating</i>                               |                                                                   | vergoldet / <i>gold plating</i>                                  |                                                                   |
|                                                                                                | 0,5 - 1,5 mm <sup>2</sup>                      | 20 - 16 | 100                        | VN01 025 0001 (101)                                              | VN02 025 0001 (101)                                               | VN01 025 0001 (102)                                              | VN02 025 0001 (102)                                               |
|                                                                                                | 1,5 - 2,5 mm <sup>2</sup>                      | 16 - 14 | 100                        | VN01 025 0010 (101)                                              | VN02 025 0010 (101)                                               | VN01 025 0010 (102)                                              | VN02 025 0010 (102)                                               |
| Gestanzte Bandkontakte für Crimpzangen / <i>Stamped Contacts on reel for hand crimp tools</i>  |                                                |         |                            |                                                                  |                                                                   |                                                                  |                                                                   |
|                                                                                                | 0,5 - 1,5 mm <sup>2</sup>                      | 20 - 16 | 200                        | ZN01 025 0001 (1)                                                | ZN02 025 0001 (1)                                                 | ZN01 025 0001 (2)                                                | ZN02 025 0001 (2)                                                 |
|                                                                                                | 1,5 - 2,5 mm <sup>2</sup>                      | 16 - 14 | 100                        | ZN01 025 0010 (1)                                                | ZN02 025 0010 (1)                                                 | ZN01 025 0010 (2)                                                | ZN02 025 0010 (2)                                                 |
| Gestanzte Bandkontakte für Crimpmaschinen / <i>Stamped contacts on reel for crimp machines</i> |                                                |         |                            |                                                                  |                                                                   |                                                                  |                                                                   |
| Kontaktzuführung rechts<br><i>Contact feeding right hand side</i>                              | 0,5 - 1,5 mm <sup>2</sup>                      | 20 - 16 | 2000                       | HN01 025 0001 (1)                                                | HN02 025 0001 (1)                                                 |                                                                  |                                                                   |
|                                                                                                | 1,5 - 2,5 mm <sup>2</sup>                      | 16 - 14 | 2000                       | HN01 025 0010 (1)                                                | HN02 025 0010 (1)                                                 |                                                                  |                                                                   |
| Kontaktzuführung links<br><i>Contact feeding left hand side</i>                                | 0,5 - 1,5 mm <sup>2</sup>                      | 20 - 16 | 2000                       | TN01 025 0001 (1)                                                | TN02 025 0001 (1)                                                 |                                                                  |                                                                   |
|                                                                                                | 1,5 - 2,5 mm <sup>2</sup>                      | 16 - 14 | 2000                       | TN01 025 0010 (1)                                                | TN02 025 0010 (1)                                                 |                                                                  |                                                                   |
| Gedrehte Crimpkontakte / <i>Turned crimp contacts</i>                                          |                                                |         |                            |                                                                  |                                                                   |                                                                  |                                                                   |
| Einzelkontakt<br><i>Single contact</i>                                                         | 0,5 mm <sup>2</sup>                            | 20      | 100                        | VN01 025 0035 (1)C                                               | VN02 025 0035 (1)C                                                | VN01 025 0035 (2)C                                               | VN02 025 0035 (2)C                                                |
|                                                                                                | 0,75 - 1,0 mm <sup>2</sup>                     | 18      | 100                        | VN01 025 0036 (1)C                                               | VN02 025 0036 (1)C                                                | VN01 025 0036 (2)C                                               | VN02 025 0036 (2)C                                                |
|                                                                                                | 1,5 mm <sup>2</sup>                            | 16      | 100                        | VN01 025 0037 (1)C                                               | VN02 025 0037 (1)C                                                | VN01 025 0037 (2)C                                               | VN02 025 0037 (2)C                                                |
|                                                                                                | 2,5 mm <sup>2</sup>                            | 14      | 100                        | VN01 025 0038 (1)C                                               | VN02 025 0038 (1)C                                                | VN01 025 0038 (2)C                                               | VN02 025 0038 (2)C                                                |
|                                                                                                | 4,0 mm <sup>2</sup>                            | 12      | 100                        | VN01 025 0039 (1)C                                               | VN02 025 0039 (1)C                                                | VN01 025 0039 (2)C                                               | VN02 025 0039 (2)C                                                |

Montageanleitung, Steckbild / *Assembly instruction, pin layout*

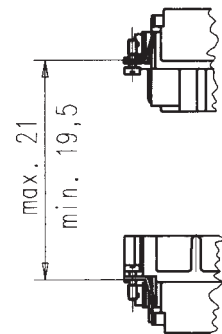
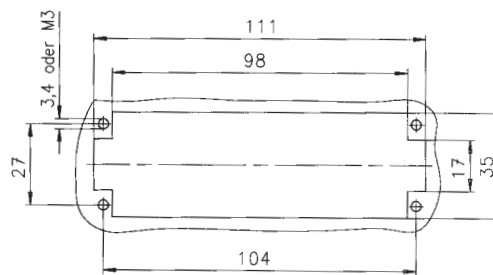
Stifteinsatz  
*Male insert*



Buchseinsatz  
*Female insert*

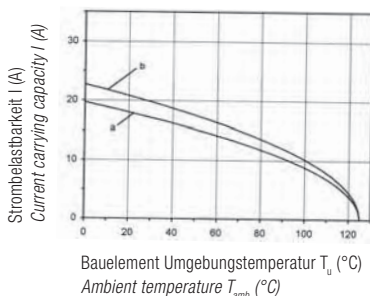


Montageausschnitt (Kontaktträger)  
*Panel cut out (insert)*



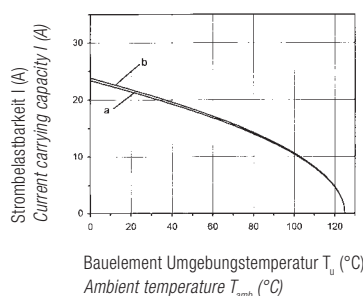
Derating Kurven / *Derating curves*

**Gestanzte Kontakte**  
**Stamped contacts**



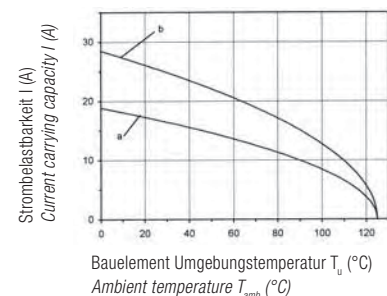
**Kurve a:** 1,5 mm<sup>2</sup> Leiterquerschnitt  
**Curve a:** 1,5 mm<sup>2</sup> wire gauge

**Gedrehte Kontakte**  
**Turned contacts**



**Kurve b:** 2,5 mm<sup>2</sup> Leiterquerschnitt  
**Curve b:** 2,5 mm<sup>2</sup> wire gauge

**Schraubanschluss**  
**Screw termination**



<sup>1)</sup> Erläuterung der Bestell-Nr. für die Kontakte siehe Seite 4  
*Explanation of the Part No. for contacts see page 4*

Abisolierlängen siehe S. 198  
*Stripping length see p. 198*

C 146 E

48 + 

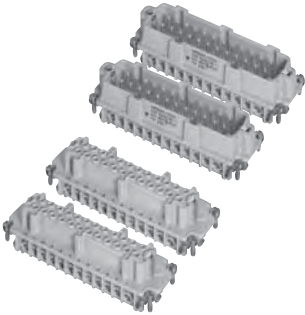
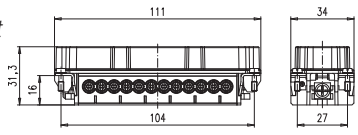
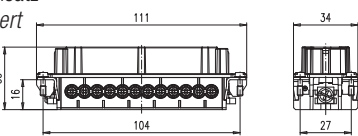
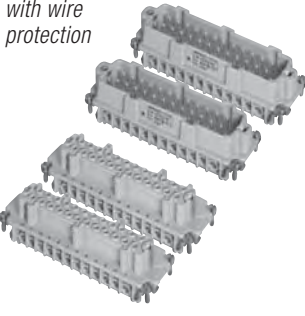
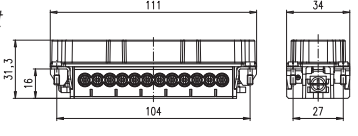
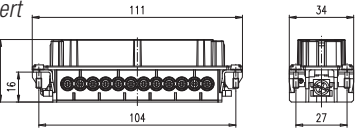
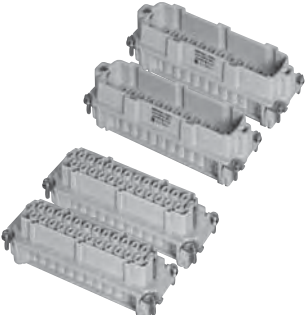
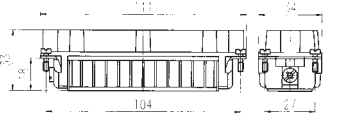
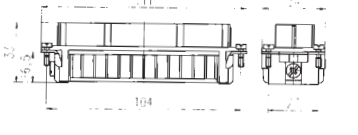
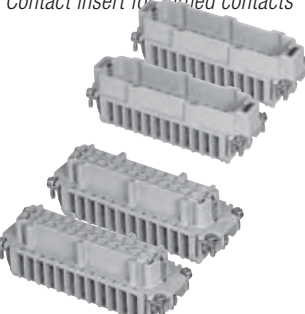
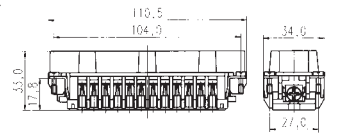
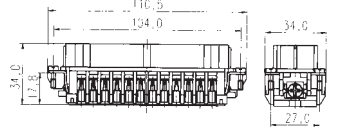
Steckverbinder  
Connectors

400 V~ Kontakteinsatz für gestanzte Kontakte /  
Contact insert for stamped contacts

500 V~ Kontakteinsatz für Schraubanschluss und für gedrehte Kontakte /  
Contact insert for screw termination and for turned contacts

16 / 22 A

Gehäuse auf Anfrage  
Housings upon request

| Bezeichnung - Abbildung<br>Description - Figure                                                                                                                                                          | Maßzeichnung<br>Drawing                                                                                                                                                                                                                        | Bestell Nr. / Part No.                      |                                             |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|---------------------------------------------|
|                                                                                                                                                                                                          |                                                                                                                                                                                                                                                | Stifteinsatz / Male insert                  | Buchseinsatz / Female insert                |
| Kontakteinsatz Schraubanschluss<br>Contact insert screw termination<br><br>                                             | Stifteinsatz<br>Male insert<br><br><br>Buchseinsatz<br>Female insert<br>     | C146 10A024 002 1<br>+<br>C146 10A024 002 1 | C146 10B024 002 1<br>+<br>C146 10B024 002 1 |
| Kontakteinsatz Schraubanschluss<br>mit Drahtschutz<br>Contact insert screw termination<br>with wire protection<br><br> | Stifteinsatz<br>Male insert<br><br><br>Buchseinsatz<br>Female insert<br>  | C146 10A024 102 1<br>+<br>C146 10A024 102 1 | C146 10B024 102 1<br>+<br>C146 10B024 102 1 |
| Kontakteinsatz für gestanzte Kontakte<br>Contact insert for stamped contacts<br><br>                                  | Stifteinsatz<br>Male insert<br><br><br>Buchseinsatz<br>Female insert<br> | C146 10A024 000 1<br>+<br>C146 10A024 005 1 | C146 10B024 000 1<br>+<br>C146 10B024 005 1 |
| Kontakteinsatz für gedrehte<br>Kontakte<br>Contact insert for turned contacts<br><br>                                 | Stifteinsatz<br>Male insert<br><br><br>Buchseinsatz<br>Female insert<br> | C146 10A024 500 1<br>+<br>C146 10A024 505 1 | C146 10B024 500 1<br>+<br>C146 10B024 505 1 |

C 146 E

48 + 

Crimpkontakte  
Crimp contacts

Gestanzte Einzelkontakte / Stamped single contacts    Gestanzte Bandkontakte für Crimpzangen / Stamped contacts on reel for hand crimping tools    Gestanzte Bandkontakte für Crimpmaschinen / Stamped contacts on reel for crimp machines



Gedrehte Einzelkontakte  
Turned single contacts



200 / 100 Stück

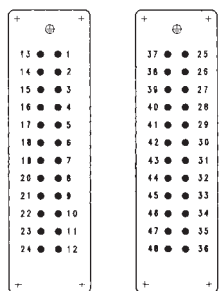
200 / 100 pcs



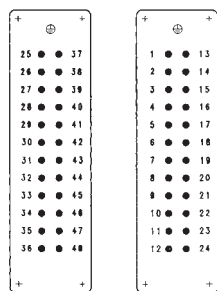
| Lieferform<br>Supplied as                                                               | für Leiterquerschnitt<br>for wire gauge | AWG     | Stückzahl<br>Pieces | Bestell Nr. <sup>1)</sup><br>Stiftkontakt<br>Male contact | Part No. <sup>1)</sup><br>Buchsenkontakt<br>Female contact | Bestell Nr. <sup>1)</sup><br>Stiftkontakt<br>Male contact | Part No. <sup>1)</sup><br>Buchsenkontakt<br>Female contact |
|-----------------------------------------------------------------------------------------|-----------------------------------------|---------|---------------------|-----------------------------------------------------------|------------------------------------------------------------|-----------------------------------------------------------|------------------------------------------------------------|
| Gestanzte Einzelkontakte / Stamped single contacts                                      |                                         |         |                     | versilbert / silver plating                               |                                                            | vergoldet / gold plating                                  |                                                            |
|                                                                                         | 0,5 - 1,5 mm <sup>2</sup>               | 20 - 16 | 100                 | VN01 025 0001 (101)                                       | VN02 025 0001 (101)                                        | VN01 025 0001 (102)                                       | VN02 025 0001 (102)                                        |
|                                                                                         | 1,5 - 2,5 mm <sup>2</sup>               | 16 - 14 | 100                 | VN01 025 0010 (101)                                       | VN02 025 0010 (101)                                        | VN01 025 0010 (102)                                       | VN02 025 0010 (102)                                        |
| Gestanzte Bandkontakte für Crimpzangen / Stamped Contacts on reel for hand crimp tools  |                                         |         |                     |                                                           |                                                            |                                                           |                                                            |
|                                                                                         | 0,5 - 1,5 mm <sup>2</sup>               | 20 - 16 | 200                 | ZN01 025 0001 (1)                                         | ZN02 025 0001 (1)                                          | ZN01 025 0001 (2)                                         | ZN02 025 0001 (2)                                          |
|                                                                                         | 1,5 - 2,5 mm <sup>2</sup>               | 16 - 14 | 100                 | ZN01 025 0010 (1)                                         | ZN02 025 0010 (1)                                          | ZN01 025 0010 (2)                                         | ZN02 025 0010 (2)                                          |
| Gestanzte Bandkontakte für Crimpmaschinen / Stamped contacts on reel for crimp machines |                                         |         |                     |                                                           |                                                            |                                                           |                                                            |
| Kontaktzuführung rechts<br>Contact feeding right hand side                              | 0,5 - 1,5 mm <sup>2</sup>               | 20 - 16 | 2000                | HN01 025 0001 (1)                                         | HN02 025 0001 (1)                                          |                                                           |                                                            |
|                                                                                         | 1,5 - 2,5 mm <sup>2</sup>               | 16 - 14 | 2000                | HN01 025 0010 (1)                                         | HN02 025 0010 (1)                                          |                                                           |                                                            |
| Kontaktzuführung links<br>Contact feeding left hand side                                | 0,5 - 1,5 mm <sup>2</sup>               | 20 - 16 | 2000                | TN01 025 0001 (1)                                         | TN02 025 0001 (1)                                          |                                                           |                                                            |
|                                                                                         | 1,5 - 2,5 mm <sup>2</sup>               | 16 - 14 | 2000                | TN01 025 0010 (1)                                         | TN02 025 0010 (1)                                          |                                                           |                                                            |
| Gedrehte Crimpkontakte / Turned crimp contacts                                          |                                         |         |                     |                                                           |                                                            |                                                           |                                                            |
| Einzelkontakt<br>Single contact                                                         | 0,5 mm <sup>2</sup>                     | 20      | 100                 | VN01 025 0035 (1)C                                        | VN02 025 0035 (1)C                                         | VN01 025 0035 (2)C                                        | VN02 025 0035 (2)C                                         |
|                                                                                         | 0,75 - 1,0 mm <sup>2</sup>              | 18      | 100                 | VN01 025 0036 (1)C                                        | VN02 025 0036 (1)C                                         | VN01 025 0036 (2)C                                        | VN02 025 0036 (2)C                                         |
|                                                                                         | 1,5 mm <sup>2</sup>                     | 16      | 100                 | VN01 025 0037 (1)C                                        | VN02 025 0037 (1)C                                         | VN01 025 0037 (2)C                                        | VN02 025 0037 (2)C                                         |
|                                                                                         | 2,5 mm <sup>2</sup>                     | 14      | 100                 | VN01 025 0038 (1)C                                        | VN02 025 0038 (1)C                                         | VN01 025 0038 (2)C                                        | VN02 025 0038 (2)C                                         |
|                                                                                         | 4,0 mm <sup>2</sup>                     | 12      | 100                 | VN01 025 0039 (1)C                                        | VN02 025 0039 (1)C                                         | VN01 025 0039 (2)C                                        | VN02 025 0039 (2)C                                         |

Montageanleitung, Steckbild / Assembly instruction, pin layout

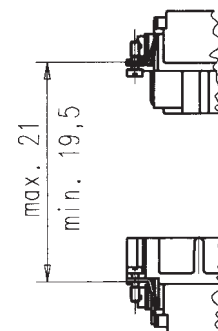
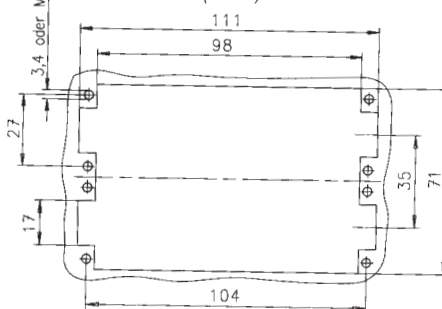
Stifteinsatz  
Male insert



Buchseinsatz  
Female insert

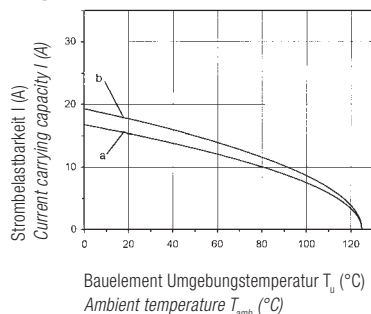


Montageausschnitt (Kontaktträger)  
Panel cut out (insert)



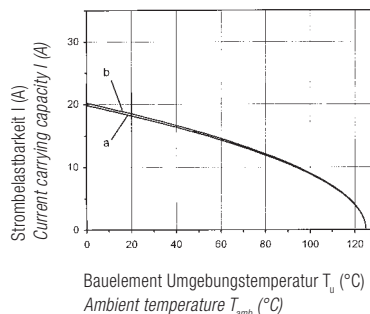
Derating Kurven / Derating curves

Gestanzte Kontakte  
Stamped contacts



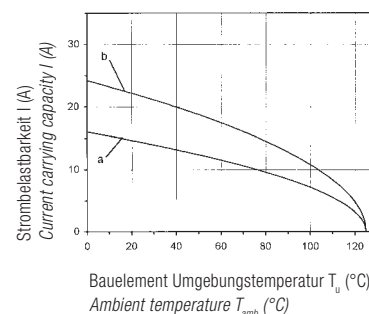
Kurve a: 1,5 mm<sup>2</sup> Leiterquerschnitt  
Curve a: 1,5 mm<sup>2</sup> wire gauge

Gedrehte Kontakte  
Turned contacts



Kurve b: 2,5 mm<sup>2</sup> Leiterquerschnitt  
Curve b: 2,5 mm<sup>2</sup> wire gauge

Schraubanschluss  
Screw termination



<sup>1)</sup> Erläuterung der Bestell-Nr. für die Kontakte siehe Seite 4  
Explanation of the Part No. for contacts see page 4

Abisolierlängen siehe S. 198  
Stripping length see p. 198

# C 146 E

## Werkzeuge <sup>1)</sup> Tools <sup>1)</sup>

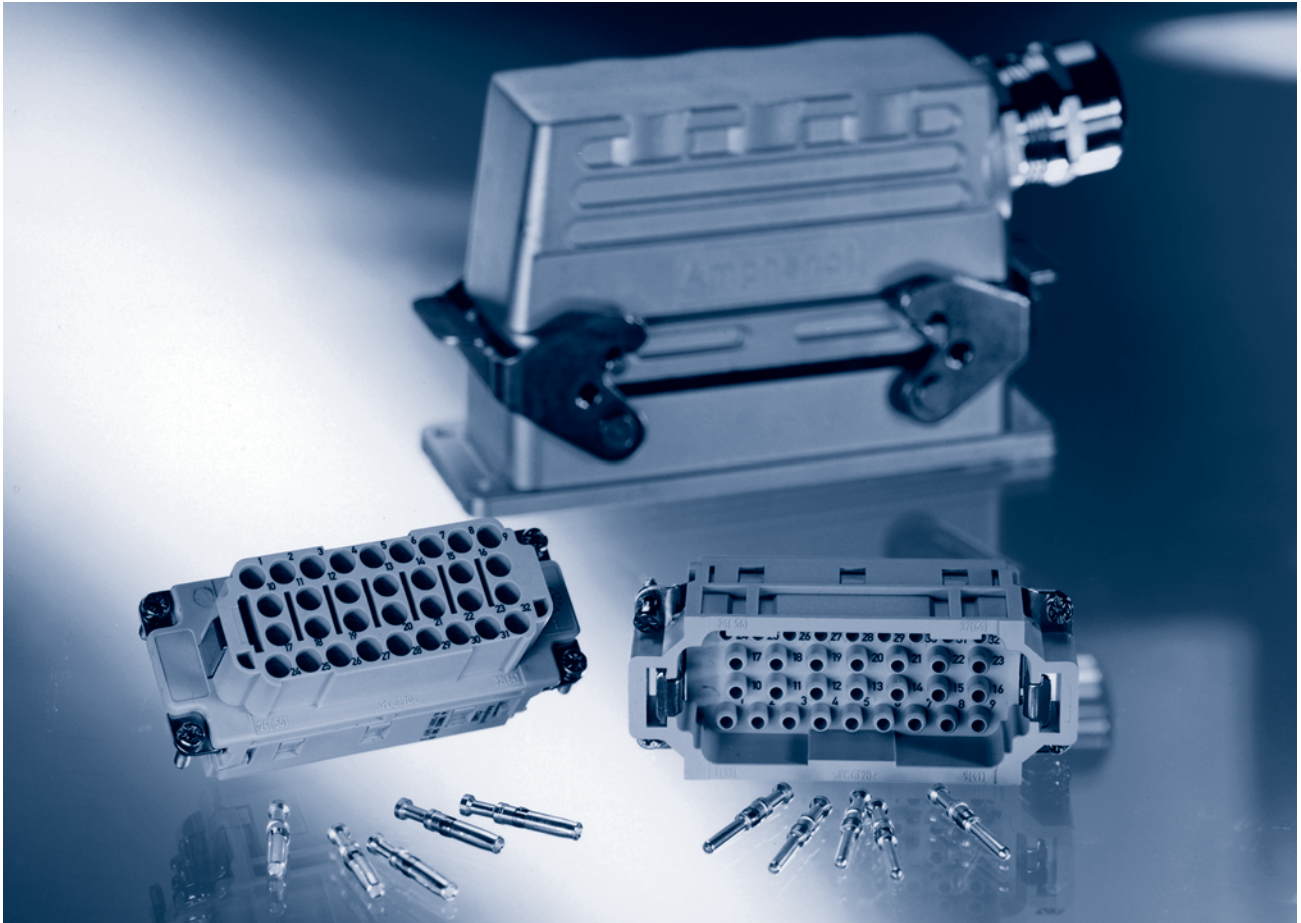
| Bezeichnung / Description                                                                   | für Leiterquerschnitt<br>for wire gauge                | Bestell Nr. / Part No.                 |                             | Werkzeuge / Tools         |
|---------------------------------------------------------------------------------------------|--------------------------------------------------------|----------------------------------------|-----------------------------|---------------------------|
|                                                                                             |                                                        | Kontaktaufnahme / Contact locator      | Crimpbacken / Crimping dies |                           |
| Lösewerkzeug für gestanzte Kontakte<br>Removal tool for stamped contacts                    | –                                                      | –                                      | –                           | FG 0200 146 1             |
| Crimpzange für gestanzte Einzelkontakte<br>Crimping tool for stamped single contacts        | 0,5 - 1,5 mm <sup>2</sup><br>1,5 - 2,5 mm <sup>2</sup> | TA 0004 146 000 1<br>TA 0005 146 000 3 | TA 0000 163<br>TA 0000 141  | TA 0000                   |
| 4-Kerb Crimpzange für<br>gedrehte Kontakte<br>4-indent crimping tool for<br>turned contacts | 0,5 - 4,0 mm <sup>2</sup>                              | –                                      | –                           | TB 0600 146 <sup>2)</sup> |



<sup>1)</sup> Weitere Informationen siehe Katalog „Werkzeuge“ / Further information see catalogue „Tools“

<sup>2)</sup> Incl. Prüfstiftset + Kontaktaufnahme / incl. calibration pin set + contact locator

# C 146 EE

EE



| Hauptmerkmale                                                                                                                                                                                         |                                                                                     | Main characteristics                                                                                                                         |                                  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| <ul style="list-style-type: none"> <li>• Bemessungsspannung 500 V (600 V UL / CSA)</li> <li>• Bemessungsstrom 16 A</li> <li>• Anschlusstechnik: crimpen</li> <li>• Polzahl: 10, 18, 32, 46</li> </ul> |                                                                                     |                                                                                                                                              |                                  |
| Zulassungen / Approvals<br>Prüfstelle / Testhouse                                                                                                                                                     |                                                                                     | Kennwerte / Characteristics                                                                                                                  | Zulassungs-Nummer / Approval-No. |
| UL                                                                                                                                                                                                    |  | 600 V, 15 A                                                                                                                                  | E 63093                          |
| CSA                                                                                                                                                                                                   |  | 600 V, 16 A                                                                                                                                  | 172062-1027396 (LR 48323-2)      |
| <p>Zulassungen beziehen sich im allgemeinen auf repräsentative Ausführungen der Steckverbinderserie. Prüfumfang und Prüfvorschrift auf Anfrage.</p>                                                   |                                                                                     | <p><i>In general approvals refer to representative versions of the connector series. Extent and specification of tests upon request.</i></p> |                                  |

**C 146 EE**


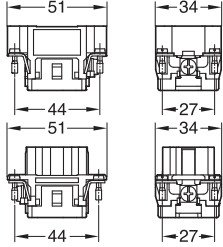


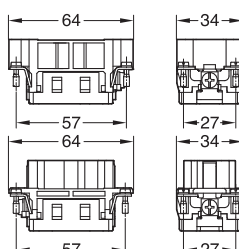
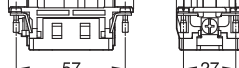

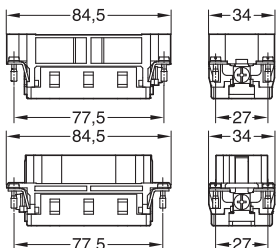
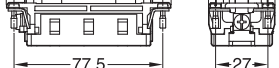

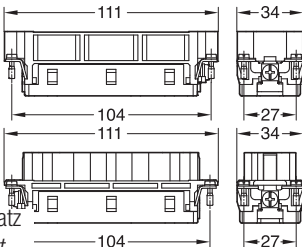

**500 V~ 16 A**



**Connectors**

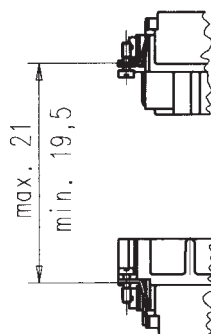
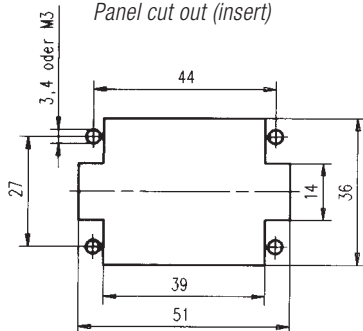
**für gedrehte Kontakte  
for turned contacts**

**Gehäuse siehe Seite 126-153  
Housings see page 126-153**

| Bezeichnung<br><i>Description</i>                                                                                                                   | Maßzeichnung<br><i>Drawing</i>                                                                                                                                                                                                             | Bestell Nr. / Part No.     |                              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|------------------------------|
|                                                                                                                                                     |                                                                                                                                                                                                                                            | Stifteinsatz / Male insert | Buchseinsatz / Female insert |
| Kontakteinsatz <b>10 + ⊕</b><br>Contact insert <b>10 + ⊕</b><br>   | Stifteinsatz<br>Male insert<br><br>Buchseinsatz<br>Female insert<br>     | C146 10A010 500 10         | C146 10B010 500 10           |
| Kontakteinsatz <b>18 + ⊕</b><br>Contact insert <b>18 + ⊕</b><br>  | Stifteinsatz<br>Male insert<br><br>Buchseinsatz<br>Female insert<br>   | C146 10A018 500 10         | C146 10B018 500 10           |
| Kontakteinsatz <b>32 + ⊕</b><br>Contact insert <b>32 + ⊕</b><br> | Stifteinsatz<br>Male insert<br><br>Buchseinsatz<br>Female insert<br> | C146 10A032 500 10         | C146 10B032 500 10           |
| Kontakteinsatz <b>46 + ⊕</b><br>Contact insert <b>46 + ⊕</b><br> | Stifteinsatz<br>Male insert<br><br>Buchseinsatz<br>Female insert<br> | C146 10A046 500 10         | C146 10B046 500 10           |

**Montageanleitung / Assembly instruction**

Montageausschnitt (Kontaktträger)  
 Panel cut out (insert)



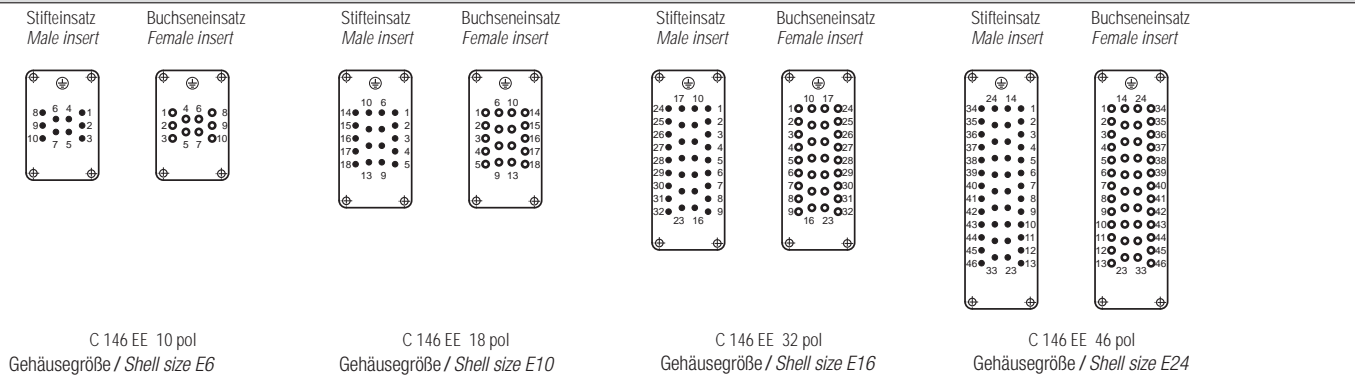
# C 146 EE

## Crimp contacts

Gedrehte 2,5 mm Kontakte  
Turned 2,5 mm contacts



### Steckbild, Ansicht Anschlussseite / Pin Layout, View from termination side

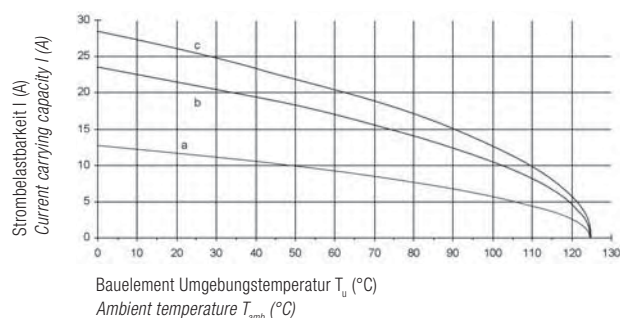


EE

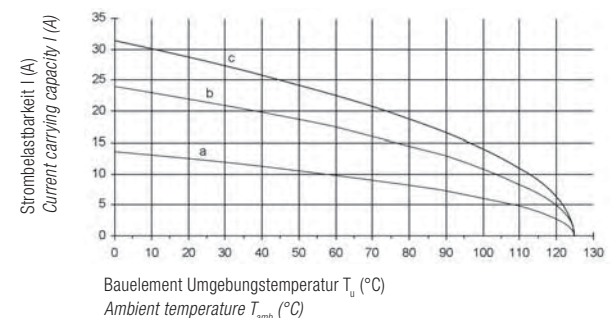
| Lieferform<br>Supplied as                      | für Leiter-<br>querschnitt<br>for wire gauge | AWG | Stück-<br>zahl<br>Pieces | Bestell Nr. <sup>1)</sup><br>Stiftkontakt<br>Male contact | Part No. <sup>1)</sup><br>Buchsenkontakt<br>Female contact | Bestell Nr. <sup>1)</sup><br>Stiftkontakt<br>Male contact | Part No. <sup>1)</sup><br>Buchsenkontakt<br>Female contact |
|------------------------------------------------|----------------------------------------------|-----|--------------------------|-----------------------------------------------------------|------------------------------------------------------------|-----------------------------------------------------------|------------------------------------------------------------|
| Gedrehte Crimpkontakte / Turned Crimp Contacts |                                              |     |                          | versilbert / silver plating                               |                                                            | vergoldet / gold plating                                  |                                                            |
| Einzelkontakte<br>Single contact               | 0,5 mm <sup>2</sup>                          | 20  | 100                      | VN01 025 0035 (1)C                                        | VN02 025 0035 (1)C                                         | VN01 025 0035 (2)C                                        | VN02 025 0035 (2)C                                         |
|                                                | 0,75 - 1,0 mm <sup>2</sup>                   | 18  | 100                      | VN01 025 0036 (1)C                                        | VN02 025 0036 (1)C                                         | VN01 025 0036 (2)C                                        | VN02 025 0036 (2)C                                         |
|                                                | 1,5 mm <sup>2</sup>                          | 16  | 100                      | VN01 025 0037 (1)C                                        | VN02 025 0037 (1)C                                         | VN01 025 0037 (2)C                                        | VN02 025 0037 (2)C                                         |
|                                                | 2,5 mm <sup>2</sup>                          | 14  | 100                      | VN01 025 0038 (1)C                                        | VN02 025 0038 (1)C                                         | VN01 025 0038 (2)C                                        | VN02 025 0038 (2)C                                         |
|                                                | 4,0 mm <sup>2</sup>                          | 12  | 100                      | VN01 025 0039 (1)C                                        | VN02 025 0039 (1)C                                         | VN01 025 0039 (2)C                                        | VN02 025 0039 (2)C                                         |
| Kontaktlösewerkzeug<br>Contact removal tool    |                                              |     |                          | FG 0300 146 (7)                                           |                                                            |                                                           |                                                            |

### Derating Kurven / Derating curves

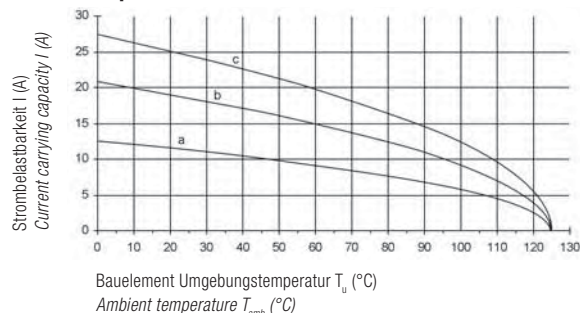
#### C146 EE 10 pol



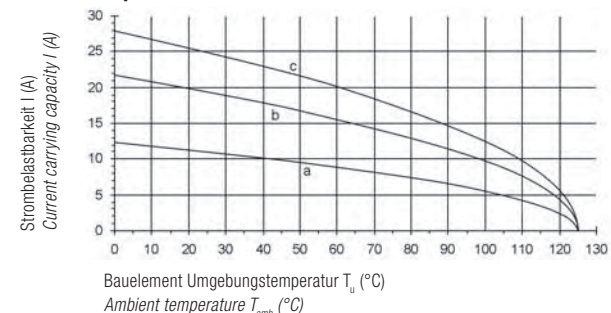
#### C146 EE 18 pol



#### C146 EE 32 pol



#### C146 EE 46 pol



**Kurve a:** 0,5 mm<sup>2</sup> Anschlussquerschnitt  
**Curve a:** 0,5 mm<sup>2</sup> wire gauge

**Kurve b:** 2,5 mm<sup>2</sup> Anschlussquerschnitt  
**Curve b:** 2,5 mm<sup>2</sup> wire gauge

**Kurve c:** 4,0 mm<sup>2</sup> Anschlussquerschnitt  
**Curve c:** 4,0 mm<sup>2</sup> wire gauge

Abisolierlängen siehe S. 198 / Stripping length see p. 198

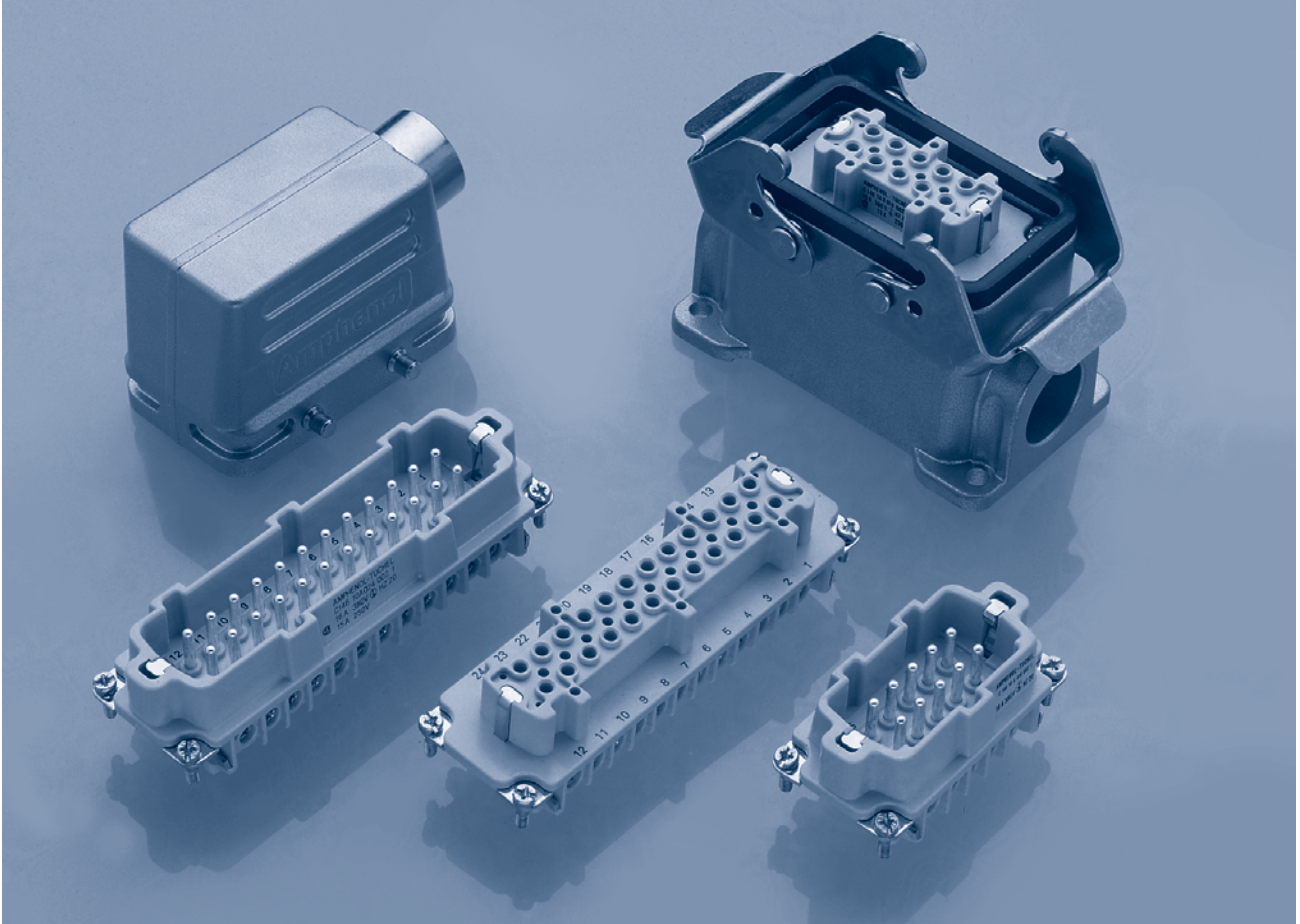
| Allgemeine Kennwerte                 | General Characteristics                | Norm / Standard        | Wert / Value                                |                        |        |        |
|--------------------------------------|----------------------------------------|------------------------|---------------------------------------------|------------------------|--------|--------|
| Polzahl                              | Number of contacts                     |                        | 10 + ⊕                                      | 18 + ⊕                 | 32 + ⊕ | 46 + ⊕ |
| Anschluss technik                    | Termination technique                  |                        | crimpen / crimp                             |                        |        |        |
| Anschlussquerschnitt                 | Wire gauge                             |                        | 0,5 mm <sup>2</sup> - 4,0 mm <sup>2</sup>   |                        |        |        |
| Brennbarkeit                         | Flammability                           | UL 94                  | V-0                                         |                        |        |        |
| Elektrische Kennwerte                | Electrical Characteristics             |                        |                                             |                        |        |        |
| Bemessungsspannung                   | Rated voltage                          | IEC 60664-1            | 500 V (600 V UL / CSA)                      |                        |        |        |
| Verschmutzungsgrad                   | Pollution degree                       | IEC 60664-1            | 3                                           |                        |        |        |
| Überspannungskategorie               | Installation (overvoltage) category    | IEC 60664-1            | III                                         |                        |        |        |
| Isolierstoffgruppe                   | Material group                         | IEC 60664-1            | III b                                       |                        |        |        |
| Bemessungs-Stoßspannung              | Rated impulse withstand voltage        | IEC 60664-1            | 6 kV                                        |                        |        |        |
| Spannungsfestigkeit                  | Voltage proof                          | IEC 60512-2; Test 4 a  | 3 kV                                        |                        |        |        |
| Strombelastbarkeit                   | Current carrying capacity              | IEC 60512-3; Test 5 b  | siehe Derating Kurven / see derating curves |                        |        |        |
| Bemessungsstrom $T_u = 40\text{ °C}$ | Rated current $T_{amb} = 40\text{ °C}$ |                        | 16 A                                        |                        |        |        |
| Durchgangswiderstand                 | Contact resistance                     | IEC 60512-2; Test 2 a  | ≤ 5 m Ω                                     |                        |        |        |
| Isolationswiderstand                 | Insulation resistance                  | IEC 60512-2; Test 3 a  | ≥ 10 <sup>12</sup> Ω <sup>1)</sup>          |                        |        |        |
| Luftstrecke                          | Clearance                              | IEC 60664-1            | > 5,5 mm                                    |                        |        |        |
| Kriechstrecke                        | Creepage                               | IEC 60664-1            | > 10 mm                                     |                        |        |        |
| Klimatische Kennwerte                | Climatical Characteristics             |                        |                                             |                        |        |        |
| Prüfklasse                           | Climatic category                      | IEC 60068-1            | 40 / 100 / 21                               |                        |        |        |
| Obere Grenztemperatur                | Upper temperature                      | IEC 60512-6; Test 11 i | + 100 °C / 1000 h                           |                        |        |        |
| Untere Grenztemperatur               | Lower temperature                      | IEC 60512-6; Test 11 i | - 40 °C                                     |                        |        |        |
| Mechanische Kennwerte                | Mechanical Characteristics             |                        |                                             |                        |        |        |
| Mechanische Lebensdauer              | Mechanical operation                   | IEC 60512-5; Test 9 a  | ≥ 500 Steckzyklen / mating cycles           |                        |        |        |
| IP-Schutzart Stifteinsatz            | IP-degree of protection pin insert     | IEC 60529              | ungesteckt/unmated<br>IP00                  | gesteckt/mated<br>IP20 |        |        |
| IP-Schutzart Buchseneinsatz          | IP-degree of protection socket insert  | IEC 60529              | ungesteckt/unmated<br>IP20                  | gesteckt/mated<br>IP20 |        |        |
| Werkstoffe                           | Materials                              |                        |                                             |                        |        |        |
| Kontakteinsatz                       | Insert                                 |                        | PC                                          |                        |        |        |
| Kontakte                             | Contacts                               |                        | CuZn (Messing / brass)                      |                        |        |        |
| Kontaktoberfläche                    | Contact plating                        |                        | Ag (silber / silver)                        |                        |        |        |
| Farbe                                | Colour                                 |                        | grau / grey                                 |                        |        |        |

<sup>1)</sup> Bei Beanspruchung > 10<sup>10</sup> Ω / Under operating conditions > 10<sup>10</sup> Ω



# C 146 E/FE/KO

E/FE/KO



## Hauptmerkmale

- Bemessungsspannung 400 V
- Material Kontakte: Eisen-Konstantan
- Bemessungsstrom 10 A
- Polzahl: 6, 10, 16, 24

## Main characteristics

- Rated voltage 400 V
- Material contacts: iron-constantan
- Rated current 10 A
- Number of contacts: 6, 10, 16, 24

Bezeichnung - Abbildung

*Description - Figure*

**Steckverbinder mit Eisen-(FE) und Konstantan(KO)-Kontaktelementen**

finden vornehmlich in der Steuer- und Regeltechnik ihren Einsatz, und zwar dort, wo es gilt, zwischen Eisen- bzw. Konstantan-Leitungen „Schnittstellen“ zu schaffen. FE/KO-Kabel werden üblicherweise als Verbindungsglied zwischen Thermoelement und Regelgerät eingesetzt.

Z. B. : Messen und Regeln der Temperatur in Kunststoff-Spritzformen Spritzformen (Heißkanal-Anspritzung) mittels Thermofühler und elektronischem Regelgerät.

Durch das Einbringen von FE/KO-Steckverbindern in die „Thermofühlerleitung“ werden die Messergebnisse verfeinert, d. h. die Regelungsgenauigkeit wird stark reduziert.

**Soll-Wert-Abweichung bei verschiedenen Kontaktwerkstoff-Paarungen**

| Kontaktwerkstoffe<br>Soll.-Temp. | ohne Thermo-Kontakte |          | mit Thermo-Kontakte |         |
|----------------------------------|----------------------|----------|---------------------|---------|
|                                  | MS/FE                | MS/KO    | FE/FE               | KO/KO   |
| 100 °C                           | + 4 %                | - 16 %   | - 4 %               | - 2 %   |
| 200 °C                           | + 2,5 %              | - 8 %    | - 3 %               | - 1,5 % |
| 300 °C                           | + 1,3 %              | - 12,7 % | - 1,3 %             | 0 %     |
| 400 °C                           | + 1,5 %              | - 4,5 %  | - 1,0 %             | 0 %     |

Die Werte sind auf eine Umgebungstemperatur von 100 °C bezogen.

Die Ursache der Sollwert-Abweichung (Übertragungsverlust) bei Steckverbindern mit Messingkontakten liegt in der selbsterzeugenden Thermospannung (hervorgerufen durch den Wechsel von FE-Draht zu Messing-Kontaktelement) bzw. durch die Temperaturschwankungen an den Kontaktelementen.

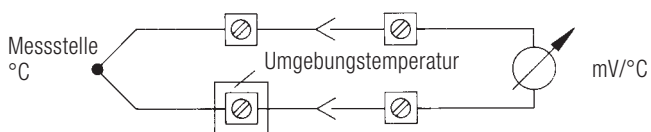
**Einsatz von Thermo-Werkstoffen**

in Abhängigkeit der Messtemperatur

| Temperaturbereich    | Temperaturbereich                   |
|----------------------|-------------------------------------|
| < 150 °C             | beliebig / Widerstandsmessung       |
| 150 °C - 450 °C      | FE-KO (Eisen/Konstantan)            |
| 450 °C - ca. 1000 °C | Ni/Cr - Ni (Nickel/Cromleg./Nickel) |

**Faktoren, die das Messergebnis zusätzlich beeinflussen**

- schwankende Umgebungstemperaturen (am Steckverbinder)



**Connectors with iron (FE) and constantan (CO) contacts**

are basically used in measuring and control circuits to serve as interface between FE/CO thermocouples and control unit, i. e. temperature control of moulds in injection moulding machines.

Through the use of FE/CO connectors in the thermocouple circuit the measuring results are more accurate, thus the tolerance of the temperature control is much narrower.

Amphenol's Industrial Connectors with iron (FE) and Constantan (CO) contacts are used to connect FE/CO thermocouples with electronic signal amplifiers in measuring and control circuits, i. e. for temperature control of moulding machines.

**Errors with various combinations**

| Contact Material<br>Nominal Temp. | without Thermo Contacts |          | with Thermo Contacts |         |
|-----------------------------------|-------------------------|----------|----------------------|---------|
|                                   | MS/FE                   | MS/KO    | FE/FE                | KO/KO   |
| 100 °C                            | + 4 %                   | - 16 %   | - 4 %                | - 2 %   |
| 200 °C                            | + 2,5 %                 | - 8 %    | - 3 %                | - 1,5 % |
| 300 °C                            | + 1,3 %                 | - 12,7 % | - 1,3 %              | 0 %     |
| 400 °C                            | + 1,5 %                 | - 4,5 %  | - 1,0 %              | 0 %     |

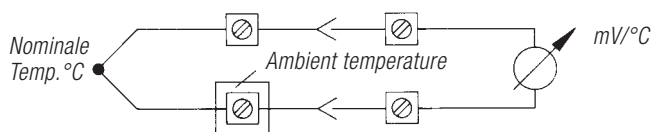
The connection of unlike metals (FE/Brass and CO/Brass) generate thermoelectric voltage errors in the measuring circuit caused by the flow from iron wire to the brass contact or by temperature changes at the contact elements.

By using FE/CO contacts respectively these deviations will be minimized.

**Material / Temperature Range**

| Temperatur range         | Material/measurement procedure  |
|--------------------------|---------------------------------|
| < 150 °C                 | any/Resistance measurement      |
| 150 °C - 450 °C          | FE-CO (iron/Constantan)         |
| 450 °C - approx. 1000 °C | Ni/Cr-Ni (Nickel/Chrome/Nickel) |

**Temperature changes cause errors:**



| Allgemeine Kennwerte                      | General Characteristics                | Norm / Standard        | Wert / Value                                                             |        |                        |         |
|-------------------------------------------|----------------------------------------|------------------------|--------------------------------------------------------------------------|--------|------------------------|---------|
| Polzahl                                   | Number of contacts                     |                        | 6 + ⊕                                                                    | 10 + ⊕ | 16 + ⊕                 | 24 + ⊕  |
| Anschluss technik                         | Termination technique                  |                        | schrauben / screw                                                        |        |                        |         |
| Anschlussquerschnitt                      | Wire gauge                             |                        | 0,25 mm <sup>2</sup> - 2,5 mm <sup>2</sup>                               |        |                        |         |
| Brennbarkeit                              | Flammability                           | UL 94                  | V-0                                                                      |        |                        |         |
| Elektrische Kennwerte                     | Electrical Characteristics             |                        |                                                                          |        |                        |         |
| Bemessungsspannung                        | Rated voltage                          | IEC 60664-1            | 400 V                                                                    |        |                        |         |
| Verschmutzungsgrad                        | Pollution degree                       | IEC 60664-1            | 3                                                                        |        |                        |         |
| Überspannungskategorie                    | Installation (overvoltage) category    | IEC 60664-1            | III                                                                      |        |                        |         |
| Isolierstoffgruppe                        | Material group                         | IEC 60664-1            | III b                                                                    |        |                        |         |
| Bemessungs-Stoßspannung                   | Rated impulse withstand voltage        | IEC 60664-1            | 6,0 kV                                                                   |        |                        |         |
| Spannungsfestigkeit                       | Voltage proof                          | IEC 60512-2; Test 4 a  | 2,8 kV                                                                   |        |                        |         |
| Bemessungsstrom $T_u = 40\text{ °C}$      | Rated current $T_{amb} = 40\text{ °C}$ | IEC 60512-3            | 10 A                                                                     |        |                        |         |
| Durchgangswiderstand                      | Contact resistance                     | IEC 60512-2; Test 2 a  | ≤ 10 m Ω                                                                 |        |                        |         |
| Isolationswiderstand                      | Insulation resistance                  | IEC 60512-2; Test 3 a  | ≥ 10 <sup>12</sup> Ω <sup>1)</sup>                                       |        |                        |         |
| Klimatische Kennwerte                     | Climatical Characteristics             |                        |                                                                          |        |                        |         |
| Prüfklasse                                | Climatic category                      | IEC 60068-1            | 40 / 100 / 21                                                            |        |                        |         |
| Obere Grenztemperatur                     | Upper temperature                      | IEC 60512-6; Test 11 i | + 100 °C / 1000 h                                                        |        |                        |         |
| Untere Grenztemperatur                    | Lower temperature                      | IEC 60512-6; Test 11 i | - 40 °C                                                                  |        |                        |         |
| Mechanische Kennwerte                     | Mechanical Characteristics             |                        |                                                                          |        |                        |         |
| Steck- und Ziehkraft                      | Insertion and withdrawal forces        | IEC 60512-7; Test 13 b | < 40 N                                                                   | < 70 N | < 95 N                 | < 165 N |
| <sup>2)</sup> IP-Schutzart Stifteinsatz   | IP-degree of protection pin insert     | IEC 60529              | ungesteckt/unmated<br>IP00                                               |        | gesteckt/mated<br>IP20 |         |
| <sup>2)</sup> IP-Schutzart Buchseneinsatz | IP-degree of protection socket insert  | IEC 60529              | ungesteckt/unmated<br>IP20                                               |        | gesteckt/mated<br>IP20 |         |
| Gewicht Stifteinsatz                      | Weight pin insert                      |                        | 45 g                                                                     | 60 g   | 78 g                   | 105 g   |
| Gewicht Buchseneinsatz                    | Weight socket insert                   |                        | 45 g                                                                     | 60 g   | 78 g                   | 105 g   |
| Mechanische Lebensdauer                   | Mechanical operation                   | IEC 60512-5; Test 9 a  | ≥ 100 Steckzyklen / mating cycles                                        |        |                        |         |
| Werkstoffe                                | Materials                              |                        |                                                                          |        |                        |         |
| Material Kontakteinsatz                   | Material insert                        |                        | PA, GV (Polyamid)                                                        |        |                        |         |
| Material Kontakte                         | Material contacts                      |                        | Eisen / iron; gal cd 4<br>Konstantan = roh; constantan = without plating |        |                        |         |
| Farbton                                   | Colour                                 |                        | grau / grey RAL 7032                                                     |        |                        |         |

<sup>1)</sup> Bei Beanspruchung >10<sup>10</sup> Ω / Under operating conditions > 10<sup>10</sup> Ω

<sup>2)</sup> IP-Schutzart im Anschlussbereich der Schraubausführung IP 10 / IP-degree of protection on termination side of screw version IP 10



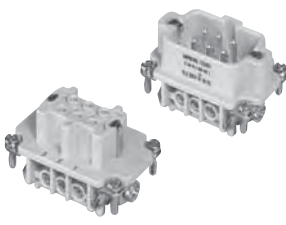
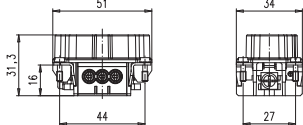
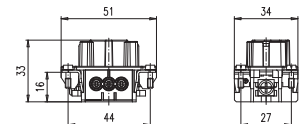


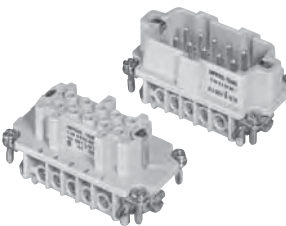
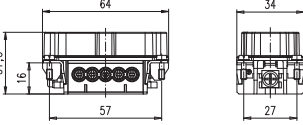
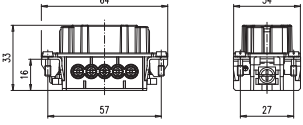


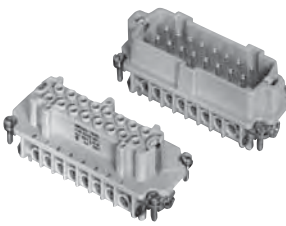
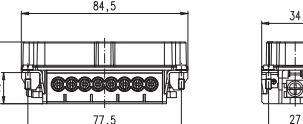
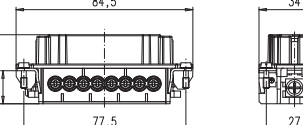


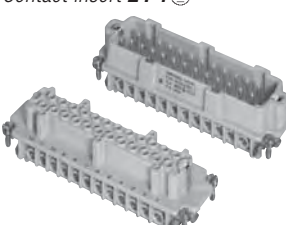
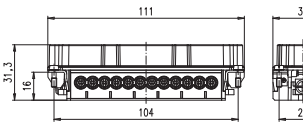
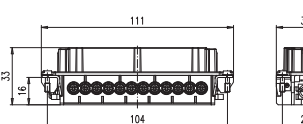
C 146 E FE-KO

6 -24 + 

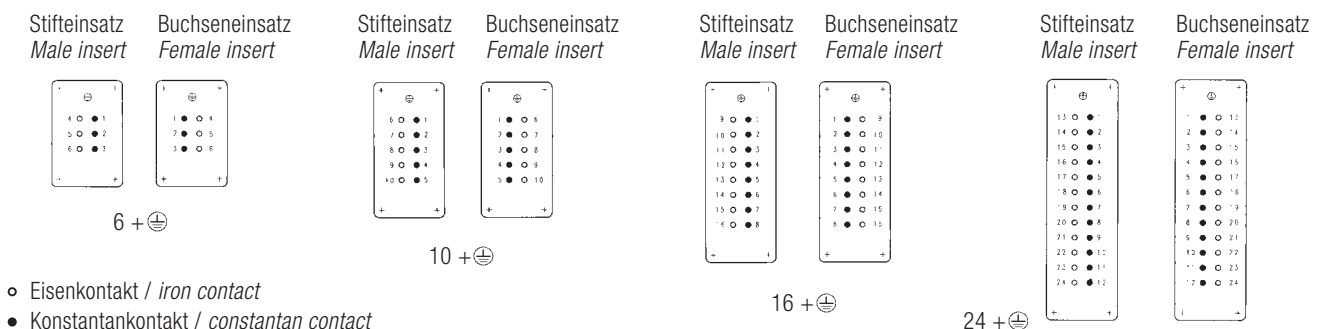
Steckverbinder mit Eisen-Konstantan-Kontakten  
Connectors with iron-constantan contacts

Steckverbinder  
Connectors

Gehäuse siehe Seite 126-153  
Housings see page 126-153

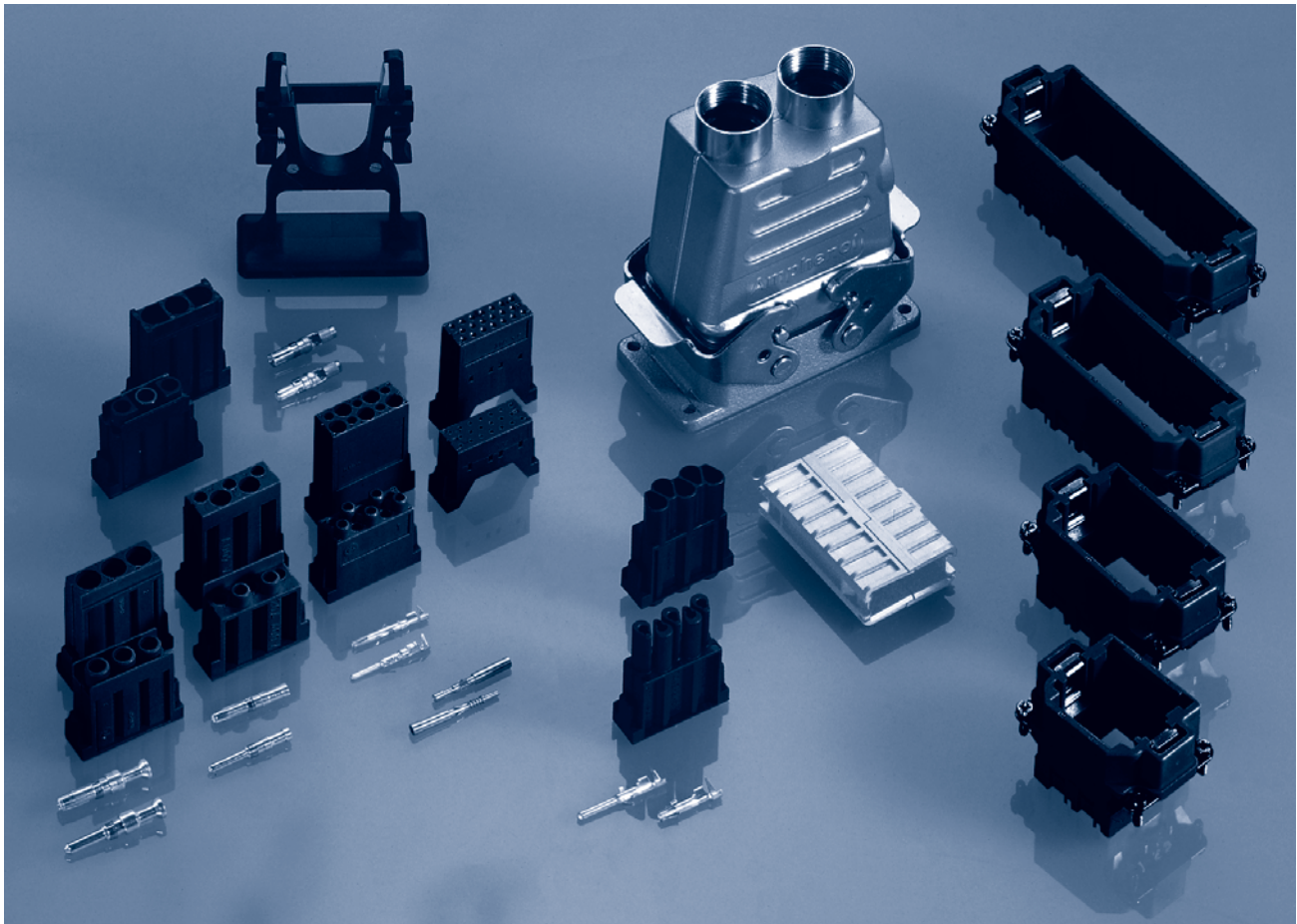
| Bezeichnung - Abbildung<br>Description - Figure                                                                                                                                                                                                                                                                                   | Maßzeichnung<br>Drawing                                                                                                                                                                                                                    | Bestell Nr. / Part No.     |                              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|------------------------------|
|                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                            | Stifteinsatz / Male insert | Buchseinsatz / Female insert |
| Kontakteinsatz 6  <sup>1)</sup><br>Contact insert 6  <sup>1)</sup><br>         | Stifteinsatz<br>Male insert<br><br>Buchseinsatz<br>Female insert<br>     | C146 10A006 810 1          | C146 10B006 810 1            |
| Kontakteinsatz 10  <sup>1)</sup><br>Contact insert 10  <sup>1)</sup><br>      | Stifteinsatz<br>Male insert<br><br>Buchseinsatz<br>Female insert<br>    | C146 10A010 810 1          | C146 10B010 810 1            |
| Kontakteinsatz 16  <sup>1)</sup><br>Contact insert 16  <sup>1)</sup><br> | Stifteinsatz<br>Male insert<br><br>Buchseinsatz<br>Female insert<br> | C146 10A016 810 1          | C146 10B016 810 1            |
| Kontakteinsatz 24  <sup>1)</sup><br>Contact insert 24  <sup>1)</sup><br> | Stifteinsatz<br>Male insert<br><br>Buchseinsatz<br>Female insert<br> | C146 10A024 810 1          | C146 10B024 810 1            |

Steckbild / pin layout









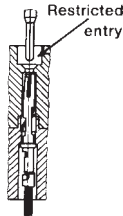
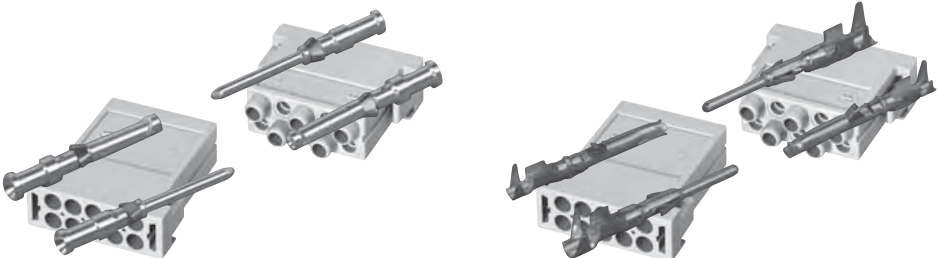
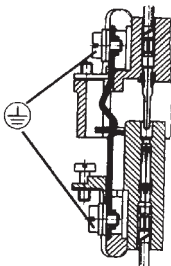

<sup>1)</sup> mit Drahtschutz / with wire protection

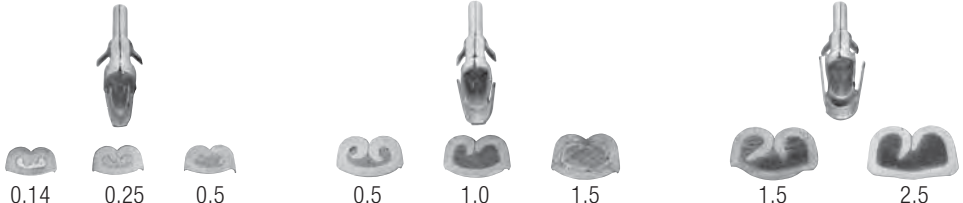

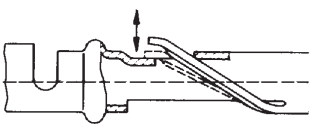
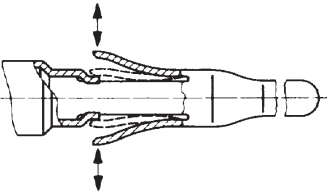


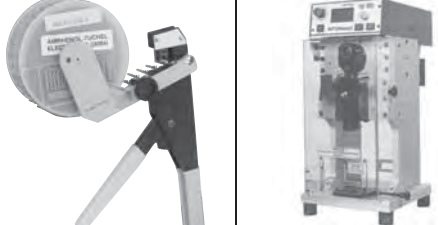
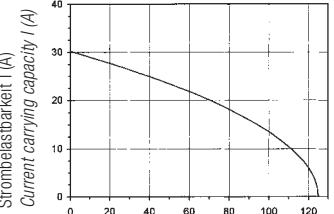
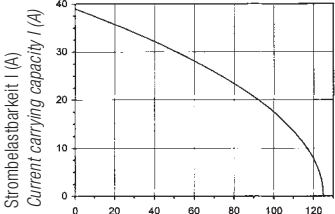
# C 146 M



M

| <b>Hauptmerkmale</b>                                                                                                                                                                                                                  |                                                                                     | <b>Main characteristics</b>                                                                                                                                                                                           |          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| <ul style="list-style-type: none"> <li>• Modular aufgebauter Steckverbinder</li> <li>• Bemessungsspannung 63 - 1000 V</li> <li>• Bemessungsstrom 5 A ... 70 A</li> <li>• Anschlussart: crimpen</li> <li>• Polzahl: 3 - 280</li> </ul> |                                                                                     | <ul style="list-style-type: none"> <li>• Modular connector</li> <li>• Rated voltage 63 - 1000 V</li> <li>• Rated current 5 A ... 70 A</li> <li>• Termination: crimp</li> <li>• Number of contacts: 3 - 280</li> </ul> |          |
| <b>Zulassungen / Approvals</b>                                                                                                                                                                                                        |                                                                                     | <b>Zulassungs-Nummer / Approval-No.</b>                                                                                                                                                                               |          |
| <b>Prüfstelle / Testhouse</b>                                                                                                                                                                                                         |                                                                                     |                                                                                                                                                                                                                       |          |
| VDE                                                                                                                                                                                                                                   |  |                                                                                                                                                                                                                       | 56 79 ÜG |
| BGZ                                                                                                                                                                                                                                   |  | Kennwerte<br>siehe Bemessungsspannung<br>und Bemessungsstrom S. 61                                                                                                                                                    | VBG 70   |
| SEV                                                                                                                                                                                                                                   |  |                                                                                                                                                                                                                       |          |
| UL                                                                                                                                                                                                                                    |  | Characteristics see<br>rated voltage and<br>rated current page 61                                                                                                                                                     | E 63093  |
| CSA                                                                                                                                                                                                                                   |  |                                                                                                                                                                                                                       | 48932    |
| Zulassungen beziehen sich im allgemeinen auf repräsentative Ausführungen der Steckverbinderserie. Prüfumfang und Prüfvorschrift auf Anfrage.                                                                                          |                                                                                     | In general approvals refer to representative versions of the connector series. Extent and specification of tests upon request.                                                                                        |          |

|                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Allgemeine Hinweise</p>  <p>General information</p>                                                    | <ul style="list-style-type: none"> <li>• Module ohne Crimpkontakte, Crimpwerkzeuge siehe separater Katalog „Werkzeuge“.</li> <li>• Kontakte müssen separat bestellt werden, Verarbeitungs- und Montagehinweise siehe Katalog „Werkzeuge“.</li> <li>• Für die Einsätze der Serie C 146 M werden die hohen Gehäusebauformen empfohlen.</li> <li>• Steckverbinder der Serie C 146 M dürfen unter Spannung, jedoch nicht unter Strom betätigt werden. Werden die Steckverbinder unter Last gesteckt und getrennt, ist der Strom auf 10 % des Bemessungsstroms zu begrenzen.</li> <li>• Leere Modulplätze sind durch Blindmodule aufzufüllen.</li> <li>• Drehmoment für PE-Anschluss 1,8 Nm</li> </ul> <ul style="list-style-type: none"> <li>• <i>Modules inserts without crimp contacts, crimping tools see separate catalogue „Tools“.</i></li> <li>• <i>Contacts must be ordered separately, processing instructions see catalogue „Tools“.</i></li> <li>• <i>We recommend using the high profile housings / hoods for the C146 M inserts.</i></li> <li>• <i>Connectors series C 146 M may be engaged or disengaged when live but without electrical load.</i></li> <li>• <i>If these connectors are mated or unmated under load, the load shall be reduced to 10 % of rated current.</i></li> <li>• <i>Empty modul spaces have to be filled with blind modules.</i></li> <li>• <i>Torque for PE connection 1,8 Nm</i></li> </ul> |
| <p>Systemvorteile</p> <p>Advantages of the system</p>                                                                                                                                      | <ul style="list-style-type: none"> <li>• Viele Kombinationsmöglichkeiten</li> <li>• Inverse Bestückung möglich</li> <li>• Bemessungsspannung bis 1000 V</li> <li>• Kostengünstig</li> </ul> <ul style="list-style-type: none"> <li>• <i>High combination possibilities</i></li> <li>• <i>Possibility of inverse configuration</i></li> <li>• <i>Rated voltage up to 1000 V</i></li> <li>• <i>Low cost</i></li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <p>Hoher Schutz vor Fehlsteckungen</p> <p>High protection against mismatching</p>                                                                                                          | <ul style="list-style-type: none"> <li>• Buchsenkontakteinsatz mit trichterförmiger, verengter Stecköffnung.</li> <li>• Hohe Steck- und Kontaktsicherheit bei 10 pol. Modul mit gestanzten Kontakten.</li> </ul> <ul style="list-style-type: none"> <li>• <i>Female inserts with funnel shaped contact entry avoids mismatching.</i></li> <li>• <i>High security in mating and contacting with stamped crimp contacts for 10 pin module.</i></li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <p>10 pol. Module für gestanzte Kontakte und für gedrehte Kontakte</p> <p>10 pin modules for stamped contacts and for turned contacts</p>                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <p>Voreilender Schutzkontakt<br/>Mindest Anschlussquerschnitt 0,5 mm<sup>2</sup></p> <p>First-to-mate last-to-break protective ground contact<br/>Minimum wire size 0,5 mm<sup>2</sup></p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <p>Große Gehäuseauswahl in 2 Bauhöhen (ab Seite 126)</p> <p>Large range of housings in 2 different heights (see page 126)</p>                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

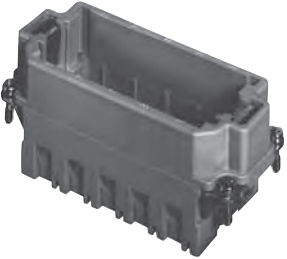
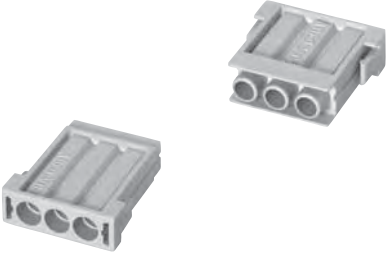



|                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                          |                                                                                                                                                               |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Großer Crimpbereich<br/><i>Large range of wire gauges</i></p> <p>Gasdichte Verbindung<br/>(Kaltverschweißung)<br/><i>Gas-tight (coldwelding)</i></p>                                                                                    | <p>.N01 016 0003 (1) <sup>1)</sup>      .N01 016 0002 (1) <sup>1)</sup>      .N01 016 0005 (1) <sup>1)</sup></p>  <p>0,14   0,25   0,5      0,5   1,0   1,5      1,5   2,5</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                          |                                                                                                                                                               |
| <p>Gestanzte Crimpkontakte mit Isolierungshalterung um mechanische Beanspruchung von der Crimpverbindung fernzuhalten<br/><i>Stamped crimp contacts with insulation crimp, to absorb mechanical stress from the crimped connection</i></p> |  <p>Isolierungshalterung<br/><i>Insulation grip</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                          |                                                                                                                                                               |
| <p>Mechanischer Rasthakenanschlag bei Buchsen- und Stiftkontakt<br/><i>Mechanical retention spring stop on female and male contact</i></p> <p>Einfache Montage<br/><i>Easy assembly</i></p>                                                | <p>Buchsenkontakt<br/><i>Female contact</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <p>Stiftkontakt<br/><i>Male contact</i></p>          |                                                                                                                                                               |
| <p>Kostengünstige, einfache Verarbeitung<br/>Werkzeuge siehe Katalog „Werkzeuge“<br/><i>Economical and easy processing<br/>Tools see catalogue „Tools“</i></p>                                                                             |  <p>Service-Anwendungen<br/><i>Service application</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  <p>Einzel-Fertigung<br/><i>Single production</i></p> |  <p>Kleinserie<br/><i>Small series</i></p> <p>Serie<br/><i>Series</i></p> |
| <p>Hohe Strombelastbarkeit<br/>(siehe Derating Kurven)<br/><i>High current carrying capacity<br/>(see derating curves)</i></p>                                                                                                             | <p>Beispiel Einzelkontakt / <i>Example single contact</i></p> <div style="display: flex; justify-content: space-around;"> <div data-bbox="507 1713 869 2004">  <p>Strombelastbarkeit I (A)<br/><i>Current carrying capacity I (A)</i></p> <p>Bauelement Umgebungstemperatur <math>T_u</math> (°C)<br/><i>Ambient temperature <math>T_{amb}</math> (°C)</i></p> <p>Standardkontakt, Anschlussquerschnitt 2,5 mm<sup>2</sup><br/><i>Standard contact, wire gauge 2.5 mm<sup>2</sup></i></p> </div> <div data-bbox="1013 1713 1380 2004">  <p>Strombelastbarkeit I (A)<br/><i>Current carrying capacity I (A)</i></p> <p>Bauelement Umgebungstemperatur <math>T_u</math> (°C)<br/><i>Ambient temperature <math>T_{amb}</math> (°C)</i></p> <p>Hochstromkontakt, Anschlussquerschnitt 2,5 mm<sup>2</sup><br/><i>High current contact, wire gauge 2.5 mm<sup>2</sup></i></p> </div> </div> |                                                                                                                                          |                                                                                                                                                               |

<sup>1)</sup> Erläuterung der Bestell-Nr. für die Kontakte siehe Seite 4

<sup>1)</sup> Explanation of the Part No. of contacts see page 4

# C 146 M

## Bestellverfahren How to order

| Auswahl<br><i>Choice</i>       |                                                                                      | Beispiel Bestell Nr.<br><i>Example Part No.</i> |
|--------------------------------|--------------------------------------------------------------------------------------|-------------------------------------------------|
| 1) Rahmen<br><i>Frames</i>     |     | C146 P16 001 G8                                 |
| 2) Module<br><i>Modules</i>    |   | C146 A03 001 E8                                 |
| 3) Kontakte<br><i>Contacts</i> |  | VN01 036 0002 1C                                |
| 4) Werkzeug<br><i>Tool</i>     |   | TA 0000<br>+ TA 0000 124<br>+ TA 0010 146 004   |
| 5) Gehäuse<br><i>Housings</i>  |   | C146 10G016 500 8                               |



| Allgemeine Kennwerte                      | General Characteristics                       |                                             |                     |                    |                   |                            |                     |                   |                        |                   |
|-------------------------------------------|-----------------------------------------------|---------------------------------------------|---------------------|--------------------|-------------------|----------------------------|---------------------|-------------------|------------------------|-------------------|
| Modul                                     | Module                                        | 1                                           | 2                   | 3                  | 4                 | 5                          | 6                   | 7                 | 8                      | 9                 |
| Polzahl                                   | Number of contacts                            | 20                                          | 10                  | 10 <sup>1)</sup>   | 5                 | 3                          | 4+⊕/5               | 3                 | 3                      | 5                 |
| Kontakt Durchmesser in mm                 | Contact diameter in mm                        | 1,0                                         | 1,6                 | 1,6                | 2,5               | 3,6                        | 2,5                 | 3,6 Koax          | 3,6                    | 2,5               |
| Crimpkontakt                              | Crimp contact                                 | gestanzt<br>stamped                         | gestanzt<br>stamped | gedreht<br>turned  | gedreht<br>turned | gedreht<br>turned          | gestanzt<br>stamped | gedreht<br>turned | gedreht<br>turned      | gedreht<br>turned |
| Anschlussart                              | Termination technique                         | crimpen / crimp                             |                     |                    |                   |                            |                     |                   |                        |                   |
| Brennbarkeit                              | Flammbarkeit                                  | V-0                                         |                     |                    |                   |                            |                     |                   |                        |                   |
| Elektrische Kennwerte                     | Electrical Characteristics                    |                                             |                     |                    |                   |                            |                     |                   |                        |                   |
| Bemessungsspannung <sup>2)</sup>          | Rated voltage <sup>2)</sup>                   | 63 V                                        | 400 V               | 400 V              | 400 V             | 630 V                      | 1000 V              | 250 V             | 1000 V                 | 400 V             |
| Verschmutzungsgrad <sup>2)</sup>          | Pollution degree <sup>2)</sup>                | 3                                           | 3                   | 3                  | 3                 | 3                          | 3                   | 3                 | 3                      | 3                 |
| Bemessungs-Stoßspannung <sup>2)</sup>     | Rated impulse withstand voltage <sup>2)</sup> | 4,0 kV                                      | 6,0 kV              | 6,0 kV             | 6,0 kV            | 8,0 kV                     | 8,0 kV              |                   | 8,0 kV                 | 6,0 kV            |
| Isolierstoffgruppe <sup>2)</sup> (PA)     | Material group <sup>2)</sup> (PA)             | II                                          | II                  | II                 | II                | II                         | II                  | II                | II                     | II                |
| Spannungsfestigkeit <sup>3)</sup>         | Voltage proof <sup>3)</sup>                   | 1680 V                                      | 2110 V              | 2110 V             | 3510 V            | 4260 V                     | 5700 V              |                   | 5700 V                 | 3510 V            |
| Bemessungsstrom $T_u = 40\text{ °C}$      | Rated current $T_{amb} = 40\text{ °C}$        | 5 A                                         | 10 A                | 10 A               | 20 A              | 50 A                       | 16 A                |                   | 50 A                   | 20 A              |
| Strombelastbarkeit <sup>4)</sup>          | Current carrying capacity <sup>4)</sup>       | siehe Derating Kurven / see derating curves |                     |                    |                   |                            |                     |                   |                        |                   |
| Isolationswiderstand <sup>3)</sup>        | Insulation resistance <sup>3)</sup>           | $\geq 10^{12}\ \Omega$                      |                     |                    |                   |                            |                     |                   |                        |                   |
| Durchgangswiderstand <sup>3)</sup>        | Contact resistance <sup>3)</sup>              | $< 5\text{ m}\Omega$                        |                     |                    |                   |                            |                     |                   |                        |                   |
| Klimatische Kennwerte                     | Climatical Characteristics                    |                                             |                     |                    |                   |                            |                     |                   |                        |                   |
| Temperaturbereich                         | Temperatur range                              | -40 °C - +125 °C                            | -40 °C<br>+100 °C   | - 40 °C / + 125 °C |                   |                            |                     |                   |                        |                   |
| Mechanische Kennwerte                     | Mechanical Characteristics                    |                                             |                     |                    |                   |                            |                     |                   |                        |                   |
| Steck- und Ziehkraft <sup>5)</sup>        | Insertion and withdrawal forces <sup>5)</sup> | 15 - 20 N (Rahmen / frame)                  |                     |                    |                   |                            |                     |                   |                        |                   |
| <sup>6)</sup> IP-Schutzart Stifteinsatz   | IP-degree of protection pin insert            | Norm/Standard<br>IEC 60529                  |                     |                    |                   | ungesteckt/unmated<br>IP00 |                     |                   | gesteckt/mated<br>IP20 |                   |
| <sup>6)</sup> IP-Schutzart Buchseneinsatz | IP-degree of protection socket insert         | Norm/Standard<br>IEC 60529                  |                     |                    |                   | ungesteckt/unmated<br>IP20 |                     |                   | gesteckt/mated<br>IP20 |                   |
| Werkstoffe                                | Materials                                     |                                             |                     |                    |                   |                            |                     |                   |                        |                   |
| Rahmen                                    | Frames                                        | PA 6.6 GF                                   |                     |                    |                   |                            |                     |                   |                        |                   |
| Module                                    | Modules                                       | PA 6.6 GF                                   |                     |                    |                   |                            |                     |                   |                        |                   |
| Farbe Rahmen                              | Colour frames                                 | schwarz / black                             |                     |                    |                   |                            |                     |                   |                        |                   |
| Farbe Module                              | Colour modules                                | schwarz / black / rotbraun / redbrown       |                     |                    |                   |                            |                     |                   |                        |                   |
| Kontakte                                  | Contacts                                      | Cu-Legierung / Cu-alloy                     |                     |                    |                   |                            |                     |                   |                        |                   |
| Kontaktoberfläche                         | Contact plating                               | Au                                          | Ag                  |                    |                   |                            | Au                  |                   | Ag                     |                   |

<sup>1)</sup> auch LWL Kontakte möglich 1,0 mm POF / also FO 1,0 mm contacts available

<sup>2)</sup> nach IEC 60664-1 / according to IEC 60664-1

<sup>3)</sup> nach IEC 60512-2 / according to IEC 60512-2

<sup>4)</sup> nach IEC 60512-3 / according to IEC 60512-3

<sup>5)</sup> nach IEC 60512-7 / according to IEC 60512-7

<sup>6)</sup> Ausnahme Stifteinsatz IP 20 siehe Module / Exception pin insert IP 20 see modules

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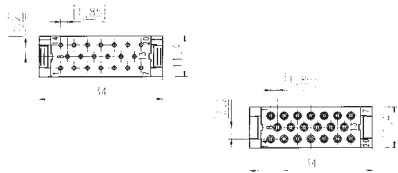

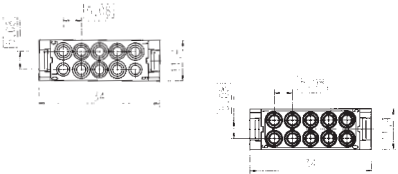
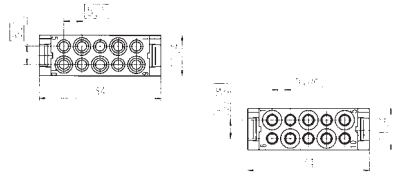

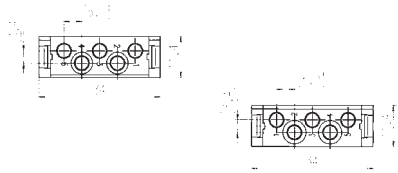

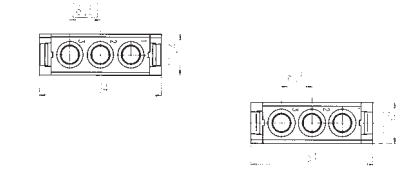
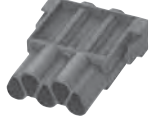
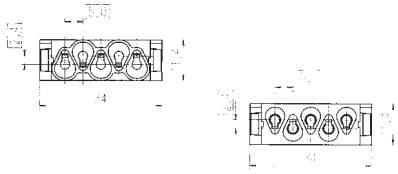

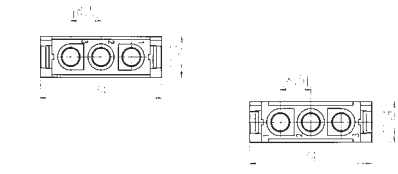

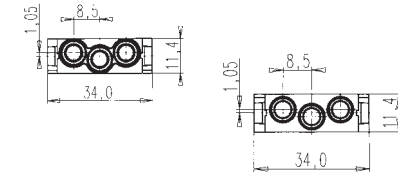
## Module Übersicht Modules Overview



Sittmodul / pin module



Buchsenmodul / socket module

| Bezeichnung - Abbildung<br>Description - Figure                                                                                                         | Nr.<br>No. | Maßzeichnung<br>Drawing                                                             | Bestell Nr. / Part No.                                                                  |                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
|                                                                                                                                                         |            |                                                                                     | Stiftmodule / Pin module                                                                | Buchsenmodule / Socket module                                                           |
| 20 pol. für gestanzte Kontakte<br>20 contacts for stamped contacts<br> | 1          |    | C146 A20 001 G8                                                                         | C146 B20 001 G8                                                                         |
| 10 pol. für gestanzte Kontakte<br>10 contacts for stamped contacts<br> | 2          |    | C146 D10 001 E8                                                                         | C146 C10 001 G8                                                                         |
| 10 pol. für gedrehte Kontakte<br>10 contacts for turned contacts<br>  | 3          |   | C146 A10 001 E8                                                                         | C146 B10 001 E8                                                                         |
| 5 pol. für gedrehte Kontakte<br>5 contacts for turned contacts<br>   | 4          |  | C146 A05 001 E8 <sup>1)</sup>                                                           | C146 B05 001 E8 <sup>1)</sup>                                                           |
| 3 pol. für gedrehte Kontakte<br>3 contacts for turned contacts<br>   | 5          |  | C146 A03 001 E8                                                                         | C146 B03 001 E8                                                                         |
| 5 pol. für gestanzte Kontakte<br>5 contacts for stamped contacts<br> | 6          |  | C146 D04 001 E8<br>(4 pol)<br>C146 D05 001 E8<br>(4 + PE)<br>C146 D05 801 E8<br>(5 pol) | C146 C04 001 E8<br>(4 pol)<br>C146 C05 001 E8<br>(4 + PE)<br>C146 C05 801 E8<br>(5 pol) |
| 3 pol. für Koax Kontakte<br>3 contacts for coax contacts<br>         | 7          |  | C146 A03 501 E8                                                                         | C146 B03 501 E8                                                                         |
| 3 pol. für gedrehte Kontakte<br>3 contacts for turned contacts<br>   | 8          |  | C146 A03 801 E8                                                                         | C146 B03 801 E8                                                                         |

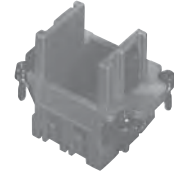
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## Rahmen Frames

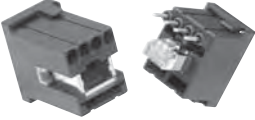
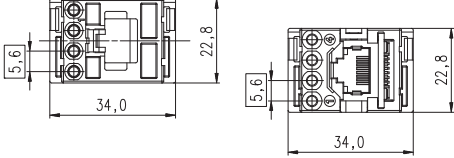
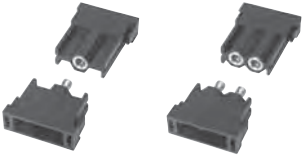
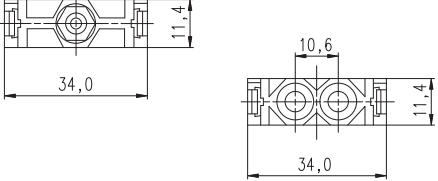
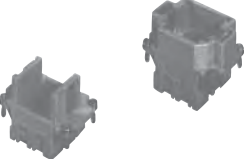
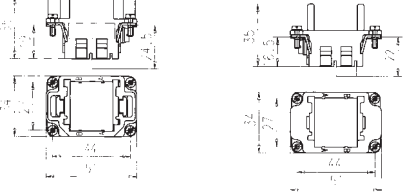
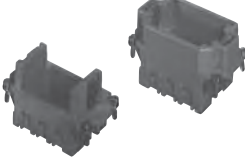
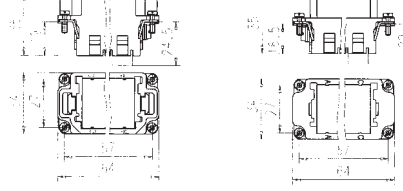
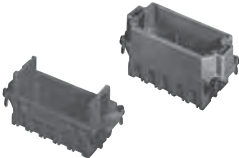
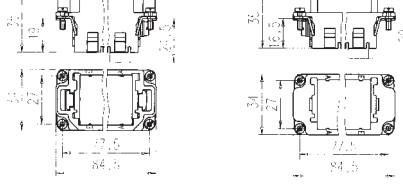

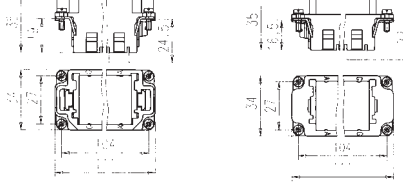
**Gehäuse, siehe Seite 126-153**  
**Housings, see page 126-153**



Rahmen für Stiftmodule <sup>1)</sup>  
Frame for pin modules <sup>1)</sup>



Rahmen für Buchsenmodule <sup>1)</sup>  
Frame for socket modules <sup>1)</sup>

| Bezeichnung - Abbildung<br>Description - Figure                                                                                                                | Maßzeichnung / Drawing                                                              | Bestell Nr. / Part No. <sup>2)</sup>                                                                             |                                                                                                                  |                                                                                                      |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                |                                                                                     | Stiftmodule / pin module                                                                                         | Buchsenmodule/socket modul                                                                                       |                                                                                                      |
| RJ Modul<br>RJ module<br>                                                     |    | C146 E12 001 E8                                                                                                  | C146 F12 001 G8                                                                                                  |                                                                                                      |
| Pneu Modul, 1 oder 2 Verbindungen<br>Pneumatic module, 1 or 2 connections<br> |    | C146 G01 014 G8 (2,5 mm)<br>C146 G01 024 G8 (4,0 mm)<br><br>C146 G02 014 G8 (2,5 mm)<br>C146 G02 024 G8 (4,0 mm) | C146 H01 034 G8 (2,5 mm)<br>C146 H01 044 G8 (4,0 mm)<br><br>C146 H02 034 G8 (2,5 mm)<br>C146 H02 044 G8 (4,0 mm) |                                                                                                      |
| Bezeichnung - Abbildung<br>Description - Figure                                                                                                                | Maßzeichnung / Drawing                                                              | Kennzeich.<br>Positions                                                                                          | Bestell Nr. / Part No. <sup>2)</sup>                                                                             |                                                                                                      |
|                                                                                                                                                                | Rahmen für Stiftmodule<br>Frame for pin modules                                     |                                                                                                                  | Rahmen für Buchsenmodule<br>Frame for socket module                                                              | Rahmen für Stiftmodule<br>Frame for pin modules                                                      |
| Rahmen für 2 Module<br>Frame for 2 modules<br>                              |  | A - B                                                                                                            | C146 P06 001 G8<br><br>C146 P06 002 G8<br>(2 x PE)                                                               | C146 S06 001 G8<br><br>C146 S06 002 G8<br>(2 x PE)                                                   |
| Rahmen für 3 Module<br>Frame for 3 modules<br>                              |  | A - C                                                                                                            | C146 P10 001 G8<br><br>C146 P10 002 G8<br>(2 x PE)                                                               | C146 S10 001 G8<br><br>C146 S10 002 G8<br>(2 x PE)                                                   |
| Rahmen für 5 Module<br>Frame for 5 modules<br>                              |  | A - E                                                                                                            | C146 P16 001 G8<br><br>C146 P16 002 G8<br>(2 x PE)                                                               | C146 S16 001 G8<br><br>C146 S16 002 G8<br>(2 x PE)                                                   |
| Rahmen für 7 Module<br>Frame for 7 modules<br>                              |  | A - G<br><br>T - Z                                                                                               | C146 P24 001 G8<br>C146 P24 002 G8<br>(2 x PE)<br><br>C146 P24 101 G8<br>C146 P24 102 G8<br>(2 x PE)             | C146 S24 001 G8<br>C146 S24 002 G8<br>(2 x PE)<br><br>C146 S24 101 G8<br>C146 S24 102 G8<br>(2 x PE) |

<sup>1)</sup> Im Rahmen für Stiftmodule können auch Buchsenmodule gesteckt werden (inverse Bestückung möglich).

<sup>1)</sup> It is possible to mount socket modules in frames for pin modules (possibility of inverse configuration).

<sup>2)</sup> Für den Einbau der Steckverbinder in nicht leitende Gehäuse sind beide Schutzleiter (Ausführung 2 x PE) anzuschließen.

<sup>2)</sup> If connectors are mounted in non conductive housings both protective earthing terminals shall be mounted.

# C 146 M

## 20 pol

### Technische Daten Characteristics

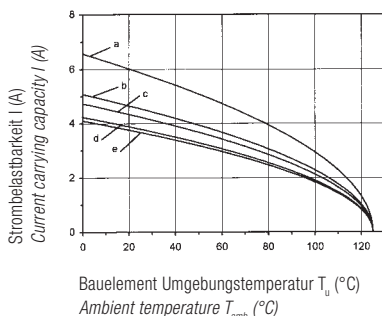
| Allgemeine Kennwerte               | General Characteristics                       | Norm / Standard        | Wert / Value                                |
|------------------------------------|-----------------------------------------------|------------------------|---------------------------------------------|
| Polzahl                            | Number of contacts                            |                        | 20                                          |
| Anschluss technik                  | Termination technique                         |                        | crimpen / crimp                             |
| Anschlussquerschnitt               | Wire gauge                                    |                        | 0,09 - 0,5 mm <sup>2</sup> (AWG 28 - 20)    |
| Brennbarkeit                       | Flammability                                  | UL 94                  | V-0                                         |
| Elektrische Kennwerte              | Electrical Characteristics                    |                        |                                             |
| Bemessungsspannung                 | Rated voltage                                 | IEC 60664-1            | 63 V                                        |
| Verschmutzungsgrad                 | Pollution degree                              | IEC 60664-1            | 3                                           |
| Überspannungskategorie             | Installation (overvoltage) category           | IEC 60664-1            | III                                         |
| Isolierstoffgruppe                 | Material group                                | IEC 60664-1            | II (PA)                                     |
| Bemessungs-Stoßspannung            | Rated impulse withstand voltage               | IEC 60664-1            | 4,0 kV                                      |
| Spannungsfestigkeit                | Voltage proof                                 | IEC 60512-2; Test 4 a  | 1,68 kV                                     |
| Strombelastbarkeit                 | Current carrying capacity                     | IEC 60512-3; Test 5 b  | siehe Derating Kurven / see derating curves |
| Durchgangswiderstand               | Contact resistance                            | IEC 60512-2; Test 2 a  | ≤ 5 mΩ                                      |
| Isolationswiderstand               | Insulation resistance                         | IEC 60512-2; Test 3 a  | ≥ 10 <sup>12</sup> Ω <sup>2)</sup>          |
| Luftstrecke                        | Clearance                                     | IEC 60664-1            | > 2,4 mm                                    |
| Kriechstrecke                      | Creepage                                      | IEC 60664-1            | > 2,4 mm                                    |
| Klimatische Kennwerte              | Climatical Characteristics                    |                        |                                             |
| Prüfklasse                         | Climatic category                             | IEC 60068-1            | 40 / 125 / 21                               |
| Obere Grenztemperatur              | Upper temperature                             | IEC 60512-6; Test 11 i | + 125 °C / 1000 h                           |
| Untere Grenztemperatur             | Lower temperature                             | IEC 60512-6; Test 11 i | - 40 °C                                     |
| Mechanische Kennwerte              | Mechanical Characteristics                    |                        |                                             |
| Steck- und Ziehkraft <sup>1)</sup> | Insertion and withdrawal forces <sup>1)</sup> | IEC 60512-7; Test 13 b | 10 - 15 N                                   |
| Mechanische Lebensdauer            | Mechanical operation                          | IEC 60512-5; Test 9 a  | ≥ 500 Steckzyklen / mating cycles           |
| Werkstoffe                         | Materials                                     |                        |                                             |
| Kontakteinsatz                     | Insert                                        |                        | PA 6.6 GF                                   |
| Farbe                              | Colour                                        |                        | schwarz / black                             |
| Kontakte Stift / Buchse            | Contacts male / female                        |                        | CuZn (Messing/brass) / CuSn (Bronze/bronze) |
| Kontakt oberfläche                 | Contact plating                               |                        | Au (gold / gold)                            |

<sup>1)</sup> für ein Modul / for one module

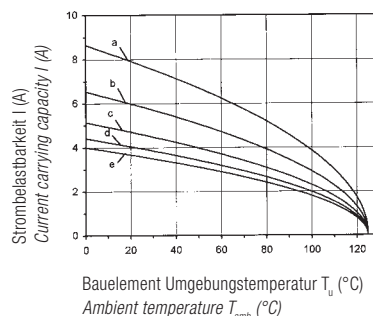
<sup>2)</sup> bei Beanspruchung >10<sup>10</sup> Ω / under operating condition >10<sup>10</sup> Ω

#### Derating Kurven / Derating curves

0,25 mm<sup>2</sup>



0,5 mm<sup>2</sup>



| Kurve<br>Curve | Polzahl<br>Contacts | Rahmen<br>Frame |
|----------------|---------------------|-----------------|
| a              | 20                  | 2 Module        |
| b              | 40                  | 2 Module        |
| c              | 60                  | 3 Module        |
| d              | 100                 | 5 Module        |
| e              | 140                 | 7 Module        |

# C 146 M 20 pol

Module  
Modules



Bandkontakte für Crimpzangen  
Contacts on reel for hand crimping tools



350 Stück  
350 pcs

Bandkontakte für Crimpmaschinen  
Contacts on reel for crimp machines



2000 Stück  
(Zuführung links)  
2000 pcs  
(feeding left hand side)

für gestanzte 1,0 mm Kontakte  
for stamped 1,0 mm contacts

| Abbildung<br>Figure | Maßzeichnung / Drawing  |                              | Bestell Nr. / Part No.  |                              |
|---------------------|-------------------------|------------------------------|-------------------------|------------------------------|
|                     | Stiftmodul / Pin module | Buchsenmodul / Socket module | Stiftmodul / Pin module | Buchsenmodul / Socket module |
|                     |                         |                              | C146 A20 001 G8         | C146 B20 001 G8              |

## Crimpkontakte / Crimp contacts

| Lieferform<br>Supplied as                                                | für Leiterquerschnitt<br>for wire gauge | AWG     | Stückzahl<br>Pieces | Bestell Nr. / Part No.      |                                 |
|--------------------------------------------------------------------------|-----------------------------------------|---------|---------------------|-----------------------------|---------------------------------|
|                                                                          |                                         |         |                     | Stiftkontakt / Male contact | Buchsenkontakt / Female contact |
| Einzelkontakte für Crimpzangen / single contacts for hand crimping tools |                                         |         |                     |                             |                                 |
| vergoldet / gold plating                                                 |                                         |         |                     |                             |                                 |
|                                                                          | 0,09 - 0,25 mm <sup>2</sup>             | 28 - 24 | 100                 | VN01 010 0130 (2)           | VN02 010 0130 (2)               |
|                                                                          | 0,25 - 0,50 mm <sup>2</sup>             | 24 - 20 | 100                 | VN01 010 0131 (2)           | VN02 010 0131 (2)               |
| Bandkontakte für Crimpzangen / Contacts on reel for hand crimping tools  |                                         |         |                     |                             |                                 |
|                                                                          | 0,09 - 0,25 mm <sup>2</sup>             | 28 - 24 | 500                 | ZN01 010 0130 (2)           | ZN02 010 0130 (2)               |
|                                                                          | 0,25 - 0,50 mm <sup>2</sup>             | 24 - 20 | 500                 | ZN01 010 0131 (2)           | ZN02 010 0131 (2)               |
| Bandkontakte für Crimpmaschinen / Contacts on reel for crimp machines    |                                         |         |                     |                             |                                 |
| Kontaktzuführung links<br>Contact feeding left hand side                 | 0,09 - 0,25 mm <sup>2</sup>             | 28 - 24 | 2000                | TN01 010 0130 (2)           | TN02 010 0130 (2)               |
|                                                                          | 0,25 - 0,50 mm <sup>2</sup>             | 24 - 20 | 2000                | TN01 010 0131 (2)           | TN02 010 0131 (2)               |
|                                                                          | 0,09 - 0,25 mm <sup>2</sup>             | 28 - 24 | 10.000              | FN01 010 0130 (2)           | FN02 010 0130 (2)               |
|                                                                          | 0,25 - 0,50 mm <sup>2</sup>             | 24 - 20 | 10.000              | FN01 010 0131 (2)           | FN02 010 0131 (2)               |

## Werkzeuge / Tools <sup>1)</sup>

| Bezeichnung / Description                              | für Leiterquerschnitt<br>for wire gauge | Kontaktaufnahme / Contact locator | Crimpbacken / Crimping dies | Bestell Nr. / Part No. |
|--------------------------------------------------------|-----------------------------------------|-----------------------------------|-----------------------------|------------------------|
|                                                        |                                         |                                   |                             | Werkzeuge / Tools      |
| Lösewerkzeug für Kontakte<br>Removal tool for contacts | –                                       | –                                 | –                           | 17D 438 SP             |
| Lösewerkzeug für Module<br>Removal tool for modules    | –                                       | –                                 | –                           | FG 1000 146            |
| Service Crimpzange<br>Service crimping tool            | 0,09 - 0,25 mm <sup>2</sup>             | –                                 | –                           | TA 0200 146            |
|                                                        | 0,25 - 0,50 mm <sup>2</sup>             | –                                 | –                           |                        |

Bei kleinen Leiterquerschnitten wird der Einsatz von Führungselementen empfohlen (siehe Seite 184)  
If small wire sizes are used, guide pins and guide sockets should be preferred to use (see page 184)

<sup>1)</sup> Weitere Informationen siehe Katalog „Werkzeuge“ / Further information see catalogue „Tools“

Abisolierlängen siehe S. 198  
Stripping length see p. 198

# C 146 M

# 10 pol

## Technische Daten Characteristics

## Module für gestanzte Kontakte Modules for stamped contacts

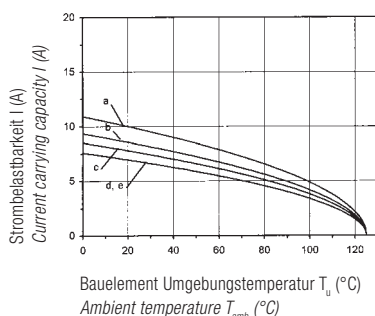
| Allgemeine Kennwerte               | General Characteristics                       | Norm / Standard        | Wert / Value                                |
|------------------------------------|-----------------------------------------------|------------------------|---------------------------------------------|
| Polzahl                            | Number of contacts                            |                        | 10                                          |
| Anschluss technik                  | Termination technique                         |                        | crimpen / crimp                             |
| Anschlussquerschnitt               | Wire gauge                                    |                        | 0,14 - 2,5 mm <sup>2</sup> (AWG 26 - 14)    |
| Brennbarkeit                       | Flammability                                  | UL 94                  | V-0                                         |
| Elektrische Kennwerte              | Electrical Characteristics                    |                        |                                             |
| Bemessungsspannung                 | Rated voltage                                 | IEC 60664-1            | 400 V                                       |
| Verschmutzungsgrad                 | Pollution degree                              | IEC 60664-1            | 3                                           |
| Überspannungskategorie             | Installation (overvoltage) category           | IEC 60664-1            | III                                         |
| Isolierstoffgruppe                 | Material group                                | IEC 60664-1            | II                                          |
| Bemessungs-Stoßspannung            | Rated impulse withstand voltage               | IEC 60664-1            | 6,0 kV                                      |
| Spannungsfestigkeit                | Voltage proof                                 | IEC 60512-2; Test 4 a  | 2,11 kV                                     |
| Strombelastbarkeit                 | Current carrying capacity                     | IEC 60512-3; Test 5 b  | siehe Derating Kurven / see derating curves |
| Durchgangswiderstand               | Contact resistance                            | IEC 60512-2; Test 2 a  | ≤ 5 mΩ                                      |
| Isolationswiderstand               | Insulation resistance                         | IEC 60512-2; Test 3 a  | ≥ 10 <sup>12</sup> Ω <sup>2)</sup>          |
| Luftstrecke / Kriechstrecke        | Clearance / Creepage                          | IEC 60664-1            | > 4,3 mm                                    |
| Klimatische Kennwerte              | Climatical Characteristics                    |                        |                                             |
| Prüfklasse                         | Climatic category                             | IEC 60068-1            | 40 / 125 / 21                               |
| Obere Grenztemperatur              | Upper temperature                             | IEC 60512-6; Test 11 i | + 125 °C / 1000 h                           |
| Untere Grenztemperatur             | Lower temperature                             | IEC 60512-6; Test 11 i | - 40 °C                                     |
| Mechanische Kennwerte              | Mechanical Characteristics                    |                        |                                             |
| Steck- und Ziehkraft <sup>1)</sup> | Insertion and withdrawal forces <sup>1)</sup> | IEC 60512-7; Test 13 b | 20 - 25 N                                   |
| Mechanische Lebensdauer            | Mechanical operation                          | IEC 60512-5; Test 9 a  | ≥ 500 Steckzyklen / mating cycles           |
| Werkstoffe                         | Materials                                     |                        |                                             |
| Modul                              | Module                                        |                        | PA 6.6 GF                                   |
| Farbe                              | Colour                                        |                        | schwarz / black                             |
| Stiftkontakt                       | Male contact                                  |                        | CuZn (Messing/brass)                        |
| Buchsenkontakt                     | Female contact                                |                        | CuSn (Bronze/bronze)                        |
| Kontaktoberfläche                  | Contact plating                               |                        | Ag (silber/silver)                          |

<sup>1)</sup> für ein Modul / for one module

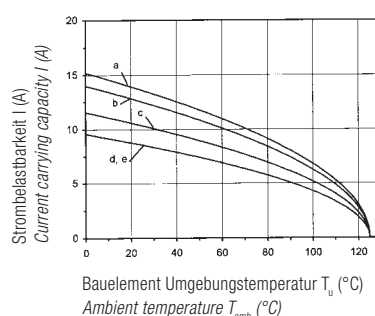
<sup>2)</sup> bei Beanspruchung >10<sup>10</sup> Ω / under operating condition >10<sup>10</sup> Ω

### Derating Kurven / Derating curves

#### 0,5 mm<sup>2</sup>



#### 1,5 mm<sup>2</sup>



| Kurve<br>Curve | Polzahl<br>Contacts | Rahmen<br>Frame |
|----------------|---------------------|-----------------|
| a              | 10                  | 2 Module        |
| b              | 20                  | 2 Module        |
| c              | 30                  | 3 Module        |
| d              | 50                  | 5 Module        |
| e              | 70                  | 7 Module        |

# C 146 M 10 pol

Module  
Modules

gestanzte Einzelkontakte  
Stamped single contacts



Bandkontakte für Crimpzangen  
Contacts on reel for hand crimping tools



200 / 100 Stück  
200 / 100 pcs

Bandkontakte für Crimpmaschinen  
Contacts on reel for crimp machines



2000 Stück  
(Zuführung links  
oder rechts)  
2000 pcs  
(feeding left or  
right hand side)

**für gestanzte 1,6 mm Kontakte  
for stamped 1,6 mm contacts**

| Abbildung<br>Figure | Maßzeichnung / Drawing  |                              | Bestell Nr. / Part No.  |                              |
|---------------------|-------------------------|------------------------------|-------------------------|------------------------------|
|                     | Stiftmodul / Pin module | Buchsenmodul / Socket module | Stiftmodul / Pin module | Buchsenmodul / Socket module |
|                     |                         |                              | C146 D10 001 E8         | C146 C10 001 G8              |

## Crimpkontakte / Crimp contacts

| Lieferform<br>Supplied as                                                               | für Leiterquerschnitt<br>for wire gauge                | AWG     | Stückzahl<br>Pieces | Bestell Nr. <sup>1)</sup>    |                                  | Part No. <sup>1)</sup>       |                                  |
|-----------------------------------------------------------------------------------------|--------------------------------------------------------|---------|---------------------|------------------------------|----------------------------------|------------------------------|----------------------------------|
|                                                                                         |                                                        |         |                     | Stiftkontakt<br>Male contact | Buchsenkontakt<br>Female contact | Stiftkontakt<br>Male contact | Buchsenkontakt<br>Female contact |
| Gestanzte Einzelkontakte / Stamped single contacts                                      |                                                        |         |                     | versilbert / silver plating  |                                  | vergoldet / gold plating     |                                  |
| Standard<br>Hochstrom<br>High current                                                   | 0,14 - 0,5 mm <sup>2</sup>                             | 26 - 20 | 100                 | VN01 016 0003 (1)            | VN02 016 0003 (1)                | VN01 016 0003 (2)            | VN02 016 0003 (2)                |
|                                                                                         | 0,5 - 1,5 mm <sup>2</sup>                              | 20 - 16 | 100                 | VN01 016 0002 (1)            | VN02 016 0002 (1)                | VN01 016 0002 (2)            | VN02 016 0002 (2)                |
|                                                                                         | 1,5 - 2,5 mm <sup>2</sup>                              | 16 - 14 | 100                 | VN01 016 0005 (1)            | VN02 016 0005 (1)                | VN01 016 0005 (2)            | VN02 016 0005 (2)                |
|                                                                                         | 0,5 - 1,5 mm <sup>2</sup>                              | 20 - 16 | 100                 | VN01 016 0015 (1)            | VN02 016 0015 (1)                |                              |                                  |
|                                                                                         | 1,5 - 2,5 mm <sup>2</sup>                              | 16 - 14 | 100                 | VN01 016 0016 (1)            | VN02 016 0016 (1)                |                              |                                  |
| Gestanzte Bandkontakte für Crimpzangen / Stamped Contacts on reel for hand crimp tools  |                                                        |         |                     |                              |                                  |                              |                                  |
| Standard<br>Hochstrom<br>High current                                                   | 0,14 - 0,5 mm <sup>2</sup>                             | 26 - 20 | 200                 | ZN01 016 0003 (1)            | ZN02 016 0003 (1)                | ZN01 016 0003 (2)            | ZN02 016 0003 (2)                |
|                                                                                         | 0,5 - 1,5 mm <sup>2</sup>                              | 20 - 16 | 200                 | ZN01 016 0002 (1)            | ZN02 016 0002 (1)                | ZN01 016 0002 (2)            | ZN02 016 0002 (2)                |
|                                                                                         | 1,5 - 2,5 mm <sup>2</sup>                              | 16 - 14 | 100                 | ZN01 016 0005 (1)            | ZN02 016 0005 (1)                | ZN01 016 0005 (2)            | ZN02 016 0005 (2)                |
|                                                                                         | 0,5 - 1,5 mm <sup>2</sup>                              | 20 - 16 | 200                 | ZN01 016 0015 (1)            | ZN02 016 0015 (1)                |                              |                                  |
|                                                                                         | 1,5 - 2,5 mm <sup>2</sup>                              | 16 - 14 | 100                 | ZN01 016 0016 (1)            | ZN02 016 0016 (1)                |                              |                                  |
| Gestanzte Bandkontakte für Crimpmaschinen / Stamped contacts on reel for crimp machines |                                                        |         |                     |                              |                                  |                              |                                  |
| Kontaktzuführung rechts<br>Contact feeding right hand side                              | 0,14 - 0,5 mm <sup>2</sup>                             | 26 - 20 | 2000                | HN01 016 0003 (1)            | HN02 016 0003 (1)                | HN01 016 0003 (2)            | HN02 016 0003 (2)                |
|                                                                                         | 0,5 - 1,5 mm <sup>2</sup>                              | 20 - 16 | 2000                | HN01 016 0002 (1)            | HN02 016 0002 (1)                | HN01 016 0002 (2)            | HN02 016 0002 (2)                |
|                                                                                         | Standard<br>1,5 - 2,5 mm <sup>2</sup>                  | 16 - 14 | 2000                | HN01 016 0005 (1)            | HN02 016 0005 (1)                | HN01 016 0005 (2)            | HN02 016 0005 (2)                |
|                                                                                         | Hochstrom<br>High current<br>0,5 - 1,5 mm <sup>2</sup> | 20 - 16 | 2000                | HN01 016 0015 (1)            | HN02 016 0015 (1)                |                              |                                  |
|                                                                                         | 1,5 - 2,5 mm <sup>2</sup>                              | 16 - 14 | 2000                | HN01 016 0016 (1)            | HN02 016 0016 (1)                |                              |                                  |
| Kontaktzuführung links<br>Contact feeding left hand side                                | 0,14 - 0,5 mm <sup>2</sup>                             | 26 - 20 | 2000                | TN01 016 0003 (1)            | TN02 016 0003 (1)                | TN01 016 0003 (2)            | TN02 016 0003 (2)                |
|                                                                                         | 0,5 - 1,5 mm <sup>2</sup>                              | 20 - 16 | 2000                | TN01 016 0002 (1)            | TN02 016 0002 (1)                | TN01 016 0002 (2)            | TN02 016 0002 (2)                |
|                                                                                         | Standard<br>1,5 - 2,5 mm <sup>2</sup>                  | 16 - 14 | 2000                | TN01 016 0005 (1)            | TN02 016 0005 (1)                | TN01 016 0005 (2)            | TN02 016 0005 (2)                |
|                                                                                         | Hochstrom<br>High current<br>0,5 - 1,5 mm <sup>2</sup> | 20 - 16 | 2000                | TN01 016 0015 (1)            | TN02 016 0015 (1)                |                              |                                  |
|                                                                                         | 1,5 - 2,5 mm <sup>2</sup>                              | 18 - 14 | 2000                | TN01 016 0016 (1)            | TN02 016 0016 (1)                |                              |                                  |

## Werkzeuge / Tools <sup>2)</sup>

| Bezeichnung / Description                                                 | für Leiterquerschnitt<br>for wire gauge                 | Bestell Nr. / Part No.            |                             |                             |
|---------------------------------------------------------------------------|---------------------------------------------------------|-----------------------------------|-----------------------------|-----------------------------|
|                                                                           |                                                         | Kontaktaufnahme / Contact locator | Crimpbacken / Crimping dies | Werkzeuge / Tools           |
| Lösewerkzeug für Kontakte / Module<br>Removal tool for contacts / modules | –                                                       | –                                 | –                           | FG 0300 146 1 / FG 1000 146 |
| Service Crimpzange<br>Service crimping tool                               | 0,14 - 0,5 mm <sup>2</sup><br>0,5 - 1,5 mm <sup>2</sup> | –                                 | –                           | TA 0100 146                 |
| Crimpzange für Einzelkontakte<br>Crimping tool for single contacts        | 0,14 - 0,5 mm <sup>2</sup>                              | TA 0001 146 000 1                 | TA 0000 202                 | TA 0000                     |
|                                                                           | 0,5 - 1,5 mm <sup>2</sup>                               | TA 0002 146 000 1                 | TA 0000 163                 |                             |
|                                                                           | 1,5 - 2,5 mm <sup>2</sup>                               | TA 0007 146 000 3                 | TA 0000 141                 |                             |

<sup>1)</sup> Erläuterung der Bestell-Nr. für die Kontakte siehe Seite 4 / Explanation of the Part No. for contacts see page 4

<sup>2)</sup> Weitere Informationen siehe Katalog „Werkzeuge“ / Further information see catalogue „Tools“

Abisolierlängen siehe S. 198  
Stripping length see p. 198

# C 146 M 10 pol

## Technische Daten Characteristics

## für gedrehte 1,6 mm Kontakte for turned 1,6 mm contacts

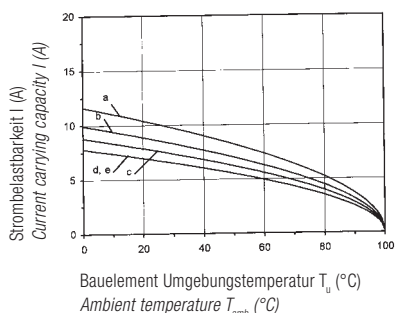
| Allgemeine Kennwerte               | General Characteristics                       | Norm / Standard        | Wert / Value                                |
|------------------------------------|-----------------------------------------------|------------------------|---------------------------------------------|
| Polzahl                            | Number of contacts                            |                        | 10                                          |
| Anschluss technik                  | Termination technique                         |                        | crimpen / crimp                             |
| Anschlussquerschnitt               | Wire gauge                                    |                        | 0,14 - 2,5 mm <sup>2</sup> (AWG 26 - 14)    |
| Brennbarkeit                       | Flammability                                  | UL 94                  | V-0                                         |
| Elektrische Kennwerte              | Electrical Characteristics                    |                        |                                             |
| Bemessungsspannung                 | Rated voltage                                 | IEC 60664-1            | 400 V                                       |
| Verschmutzungsgrad                 | Pollution degree                              | IEC 60664-1            | 3                                           |
| Überspannungskategorie             | Installation (overvoltage) category           | IEC 60664-1            | III                                         |
| Isolierstoffgruppe                 | Material group                                | IEC 60664-1            | II (PA)                                     |
| Bemessungs-Stoßspannung            | Rated impulse withstand voltage               | IEC 60664-1            | 6,0 kV                                      |
| Spannungsfestigkeit                | Voltage proof                                 | IEC 60512-2; Test 4 a  | 2,21 kV                                     |
| Strombelastbarkeit                 | Current carrying capacity                     | IEC 60512-3; Test 5 b  | siehe Derating Kurven / see derating curves |
| Durchgangswiderstand               | Contact resistance                            | IEC 60512-2; Test 2 a  | ≤ 5 mΩ                                      |
| Isolationswiderstand               | Insulation resistance                         | IEC 60512-2; Test 3 a  | ≥ 10 <sup>12</sup> Ω <sup>2)</sup>          |
| Luftstrecke                        | Clearance                                     | IEC 60664-1            | > 4,3 mm                                    |
| Kriechstrecke                      | Creepage                                      | IEC 60664-1            | > 4,3 mm                                    |
| Klimatische Kennwerte              | Climatical Characteristics                    |                        |                                             |
| Prüfklasse                         | Climatic category                             | IEC 60068-1            | 40 / 100 / 21                               |
| Obere Grenztemperatur              | Upper temperature                             | IEC 60512-6; Test 11 i | + 100 °C / 1000 h                           |
| Untere Grenztemperatur             | Lower temperature                             | IEC 60512-6; Test 11 i | - 40 °C                                     |
| Mechanische Kennwerte              | Mechanical Characteristics                    |                        |                                             |
| Steck- und Ziehkraft <sup>1)</sup> | Insertion and withdrawal forces <sup>1)</sup> | IEC 60512-7; Test 13 b | 25 - 30 N                                   |
| Mechanische Lebensdauer            | Mechanical operation                          | IEC 60512-5; Test 9 a  | ≥ 500 Steckzyklen / mating cycles           |
| Werkstoffe                         | Materials                                     |                        |                                             |
| Modul                              | Module                                        |                        | PA 6.6 GF                                   |
| Farbe                              | Colour                                        |                        | schwarz / black                             |
| Kontakte                           | Contacts                                      |                        | CuZn (Messing / brass)                      |
| Kontaktoberfläche                  | Contact plating                               |                        | Ag (silber / silver)                        |

<sup>1)</sup> für ein Modul / for one module

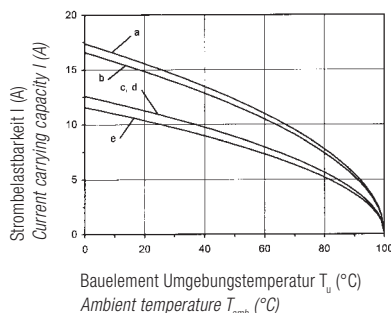
<sup>2)</sup> bei Beanspruchung >10<sup>10</sup> Ω / under operating condition >10<sup>10</sup> Ω

### Derating Kurven / Derating curves

#### 0,5 mm<sup>2</sup>



#### 1,5 mm<sup>2</sup>

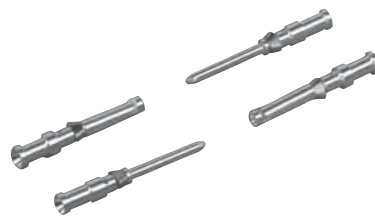


| Kurve<br>Curve | Polzahl<br>Contacts | Rahmen<br>Frame |
|----------------|---------------------|-----------------|
| a              | 10                  | 2 Module        |
| b              | 20                  | 2 Module        |
| c              | 30                  | 3 Module        |
| d              | 50                  | 5 Module        |
| e              | 70                  | 7 Module        |



# C 146 M 10 pol

Module  
Modules



für gedrehte 1,6 mm Kontakte  
for turned 1,6 mm contacts



LWL-Kontakte  
FO-contacts

| Abbildung<br>Figure | Maßzeichnung / Drawing  |                              | Bestell Nr. / Part No.  |                              |
|---------------------|-------------------------|------------------------------|-------------------------|------------------------------|
|                     | Stiftmodul / Pin module | Buchsenmodul / Socket module | Stiftmodul / Pin module | Buchsenmodul / Socket module |
|                     |                         |                              | C146 A10 001 E8         | C146 B10 001 E8              |

## Crimpkontakte / Crimp contacts

| Lieferform<br>Supplied as                      | für Leiterquerschnitt<br>for wire gauge | AWG     | Stückzahl<br>Pieces | Bestell Nr. <sup>1)</sup>    |                                  | Bestell Nr. <sup>1)</sup>    |                                  |
|------------------------------------------------|-----------------------------------------|---------|---------------------|------------------------------|----------------------------------|------------------------------|----------------------------------|
|                                                |                                         |         |                     | Stiftkontakt<br>Male contact | Buchsenkontakt<br>Female contact | Stiftkontakt<br>Male contact | Buchsenkontakt<br>Female contact |
| Gedrehte Crimpkontakte / Turned crimp contacts |                                         |         |                     | versilbert / silver plating  |                                  | vergoldet / gold plating     |                                  |
| Einzelkontakte<br>Single contact               | 0,14 - 0,37mm <sup>2</sup>              | 26 - 22 | 100                 | VN01 016 0024 (1)C           | VN02 016 0024 (1)C               | VN01 016 0024 (2)C           | VN02 016 0024 (2)C               |
|                                                | 0,5 mm <sup>2</sup>                     | 20      | 100                 | VN01 016 0025 (1)C           | VN02 016 0025 (1)C               | VN01 016 0025 (2)C           | VN02 016 0025 (2)C               |
|                                                | 0,75 - 1,0 mm <sup>2</sup>              | 20 - 16 | 100                 | VN01 016 0026 (1)C           | VN02 016 0026 (1)C               | VN01 016 0026 (2)C           | VN02 016 0026 (2)C               |
|                                                | 1,5 mm <sup>2</sup>                     | 16 - 15 | 100                 | VN01 016 0027 (1)C           | VN02 016 0027 (1)C               | VN01 016 0027 (2)C           | VN02 016 0027 (2)C               |
|                                                | 2,5 mm <sup>2</sup>                     | 14      | 100                 | VN01 016 0028 (1)C           | VN02 016 0028 (1)C               | VN01 016 0028 (2)C           | VN02 016 0028 (2)C               |

## LWL Kontakte / FO contacts

| Lieferform<br>Supplied as      | für Leiterquerschnitt<br>for wire gauge | AWG | Stückzahl<br>Pieces | Bestell Nr. <sup>1)</sup> / Part No. <sup>1)</sup> |                                 |
|--------------------------------|-----------------------------------------|-----|---------------------|----------------------------------------------------|---------------------------------|
|                                |                                         |     |                     | Stiftkontakt / Male contact                        | Buchsenkontakt / Female contact |
| Crimpkontakte / Crimp contacts |                                         |     |                     |                                                    |                                 |
| Einzelkontakt / Single contact | 1,0 mm POF/FO                           | –   | 10                  | VN01 016 0040 (8) X                                | VN02 016 0040 (8) X             |

## Werkzeuge / Tools<sup>2)</sup>

| Bezeichnung / Description                                                                | für Leiterquerschnitt<br>for wire gauge                                  | Kontaktaufnahme / Contact locator | Bestell Nr. / Part No.      |   | Werkzeuge / Tools |
|------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|-----------------------------------|-----------------------------|---|-------------------|
|                                                                                          |                                                                          |                                   | Crimpbacken / crimping dies |   |                   |
| Lösewerkzeug für Kontakte<br>Removal tool for contacts                                   | –                                                                        | –                                 | –                           | – | FG 0300 146 1     |
| Lösewerkzeug für Module<br>Removal tool for modules                                      | –                                                                        | –                                 | –                           | – | FG 1000 146       |
| Crimpzange für Einzelkontakte<br>Crimping tool for single contacts                       | 0,14 - 1,0 mm <sup>2</sup><br>1,5 mm <sup>2</sup><br>2,5 mm <sup>2</sup> | TA 0010 146 000 1                 | TA 0000 184                 | – | TA 0000           |
| Crimpzange für LWL Kontakte <sup>3)</sup><br>Crimping tool for FO contacts <sup>3)</sup> | 1,0 mm POF/FO                                                            | –                                 | –                           | – | TB 0500 146       |

<sup>1)</sup> Erläuterung der Bestell-Nr. für die Kontakte siehe Seite 4 / Explanation of the Part No. for contacts see page 4

<sup>2)</sup> Weitere Informationen siehe Katalog „Werkzeuge“ / Further information see catalogue „Tools“

<sup>3)</sup> incl. Abisolierwerkzeug, Kontaktaufnahme, Schleiflehre / incl. stripping tool, locator, abrasive adapter

Abisolierlängen siehe S. 198  
Stripping length see p. 198

# C 146 M

## 5 pol

### Technische Daten Characteristics

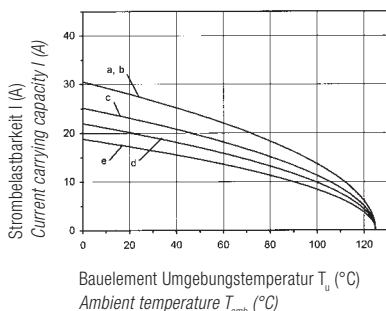
| Allgemeine Kennwerte               | General Characteristics                       | Norm / Standard        | Wert / Value                                |
|------------------------------------|-----------------------------------------------|------------------------|---------------------------------------------|
| Polzahl                            | Number of contacts                            |                        | 5                                           |
| Anschluss technik                  | Termination technique                         |                        | crimpen / crimp                             |
| Anschlussquerschnitt               | Wire gauge                                    |                        | 0,5 - 4,0 mm <sup>2</sup> (AWG 20 - 12)     |
| Brennbarkeit                       | Flammability                                  | UL 94                  | V-0                                         |
| Elektrische Kennwerte              | Electrical Characteristics                    |                        |                                             |
| Bemessungsspannung                 | Rated voltage                                 | IEC 60664-1            | 400 V                                       |
| Verschmutzungsgrad                 | Pollution degree                              | IEC 60664-1            | 3                                           |
| Überspannungskategorie             | Installation (overvoltage) category           | IEC 60664-1            | III                                         |
| Isolierstoffgruppe                 | Material group                                | IEC 60664-1            | II                                          |
| Bemessungs-Stoßspannung            | Rated impulse withstand voltage               | IEC 60664-1            | 6,0 kV                                      |
| Spannungsfestigkeit                | Voltage proof                                 | IEC 60512-2; Test 4 a  | 3,51 kV                                     |
| Strombelastbarkeit                 | Current carrying capacity                     | IEC 60512-3; Test 5 b  | siehe Derating Kurven / see derating curves |
| Durchgangswiderstand               | Contact resistance                            | IEC 60512-2; Test 2 a  | ≤ 2 mΩ                                      |
| Isolationswiderstand               | Insulation resistance                         | IEC 60512-2; Test 3 a  | ≥ 10 <sup>12</sup> Ω <sup>2)</sup>          |
| Luftstrecke                        | Clearance                                     | IEC 60664-1            | 5,8 mm                                      |
| Kriechstrecke                      | Creepage                                      | IEC 60664-1            | 5,8 mm                                      |
| Klimatische Kennwerte              | Climatical Characteristics                    |                        |                                             |
| Prüfklasse                         | Climatic category                             | IEC 60068-1            | 40 / 125 / 21                               |
| Obere Grenztemperatur              | Upper temperature                             | IEC 60512-6; Test 11 i | + 125 °C / 1000 h                           |
| Untere Grenztemperatur             | Lower temperature                             | IEC 60512-6; Test 11 i | - 40 °C                                     |
| Mechanische Kennwerte              | Mechanical Characteristics                    |                        |                                             |
| Steck- und Ziehkraft <sup>1)</sup> | Insertion and withdrawal forces <sup>1)</sup> | IEC 60512-7; Test 13 b | 25 - 30 N                                   |
| Mechanische Lebensdauer            | Mechanical operation                          | IEC 60512-5; Test 9 a  | ≥ 500 Steckzyklen / mating cycles           |
| Werkstoffe                         | Materials                                     |                        |                                             |
| Modul                              | Module                                        |                        | PA 6.6 GF                                   |
| Farbe                              | Colour                                        |                        | schwarz                                     |
| Kontakte                           | Contacts                                      |                        | Cu-Legierung / Cu-alloy                     |
| Kontakt oberfläche                 | Contact plating                               |                        | Ag (silber / silver)                        |

<sup>1)</sup> für ein Modul / for one module

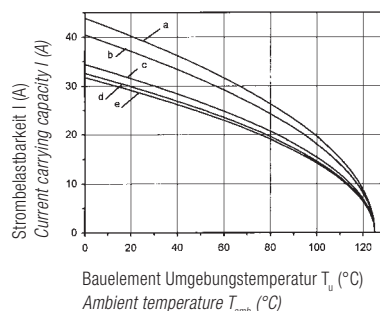
<sup>2)</sup> bei Beanspruchung >10<sup>10</sup> Ω / under operating condition >10<sup>10</sup> Ω

#### Derating Kurven / Derating curves

##### 2,5 mm<sup>2</sup>



##### 4 mm<sup>2</sup>



| Kurve<br>Curve | Polzahl<br>Contacts | Rahmen<br>Frame |
|----------------|---------------------|-----------------|
| a              | 5                   | 2 Module        |
| b              | 10                  | 2 Module        |
| c              | 15                  | 3 Module        |
| d              | 25                  | 5 Module        |
| e              | 35                  | 7 Module        |

# C 146 M 5 pol

Module  
Modules

für gedrehte 2,5 mm Kontakte  
for turned 2,5 mm contacts



| Abbildung<br>Figure | Maßzeichnung / Drawing  |                              | Bestell Nr. / Part No.  |                              |
|---------------------|-------------------------|------------------------------|-------------------------|------------------------------|
|                     | Stiftmodul / Pin module | Buchsenmodul / Socket module | Stiftmodul / Pin module | Buchsenmodul / Socket module |
|                     |                         |                              | C146 A05 001 E8         | C146 B05 001 E8              |

## Gedrehte Crimpkontakte / Turned crimp contacts

| Lieferform<br>Supplied as                      | für Leiterquerschnitt<br>for wire gauge | AWG | Stückzahl<br>Pieces | Bestell Nr. <sup>1)</sup>    |                                  | Bestell Nr. <sup>1)</sup>    |                                  |
|------------------------------------------------|-----------------------------------------|-----|---------------------|------------------------------|----------------------------------|------------------------------|----------------------------------|
|                                                |                                         |     |                     | Stiftkontakt<br>Male contact | Buchsenkontakt<br>Female contact | Stiftkontakt<br>Male contact | Buchsenkontakt<br>Female contact |
| Gedrehte Crimpkontakte / Turned crimp contacts |                                         |     |                     | versilbert / silver plating  |                                  | vergoldet / gold plating     |                                  |
| Einzelkontakte<br>Single contact               | 0,5 mm <sup>2</sup>                     | 20  | 100                 | VN01 025 0029 (1)C           | VN02 025 0029 (1)C               | VN01 025 0029 (2)C           | VN02 025 0029 (2)C               |
|                                                | 0,75 - 1,0 mm <sup>2</sup>              | 18  | 100                 | VN01 025 0030 (1)C           | VN02 025 0030 (1)C               | VN01 025 0030 (2)C           | VN02 025 0030 (2)C               |
|                                                | 1,5 mm <sup>2</sup>                     | 16  | 100                 | VN01 025 0031 (1)C           | VN02 025 0031 (1)C               | VN01 025 0031 (2)C           | VN02 025 0031 (2)C               |
|                                                | 2,5 mm <sup>2</sup>                     | 14  | 100                 | VN01 025 0032 (1)C           | VN02 025 0032 (1)C               | VN01 025 0032 (2)C           | VN02 025 0032 (2)C               |
|                                                | 4,0 mm <sup>2</sup>                     | 12  | 100                 | VN01 025 0033 (1)C           | VN02 025 0033 (1)C               | VN01 025 0033 (2)C           | VN02 025 0033 (2)C               |

## Werkzeuge / Tools<sup>2)</sup>

| Bezeichnung / Description                                          | für Leiterquerschnitt<br>for wire gauge          | Bestell Nr. / Part No.                 |                             |                   |
|--------------------------------------------------------------------|--------------------------------------------------|----------------------------------------|-----------------------------|-------------------|
|                                                                    |                                                  | Kontaktaufnahme / Contact locator      | Crimpbacken / crimping dies | Werkzeuge / Tools |
| Löswerkzeug für Kontakte<br>Removal tool for contacts              | –                                                | –                                      | –                           | FG 0300 146 4     |
| Löswerkzeug für Module<br>Removal tool for modules                 | –                                                | –                                      | –                           | FG 1000 146       |
| Crimpzange für Einzelkontakte<br>Crimping tool for single contacts | 0,5 - 2,5 mm <sup>2</sup><br>4,0 mm <sup>2</sup> | TA 0010 146 000 2<br>TA 0010 146 000 3 | TA 0000 144<br>TA 0000 124  | TA 0000           |

<sup>1)</sup> Erläuterung der Bestell-Nr. für die Kontakte siehe Seite 4 / Explanation of the Part No. for contacts see page 4

<sup>2)</sup> Weitere Informationen siehe Katalog „Werkzeuge“ / further information see catalogue „Tools“

Abisolierlängen siehe S. 198  
Stripping length see p. 198

# C 146 M

## 3 pol

### Technische Daten Characteristics

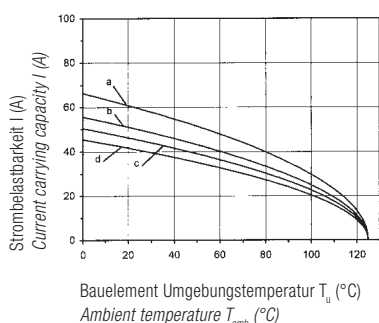
| Allgemeine Kennwerte               | General Characteristics                       | Norm / Standard        | Wert / Value                                |
|------------------------------------|-----------------------------------------------|------------------------|---------------------------------------------|
| Polzahl                            | Number of contacts                            |                        | 3                                           |
| Anschluss technik                  | Termination technique                         |                        | crimpen / crimp                             |
| Anschlussquerschnitt               | Wire gauge                                    |                        | 1,5 - 10 mm <sup>2</sup> (AWG 16 - 8)       |
| Brennbarkeit                       | Flammability                                  | UL 94                  | V-0                                         |
| Elektrische Kennwerte              | Electrical Characteristics                    |                        |                                             |
| Bemessungsspannung                 | Rated voltage                                 | IEC 60664-1            | 630 V                                       |
| Verschmutzungsgrad                 | Pollution degree                              | IEC 60664-1            | 3                                           |
| Überspannungskategorie             | Installation (overvoltage) category           | IEC 60664-1            | III                                         |
| Isolierstoffgruppe                 | Material group                                | IEC 60664-1            | II (PA)                                     |
| Bemessungs-Stoßspannung            | Rated impulse withstand voltage               | IEC 60664-1            | 8,0 kV                                      |
| Spannungsfestigkeit                | Voltage proof                                 | IEC 60512-2 Test 4 a   | 4,26 kV                                     |
| Strombelastbarkeit                 | Current carrying capacity                     | IEC 60512-3; Test 5 b  | siehe Derating Kurven / see derating curves |
| Durchgangswiderstand               | Contact resistance                            | IEC 60512-2; Test 2 a  | ≤ 1 mΩ                                      |
| Isolationswiderstand               | Insulation resistance                         | IEC 60512-2; Test 3 a  | ≥ 10 <sup>12</sup> Ω <sup>2)</sup>          |
| Luftstrecke                        | Clearance                                     | IEC 60664-1            | > 12 mm                                     |
| Kriechstrecke                      | Creepage                                      | IEC 60664-1            | > 12 mm                                     |
| Klimatische Kennwerte              | Climatical Characteristics                    |                        |                                             |
| Prüfklasse                         | Climatic category                             | IEC 60068-1            | 40 / 125 / 21                               |
| Obere Grenztemperatur              | Upper temperature                             | IEC 60512-6; Test 11 i | + 125 °C / 1000 h                           |
| Untere Grenztemperatur             | Lower temperature                             | IEC 60512-6; Test 11 i | - 40 °C                                     |
| Mechanische Kennwerte              | Mechanical Characteristics                    |                        |                                             |
| Steck- und Ziehkraft <sup>1)</sup> | Insertion and withdrawal forces <sup>1)</sup> | IEC 60512-7; Test 13 b | 20 - 30 N                                   |
| Mechanische Lebensdauer            | Mechanical operation                          | IEC 60512-5; Test 9 a  | ≥ 500 Steckzyklen / mating cycles           |
| Werkstoffe                         | Materials                                     |                        |                                             |
| Modul                              | Module                                        |                        | PA 6.6 GF                                   |
| Farbe                              | Colour                                        |                        | schwarz / black                             |
| Kontakte                           | Contacts                                      |                        | Cu-Legierung / Cu-alloy                     |
| Kontaktoberfläche                  | Contact plating                               |                        | Ag (silber / silver)                        |

<sup>1)</sup> für ein Modul / for one module

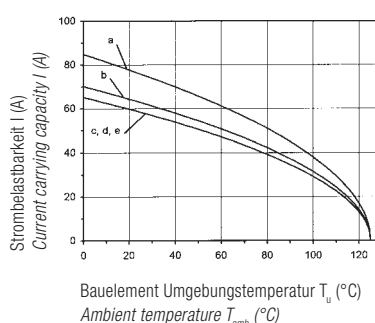
<sup>2)</sup> bei Beanspruchung >10<sup>10</sup> Ω / under operating condition >10<sup>10</sup> Ω

#### Derating Kurven / Derating curves

6 mm<sup>2</sup>



10 mm<sup>2</sup>



| Kurve<br>Curve | Polzahl<br>Contacts | Rahmen<br>Frame |
|----------------|---------------------|-----------------|
| a              | 3                   | 2 Module        |
| b              | 6                   | 2 Module        |
| c              | 9                   | 3 Module        |
| d              | 15                  | 5 Module        |
| e              | 21                  | 7 Module        |

# C 146 M 3 pol

Module  
Modules

für gedrehte 3,6 mm Kontakte  
for turned 3,6 mm contacts



| Abbildung<br>Figure | Maßzeichnung / Drawing  |                              | Bestell Nr. / Part No.  |                              |
|---------------------|-------------------------|------------------------------|-------------------------|------------------------------|
|                     | Stiftmodul / Pin module | Buchsenmodul / Socket module | Stiftmodul / Pin module | Buchsenmodul / Socket module |
|                     |                         |                              | C146 A03 001 E8         | C146 B03 001 E8              |

## Gedrehte Crimpkontakte / Turned crimp contacts

| Lieferform<br>Supplied as                      | für Leiterquerschnitt<br>for wire gauge | AWG | Stückzahl<br>Pieces | Bestell Nr. <sup>1)</sup> / Part No. <sup>1)</sup> |                                  |
|------------------------------------------------|-----------------------------------------|-----|---------------------|----------------------------------------------------|----------------------------------|
|                                                |                                         |     |                     | Stiftkontakt / Male contact                        | Buchsenkontakt / Female contact  |
| Gedrehte Crimpkontakte / Turned crimp contacts |                                         |     |                     |                                                    |                                  |
| versilbert / silver plating                    |                                         |     |                     |                                                    |                                  |
| Einzelkontakt<br>Single contact                | 1,5 mm <sup>2</sup>                     | 16  | 100                 | VN01 036 0004 (1)C                                 | VN02 036 0004 (1)C               |
|                                                | 2,5 mm <sup>2</sup>                     | 14  | 100                 | VN01 036 0005 (1)C                                 | VN02 036 0005 (1)C               |
|                                                | 4,0 mm <sup>2</sup>                     | 12  | 100                 | VN01 036 0001 (1)C                                 | VN02 036 0001 (1)C               |
|                                                | 6,0 mm <sup>2</sup>                     | 10  | 100                 | VN01 036 0002 (1)C <sup>2)</sup>                   | VN02 036 0002 (1)C <sup>2)</sup> |
|                                                | 10,0 mm <sup>2</sup>                    | 8   | 100                 | VN01 036 0003 (1)C <sup>2)</sup>                   | VN02 036 0003 (1)C <sup>2)</sup> |

## Werkzeuge / Tools <sup>3)</sup>

| Bezeichnung / Description                                               | für Leiterquerschnitt<br>for wire gauge                                 | Kontaktaufnahme / Contact locator                           | Bestell Nr. / Part No.                    |                        |
|-------------------------------------------------------------------------|-------------------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------|------------------------|
|                                                                         |                                                                         |                                                             | Crimpbacken / Crimping dies               | Werkzeuge / Tools      |
| Löswerkzeug für Kontakte<br>Removal tool for contacts                   | –                                                                       | –                                                           | –                                         | FG 0300 146 3          |
| Löswerkzeug für Module<br>Removal tool for modules                      | –                                                                       | –                                                           | –                                         | FG 1000 146            |
| Crimpzange für Einzelkontakte<br>Crimping tool for single contacts      | 1,5 - 2,5 mm <sup>2</sup><br>4,0 mm <sup>2</sup><br>6,0 mm <sup>2</sup> | TA 0010 146 000 5<br>TA 0010 146 000 4<br>TA 0010 146 000 4 | TA 0000 144<br>TA 0000 124<br>TA 0000 124 | TA 0000                |
| 4-Kerb Crimpzange <sup>4)</sup><br>4-indent crimping tool <sup>4)</sup> | 1,5 - 10,0 mm <sup>2</sup>                                              | –                                                           | –                                         | TB 0200 146            |
| Crimpzange für Kabelschuhe<br>Crimping tool for cable lugs              | 6,0 mm <sup>2</sup><br>10,0 mm <sup>2</sup>                             | –                                                           | TA 0000 180                               | TA 0000                |
| Kabelschuhe für Schutzleiteranschluss / Cable lugs for PE connection    |                                                                         |                                                             | Stückzahl / Pieces                        | Bestell Nr. / Part No. |
| Kabelschuh<br>cable lug                                                 | 6,0 mm <sup>2</sup>                                                     | –                                                           | 20                                        | N15 006 000 9Z         |
|                                                                         | 10,0 mm <sup>2</sup>                                                    | –                                                           | 20                                        | N15 010 000 7Z         |

<sup>1)</sup> Erläuterung der Bestell-Nr. für die Kontakte siehe Seite 4 / Explanation of the Part No. for contacts see page 4

<sup>2)</sup> Bei den Leiterquerschnitten 6 + 10 mm<sup>2</sup> sind Kabelschuhe für den Schutzleiteranschluss zu verwenden / For wire gauges 6 + 10 mm<sup>2</sup> cable lugs have to be used for PE connection

<sup>3)</sup> Weitere Informationen siehe Katalog „Werkzeuge“ / Further information see catalogue „Tools“

<sup>4)</sup> incl. Prüfstiftset, Kontaktaufnahme / incl. calibration pin set, locator

Abisolierlängen siehe S. 198 / Stripping length see p. 198


C 146 M

4 pol

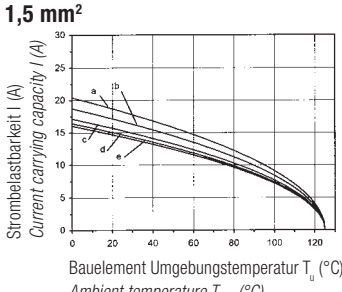
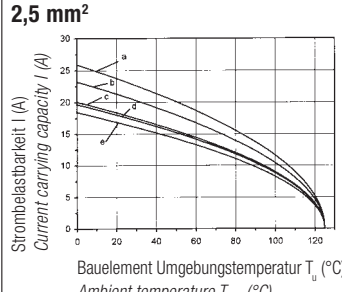
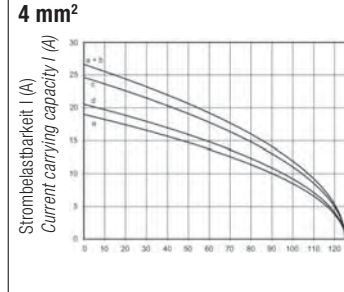
4+ 

5 pol

Technische Daten  
Characteristics

| Allgemeine Kennwerte               | General Characteristics                       | Norm / Standard        | Wert / Value                                                                              |
|------------------------------------|-----------------------------------------------|------------------------|-------------------------------------------------------------------------------------------|
| Polzahl                            | Number of contacts                            |                        | 4 +  / 5 |
| Anschluss technik                  | Termination technique                         |                        | crimpen / crimp                                                                           |
| Anschlussquerschnitt               | Wire gauge                                    |                        | 0,5 - 4,0 mm <sup>2</sup> (AWG 20 - 12)                                                   |
| Brennbarkeit                       | Flammability                                  | UL 94                  | V-0                                                                                       |
| Elektrische Kennwerte              | Electrical Characteristics                    |                        |                                                                                           |
| Bemessungsspannung                 | Rated voltage                                 | IEC 60664-1            | 1000 V <sup>1)</sup>                                                                      |
| Verschmutzungsgrad                 | Pollution degree                              | IEC 60664-1            | 3                                                                                         |
| Überspannungskategorie             | Installation (overvoltage) category           | IEC 60664-1            | III                                                                                       |
| Isolierstoffgruppe                 | Material group                                | IEC 60664-1            | II                                                                                        |
| Bemessungs-Stoßspannung            | Rated impulse withstand voltage               | IEC 60664-1            | 8,0 kV                                                                                    |
| Spannungsfestigkeit                | Voltage proof                                 | IEC 60512-2; Test 4 a  | 5,7 kV                                                                                    |
| Strombelastbarkeit                 | Current carrying capacity                     | IEC 60512-3; Test 5 b  | siehe Derating Kurven / see derating curves                                               |
| Durchgangswiderstand               | Contact resistance                            | IEC 60512-2; Test 2 a  | ≤ 5 mΩ                                                                                    |
| Isolationswiderstand               | Insulation resistance                         | IEC 60512-2; Test 3 a  | ≥ 10 <sup>12</sup> Ω                                                                      |
| Luftstrecke                        | Clearance                                     | IEC 60664-1            | > 14 mm                                                                                   |
| Kriechstrecke                      | Creepage                                      | IEC 60664-1            | > 14 mm                                                                                   |
| Klimatische Kennwerte              | Climatical Characteristics                    |                        |                                                                                           |
| Prüfklasse                         | Climatic category                             | IEC 60068-1            | 40 / 125 / 21                                                                             |
| Obere Grenztemperatur              | Upper temperature                             | IEC 60512-6; Test 11 i | + 125 °C / 1000 h                                                                         |
| Untere Grenztemperatur             | Lower temperature                             | IEC 60512-6; Test 11 i | - 40 °C                                                                                   |
| Mechanische Kennwerte              | Mechanical Characteristics                    |                        |                                                                                           |
| IP-Schutzart                       | IP-degree of protection                       | IEC 60529              | 20                                                                                        |
| Steck- und Ziehkraft <sup>2)</sup> | Insertion and withdrawal forces <sup>2)</sup> | IEC 60512-7; Test 13 b | 15 - 20 N                                                                                 |
| Mechanische Lebensdauer            | Mechanical operation                          | IEC 60512-5; Test 9 a  | ≥ 500 Steckzyklen / mating cycles                                                         |
| Werkstoffe                         | Materials                                     |                        |                                                                                           |
| Modul                              | Module                                        |                        | PA 6.6 GF                                                                                 |
| Farbe                              | Colour                                        |                        | schwarz / black                                                                           |
| Kontakte Stift / Buchse            | Contacts male / female                        |                        | CuZn (Messing/brass) / CuSn (Bronze/bronze)                                               |
| Kontaktoberfläche                  | Contact plating                               |                        | Ag (silber / silver)                                                                      |

<sup>1)</sup> 630 V bei Verwendung als Steckvorrichtung / 630 V if the modules are used as plug and socket device<sup>2)</sup> für ein Modul / for one module

| Derating Kurven / Derating curves                                                                                |                                                                                                                  |                                                                                                                 | Kurve<br>Curve | Polzahl<br>Contacts | Rahmen<br>Frame |
|------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|----------------|---------------------|-----------------|
| <b>1,5 mm<sup>2</sup></b><br> | <b>2,5 mm<sup>2</sup></b><br> | <b>4 mm<sup>2</sup></b><br> | a              | 5                   | 2 Module        |
|                                                                                                                  |                                                                                                                  |                                                                                                                 | b              | 10                  | 2 Module        |
|                                                                                                                  |                                                                                                                  |                                                                                                                 | c              | 15                  | 3 Module        |
|                                                                                                                  |                                                                                                                  |                                                                                                                 | d              | 25                  | 5 Module        |
|                                                                                                                  |                                                                                                                  |                                                                                                                 | e              | 35                  | 7 Module        |

**C 146 M**  
**4 pol**  
**4+ **  
**5 pol**  
 Module  
 Modules

gestanzte Einzelkontakte  
 Stamped single contacts



**für gestanzte 2,5 mm Kontakte**  
**for stamped 2,5 mm contacts**

Bandkontakte für Crimpzangen  
 Contacts on reel for hand crimping tools




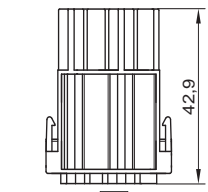
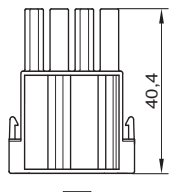
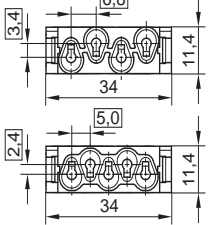
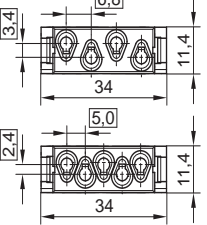
200 / 100 Stück  
 200 / 100 pcs

Bandkontakte für Crimpmaschinen  
 Contacts on reel for crimp machines



2000 Stück  
 (Zuführung links  
 oder rechts)

2000 pcs  
 (feeding left or  
 right hand side)

| Abbildung<br>Figure                                                               | Maßzeichnung / Drawing                                                            |                                                                                   | Bestell Nr. / Part No.                                                                          |                                                                                                 |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
|                                                                                   | Stiftmodul / Pin module                                                           | Buchsenmodul / Socket module                                                      | Stiftmodul / Pin module                                                                         | Buchsenmodul / Socket module                                                                    |
|  |  |  | C146 D04 001 E8<br>(4 pol)<br><br>C146 D05 001 E8<br>(4 + PE)<br><br>C146 D05 801 E8<br>(5 pol) | C146 C04 001 E8<br>(4 pol)<br><br>C146 C05 001 E8<br>(4 + PE)<br><br>C146 C05 801 E8<br>(5 pol) |
|                                                                                   |  |                                                                                   |                                                                                                 |                                                                                                 |
|                                                                                   |  |                                                                                   |                                                                                                 |                                                                                                 |
|                                                                                   | PE Kontakt 2 mm voreilend<br>PE contact 2 mm first-to-mate                        |                                                                                   |                                                                                                 |                                                                                                 |

**Crimpkontakte / Crimp contacts**

| Lieferform<br>Supplied as                                               | für Leiterquerschnitt<br>for wire gauge | AWG     | Stückzahl<br>Pieces | Bestell Nr. <sup>1)</sup><br>Stiftkontakt<br>Male contact | Part No. <sup>1)</sup><br>Buchsenkontakt<br>Female contact | Bestell Nr. <sup>1)</sup><br>Stiftkontakt<br>Male contact | Part No. <sup>1)</sup><br>Buchsenkontakt<br>Female contact |
|-------------------------------------------------------------------------|-----------------------------------------|---------|---------------------|-----------------------------------------------------------|------------------------------------------------------------|-----------------------------------------------------------|------------------------------------------------------------|
| Gestanzte Einzelkontakte / Stamped single contacts                      |                                         |         |                     | versilbert / silver plating                               |                                                            | vergoldet / gold plating                                  |                                                            |
|                                                                         | 0,5 - 1,5 mm <sup>2</sup>               | 20 - 16 | 100                 | VN01 025 0001 (101)                                       | VN02 025 0001 (101)                                        | VN01 025 0001 (102)                                       | VN02 025 0001 (102)                                        |
|                                                                         | 1,5 - 2,5 mm <sup>2</sup>               | 16 - 14 | 100                 | VN01 025 0010 (101)                                       | VN02 025 0010 (101)                                        | VN01 025 0010 (102)                                       | VN02 025 0010 (102)                                        |
|                                                                         | 2,5 - 4,0 mm <sup>2</sup>               | 12      | 100                 | VN01 025 0043 (1)                                         | VN02 025 0043 (1)                                          |                                                           |                                                            |
| Bandkontakte für Crimpzangen / Contacts on reel for hand crimping tools |                                         |         |                     |                                                           |                                                            |                                                           |                                                            |
|                                                                         | 0,5 - 1,5 mm <sup>2</sup>               | 20 - 16 | 200                 | ZN01 025 0001 (1)                                         | ZN02 025 0001 (1)                                          | ZN01 025 0001 (2)                                         | ZN02 025 0001 (2)                                          |
|                                                                         | 1,5 - 2,5 mm <sup>2</sup>               | 16 - 14 | 100                 | ZN01 025 0010 (1)                                         | ZN02 025 0010 (1)                                          | ZN01 025 0010 (2)                                         | ZN02 025 0010 (2)                                          |
| Bandkontakte für Crimpmaschinen / Contacts on reel for crimp machines   |                                         |         |                     |                                                           |                                                            |                                                           |                                                            |
| Kontaktzuführung rechts<br>Contact feeding right hand side              | 0,5 - 1,5 mm <sup>2</sup>               | 20 - 16 | 2000                | HN01 025 0001 (1)                                         | HN02 025 0001 (1)                                          |                                                           |                                                            |
|                                                                         | 1,5 - 2,5 mm <sup>2</sup>               | 16 - 14 | 2000                | HN01 025 0010 (1)                                         | HN02 025 0010 (1)                                          |                                                           |                                                            |
| Kontaktzuführung links<br>Contact feeding left hand side                | 0,5 - 1,5 mm <sup>2</sup>               | 20 - 16 | 2000                | TN01 025 0001 (1)                                         | TN02 025 0001 (1)                                          |                                                           |                                                            |
|                                                                         | 1,5 - 2,5 mm <sup>2</sup>               | 16 - 14 | 2000                | TN01 025 0010 (1)                                         | TN02 025 0010 (1)                                          |                                                           |                                                            |
|                                                                         | 2,5 - 4 mm <sup>2</sup>                 | 12      | 2000                | TN01 025 0043 (1)                                         | TN02 025 0043 (1)                                          |                                                           |                                                            |

**Werkzeuge / Tools <sup>2)</sup>**

| Bezeichnung / Description                                          | für Leiterquerschnitt<br>for wire gauge | Bestell Nr. / Part No.            |                             |                   |
|--------------------------------------------------------------------|-----------------------------------------|-----------------------------------|-----------------------------|-------------------|
|                                                                    |                                         | Kontaktaufnahme / Contact locator | Crimpbacken / Crimping dies | Werkzeuge / Tools |
| Lösewerkzeug für Kontakte<br>Removal tool for contacts             | –                                       | –                                 | –                           | FG 0200 146 1     |
| Lösewerkzeug für Module<br>Removal tool for modules                | –                                       | –                                 | –                           | FG 1000 146       |
| Crimpzange für Einzelkontakte<br>Crimping tool for single contacts | 0,5 - 1,5 mm <sup>2</sup>               | TA 0004 146 000 1                 | TA 0000 163                 | TA 0000           |
|                                                                    | 1,5 - 2,5 mm <sup>2</sup>               | TA 0005 146 000 3                 | TA 0000 141                 |                   |
|                                                                    | 2,5 - 4,0 mm <sup>2</sup>               | TA 0003 146 000 1                 | TA 0000 121                 |                   |

<sup>1)</sup> Erläuterung der Bestell-Nr. für die Kontakte siehe Seite 4 / Explanation of the Part No. for contacts see page 4

<sup>2)</sup> Weitere Informationen siehe Katalog „Werkzeuge“ / Further information see catalogue „Tools“

Abisolierlängen siehe S. 198  
 Stripping length see p. 198

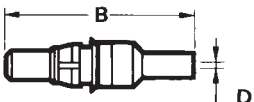
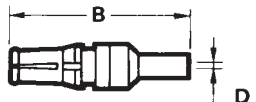
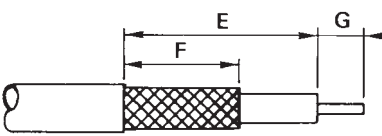
C 146 M

# 3 pol Koax

**Technische Daten**  
*Characteristics*

| Allgemeine Kennwerte               | General Characteristics                       | Norm / Standard        | Wert / Value                      |
|------------------------------------|-----------------------------------------------|------------------------|-----------------------------------|
| Polzahl                            | Number of contacts                            |                        | 3                                 |
| Anschluss technik                  | Termination technique                         |                        | crimpen, löten / crimp, solder    |
| Brennbarkeit                       | Flammbarkeit                                  | UL 94                  | V-0                               |
| Elektrische Kennwerte              | Electrical Characteristics                    |                        |                                   |
| Bemessungsspannung                 | Rated voltage                                 | IEC 60664-1            | 250 V                             |
| Verschmutzungsgrad                 | Pollution degree                              | IEC 60664-1            | 3                                 |
| Überspannungskategorie             | Installation (overvoltage) category           | IEC 60664-1            | III                               |
| Isolierstoffgruppe                 | Material group                                | IEC 60664-1            | II                                |
| Wellenwiderstand                   | Impedance                                     |                        | 50 Ω                              |
| Spannungsfestigkeit                | Voltage proof                                 | IEC 60512-2; Test 4 a  | 0,75 kV                           |
| Frequenzbereich                    | Working frequency                             |                        | 2 GHz                             |
| Durchgangswiderstand               | Contact resistance                            | IEC 60512-2; Test 2 a  | ≤ 6 mΩ                            |
| Isolationswiderstand               | Insulation resistance                         | IEC 60512-2; Test 3 a  | ≥ 10 <sup>6</sup> Ω               |
| Klimatische Kennwerte              | Climatical Characteristics                    |                        |                                   |
| Prüfklasse                         | Climatic category                             | IEC 60068-1            | 40 / 125 / 21                     |
| Obere Grenztemperatur              | Upper temperature                             | IEC 60512-6; Test 11 i | + 125 °C / 1000 h                 |
| Untere Grenztemperatur             | Lower temperature                             | IEC 60512-6; Test 11 i | - 40 °C                           |
| Mechanische Kennwerte              | Mechanical Characteristics                    |                        |                                   |
| Steck- und Ziehkraft <sup>1)</sup> | Insertion and withdrawal forces <sup>1)</sup> | IEC 60512-7; Test 13 b | 25 - 30 N                         |
| Mechanische Lebensdauer            | Mechanical operation                          | IEC 60512-5; Test 9 a  | ≥ 500 Steckzyklen / mating cycles |
| Werkstoffe                         | Materials                                     |                        |                                   |
| Modul                              | Module                                        |                        | PA 6.6 GF                         |
| Farbe                              | Colour                                        |                        | rotbraun / redbrown               |
| Kontakt oberfläche                 | Contact plating                               |                        | Au (gold / gold)                  |

<sup>1)</sup> für ein Modul / for one module

| Stiftkontakt / Male contact                                                         | Buchsenkontakt / Female contact                                                     | Bestell Nr.<br>Part No. | B    | D   | E   | F   | G |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------|------|-----|-----|-----|---|
|  |  | 17 DM 537 401           | 23,6 | 1,7 | 7,9 | 6,3 | 2 |
|                                                                                     |                                                                                     | 17 DM 537 421           | 23,6 | 1,7 | 7,9 | 6,3 | 2 |
| Absetzmaße / Stripping Dimensions                                                   |                                                                                     | 17 DM 537 405           | 26,3 | 3,2 | 9,5 | 7,9 | 2 |
|                                                                                     |  | 17 DM 537 425           | 26,3 | 3,2 | 9,5 | 7,9 | 2 |



C 146 M

## 3 pol Koax

Module  
Modulesfür Koax-Kontakte  
for coax-contacts

| Abbildung<br>Figure | Maßzeichnung / Drawing  |                              | Bestell Nr. / Part No.  |                              |
|---------------------|-------------------------|------------------------------|-------------------------|------------------------------|
|                     | Stiftmodul / Pin module | Buchsenmodul / Socket module | Stiftmodul / Pin module | Buchsenmodul / Socket module |
|                     |                         |                              | C146 A03 501 E8         | C146 B03 501 E8              |

Crimpkontakte <sup>1)</sup> / Crimp contacts <sup>1)</sup>

| Lieferform<br>Supplied as        | für Kabelgröße<br>for cable size | Stückzahl<br>Pieces | Bestell Nr. / Part No.      |                                 |
|----------------------------------|----------------------------------|---------------------|-----------------------------|---------------------------------|
|                                  |                                  |                     | Stiftkontakt / Male contact | Buchsenkontakt / Female contact |
| Einzelkontakte / Single contacts |                                  |                     |                             |                                 |
|                                  | RG 174, 179, 316                 | 1                   | 17 DM 537 401               | 17 DM 537 421                   |
|                                  | RG 58                            | 1                   | 17 DM 537 405               | 17 DM 537 425                   |

Werkzeuge <sup>2)</sup> / Tools <sup>2)</sup>

| Bezeichnung / Description                                          | für Kabelgröße<br>for cable size | 6-Kant-Maß in mm<br>6-hex-size in mm |       |       | Bestell Nr. / Part No.      |                   |
|--------------------------------------------------------------------|----------------------------------|--------------------------------------|-------|-------|-----------------------------|-------------------|
|                                                                    |                                  |                                      |       |       | Crimpbacken / Crimping dies | Werkzeuge / Tools |
| Löswerkzeug für Kontakte<br>Removal tool for contacts              | –                                | –                                    | –     | –     | –                           | FG 0300 146 3     |
| Löswerkzeug für Module<br>Removal tool for modules                 | –                                | –                                    | –     | –     | –                           | FG 1000 146       |
| Crimpzange für Einzelkontakte<br>Crimping tool for single contacts | RG 58                            | 5,4                                  | (6,5) | (1,7) | TA 0000 401                 | TA 0000           |
|                                                                    | RG 174, 179, 316                 | 3,25                                 | (4,5) | (1,7) | TA 0000 402                 | TA 0000           |

<sup>1)</sup> Weitere Kontakte auf Anfrage / Further contacts on request<sup>2)</sup> Weitere Informationen siehe Katalog „Werkzeuge“ / Further information see catalogue „Tools“

C 146 M

3 pol

Technische Daten  
Characteristics

| Allgemeine Kennwerte               | General Characteristics                       | Norm / Standard        | Wert / Value                                |
|------------------------------------|-----------------------------------------------|------------------------|---------------------------------------------|
| Polzahl                            | Number of contacts                            |                        | 3                                           |
| Anschluss technik                  | Termination technique                         |                        | crimpen / crimp                             |
| Anschlussquerschnitt               | Wire gauge                                    |                        | 1,5 - 10 mm <sup>2</sup> (AWG 16 - 8)       |
| Brennbarkeit                       | Flammability                                  | UL 94                  | V-0                                         |
| Elektrische Kennwerte              | Electrical Characteristics                    |                        |                                             |
| Bemessungsspannung                 | Rated voltage                                 | IEC 60664-1            | 1000 V <sup>1)</sup>                        |
| Verschmutzungsgrad                 | Pollution degree                              | IEC 60664-1            | 3                                           |
| Überspannungskategorie             | Installation (overvoltage) category           | IEC 60664-1            | III                                         |
| Isolierstoffgruppe                 | Material group                                | IEC 60664-1            | II                                          |
| Bemessungs-Stoßspannung            | Rated impulse withstand voltage               | IEC 60664-1            | 8,0 kV                                      |
| Spannungsfestigkeit                | Voltage proof                                 | IEC 60512-2; Test 4 a  | 5,7 kV                                      |
| Strombelastbarkeit                 | Current carrying capacity                     | IEC 60512-3; Test 5 b  | siehe Derating Kurven / see derating curves |
| Durchgangswiderstand               | Contact resistance                            | IEC 60512-2; Test 2 a  | ≤ 1 mΩ                                      |
| Isolationswiderstand               | Insulation resistance                         | IEC 60512-2; Test 3 a  | ≥ 10 <sup>12</sup> Ω                        |
| Luftstrecke                        | Clearance                                     | IEC 60664-1            | > 14 mm                                     |
| Kriechstrecke                      | Creepage                                      | IEC 60664-1            | > 14 mm                                     |
| Klimatische Kennwerte              | Climatical Characteristics                    |                        |                                             |
| Prüfklasse                         | Climatic category                             | IEC 60068-1            | 40 / 125 / 21                               |
| Obere Grenztemperatur              | Upper temperature                             | IEC 60512-6; Test 11 i | + 125 °C / 1000 h                           |
| Untere Grenztemperatur             | Lower temperature                             | IEC 60512-6; Test 11 i | - 40 °C                                     |
| Mechanische Kennwerte              | Mechanical Characteristics                    |                        |                                             |
| IP-Schutzart                       | IP-degree of protection                       | IEC 60529              | 20                                          |
| Steck- und Ziehkraft <sup>2)</sup> | Insertion and withdrawal forces <sup>2)</sup> | IEC 60512-7; Test 13 b | 20 - 30 N                                   |
| Mechanische Lebensdauer            | Mechanical operation                          | IEC 60512-5; Test 9 a  | ≥ 500 Steckzyklen / mating cycles           |
| Werkstoffe                         | Materials                                     |                        |                                             |
| Modul                              | Module                                        |                        | PA 6.6 GF                                   |
| Farbe                              | Colour                                        |                        | schwarz / black                             |
| Kontakte                           | Contacts                                      |                        | Cu-Legierung / Cu-alloy                     |
| Kontakt oberfläche                 | Contact plating                               |                        | Ag (silber / silver)                        |

<sup>1)</sup> 630 V bei Verwendung als Steckvorrichtung / 630 V if the modules are used as plug and socket device<sup>2)</sup> für ein Modul / for one module

## Derating Kurven / Derating curves

| 6 mm <sup>2</sup>                                                                                    |                                                                                                      | 10 mm <sup>2</sup> |    | Kurve<br>Curve | Polzahl<br>Contacts | Rahmen<br>Frame |
|------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|--------------------|----|----------------|---------------------|-----------------|
| <p>Baelement Umgebungstemperatur T<sub>u</sub> (°C)<br/>Ambient temperature T<sub>amb</sub> (°C)</p> | <p>Baelement Umgebungstemperatur T<sub>u</sub> (°C)<br/>Ambient temperature T<sub>amb</sub> (°C)</p> | a                  | 3  | 2 Module       |                     |                 |
|                                                                                                      |                                                                                                      | b                  | 6  | 2 Module       |                     |                 |
|                                                                                                      |                                                                                                      | c                  | 9  | 3 Module       |                     |                 |
|                                                                                                      |                                                                                                      | d                  | 15 | 5 Module       |                     |                 |
|                                                                                                      |                                                                                                      | e                  | 21 | 7 Module       |                     |                 |

# C 146 M 3 pol

Module  
Modules



für gedrehte 3,6 mm Kontakte  
for turned 3,6 mm contacts

alle Kontakte 2 mm voreilend zu anderen Modulen  
all contacts 2 mm first-to-mate to other modules

| Abbildung<br>Figure | Maßzeichnung / Drawing<br>Stiftmodul / Pin module    Buchsenmodul / Socket module | Bestell Nr. / Part No.  |                              |
|---------------------|-----------------------------------------------------------------------------------|-------------------------|------------------------------|
|                     |                                                                                   | Stiftmodul / Pin module | Buchsenmodul / Socket module |
|                     |                                                                                   | C146 A03 801 E8         | C146 B03 801 E8              |

## Crimpkontakte / Crimp contacts

| Lieferform<br>Supplied as       | für Leiterquerschnitt<br>for wire gauge | AWG | Stückzahl<br>Pieces | Bestell Nr. <sup>1)</sup> / Part No. <sup>1)</sup> |                                  |
|---------------------------------|-----------------------------------------|-----|---------------------|----------------------------------------------------|----------------------------------|
|                                 |                                         |     |                     | Stiftkontakt / Male contact                        | Buchsenkontakt / Female contact  |
| Crimpkontakte / Crimp contacts  |                                         |     |                     |                                                    |                                  |
| Einzelkontakt<br>Single contact | 1,5 mm <sup>2</sup>                     | 16  | 100                 | VN01 036 0004 (1)C                                 | VN02 036 0004 (1)C               |
|                                 | 2,5 mm <sup>2</sup>                     | 14  | 100                 | VN01 036 0005 (1)C                                 | VN02 036 0005 (1)C               |
|                                 | 4,0 mm <sup>2</sup>                     | 12  | 100                 | VN01 036 0001 (1)C                                 | VN02 036 0001 (1)C               |
|                                 | 6,0 mm <sup>2</sup>                     | 10  | 100                 | VN01 036 0002 (1)C <sup>2)</sup>                   | VN02 036 0002 (1)C <sup>2)</sup> |
|                                 | 10,0 mm <sup>2</sup>                    | 8   | 100                 | VN01 036 0003 (1)C <sup>2)</sup>                   | VN02 036 0003 (1)C <sup>2)</sup> |

## Werkzeuge / Tools <sup>3)</sup>

| Bezeichnung / Description                                               | für Leiterquerschnitt<br>for wire gauge                                 | Kontaktaufnahme / Contact locator                           | Bestell Nr. / Part No.                    |                        |
|-------------------------------------------------------------------------|-------------------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------|------------------------|
|                                                                         |                                                                         |                                                             | Crimpbacken / Crimping dies               | Werkzeuge / Tools      |
| Lösewerkzeug für Kontakte<br>Removal tool for contacts                  | –                                                                       | –                                                           | –                                         | FG 0300 146 3          |
| Lösewerkzeug für Module<br>Removal tool for modules                     | –                                                                       | –                                                           | –                                         | FG 1000 146            |
| Crimpzange für Einzelkontakte<br>Crimping tool for single contacts      | 1,5 - 2,5 mm <sup>2</sup><br>4,0 mm <sup>2</sup><br>6,0 mm <sup>2</sup> | TA 0010 146 000 2<br>TA 0010 146 000 4<br>TA 0010 146 000 4 | TA 0000 144<br>TA 0000 124<br>TA 0000 124 | TA 0000                |
| 4-Kerb Crimpzange <sup>4)</sup><br>4-indent crimping tool <sup>4)</sup> | 1,5 - 10,0 mm <sup>2</sup>                                              | –                                                           | –                                         | TB 0200 146            |
| Crimpzange für Kabelschuhe<br>Crimping tool for cable lugs              | 6,0 mm <sup>2</sup><br>10,0 mm <sup>2</sup>                             | –                                                           | TA 0000 180                               | TA 0000                |
| Kabelschuhe für Schutzleiteranschluss / Cable lugs for PE connection    |                                                                         |                                                             |                                           | Bestell Nr. / Part No. |
| Kabelschuh<br>cable lug                                                 | 6,0 mm <sup>2</sup>                                                     | –                                                           | 20                                        | N15 006 000 9Z         |
|                                                                         | 10,0 mm <sup>2</sup>                                                    | –                                                           | 20                                        | N15 010 000 7Z         |

<sup>1)</sup> Erläuterung der Bestell-Nr. für die Kontakte siehe Seite 4 / Explanation of the Part No. for contacts see page 4

<sup>2)</sup> Bei den Leiterquerschnitten 6 + 10 mm<sup>2</sup> sind Kabelschuhe für den Schutzleiteranschluss zu verwenden / For wire gauges 6 + 10 mm<sup>2</sup> cable lugs have to be used for PE connection

<sup>3)</sup> Weitere Informationen siehe Katalog „Werkzeuge“ / Further information see catalogue „Tools“

<sup>4)</sup> incl. Prüfstiftset, Kontaktaufnahme / incl. calibration pin set, locator

**C 146 M**  
**RJ Modul**  
*RJ module*

**Technische Daten**  
*Characteristics*

| <b>Allgemeine Kennwerte</b>  | <b>General Characteristics</b>         | <b>Norm / Standard</b> | <b>Wert / Value Module</b>                | <b>Wert / Value RJ45</b>                  |
|------------------------------|----------------------------------------|------------------------|-------------------------------------------|-------------------------------------------|
| Polzahl                      | <i>Number of contacts</i>              |                        | 4                                         | 8                                         |
| Anschluss-technik            | <i>Termination technique</i>           |                        | Crimpen                                   | Stecken                                   |
| Anschlussquerschnitt         | <i>Wire gauge</i>                      |                        | 0,14 - 2,5mm <sup>2</sup>                 |                                           |
| Brennbarkeit                 | <i>Flammability</i>                    | UL 94                  | V - 0                                     | V - 0                                     |
| <b>Elektrische Kennwerte</b> | <b>Technical Characteristics</b>       |                        |                                           |                                           |
| Bemessungsspannung           | <i>Rated voltage</i>                   | IEC 60664-1            | 400 V AC                                  | 125 V AC                                  |
| Bemessungs-Stoßspannung      | <i>Rated impulse withstand voltage</i> | IEC 60664-1            | 6 kV                                      | 1,8 kV                                    |
| Spannungsfestigkeit          | <i>Voltage proof</i>                   | IEC 60512-2; Test 4 a  | 3,51 kV                                   | 1,0 kV                                    |
| Strombelastbarkeit           | <i>Current carrying capacity</i>       | IEC 60512-3; Test 5 b  | 13 A <sup>1)</sup>                        | 1,5 A                                     |
| Durchgangswiderstand         | <i>Contact resistance</i>              | IEC 60512-2; Test 2 a  | ≤ 5 mΩ                                    | ≤ 20 mΩ                                   |
| Isolationswiderstand         | <i>Insulation resistance</i>           | IEC 60512-2; Test 3 a  | 10 <sup>10</sup> Ω                        | 5 <sup>8</sup> Ω                          |
| <b>Klimatische Kennwerte</b> | <b>Climatical Characteristics</b>      |                        |                                           |                                           |
| Obere Grenztemperatur        | <i>Upper temperature</i>               | IEC 60512-6; Test 11 i | + 100 °C / 1000 h                         | + 80 °C / 1000 h                          |
| Untere Grenztemperatur       | <i>Lower temperature</i>               | IEC 60512-6; Test 11 i |                                           | - 20 °C                                   |
| <b>Mechanische Kennwerte</b> | <b>Mechanical Characteristics</b>      |                        |                                           |                                           |
| Steck- und Ziehkraft         | <i>Insertion and withdrawal forces</i> | IEC 60512-7; Test 13 b | 15-20 N                                   | max. 20 N                                 |
| Mechanische Lebensdauer      | <i>Mechanical operation</i>            | IEC 60512-5; Test 9 a  | ≥ 500 Steckzyklen<br><i>mating cycles</i> | ≥ 500 Steckzyklen<br><i>mating cycles</i> |
| <b>Werkstoffe</b>            | <b>Materials</b>                       |                        |                                           |                                           |
| Kontakteinsatz               | <i>Insert</i>                          |                        | PA 6.6 GF                                 |                                           |
| Farbe                        | <i>Colour</i>                          |                        | schwarz / <i>black</i>                    | schwarz / <i>black</i>                    |
| Kontakte Stift / Buchse      | <i>Contacts male / female</i>          |                        | CuZn                                      | CuSn                                      |
| Kontaktoberfläche            | <i>Contacts plating</i>                |                        | Ag (silber / <i>silver</i> )              | Au (Gold / <i>gold</i> )                  |

1) 2 Module, 40°C Umgebungstemperatur, 1,5 mm<sup>2</sup> Anschlussquerschnitt / 2 Modules, 40°C ambient temperature, 1,5 mm<sup>2</sup> wire gauge

**RJ Modul**

Zur Integration von Standard RJ45 Komponenten • Weltweiter Echtzeit-Zugriff auf Maschinen und Anlagen

- Sehr leichte Konfektionierung durch Einsatz von Standard RJ45 Komponenten
- Ein Steckverbinder für Power, Signale und Datenübertragung
- Zusätzlich 4 Power Crimp-Kontakte
- Zeit- und Kosteneinsparungen durch einheitliche Aktiv- und Passivkomponenten
- Einheitliches Übertragungsprotokoll im Office- und Produktionsbereich
- erreicht CAT 5 für Ethernet nach ISO/IEC 11801

Rahmen für die Integration des RJ45 Moduls sowie Gehäuse für den Einbau der Rahmen entnehmen Sie bitte dem Gesamtkatalog C146 Schwere Steckverbinder

**RJ Module**

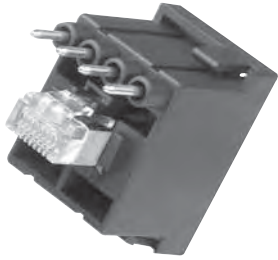
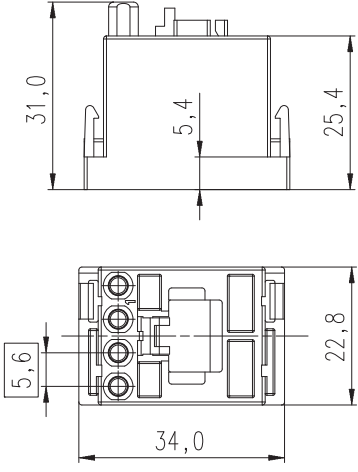
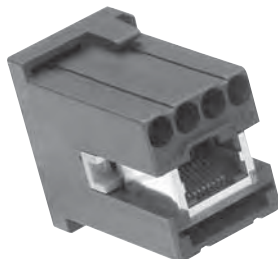
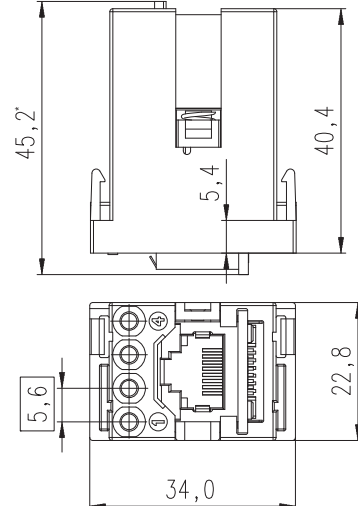


For integration of standard RJ45 components

- Worldwide real-time access on machines and facilities
- Easy assembly through the use of standard RJ45 components
- One connector for power, signal and data transmission
- 4 additional power crimp contacts
- Time- and money saving through the use of similar active- and passive components
- Unitary transmission protocol in the office- and production environment.
- Meets CAT 5 for Ethernet acc. ISO/IEC 11801

Frames for the integration of the RJ45 module as well as housings for the incorporation of the frames can be found in the full range C146 heavy connectors catalogue

**C 146 M**  
**RJ Modul**  
*RJ module*

Module  
 Modules

| Abbildung<br>Figure                                                                                                                                                                            | Maßzeichnung<br>Drawing                                                                                                                  | Bestell Nr.<br>Part No.                                     |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|
| Stiftmodul / Pin module<br>                                                                                   |                                                        | C146 E12 001 E8                                             |
| Buchsenmodul / Socket module<br>                                                                            |                                                      | C146 F12 001 G8                                             |
| Tüllengehäuse, 2x Abgang oben / Hood, 2x top entry<br>                                                      | 10 pol 2xM25 ohne Stutzen / without stud<br>16 pol 2xM25 ohne Stutzen / without stud<br>24 pol 1xM25 + 1xM40 ohne Stutzen / without stud | C146 21R010 902 8<br>C146 21R016 910 8<br>C146 21R024 913 8 |
| Kabelverschraubung, geteilt (Verpackungseinheit 5 St.)<br>Gland bushing, splitted (packing unit 5 pcs.)<br> |                                                                                                                                          | VN16 250 0131 V                                             |

\*Wenn Buchse eingefedert: 46,8 / If plug socket recessed: 46,8

## C 146 M

### Pneu Modul

#### Pneumatic module

#### Technische Daten Characteristics

| Allgemeine Kennwerte    | General Characteristics    | Norm / Standard | Wert / Value                                                                    |
|-------------------------|----------------------------|-----------------|---------------------------------------------------------------------------------|
| Kontaktzahl             | Number of contacts         |                 | 1 / 2                                                                           |
| Anschluss technik       | Termination technique      |                 | Schlauchanschluss / tube termination                                            |
| Anschlussquerschnitt    | Wire gauge                 |                 | 2,5 mm / 4,0 mm                                                                 |
| Brennbarkeit            | Flammability               | UL 94           | V-0                                                                             |
| Technische Kennwerte    | Technical Characteristics  |                 |                                                                                 |
| Betriebsdruck           | Operating pressure         |                 | 8 bar mit PTFE-Schlauch (Teflon) / with PTFE tube                               |
| Schaltweg               | Operating path             |                 | 4,0 mm                                                                          |
| Absperrung              | Locking                    |                 | einseitig absperrend / locking on one side                                      |
| Pneumatikschlauch       | Pneumatic tube             |                 | nur PTFE-Schläuche verwenden <sup>1)</sup><br>only use PTFE tubes <sup>1)</sup> |
| Klimatische Kennwerte   | Climatical Characteristics |                 |                                                                                 |
| Obere Grenztemperatur   | Upper temperature          |                 | +100 °C                                                                         |
| Untere Grenztemperatur  | Lower temperature          |                 | - 20 °C                                                                         |
| Mechanische Kennwerte   | Mechanical Characteristics |                 |                                                                                 |
| Mechanische Lebensdauer | Mechanical operation       |                 | 5000 Steckzyklen / mating cycles                                                |
| Werkstoffe              | Materials                  |                 |                                                                                 |
| Modul                   | Module                     |                 | PA 6.6 GF                                                                       |
| Farbe                   | Colour                     |                 | schwarz / black                                                                 |
| Kontakte                | Contacts                   |                 | Messing MS 58 / Brass MS 58                                                     |

<sup>1)</sup> Die Module sind speziell für den Einsatz von PTFE-Schläuchen konzipiert und dürfen nur in Verbindung mit diesen eingesetzt werden. Der Einsatz von Schläuchen aus anderem Material ist nicht zu empfehlen, da die oberen und unteren Grenztemperaturen nicht erreicht werden.

<sup>1)</sup> The modules are specifically designed for the use of PTFE tubes and should only be used in conjunction with these. The use of tubes made from other materials is not recommended, as the higher and lower category temperatures will not be achievable.

### Pneu Modul

#### Leistung, Signal und Pneumatik in einem Steckverbinder

- Sehr stabile Messing-Kontakte
- Pneumatik-Buchsenkontakte mit Absperrung, schließt bei geöffnetem Steckverbinder
- Wahlweise mit 1 oder 2 Anschlüssen
- Anschluss für 2,5 mm oder 4 mm PTFE (Teflon)-Schläuchen
- Schläuche können von den Anschlüssen wieder demontiert werden

Rahmen für die Integration des Pneu Moduls sowie Gehäuse für den Einbau der Rahmen entnehmen Sie bitte dem Gesamtkatalog C146 Schwere Steckverbinder.

### Pneumatic Module

#### Power, signal and pneumatic within a single connector

- Very stable brass contacts
- Pneumatic socket contacts with barrier, closes when the connector is open
- Available with single or double connections
- Connection for 2.5 mm or 4 mm PTFE (Teflon)-tubes
- Tubes can be disassembled from the terminations

Frames for the integration of the pneumatic module as well as housings for the incorporation of the frames can be found in the full range C146 heavy connectors catalogue.


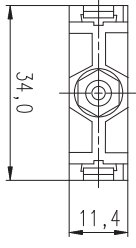
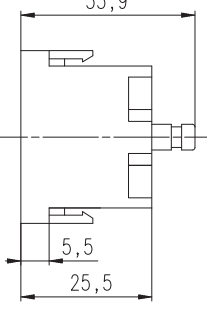

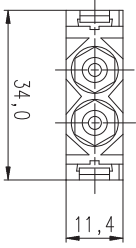
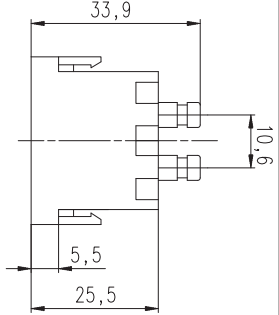
# C 146 M

## Pneu Modul

### Pneumatic module

Module











Modules

| Abbildung<br>Figure                                                                 | Maßzeichnung / Drawing                                                              |                                                                                     | Bestell Nr. / Part No.                                                  |                                                                         |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------|-------------------------------------------------------------------------|
|                                                                                     | Stiftmodul / Pin module                                                             | Buchsenmodul / Socket module                                                        | Stiftmodul / Pin module                                                 | Buchsenmodul / Socket module                                            |
|    |    |    | <p>C146 G01 014 G8<br/>(2,5 mm)</p> <p>C146 G01 024 G8<br/>(4,0 mm)</p> | <p>C146 H01 034 G8<br/>(2,5 mm)</p> <p>C146 H01 044 G8<br/>(4,0 mm)</p> |
|  |  |  | <p>C146 G02 014 G8<br/>(2,5 mm)</p> <p>C146 G02 024 G8<br/>(4,0 mm)</p> | <p>C146 H02 034 G8<br/>(2,5 mm)</p> <p>C146 H02 044 G8<br/>(4,0 mm)</p> |

M

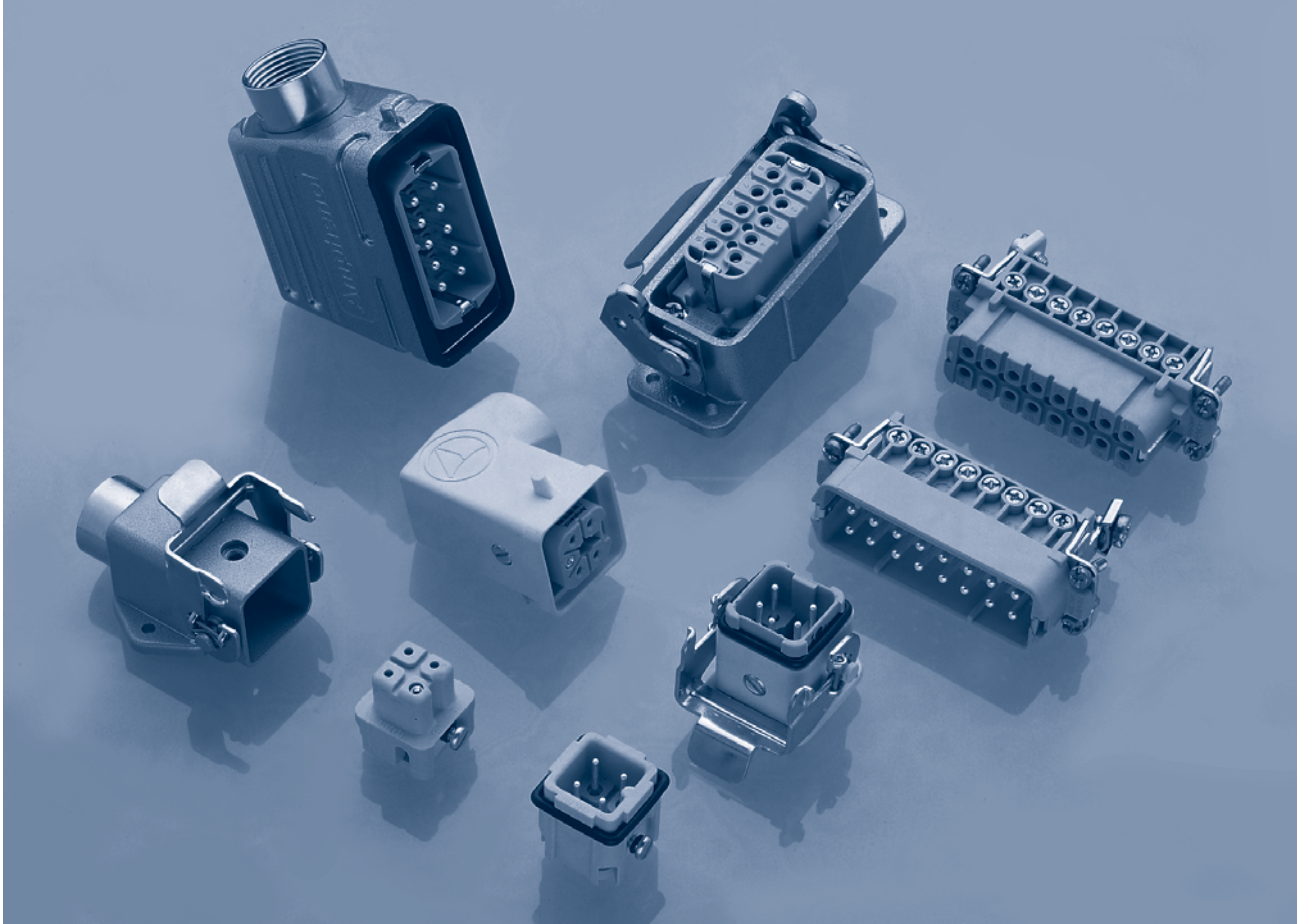
# C 146 M

Löswerkzeuge, Zubehör  
Removal tools, accessoires




| Kontaktgröße<br>Contact size                  | Abbildung<br>Figure                                                                  | Bestell Nr.<br>Part No.                                              |
|-----------------------------------------------|--------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| 1,0 mm                                        |    | 17D 438 SP                                                           |
| 1,6 mm                                        |    | FG 0300 146 1                                                        |
| 2,5 mm gedreht<br>2,5 mm turned               |    | FG 0300 146 4                                                        |
| 2,5 mm gestanzt<br>2,5 mm stamped             |  | FG 0200 146 1                                                        |
| 3,6 mm                                        |  | FG 0300 146 3                                                        |
| Modullösewerkzeug<br>Removal tool for modules |   | FG 1000 146                                                          |
| Blind Module<br>Blank modules                 |  | C146 A00 001 E8<br>(Stift/pin)<br>C146 B00 001 E8<br>(Buchse/socket) |
| Modulkoppler<br>Module coupler                |   | C146 10Z000 002 8                                                    |
| Montagewinkel<br>Assembly angle               |  | C146 10Z001 001 8                                                    |
| Zugentlastung<br>Strain relief                |  | C146 10Z002 001 8                                                    |



# C 146 A



A

| <b>Hauptmerkmale</b>                                                                                                                                                                                                           |                                                                                     | <b>Main characteristics</b>                                                                                                                                                                                                                                   |                                         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| <ul style="list-style-type: none"> <li>• Schmale Bauform</li> <li>• Bemessungsspannung 250 / 400 V</li> <li>• Bemessungsstrom 14 A ... 18 A</li> <li>• Anschlussart: schrauben</li> <li>• Polzahl: 3, 4, 10, 16, 32</li> </ul> |                                                                                     | <ul style="list-style-type: none"> <li>• <i>Narrow style</i></li> <li>• <i>Rated voltage 250 / 400 V</i></li> <li>• <i>Rated current 14 A ... 18 A</i></li> <li>• <i>Termination: screw</i></li> <li>• <i>Number of contacts: 3, 4, 10, 16, 32</i></li> </ul> |                                         |
| <b>Zulassungen / Approvals</b>                                                                                                                                                                                                 | <b>Prüfstelle / Testhouse</b>                                                       | <b>Kennwerte / Characteristics</b>                                                                                                                                                                                                                            | <b>Zulassungs-Nummer / Approval-No.</b> |
| SEV                                                                                                                                                                                                                            |  | 250 V, 10 A                                                                                                                                                                                                                                                   |                                         |
| UL                                                                                                                                                                                                                             |  | 600 V, 14 A                                                                                                                                                                                                                                                   | E 63093                                 |
| CSA                                                                                                                                                                                                                            |  | 600 V, 10 A; 16 A; 20 A                                                                                                                                                                                                                                       | LR 700721                               |
| <p>Zulassungen beziehen sich im allgemeinen auf repräsentative Ausführungen der Steckverbinderserie. Prüfumfang und Prüfvorschrift auf Anfrage.</p>                                                                            |                                                                                     | <p><i>In general approvals refer to representative versions of the connector series. Extent and specification of tests upon request.</i></p>                                                                                                                  |                                         |

# C 146 A

## Kurzinformation Brief information

Allgemeine Hinweise



General information

- Steckverbinder der Serie C 146 A dürfen unter Spannung, jedoch nicht unter Strom betätigt werden. Werden die Steckverbinder als Steckvorrichtung eingesetzt, ist der Strom auf 10 % des Bemessungsstroms zu begrenzen.
- Für die Einsätze der Serie C 146 A (10 + 16 pol) können sowohl niedrige, wie auch hohe Gehäusebauformen verwendet werden.

- *For series C 146 A connectors may be engaged or disengaged when live but without electrical load. If these connectors are used as plug and socket device, the load shall be reduced to 10 % of the rated current.*
- *Low and high profile housing for C 146 A series inserts for 10 and 16 contacts.*

Nicht genormte Steckverbinder, aber:

*No standard for this series, but:*

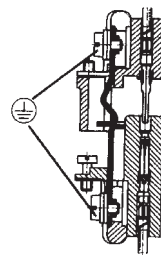
- Steck- und austauschbar mit Fremdfabrikaten  
a) Kontakteinsatz / Kontakteinsatz  
b) Kontakteinsatz / Gehäuse 10, 16 pol.
- *Interchangeable with other makes*  
a) *contact insert to contact insert*  
b) *contact insert to housing 10 ,16 pin*

Gehäuse nach CECC 75 301 - 801

*Housings are designed according to CECC 75 301 - 801*

Voreilender Schutzkontakt

*First-to-mate last-to-break protective ground contact*



Große Gehäuseauswahl in 2 Bauhöhen (ab Seite 108)

*Large range of housings in 2 different heights (see page 108)*



| <b>Allgemeine Kennwerte</b>               | <b>General Characteristics</b>               | <b>Norm / Standard</b> | <b>Wert / Value</b>                                |           |                        |           |
|-------------------------------------------|----------------------------------------------|------------------------|----------------------------------------------------|-----------|------------------------|-----------|
| Polzahl                                   | <i>Number of contacts</i>                    |                        | 3/4 + ⊕                                            | 10 + ⊕    | 16 + ⊕                 | 32 + ⊕    |
| Anschluss technik                         | <i>Termination technique</i>                 |                        | schrauben / <i>screw</i>                           |           |                        |           |
| Anschlussquerschnitt                      | <i>Wire gauge</i>                            |                        | 0,25 - 2,5 mm <sup>2</sup>                         |           |                        |           |
| Brennbarkeit                              | <i>Flammability</i>                          | UL 94                  | V-0                                                |           |                        |           |
| <b>Elektrische Kennwerte</b>              | <b>Electrical Characteristics</b>            |                        |                                                    |           |                        |           |
| Bemessungsspannung                        | <i>Rated voltage</i>                         | IEC 60664-1            | 400 V                                              | 250 V     |                        |           |
| Verschmutzungsgrad                        | <i>Pollution degree</i>                      | IEC 60664-1            | 3                                                  |           |                        |           |
| Überspannungskategorie                    | <i>Installation (overvoltage) category</i>   | IEC 60664-1            | III                                                |           |                        |           |
| Isolierstoffgruppe                        | <i>Material group</i>                        | IEC 60664-1            | III b                                              |           |                        |           |
| Bemessungs-Stoßspannung                   | <i>Rated impulse withstand voltage</i>       | IEC 60664-1            | 4,0 KV                                             |           |                        |           |
| Spannungsfestigkeit                       | <i>Voltage proof</i>                         | IEC 60512-2; Test 4 a  | 2,8 KV                                             |           |                        |           |
| Strombelastbarkeit                        | <i>Current carrying capacity</i>             | IEC 60512-3; Test 5 b  | siehe Derating Kurven / <i>see derating curves</i> |           |                        |           |
| Bemessungsstrom T <sub>u</sub> = 40 °C    | <i>Rated current T<sub>amp</sub> = 40 °C</i> |                        | 18 A                                               | 16 A      | 14 A                   | 14 A      |
| Durchgangswiderstand                      | <i>Contact resistance</i>                    | IEC 60512-2; Test 2 a  | ≤ 5 m Ω                                            |           |                        |           |
| Isolationswiderstand                      | <i>Insulation resistance</i>                 | IEC 60512-2; Test 3 a  | ≥ 10 <sup>12</sup> Ω <sup>1)</sup>                 |           |                        |           |
| <b>Klimatische Kennwerte</b>              | <b>Climatical Characteristics</b>            |                        |                                                    |           |                        |           |
| Prüfklasse                                | <i>Climatic category</i>                     | IEC 60068-1            | 40 / 100 / 21                                      |           |                        |           |
| Obere Grenztemperatur                     | <i>Upper temperature</i>                     | IEC 60512-6; Test 11 i | + 100 °C / 1000 h                                  |           |                        |           |
| Untere Grenztemperatur                    | <i>Lower temperature</i>                     | IEC 60512-6; Test 11 i | - 40 °C                                            |           |                        |           |
| <b>Mechanische Kennwerte</b>              | <b>Mechanical Characteristics</b>            |                        |                                                    |           |                        |           |
| Steck- und Ziehkraft                      | <i>Insertion and withdrawal forces</i>       | IEC 60512-7; Test 13 b | 15 - 20 N                                          | 50 - 70 N | 80-100 N               | 160-200 N |
| <sup>2)</sup> IP-Schutzart Stifteinsatz   | <i>IP-degree of protection pin insert</i>    | IEC 60529              | ungesteckt/unmated<br>IP00                         |           | gesteckt/mated<br>IP20 |           |
| <sup>2)</sup> IP-Schutzart Buchseneinsatz | <i>IP-degree of protection socket insert</i> | IEC 60529              | ungesteckt/unmated<br>IP20                         |           | gesteckt/mated<br>IP20 |           |
| Gewicht Stifteinsatz                      | <i>Weight pin insert</i>                     |                        | 13 g                                               | 48 g      | 68 g                   | 136 g     |
| Gewicht Buchseneinsatz                    | <i>Weight socket insert</i>                  |                        | 13 g                                               | 52 g      | 73 g                   | 146 g     |
| Mechanische Lebensdauer                   | <i>Mechanical operation</i>                  | IEC 60512-5; Test 9 a  | ≥ 500 Steckzyklen / <i>mating cycles</i>           |           |                        |           |
| <b>Werkstoffe</b>                         | <b>Materials</b>                             |                        |                                                    |           |                        |           |
| Kontakteinsatz                            | <i>Insert</i>                                |                        | PA                                                 | PBT       | PBT                    | PBT       |
| Kontakte                                  | <i>Contacts</i>                              |                        | Cu Zn (Messing / <i>brass</i> )                    |           |                        |           |
| Kontakt oberfläche                        | <i>Contact plating</i>                       |                        | Ag (silber / <i>silver</i> )                       |           |                        |           |

<sup>1)</sup> Bei Beanspruchung > 10<sup>10</sup> Ω / *Under operating conditions > 10<sup>10</sup> Ω*




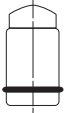
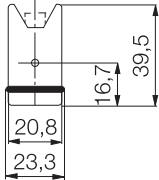
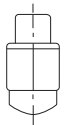
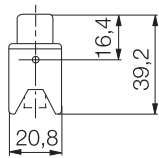



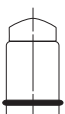
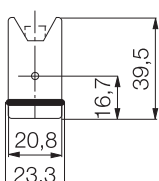
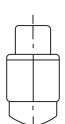
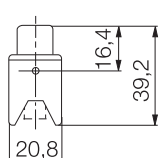
<sup>2)</sup> IP-Schutzart im Anschlussbereich der Schraubausführung IP 10 / *IP-degree of protection on termination side of screw version IP 10*

**C 146 A**  
**3/4 +** 

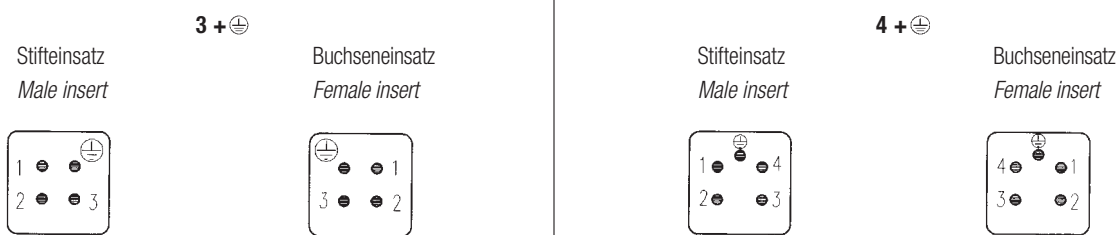
**400 V~**      **10 A**

**Steckverbinder**  
**Connectors**

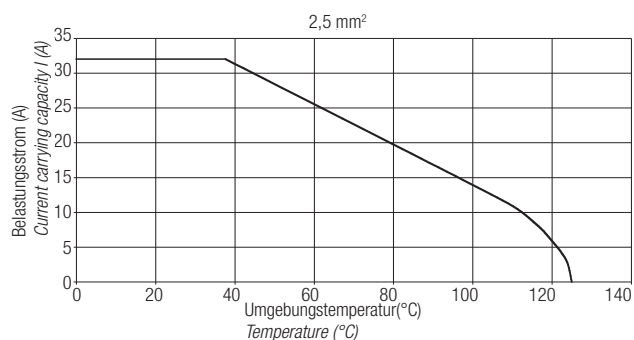
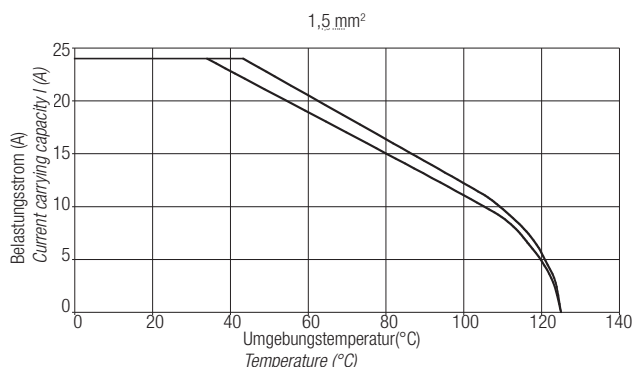
**Gehäuse siehe Seite 110-113**  
**Housings see page 110-113**

| Bezeichnung - Abbildung<br>Description - Figure                                                                                                                                                                                                                                                                                                            | Maßzeichnung<br>Drawing                                                                                                                                                                                                                                                                                                                                                                                                      | Bestell Nr. / Part No.     |                                |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|--------------------------------|
|                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                              | Stifteinsatz / Male insert | Buchseneinsatz / Female insert |
| Kontakteinsatz Schraubanschluss<br><b>3 +</b> <br>Contact insert screw termination<br><b>3 +</b> <br>   | Stifteinsatz<br>Male insert<br> M<br><br>Buchseneinsatz<br>Female insert<br> F<br>       | C146 10A003 002 4          | C146 10B003 002 4              |
| Kontakteinsatz Schraubanschluss<br><b>4 +</b> <br>Contact insert screw termination<br><b>4 +</b> <br> | Stifteinsatz<br>Male insert<br> M<br><br>Buchseneinsatz<br>Female insert<br> F<br> | C146 10A004 002 4          | C146 10B004 002 4              |

Steckbild / pin layout



Derating Kurven / Derating curves


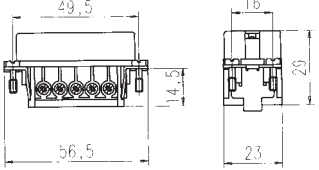
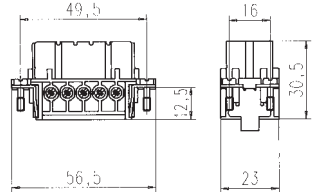
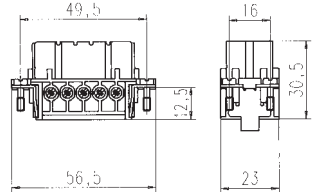


C 146 A  
10 + 

250 V~ 16 A

Steckverbinder  
Connectors

Gehäuse siehe Seite 114-117  
Housings see page 114-117

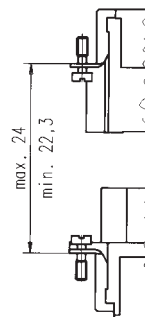
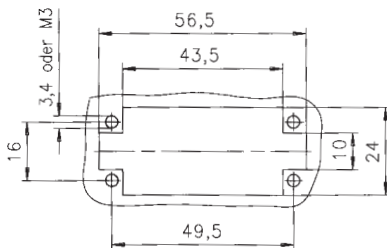
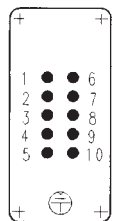
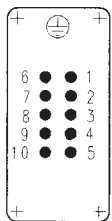
| Bezeichnung - Abbildung<br>Description - Figure                                                                                                                                                                                                       | Maßzeichnung<br>Drawing                                                                                                                                                                                                                            | Bestell Nr. / Part No.                                                                    |                                                                                           |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                    | Stifteinsatz / Male insert                                                                | Buchseinsatz / Female insert                                                              |
| Kontakteinsatz Schraubanschluss<br>Contact insert screw termination<br><br><br><br> | Stifteinsatz<br>Male insert<br><br><br><br>Buchseinsatz<br>Female insert<br><br> | C146 10A010 002 4<br><br>C146 10A010 102 4<br>(mit Drahtschutz /<br>with wire protection) | C146 10B010 002 4<br><br>C146 10B010 102 4<br>(mit Drahtschutz /<br>with wire protection) |

Montageanleitung, Steckbild / Assembly instruction, pin layout

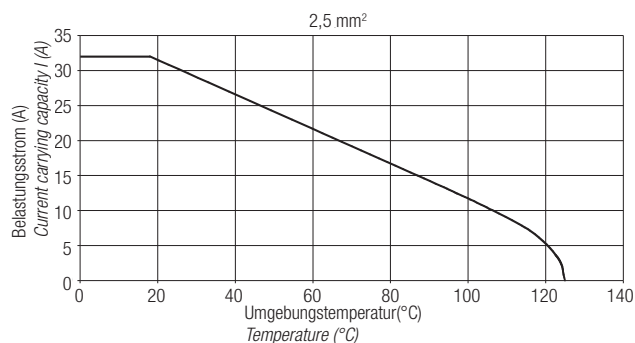
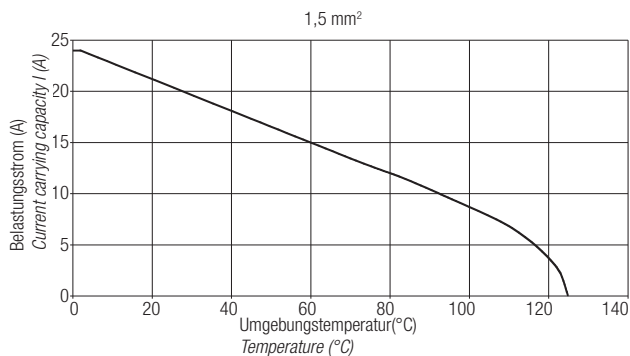
Stifteinsatz  
Male insert

Buchseinsatz  
Female insert

Montageausschnitt (Kontaktträger)  
Panel cut out (insert)



Derating Kurven / Derating curves

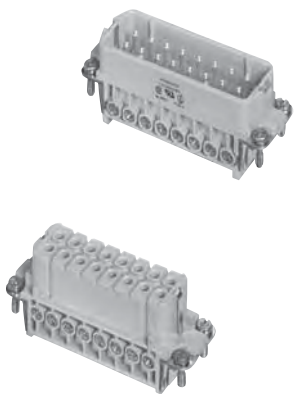
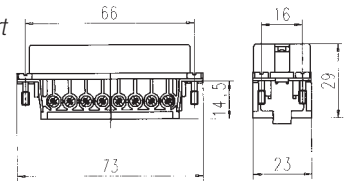
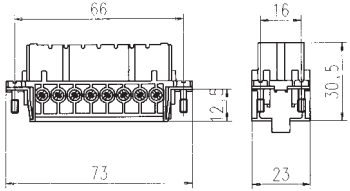


C 146 A  
**16 +** 

250 V~ 14 A

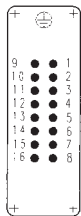
Steckverbinder  
 Connectors

Gehäuse siehe Seite 118-121  
 Housings see page 118-121

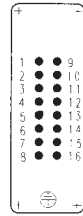
| Bezeichnung - Abbildung<br>Description - Figure                                                                                                       | Maßzeichnung<br>Drawing                                                                                                                                                                                                                    | Bestell Nr. / Part No.                                                                    |                                                                                           |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
|                                                                                                                                                       |                                                                                                                                                                                                                                            | Stifteinsatz / Male insert                                                                | Buchseinsatz / Female insert                                                              |
| Kontaktsatz Schraubanschluss<br>Contact insert screw termination<br> | Stifteinsatz<br>Male insert<br><br><br>Buchseinsatz<br>Female insert<br> | C146 10A016 002 4<br><br>C146 10A016 102 4<br>(mit Drahtschutz /<br>with wire protection) | C146 10B016 002 4<br><br>C146 10B016 102 4<br>(mit Drahtschutz /<br>with wire protection) |

Montageanleitung, Steckbild / Assembly instruction, pin layout

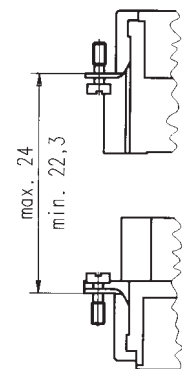
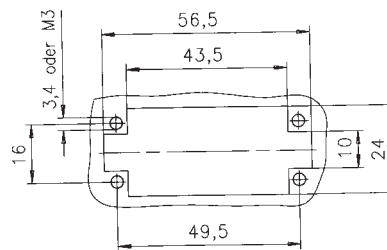
Stifteinsatz  
 Male insert



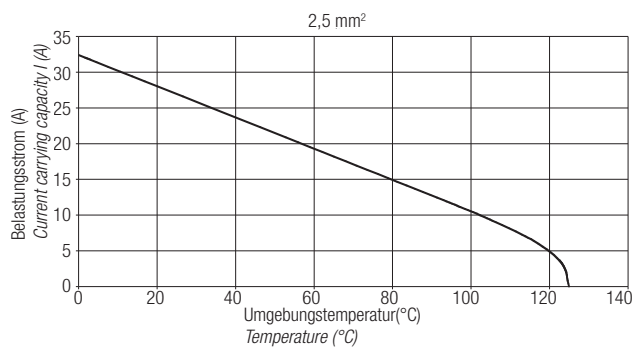
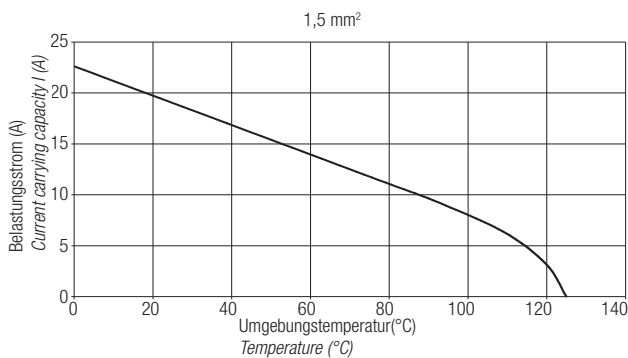
Buchseinsatz  
 Female insert



Montageausschnitt (Kontaktträger)  
 Panel cut out (insert)



Derating Kurven / Derating curves

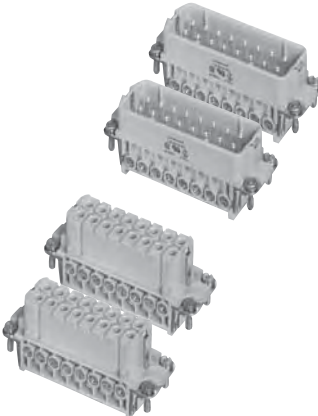
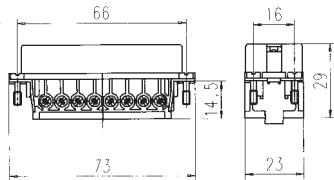
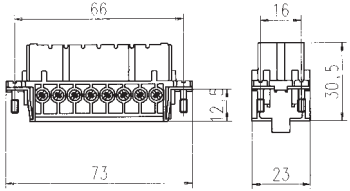


C 146 A  
**32 +** 

250 V~ 14 A

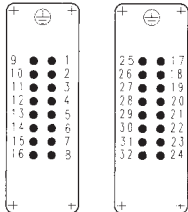
Steckverbinder  
 Connectors

Gehäuse siehe Seite 122-125  
 Housings see page 122-125

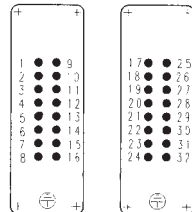
| Bezeichnung - Abbildung<br>Description - Figure                                                                                                          | Maßzeichnung<br>Drawing                                                                                            | Bestell Nr. / Part No.                                                             |                                                                                    |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
|                                                                                                                                                          |                                                                                                                    | Stifteinsatz / Male insert                                                         | Buchseinsatz / Female insert                                                       |
| Kontakteinsatz Schraubanschluss<br>Contact insert screw termination<br> | Stifteinsatz<br>Male insert<br>   | C146 10A016 002 4<br>(1 - 16)                                                      | C146 10B016 002 4<br>(1 - 16)                                                      |
|                                                                                                                                                          |                                                                                                                    | +<br>C146 10A016 004 4<br>(17 - 32)                                                | +<br>C146 10B016 004 4<br>(17 - 32)                                                |
|                                                                                                                                                          | Buchseinsatz<br>Female insert<br> | C146 10A016 102 4<br>(1 - 16)                                                      | C146 10B016 102 4<br>(1 - 16)                                                      |
|                                                                                                                                                          |                                                                                                                    | +<br>C146 10A016 104 4<br>(17 - 32)<br>(mit Drahtschutz /<br>with wire protection) | +<br>C146 10B016 104 4<br>(17 - 32)<br>(mit Drahtschutz /<br>with wire protection) |

Montageanleitung, Steckbild / Assembly instruction, pin layout

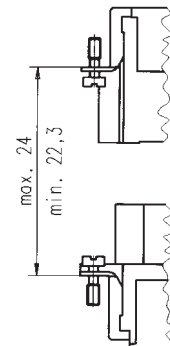
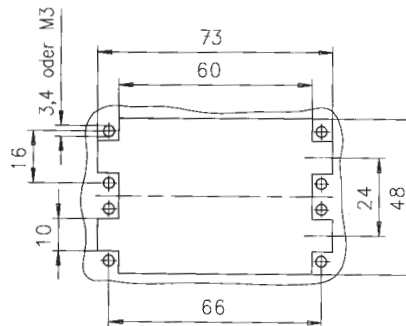
Stifteinsatz  
Male insert



Buchseinsatz  
Female insert



Montageausschnitt (Kontaktträger)  
Panel cut out (insert)

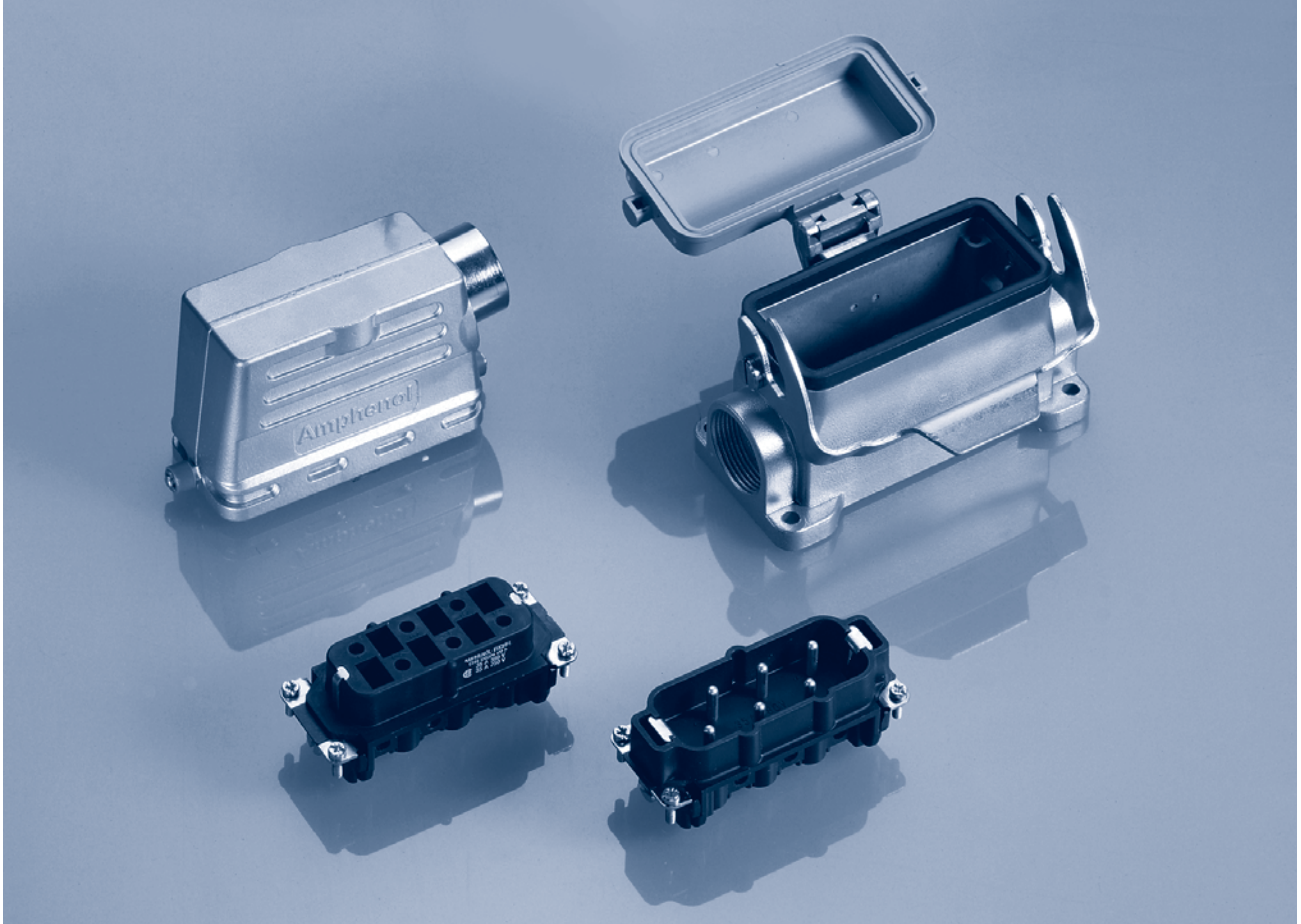


A







# C 146 HSE



HSE

| <b>Hauptmerkmale</b>                                                                                                                                                                                                   |                                                                                     | <b>Main characteristics</b>                                                                                                                                                                                      |                                         |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| <ul style="list-style-type: none"> <li>• Bemessungsspannung 400 V</li> <li>• Bemessungsstrom 42 A</li> <li>• Anschlussart: schrauben</li> <li>• Anschlussquerschnitt: 6mm<sup>2</sup></li> <li>• Polzahl: 6</li> </ul> |                                                                                     | <ul style="list-style-type: none"> <li>• Rated voltage 400 V</li> <li>• Rated current 42 A</li> <li>• Termination: screw</li> <li>• Max. wire gauge 6 mm<sup>2</sup></li> <li>• Number of contacts: 6</li> </ul> |                                         |
| <b>Zulassungen / Approvals</b>                                                                                                                                                                                         |                                                                                     | <b>Kennwerte / Characteristics</b>                                                                                                                                                                               | <b>Zulassungs-Nummer / Approval-No.</b> |
| Prüfstelle / Testhouse<br>UL                                                                                                                                                                                           |  | 600 V, 35 A                                                                                                                                                                                                      | 48932                                   |
| Prüfstelle / Testhouse<br>CSA                                                                                                                                                                                          |  | 600 V, 35 A                                                                                                                                                                                                      | E 63093                                 |
| Zulassungen beziehen sich im allgemeinen auf repräsentative Ausführungen der Steckverbinderserie. Prüfumfang und Prüfvorschrift auf Anfrage.                                                                           |                                                                                     | In general approvals refer to representative versions of the connector series. Extent and specification of tests upon request.                                                                                   |                                         |

| <b>Allgemeine Kennwerte</b>               | <b>General Characteristics</b>         | <b>Norm / Standard</b> | <b>Wert / Value</b>                         |
|-------------------------------------------|----------------------------------------|------------------------|---------------------------------------------|
| Polzahl                                   | Number of contacts                     |                        | 6 + ⊕                                       |
| Anschluss technik                         | Termination technique                  |                        | schrauben / screw                           |
| Anschlussquerschnitt                      | Wire gauge                             |                        | 0,5 - 6,0 mm <sup>2</sup> (Ø 3,4 mm)        |
| Brennbarkeit                              | Flammability                           | UL 94                  | V-0                                         |
| <b>Elektrische Kennwerte</b>              | <b>Electrical Characteristics</b>      |                        |                                             |
| Bemessungsspannung                        | Rated voltage                          | IEC 60664-1            | 400 V (600 V UL / CSA <sup>2</sup> )        |
| Verschmutzungsgrad                        | Pollution degree                       | IEC 60664-1            | 3                                           |
| Überspannungskategorie                    | Installation (overvoltage) category    | IEC 60664-1            | III                                         |
| Isolierstoffgruppe                        | Material group                         | IEC 60664-1            | II                                          |
| Bemessungs-Stoßspannung                   | Rated impulse withstand voltage        | IEC 60664-1            | 6,0 kV                                      |
| Spannungsfestigkeit                       | Voltage proof                          | IEC 60512-2; Test 4 a  | 2200 V                                      |
| Strombelastbarkeit                        | Rated current                          | IEC 60512-3; Test 5 b  | siehe Derating Kurven / see derating curves |
| Bemessungsstrom $T_u = 40\text{ °C}$      | Rated current $T_{amp} = 40\text{ °C}$ |                        | 42 A                                        |
| Durchgangswiderstand                      | Contact resistance                     | IEC 60512-2; Test 2 a  | ≤ 1 m Ω                                     |
| Isolationswiderstand                      | Insulation resistance                  | IEC 60512-2; Test 3 a  | ≥ 10 <sup>12</sup> Ω <sup>1)</sup>          |
| Luftstrecke                               | Clearance                              | IEC 60664-1            | ≥ 3,5 mm                                    |
| Kriechstrecke                             | Creepage                               | IEC 60664-1            | ≥ 5,6 mm                                    |
| <b>Klimatische Kennwerte</b>              | <b>Climatical Characteristics</b>      |                        |                                             |
| Prüfklasse                                | Climatic category                      | IEC 60068-1            | 40 / 125 / 21                               |
| Obere Grenztemperatur                     | Upper temperature                      | IEC 60512-6; Test 11 i | + 125 °C / 1000 h                           |
| Untere Grenztemperatur                    | Lower temperature                      | IEC 60512-6; Test 11 i | - 40 °C                                     |
| <b>Mechanische Kennwerte</b>              | <b>Mechanical Characteristics</b>      |                        |                                             |
| Steck- und Ziehkraft                      | Insertion and withdrawal forces        | IEC 60512-7; Test 13 b | 40 - 60 N                                   |
| <sup>3)</sup> IP-Schutzart Stifteinsatz   | IP-degree of protection pin insert     | IEC 60529              | ungesteckt/unmated<br>IP00                  |
| <sup>3)</sup> IP-Schutzart Buchseneinsatz | IP-degree of protection socket insert  | IEC 60529              | ungesteckt/unmated<br>IP20                  |
| Gewicht Stifteinsatz                      | Weight pin insert                      |                        | 80 g                                        |
| Gewicht Buchseneinsatz                    | Weight socket insert                   |                        | 80 g                                        |
| Mechanische Lebensdauer                   | Mechanical operation                   | IEC 60512-5; Test 9 a  | ≥ 500 Steckzyklen / mating cycles           |
| <b>Werkstoffe</b>                         | <b>Materials</b>                       |                        |                                             |
| Kontakteinsatz                            | Insert                                 |                        | PA, GV                                      |
| Kontakte                                  | Contacts                               |                        | Cu Zn (Messing / brass)                     |
| Kontaktoberfläche                         | Contact plating                        |                        | Ag (silber / silver)                        |
| Farbe                                     | Colour                                 |                        | schwarz / black                             |

<sup>1)</sup> Bei Beanspruchung > 10<sup>10</sup> Ω / Under operating conditions > 10<sup>10</sup> Ω

<sup>2)</sup> Hinweisschild für CSA-Anwendung siehe Seite 176/ Label for CSA application see page 176

<sup>3)</sup> IP-Schutzart im Anschlussbereich IP 10 / IP-degree of protection on termination side IP 10

C 146 HSE

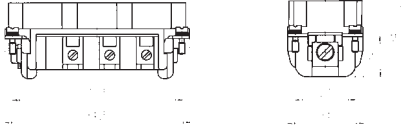
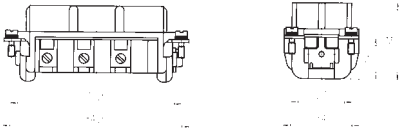
6 + 

400 V~

42 A

Steckverbinder  
Connectors

Gehäuse siehe Seite 138-145  
Housings see page 138-145

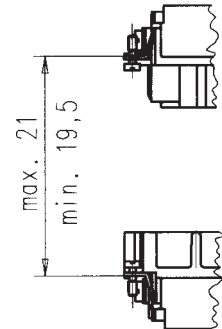
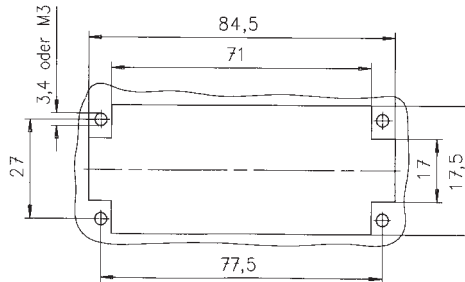
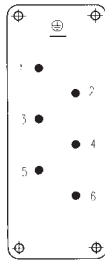
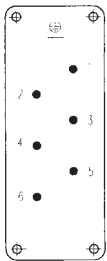
| Bezeichnung - Abbildung<br>Description - Figure                     | Maßzeichnung<br>Drawing                                                                                                                                                                                                                       | Bestell Nr. / Part No.                                           |                                                                  |
|---------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|------------------------------------------------------------------|
|                                                                     |                                                                                                                                                                                                                                               | Stifteinsatz / Male insert                                       | Buchseinsatz / Female insert                                     |
| Kontakteinsatz Schraubanschluss<br>Contact insert screw termination | <p>Stifteinsatz<br/>Male insert</p>  <p>Buchseinsatz<br/>Female insert</p>  | C146 10A006 102 5<br>(mit Drahtschutz /<br>with wire protection) | C146 10B006 102 5<br>(mit Drahtschutz /<br>with wire protection) |

Montageanleitung Steckbild / Assembly instruction pin layout

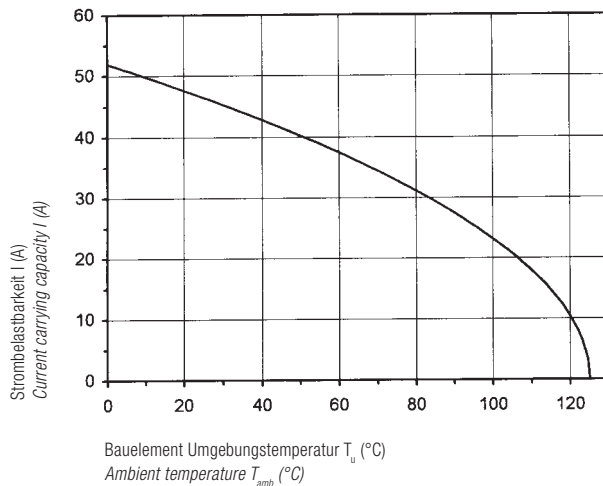
Stifteinsatz  
Male insert

Buchseinsatz  
Female insert

Montageausschnitt (Kontaktträger)  
Panel cut out (insert)



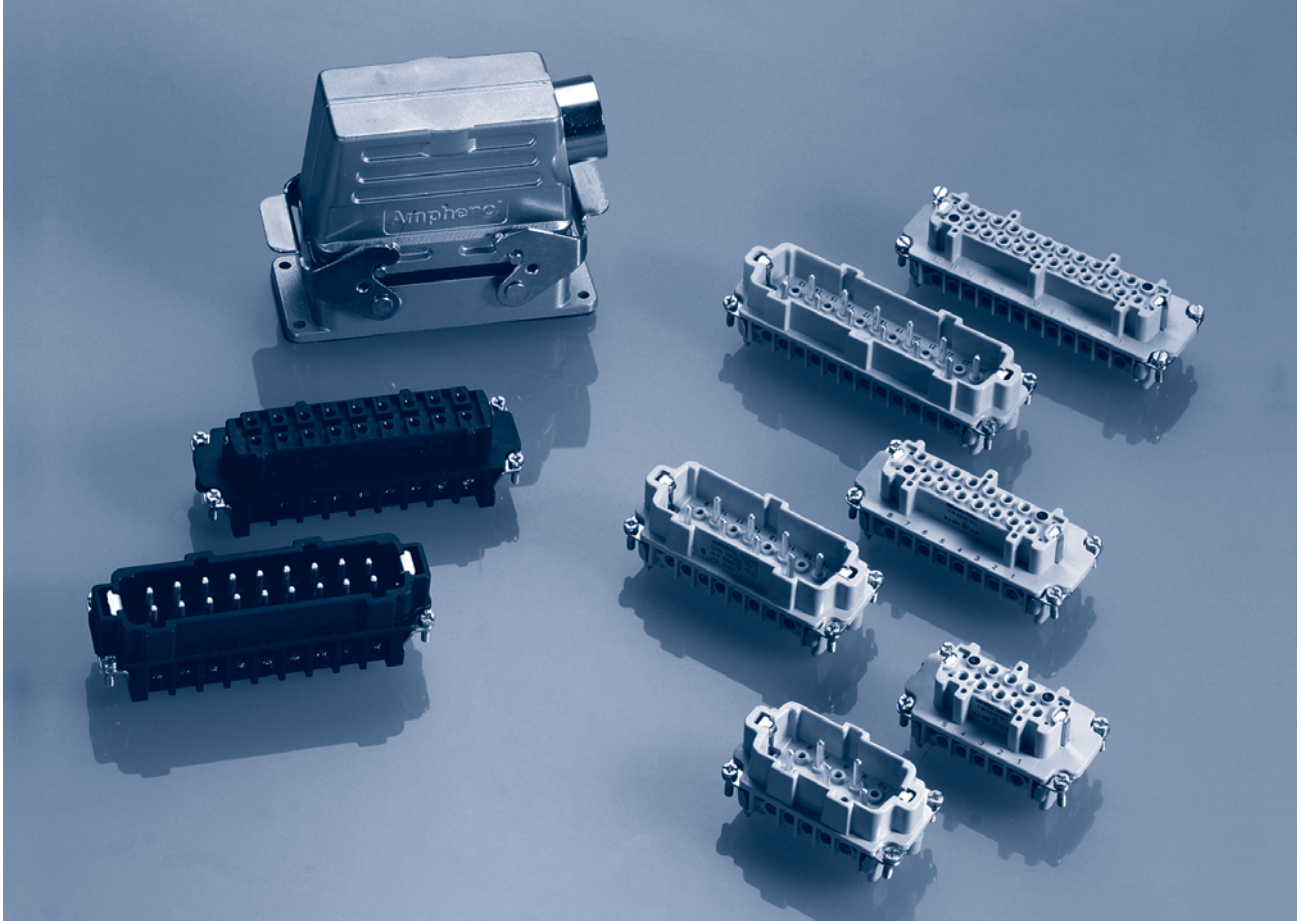
Derating Kurven / Derating curves






Anschlussquerschnitt 6 mm<sup>2</sup>  
Wire gauge 6 mm<sup>2</sup>



# C 146 HvE



HvE

| <b>Hauptmerkmale</b>                                                                                                                                                                                                                          |                                                                                     | <b>Main characteristics</b>                                                                                                                                                                                                               |                                         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| <ul style="list-style-type: none"> <li>• Bemessungsspannung 660 V</li> <li>• Bemessungsstrom 16 A ... 22 A</li> <li>• Anschlussart: schrauben</li> <li>• 2 nacheilende Schaltkontakte</li> <li>• Polzahl: 3, 6, 10, 16, 20, 26, 32</li> </ul> |                                                                                     | <ul style="list-style-type: none"> <li>• Rated voltage 660 V</li> <li>• Rated current 16 A ... 22 A</li> <li>• Termination: screw</li> <li>• 2 delayed mating contacts</li> <li>• Number of contacts: 3, 6, 10, 16, 20, 26, 32</li> </ul> |                                         |
| <b>Zulassungen / Approvals</b>                                                                                                                                                                                                                | <b>Prüfstelle / Testhouse</b>                                                       | <b>Kennwerte / Characteristics</b>                                                                                                                                                                                                        | <b>Zulassungs-Nummer / Approval-No.</b> |
| SEV                                                                                                                                                                                                                                           |  | 660 V, 16 / 22 A                                                                                                                                                                                                                          |                                         |
| UL                                                                                                                                                                                                                                            |  | 600 V, 10 A                                                                                                                                                                                                                               | E 63093                                 |
| CSA                                                                                                                                                                                                                                           |  | 600 V, 20 A                                                                                                                                                                                                                               | 48932                                   |
| <p>Zulassungen beziehen sich im allgemeinen auf repräsentative Ausführungen der Steckverbinderserie. Prüfumfang und Prüfvorschrift auf Anfrage.</p>                                                                                           |                                                                                     | <p><i>In general approvals refer to representative versions of the connector series. Extent and specification of tests upon request.</i></p>                                                                                              |                                         |



| <b>Allgemeine Kennwerte</b>               | <b>General Characteristics</b>               | <b>Norm / Standard</b> | <b>Wert / Value</b>                                 |      |                         |                     |                                |                         |       |  |
|-------------------------------------------|----------------------------------------------|------------------------|-----------------------------------------------------|------|-------------------------|---------------------|--------------------------------|-------------------------|-------|--|
| Polzahl                                   | <i>Number of contacts</i>                    |                        | 3                                                   | 6    | 10                      | 16                  | 20                             | 26 <sup>4)</sup>        | 32    |  |
| Anschluss technik                         | <i>Termination technique</i>                 |                        | schrauben / <i>screw</i>                            |      |                         |                     |                                |                         |       |  |
| Anschlussquerschnitt                      | <i>Wire gauge</i>                            |                        | 0,25 - 2,5 mm <sup>2</sup>                          |      |                         |                     |                                |                         |       |  |
| Brennbarkeit                              | <i>Flammability</i>                          | UL 94                  | V-0                                                 |      |                         |                     |                                |                         |       |  |
| <b>Elektrische Kennwerte</b>              | <b>Electrical Characteristics</b>            |                        |                                                     |      |                         |                     |                                |                         |       |  |
| Bemessungsspannung                        | <i>Rated voltage</i>                         | IEC 60664-1            | 660 V <sup>1)</sup> (600 V UL / CSA <sup>3)</sup> ) |      |                         |                     |                                |                         |       |  |
| Verschmutzungsgrad                        | <i>Pollution degree</i>                      | IEC 60664-1            | 3                                                   |      |                         |                     |                                |                         |       |  |
| Überspannungskategorie                    | <i>Installation (overvoltage) category</i>   | IEC 60664-1            | III                                                 |      |                         |                     |                                |                         |       |  |
| Isolierstoffgruppe                        | <i>Material group</i>                        | IEC 60664-1            | III a                                               |      | II                      | IIIa                | <sup>4)</sup>                  | II                      |       |  |
| Bemessungs-Stoßspannung                   | <i>Rated impulse withstand voltage</i>       | IEC 60664-1            | 8,0 KV                                              |      |                         |                     |                                |                         |       |  |
| Spannungsfestigkeit                       | <i>Voltage proof</i>                         | IEC 60512-2; Test 4 a  | 3,5 KV                                              |      |                         |                     |                                |                         |       |  |
| Strombelastbarkeit                        | <i>Current carrying capacity</i>             | IEC 60512-3; Test 5 b  | siehe Derating Kurven / <i>see derating curves</i>  |      |                         |                     |                                |                         |       |  |
| Durchgangswiderstand                      | <i>Contact resistance</i>                    | IEC 60512-2; Test 2 a  | ≤ 5 m Ω                                             |      |                         |                     |                                |                         |       |  |
| Isolationswiderstand                      | <i>Insulation resistance</i>                 | IEC 60512-2; Test 3 a  | ≥ 10 <sup>12</sup> Ω <sup>2)</sup>                  |      |                         |                     |                                |                         |       |  |
| <b>Klimatische Kennwerte</b>              | <b>Climatical Characteristics</b>            |                        |                                                     |      |                         |                     |                                |                         |       |  |
| Prüfklasse                                | <i>Climatic category</i>                     | IEC 60068-1            | 40 / 125 / 21                                       |      |                         |                     |                                |                         |       |  |
| Obere Grenztemperatur                     | <i>Upper temperature</i>                     | IEC 60512-6; Test 11 i | + 125 °C / 1000 h                                   |      |                         |                     |                                |                         |       |  |
| Untere Grenztemperatur                    | <i>Lower temperature</i>                     | IEC 60512-6; Test 11 i | - 40 °C                                             |      |                         |                     |                                |                         |       |  |
| <b>Mechanische Kennwerte</b>              | <b>Mechanical Characteristics</b>            |                        |                                                     |      |                         |                     |                                |                         |       |  |
| <sup>5)</sup> IP-Schutzart Stifteinsatz   | <i>IP-degree of protection pin insert</i>    | IEC 60529              | ungesteckt/ <i>unmated</i><br>IP00                  |      |                         |                     | gesteckt/ <i>mated</i><br>IP20 |                         |       |  |
| <sup>5)</sup> IP-Schutzart Buchseneinsatz | <i>IP-degree of protection socket insert</i> | IEC 60529              | ungesteckt/ <i>unmated</i><br>IP20                  |      |                         |                     | gesteckt/ <i>mated</i><br>IP20 |                         |       |  |
| Gewicht Stifteinsatz                      | <i>Weight pin insert</i>                     |                        | 49 g                                                | 63 g | 81 g                    | 107 g               | 162 g                          | 189 g                   | 214 g |  |
| Gewicht Buchseneinsatz                    | <i>Weight socket insert</i>                  |                        | 49 g                                                | 63 g | 81 g                    | 107 g               | 162 g                          | 189 g                   | 214 g |  |
| Mechanische Lebensdauer                   | <i>Mechanical operation</i>                  | IEC 60512-5; Test 9 a  | ≥ 500 Steckzyklen / <i>mating cycles</i>            |      |                         |                     |                                |                         |       |  |
| <b>Werkstoffe</b>                         | <b>Materials</b>                             |                        |                                                     |      |                         |                     |                                |                         |       |  |
| Kontakteinsatz                            | <i>Insert</i>                                |                        | PC, GV                                              |      | PA, GV                  | PC, GV              | <sup>4)</sup>                  | PA, GV                  |       |  |
| Kontakte                                  | <i>Contacts</i>                              |                        | Cu Zn (Messing / <i>brass</i> )                     |      |                         |                     |                                |                         |       |  |
| Kontakt oberfläche                        | <i>Contact plating</i>                       |                        | Ag (silber / <i>silver</i> )                        |      |                         |                     |                                |                         |       |  |
| Farbe                                     | <i>Colour</i>                                |                        | grau / <i>grey</i>                                  |      | schwarz<br><i>black</i> | grau<br><i>grey</i> | <sup>4)</sup>                  | schwarz<br><i>black</i> |       |  |

<sup>1)</sup> für Arbeitskontakte, 400 V für Schaltkontakte / *for working contacts, 400 V for mating contacts*

<sup>2)</sup> bei Beanspruchung > 10<sup>10</sup> Ω / *Under operating conditions > 10<sup>10</sup> Ω*

<sup>3)</sup> Hinweisschild für CSA-Anwendung siehe Seite 186 / *Label for CSA application see page 186*

<sup>4)</sup> Kombination 10- und 16-polig; d.h. Werkstoff PC und PA / *Combination 10 and 16 ways, i.e. material PC and PA*

<sup>5)</sup> IP-Schutzart im Anschlussbereich IP 10 / *IP-degree of protection on termination side IP 10*

C 146 HvE

3 +  + 2

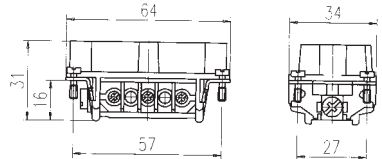
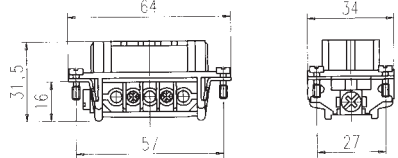
660 V~

16 / 22 A

2 nacheilende Schaltkontakte  
2 delayed mating contacts

Steckverbinder  
Connectors

Gehäuse siehe Seite 130-137  
Housings see page 130-137

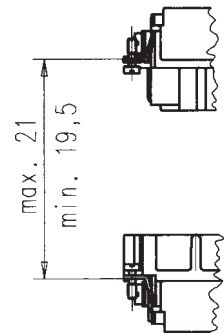
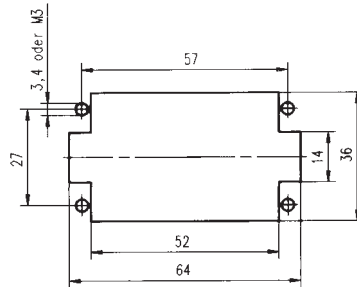
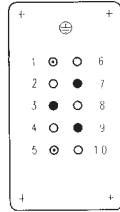
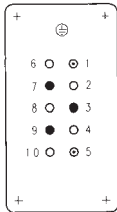
| Bezeichnung - Abbildung<br>Description - Figure                                                 | Maßzeichnung<br>Drawing                                                                                                                                                                                                                         | Bestell Nr. / Part No.     |                                |
|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|--------------------------------|
|                                                                                                 |                                                                                                                                                                                                                                                 | Stifteinsatz / Male insert | Buchseneinsatz / Female insert |
| Kontakteinsatz Schraubanschluss <sup>1)</sup><br>Contact insert screw termination <sup>1)</sup> | <p>Stifteinsatz<br/>Male insert</p>  <p>Buchseneinsatz<br/>Female insert</p>  | C146 10A003 102 3          | C146 10B003 102 3              |

Montageanleitung, Steckbild / Assembly instruction, pin layout

Stifteinsatz  
Male insert

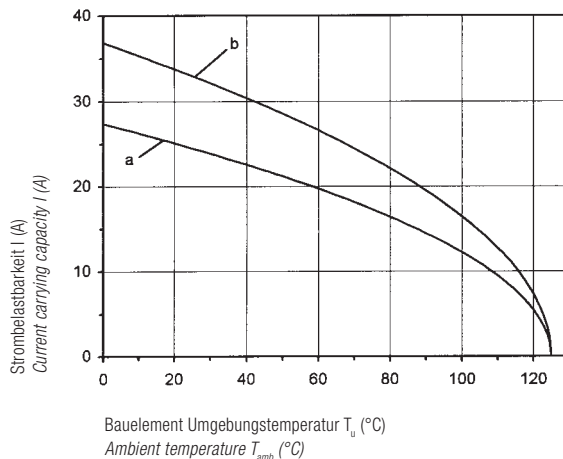
Buchseneinsatz  
Female insert

Montageausschnitt (Kontaktträger)  
Panel cut out (insert)



- Arbeitskontakt / working contact
- ⊙ Schaltkontakt / mating contact
- Leerstelle / without contact

Derating Kurve / Derating curve



Begrenzung durch Leiter beachten  
Notice restriction of wire

Kurve a Anschlussquerschnitt 1,5 mm<sup>2</sup>  
Curve a wire gauge 1,5 mm<sup>2</sup>

Kurve b Anschlussquerschnitt 2,5 mm<sup>2</sup>  
Curve b wire gauge 2,5 mm<sup>2</sup>

1) mit Drahtschutz / with wire protection



C 146 HvE

6 +  + 2

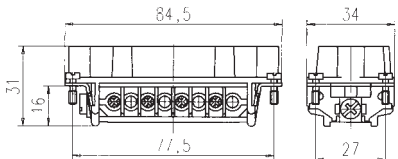
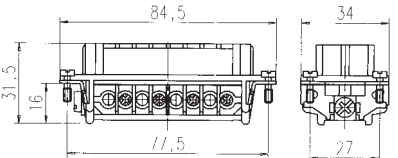
660 V~

16 / 22 A

2 nacheilende Schaltkontakte  
2 delayed mating contacts

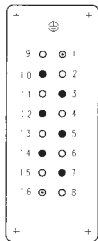
Steckverbinder  
Connectors

Gehäuse siehe Seite 138-145  
Housings see page 138-145

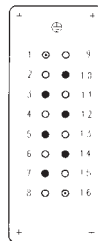
| Bezeichnung - Abbildung<br>Description - Figure                                                 | Maßzeichnung<br>Drawing                                                                                                                                                                                                                         | Bestell Nr. / Part No.     |                                |
|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|--------------------------------|
|                                                                                                 |                                                                                                                                                                                                                                                 | Stifteinsatz / Male insert | Buchseneinsatz / Female insert |
| Kontakteinsatz Schraubanschluss <sup>1)</sup><br>Contact insert screw termination <sup>1)</sup> | <p>Stifteinsatz<br/>Male insert</p>  <p>Buchseneinsatz<br/>Female insert</p>  | C146 10A006 102 3          | C146 10B006 102 3              |

Montageanleitung, Steckbild / Assembly instruction, pin layout

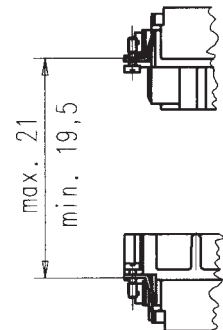
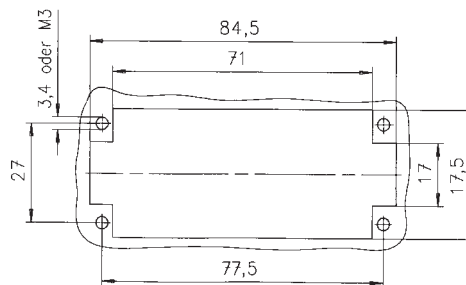
Stifteinsatz  
Male insert



Buchseneinsatz  
Female insert

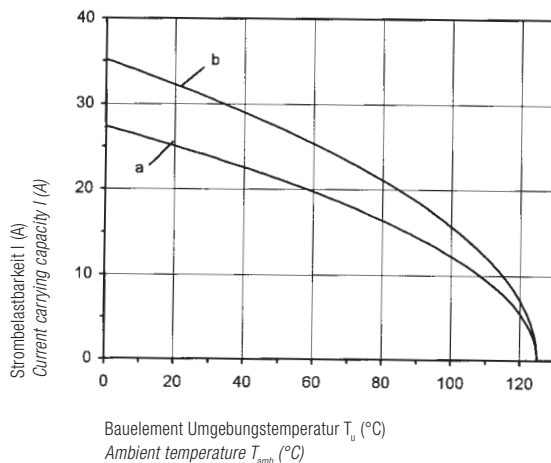


Montageausschnitt (Kontaktträger)  
Panel cut out (insert)



- Arbeitskontakt / working contact
- ⊙ Schaltkontakt / mating contact
- Leerstelle / without contact

Derating Kurve / Derating curve



Begrenzung durch Leiter beachten  
Notice restriction of wire

Kurve a Anschlussquerschnitt 1,5 mm<sup>2</sup>  
Curve a wire gauge 1,5 mm<sup>2</sup>

Kurve b Anschlussquerschnitt 2,5 mm<sup>2</sup>  
Curve b wire gauge 2,5 mm<sup>2</sup>

1) mit Drahtschutz / with wire protection

C 146 HVE

10 +  + 2

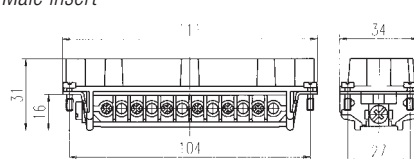
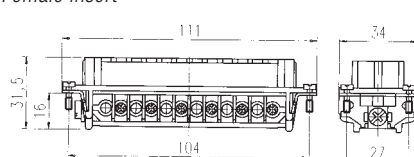
660 V~

16 / 22 A

2 nacheilende Schaltkontakte  
2 delayed mating contacts

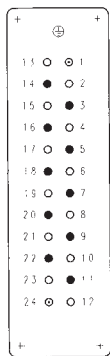
Steckverbinder  
Connectors

Gehäuse siehe Seite 146-153  
Housings see page 146-153

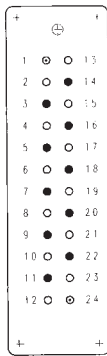
| Bezeichnung - Abbildung<br>Description - Figure                                                 | Maßzeichnung<br>Drawing                                                                                                                                                                                                                         | Bestell Nr. / Part No.     |                                |
|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|--------------------------------|
|                                                                                                 |                                                                                                                                                                                                                                                 | Stifteinsatz / Male insert | Buchseneinsatz / Female insert |
| Kontakteinsatz Schraubanschluss <sup>1)</sup><br>Contact insert screw termination <sup>1)</sup> | <p>Stifteinsatz<br/>Male insert</p>  <p>Buchseneinsatz<br/>Female insert</p>  | C146 10A010 102 3          | C146 10B010 102 3              |

Montageanleitung, Steckbild / Assembly instruction, pin layout

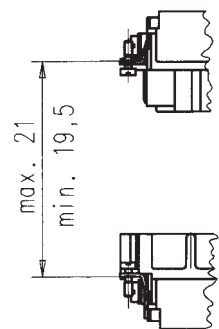
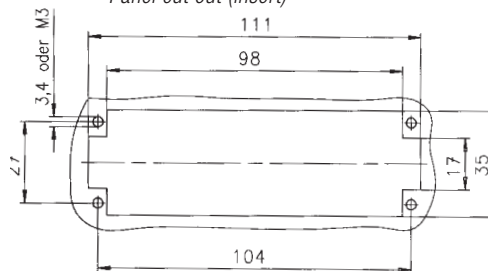
Stifteinsatz  
Male insert



Buchseneinsatz  
Female insert

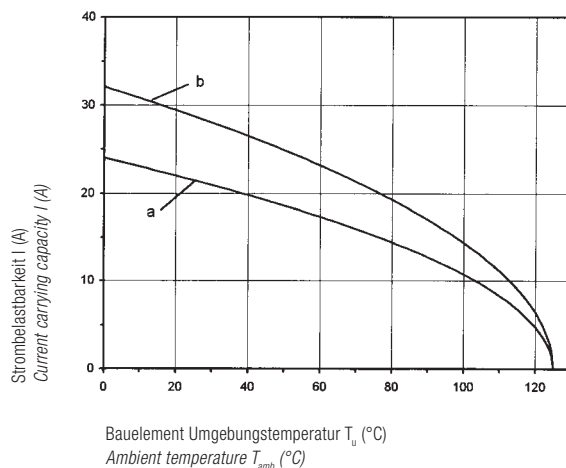


Montageausschnitt (Kontaktträger)  
Panel cut out (insert)



- Arbeitskontakt / working contact
- Schaltkontakt / mating contact
- Leerstelle / without contact

Derating Kurve / Derating curve



Begrenzung durch Leiter beachten  
Notice restriction of wire

Kurve a Anschlussquerschnitt 1,5 mm<sup>2</sup>  
Curve a wire gauge 1,5 mm<sup>2</sup>

Kurve b Anschlussquerschnitt 2,5 mm<sup>2</sup>  
Curve b wire gauge 2,5 mm<sup>2</sup>

1) mit Drahtschutz / with wire protection

C 146 HvE

16 +  + 2

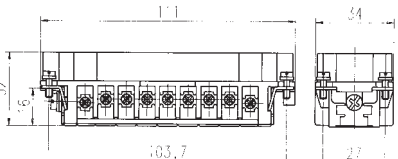
660 V~

16 / 22 A

2 nacheilende Schaltkontakte  
2 delayed mating contacts

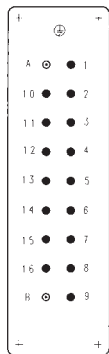
Steckverbinder  
Connectors

Gehäuse siehe Seite 154-155  
Housings see page 154-155

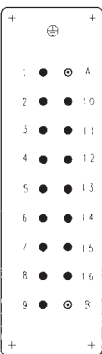
| Bezeichnung - Abbildung<br>Description - Figure                                                 | Maßzeichnung<br>Drawing                                                           | Bestell Nr. / Part No.                                                                      |                                                                                             |
|-------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
|                                                                                                 |                                                                                   | Stifteinsatz / Male insert                                                                  | Buchseinsatz / Female insert                                                                |
| Kontakteinsatz Schraubanschluss <sup>1)</sup><br>Contact insert screw termination <sup>1)</sup> |  | C146 10A016 102 3<br><br>C146 10A016 002 3<br>(ohne Drahtschutz<br>without wire protection) | C146 10B016 102 3<br><br>C146 10B016 002 3<br>(ohne Drahtschutz<br>without wire protection) |

Montageanleitung, Steckbild / Assembly instruction, pin layout

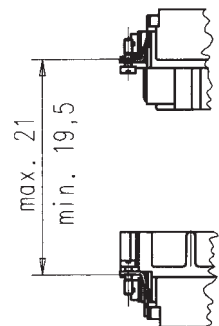
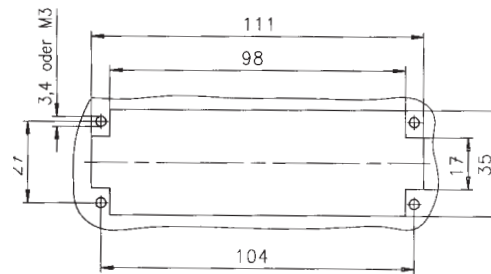
Stifteinsatz  
Male insert



Buchseinsatz  
Female insert

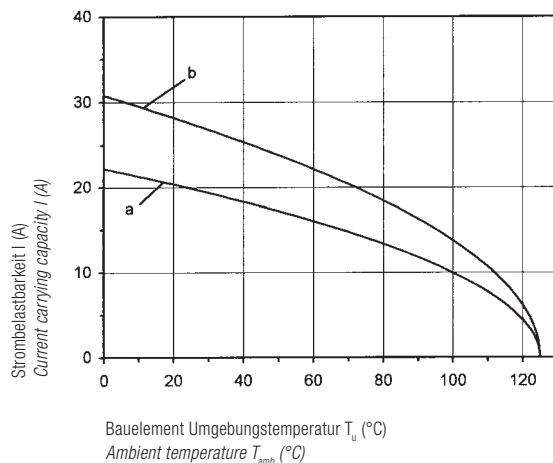


Montageausschnitt (Kontaktträger)  
Panel cut out (insert)



- Arbeitskontakt / working contact
- ⊙ Schaltkontakt / mating contact

Derating Kurve / Derating curve











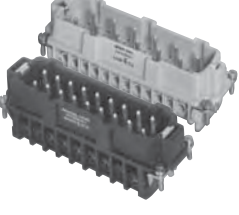
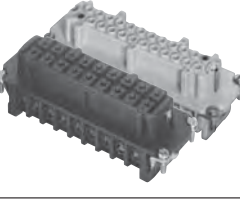

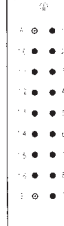




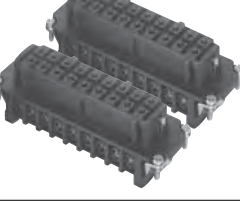




Begrenzung durch Leiter beachten  
Notice restriction of wire

Kurve a Anschlussquerschnitt 1,5 mm<sup>2</sup>  
Curve a wire gauge 1,5 mm<sup>2</sup>

Kurve b Anschlussquerschnitt 2,5 mm<sup>2</sup>  
Curve b wire gauge 2,5 mm<sup>2</sup>

1) mit Drahtschutz / with wire protection

**C 146 HvE****20 +  + 4****26 +  + 4****32 +  + 4****Steckverbinder  
Connectors****660 V~****16 / 22 A****4 nacheilende Schaltkontakte  
4 delayed mating contacts****Gehäuse auf Anfrage  
Housings upon request**

| Bezeichnung - Abbildung<br>Description - Figure                                                                                                                                                                                                                                                                                                                                        | Maßzeichnung / Drawing                                                                                                                                                                                                                                                                                                                          |                                                                                    | Bestell Nr. / Part No.                                                             |                              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                        | Stifteinsatz / Male insert                                                                                                                                                                                                                                                                                                                      | Buchseinsatz / Female insert                                                       | Stifteinsatz / Male insert                                                         | Buchseinsatz / Female insert |
| Kontakteinsätze Schraubanschluss <sup>1)</sup><br>Contact inserts screw termination <sup>1)</sup><br><b>20 +  + 4</b><br><br>      |             | <b>C146 10A010 102 3</b><br>(1 - 24)<br>+<br><b>C146 10A010 104 3</b><br>(25 - 48) | <b>C146 10B010 102 3</b><br>(1 - 24)<br>+<br><b>C146 10B010 104 3</b><br>(25 - 48) |                              |
| Kontakteinsätze Schraubanschluss <sup>1)</sup><br>Contact inserts screw termination <sup>1)</sup><br><b>26 +  + 4</b><br><br> |     | <b>C146 10A010 102 3</b><br>(1 - 24)<br>+<br><b>C146 10A016 102 3</b><br>(1 - 16)  | <b>C146 10A010 102 3</b><br>(1 - 24)<br>+<br><b>C146 10B016 102 3</b><br>(1 - 16)  |                              |
| Kontakteinsätze Schraubanschluss <sup>1)</sup><br>Contact inserts screw termination <sup>1)</sup><br><b>32 +  + 4</b><br><br> |     | <b>C146 10A016 102 3</b><br>(1 - 16)<br>+<br><b>C146 10A016 104 3</b><br>(17 - 32) | <b>C146 10B016 102 3</b><br>(1 - 16)<br>+<br><b>C146 10B016 104 3</b><br>(17 - 32) |                              |

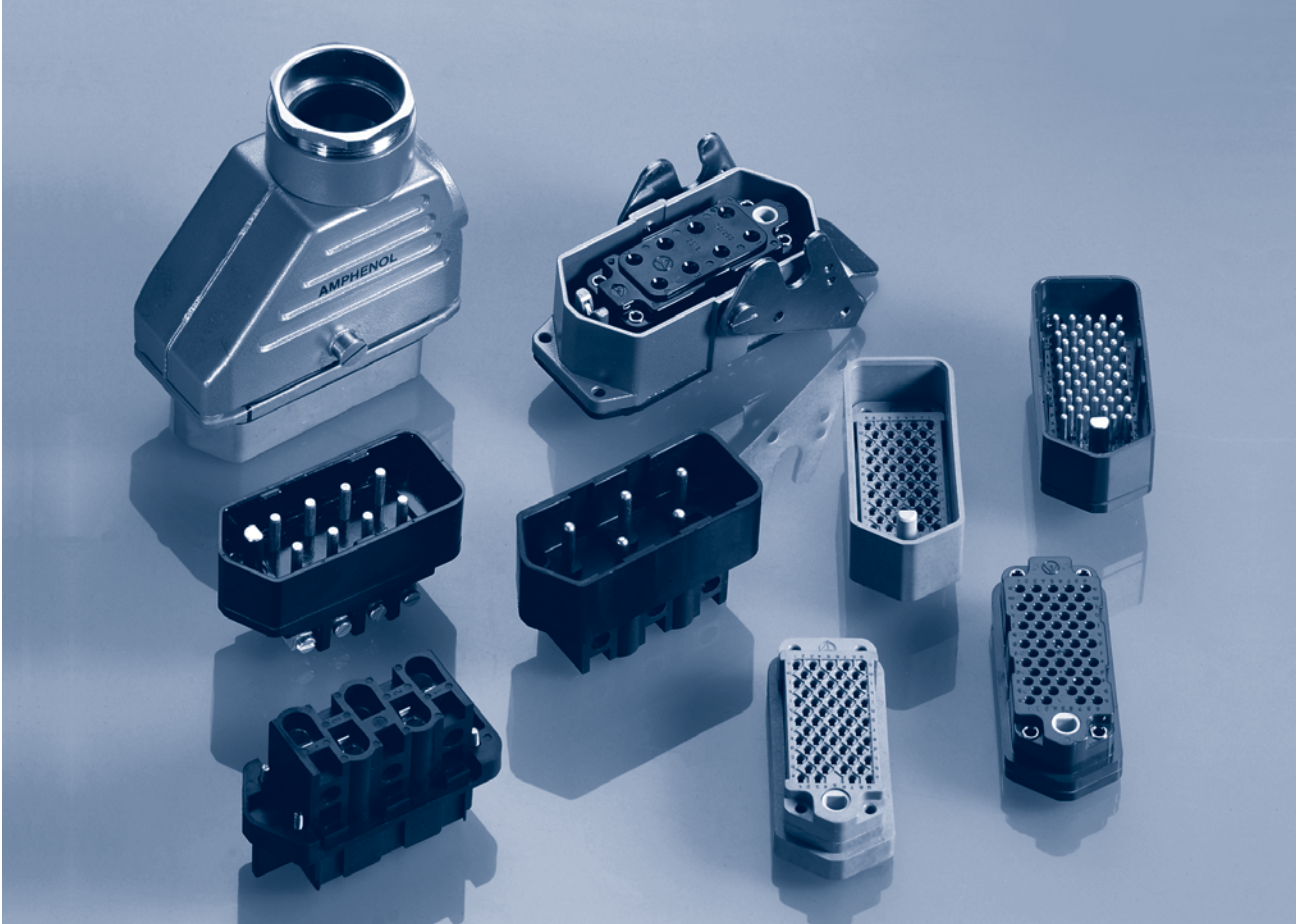
- Arbeitskontakt / working contact
- ⊙ Schaltkontakt / mating contact
- Leerstelle / without contact

- Arbeitskontakt / working contact
- ⊙ Schaltkontakt / mating contact
- Leerstelle / without contact

- Arbeitskontakt / working contact
- ⊙ Schaltkontakt / mating contact

1) mit Drahtschutz / with wire protection

# C 146 S



## Hauptmerkmale

- Bemessungsspannung 125 V
- Bemessungsstrom 10 A
- Anschlussart: crimpen
- Polzahl: 57

## Main characteristics

- *Rated voltage 125 V*
- *Rated current 10 A*
- *Termination: crimping*
- *Number of contacts: 57*

S

### Allgemeine Hinweise



#### General information

- Kontakteinsätze ohne Crimpkontakte (bei Kontakteinsatz mit Crimpanschluss).
- Steckverbinder der Serie C 146 S dürfen nicht unter Last betätigt werden.
- Crimpwerkzeuge siehe separater Katalog „Werkzeuge“.
- Für die Einsätze der Serie C 146 S können sowohl niedrige, wie auch hohe Gehäusebauformen verwendet werden.
- Verarbeitungs- und Montagehinweise von Crimpkontakten, siehe Katalog „Werkzeuge“.

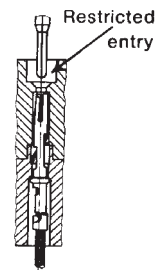
- *Contact inserts without crimp contacts.*
- *Do not mate or unmate A 146 S connectors under electrical load.*
- *Crimping tools see separate catalogue „Tools“.*
- *Low and high profile housings for C 146 S series inserts.*
- *Processing instruction for crimp contacts see catalogue „Tools“.*

### Hoher Schutz vor Fehlsteckungen

#### High protection against mismatching

Buchsenkontakteinsatz mit trichterförmiger, verengter Stecköffnung.  
(hohe Steck- und Kontaktsicherheit)

*Female inserts with funnel shaped contact entry avoids mismatching.  
(high security in mating and contacting)*



### Voreilender Schutzkontakt (am Kontakteinsatz)

#### First-to-mate last-to-break protective ground contact (at the contact insert)



| Allgemeine Kennwerte                      | General Characteristics               | Norm / Standard       | Wert / Value                                |
|-------------------------------------------|---------------------------------------|-----------------------|---------------------------------------------|
| Polzahl                                   | Number of contacts                    |                       | 57 + ⊕                                      |
| Anschluss technik                         | Termination technique                 |                       | crimpen<br>crimp                            |
|                                           | Max. wire gauge                       |                       | 2,5 mm <sup>2</sup>                         |
|                                           | Protection class                      |                       | IP 54                                       |
| Maximaler Leiterquerschnitt               | Max. wire diameter                    |                       | 3,5 mm                                      |
|                                           | Flammability                          | UL 94                 | V-1                                         |
| Elektrische Kennwerte                     | Electrical Characteristics            |                       |                                             |
| Bemessungsspannung                        | Rated voltage                         | IEC 60664-1           | 150 V                                       |
| Verschmutzungsgrad                        | Pollution degree                      | IEC 60664-1           | 3                                           |
| Isolierstoffgruppe                        | Material group                        | IEC 60664-1           | III a                                       |
| Bemessungs-Stoßspannung                   | Rated impulse withstand voltage       | IEC 60664-1           | 3,0 kV                                      |
| Spannungsfestigkeit                       | Voltage proof                         | IEC 60512-2; Test 4 a | 1,4 kV                                      |
| Strombelastbarkeit                        | Current carrying capacity             | IEC 60512-2           | siehe Derating Kurven / see derating curves |
| Durchgangswiderstand                      | Contact resistance                    | IEC 60512-2           | < 5 m Ω                                     |
| Isolationswiderstand                      | Insulation resistance                 | IEC 60512-2           | ≥ 10 <sup>10</sup> Ω                        |
| Luftstrecke                               | Clearance                             | IEC 60664-1           | 1,6 mm                                      |
| Kriechstrecke                             | Creepage                              | IEC 60664-1           | 3 mm                                        |
| Klimatische Kennwerte                     | Climatical Characteristics            |                       |                                             |
| Prüfklasse                                | Climatic category                     | IEC 60068-1           | 40 / 125 / 21                               |
| Mechanische Kennwerte                     | Mechanical Characteristics            |                       |                                             |
| Gesamt Steck- und Ziehkraft               | Insertion and withdrawal forces       | IEC 60529             | ≤ 250 N                                     |
| <sup>1)</sup> IP-Schutzart Stifteinsatz   | IP-degree of protection pin insert    | IEC 60529             | gesteckt/mated IP20                         |
| <sup>1)</sup> IP-Schutzart Buchseneinsatz | IP-degree of protection socket insert | IEC 60529             | gesteckt/mated IP20                         |
| Gewicht Stifteinsatz                      | Weight Male insert                    |                       | 60 g                                        |
| Gewicht Buchseneinsatz                    | Weight Female insert                  |                       | 55 g                                        |
| Mechanische Lebensdauer                   | Mechanical operation                  |                       | > 500 Steckzyklen / mating cycles           |
| Werkstoffe                                | Materials                             |                       |                                             |
| Kontakteinsatz                            | Insert                                |                       | PPO                                         |
| Schraubkontakte                           | Screw contacts                        |                       | CuZn (Messing/brass)                        |
| Crimpkontakt Stift                        | Male crimp contacts                   |                       | CuZn (Messing/brass)                        |
| Crimpkontakt Buchse                       | Female crimp contacts                 |                       | CuSn (Zinnbronze / Tin bronze)              |
| Kontakt oberfläche                        | Contact plating                       |                       | Ag                                          |
| Farbe                                     | Colour                                |                       | grau / grey                                 |
| Gehäuse                                   | Housings                              |                       | Aluminium Druckguss / Aluminium die cast    |
| Dichtgummi                                | Rubber gasket                         |                       | Neoprene / Neoprene                         |

<sup>1)</sup> IP-Schutzart im Anschlussbereich der Schraub-/Löt ausführung IP 00  
IP-degree of protection on termination side of screw/solder version IP 00

C 146 S


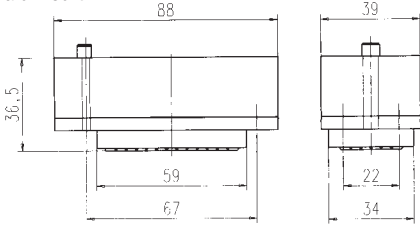
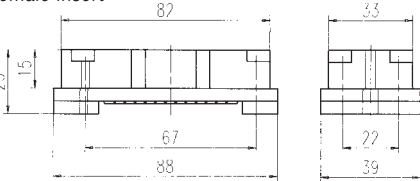
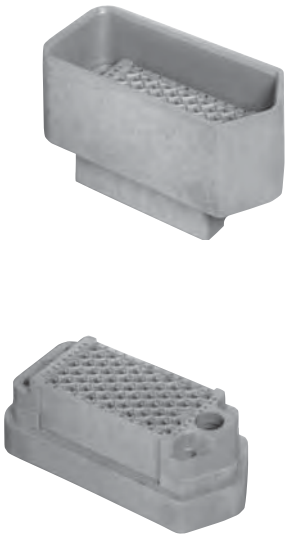
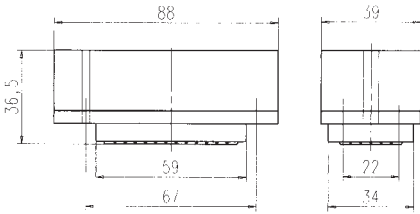
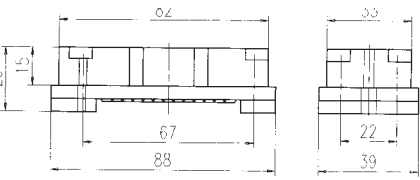
57 + 

125 V~

10 A

Steckverbinder  
Connectors

Gehäuse siehe Seite 106  
Housings see page 106

| Bezeichnung - Abbildung<br>Description - Figure                                                                                                                                                                     | Maßzeichnung<br>Drawing                                                                                                                                                                                                                           | Bestell Nr. / Part No.     |                              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|------------------------------|
|                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                   | Stifteinsatz / Male insert | Buchseinsatz / Female insert |
| <p>Kontakteinsatz Crimpanschluss mit Kodiereinrichtung 6 Pos.<br/>Contact insert crimp termination incl. polarisation 6 Pos.</p>  | <p>Stifteinsatz<br/>Male insert</p>  <p>Buchseinsatz<br/>Female insert</p>    | <p>C146 10A057 000 6</p>   | <p>C146 10B057 000 6</p>     |
| <p>Kontakteinsatz Crimpanschluss ohne Kodiereinrichtung<br/>Contact insert crimp termination without polarisation</p>            | <p>Stifteinsatz<br/>Male insert</p>  <p>Buchseinsatz<br/>Female insert</p>  | <p>C146 10A057 801 6</p>   | <p>C146 10B057 801 6</p>     |

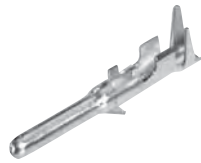


C 146 S

57 + 

**Crimpkontakte**  
**Crimp contacts**

Gestanzte Einzelkontakte  
*Stamped single contacts*



Gestanzte Bandkontakte für Crimpzangen  
*Stamped contacts on reel for hand crimping tools*



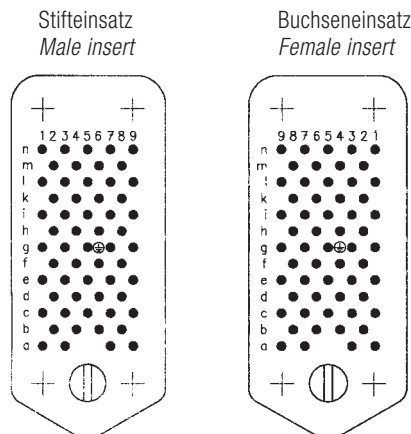
200 / 100 Stück  
200 / 100 pcs

Gestanzte Bandkontakte für Crimpmaschinen  
*Stamped contacts on reel for crimp machines*

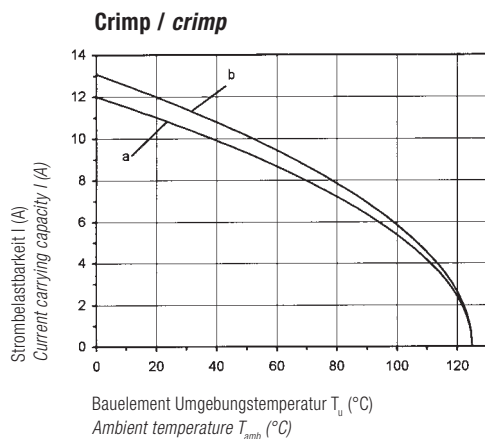


2000 Stück  
(Zuführung links oder rechts)  
2000 pcs  
(feeding left or right hand side)

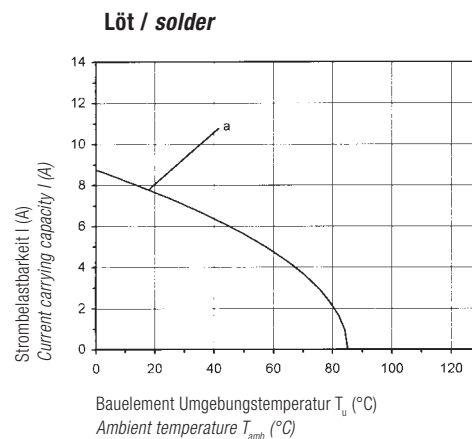
| Lieferform<br><i>Supplied as</i>                                                                 | für Leiterquerschnitt<br><i>for wire gauge</i> | AWG     | Stückzahl<br><i>Pieces</i> | Bestell Nr. <sup>1)</sup> / Part No. <sup>1)</sup> |                                 |
|--------------------------------------------------------------------------------------------------|------------------------------------------------|---------|----------------------------|----------------------------------------------------|---------------------------------|
|                                                                                                  |                                                |         |                            | Stiftkontakt / Male contact                        | Buchsenkontakt / Female contact |
| Gestanzte Einzelkontakte / <i>Stamped single contacts</i>                                        |                                                |         |                            |                                                    |                                 |
|                                                                                                  | 0,5 - 1,5 mm <sup>2</sup>                      | 20 - 16 | 100                        | VN01 025 0007 (101)                                | VN02 025 0001 (101)             |
|                                                                                                  | 1,5 - 2,5 mm <sup>2</sup>                      | 16 - 14 | 100                        | VN01 025 0008 (101)                                | VN02 025 0010 (101)             |
| Gestanzte Bandkontakte für Crimpzangen / <i>Stamped contacts on reel for hand crimping tools</i> |                                                |         |                            |                                                    |                                 |
|                                                                                                  | 0,5 - 1,5 mm <sup>2</sup>                      | 20 - 16 | 200                        | ZN01 025 0007 (1)                                  | ZN02 025 0001 (1)               |
|                                                                                                  | 1,5 - 2,5 mm <sup>2</sup>                      | 16 - 14 | 100                        | ZN01 025 0008 (1)                                  | ZN02 025 0010 (1)               |
| Gestanzte Bandkontakte für Crimpmaschinen / <i>Stamped contacts on reel for crimp machines</i>   |                                                |         |                            |                                                    |                                 |
| Kontaktzuführung rechts<br><i>Contact feeding right hand side</i>                                | 0,5 - 1,5 mm <sup>2</sup>                      | 20 - 16 | 2000                       | HN01 025 0007 (1)                                  | HN02 025 0001 (1)               |
|                                                                                                  | 1,5 - 2,5 mm <sup>2</sup>                      | 16 - 14 | 2000                       | HN01 025 0008 (1)                                  | HN02 025 0010 (1)               |
| Kontaktzuführung links<br><i>Contact feeding left hand side</i>                                  | 0,5 - 1,5 mm <sup>2</sup>                      | 20 - 16 | 2000                       | TN01 025 0007 (1)                                  | TN02 025 0001 (1)               |
|                                                                                                  | 1,5 - 2,5 mm <sup>2</sup>                      | 16 - 14 | 2000                       | TN01 025 0008 (1)                                  | TN02 025 0010 (1)               |
| Steckbild / <i>Pin layout</i>                                                                    |                                                |         |                            |                                                    |                                 |



Derating Kurven / *Derating curves*



Kurve a Anschlussquerschnitt 1,5 mm<sup>2</sup> / *Curve a wire gauge 1,5 mm<sup>2</sup>*  
 Kurve b Anschlussquerschnitt 2,5 mm<sup>2</sup> / *Curve b wire gauge 2,5 mm<sup>2</sup>*

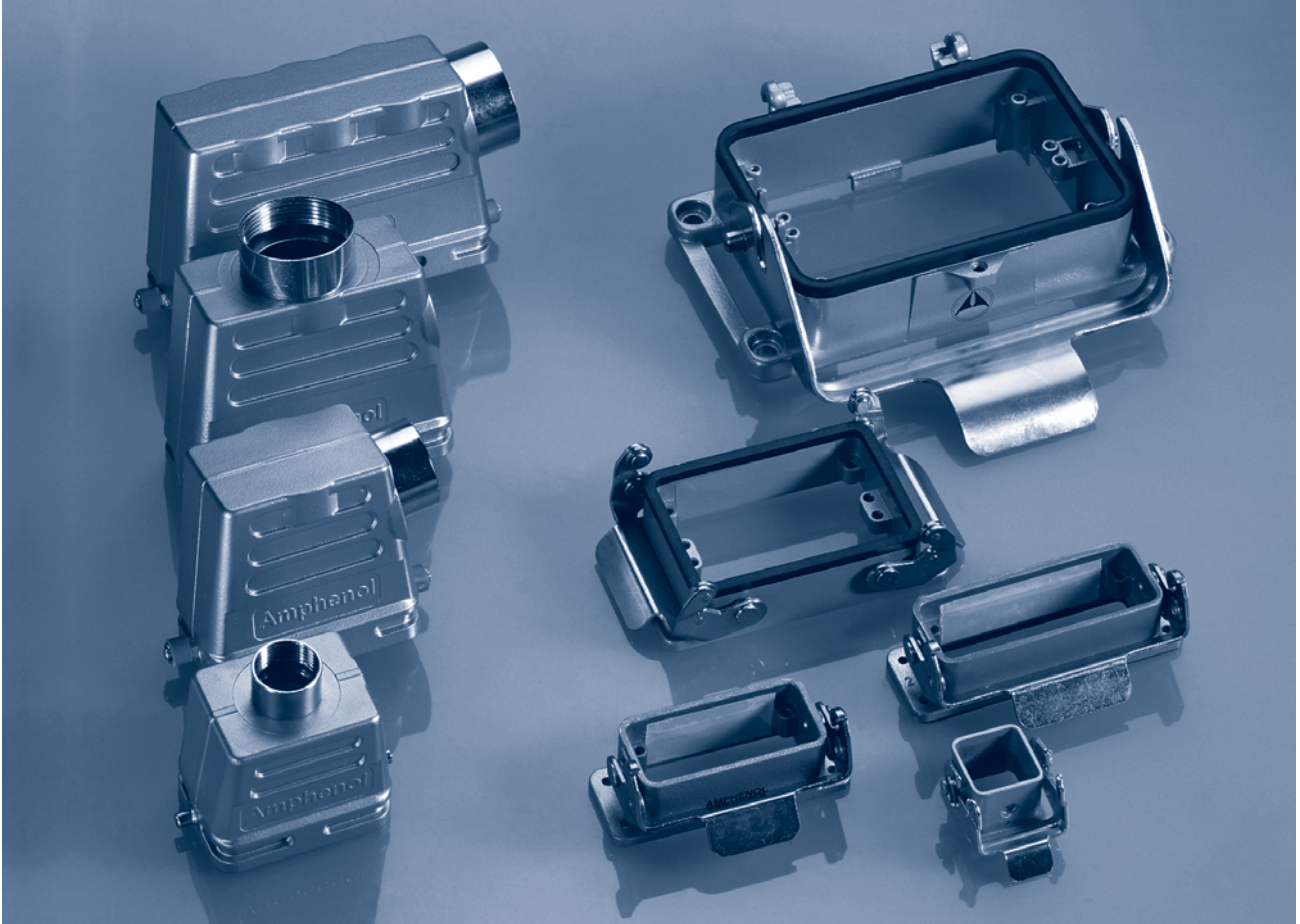


<sup>1)</sup> Erläuterung der Bestell-Nr. für die Kontakte siehe Seite 4  
<sup>1)</sup> *Explanation of the Part No. for contacts see page 4*

Abisolierlängen siehe S. 198  
*Stripping length see p. 198*



# C 146 Gehäuse / *Housings*



## **Für Serien**

- C 146 D / DD
- C 146 E
- C 146 M
- C 146 A
- C 146 HSE
- C 146 HvE

## ***For series***

- *C 146 D / DD*
- *C 146 E*
- *C 146 M*
- *C 146 A*
- *C 146 HSE*
- *C 146 HvE*

## C 146 Gehäuse Housings

### Kurzinformation Brief information

#### Allgemeine Hinweise



#### General information

- Die Steckverbindungen der Serie C 146 sind für Einsatzbereiche im allgemeinen Maschinen-, Anlagen- und Apparatebau, Steuerungs- und Elektrogerätebau vorgesehen. Die Überprüfung, ob die Steckverbindung anderen als den angegebenen Vorschriften entspricht, bzw. ob diese in speziell von uns nicht vorhersehbaren Anwendungsbereichen eingesetzt werden kann, obliegt dem Anwender.
  - Bei Kupplungsgehäusen ist eine ausreichende Zugentlastung sicherzustellen.
  - Bei Einsatz von Gehäusen ohne Stützen wird der Kabelraum beeinträchtigt.
  - Die angegebenen Bemaßungen bei den Montageausschnitten stellen Anhaltswerte dar und sind im konkreten Anwendungsfall auf die Produkte abzustimmen.
  - Die Dichtfläche bei den Anbaugehäusen muss eben und gratfrei sein.
- *The connectors of our C 146 series are designed for use in machine tools, general electric installations and applications as well as for industrial control and other electrical equipment. Other applications than the above mentioned are in the responsibility of the user.*
  - *For cable to cable connections a suitable cable clamp has to be used.*
  - *The use of housings without stud impairs the cable room.*
  - *The indicated dimensions with the panel cut-outs represent reference values and are in the concrete application with products to be co-ordinated.*
  - *The sealing area of the housing has to be level and free of burrs.*

#### Große Gehäuseauswahl in 2 Bauhöhen

#### Large range of housings in 2 different heights



#### Genormte Steckverbindergehäuse nach DIN 43652 DIN EN 175 301-801 (DIN 43652)

#### Standardised connector housings according DIN 43652 DIN EN 175 301-801 (DIN 43652)

#### Weitere Sonderausführung auf Anfrage

#### Special housing on request



z. B. Korrosions geschützte Gehäuse  
e. G. corrosion protected housings



Sondertypen  
Customer specials

## C 146 Gehäuse Housings


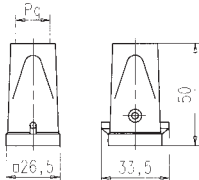

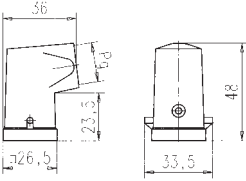

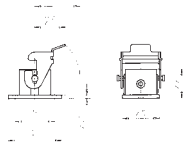

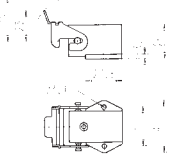

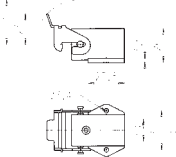

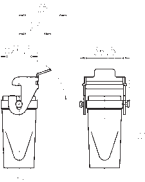

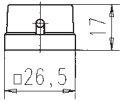
### Technische Daten Characteristics

| <b>Allgemeine Kennwerte</b>                         | <b>General Characteristics</b>                                   | <b>Norm / Standard</b>             | <b>Wert / Value</b>                                                            |
|-----------------------------------------------------|------------------------------------------------------------------|------------------------------------|--------------------------------------------------------------------------------|
| Schutzart Gehäuse                                   | <i>Protection class housing</i>                                  |                                    | IP 65                                                                          |
| Schutzart Klappdeckel<br>verriegelt<br>unverriegelt | <i>Protetion class spring cover<br/>locked<br/>spring loaded</i> |                                    | IP 65<br>IP 54                                                                 |
| Verriegelungssystem                                 | <i>Locking system</i>                                            | DIN EN 175 301-801<br>(DIN 43 652) | 1 Längsbügel / <i>1 locking lever</i><br>2 Querbügel / <i>2 locking levers</i> |
| <b>Klimatische Kennwerte</b>                        | <b>Climatical Characteristics</b>                                |                                    |                                                                                |
| Prüfklasse                                          | <i>Climatic category</i>                                         | IEC 60068-1                        | 40 / 100 / 21                                                                  |
| Temperaturbereich                                   | <i>Temperature range</i>                                         | IEC 60068-1                        | - 40 °C / + 100 °C                                                             |
| Obere Grenztemperatur                               | <i>Upper temperature</i>                                         | IEC 60512-6; Test 11 i             | + 100 °C / 1000 h                                                              |
| Untere Grenztemperatur                              | <i>Lower temperature</i>                                         | IEC 60512-6; Test 11 i             | - 40 °C                                                                        |
| <b>Mechanische Kennwerte</b>                        | <b>Mechanical Characteristics</b>                                |                                    |                                                                                |
| Mechanische Lebensdauer                             | <i>Mechanical operation</i>                                      | IEC 60512-5; Test 9 a              | ≥ 500 Zyklen / <i>cycles</i>                                                   |
| <b>Werkstoffe</b>                                   | <b>Materials</b>                                                 |                                    |                                                                                |
| Gehäuse                                             | <i>Housings</i>                                                  | DIN EN 175 301-801<br>(DIN 43 652) | Aluminium-Druckguss<br><i>Aluminium die cast alloy</i>                         |
| Kunststoffgehäuse                                   | <i>Thermoplastic housing</i>                                     |                                    | PA                                                                             |
| Metallgehäuse D 7                                   | <i>Metal housing D 7</i>                                         |                                    | Zink-Druckguss / <i>Zinc die cast alloy</i>                                    |
| Schutzkappe                                         | <i>Protective cover</i>                                          |                                    | PA                                                                             |
| Dichtgummi                                          | <i>Rubber gasket</i>                                             |                                    | NBR                                                                            |
| Verriegelung                                        | <i>Locking lever</i>                                             |                                    | Stahl / verzinkt <i>steel / zinc coated</i>                                    |
| Oberfläche EMV Gehäuse                              | <i>Surface EMV housings</i>                                      |                                    | Spezialbeschichtung / <i>special surface</i>                                   |

C 146 D 7 pol.  
C 146 A 3/4 pol.

Gehäuse Kunststoff  
Housings thermoplastic


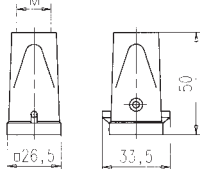

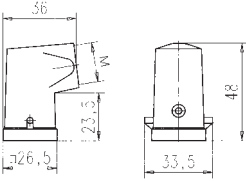

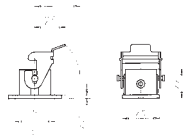

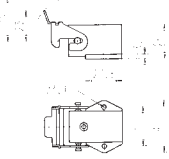

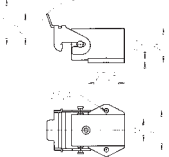

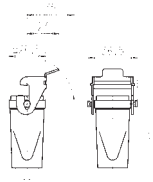

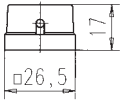
PG-Gewinde  
PG-thread

| Bezeichnung - Abbildung<br>Description - Figure                                                                                                                                                                                 | Maßzeichnung<br>Drawing                                                                                                            | PG | Bestell Nr.<br>Part No. |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|----|-------------------------|
| <b>Gehäuseoberteile / Hoods</b>                                                                                                                                                                                                 |                                                                                                                                    |    |                         |
| Tüllengehäuse, gerader Kabelausgang<br>Hood, top entry<br>                                                                                     |                                                   | 11 | C146 10G003 600 4       |
| Tüllengehäuse, seitlicher Kabelausgang<br>Hood, side entry<br>                                                                                 |                                                   | 11 | C146 10G003 500 4       |
| <b>Gehäuseunterteile / Housings</b>                                                                                                                                                                                             |                                                                                                                                    |    |                         |
| Anbaugehäuse (incl. Flachdichtung)<br>Housing bulkhead mounting<br>(incl. gasket)<br>                                                        | <br>Montageausschnitt/panel cut out: 22 x 22 mm | –  | C146 10F003 000 4       |
| Anbaugehäuse (incl. Flachdichtung)<br>Housing bulkhead end mounting<br>(incl. gasket)<br>                                                    | <br>Montageausschnitt/panel cut out: 22 x 22 mm | –  | C146 10F003 004 4       |
| Sockelgehäuse, 1 Kabelausgang<br>Housing, single side entry<br>                                                                              | <br>Montageausschnitt/panel cut out: 22 x 22 mm | 11 | C146 10F003 500 4       |
| Kupplungsgehäuse, 1 Kabelausgang<br>Hood, cable to cable coupling<br>                                                                        |                                                 | 11 | C146 10G003 804 4       |
| <b>Schutzkappen / Protective cover</b>                                                                                                                                                                                          |                                                                                                                                    |    |                         |
| Schutzkappe für Gehäuseunterteile<br>(nur in Verbindung mit Stifteinsatz)<br>Cover for housings<br>(only in connection with male insert)<br> |                                                 | –  | C146 10Z003 100 4       |

C 146 D 7 pol.  
C 146 A 3/4 pol.

Gehäuse Kunststoff  
Housings thermoplastic


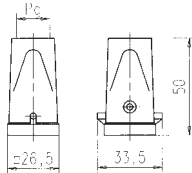

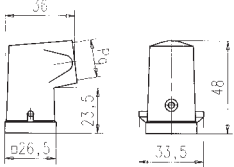

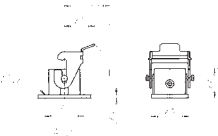

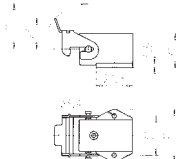

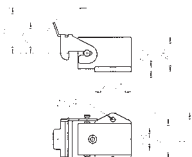

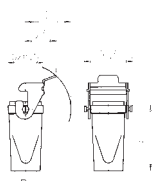

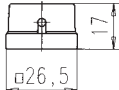
Metrisches Gewinde  
Metric thread

| Bezeichnung - Abbildung<br>Description - Figure                                                                                                                                                                                 | Maßzeichnung<br>Drawing                                                                                                            | M  | Bestell Nr. / Part No.                                               |                             |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|----|----------------------------------------------------------------------|-----------------------------|
|                                                                                                                                                                                                                                 |                                                                                                                                    |    | mit Stützen / with stud                                              | ohne Stützen / without stud |
| <b>Gehäuseoberteile / Hoods</b>                                                                                                                                                                                                 |                                                                                                                                    |    |                                                                      |                             |
| Tüllengehäuse, gerader Kabelausgang<br>Hood, top entry<br>                                                                                     |                                                   | 20 | C146 10R003 600 4 (grau)                                             |                             |
|                                                                                                                                                                                                                                 |                                                                                                                                    | 20 | C146 16R003 600 4 (sw)                                               |                             |
| Tüllengehäuse, seitlicher Kabelausgang<br>Hood, side entry<br>                                                                                 |                                                   | 20 | C146 10R003 500 4 (grau)                                             |                             |
|                                                                                                                                                                                                                                 |                                                                                                                                    | 20 | C146 16R003 500 4 (sw)                                               |                             |
| <b>Gehäuseunterteile / Housings</b>                                                                                                                                                                                             |                                                                                                                                    |    |                                                                      |                             |
| Anbaugehäuse (incl. Flachdichtung)<br>Housing bulkhead mounting<br>(incl. gasket)<br>                                                        | <br>Montageausschnitt/panel cut out: 22 x 22 mm | –  | C146 10F003 000 4 (grau)                                             |                             |
|                                                                                                                                                                                                                                 |                                                                                                                                    |    | C146 16F003 000 4 (sw)                                               |                             |
| Anbaugehäuse (incl. Flachdichtung)<br>Housing bulkhead end mounting<br>(incl. gasket)<br>                                                    | <br>Montageausschnitt/panel cut out: 22 x 22 mm | –  | C146 10F003 004 4                                                    |                             |
|                                                                                                                                                                                                                                 |                                                                                                                                    |    |                                                                      |                             |
| Sockelgehäuse, 1 Kabelausgang<br>Housing, single side entry<br>                                                                              | <br>Montageausschnitt/panel cut out: 22 x 22 mm | 20 | C146 10N003 500 4 (grau)<br>mit Verschraubung/<br>with gland bushing |                             |
|                                                                                                                                                                                                                                 |                                                                                                                                    | 20 | C146 16N003 500 4 (sw)<br>mit Verschraubung/<br>with gland bushing   |                             |
| Kupplungsgehäuse, 1 Kabelausgang<br>Hood, cable to cable coupling<br>                                                                        |                                                 | 20 | C146 10R003 804 4                                                    |                             |
| <b>Schutzkappen / Protective cover</b>                                                                                                                                                                                          |                                                                                                                                    |    |                                                                      |                             |
| Schutzkappe für Gehäuseunterteile<br>(nur in Verbindung mit Stifteinsatz)<br>Cover for housings<br>(only in connection with male insert)<br> |                                                 | –  | C146 10Z003 100 4                                                    |                             |

C 146 D 7 pol.  
C 146 A 3/4 pol.

Gehäuse Metall  
Housings metal

PG-Gewinde  
PG-thread

| Bezeichnung - Abbildung<br>Description - Figure                                                                                                                                                                                 | Maßzeichnung<br>Drawing                                                             | PG | Bestell Nr.<br>Part No. |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----|-------------------------|
| <b>Gehäuseoberteile / Hoods</b>                                                                                                                                                                                                 |                                                                                     |    |                         |
| Tüllengehäuse, gerader Kabelausgang<br>Hood, top entry<br>                                                                                     |    | 11 | C146 30G003 600 4       |
| Tüllengehäuse, seitlicher Kabelausgang<br>Hood, side entry<br>                                                                                 |    | 11 | C146 30G003 500 4       |
| <b>Gehäuseunterteile / Housings</b>                                                                                                                                                                                             |                                                                                     |    |                         |
| Anbaugehäuse (incl. Flachdichtung)<br>Housing bulkhead mounting<br>(incl. gasket)<br>                                                        |  | -  | C146 30F003 000 4       |
| Anbaugehäuse (incl. Flachdichtung)<br>Housing bulkhead end mounting<br>(incl. gasket)<br>                                                    |  | -  | C146 30F003 004 4       |
| Sockelgehäuse, 1 Kabelausgang<br>Housing, single side entry<br>                                                                              |  | 11 | C146 30F003 500 4       |
| Kupplungsgehäuse, 1 Kabelausgang<br>Hood, cable to cable coupling<br>                                                                        |  | 11 | C146 30G003 804 4       |
| <b>Schutzkappen / Protective cover</b>                                                                                                                                                                                          |                                                                                     |    |                         |
| Schutzkappe für Gehäuseunterteile<br>(nur in Verbindung mit Stifteinsatz)<br>Cover for housings<br>(only in connection with male insert)<br> |  | -  | C146 30Z003 100 4       |


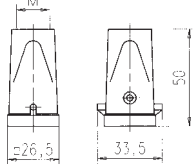

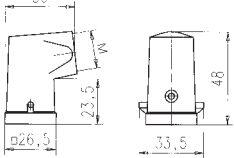

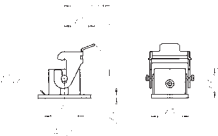

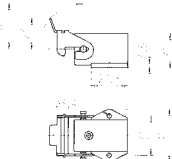

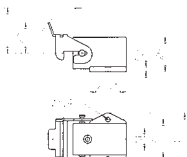

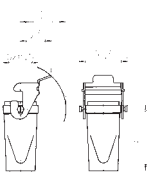

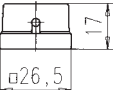
Verschraubung für Tüllen- und Sockelgehäuse siehe Seite 170 - 173 / gland bushings for hoods and housing see page 170-173



C 146 D 7 pol.  
C 146 A 3/4 pol.

Gehäuse Metall (metrisch)  
Housings metal (metric)

Metrisches Gewinde  
Metric thread


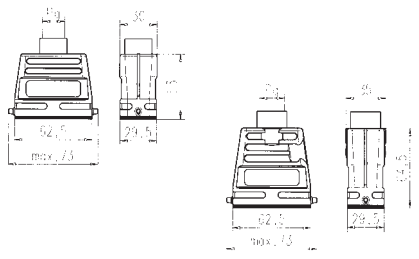

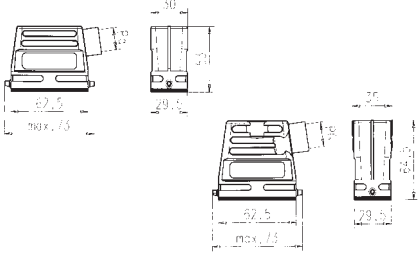

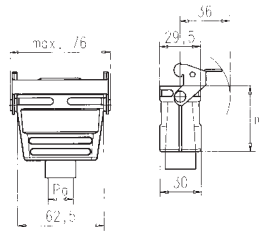

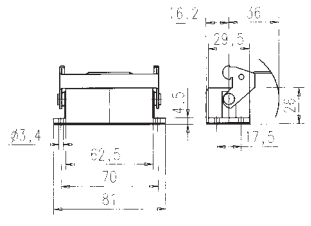

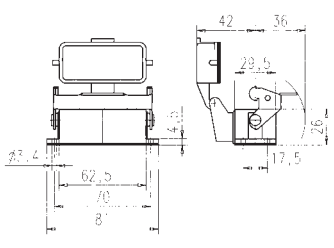
| Bezeichnung - Abbildung<br>Description - Figure                                                                                                                                                                                 | Maßzeichnung<br>Drawing                                                             | M  | Bestell Nr. / Part No.  |                             |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----|-------------------------|-----------------------------|
|                                                                                                                                                                                                                                 |                                                                                     |    | mit Stützen / with stud | ohne Stützen / without stud |
| <b>Gehäuseoberteile / Hoods</b>                                                                                                                                                                                                 |                                                                                     |    |                         |                             |
| Tüllengehäuse, gerader Kabelausgang<br>Hood, top entry<br>                                                                                     |    | 20 | C146 30R003 600 4       |                             |
| Tüllengehäuse, seitlicher Kabelausgang<br>Hood, side entry<br>                                                                                 |    | 20 | C146 30R003 500 4       |                             |
| <b>Gehäuseunterteile / Housings</b>                                                                                                                                                                                             |                                                                                     |    |                         |                             |
| Anbaugehäuse (incl. Flachdichtung)<br>Housing bulkhead mounting<br>(incl. gasket)<br>                                                        |  | -  | C146 30F003 000 4       |                             |
| Anbaugehäuse (incl. Flachdichtung)<br>Housing bulkhead end mounting<br>(incl. gasket)<br>                                                    |  | -  | C146 30F003 004 4       |                             |
| Sockelgehäuse, 1 Kabelausgang<br>Housing, single side entry<br>                                                                              |  | 20 | C146 30N003 500 4       | C146 31N003 500 4           |
| Kupplungsgehäuse, 1 Kabelausgang<br>Hood, cable to cable coupling<br>                                                                        |  | 20 | C146 30R003 804 4       |                             |
| <b>Schutzkappen / Protective cover</b>                                                                                                                                                                                          |                                                                                     |    |                         |                             |
| Schutzkappe für Gehäuseunterteile<br>(nur in Verbindung mit Stifteinsatz)<br>Cover for housings<br>(only in connection with male insert)<br> |  | -  | C146 30Z003 100 4       |                             |

C 146 D 15 pol.  
C 146 A 10 pol.

nach  
DIN EN 175 301 - 801 (DIN 43 652)

Gehäuse  
Housings

PG-Gewinde  
PG-thread

| Bezeichnung - Abbildung<br>Description - Figure                                                                                                                                        | Maßzeichnung<br>Drawing                                                             | PG   | Bestell Nr. / Part No.           |                               |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------|----------------------------------|-------------------------------|--|
|                                                                                                                                                                                        |                                                                                     |      | Niedrige Bauform/<br>Low profile | Hohe Bauform/<br>High profile |  |
| <b>Gehäuseoberteile / Hoods</b>                                                                                                                                                        |                                                                                     |      |                                  |                               |  |
| Tüllengehäuse, Abgang oben<br>Hood, top entry<br>                                                     |    | 13,5 | C146 10G010 600 4                |                               |  |
|                                                                                                                                                                                        |                                                                                     | 16   | C146 10G010 601 4                |                               |  |
|                                                                                                                                                                                        |                                                                                     | 16   |                                  | C146 10G015 601 2             |  |
|                                                                                                                                                                                        |                                                                                     | 21   |                                  | C146 10G015 600 2             |  |
| Tüllengehäuse, Abgang Seite<br>Hood, side entry<br>                                                  |   | 13,5 | C146 10G010 501 4                |                               |  |
|                                                                                                                                                                                        |                                                                                     | 16   | C146 10G010 500 4                |                               |  |
|                                                                                                                                                                                        |                                                                                     | 16   |                                  | C146 10G015 501 2             |  |
|                                                                                                                                                                                        |                                                                                     | 21   |                                  | C146 10G015 500 2             |  |
| <b>Gehäuseunterteile / Housings</b>                                                                                                                                                    |                                                                                     |      |                                  |                               |  |
| Kupplungsgehäuse<br>Hood, coupling application<br>                                                  |  | h    |                                  |                               |  |
|                                                                                                                                                                                        |                                                                                     | 47,5 | 13,5                             | C146 10G010 804 4             |  |
|                                                                                                                                                                                        |                                                                                     | 47,5 | 16                               | C146 10G010 805 4             |  |
|                                                                                                                                                                                        |                                                                                     | 59   | 21                               | C146 10G015 804 2             |  |
| Anbaugehäuse <sup>1)</sup><br>Housing, bulkhead mounting<br>                                        |  |      |                                  | C146 10F015 000 2             |  |
| Anbaugehäuse, mit Klappdeckel <sup>1)</sup><br>Housing, bulkhead mounting,<br>with spring cover<br> |  |      |                                  | C146 10F015 003 2             |  |

<sup>1)</sup> incl. Flachdichtung / incl. gasket

**Metrisches Gewinde**  
**Metric thread**


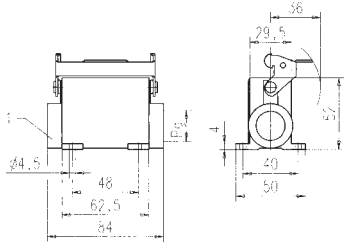

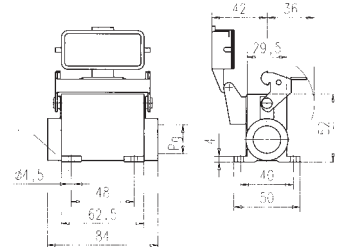

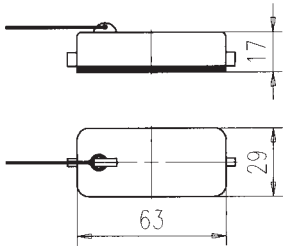
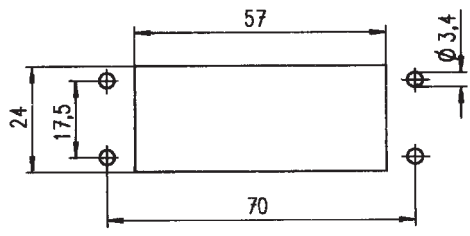
| Maßzeichnung<br>Drawing | M    | Bestell Nr. / Part No.           |                               | Bestell Nr. / Part No.           |                               |
|-------------------------|------|----------------------------------|-------------------------------|----------------------------------|-------------------------------|
|                         |      | Niedrige Bauform/<br>Low profile | Hohe Bauform/<br>High profile | Niedrige Bauform/<br>Low profile | Hohe Bauform/<br>High profile |
|                         |      | mit Stützen / with stud          |                               | ohne Stützen / without stud      |                               |
|                         | 20   | C146 10R010 650 4                |                               | C146 21R010 650 4                |                               |
|                         | 25   | C146 10R010 600 4                |                               | C146 21R010 600 4                |                               |
|                         | 20   |                                  | C146 10R015 650 2             |                                  | C146 21R015 650 2             |
|                         | 25   |                                  | C146 10R015 600 2             |                                  | C146 21R015 600 2             |
|                         | 20   | C146 10R010 550 4                |                               | C146 21R010 550 4                |                               |
|                         | 25   | C146 10R010 500 4                |                               | C146 21R010 500 4                |                               |
|                         | 20   |                                  | C146 10R015 550 2             |                                  | C146 21R015 550 2             |
|                         | 25   |                                  | C146 10R015 500 2             |                                  | C146 21R015 500 2             |
|                         | h    |                                  |                               |                                  |                               |
|                         | 47,5 | 20                               | C146 10R010 854 4             |                                  | C146 21R010 854 4             |
|                         | 47,5 | 25                               | C146 10R010 804 4             |                                  | C146 21R010 804 4             |
|                         | 59   | 20                               |                               | C146 10R015 854 2                |                               |
|                         | 25   |                                  | C146 10R015 804 2             |                                  | C146 21R015 804 2             |
|                         |      | -                                | C146 10F015 000 2             |                                  |                               |
|                         |      |                                  | -                             | C146 10F015 003 2                |                               |

C 146 D 15 pol.  
C 146 A 10 pol.

nach  
DIN EN 175 301 - 801 (DIN 43 652)

Gehäuse  
Housings

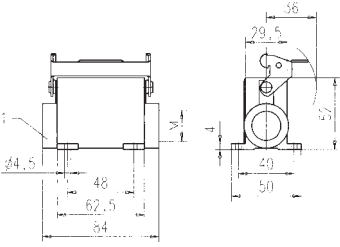
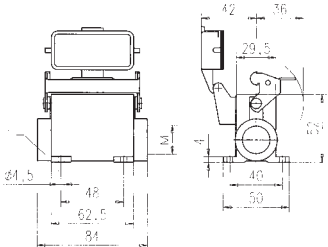
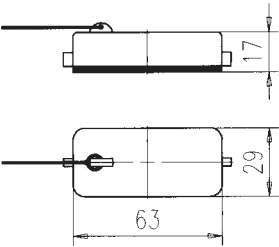
PG-Gewinde  
PG-thread

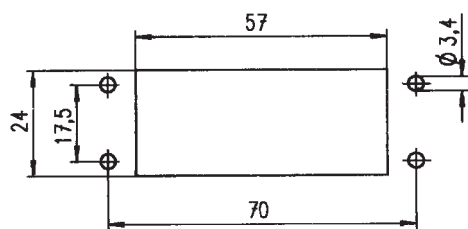
| Bezeichnung - Abbildung<br>Description - Figure                                                                                                       | Maßzeichnung<br>Drawing                                                                                                                                     | PG | Bestell Nr. / Part No.             |                                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|----|------------------------------------|-------------------------------------|
|                                                                                                                                                       |                                                                                                                                                             |    | 1 Kabelabgang<br>single side entry | 2 Kabelabgänge<br>double side entry |
| <b>Gehäuseunterteil / Housings</b>                                                                                                                    |                                                                                                                                                             |    |                                    |                                     |
| Sockelgehäuse<br>Housing<br><br>                                     |  <p>1 Geschlossen bei einem Kabelausgang<br/>1 closed if single entry</p>  | 16 | C146 10F015 501 2                  | C146 10F015 601 2                   |
|                                                                                                                                                       |                                                                                                                                                             | 21 | C146 10F015 500 2                  | C146 10F015 600 2                   |
| Sockelgehäuse mit Klappdeckel<br>Housing with spring cover<br><br> |  <p>1 Geschlossen bei einem Kabelausgang<br/>1 closed if single entry</p> | 16 | C146 10F015 807 2                  | C146 10F015 607 2                   |
|                                                                                                                                                       |                                                                                                                                                             | 21 | C146 10F015 806 2                  | C146 10F015 606 2                   |
| <b>Schutzkappen / Protective cover</b>                                                                                                                |                                                                                                                                                             |    |                                    |                                     |
| Schutzkappe für Gehäuseunterteile<br>Cover for housings<br><br>    |                                                                          | -  | C146 10Z015 100 2                  |                                     |
| <b>Montageausschnitt / Panel cut out</b>                                                                                                              |                                                                                                                                                             |    |                                    |                                     |
|                                                                   |                                                                                                                                                             |    |                                    |                                     |

Verschraubung für Tüllen- und Sockelgehäuse siehe Seite 170-173 / gland bushings for hoods and housing see page 170-173

according to  
DIN EN 175 301 - 801 (DIN 43 652)

**Metrisches Gewinde**  
**Metric thread**

| Maßzeichnung<br>Drawing                                                                                                                                     | M  | Bestell Nr. / Part No.             |                                     |                                                                       |                   |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|----|------------------------------------|-------------------------------------|-----------------------------------------------------------------------|-------------------|
|                                                                                                                                                             |    | 1 Kabelabgang<br>single side entry | 2 Kabelabgänge<br>double side entry | 2 Kabelabgänge (rechts + unten)<br>double side entry (right + bottom) |                   |
|  <p>1 Geschlossen bei einem Kabelausgang<br/>1 closed if single entry</p>  | 20 | C146 10N015 501 2                  | C146 10N015 601 2                   | C146 10N015 703 2                                                     |                   |
|                                                                                                                                                             | 20 |                                    |                                     |                                                                       |                   |
|                                                                                                                                                             | 20 |                                    |                                     |                                                                       |                   |
|                                                                                                                                                             |    | 25                                 | C146 10N015 500 2                   | C146 10N015 600 2                                                     | C146 10N015 702 2 |
|                                                                                                                                                             |    | 25                                 |                                     |                                                                       |                   |
|                                                                                                                                                             |    | 25                                 |                                     |                                                                       |                   |
|  <p>1 Geschlossen bei einem Kabelausgang<br/>1 closed if single entry</p> | 20 | C146 10N015 807 2                  | C146 10N015 607 2                   | C146 10N015 709 2                                                     |                   |
|                                                                                                                                                             | 20 |                                    |                                     |                                                                       |                   |
|                                                                                                                                                             | 20 |                                    |                                     |                                                                       |                   |
|                                                                                                                                                             |    | 25                                 | C146 10N015 806 2                   | C146 10N015 606 2                                                     | C146 10N015 708 2 |
|                                                                                                                                                             |    | 25                                 |                                     |                                                                       |                   |
|                                                                                                                                                             |    | 25                                 |                                     |                                                                       |                   |
|                                                                          | -  |                                    | C146 10Z015 100 2                   |                                                                       |                   |


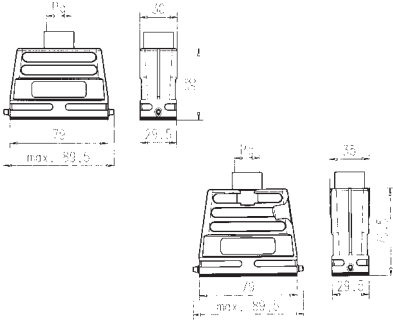

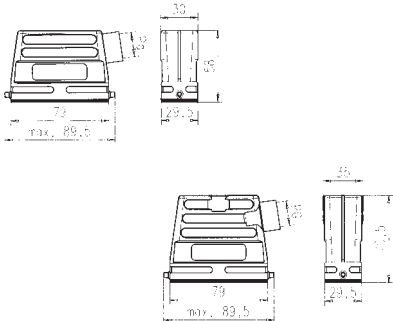

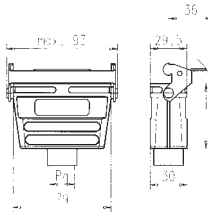

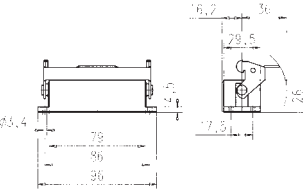

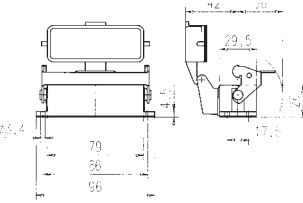


**C 146 D 25 pol.**  
**C 146 A 16 pol.**

nach  
DIN EN 175 301 - 801 (DIN 43 652)

**Gehäuse**  
**Housings**

**PG-Gewinde**  
**PG-thread**

| Bezeichnung - Abbildung<br><i>Description - Figure</i>                                                                                                                                      | Maßzeichnung<br><i>Drawing</i>                                                      | PG   | Bestell Nr. / <i>Part No.</i>           |                                      |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------|-----------------------------------------|--------------------------------------|--|
|                                                                                                                                                                                             |                                                                                     |      | Niedrige Bauform/<br><i>Low profile</i> | Hohe Bauform/<br><i>High profile</i> |  |
| <b>Gehäuseoberteile / Hoods</b>                                                                                                                                                             |                                                                                     |      |                                         |                                      |  |
| Tüllengehäuse, Abgang oben<br><i>Hood, top entry</i><br>                                                   |    | 16   | C146 10G016 600 4                       |                                      |  |
|                                                                                                                                                                                             |                                                                                     | 16   |                                         | C146 10G025 601 2                    |  |
|                                                                                                                                                                                             |                                                                                     | 21   |                                         | C146 10G025 600 2                    |  |
| Tüllengehäuse, Abgang Seite<br><i>Hood, side entry</i><br>                                               |   | 13,5 | C146 10G016 501 4                       |                                      |  |
|                                                                                                                                                                                             |                                                                                     | 16   | C146 10G016 500 4                       |                                      |  |
|                                                                                                                                                                                             |                                                                                     | 16   |                                         | C146 10G025 501 2                    |  |
|                                                                                                                                                                                             |                                                                                     | 21   |                                         | C146 10G025 500 2                    |  |
| <b>Gehäuseunterteile / Housings</b>                                                                                                                                                         |                                                                                     |      |                                         |                                      |  |
| Kupplungsgehäuse<br><i>Hood, coupling application</i><br>                                                |  | h    |                                         |                                      |  |
|                                                                                                                                                                                             |                                                                                     | 52,5 | 13,5                                    | C146 10G016 805 4                    |  |
|                                                                                                                                                                                             |                                                                                     | 52,5 | 16                                      | C146 10G016 804 4                    |  |
|                                                                                                                                                                                             |                                                                                     | 65   |                                         | C146 10G025 804 2                    |  |
| Anbaugeschäse <sup>1)</sup><br><i>Housing, bulkhead mounting</i><br>                                     |  | —    | C146 10F025 000 2                       |                                      |  |
| Anbaugeschäse, mit Klappdeckel <sup>1)</sup><br><i>Housing, bulkhead mounting, with spring cover</i><br> |  | —    | C146 10F025 003 2                       |                                      |  |

<sup>1)</sup> incl. Flachdichtung / *incl. gasket*

according to  
DIN EN 175 301 - 801 (DIN 43 652)

**Metrisches Gewinde**  
**Metric thread**

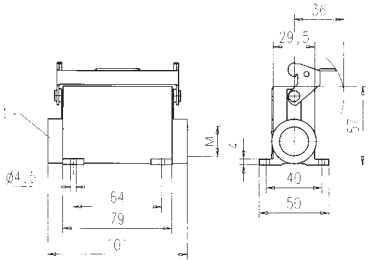
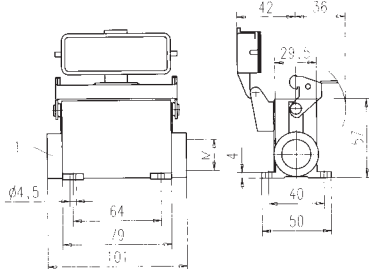
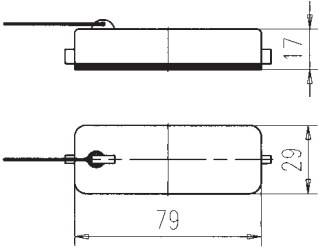
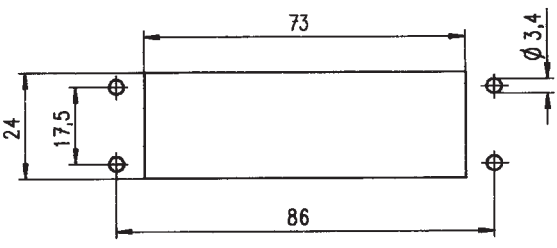
| Maßzeichnung<br>Drawing | M    | Bestell Nr. / Part No.           |                               | Bestell Nr. / Part No.           |                               |                   |
|-------------------------|------|----------------------------------|-------------------------------|----------------------------------|-------------------------------|-------------------|
|                         |      | Niedrige Bauform/<br>Low profile | Hohe Bauform/<br>High profile | Niedrige Bauform/<br>Low profile | Hohe Bauform/<br>High profile |                   |
|                         |      | mit Stützen / with stud          |                               | ohne Stützen / without stud      |                               |                   |
|                         | 20   | C146 10R016 650 4                |                               | C146 21R016 650 4                |                               |                   |
|                         | 25   | C146 10R016 600 4                |                               | C146 21R016 600 4                |                               |                   |
|                         | 20   |                                  | C146 10R025 650 2             |                                  | C146 21R025 650 2             |                   |
|                         | 25   |                                  | C146 10R025 600 2             |                                  | C146 21R025 600 2             |                   |
|                         | 20   | C146 10R016 550 4                |                               | C146 21R016 550 4                |                               |                   |
|                         | 25   | C146 10R016 500 4                |                               | C146 21R016 500 4                |                               |                   |
|                         | 20   |                                  | C146 10R025 550 2             |                                  | C146 21R025 550 2             |                   |
|                         | 25   |                                  | C146 10R025 500 2             |                                  | C146 21R025 500 2             |                   |
|                         | 52,5 | 20                               | C146 10R016 854 4             |                                  | C146 21R016 854 4             |                   |
|                         | 65   | 25                               | C146 10R016 804 4             |                                  | C146 21R016 804 4             |                   |
|                         | 52,5 | 20                               |                               | C146 10R025 854 2                |                               | C146 21R025 854 2 |
|                         | 65   | 25                               |                               | C146 10R025 804 2                |                               | C146 21R025 804 2 |
|                         | -    |                                  | C146 10F025 000 2             |                                  |                               |                   |
|                         |      | -                                |                               | C146 10F025 003 2                |                               |                   |





according to  
DIN 43 652 (CECC 75 301 - 801; EN 175 301 - 801)


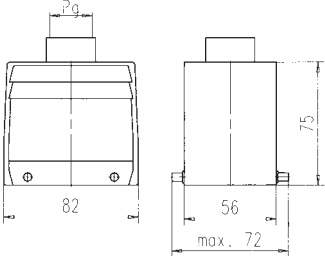

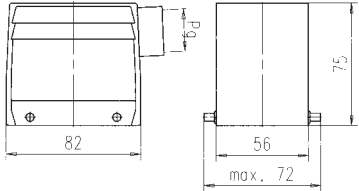

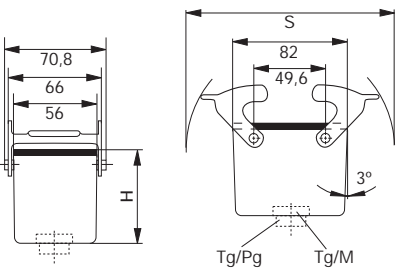

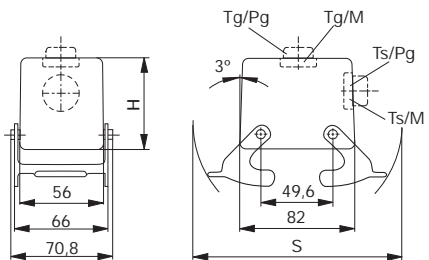

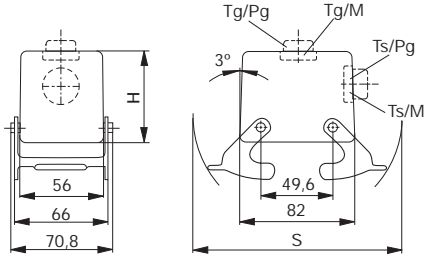
**Metrisches Gewinde**  
**Metric thread**

| Maßzeichnung<br><i>Drawing</i>                                                                                                                              | M  | Bestell Nr. / Part No.                    |                                            |                                                                              |                   |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|----|-------------------------------------------|--------------------------------------------|------------------------------------------------------------------------------|-------------------|
|                                                                                                                                                             |    | 1 Kabelabgang<br><i>single side entry</i> | 2 Kabelabgänge<br><i>double side entry</i> | 2 Kabelabgänge (rechts + unten)<br><i>double side entry (right + bottom)</i> |                   |
|  <p>1 Geschlossen bei einem Kabelausgang<br/>1 closed if single entry</p>  | 20 | C146 10N025 501 2                         | C146 10N025 601 2                          | C146 10N025 703 2                                                            |                   |
|                                                                                                                                                             | 20 |                                           |                                            |                                                                              |                   |
|                                                                                                                                                             | 20 |                                           |                                            |                                                                              |                   |
|                                                                                                                                                             |    | 25                                        | C146 10N025 500 2                          | C146 10N025 600 2                                                            | C146 10N025 702 2 |
|                                                                                                                                                             |    | 25                                        |                                            |                                                                              |                   |
|                                                                                                                                                             |    | 25                                        |                                            |                                                                              |                   |
|  <p>1 Geschlossen bei einem Kabelausgang<br/>1 closed if single entry</p> | 20 | C146 10N025 807 2                         | C146 10N025 607 2                          | C146 10N025 709 2                                                            |                   |
|                                                                                                                                                             | 20 |                                           |                                            |                                                                              |                   |
|                                                                                                                                                             | 20 |                                           |                                            |                                                                              |                   |
|                                                                                                                                                             |    | 25                                        | C146 10N025 806 2                          | C146 10N025 606 2                                                            | C146 10N025 708 2 |
|                                                                                                                                                             |    | 25                                        |                                            |                                                                              |                   |
|                                                                                                                                                             |    | 25                                        |                                            |                                                                              |                   |
|                                                                          | -  | C146 10Z025 100 2                         |                                            |                                                                              |                   |
|                                                                                                                                                             |    |                                           |                                            |                                                                              |                   |
|                                                                          |    |                                           |                                            |                                                                              |                   |

**C 146 D 50 pol.**  
**C 146 A 32 pol.**

**Gehäuse**  
**Housings**

**PG-Gewinde**  
**PG-thread**


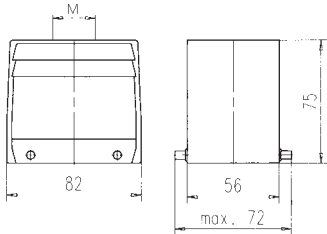

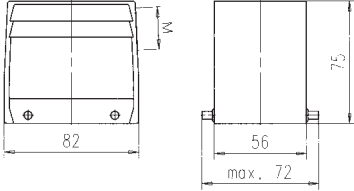

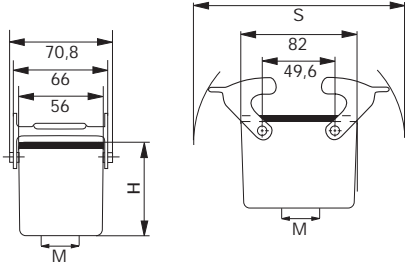

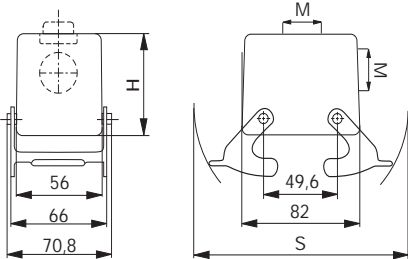

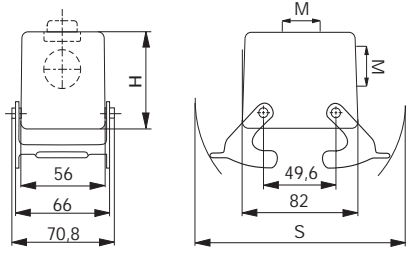
| Bezeichnung - Abbildung<br>Description - Figure                                                                                               | Maßzeichnung<br>Drawing                                                             | PG | Bestell Nr.<br>Part No. |
|-----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----|-------------------------|
| <b>Gehäuseoberteile / Hoods</b>                                                                                                               |                                                                                     |    |                         |
| Tüllengehäuse, Abgang oben<br><i>Hood, top entry</i><br>     |    | 21 | C146 10G032 600 4       |
| Tüllengehäuse, Abgang Seite<br><i>Hood, side entry</i><br>  |   | 21 | C146 10G032 500 4       |
| Kupplungsgehäuse<br><i>Hood, coupling application</i><br>  |  |    |                         |
| Tüllengehäuse, Abgang oben<br><i>Hood, top entry</i><br>   |  |    |                         |
| Tüllengehäuse, Abgang Seite<br><i>Hood, side entry</i><br> |  |    |                         |

Verschraubung für Tüllen- und Sockelgehäuse siehe Seite 170-173 / gland bushings for hoods and housing see page 170-173

**C 146 D 50 pol.**  
**C 146 A 32 pol.**

**Gehäuse**  
**Housings**


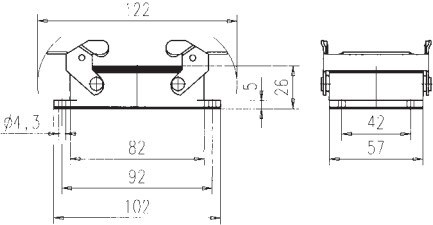

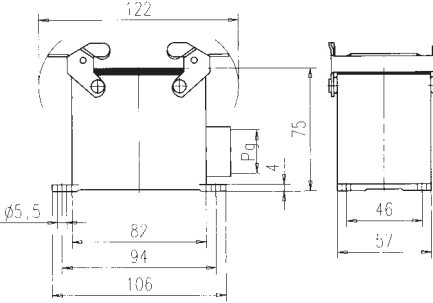

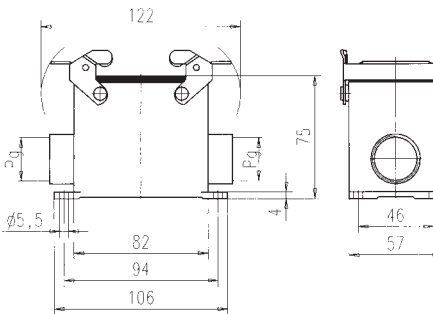
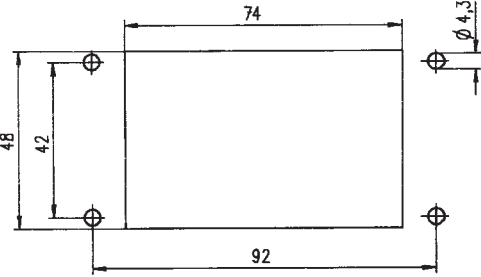
**Metrisches Gewinde**  
**Metric thread**

| Bezeichnung - Abbildung<br>Description - Figure                                                                                               | Maßzeichnung<br>Drawing                                                             | M                                  | Bestell Nr.<br>Part No.                                             |
|-----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------------------------------|---------------------------------------------------------------------|
| <b>Gehäuseoberteile / Hoods</b>                                                                                                               |                                                                                     | <b>ohne Stützen / without stud</b> |                                                                     |
| Tüllengehäuse, Abgang oben<br><i>Hood, top entry</i><br>     |    | 25<br><br>32<br><br>40             | C146 21R032 650 4<br><br>C146 21R032 600 4<br><br>C146 21R032 601 4 |
| Tüllengehäuse, Abgang Seite<br><i>Hood, side entry</i><br>  |   | 25<br><br>32<br><br>40             | C146 21R032 550 4<br><br>C146 21R032 500 4<br><br>C146 21R032 501 4 |
| Kupplungsgehäuse<br><i>Hood, coupling application</i><br>  |  | 25<br><br>32<br><br>40             | C146 21R032 852 4<br><br>C146 21R032 802 4<br><br>C146 21R032 803 4 |
| Tüllengehäuse, Abgang oben<br><i>Hood, top entry</i><br>   |  | 25<br><br>32<br><br>40             | C146 21R032 652 4<br><br>C146 21R032 602 4<br><br>C146 21R032 603 4 |
| Tüllengehäuse, Abgang Seite<br><i>Hood, side entry</i><br> |  | 25<br><br>32<br><br>40             | C146 21R032 552 4<br><br>C146 21R032 502 4<br><br>C146 21R032 503 4 |

C 146 D 50 pol.  
C 146 A 32 pol.

Gehäuse  
Housings

PG-Gewinde  
PG-thread


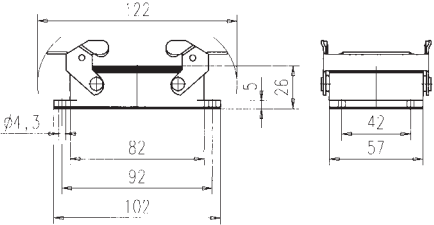

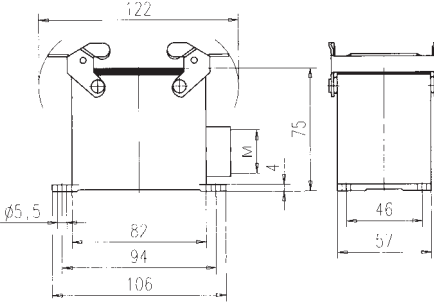

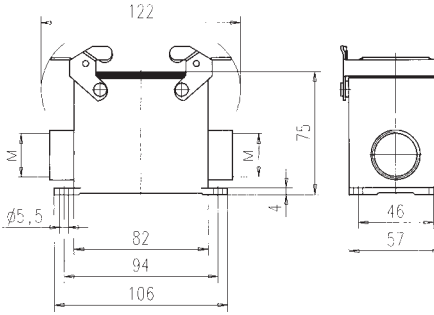
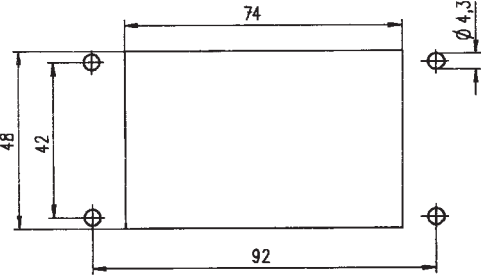
| Bezeichnung - Abbildung<br>Description - Figure                                                                                                    | Maßzeichnung<br>Drawing                                                             | PG | Bestell Nr.<br>Part No. |
|----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----|-------------------------|
| <b>Gehäuseunterteile / Housings</b>                                                                                                                |                                                                                     |    |                         |
| Anbaugehäuse <sup>1)</sup><br>Housing, bulkhead mounting<br>      |    | –  | C146 10F032 000 4       |
| Anbaugehäuse <sup>1)</sup> mit Bolzen und Klappdeckel<br>Housing <sup>1)</sup> , bulkhead mounting and with spring cover                           |                                                                                     | –  | C146 10F032 002 4       |
| Sockelgehäuse, 1 Kabelabgang<br>Housing, single side entry<br>  |   | 21 | C146 10F032 500 4       |
|                                                                                                                                                    |                                                                                     | 29 | C146 10F032 501 4       |
| Sockelgehäuse, 2 Kabelabgänge<br>Housing, double side entry<br> |  | 21 | C146 10F032 600 4       |
|                                                                                                                                                    |                                                                                     | 29 | C146 10F032 601 4       |
| <b>Montageausschnitt / Panel cut out</b>                                                                                                           |                                                                                     |    |                         |
|                                                                |                                                                                     |    |                         |

<sup>1)</sup> incl. Flachdichtung / incl. gasket  
Bei Sockelgehäusen Abgang rechts dargestellt / housings are shown with right outlet

C 146 D 50 pol.  
C 146 A 32 pol.

Gehäuse  
Housings

Metrisches Gewinde  
Metric thread


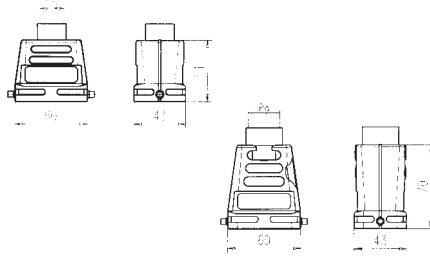

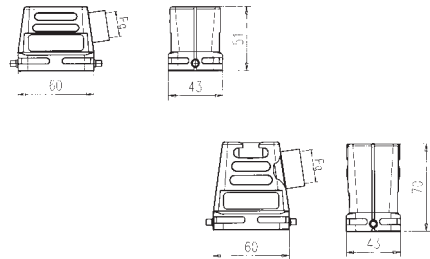

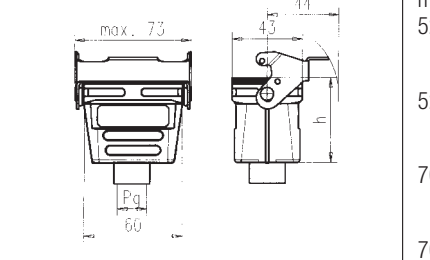

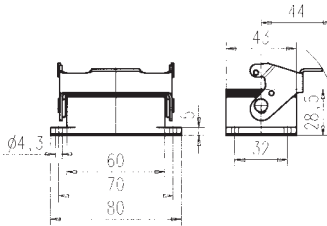

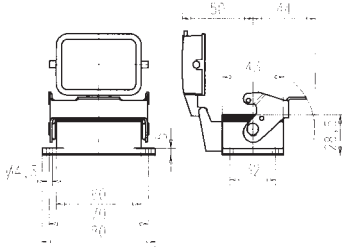
| Bezeichnung - Abbildung<br>Description - Figure                                                                                                        | Maßzeichnung<br>Drawing                                                             | M                              | Bestell Nr.<br>Part No.                                             |
|--------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------|---------------------------------------------------------------------|
| <b>Gehäuseunterteile / Housings</b>                                                                                                                    |                                                                                     | <b>mit Stützen / with stud</b> |                                                                     |
| Anbaugehäuse <sup>1)</sup><br>Housing, bulkhead mounting<br><br>      |    | -                              | C146 10F032 000 4                                                   |
| Anbaugehäuse <sup>1)</sup> mit Bolzen und Klappdeckel<br>Housing <sup>1)</sup> , bulkhead mounting and with spring cover                               |                                                                                     | -                              | C146 10F032 002 4                                                   |
| Sockelgehäuse, 1 Kabelabgang<br>Housing, single side entry<br><br>  |   | 25<br><br>32<br><br>40         | C146 10N032 550 4<br><br>C146 10N032 500 4<br><br>C146 10N032 501 4 |
| Sockelgehäuse, 2 Kabelabgänge<br>Housing, double side entry<br><br> |  | 25<br><br>32<br><br>40         | C146 10N032 650 4<br><br>C146 10N032 600 4<br><br>C146 10N032 601 4 |
| <b>Montageausschnitt / Panel cut out</b>                                                                                                               |                                                                                     |                                |                                                                     |
|                                                                    |                                                                                     |                                |                                                                     |

C 146 E 6 pol.  
 C 146 M 2 Module  
 C 146 DD 24 pol.  
 C 146 EE 10 pol.

Gehäuse für Längsbügelverriegelung  
 in Anlehnung an  
 DIN EN 175 301 - 801 (DIN 43 652)

Gehäuse  
 Housings

PG-Gewinde  
 PG-thread

| Bezeichnung - Abbildung<br>Description - Figure                                                                                                                                                    | Maßzeichnung<br>Drawing                                                             | PG   | Bestell Nr. / Part No.         |                             |                   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------|--------------------------------|-----------------------------|-------------------|
|                                                                                                                                                                                                    |                                                                                     |      | Niedrige Bauform / Low profile | Hohe Bauform / High profile |                   |
| <b>Gehäuseoberteile / Hoods</b>                                                                                                                                                                    |                                                                                     |      |                                |                             |                   |
| Tüllengehäuse, Abgang oben<br>Hood, top entry<br>                                                                 |    | 13,5 | C146 10G006 600 1              |                             |                   |
|                                                                                                                                                                                                    |                                                                                     | 16   | C146 10G006 601 1              |                             |                   |
|                                                                                                                                                                                                    |                                                                                     | 16   |                                | C146 10G006 656 8           |                   |
|                                                                                                                                                                                                    |                                                                                     | 21   |                                | C146 10G006 606 8           |                   |
|                                                                                                                                                                                                    |                                                                                     | 29   |                                | C146 10G006 607 8           |                   |
| Tüllengehäuse, Abgang Seite<br>Hood, side entry<br>                                                              |   | 13,5 | C146 10G006 500 1              |                             |                   |
|                                                                                                                                                                                                    |                                                                                     | 16   | C146 10G006 501 1              |                             |                   |
|                                                                                                                                                                                                    |                                                                                     | 16   |                                | C146 10G006 556 8           |                   |
|                                                                                                                                                                                                    |                                                                                     | 21   |                                | C146 10G006 506 8           |                   |
|                                                                                                                                                                                                    |                                                                                     | 29   |                                | C146 10G006 507 8           |                   |
| <b>Gehäuseunterteile / Housings</b>                                                                                                                                                                |                                                                                     |      |                                |                             |                   |
| Kupplungsgehäuse,<br>Hood, coupling application<br>                                                             |  | h 52 | 13,5                           | C146 10G006 804 1           |                   |
|                                                                                                                                                                                                    |                                                                                     | 52   | 16                             | C146 10G006 805 1           |                   |
|                                                                                                                                                                                                    |                                                                                     | 70   | 21                             |                             | C146 10G006 804 8 |
|                                                                                                                                                                                                    |                                                                                     | 70   | 29                             |                             | C146 10G006 805 8 |
| Anbaugehäuse <sup>1)</sup><br>Housing, bulkhead mounting <sup>1)</sup><br>                                      |  | -    |                                |                             | C146 10F006 000 1 |
| Anbaugehäuse mit Klappdeckel <sup>1)</sup><br>Housing, bulkhead mounting<br>with spring cover <sup>1)</sup><br> |  | -    |                                |                             | C146 10F006 003 1 |

<sup>1)</sup> incl. Flachdichtung / incl. gasket

housings for 1 locking-lever-system  
 in accordance with  
 DIN EN 175 301 - 801 (DIN 43 652)

Metrisches Gewinde  
 Metric thread


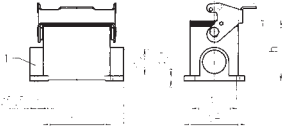

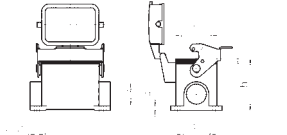

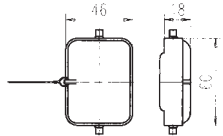

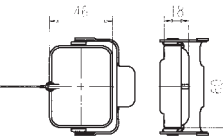

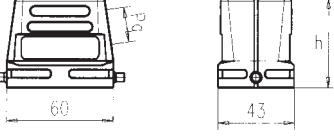
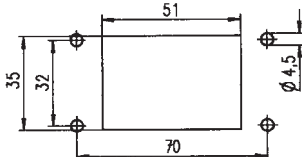
| Maßzeichnung<br>Drawing | M  | Bestell Nr. / Part No.           |                               | Bestell Nr. / Part No.           |                               |
|-------------------------|----|----------------------------------|-------------------------------|----------------------------------|-------------------------------|
|                         |    | Niedrige Bauform/<br>Low profile | Hohe Bauform/<br>High profile | Niedrige Bauform/<br>Low profile | Hohe Bauform/<br>High profile |
|                         |    | mit Stützen / with stud          |                               | ohne Stützen / without stud      |                               |
|                         | 16 | C146 10R006 656 1                |                               | C146 21R006 656 1                |                               |
|                         | 20 | C146 10R006 606 1                |                               | C146 21R006 606 1                |                               |
|                         | 25 | C146 10R006 607 1                |                               | C146 21R006 607 1                |                               |
|                         | 25 |                                  | C146 10R006 656 8             |                                  | C146 21R006 656 8             |
|                         | 32 |                                  | C146 10R006 606 8             |                                  | C146 21R006 606 8             |
|                         | 20 | C146 10R006 506 1                |                               | C146 21R006 506 1                |                               |
|                         | 25 | C146 10R006 507 1                |                               | C146 21R006 507 1                |                               |
|                         | 25 |                                  | C146 10R006 556 8             |                                  | C146 21R006 556 8             |
|                         | 32 |                                  | C146 10R006 506 8             |                                  | C146 21R006 506 8             |
|                         |    |                                  |                               |                                  |                               |
|                         | h  |                                  |                               |                                  |                               |
|                         | 52 | 20                               | C146 10R006 804 1             |                                  | C146 21R006 804 1             |
|                         | 52 | 25                               | C146 10R006 805 1             |                                  | C146 21R006 805 1             |
|                         | 70 | 25                               |                               | C146 10R006 854 8                | C146 21R006 854 8             |
|                         | 70 | 32                               |                               | C146 10R006 804 8                | C146 21R006 804 8             |
|                         |    |                                  | C146 10F006 000 1             |                                  |                               |
|                         |    |                                  | C146 10F006 003 1             |                                  |                               |

C 146 E 6 pol.  
 C 146 M 2 Module  
 C 146 DD 24 pol.  
 C 146 EE 10 pol.

Gehäuse für Längsbügelverriegelung  
 in Anlehnung an  
 DIN EN 175 301 - 801 (DIN 43 652)

Gehäuse  
 Housings

PG-Gewinde  
 PG-thread

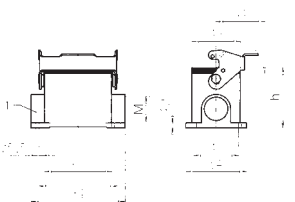
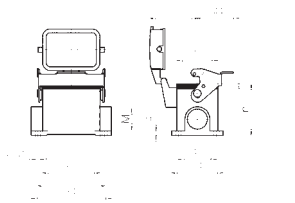
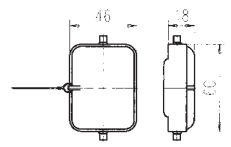
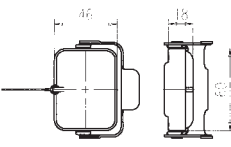
| Bezeichnung - Abbildung<br>Description - Figure                                                                                                | Maßzeichnung<br>Drawing                                                                                                                                     | PG       | Bestell Nr. / Part No.                    |                               |                                                                                          |
|------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-------------------------------------------|-------------------------------|------------------------------------------------------------------------------------------|
|                                                                                                                                                |                                                                                                                                                             |          | Niedrige Bauform/<br>Low profile          | Hohe Bauform/<br>High profile |                                                                                          |
| <b>Gehäuseunterteil / Housings</b>                                                                                                             |                                                                                                                                                             | <b>h</b> | <b>1 Kabelabgang / Single side entry</b>  |                               |                                                                                          |
| Sockelgehäuse<br>Housing<br>                                  |  <p>1 Geschlossen bei einem Kabelausgang<br/>1 closed if single entry</p>  | 54       | 16                                        | C146 10F006 500 1             | C146 10F006 803 2<br>C146 10F006 503 2 (*)<br>C146 10F006 802 2<br>C146 10F006 502 2 (*) |
|                                                                                                                                                |                                                                                                                                                             | 54/74    | 16/21                                     | C146 10F006 502 1             |                                                                                          |
|                                                                                                                                                |                                                                                                                                                             | 74       | 21                                        | (*)                           |                                                                                          |
|                                                                                                                                                |                                                                                                                                                             | 74       | 29                                        |                               |                                                                                          |
|                                                                                                                                                |                                                                                                                                                             |          | <b>2 Kabelabgänge / Double side entry</b> |                               |                                                                                          |
|                                                                                                                                                |                                                                                                                                                             | 54       | 16                                        | C146 10F006 600 1             |                                                                                          |
|                                                                                                                                                |                                                                                                                                                             | 74       | 21                                        |                               | C146 10F006 603 2                                                                        |
|                                                                                                                                                |                                                                                                                                                             | 74       | 29                                        |                               | C146 10F006 602 2                                                                        |
| <b>Sockelgehäuse mit Klappdeckel<br/>Housing with spring cover</b>                                                                             |                                                                                                                                                             |          | <b>1 Kabelabgang / Single side entry</b>  |                               |                                                                                          |
|                                                              |  <p>1 Geschlossen bei einem Kabelausgang<br/>1 closed if single entry</p> | 54       | 16                                        | C146 10F006 806 1             | C146 10F006 807 2<br>C146 10F006 507 2 (*)<br>C146 10F006 806 2<br>C146 10F006 506 2 (*) |
|                                                                                                                                                |                                                                                                                                                             | 54/74    | 16/21                                     | C146 10F006 506 1 (*)         |                                                                                          |
|                                                                                                                                                |                                                                                                                                                             | 74       | 21                                        |                               |                                                                                          |
|                                                                                                                                                |                                                                                                                                                             | 74       | 29                                        |                               |                                                                                          |
|                                                                                                                                                |                                                                                                                                                             |          | <b>2 Kabelabgänge / Double side entry</b> |                               |                                                                                          |
|                                                                                                                                                |                                                                                                                                                             | 54       | 16                                        | C146 10F006 606 1             |                                                                                          |
|                                                                                                                                                |                                                                                                                                                             | 74       | 21                                        |                               | C146 10F006 607 2                                                                        |
|                                                                                                                                                |                                                                                                                                                             | 74       | 29                                        |                               | C146 10F006 606 2                                                                        |
| <b>Schutzkappen / Protective cover</b>                                                                                                         |                                                                                                                                                             |          |                                           |                               |                                                                                          |
| Schutzkappe für Gehäuseunterteile<br>Cover for housings<br> |                                                                          | -        | C146 10Z006 100 1                         |                               |                                                                                          |
| Schutzkappe für Gehäuseoberteile<br>Cover for housings<br>  |                                                                          | -        | C146 10Z006 200 1                         |                               |                                                                                          |
| <b>Sondergehäuse / Special housings</b>                                                                                                        |                                                                                                                                                             |          |                                           |                               |                                                                                          |
| Tüllengehäuse ohne Stutzen<br>Hood, without stud<br>        |                                                                          | 16       | C146 21G006 501 1                         |                               |                                                                                          |
|                                                                                                                                                |                                                                                                                                                             | 21       | C146 21G006 506 8                         |                               |                                                                                          |
| <b>Montageausschnitt / Panel cut out</b>                                                                                                       |                                                                                                                                                             |          |                                           |                               |                                                                                          |
|                                                             |                                                                                                                                                             |          |                                           |                               |                                                                                          |

Verschraubung für Tüllen- und Sockelgehäuse siehe Seite 170-173 / gland bushings for hoods and housing see page 170-173  
 Bei Sockelgehäusen Abgang rechts dargestellt / housings are shown with right outlet



housings for 1 locking-lever-system  
 in accordance with  
 DIN EN 175 301 - 801 (DIN 43 652)

Metrisches Gewinde  
 Metric thread

| Maßzeichnung<br>Drawing                                                                                                                                     | M     | Bestell Nr. / Part No.           |                                  | Bestell Nr. / Part No.           |                                    |                   |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|----------------------------------|----------------------------------|----------------------------------|------------------------------------|-------------------|
|                                                                                                                                                             |       | Niedrige Bauform/<br>Low profile | Hohe Bauform/<br>High profile    | Niedrige Bauform/<br>Low profile | Hohe Bauform/<br>High profile      |                   |
|                                                                                                                                                             |       | <b>1 Kabelabgang</b>             |                                  | <b>2 Kabelabgänge</b>            |                                    |                   |
|  <p>1 Geschlossen bei einem Kabelausgang<br/>1 closed if single entry</p>  | h     |                                  |                                  |                                  |                                    |                   |
|                                                                                                                                                             | 54    | 20                               | C146 10N006 803 1                |                                  | C146 10N006 603 1                  |                   |
|                                                                                                                                                             | 54    | 20                               | C146 10N006 503 1 <sup>(l)</sup> |                                  | C146 10N006 703 1 <sup>(r+u)</sup> |                   |
|                                                                                                                                                             | 54/74 | 25                               | C146 10N006 802 1                | C146 10N006 803 2                | C146 10N006 602 1                  | C146 10N006 603 2 |
|                                                                                                                                                             | 54/74 | 25                               | C146 10N006 502 1 <sup>(l)</sup> | C146 10N006 503 2 <sup>(l)</sup> | C146 10N006 702 1 <sup>(r+u)</sup> |                   |
|                                                                                                                                                             | 74    | 32                               |                                  | C146 10N006 802 2                |                                    | C146 10N006 602 2 |
| 74                                                                                                                                                          | 32    |                                  | C146 10N006 502 2 <sup>(l)</sup> |                                  |                                    |                   |
|  <p>1 Geschlossen bei einem Kabelausgang<br/>1 closed if single entry</p> | h     |                                  |                                  |                                  |                                    |                   |
|                                                                                                                                                             | 54    | 20                               | C146 10N006 807 1                |                                  | C146 10N006 607 1                  |                   |
|                                                                                                                                                             | 54    | 20                               | C146 10N006 507 1 <sup>(l)</sup> |                                  | C146 10N006 709 1 <sup>(r+u)</sup> |                   |
|                                                                                                                                                             | 54/74 | 25                               | C146 10N006 806 1                | C146 10N006 807 2                | C146 10N006 606 1                  | C146 10N006 607 2 |
|                                                                                                                                                             | 54/74 | 25                               | C146 10N006 506 1 <sup>(l)</sup> | C146 10N006 507 2 <sup>(l)</sup> | C146 10N006 708 1 <sup>(r+u)</sup> |                   |
|                                                                                                                                                             | 74    | 32                               |                                  | C146 10N006 806 2                |                                    | C146 10N006 606 2 |
| 74                                                                                                                                                          | 32    |                                  | C146 10N006 506 2 <sup>(l)</sup> |                                  |                                    |                   |
|                                                                          | -     | C146 10Z006 100 1                |                                  |                                  |                                    |                   |
|                                                                                                                                                             |       |                                  |                                  |                                  |                                    |                   |
|                                                                          | -     | C146 10Z006 200 1                |                                  |                                  |                                    |                   |
|                                                                                                                                                             |       |                                  |                                  |                                  |                                    |                   |

<sup>(r+u)</sup> rechts und unten / right and bottom  
<sup>(l)</sup> links / left


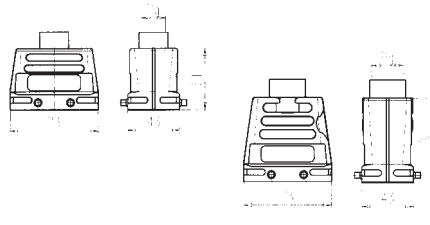
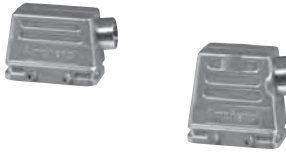
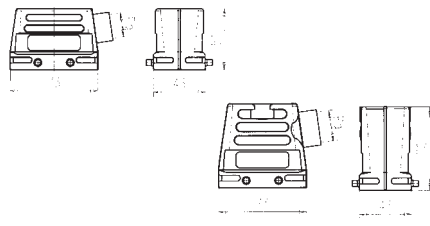

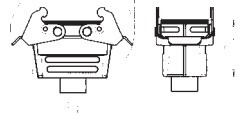

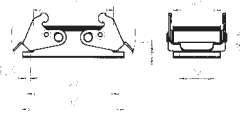


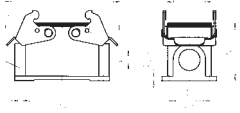
C 146 E 10 pol.  
 C 146 M 3 Module  
 C 146 DD 42 pol.  
 C 146 HvE 3 pol.  
 C 146 EE 18 pol.

Gehäuse  
 Housings

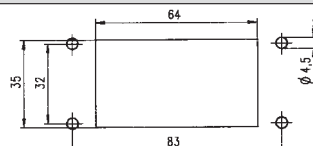
Gehäuse für Querbügelverriegelung  
 in Anlehnung an  
 DIN EN 175 301 - 801 (DIN 43 652)

- sichere 4-Punkt Verriegelung
- bevorzugt bei seitlicher Anreihung
- fliegende Verbindung möglich

PG-Gewinde  
 PG-thread

| Bezeichnung - Abbildung<br>Description - Figure                                                                                                               | Maßzeichnung<br>Drawing                                                             | PG    | Bestell Nr. / Part No.            |                                    |                   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------|-----------------------------------|------------------------------------|-------------------|
|                                                                                                                                                               |                                                                                     |       | Niedrige Bauform / Low profile    | Hohe Bauform / High profile        |                   |
| <b>Gehäuseoberteile / Hoods</b>                                                                                                                               |                                                                                     |       |                                   |                                    |                   |
| Tüllengehäuse, Abgang oben<br>Hood, top entry<br>                            |    | 16    | C146 10G010 600 1                 |                                    |                   |
|                                                                                                                                                               |                                                                                     | 21    | C146 10G010 601 1                 |                                    |                   |
|                                                                                                                                                               |                                                                                     | 16    |                                   | C146 10G010 650 8                  |                   |
|                                                                                                                                                               |                                                                                     | 21    |                                   | C146 10G010 600 8                  |                   |
|                                                                                                                                                               |                                                                                     | 29    |                                   | C146 10G010 601 8                  |                   |
| Tüllengehäuse, Abgang Seite<br>Hood, side entry<br>                         |   | 16    | C146 10G010 500 1                 |                                    |                   |
|                                                                                                                                                               |                                                                                     | 21    | C146 10G010 501 1                 |                                    |                   |
|                                                                                                                                                               |                                                                                     | 16    |                                   | C146 10G010 550 8                  |                   |
|                                                                                                                                                               |                                                                                     | 21    |                                   | C146 10G010 500 8                  |                   |
|                                                                                                                                                               |                                                                                     | 29    |                                   | C146 10G010 501 8                  |                   |
| <b>Gehäuseunterteile / Housings</b>                                                                                                                           |                                                                                     |       |                                   |                                    |                   |
| Kupplungsgehäuse<br>Hood, coupling application<br>                         |  | h     |                                   |                                    |                   |
|                                                                                                                                                               |                                                                                     | 51    | 16                                | C146 10G010 802 1                  |                   |
|                                                                                                                                                               |                                                                                     | 51/70 | 21                                | C146 10G010 803 1                  | C146 10G010 802 8 |
|                                                                                                                                                               |                                                                                     | 29    |                                   | C146 10G010 803 8                  |                   |
| Anbaugehäuse <sup>1)</sup><br>Housing, bulkhead mounting <sup>1)</sup><br> |  |       |                                   | C146 10F010 000 1                  |                   |
| Winkelanbaugehäuse <sup>1)</sup><br>Right-angled housing <sup>1)</sup><br> |                                                                                     |       |                                   | C146 10F010 090 1                  |                   |
| Sockelgehäuse<br>Housing<br>                                               |  | h     | 1 Kabelabgang / single side entry |                                    |                   |
|                                                                                                                                                               |                                                                                     | 57    | 16                                | C146 10F010 500 1                  |                   |
|                                                                                                                                                               |                                                                                     | 74    | 21                                |                                    | C146 10F010 501 2 |
|                                                                                                                                                               |                                                                                     | 74    | 29                                |                                    | C146 10F010 500 2 |
|                                                                                                                                                               |                                                                                     |       |                                   | 2 Kabelabgänge / Double side entry |                   |
|                                                                                                                                                               |                                                                                     | 57    | 16                                | C146 10F010 600 1                  |                   |
| 74                                                                                                                                                            | 21                                                                                  |       | C146 10F010 601 2                 |                                    |                   |
| 74                                                                                                                                                            | 29                                                                                  |       | C146 10F010 600 2                 |                                    |                   |

**Montageausschnitt für Anbaugehäuse / Panel cut out for housing bulkhead mounting**



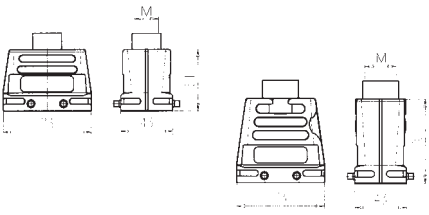
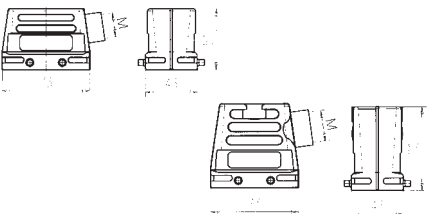
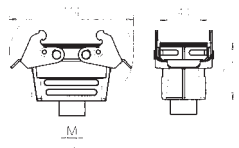
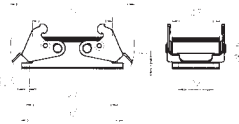
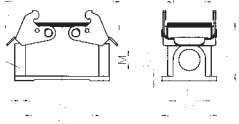
Verschraubung für Tüllen- und Sockelgehäuse siehe Seite 170-173 / gland bushings for hoods and housing see page 170-173

<sup>1)</sup> incl. Flachdichtung / incl. gasket

**housings for 2 locking-lever-system  
 according to DIN EN 175 301 - 801  
 (DIN 43 652)**

- secured 4 point locking
- preferred for side by side mounting
- cable to cable possible

**Metrisches Gewinde  
 Metric thread**

| Maßzeichnung<br>Drawing                                                                                                                                                              | M     | Bestell Nr. / Part No.           |                                   | Bestell Nr. / Part No.           |                                    |                   |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|----------------------------------|-----------------------------------|----------------------------------|------------------------------------|-------------------|
|                                                                                                                                                                                      |       | Niedrige Bauform/<br>Low profile | Hohe Bauform/<br>High profile     | Niedrige Bauform/<br>Low profile | Hohe Bauform/<br>High profile      |                   |
|                                                                                                                                                                                      |       |                                  | mit Stützen / with stud           |                                  | ohne Stützen / without stud        |                   |
|                                                                                                     | 20    | C146 10R010 650 1                |                                   | C146 21R010 650 1                |                                    |                   |
|                                                                                                                                                                                      | 25    | C146 10R010 600 1                |                                   | C146 21R010 600 1                |                                    |                   |
|                                                                                                                                                                                      | 25    |                                  | C146 10R010 650 8                 |                                  | C146 21R010 650 8                  |                   |
|                                                                                                                                                                                      | 32    |                                  | C146 10R010 600 8                 |                                  | C146 21R010 600 8                  |                   |
|                                                                                                                                                                                      | 40    |                                  | C146 10R010 601 8                 |                                  | C146 21R010 601 8                  |                   |
|                                                                                                    | 20    | C146 10R010 550 1                |                                   | C146 21R010 550 1                |                                    |                   |
|                                                                                                                                                                                      | 25    | C146 10R010 500 1                |                                   | C146 21R010 500 1                |                                    |                   |
|                                                                                                                                                                                      | 25    |                                  | C146 10R010 550 8                 |                                  | C146 21R010 550 8                  |                   |
|                                                                                                                                                                                      | 32    |                                  | C146 10R010 500 8                 |                                  | C146 21R010 500 8                  |                   |
|                                                                                                   | h     |                                  |                                   |                                  |                                    |                   |
|                                                                                                                                                                                      | 51    | 20                               | C146 10R010 852 1                 |                                  | C146 21R010 852 1                  |                   |
|                                                                                                                                                                                      | 51/70 | 25                               | C146 10R010 802 1                 | C146 10R010 852 8                | C146 21R010 802 1                  | C146 21R010 852 8 |
|                                                                                                                                                                                      | 51/70 | 32                               | C146 10R010 803 1                 | C146 10R010 802 8                | C146 21R010 803 1                  | C146 21R010 802 8 |
|                                                                                                                                                                                      | 70    | 40                               |                                   | C146 10R010 803 8                |                                    | C146 21R010 803 8 |
|                                                                                                   |       | —                                | C146 10F010 000 1                 |                                  |                                    |                   |
|                                                                                                                                                                                      |       | —                                | C146 10F010 090 1                 |                                  |                                    |                   |
|  <p>1.) Verschlusschraube bei einem Kabelausgang<br/>1.) Screwed sealing plug if single entry</p> | h     |                                  | 1 Kabelabgang / single side entry |                                  | 2 Kabelabgänge / Double side entry |                   |
|                                                                                                                                                                                      | 57    | 20                               | C146 10N010 501 1                 |                                  | C146 10N010 601 1                  |                   |
|                                                                                                                                                                                      | 57    | 20                               |                                   |                                  | C146 10N010 701 1 <sup>(r+u)</sup> |                   |
|                                                                                                                                                                                      | 57/74 | 25                               | C146 10N010 500 1                 | C146 10N010 501 2                | C146 10N010 600 1                  | C146 10N010 601 2 |
|                                                                                                                                                                                      | 57    | 25                               |                                   |                                  | C146 10N010 700 1 <sup>(r+u)</sup> |                   |
| 74                                                                                                                                                                                   | 32    |                                  | C146 10N010 500 2                 |                                  | C146 10N010 600 2                  |                   |

<sup>(r+u)</sup> rechts und unten / right and bottom


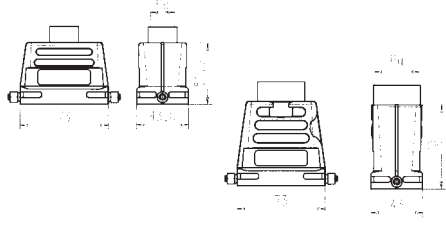
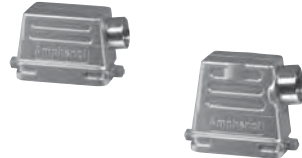
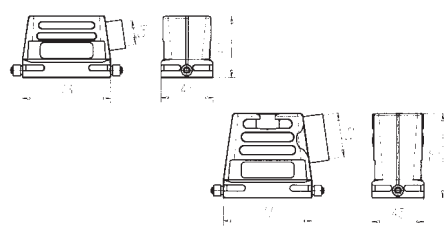

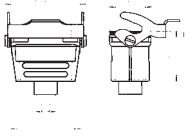

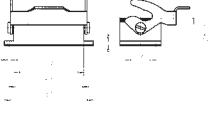

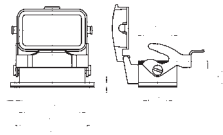

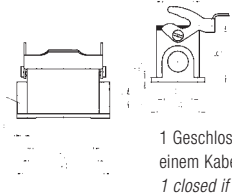

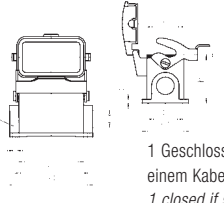
C 146 E 10 pol.  
 C 146 M 3 Module  
 C 146 DD 42 pol.  
 C 146 HvE 3 pol.  
 C 146 EE 18 pol.

Gehäuse  
 Housings

Gehäuse für Längsbügelverriegelung  
 in Anlehnung an  
 DIN EN 175 301 - 801 (DIN 43 652)

- leichtes Bedienen auch bei seitlichem Kabelabgang
- Schutzkappe am Gehäuseunterteil verriegelbar
- fliegende Verbindung möglich

PG-Gewinde  
 PG-thread

| Bezeichnung - Abbildung<br>Description - Figure                                                                                                                         | Maßzeichnung<br>Drawing                                                             | PG      | Bestell Nr. / Part No.         |                                    |                                  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------|--------------------------------|------------------------------------|----------------------------------|
|                                                                                                                                                                         |                                                                                     |         | Niedrige Bauform / Low profile | Hohe Bauform / High profile        |                                  |
| <b>Gehäuseoberteile / Hoods</b>                                                                                                                                         |                                                                                     |         |                                |                                    |                                  |
| Tüllengehäuse, Abgang oben<br>Hood, top entry<br>                                      |    | 16      | C146 10G010 606 1              |                                    |                                  |
|                                                                                                                                                                         |                                                                                     | 21      | C146 10G010 607 1              |                                    |                                  |
|                                                                                                                                                                         |                                                                                     | 21      |                                | C146 10G010 606 8                  |                                  |
|                                                                                                                                                                         |                                                                                     | 29      |                                | C146 10G010 607 8                  |                                  |
| Tüllengehäuse, Abgang Seite<br>Hood, side entry<br>                                   |   | 16      | C146 10G010 506 1              |                                    |                                  |
|                                                                                                                                                                         |                                                                                     | 21      | C146 10G010 507 1              |                                    |                                  |
|                                                                                                                                                                         |                                                                                     | 21      |                                | C146 10G010 506 8                  |                                  |
|                                                                                                                                                                         |                                                                                     | 29      |                                | C146 10G010 507 8                  |                                  |
| <b>Gehäuseunterteile / Housings</b>                                                                                                                                     |                                                                                     |         |                                |                                    |                                  |
| Kupplungsgehäuse<br>Hood, coupling application<br>                                   |  | h<br>51 | 16                             | C146 10G010 804 1                  |                                  |
|                                                                                                                                                                         |                                                                                     | 51/70   | 21                             | C146 10G010 805 1                  | C146 10G010 804 8                |
|                                                                                                                                                                         |                                                                                     | 70      | 29                             |                                    | C146 10G010 805 8                |
| Anbaugehäuse <sup>1)</sup><br>Housing, bulkhead mounting <sup>1)</sup><br>           |  |         |                                | C146 10F010 001 1                  |                                  |
| Anbaugehäuse mit Deckel <sup>1)</sup><br>Housing with spring cover <sup>1)</sup><br> |  |         |                                | C146 10F010 003 1                  |                                  |
| Sockelgehäuse<br>Housing<br>                                                         |  | h<br>57 | 16<br>16/21<br>21<br>29<br>29  | 1 Kabelabgang / Single side entry  |                                  |
|                                                                                                                                                                         |                                                                                     | 57/74   |                                | C146 10F010 802 1                  | C146 10F010 803 2                |
|                                                                                                                                                                         |                                                                                     | 74      |                                | C146 10F010 502 1 <sup>(1)</sup>   | C146 10F010 503 2 <sup>(1)</sup> |
|                                                                                                                                                                         |                                                                                     | 74      |                                |                                    | C146 10F010 802 2                |
|                                                                                                                                                                         |                                                                                     |         |                                | 2 Kabelabgänge / Double side entry |                                  |
|                                                                                                                                                                         |                                                                                     | 57      | 16                             | C146 10F010 602 1                  |                                  |
|                                                                                                                                                                         |                                                                                     | 74      | 21                             |                                    | C146 10F010 603 2                |
|                                                                                                                                                                         |                                                                                     | 74      | 29                             |                                    | C146 10F010 602 2                |
| Sockelgehäuse mit Deckel<br>Housing with spring cover<br>                            |  | h<br>57 | 16<br>16/21<br>21<br>29<br>29  | 1 Kabelabgang / Single side entry  |                                  |
|                                                                                                                                                                         |                                                                                     | 57/74   |                                | C146 10F010 806 1                  | C146 10F010 807 2                |
|                                                                                                                                                                         |                                                                                     | 74      |                                | C146 10F010 506 1 <sup>(1)</sup>   | C146 10F010 507 2 <sup>(1)</sup> |
|                                                                                                                                                                         |                                                                                     | 74      |                                |                                    | C146 10F010 806 2                |
|                                                                                                                                                                         |                                                                                     | 74      |                                |                                    | C146 10F010 506 2 <sup>(1)</sup> |
|                                                                                                                                                                         |                                                                                     |         |                                |                                    |                                  |
|                                                                                                                                                                         |                                                                                     | 57      | 16                             | C146 10F010 606 1                  |                                  |
|                                                                                                                                                                         |                                                                                     | 74      | 21                             |                                    | C146 10F010 607 2                |
|                                                                                                                                                                         |                                                                                     | 74      | 29                             |                                    | C146 10F010 606 2                |

<sup>1)</sup> incl. Flachdichtung / incl. flat sealing

<sup>(1)</sup> links / left

Bei Sockelgehäusen Abgang rechts dargestellt / housings are shown with right outlet

**housings for 1 locking-lever-system  
 in accordance with  
 DIN EN 175 301 - 801 (DIN 43 652)**

- also easy to use for side entry
- cover for housings lockable
- cable to cable possible

**Metrisches Gewinde  
 Metric thread**

| Maßzeichnung<br>Drawing                                                  | M     | Bestell Nr. / Part No.           |                                   | Bestell Nr. / Part No.            |                                    |                                    |
|--------------------------------------------------------------------------|-------|----------------------------------|-----------------------------------|-----------------------------------|------------------------------------|------------------------------------|
|                                                                          |       | Niedrige Bauform/<br>Low profile | Hohe Bauform/<br>High profile     | Niedrige Bauform/<br>Low profile  | Hohe Bauform/<br>High profile      |                                    |
|                                                                          |       | mit Stützen / with stud          |                                   | ohne Stützen / without stud       |                                    |                                    |
|                                                                          | 20    | C146 10R010 656 1                |                                   | C146 21R010 656 1                 |                                    |                                    |
|                                                                          | 25    | C146 10R010 606 1                |                                   | C146 21R010 606 1                 |                                    |                                    |
|                                                                          | 32    | C146 10R010 607 1                |                                   | C146 21R010 607 1                 |                                    |                                    |
|                                                                          | 25    |                                  | C146 10R010 656 8                 |                                   | C146 21R010 656 8                  |                                    |
|                                                                          | 32    |                                  | C146 10R010 606 8                 |                                   | C146 21R010 606 8                  |                                    |
| 40                                                                       |       | C146 10R010 607 8                |                                   | C146 21R010 607 8                 |                                    |                                    |
|                                                                          | 20    | C146 10R010 556 1                |                                   | C146 21R010 556 1                 |                                    |                                    |
|                                                                          | 25    | C146 10R010 506 1                |                                   | C146 21R010 506 1                 |                                    |                                    |
|                                                                          | 25    |                                  | C146 10R010 556 8                 |                                   | C146 21R010 556 8                  |                                    |
|                                                                          | 32    |                                  | C146 10R010 506 8                 |                                   | C146 21R010 506 8                  |                                    |
|                                                                          | h     |                                  |                                   |                                   |                                    |                                    |
|                                                                          | 51    | 20                               | C146 10R010 854 1                 |                                   | C146 21R010 854 1                  |                                    |
|                                                                          | 51/70 | 25                               | C146 10R010 804 1                 | C146 10R010 854 8                 | C146 21R010 804 1                  | C146 21R010 854 8                  |
|                                                                          | 51/70 | 32                               | C146 10R010 805 1                 | C146 10R010 804 8                 | C146 21R010 805 1                  | C146 21R010 804 8                  |
| 70                                                                       | 40    |                                  | C146 10R010 805 8                 |                                   | C146 21R010 805 8                  |                                    |
|                                                                          |       | -                                | C146 10F010 001 1                 |                                   |                                    |                                    |
|                                                                          |       |                                  | -                                 | C146 10F010 003 1                 |                                    |                                    |
| <p>1 Geschlossen bei einem Kabelausgang<br/>1 closed if single entry</p> |       | h                                |                                   | 1 Kabelabgang / Single side entry |                                    | 2 Kabelabgänge / Double side entry |
|                                                                          | 57    | 20                               | C146 10N010 803 1                 |                                   | C146 10N010 603 1                  |                                    |
|                                                                          | 57    | 20                               | C146 10N010 503 1 (*)             |                                   | C146 10N010 703 1 (r+u)            |                                    |
|                                                                          | 57/74 | 25                               | C146 10N010 802 1                 | C146 10N010 803 2                 | C146 10N010 602 1                  | C146 10N010 603 2                  |
|                                                                          | 57/74 | 25                               | C146 10N010 502 1 (*)             | C146 10N010 503 2 (*)             | C146 10N010 702 1 (r+u)            |                                    |
|                                                                          | 74    | 32                               |                                   | C146 10N010 802 2                 |                                    | C146 10N010 602 2                  |
| 74                                                                       | 32    |                                  | C146 10N010 502 2 (*)             |                                   |                                    |                                    |
| <p>1 Geschlossen bei einem Kabelausgang<br/>1 closed if single entry</p> | h     |                                  | 1 Kabelabgang / Single side entry |                                   | 2 Kabelabgänge / Double side entry |                                    |
|                                                                          | 57    | 20                               | C146 10N010 807 1                 |                                   | C146 10N010 607 1                  |                                    |
|                                                                          | 57    | 20                               | C146 10N010 507 1 (*)             |                                   | C146 10N010 708 1 (r+u)            |                                    |
|                                                                          | 57/74 | 25                               | C146 10N010 806 1                 | C146 10N010 807 2                 | C146 10N010 606 1                  | C146 10N010 607 2                  |
|                                                                          | 57/74 | 25                               | C146 10N010 506 1 (*)             | C146 10N010 507 2 (*)             | C146 10N010 709 1 (r+u)            |                                    |
|                                                                          | 74    | 32                               |                                   | C146 10N010 806 2                 |                                    | C146 10N010 606 2                  |
| 74                                                                       | 32    |                                  | C146 10N010 506 2 (*)             |                                   |                                    |                                    |

(\*) links / left

(r+u) rechts und unten / right and bottom

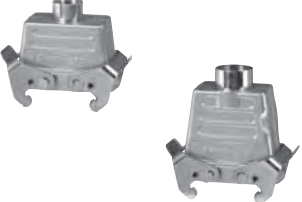
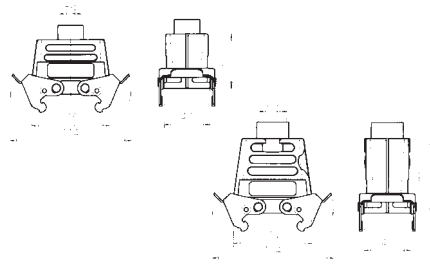

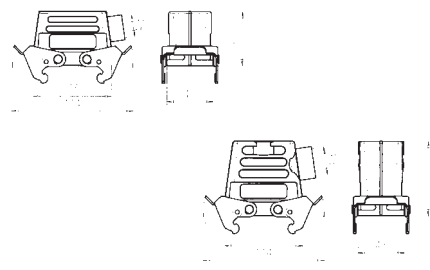

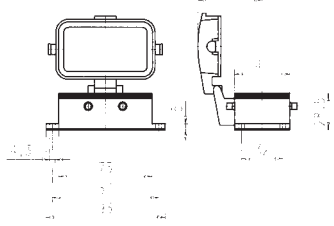

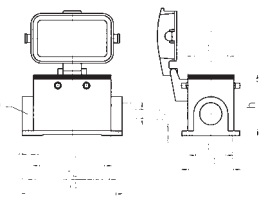

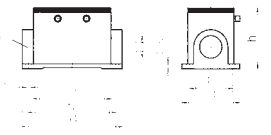
C 146 E 10 pol.  
 C 146 M 3 Module  
 C 146 DD 42 pol.  
 C 146 HvE 3 pol.  
 C 146 EE 18 pol.

Gehäuse  
 Housings

Tüllengehäuse mit Querbügel  
 in Anlehnung an  
 DIN EN 175 301 - 801 (DIN 43 653)

- sichere 4-Punkt Verriegelung
- Gehäuseunterteil mit Schutzdeckel
- keine Bügel am Gehäuseunterteil

PG-Gewinde  
 PG-thread

| Bezeichnung - Abbildung<br>Description - Figure                                                                                                                          | Maßzeichnung<br>Drawing                                                             | PG                                                   | Bestell Nr. / Part No.             |                                  |  |                   |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------------------------------------------------|------------------------------------|----------------------------------|--|-------------------|
|                                                                                                                                                                          |                                                                                     |                                                      | Niedrige Bauform / Low profile     | Hohe Bauform / High profile      |  |                   |
| <b>Gehäuseoberteile / Hoods</b>                                                                                                                                          |                                                                                     |                                                      |                                    |                                  |  |                   |
| Tüllengehäuse, Abgang oben<br>Hood, top entry<br>                                       |    | 16                                                   | C146 10G010 602 1                  |                                  |  |                   |
|                                                                                                                                                                          |                                                                                     | 21                                                   | C146 10G010 603 1                  |                                  |  |                   |
|                                                                                                                                                                          |                                                                                     | 21                                                   |                                    | C146 10G010 602 8                |  |                   |
|                                                                                                                                                                          |                                                                                     | 29                                                   |                                    | C146 10G010 603 8                |  |                   |
| Tüllengehäuse, Abgang Seite<br>Hood, side entry<br>                                    |   | 16                                                   | C146 10G010 502 1                  |                                  |  |                   |
|                                                                                                                                                                          |                                                                                     | 21                                                   | C146 10G010 503 1                  |                                  |  |                   |
|                                                                                                                                                                          |                                                                                     | 21                                                   |                                    | C146 10G010 502 8                |  |                   |
|                                                                                                                                                                          |                                                                                     | 29                                                   |                                    | C146 10G010 503 8                |  |                   |
| <b>Gehäuseunterteile / Housings</b>                                                                                                                                      |                                                                                     |                                                      |                                    |                                  |  |                   |
| Anbaugehäuse mit Deckel <sup>1)</sup><br>Housing, with spring cover <sup>1)</sup><br> |  | -                                                    | C146 10F010 002 1                  |                                  |  |                   |
| Sockelgehäuse, mit Deckel<br>Housing, with spring cover<br>                           |  | h<br>57 16<br>57/74 16/21<br>74 21<br>74 29<br>74 29 | 1 Kabelabgang / Single side entry  |                                  |  |                   |
|                                                                                                                                                                          |                                                                                     |                                                      | C146 10F010 804 1                  | C146 10F010 805 2                |  |                   |
|                                                                                                                                                                          |                                                                                     |                                                      | C146 10F010 504 1 <sup>(1)</sup>   | C146 10F010 505 2 <sup>(1)</sup> |  |                   |
|                                                                                                                                                                          |                                                                                     |                                                      |                                    | C146 10F010 804 2                |  |                   |
|                                                                                                                                                                          |                                                                                     |                                                      |                                    | C146 10F010 504 2 <sup>(1)</sup> |  |                   |
|                                                                                                                                                                          |                                                                                     |                                                      | 2 Kabelabgänge / Double side entry |                                  |  |                   |
|                                                                                                                                                                          | C146 10F010 604 1                                                                   |                                                      | C146 10F010 605 2                  |                                  |  |                   |
|                                                                                                                                                                          |                                                                                     |                                                      | C146 10F010 604 2                  |                                  |  |                   |
| Sockelgehäuse<br>Housing<br>                                                          |  | h<br>74 21<br>74 29<br>74 21<br>74 29                | 1 Kabelabgang / Single side entry  |                                  |  |                   |
|                                                                                                                                                                          |                                                                                     |                                                      |                                    | C146 10F010 509 2                |  |                   |
|                                                                                                                                                                          |                                                                                     |                                                      |                                    | C146 10F010 508 2                |  |                   |
|                                                                                                                                                                          |                                                                                     |                                                      | 2 Kabelabgänge / Double side entry |                                  |  |                   |
|                                                                                                                                                                          |                                                                                     |                                                      |                                    | C146 10F010 609 2                |  | C146 10F010 608 2 |
|                                                                                                                                                                          |                                                                                     |                                                      |                                    |                                  |  |                   |

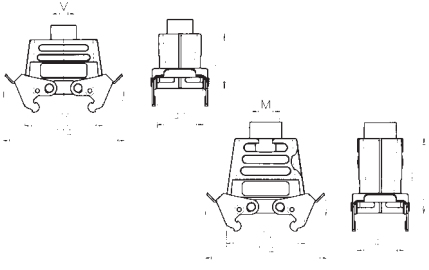
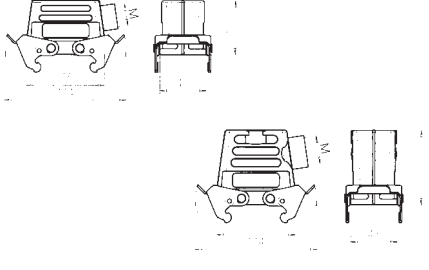
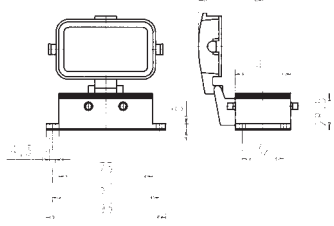
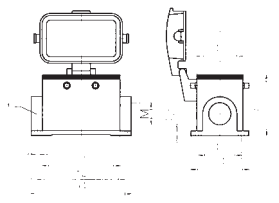
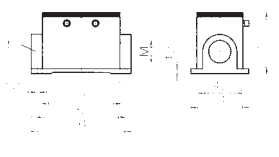
<sup>1)</sup> incl. Flachdichtung / incl. gasket

Bei Sockelgehäusen Abgang rechts dargestellt / housings are shown with right outlet

**hoods with 2 locking-levers  
in accordance with  
DIN EN 175 301 - 801 (DIN 43 653)**

- secured 4 point locking
- housing with cover
- no locking levers at the housings

**Metrisches Gewinde  
Metric thread**

| Maßzeichnung<br>Drawing                                                                                                                                      | M     | Bestell Nr. / Part No.            |                                  | Bestell Nr. / Part No.             |                                    |                   |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-----------------------------------|----------------------------------|------------------------------------|------------------------------------|-------------------|
|                                                                                                                                                              |       | Niedrige Bauform/<br>Low profile  | Hohe Bauform/<br>High profile    | Niedrige Bauform/<br>Low profile   | Hohe Bauform/<br>High profile      |                   |
|                                                                                                                                                              |       | mit Stützen / with stud           |                                  | ohne Stützen / without stud        |                                    |                   |
|                                                                             | 20    | C146 10R010 652 1                 |                                  | C146 21R010 652 1                  |                                    |                   |
|                                                                                                                                                              | 25    | C146 10R010 602 1                 |                                  | C146 21R010 602 1                  |                                    |                   |
|                                                                                                                                                              | 25    |                                   | C146 10R010 652 8                |                                    | C146 21R010 652 8                  |                   |
|                                                                                                                                                              | 32    |                                   | C146 10R010 602 8                |                                    | C146 21R010 602 8                  |                   |
|                                                                                                                                                              | 40    |                                   | C146 10R010 603 8                |                                    | C146 21R010 603 8                  |                   |
|                                                                            | 20    | C146 10R010 552 1                 |                                  | C146 21R010 552 1                  |                                    |                   |
|                                                                                                                                                              | 25    | C146 10R010 502 1                 |                                  | C146 21R010 502 1                  |                                    |                   |
|                                                                                                                                                              | 25    |                                   | C146 10R010 552 8                |                                    | C146 21R010 552 8                  |                   |
|                                                                                                                                                              | 32    |                                   | C146 10R010 502 8                |                                    | C146 21R010 502 8                  |                   |
|                                                                           | —     | C146 10F010 002 1                 |                                  |                                    |                                    |                   |
|  <p>1 Geschlossen bei einem Kabelausgang<br/>1 closed if single entry</p> | h     | 1 Kabelabgang / Single side entry |                                  | 2 Kabelabgänge / Double side entry |                                    |                   |
|                                                                                                                                                              | 57    | 20                                | C146 10N010 805 1                |                                    | C146 10N010 605 1                  |                   |
|                                                                                                                                                              | 57    | 20                                | C146 10N010 505 1 <sup>(*)</sup> |                                    | C146 10N010 809 1 <sup>(r+u)</sup> |                   |
|                                                                                                                                                              | 57/74 | 25                                | C146 10N010 804 1                | C146 10N010 805 2                  | C146 10N010 604 1                  | C146 10N010 605 2 |
|                                                                                                                                                              | 57/74 | 25                                | C146 10N010 504 1 <sup>(*)</sup> | C146 10N010 505 2 <sup>(*)</sup>   | C146 10N010 808 1 <sup>(r+u)</sup> |                   |
|                                                                                                                                                              | 74    | 32                                |                                  | C146 10N010 804 2                  |                                    | C146 10N010 604 2 |
| 74                                                                                                                                                           | 32    |                                   | C146 10N010 504 2 <sup>(*)</sup> |                                    |                                    |                   |
|  <p>1 Geschlossen bei einem Kabelausgang<br/>1 closed if single entry</p> | h     | 1 Kabelabgang / Single side entry |                                  | 2 Kabelabgänge / Double side entry |                                    |                   |
|                                                                                                                                                              | 57    | 20                                | C146 10N010 509 1                |                                    | C146 10N010 609 1                  |                   |
|                                                                                                                                                              | 57/74 | 25                                | C146 10N010 508 1                | C146 10N010 509 2                  | C146 10N010 608 1                  | C146 10N010 609 2 |
| 74                                                                                                                                                           | 32    |                                   | C146 10N010 508 2                |                                    | C146 10N010 608 2                  |                   |

<sup>(\*)</sup> links / left

<sup>(r+u)</sup> rechts und unten / right and bottom


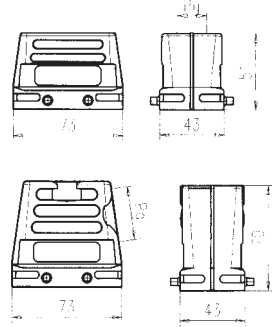

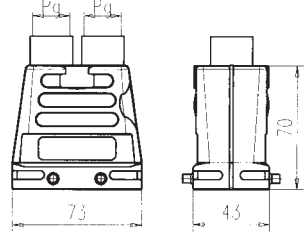

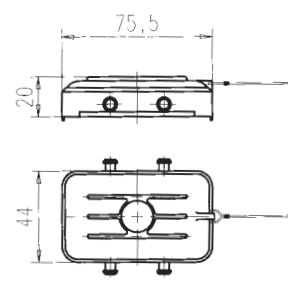
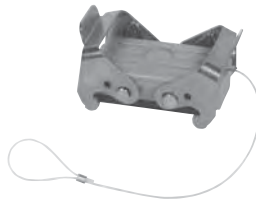
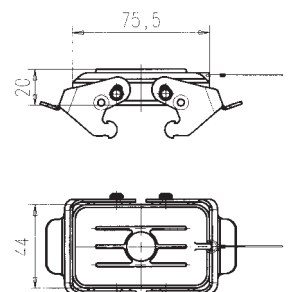
C 146 E 10 pol.  
 C 146 M 3 Module  
 C 146 DD 42 pol.  
 C 146 HvE 3 pol.  
 C 146 EE 18 pol.

Gehäuse, Schutzkappen  
 Housings, covers

Sondergehäuse für Querbügelverriegelung,  
 in Anlehnung an  
 DIN EN 175 301 - 801 (DIN 43 653)

PG-Gewinde  
 PG-thread

special housings for 2 locking-system,  
 in accordance with  
 DIN EN 175 301 - 801 (DIN 43 653)

| Bezeichnung - Abbildung<br>Description - Figure                                                                                                    | Maßzeichnung<br>Drawing                                                             | PG | Kabelabgang<br>cable outlet | Bestell Nr. / Part No.                 |                                        |
|----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----|-----------------------------|----------------------------------------|----------------------------------------|
|                                                                                                                                                    |                                                                                     |    |                             | Niedrige Bauform / Low profile         | Hohe Bauform / High profile            |
| <b>Gehäuseoberteile / Hoods</b>                                                                                                                    |                                                                                     |    |                             |                                        |                                        |
| Tüllengehäuse ohne Stutzen<br>Hood without stud<br><br>           |    | 16 | Oben / top<br>Seite / side  | C146 21G010 600 1<br>C146 21G010 500 1 |                                        |
|                                                                                                                                                    |                                                                                     | 21 | Oben / top<br>Seite / side  |                                        | C146 21G010 600 8<br>C146 21G010 500 8 |
| Tüllengehäuse, 2 x Abgang Oben<br>Hood, 2 top entry<br><br>     |   | 16 |                             |                                        | C146 10G010 902 8                      |
| <b>Schutzkappen / Protective cover</b>                                                                                                             |                                                                                     |    |                             |                                        |                                        |
| Schutzkappe für Gehäuseunterteile<br>Cover for housings<br><br> |  | -  |                             | C146 10Z010 100 1                      |                                        |
| Schutzkappe für Gehäuseoberteile<br>Cover for hoods<br><br>     |  | -  |                             | C146 10Z010 200 1                      |                                        |

Verschraubung für Tüllen- und Sockelgehäuse siehe Seite 170-173 / gland bushings for hoods and housing see page 170-173




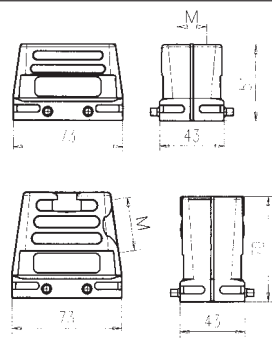

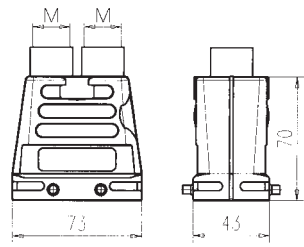

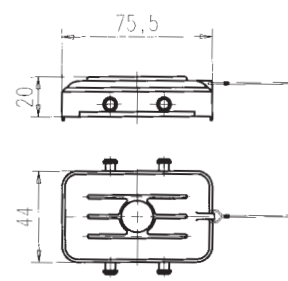
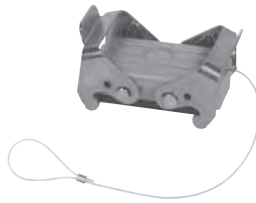
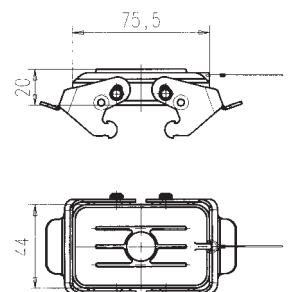
C 146 E 10 pol.  
 C 146 M 3 Module  
 C 146 DD 42 pol.  
 C 146 HvE 3 pol.  
 C 146 EE 18 pol.

Gehäuse, Schutzkappen  
 Housings, covers

Sondergehäuse für Querbügelverriegelung,  
 in Anlehnung an  
 DIN EN 175 301 - 801 (DIN 43 653)

Metrisches Gewinde  
 Metric thread

special housings for 2 locking-system,  
 in accordance with  
 DIN EN 175 301 - 801 (DIN 43 653)

| Bezeichnung - Abbildung<br>Description - Figure                                                                                                    | Maßzeichnung<br>Drawing                                                             | M  | Kabelabgang<br>cable outlet | Bestell Nr. / Part No.         |                             |
|----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----|-----------------------------|--------------------------------|-----------------------------|
|                                                                                                                                                    |                                                                                     |    |                             | Niedrige Bauform / Low profile | Hohe Bauform / High profile |
| <b>Gehäuseoberteile / Hoods</b>                                                                                                                    |                                                                                     |    |                             |                                |                             |
| Tüllengehäuse ohne Stutzen<br>Hood without stud<br><br>           |    | 20 | Oben / top                  | C146 21R010 650 1              |                             |
|                                                                                                                                                    |                                                                                     | 20 | Seite / side                | C146 21R010 550 1              |                             |
|                                                                                                                                                    |                                                                                     | 25 | Oben / top                  | C146 21R010 600 1              |                             |
|                                                                                                                                                    |                                                                                     | 25 | Seite / side                | C146 21R010 500 1              |                             |
|                                                                                                                                                    |                                                                                     | 25 | Oben / top                  |                                | C146 21R010 650 8           |
|                                                                                                                                                    |                                                                                     | 25 | Seite / side                |                                | C146 21R010 550 8           |
|                                                                                                                                                    |                                                                                     | 32 | Oben / top                  |                                | C146 21R010 600 8           |
| 32                                                                                                                                                 | Seite / side                                                                        |    | C146 21R010 500 8           |                                |                             |
| 40                                                                                                                                                 | Oben / top                                                                          |    | C146 21R010 601 8           |                                |                             |
| Tüllengehäuse, 2 x Abgang Oben<br>Hood, 2 top entry<br><br>     |   | 25 |                             |                                | C146 10R010 902 8           |
| <b>Schutzkappen / Protective cover</b>                                                                                                             |                                                                                     |    |                             |                                |                             |
| Schutzkappe für Gehäuseunterteile<br>Cover for housings<br><br> |  | -  |                             | C146 10Z010 100 1              |                             |
| Schutzkappe für Gehäuseoberteile<br>Cover for hoods<br><br>     |  | -  |                             | C146 10Z010 200 1              |                             |


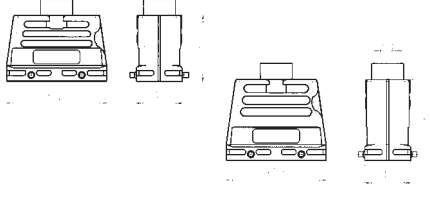

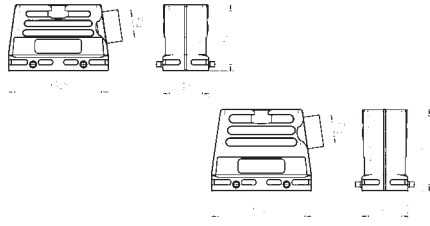
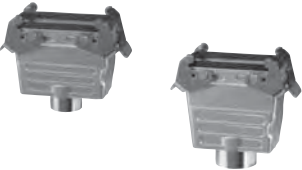
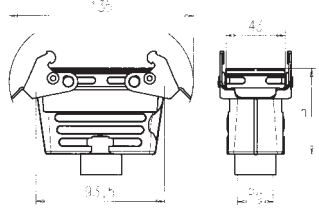

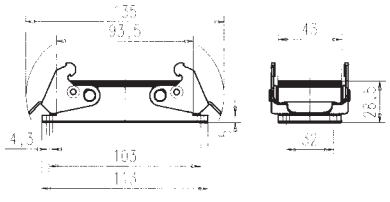

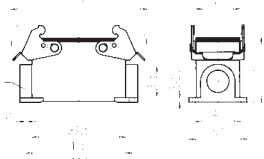
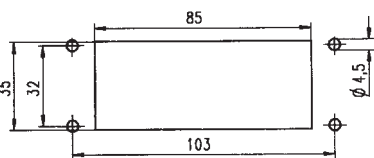
Verschraubung für Tüllen- und Sockelgehäuse siehe Seite 170-173 / gland bushings for hoods and housing see page 170-173

**C 146 E** 16 pol.  
**C 146 M** 5 Module  
**C 146 D** 40 pol.  
**C 146 DD** 72 pol.  
**C 146 HSE** 6 pol.  
**C 146 HvE** 6 pol.  
**C 146 EE** 32 pol.  
 Gehäuse / Housings

Gehäuse für Querbügelverriegelung nach  
 DIN EN 175 301 - 801 (DIN 43 652)

- sichere 4-Punkt Verriegelung
- bevorzugt bei seitlicher Anreihung
- fliegende Verbindung möglich

**PG-Gewinde**  
**PG-thread**

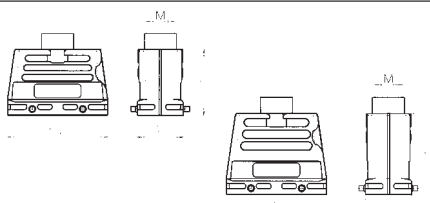
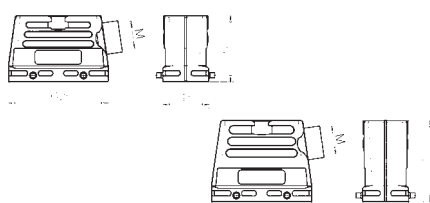
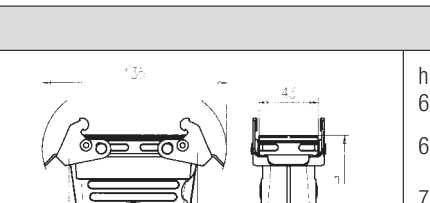
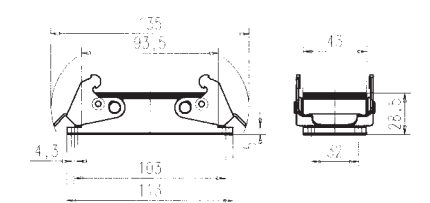
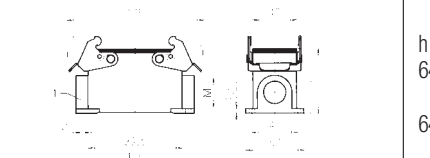
| Bezeichnung - Abbildung<br><i>Description - Figure</i>                                                                                                               | Maßzeichnung<br><i>Drawing</i>                                                                                                                               | PG                | Bestell Nr. / Part No.            |                                    |                   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-----------------------------------|------------------------------------|-------------------|
|                                                                                                                                                                      |                                                                                                                                                              |                   | Niedrige Bauform / Low profile    | Hohe Bauform / High profile        |                   |
| <b>Gehäuseoberteile / Hoods</b>                                                                                                                                      |                                                                                                                                                              |                   |                                   |                                    |                   |
| Tüllengehäuse, Abgang oben<br><i>Hood, top entry</i><br>                            |                                                                             | 21                | C146 10G016 600 1                 |                                    |                   |
|                                                                                                                                                                      |                                                                                                                                                              | 29                | C146 10G016 601 1                 |                                    |                   |
|                                                                                                                                                                      |                                                                                                                                                              | 21                |                                   | C146 10G016 600 8                  |                   |
|                                                                                                                                                                      |                                                                                                                                                              | 29                |                                   | C146 10G016 601 8                  |                   |
| Tüllengehäuse, Abgang Seite<br><i>Hood, side entry</i><br>                         |                                                                            | 21                | C146 10G016 500 1                 |                                    |                   |
|                                                                                                                                                                      |                                                                                                                                                              | 29                | C146 10G016 501 1                 |                                    |                   |
|                                                                                                                                                                      |                                                                                                                                                              | 21                |                                   | C146 10G016 500 8                  |                   |
|                                                                                                                                                                      |                                                                                                                                                              | 29                |                                   | C146 10G016 501 8                  |                   |
| <b>Gehäuseunterteile / Housings</b>                                                                                                                                  |                                                                                                                                                              |                   |                                   |                                    |                   |
| Kupplungsgehäuse<br><i>Hood, coupling application</i><br>                         |                                                                           | h                 |                                   |                                    |                   |
|                                                                                                                                                                      |                                                                                                                                                              | 62                | 21                                | C146 10G016 802 1                  |                   |
|                                                                                                                                                                      |                                                                                                                                                              | 62                | 29                                | C146 10G016 803 1                  |                   |
|                                                                                                                                                                      |                                                                                                                                                              | 76                | 21                                |                                    | C146 10G016 802 8 |
| 76                                                                                                                                                                   | 29                                                                                                                                                           |                   | C146 10G016 803 8                 |                                    |                   |
| Anbaugehäuse <sup>1)</sup><br><i>Housing, bulkhead mounting <sup>1)</sup></i><br> |                                                                           | –                 | C146 10F016 000 1                 |                                    |                   |
| Sockelgehäuse<br><i>Housing</i><br>                                               |  <p>1 Geschlossen bei einem Kabelausgang<br/>1 closed if single entry</p> | h                 | 1 Kabelabgang / Single side entry |                                    |                   |
|                                                                                                                                                                      |                                                                                                                                                              | 64/77             | 21                                | C146 10F016 500 1                  | C146 10F040 501 2 |
|                                                                                                                                                                      |                                                                                                                                                              | 77                | 29                                |                                    | C146 10F040 500 2 |
|                                                                                                                                                                      |                                                                                                                                                              | 64/77             | 21                                | 2 Kabelabgänge / Double side entry |                   |
| 77                                                                                                                                                                   | 29                                                                                                                                                           | C146 10F016 600 1 | C146 10F040 601 2                 |                                    |                   |
|                                                                                                                                                                      |                                                                                                                                                              |                   | C146 10F040 600 2                 |                                    |                   |
| <b>Montageausschnitt für Anbaugehäuse / Panel cut out for housing bulkhead mounting</b>                                                                              |                                                                                                                                                              |                   |                                   |                                    |                   |
|                                                                                   |                                                                                                                                                              |                   |                                   |                                    |                   |

<sup>(1)</sup> links / left

**housings for 2 locking-lever-system according to  
 DIN EN 175 301 - 801 (DIN 43 652)**

- **secured 4 point locking**
- **preferred for side by side mounting**
- **cable to cable possible**

**Metrisches Gewinde  
 Metric thread**

| Maßzeichnung<br>Drawing                                                                                                                                      | M  | Bestell Nr. / Part No.            |                               | Bestell Nr. / Part No.             |                                    |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|----|-----------------------------------|-------------------------------|------------------------------------|------------------------------------|--|
|                                                                                                                                                              |    | Niedrige Bauform/<br>Low profile  | Hohe Bauform/<br>High profile | Niedrige Bauform/<br>Low profile   | Hohe Bauform/<br>High profile      |  |
|                                                                                                                                                              |    | mit Stützen / with stud           |                               | ohne Stützen / without stud        |                                    |  |
|                                                                             | 25 | C146 10R016 650 1                 |                               | C146 21R016 650 1                  |                                    |  |
|                                                                                                                                                              | 32 | C146 10R016 600 1                 |                               | C146 21R016 600 1                  |                                    |  |
|                                                                                                                                                              | 25 |                                   | C146 10R016 650 8             |                                    | C146 21R016 650 8                  |  |
|                                                                                                                                                              | 32 |                                   | C146 10R016 600 8             |                                    | C146 21R016 600 8                  |  |
|                                                                             | 25 | C146 10R016 550 1                 |                               | C146 21R016 550 1                  |                                    |  |
|                                                                                                                                                              | 32 | C146 10R016 500 1                 |                               | C146 21R016 500 1                  |                                    |  |
|                                                                                                                                                              | 25 |                                   | C146 10R016 550 8             |                                    | C146 21R016 550 8                  |  |
|                                                                                                                                                              | 32 |                                   | C146 10R016 500 8             |                                    | C146 21R016 500 8                  |  |
|                                                                           | 25 | C146 10R016 852 1                 |                               | C146 21R016 852 1                  |                                    |  |
|                                                                                                                                                              | 32 | C146 10R016 802 1                 |                               | C146 21R016 802 1                  |                                    |  |
|                                                                                                                                                              | 25 |                                   | C146 10R016 852 8             |                                    | C146 21R016 852 8                  |  |
|                                                                                                                                                              | 32 |                                   | C146 10R016 802 8             |                                    | C146 21R016 802 8                  |  |
|                                                                           | 40 |                                   |                               | C146 10R016 803 8                  | C146 21R016 803 8                  |  |
|                                                                                                                                                              |    |                                   | C146 10F016 000 1             |                                    |                                    |  |
|                                                                                                                                                              |    |                                   |                               |                                    |                                    |  |
|                                                                                                                                                              |    |                                   |                               |                                    |                                    |  |
|  <p>1 Geschlossen bei einem Kabelausgang<br/>1 closed if single entry</p> | 25 | 1 Kabelabgang / Single side entry |                               | 2 Kabelabgänge / Double side entry |                                    |  |
|                                                                                                                                                              | 25 | C146 10N016 500 1                 | C146 10N016 501 2             | C146 10N016 600 1                  | C146 10N016 601 2                  |  |
|                                                                                                                                                              | 25 |                                   |                               | C146 10N016 700 1 <sup>(r+u)</sup> | C146 10N016 701 2 <sup>(r+u)</sup> |  |
|                                                                                                                                                              | 32 |                                   | C146 10N016 500 2             |                                    | C146 10N016 600 2                  |  |
| 32                                                                                                                                                           |    |                                   |                               |                                    | C146 10N016 700 2 <sup>(r+u)</sup> |  |

<sup>(r+u)</sup> rechts und unten / right and bottom

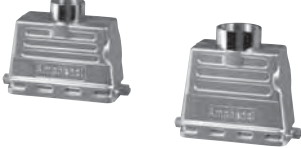
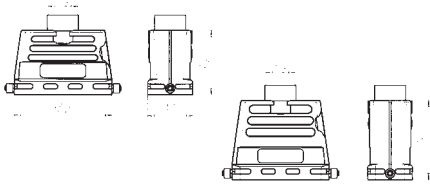
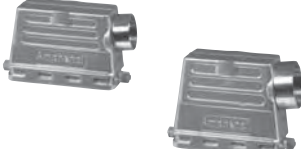
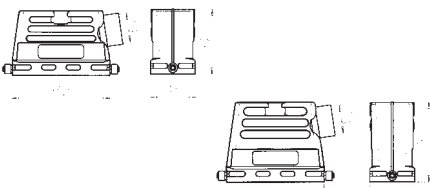

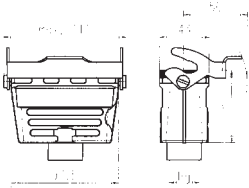

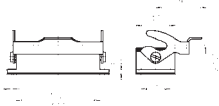

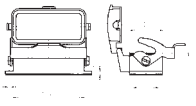

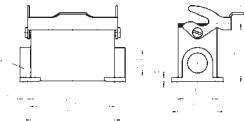

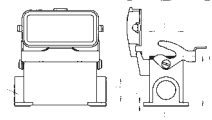
Bei Sockelgehäusen Abgang rechts dargestellt / housings are shown with right outlet

**C 146 E** 16 pol.  
**C 146 M** 5 Module  
**C 146 D** 40 pol.  
**C 146 DD** 72 pol.  
**C 146 HSE** 6 pol.  
**C 146 HvE** 6 pol.  
**C 146 EE** 32 pol.  
 Gehäuse / Housings

Gehäuse für Längsbügelverriegelung nach  
 DIN EN 175 301 - 801 (DIN 43 652)

- leichtes Bedienen auch bei seitlichem Kabelabgang
- Schutzkappe am Gehäuseunterteil verriegelbar
- fliegende Verbindung möglich

**PG-Gewinde**  
**PG-thread**

| Bezeichnung - Abbildung<br><i>Description - Figure</i>                                                                                                                         | Maßzeichnung<br><i>Drawing</i>                                                      | PG    | Bestell Nr. / Part No.            |                                  |                                    |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------|-----------------------------------|----------------------------------|------------------------------------|
|                                                                                                                                                                                |                                                                                     |       | Niedrige Bauform / Low profile    | Hohe Bauform / High profile      |                                    |
| <b>Gehäuseoberteile / Hoods</b>                                                                                                                                                |                                                                                     |       |                                   |                                  |                                    |
| Tüllengehäuse, Abgang oben<br><i>Hood, top entry</i><br>                                      |    | 21    | C146 10G016 606 1                 |                                  |                                    |
|                                                                                                                                                                                |                                                                                     | 29    | C146 10G016 607 1                 |                                  |                                    |
|                                                                                                                                                                                |                                                                                     | 21    |                                   | C146 10G016 606 8                |                                    |
|                                                                                                                                                                                |                                                                                     | 29    |                                   | C146 10G016 607 8                |                                    |
| Tüllengehäuse, Abgang Seite<br><i>Hood, side entry</i><br>                                   |    | 21    | C146 10G016 506 1                 |                                  |                                    |
|                                                                                                                                                                                |                                                                                     | 29    | C146 10G016 507 1                 |                                  |                                    |
|                                                                                                                                                                                |                                                                                     | 21    |                                   | C146 10G016 506 8                |                                    |
|                                                                                                                                                                                |                                                                                     | 29    |                                   | C146 10G016 507 8                |                                    |
| <b>Gehäuseunterteile / Housings</b>                                                                                                                                            |                                                                                     |       |                                   |                                  |                                    |
| Kupplungsgehäuse<br><i>Hood, coupling application</i><br>                                   |  | h     |                                   |                                  |                                    |
|                                                                                                                                                                                |                                                                                     | 62    | 21                                | C146 10G016 804 1                |                                    |
|                                                                                                                                                                                |                                                                                     | 62    | 29                                | C146 10G016 805 1                |                                    |
|                                                                                                                                                                                |                                                                                     | 76    | 21                                |                                  | C146 10G016 804 8                  |
|                                                                                                                                                                                |                                                                                     | 76    | 29                                |                                  | C146 10G016 805 8                  |
| Anbaugehäuse <sup>1)</sup><br><i>Housing, bulkhead mounting <sup>1)</sup></i><br>           |  | -     | C146 10F016 001 1                 |                                  |                                    |
| Anbaugehäuse mit Deckel <sup>1)</sup><br><i>Housing with spring cover <sup>1)</sup></i><br> |  | -     | C146 10F016 003 1                 |                                  |                                    |
| Sockelgehäuse<br><i>Housing</i><br>                                                         |  | h     | 1 Kabelabgang / Single side entry |                                  |                                    |
|                                                                                                                                                                                |                                                                                     | 64/77 | 21                                | C146 10F016 802 1                | C146 10F040 803 2                  |
|                                                                                                                                                                                |                                                                                     | 64/77 | 21                                | C146 10F016 502 1 <sup>(*)</sup> | C146 10F040 503 2 <sup>(*)</sup>   |
|                                                                                                                                                                                |                                                                                     | 77    | 29                                |                                  | C146 10F040 802 2                  |
|                                                                                                                                                                                |                                                                                     | 77    | 29                                |                                  | C146 10F040 502 2 <sup>(*)</sup>   |
|                                                                                                                                                                                |                                                                                     |       |                                   |                                  | 2 Kabelabgänge / Double side entry |
|                                                                                                                                                                                |                                                                                     | 64    | 21                                | C146 10F016 602 1                | C146 10F040 603 2                  |
|                                                                                                                                                                                |                                                                                     | 77    | 29                                |                                  | C146 10F040 602 2                  |
| Sockelgehäuse mit Deckel<br><i>Housing with spring cover</i><br>                            |  | h     | 1 Kabelabgang / Single side entry |                                  |                                    |
|                                                                                                                                                                                |                                                                                     | 64/77 | 21                                | C146 10F016 806 1                | C146 10F040 807 2                  |
|                                                                                                                                                                                |                                                                                     | 64/77 | 21                                | C146 10F016 506 1 <sup>(*)</sup> | C146 10F040 507 2 <sup>(*)</sup>   |
|                                                                                                                                                                                |                                                                                     | 77    | 29                                |                                  | C146 10F040 806 2                  |
|                                                                                                                                                                                |                                                                                     | 77    | 29                                |                                  | C146 10F040 506 2 <sup>(*)</sup>   |
|                                                                                                                                                                                |                                                                                     |       |                                   |                                  | 2 Kabelabgänge / Double side entry |
|                                                                                                                                                                                |                                                                                     | 64/77 | 21                                | C146 10F016 606 1                | C146 10F040 607 2                  |
|                                                                                                                                                                                |                                                                                     | 77    | 29                                |                                  | C146 10F040 606 2                  |

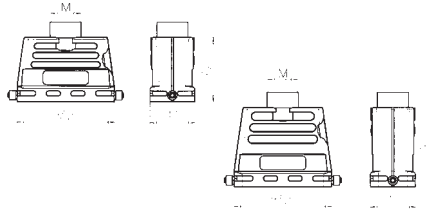
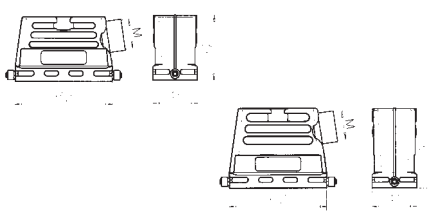
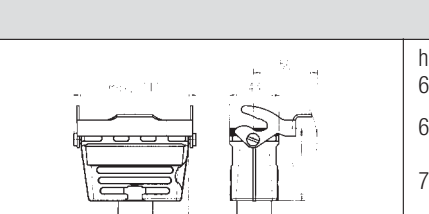
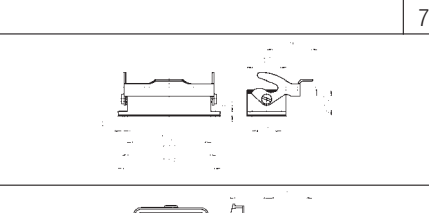
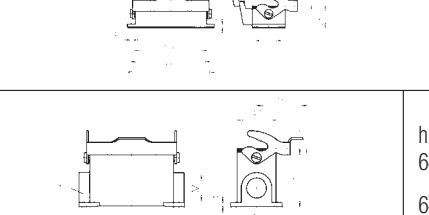
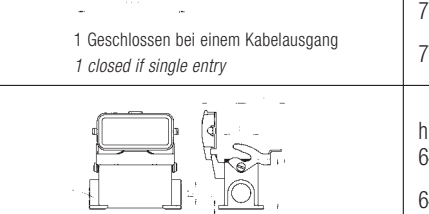
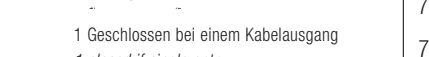
<sup>1)</sup> incl. Flachdichtung / incl. gasket

<sup>(\*)</sup> links / left

**housings for 1 locking-lever-system according to  
 DIN EN 175 301 - 801 (DIN 43 652)**

- also easy to use for side entry
- cover for housings lockable
- cable to cable possible

**Metrisches Gewinde  
 Metric thread**

| Maßzeichnung<br>Drawing                                                                                                                                     | M     | Bestell Nr. / Part No.           |                                   | Bestell Nr. / Part No.             |                                    |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|----------------------------------|-----------------------------------|------------------------------------|------------------------------------|--|
|                                                                                                                                                             |       | Niedrige Bauform/<br>Low profile | Hohe Bauform/<br>High profile     | Niedrige Bauform/<br>Low profile   | Hohe Bauform/<br>High profile      |  |
|                                                                                                                                                             |       | mit Stützen / with stud          |                                   | ohne Stützen / without stud        |                                    |  |
|                                                                            | 25    | C146 10R016 656 1                |                                   | C146 21R016 656 1                  |                                    |  |
|                                                                                                                                                             | 32    | C146 10R016 606 1                |                                   | C146 21R016 606 1                  |                                    |  |
|                                                                                                                                                             | 25    |                                  | C146 10R016 656 8                 |                                    | C146 21R016 656 8                  |  |
|                                                                                                                                                             | 32    |                                  | C146 10R016 606 8                 |                                    | C146 21R016 606 8                  |  |
|                                                                           | 40    |                                  | C146 10R016 607 8                 |                                    | C146 21R016 607 8                  |  |
|                                                                                                                                                             | 25    | C146 10R016 556 1                |                                   | C146 21R016 556 1                  |                                    |  |
|                                                                                                                                                             | 32    | C146 10R016 506 1                |                                   | C146 21R016 506 1                  |                                    |  |
|                                                                                                                                                             | 25    |                                  | C146 10R016 556 8                 |                                    | C146 21R016 556 8                  |  |
|                                                                          | 32    |                                  | C146 10R016 506 8                 |                                    | C146 21R016 506 8                  |  |
|                                                                                                                                                             | 40    |                                  | C146 10R016 507 8                 |                                    | C146 21R016 507 8                  |  |
|                                                                                                                                                             | h     | 25                               | C146 10R016 854 1                 |                                    | C146 21R016 854 1                  |  |
|                                                                                                                                                             | 62    | 32                               | C146 10R016 804 1                 |                                    | C146 21R016 804 1                  |  |
|                                                                          | 76    | 25                               | C146 10R016 854 8                 |                                    | C146 21R016 854 8                  |  |
|                                                                                                                                                             | 76    | 32                               | C146 10R016 804 8                 |                                    | C146 21R016 804 8                  |  |
|                                                                                                                                                             | 76    | 40                               | C146 10R016 805 8                 |                                    | C146 21R016 805 8                  |  |
|                                                                                                                                                             | -     | -                                | C146 10F016 001 1                 |                                    |                                    |  |
|                                                                          | -     | C146 10F016 003 1                |                                   |                                    |                                    |  |
|                                                                                                                                                             | h     | 25                               | 1 Kabelabgang / Single side entry |                                    | 2 Kabelabgänge / Double side entry |  |
|  <p>1 Geschlossen bei einem Kabelabgang<br/>1 closed if single entry</p> | 64/77 | C146 10N016 802 1                | C146 10N016 803 2                 | C146 10N016 602 1                  | C146 10N016 603 2                  |  |
|                                                                                                                                                             | 64/77 | C146 10N016 502 1 <sup>(†)</sup> | C146 10N016 503 2 <sup>(†)</sup>  | C146 10N016 702 1 <sup>(†+u)</sup> | C146 10N016 703 2 <sup>(†+u)</sup> |  |
|                                                                                                                                                             | 77    |                                  | C146 10N016 802 2                 |                                    | C146 10N016 602 2                  |  |
|                                                                                                                                                             | 77    |                                  | C146 10N016 502 2 <sup>(†)</sup>  |                                    | C146 10N016 702 2 <sup>(†+u)</sup> |  |
|  <p>1 Geschlossen bei einem Kabelabgang<br/>1 closed if single entry</p> | h     | 25                               | 1 Kabelabgang / Single side entry |                                    | 2 Kabelabgänge / Double side entry |  |
|                                                                                                                                                             | 64/77 | C146 10N016 806 1                | C146 10N016 807 2                 | C146 10N016 606 1                  | C146 10N016 607 2                  |  |
|                                                                                                                                                             | 64/77 | C146 10N016 506 1 <sup>(†)</sup> | C146 10N016 507 2 <sup>(†)</sup>  | C146 10N016 708 1 <sup>(†+u)</sup> | C146 10N016 709 2 <sup>(†+u)</sup> |  |
|                                                                                                                                                             | 77    |                                  | C146 10N016 806 2                 |                                    | C146 10N016 606 2                  |  |
|                                                                                                                                                             | 77    |                                  | C146 10N016 506 2 <sup>(†)</sup>  |                                    | C146 10N016 708 2 <sup>(†+u)</sup> |  |

<sup>(†)</sup> links / left

<sup>(†+u)</sup> rechts und unten / right and bottom


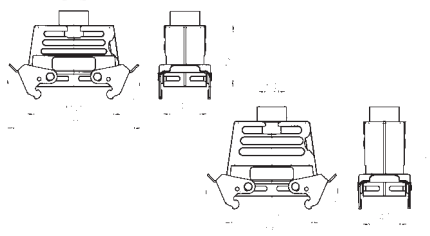

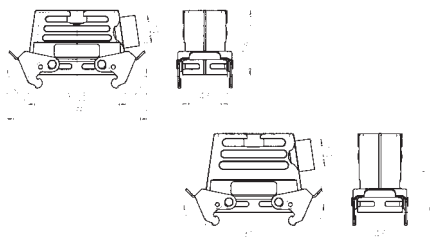

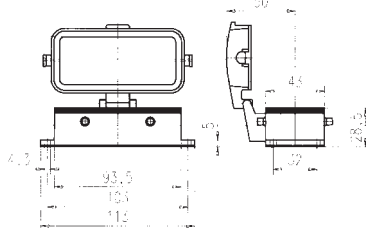

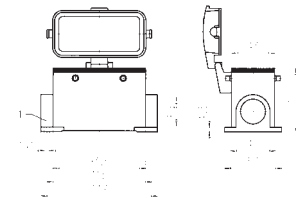

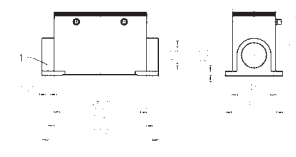
Bei Sockelgehäusen Abgang rechts dargestellt / housings are shown with right outlet

**C 146 E** 16 pol.  
**C 146 M** 5 Module  
**C 146 D** 40 pol.  
**C 146 DD** 72 pol.  
**C 146 HSE** 6 pol.  
**C 146 HvE** 6 pol.  
**C 146 EE** 32 pol.  
 Gehäuse / Housings

**Tüllengehäuse mit Querbügel nach  
 DIN EN 175 301 - 801 (DIN 43 652)**

- sichere 4-Punkt Verriegelung
- Gehäuseunterteil mit Schutzdeckel
- keine Bügel am Gehäuseunterteil

**PG-Gewinde  
 PG-thread**

| Bezeichnung - Abbildung<br><i>Description - Figure</i>                                                                                                                          | Maßzeichnung<br><i>Drawing</i>                                                                                                                               | PG    | Bestell Nr. / Part No.             |                                  |                                    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|------------------------------------|----------------------------------|------------------------------------|
|                                                                                                                                                                                 |                                                                                                                                                              |       | Niedrige Bauform / Low profile     | Hohe Bauform / High profile      |                                    |
| <b>Gehäuseoberteile / Hoods</b>                                                                                                                                                 |                                                                                                                                                              |       |                                    |                                  |                                    |
| Tüllengehäuse, Abgang oben<br><i>Hood, top entry</i><br>                                       |                                                                             | 21    | C146 10G016 602 1                  |                                  |                                    |
|                                                                                                                                                                                 |                                                                                                                                                              | 29    | C146 10G016 603 1                  |                                  |                                    |
|                                                                                                                                                                                 |                                                                                                                                                              | 21    |                                    | C146 10G016 602 8                |                                    |
|                                                                                                                                                                                 |                                                                                                                                                              | 29    |                                    | C146 10G016 603 8                |                                    |
| Tüllengehäuse, Abgang Seite<br><i>Hood, side entry</i><br>                                    |                                                                            | 21    | C146 10G016 502 1                  |                                  |                                    |
|                                                                                                                                                                                 |                                                                                                                                                              | 29    | C146 10G016 503 1                  |                                  |                                    |
|                                                                                                                                                                                 |                                                                                                                                                              | 21    |                                    | C146 10G016 502 8                |                                    |
|                                                                                                                                                                                 |                                                                                                                                                              | 29    |                                    | C146 10G016 503 8                |                                    |
| <b>Gehäuseunterteile / Housings</b>                                                                                                                                             |                                                                                                                                                              |       |                                    |                                  |                                    |
| Anbaugehäuse mit Deckel <sup>1)</sup><br><i>Housing, with spring cover <sup>1)</sup></i><br> |                                                                           | –     | C146 10F016 002 1                  |                                  |                                    |
| Sockelgehäuse, mit Deckel<br><i>Housing, with spring cover</i><br>                           |  <p>1 Geschlossen bei einem Kabelausgang<br/>1 closed if single entry</p> | h     | 1 Kabelabgang / Single side entry  |                                  |                                    |
|                                                                                                                                                                                 |                                                                                                                                                              | 64/77 | 21                                 | C146 10F016 804 1                | C146 10F040 805 2                  |
|                                                                                                                                                                                 |                                                                                                                                                              | 64/77 | 21                                 | C146 10F016 504 1 <sup>(1)</sup> | C146 10F040 505 2 <sup>(1)</sup>   |
|                                                                                                                                                                                 |                                                                                                                                                              | 77    | 29                                 |                                  | C146 10F040 804 2                  |
|                                                                                                                                                                                 |                                                                                                                                                              |       | 2 Kabelabgänge / Double side entry |                                  |                                    |
|                                                                                                                                                                                 |                                                                                                                                                              | h     | 21                                 | C146 10F016 604 1                | C146 10F040 605 2                  |
|                                                                                                                                                                                 |                                                                                                                                                              | 77    | 29                                 |                                  | C146 10F040 604 2                  |
| Sockelgehäuse<br><i>Housing</i><br>                                                          |  <p>1 Geschlossen bei einem Kabelausgang<br/>1 closed if single entry</p> | h     | 1 Kabelabgang / Single side entry  |                                  |                                    |
|                                                                                                                                                                                 |                                                                                                                                                              | 77    | 21                                 |                                  | C146 10F016 509 2                  |
|                                                                                                                                                                                 |                                                                                                                                                              | 77    | 29                                 |                                  | C146 10F016 508 2                  |
|                                                                                                                                                                                 |                                                                                                                                                              |       |                                    |                                  | 2 Kabelabgänge / Double side entry |
|                                                                                                                                                                                 |                                                                                                                                                              | h     | 21                                 |                                  | C146 10F016 609 2                  |
|                                                                                                                                                                                 |                                                                                                                                                              | 77    | 29                                 |                                  | C146 10F016 608 2                  |

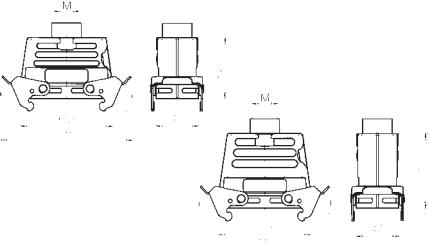
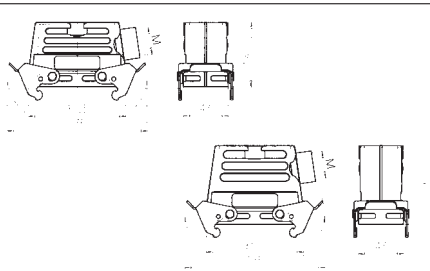
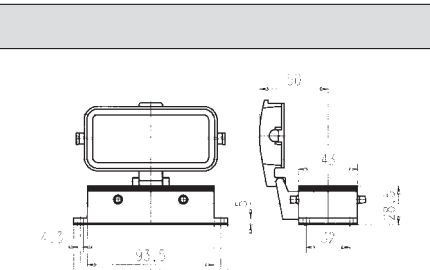
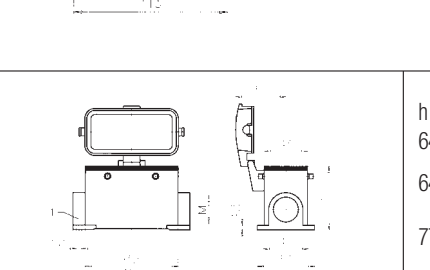
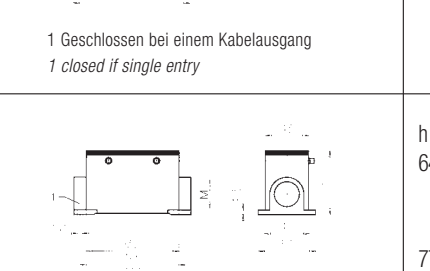
<sup>1)</sup>incl. Flachdichtung / incl. gasket

Bei Sockelgehäusen Abgang rechts dargestellt / housings are shown with right out

hoods with 2 locking-levers according to  
DIN EN 175 301 - 801 (DIN 43 652)

- secured 4 point locking
- housing with cover
- no locking levers at the housings

**Metrisches Gewinde**  
**Metric thread**

| Maßzeichnung<br>Drawing                                                                                                                                      | M     | Bestell Nr. / Part No.            |                                  | Bestell Nr. / Part No.             |                                    |                                    |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-----------------------------------|----------------------------------|------------------------------------|------------------------------------|------------------------------------|
|                                                                                                                                                              |       | Niedrige Bauform/<br>Low profile  | Hohe Bauform/<br>High profile    | Niedrige Bauform/<br>Low profile   | Hohe Bauform/<br>High profile      |                                    |
|                                                                                                                                                              |       | mit Stützen / with stud           |                                  | ohne Stützen / without stud        |                                    |                                    |
|                                                                             | 25    | C146 10R016 652 1                 |                                  | C146 21R016 652 1                  |                                    |                                    |
|                                                                                                                                                              | 32    | C146 10R016 602 1                 |                                  | C146 21R016 602 1                  |                                    |                                    |
|                                                                                                                                                              | 25    |                                   | C146 10R016 652 8                |                                    | C146 21R016 652 8                  |                                    |
|                                                                                                                                                              | 32    |                                   | C146 10R016 602 8                |                                    | C146 21R016 602 8                  |                                    |
|                                                                            | 40    |                                   | C146 10R016 603 8                |                                    | C146 21R016 603 8                  |                                    |
|                                                                                                                                                              | 25    | C146 10R016 552 1                 |                                  | C146 21R016 552 1                  |                                    |                                    |
|                                                                                                                                                              | 32    | C146 10R016 502 1                 |                                  | C146 21R016 502 1                  |                                    |                                    |
|                                                                                                                                                              | 25    |                                   | C146 10R016 552 8                |                                    | C146 21R016 552 8                  |                                    |
|                                                                           | 32    |                                   | C146 10R016 502 8                |                                    | C146 21R016 502 8                  |                                    |
|                                                                                                                                                              | 40    |                                   | C146 10R016 503 8                |                                    | C146 21R016 503 8                  |                                    |
|                                                                                                                                                              |       |                                   | C146 10F016 002 1                |                                    |                                    |                                    |
|                                                                                                                                                              |       |                                   |                                  |                                    |                                    |                                    |
|  <p>1 Geschlossen bei einem Kabelausgang<br/>1 closed if single entry</p> | h     | 1 Kabelabgang / Single side entry |                                  | 2 Kabelabgänge / Double side entry |                                    |                                    |
|                                                                                                                                                              | 64/77 | 25                                | C146 10N016 804 1                | C146 10N016 805 2                  | C146 10N016 604 1                  | C146 10N016 605 2                  |
|                                                                                                                                                              | 64/77 | 25                                | C146 10N016 504 1 <sup>(†)</sup> | C146 10N016 505 2 <sup>(†)</sup>   | C146 10N016 808 1 <sup>(†+u)</sup> | C146 10N016 809 2 <sup>(†+u)</sup> |
|                                                                                                                                                              | 77    | 32                                |                                  | C146 10N016 804 2                  |                                    | C146 10N016 604 2                  |
|  <p>1 Geschlossen bei einem Kabelausgang<br/>1 closed if single entry</p> | 77    | 32                                |                                  | C146 10N016 504 2 <sup>(†)</sup>   | C146 10N016 808 2 <sup>(†+u)</sup> |                                    |
|                                                                                                                                                              | h     | 1 Kabelabgang / Single side entry |                                  | 2 Kabelabgänge / Double side entry |                                    |                                    |
|                                                                                                                                                              | 64/77 | 25                                | C146 10N016 508 1                | C146 10N016 509 2                  | C146 10N016 608 1                  | C146 10N016 609 2                  |
|                                                                                                                                                              | 77    | 32                                |                                  | C146 10N016 508 2                  |                                    | C146 10N016 608 2                  |

<sup>(†)</sup> links / left


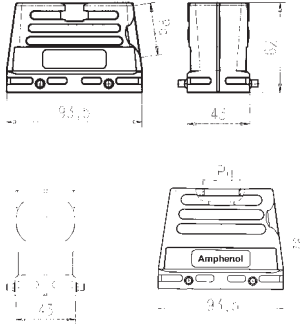

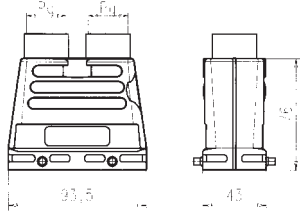

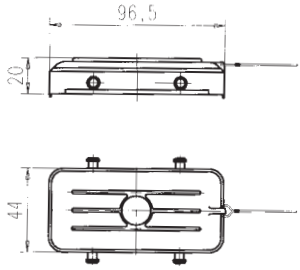
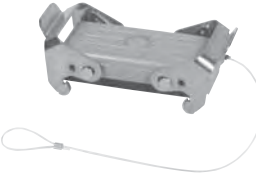
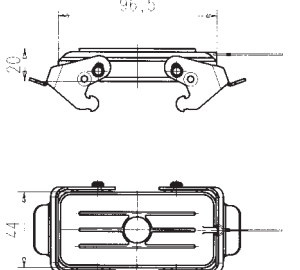
<sup>(†+u)</sup> rechts und unten / right and bottom

**C 146 E** 16 pol.  
**C 146 M** 5 Module  
**C 146 D** 40 pol.  
**C 146 DD** 72 pol.  
**C 146 HSE** 6 pol.  
**C 146 HvE** 6 pol.  
**C 146 EE** 32 pol.  
 Gehäuse / Housings

Sondergehäuse für Querbügelverriegelung, nach  
 DIN EN 175 301 - 801 (DIN 43 652)

*special housings for 2 locking-lever system,  
 according to DIN EN 175 301 - 801 (DIN 43 652)*

**PG-Gewinde**  
**PG-thread**

| Bezeichnung - Abbildung<br><i>Description - Figure</i>                                                                                                    | Maßzeichnung<br><i>Drawing</i>                                                      | PG | Kabelabgang<br><i>cabl e outlet</i>          | Bestell Nr. / <i>Part No.</i>         |                                        |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----|----------------------------------------------|---------------------------------------|----------------------------------------|
|                                                                                                                                                           |                                                                                     |    |                                              | Niedrige Bauform / <i>Low profile</i> | Hohe Bauform / <i>High profile</i>     |
| <b>Gehäuseoberteile / Hoods</b>                                                                                                                           |                                                                                     |    |                                              |                                       |                                        |
| Tüllengehäuse ohne Stutzen<br><i>Hood without stud</i><br><br>           |    | 21 | Oben / <i>top</i><br><br>Seite / <i>side</i> | C146 21G016 600 1                     |                                        |
|                                                                                                                                                           |                                                                                     |    |                                              |                                       |                                        |
| Tüllengehäuse, 2 x Abgang Oben<br><i>Hood, 2 top entry</i><br><br>     |  | 21 |                                              |                                       | C146 21G016 601 8<br>C146 21G016 501 8 |
|                                                                                                                                                           |                                                                                     |    |                                              |                                       |                                        |
| <b>Schutzkappen / Protective cover</b>                                                                                                                    |                                                                                     |    |                                              |                                       |                                        |
| Schutzkappe für Gehäuseunterteile<br><i>Cover for housings</i><br><br> |  | -  |                                              |                                       | C146 10Z016 100 1                      |
|                                                                                                                                                           |                                                                                     |    |                                              |                                       |                                        |
| Schutzkappe für Gehäuseoberteile<br><i>Cover for hoods</i><br><br>     |  | -  |                                              |                                       | C146 10Z016 200 1                      |
|                                                                                                                                                           |                                                                                     |    |                                              |                                       |                                        |

Verschraubung für Tüllen- und Sockelgehäuse siehe Seite 170-173 / *gland bushings for hoods and housing see page 170-173*


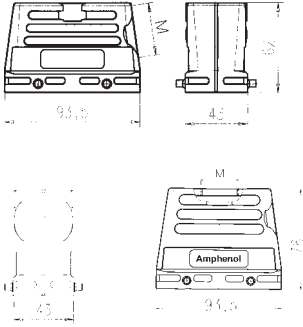

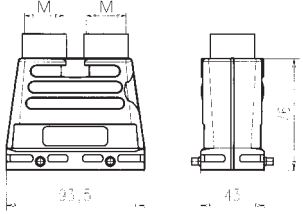

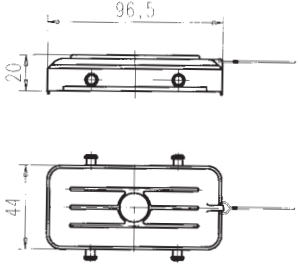
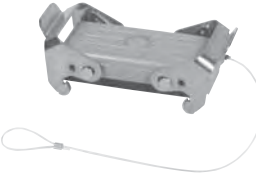
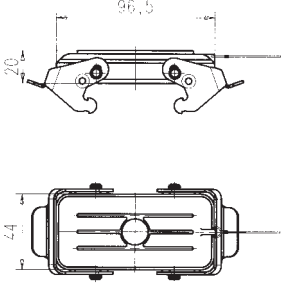


**C 146 E** 16 pol.  
**C 146 M** 5 Module  
**C 146 D** 40 pol.  
**C 146 DD** 72 pol.  
**C 146 HSE** 6 pol.  
**C 146 HvE** 6 pol.  
**C 146 EE** 32 pol.  
 Gehäuse / Housings

**Sondergehäuse für Querbügelverriegelung, nach  
 DIN EN 175 301 - 801 (DIN 43 652)**

*special housings for 2 locking-lever system,  
 according to DIN EN 175 301 - 801 (DIN 43 652)*

**Metrisches Gewinde  
 Metric thread**

| Bezeichnung - Abbildung<br><i>Description - Figure</i>                                                                                                    | Maßzeichnung<br><i>Drawing</i>                                                      | M  | Kabelabgang<br><i>cabl e outlet</i> | Bestell Nr. / <i>Part No.</i>         |                                    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----|-------------------------------------|---------------------------------------|------------------------------------|
|                                                                                                                                                           |                                                                                     |    |                                     | Niedrige Bauform / <i>Low profile</i> | Hohe Bauform / <i>High profile</i> |
| <b>Gehäuseoberteile / Hoods</b>                                                                                                                           |                                                                                     |    |                                     |                                       |                                    |
| Tüllengehäuse ohne Stutzen<br><i>Hood without stud</i><br><br>           |    | 25 | Oben / <i>top</i>                   | <a href="#">C146 21R016 650 1</a>     | <a href="#">C146 21R016 650 8</a>  |
|                                                                                                                                                           |                                                                                     |    | Seite / <i>side</i>                 | <a href="#">C146 21R016 550 1</a>     | <a href="#">C146 21R016 550 8</a>  |
|                                                                                                                                                           |                                                                                     | 32 | Oben / <i>top</i>                   | <a href="#">C146 21R016 600 1</a>     | <a href="#">C146 21R016 600 8</a>  |
|                                                                                                                                                           |                                                                                     |    | Seite / <i>side</i>                 | <a href="#">C146 21R016 500 1</a>     | <a href="#">C146 21R016 500 8</a>  |
| Tüllengehäuse, 2 x Abgang Oben<br><i>Hood, 2 top entry</i><br><br>     |  | 25 |                                     |                                       | <a href="#">C146 10R016 910 8</a>  |
|                                                                                                                                                           |                                                                                     | 32 |                                     |                                       | <a href="#">C146 10R016 902 8</a>  |
| <b>Schutzkappen / Protective cover</b>                                                                                                                    |                                                                                     |    |                                     |                                       |                                    |
| Schutzkappe für Gehäuseunterteile<br><i>Cover for housings</i><br><br> |  | —  |                                     | <a href="#">C146 10Z016 100 1</a>     |                                    |
| Schutzkappe für Gehäuseoberteile<br><i>Cover for hoods</i><br><br>     |  | —  |                                     | <a href="#">C146 10Z016 200 1</a>     |                                    |

Verschraubung für Tüllen- und Sockelgehäuse siehe Seite 170-173 / *gland bushings for hoods and housing see page 170-173*


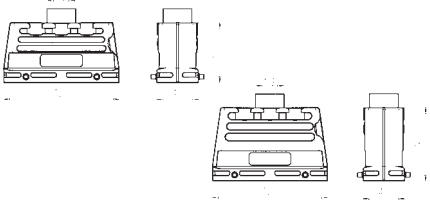

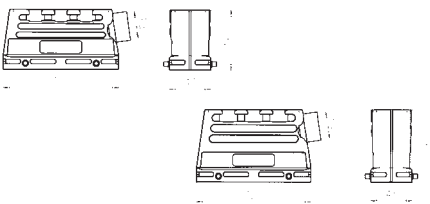

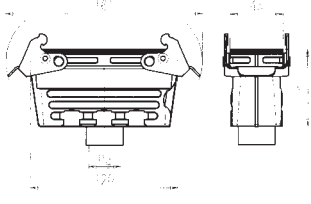

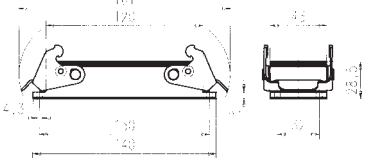

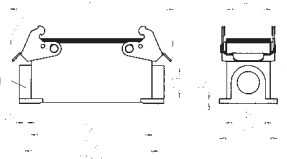
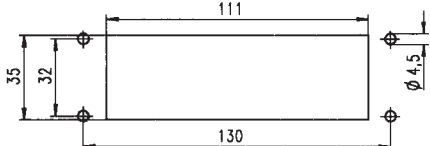
C 146 E 24 pol.  
 C 146 M 7 Module  
 C 146 D 64 pol.  
 C 146 DD 108 pol.  
 C 146 HvE 10 pol.  
 C 146 EE 46 pol.

Gehäuse / Housings

Gehäuse für Querbügelverriegelung nach  
 DIN EN 175 301 - 801 (DIN 43 652)

- sichere 4-Punkt Verriegelung
- bevorzugt bei seitlicher Anreihung
- fliegende Verbindung möglich

PG-Gewinde  
 PG-thread

| Bezeichnung - Abbildung<br><i>Description - Figure</i>                                                                                                               | Maßzeichnung<br><i>Drawing</i>                                                      | PG    | Bestell Nr. / Part No.             |                             |                   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------|------------------------------------|-----------------------------|-------------------|
|                                                                                                                                                                      |                                                                                     |       | Niedrige Bauform / Low profile     | Hohe Bauform / High profile |                   |
| <b>Gehäuseoberteile / Hoods</b>                                                                                                                                      |                                                                                     |       |                                    |                             |                   |
| Tüllengehäuse, Abgang oben<br><i>Hood, top entry</i><br>                            |    | 21    | C146 10G024 600 1                  |                             |                   |
|                                                                                                                                                                      |                                                                                     | 29    | C146 10G024 601 1                  |                             |                   |
|                                                                                                                                                                      |                                                                                     | 21    |                                    | C146 10G024 600 8           |                   |
|                                                                                                                                                                      |                                                                                     | 29    |                                    | C146 10G024 601 8           |                   |
| Tüllengehäuse, Abgang Seite<br><i>Hood, side entry</i><br>                         |   | 21    | C146 10G024 500 1                  |                             |                   |
|                                                                                                                                                                      |                                                                                     | 29    | C146 10G024 501 1                  |                             |                   |
|                                                                                                                                                                      |                                                                                     | 21    |                                    | C146 10G024 500 8           |                   |
|                                                                                                                                                                      |                                                                                     | 29    |                                    | C146 10G024 501 8           |                   |
| <b>Gehäuseunterteile / Housings</b>                                                                                                                                  |                                                                                     |       |                                    |                             |                   |
| Kupplungsgehäuse<br><i>Hood, coupling application</i><br>                         |  | h     |                                    |                             |                   |
|                                                                                                                                                                      |                                                                                     | 62    | 21                                 | C146 10G024 802 1           |                   |
|                                                                                                                                                                      |                                                                                     | 62    | 29                                 | C146 10G024 803 1           |                   |
|                                                                                                                                                                      |                                                                                     | 76    | 21                                 |                             | C146 10G024 802 8 |
| 76                                                                                                                                                                   | 29                                                                                  |       | C146 10G024 803 8                  |                             |                   |
| Anbaugehäuse <sup>1)</sup><br><i>Housing, bulkhead mounting <sup>1)</sup></i><br> |  |       | C146 10F024 000 1                  |                             |                   |
| Sockelgehäuse<br><i>Housing</i><br>                                               |  | h     | 1 Kabelabgang / Single side entry  |                             |                   |
|                                                                                                                                                                      |                                                                                     | 64/80 | 21                                 | C146 10F024 500 1           | C146 10F064 501 2 |
|                                                                                                                                                                      |                                                                                     | 80    | 29                                 |                             | C146 10F064 500 2 |
|                                                                                                                                                                      |                                                                                     | h     | 2 Kabelabgänge / Double side entry |                             |                   |
|                                                                                                                                                                      |                                                                                     | 64/80 | 21                                 | C146 10F024 600 1           | C146 10F064 601 2 |
|                                                                                                                                                                      |                                                                                     | 80    | 29                                 |                             | C146 10F064 600 2 |
| <b>Montageausschnitt für Anbaugehäuse / Panel cut out for housing bulkhead mounting</b>                                                                              |                                                                                     |       |                                    |                             |                   |
|                                                                                   |                                                                                     |       |                                    |                             |                   |

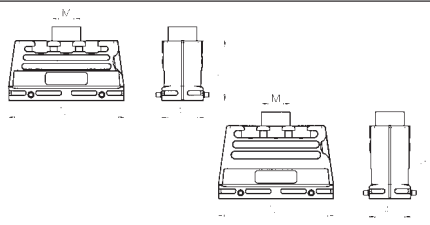
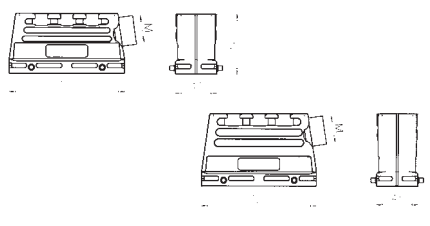
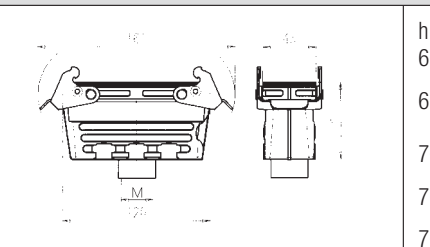
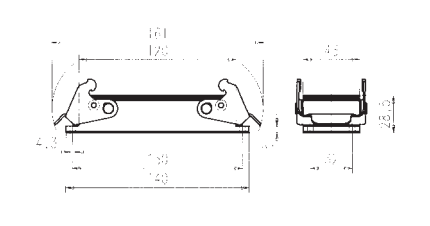
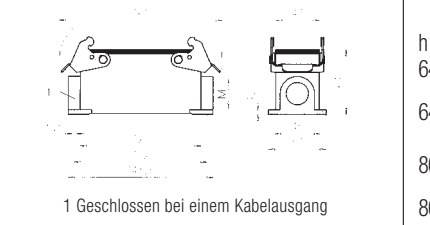
<sup>1)</sup> incl. Flachdichtung / incl. gasket

Verschraubung für Tüllen- und Sockelgehäuse siehe Seite 170-173 / gland bushings for hoods and housing see page 170-173

**housings for 2 locking-lever-system according to  
 DIN EN 175 301 - 801 (DIN 43 652)**

- **secured 4 point locking**
- **preferred for side by side mounting**
- **cable to cable possible**

**Metrisches Gewinde  
 Metric thread**

| Maßzeichnung<br>Drawing                                                                                                                                      | M     | Bestell Nr. / Part No.           |                                   | Bestell Nr. / Part No.           |                                    |                                    |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|----------------------------------|-----------------------------------|----------------------------------|------------------------------------|------------------------------------|
|                                                                                                                                                              |       | Niedrige Bauform/<br>Low profile | Hohe Bauform/<br>High profile     | Niedrige Bauform/<br>Low profile | Hohe Bauform/<br>High profile      |                                    |
|                                                                                                                                                              |       | mit Stützen / with stud          |                                   | ohne Stützen / without stud      |                                    |                                    |
|                                                                             | 25    | C146 10R024 650 1                |                                   | C146 21R024 650 1                |                                    |                                    |
|                                                                                                                                                              | 32    | C146 10R024 600 1                |                                   | C146 21R024 600 1                |                                    |                                    |
|                                                                                                                                                              | 25    |                                  | C146 10R024 650 8                 |                                  | C146 21R024 650 8                  |                                    |
|                                                                                                                                                              | 32    |                                  | C146 10R024 600 8                 |                                  | C146 21R024 600 8                  |                                    |
|                                                                                                                                                              | 40    |                                  | C146 10R024 601 8                 |                                  | C146 21R024 601 8                  |                                    |
|                                                                            | 25    | C146 10R024 550 1                |                                   | C146 21R024 550 1                |                                    |                                    |
|                                                                                                                                                              | 32    | C146 10R024 500 1                |                                   | C146 21R024 500 1                |                                    |                                    |
|                                                                                                                                                              | 25    |                                  | C146 10R024 550 8                 |                                  | C146 21R024 550 8                  |                                    |
|                                                                                                                                                              | 32    |                                  | C146 10R024 500 8                 |                                  | C146 21R024 500 8                  |                                    |
|                                                                                                                                                              | 40    |                                  | C146 10R024 501 8                 |                                  | C146 21R024 501 8                  |                                    |
|                                                                           | h     |                                  |                                   |                                  |                                    |                                    |
|                                                                                                                                                              | 62    | 25                               | C146 10R024 852 1                 |                                  | C146 21R024 852 1                  |                                    |
|                                                                                                                                                              | 62    | 32                               | C146 10R024 802 1                 |                                  | C146 21R024 802 1                  |                                    |
|                                                                                                                                                              | 76    | 25                               |                                   | C146 10R024 852 8                |                                    | C146 21R024 852 8                  |
|                                                                                                                                                              | 76    | 32                               |                                   | C146 10R024 802 8                |                                    | C146 21R024 802 8                  |
| 76                                                                                                                                                           | 40    |                                  | C146 10R024 803 8                 |                                  | C146 21R024 803 8                  |                                    |
|                                                                           | —     | C146 10F024 000 1                |                                   |                                  |                                    |                                    |
|                                                                                                                                                              |       |                                  | 1 Kabelabgang / Single side entry |                                  | 2 Kabelabgänge / Double side entry |                                    |
|  <p>1 Geschlossen bei einem Kabelausgang<br/>1 closed if single entry</p> | h     |                                  |                                   |                                  |                                    |                                    |
|                                                                                                                                                              | 64/80 | 25                               | C146 10N024 500 1                 | C146 10N024 501 2                | C146 10N024 600 1                  | C146 10N024 601 2                  |
|                                                                                                                                                              | 64/80 | 25                               |                                   |                                  | C146 10N024 700 1 <sup>(r+u)</sup> | C146 10N024 701 2 <sup>(r+u)</sup> |
|                                                                                                                                                              | 80    | 32                               |                                   | C146 10N024 500 2                |                                    | C146 10N024 600 2                  |
|                                                                                                                                                              | 80    | 32                               |                                   |                                  |                                    | C146 10N024 700 2 <sup>(r+u)</sup> |

<sup>(r+u)</sup> rechts und unten / right and bottom

Bei Sockelgehäusen Abgang rechts dargestellt / housings are shown with right out


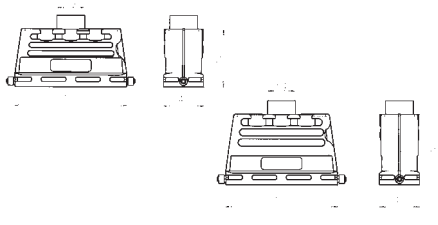

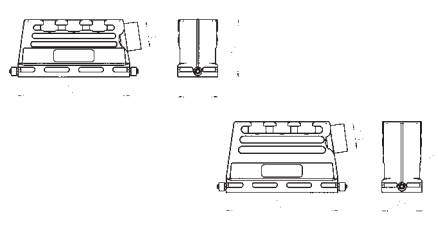

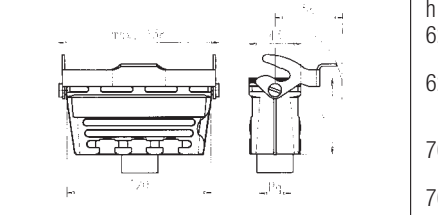

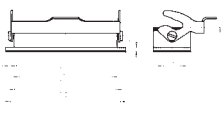

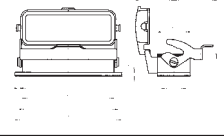

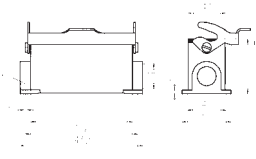

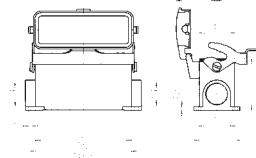
C 146 E 24 pol.  
 C 146 M 7 Module  
 C 146 D 64 pol.  
 C 146 DD 108 pol.  
 C 146 HvE 10 pol.  
 C 146 EE 46 pol.

Gehäuse / Housings

Gehäuse für Längsbügelverriegelung nach  
 DIN EN 175 301 - 801 (DIN 43 652)

- leichtes Bedienen auch bei seitlichem Kabelabgang
- Schutzkappe am Gehäuseunterteil verriegelbar
- fliegende Verbindung möglich

PG-Gewinde  
 PG-thread

| Bezeichnung - Abbildung<br>Description - Figure                                                                                                                         | Maßzeichnung<br>Drawing                                                             | PG    | Bestell Nr. / Part No.            |                                  |                                    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------|-----------------------------------|----------------------------------|------------------------------------|
|                                                                                                                                                                         |                                                                                     |       | Niedrige Bauform / Low profile    | Hohe Bauform / High profile      |                                    |
| <b>Gehäuseoberteile / Hoods</b>                                                                                                                                         |                                                                                     |       |                                   |                                  |                                    |
| Tüllengehäuse, Abgang oben<br>Hood, top entry<br>                                      |    | 21    | C146 10G024 606 1                 |                                  |                                    |
|                                                                                                                                                                         |                                                                                     | 29    | C146 10G024 607 1                 |                                  |                                    |
|                                                                                                                                                                         |                                                                                     | 21    |                                   | C146 10G024 606 8                |                                    |
|                                                                                                                                                                         |                                                                                     | 29    |                                   | C146 10G024 607 8                |                                    |
| Tüllengehäuse, Abgang Seite<br>Hood, side entry<br>                                   |   | 21    | C146 10G024 506 1                 |                                  |                                    |
|                                                                                                                                                                         |                                                                                     | 29    | C146 10G024 507 1                 |                                  |                                    |
|                                                                                                                                                                         |                                                                                     | 21    |                                   | C146 10G024 506 8                |                                    |
|                                                                                                                                                                         |                                                                                     | 29    |                                   | C146 10G024 507 8                |                                    |
| <b>Gehäuseunterteile / Housings</b>                                                                                                                                     |                                                                                     |       |                                   |                                  |                                    |
| Kupplungsgehäuse<br>Hood, coupling application<br>                                   |  | h     |                                   |                                  |                                    |
|                                                                                                                                                                         |                                                                                     | 62    | 21                                | C146 10G024 804 1                |                                    |
|                                                                                                                                                                         |                                                                                     | 62    | 29                                | C146 10G024 805 1                |                                    |
|                                                                                                                                                                         |                                                                                     | 76    | 21                                |                                  | C146 10G024 804 8                  |
| 76                                                                                                                                                                      | 29                                                                                  |       | C146 10G024 805 8                 |                                  |                                    |
| Anbaugehäuse <sup>1)</sup><br>Housing, bulkhead mounting <sup>1)</sup><br>           |  |       |                                   | C146 10F024 001 1                |                                    |
| Anbaugehäuse mit Deckel <sup>1)</sup><br>Housing with spring cover <sup>1)</sup><br> |  |       |                                   | C146 10F024 003 1                |                                    |
| Sockelgehäuse<br>Housing<br>                                                         |  | h     | 1 Kabelabgang / Single side entry |                                  |                                    |
|                                                                                                                                                                         |                                                                                     | 64/80 | 21                                | C146 10F024 802 1                | C146 10F064 803 2                  |
|                                                                                                                                                                         |                                                                                     | 64/80 | 21                                | C146 10F024 502 1 <sup>(1)</sup> | C146 10F064 503 2 <sup>(1)</sup>   |
|                                                                                                                                                                         |                                                                                     | 80    | 29                                |                                  | C146 10F064 802 2                  |
|                                                                                                                                                                         |                                                                                     | 80    | 29                                |                                  | C146 10F064 502 2 <sup>(1)</sup>   |
|                                                                                                                                                                         |                                                                                     |       |                                   |                                  | 2 Kabelabgänge / Double side entry |
|                                                                                                                                                                         |                                                                                     | 64/80 | 21                                | C146 10F024 602 1                | C146 10F064 603 2                  |
|                                                                                                                                                                         |                                                                                     | 80    | 29                                |                                  | C146 10F064 602 2                  |
| Sockelgehäuse mit Deckel<br>Housing with spring cover<br>                            |  | h     | 1 Kabelabgang / Single side entry |                                  |                                    |
|                                                                                                                                                                         |                                                                                     | 64/80 | 21                                | C146 10F024 806 1                | C146 10F064 807 2                  |
|                                                                                                                                                                         |                                                                                     | 64/80 | 21                                | C146 10F024 506 1 <sup>(1)</sup> | C146 10F064 507 2 <sup>(1)</sup>   |
|                                                                                                                                                                         |                                                                                     | 80    | 29                                |                                  | C146 10F064 806 2                  |
|                                                                                                                                                                         |                                                                                     | 80    | 29                                |                                  | C146 10F064 506 2 <sup>(1)</sup>   |
|                                                                                                                                                                         |                                                                                     |       |                                   |                                  | 2 Kabelabgänge / Double side entry |
|                                                                                                                                                                         |                                                                                     | 64/80 | 21                                | C146 10F024 606 1                | C146 10F064 607 2                  |
|                                                                                                                                                                         |                                                                                     | 80    | 29                                |                                  | C146 10F064 606 2                  |

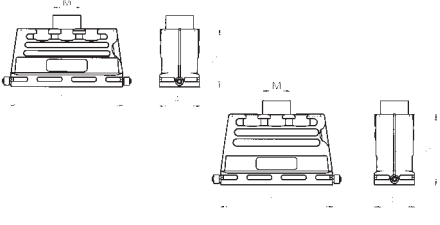
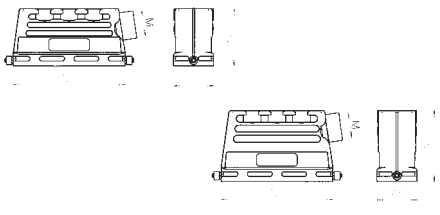
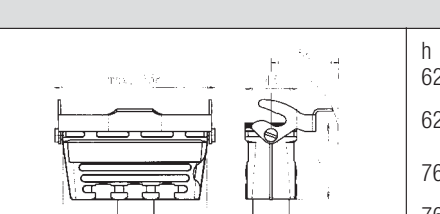
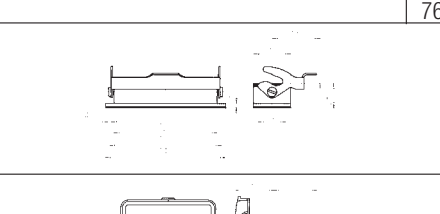
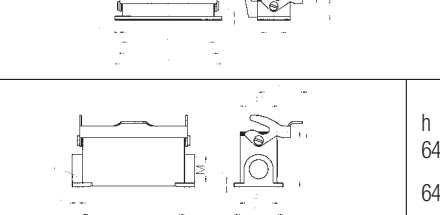
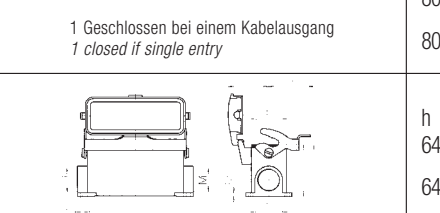
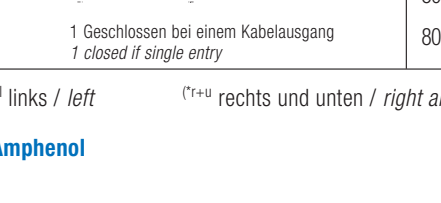
<sup>1)</sup> incl. Flachdichtung / incl. flat gasket

Bei Sockelgehäusen Abgang rechts dargestellt / housings are shown with right out

**housings for 1 locking-lever-system according to  
 DIN EN 175 301 - 801 (DIN 43 652)**

- also easy to use for side entry
- cover for housings lockable
- cable to cable possible

**Metrisches Gewinde  
Metric thread**

| Maßzeichnung<br><i>Drawing</i>                                                                                                                                      | M     | Bestell Nr. / Part No.                   |                                      | Bestell Nr. / Part No.                    |                                      |                                    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|------------------------------------------|--------------------------------------|-------------------------------------------|--------------------------------------|------------------------------------|
|                                                                                                                                                                     |       | Niedrige Bauform/<br><i>Low profile</i>  | Hohe Bauform/<br><i>High profile</i> | Niedrige Bauform/<br><i>Low profile</i>   | Hohe Bauform/<br><i>High profile</i> |                                    |
|                                                                                                                                                                     |       | mit Stützen / <i>with stud</i>           |                                      | ohne Stützen / <i>without stud</i>        |                                      |                                    |
|                                                                                    | 25    | C146 10R024 656 1                        |                                      | C146 21R024 656 1                         |                                      |                                    |
|                                                                                                                                                                     | 32    | C146 10R024 606 1                        |                                      | C146 21R024 606 1                         |                                      |                                    |
|                                                                                                                                                                     | 25    |                                          | C146 10R024 656 8                    |                                           | C146 21R024 656 8                    |                                    |
|                                                                                                                                                                     | 32    |                                          | C146 10R024 606 8                    |                                           | C146 21R024 606 8                    |                                    |
|                                                                                   | 40    |                                          | C146 10R024 607 8                    |                                           | C146 21R024 607 8                    |                                    |
|                                                                                                                                                                     | 25    | C146 10R024 556 1                        |                                      | C146 21R024 556 1                         |                                      |                                    |
|                                                                                                                                                                     | 32    | C146 10R024 506 1                        |                                      | C146 21R024 506 1                         |                                      |                                    |
|                                                                                                                                                                     | 25    |                                          | C146 10R024 556 8                    |                                           | C146 21R024 556 8                    |                                    |
|                                                                                  | 32    |                                          | C146 10R024 506 8                    |                                           | C146 21R024 506 8                    |                                    |
|                                                                                                                                                                     | 40    |                                          | C146 10R024 507 8                    |                                           | C146 21R024 507 8                    |                                    |
|                                                                                                                                                                     | h     | 25                                       | C146 10R024 854 1                    |                                           | C146 21R024 854 1                    |                                    |
|                                                                                                                                                                     | 62    | 32                                       | C146 10R024 804 1                    |                                           | C146 21R024 804 1                    |                                    |
|                                                                                  | 76    | 25                                       | C146 10R024 854 8                    |                                           | C146 21R024 854 8                    |                                    |
|                                                                                                                                                                     | 76    | 32                                       | C146 10R024 804 8                    |                                           | C146 21R024 804 8                    |                                    |
|                                                                                                                                                                     | 76    | 40                                       | C146 10R024 805 8                    |                                           | C146 21R024 805 8                    |                                    |
|                                                                                  | –     | C146 10F024 001 1                        |                                      |                                           |                                      |                                    |
|                                                                                  | –     | C146 10F024 003 1                        |                                      |                                           |                                      |                                    |
|  <p>1 Geschlossen bei einem Kabelausgang<br/><i>1 closed if single entry</i></p> | h     | 1 Kabelabgang / <i>Single side entry</i> |                                      | 2 Kabelabgänge / <i>Double side entry</i> |                                      |                                    |
|                                                                                                                                                                     | 64/80 | 25                                       | C146 10N024 802 1                    | C146 10N024 803 2                         | C146 10N024 602 1                    | C146 10N024 603 2                  |
|                                                                                                                                                                     | 64/80 | 25                                       | C146 10N024 502 1 <sup>(*)</sup>     | C146 10N024 503 2 <sup>(*)</sup>          | C146 10N024 702 1 <sup>(r+u)</sup>   | C146 10N024 703 2 <sup>(r+u)</sup> |
|                                                                                                                                                                     | 80    | 32                                       |                                      | C146 10N024 802 2                         |                                      | C146 10N024 602 2                  |
|  <p>1 Geschlossen bei einem Kabelausgang<br/><i>1 closed if single entry</i></p> | 80    | 32                                       | C146 10N024 502 2 <sup>(*)</sup>     |                                           | C146 10N024 702 2 <sup>(r+u)</sup>   |                                    |
|                                                                                                                                                                     | h     | 1 Kabelabgang / <i>Single side entry</i> |                                      | 2 Kabelabgänge / <i>Double side entry</i> |                                      |                                    |
|                                                                                                                                                                     | 64/80 | 25                                       | C146 10N024 806 1                    | C146 10N024 807 2                         | C146 10N024 606 1                    | C146 10N024 607 2                  |
|                                                                                                                                                                     | 64/80 | 25                                       | C146 10N024 506 1 <sup>(*)</sup>     | C146 10N024 507 2 <sup>(*)</sup>          | C146 10N024 708 1 <sup>(r+u)</sup>   | C146 10N024 709 2 <sup>(r+u)</sup> |
|                                                                                  | 80    | 32                                       |                                      | C146 10N024 806 2                         |                                      | C146 10N024 606 2                  |
|                                                                                                                                                                     | 80    | 32                                       |                                      | C146 10N024 506 2 <sup>(*)</sup>          |                                      | C146 10N024 708 2 <sup>(r+u)</sup> |

<sup>(\*)</sup> links / *left*

<sup>(r+u)</sup> rechts und unten / *right and bottom*


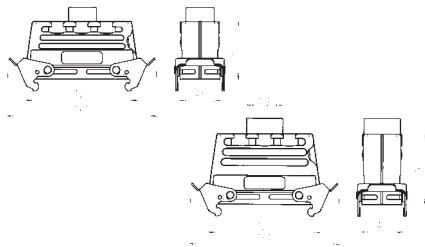

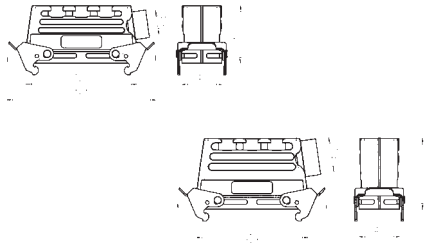

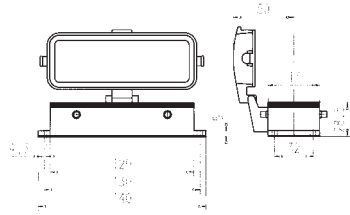

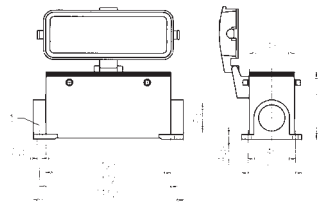


**C 146 E** 24 pol.  
**C 146 M** 7 Module  
**C 146 D** 64 pol.  
**C 146 DD** 108 pol.  
**C 146 HvE** 10 pol.  
**C 146 EE** 46 pol.

Gehäuse / Housings

**Tüllengehäuse mit Querbügel nach  
 DIN EN 175 301 - 801 (DIN 43 652 )**

- sichere 4-Punkt Verriegelung
- Gehäuseunterteil mit Schutzdeckel
- keine Bügel am Gehäuseunterteil

**PG-Gewinde  
 PG-thread**

| Bezeichnung - Abbildung<br><i>Description - Figure</i>                                                                                                                          | Maßzeichnung<br><i>Drawing</i>                                                      | PG                | Bestell Nr. / Part No.             |                             |                                  |                                  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------|------------------------------------|-----------------------------|----------------------------------|----------------------------------|
|                                                                                                                                                                                 |                                                                                     |                   | Niedrige Bauform / Low profile     | Hohe Bauform / High profile |                                  |                                  |
| <b>Gehäuseoberteile / Hoods</b>                                                                                                                                                 |                                                                                     |                   |                                    |                             |                                  |                                  |
| Tüllengehäuse, Abgang oben<br><i>Hood, top entry</i><br>                                       |    | 21                | C146 10G024 602 1                  |                             |                                  |                                  |
|                                                                                                                                                                                 |                                                                                     | 29                | C146 10G024 603 1                  |                             |                                  |                                  |
|                                                                                                                                                                                 |                                                                                     | 21                |                                    | C146 10G024 602 8           |                                  |                                  |
|                                                                                                                                                                                 |                                                                                     | 29                |                                    | C146 10G024 603 8           |                                  |                                  |
| Tüllengehäuse, Abgang Seite<br><i>Hood, side entry</i><br>                                    |   | 21                | C146 10G024 502 1                  |                             |                                  |                                  |
|                                                                                                                                                                                 |                                                                                     | 29                | C146 10G024 503 1                  |                             |                                  |                                  |
|                                                                                                                                                                                 |                                                                                     | 21                |                                    | C146 10G024 502 8           |                                  |                                  |
|                                                                                                                                                                                 |                                                                                     | 29                |                                    | C146 10G024 503 8           |                                  |                                  |
| <b>Gehäuseunterteile / Housings</b>                                                                                                                                             |                                                                                     |                   |                                    |                             |                                  |                                  |
| Anbaugehäuse mit Deckel <sup>1)</sup><br><i>Housing, with spring cover <sup>1)</sup></i><br> |  | —                 | C146 10F024 002 1                  |                             |                                  |                                  |
| Sockelgehäuse, mit Deckel<br><i>Housing, with spring cover</i><br>                           |  | h                 | 1 Kabelabgang / Single side entry  |                             |                                  |                                  |
|                                                                                                                                                                                 |                                                                                     |                   | 64/80                              | 21                          | C146 10F024 804 1                | C146 10F064 805 2                |
|                                                                                                                                                                                 |                                                                                     |                   | 64/80                              | 21                          | C146 10F024 504 1 <sup>(1)</sup> | C146 10F064 505 2 <sup>(1)</sup> |
|                                                                                                                                                                                 |                                                                                     |                   | 80                                 | 29                          |                                  | C146 10F064 804 2                |
|                                                                                                                                                                                 |                                                                                     |                   | 80                                 | 29                          |                                  | C146 10F064 504 2 <sup>(1)</sup> |
|                                                                                                                                                                                 |                                                                                     |                   | 2 Kabelabgänge / Double side entry |                             |                                  |                                  |
| 64/80                                                                                                                                                                           | 21                                                                                  | C146 10F024 604 1 | C146 10F064 605 2                  |                             |                                  |                                  |
| 80                                                                                                                                                                              | 29                                                                                  |                   | C146 10F064 604 2                  |                             |                                  |                                  |
| Sockelgehäuse<br><i>Housing</i><br>                                                          |  | h                 | 1 Kabelabgang / Single side entry  |                             |                                  |                                  |
|                                                                                                                                                                                 |                                                                                     |                   | 80                                 | 21                          |                                  | C146 10F024 509 2                |
|                                                                                                                                                                                 |                                                                                     |                   | 80                                 | 29                          |                                  | C146 10F024 508 2                |
|                                                                                                                                                                                 |                                                                                     |                   | 2 Kabelabgänge / Double side entry |                             |                                  |                                  |
|                                                                                                                                                                                 |                                                                                     |                   | 80                                 | 21                          |                                  | C146 10F024 609 2                |
|                                                                                                                                                                                 |                                                                                     |                   | 80                                 | 29                          |                                  | C146 10F024 608 2                |

<sup>1)</sup> incl. Flachdichtung / incl. gasket

Bei Sockelgehäusen Abgang rechts dargestellt / housings are shown with right out

hoods with 2 locking-levers according to  
DIN EN 175 301 - 801 (DIN 43 652)

- secured 4 point locking
- housing with cover
- no locking levers at the housings

Metrisches Gewinde  
Metric thread

| Maßzeichnung<br>Drawing                                                  | M     | Bestell Nr. / Part No.            |                                  | Bestell Nr. / Part No.             |                                    |                                    |
|--------------------------------------------------------------------------|-------|-----------------------------------|----------------------------------|------------------------------------|------------------------------------|------------------------------------|
|                                                                          |       | Niedrige Bauform/<br>Low profile  | Hohe Bauform/<br>High profile    | Niedrige Bauform/<br>Low profile   | Hohe Bauform/<br>High profile      |                                    |
|                                                                          |       | mit Stützen / with stud           |                                  | ohne Stützen / without stud        |                                    |                                    |
|                                                                          | 25    | C146 10R024 652 1                 |                                  | C146 21R024 652 1                  |                                    |                                    |
|                                                                          | 32    | C146 10R024 602 1                 |                                  | C146 21R024 602 1                  |                                    |                                    |
|                                                                          | 25    |                                   | C146 10R024 652 8                |                                    | C146 21R024 652 8                  |                                    |
|                                                                          | 32    |                                   | C146 10R024 602 8                |                                    | C146 21R024 602 8                  |                                    |
|                                                                          | 40    |                                   | C146 10R024 603 8                |                                    | C146 21R024 603 8                  |                                    |
|                                                                          |       |                                   |                                  |                                    |                                    |                                    |
|                                                                          | 25    | C146 10R024 552 1                 |                                  | C146 21R024 552 1                  |                                    |                                    |
|                                                                          | 32    | C146 10R024 502 1                 |                                  | C146 21R024 502 1                  |                                    |                                    |
|                                                                          | 25    |                                   | C146 10R024 552 8                |                                    | C146 21R024 552 8                  |                                    |
|                                                                          | 32    |                                   | C146 10R024 502 8                |                                    | C146 21R024 502 8                  |                                    |
|                                                                          | 40    |                                   | C146 10R024 503 8                |                                    | C146 21R024 503 8                  |                                    |
|                                                                          |       |                                   |                                  |                                    |                                    |                                    |
|                                                                          | -     | C146 10F024 002 1                 |                                  |                                    |                                    |                                    |
| <p>1 Geschlossen bei einem Kabelausgang<br/>1 closed if single entry</p> | h     | 1 Kabelabgang / Single side entry |                                  | 2 Kabelabgänge / Double side entry |                                    |                                    |
|                                                                          | 64/80 | 25                                | C146 10N024 804 1                | C146 10N024 805 2                  | C146 10N024 604 1                  | C146 10N024 605 2                  |
|                                                                          | 64/80 | 25                                | C146 10N024 504 1 <sup>(*)</sup> | C146 10N024 505 2 <sup>(*)</sup>   | C146 10N024 808 1 <sup>(r+u)</sup> | C146 10N024 809 2 <sup>(r+u)</sup> |
|                                                                          | 80    | 32                                |                                  | C146 10N024 804 2                  |                                    | C146 10N024 604 2                  |
|                                                                          | 80    | 32                                |                                  | C146 10N024 504 2 <sup>(*)</sup>   |                                    | C146 10N024 808 2 <sup>(r+u)</sup> |
|                                                                          |       |                                   |                                  |                                    |                                    |                                    |
| <p>1 Geschlossen bei einem Kabelausgang<br/>1 closed if single entry</p> | h     | 1 Kabelabgang / Single side entry |                                  | 2 Kabelabgänge / Double side entry |                                    |                                    |
|                                                                          | 64/80 | 25                                | C146 10N024 508 1                | C146 10N024 509 2                  | C146 10N024 608 1                  | C146 10N024 609 2                  |
|                                                                          | 80    | 32                                |                                  | C146 10N024 508 2                  |                                    | C146 10N024 608 2                  |

<sup>(\*)</sup> links / left

<sup>(r+u)</sup> rechts und unten / right and bottom


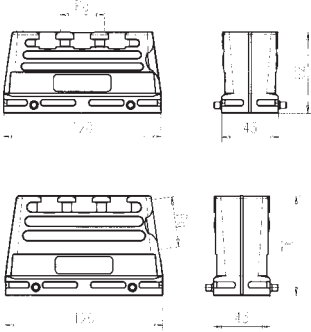
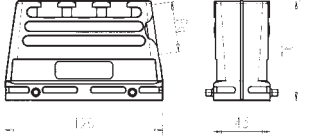

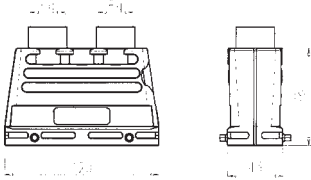

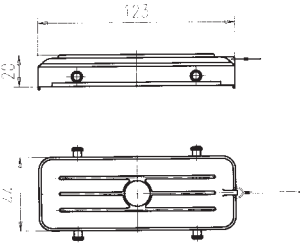

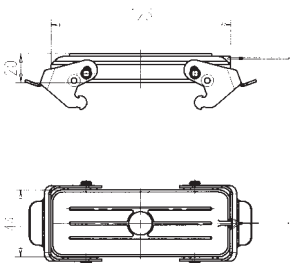
C 146 E 24 pol.  
 C 146 M 7 Module  
 C 146 D 64 pol.  
 C 146 DD 108 pol.  
 C 146 HvE 10 pol.  
 C 146 EE 46 pol.

Gehäuse, Schutzkappen  
 Housings, covers

Sondergehäuse für Querbügelverriegelung, nach  
 DIN EN 175 301 - 801 (DIN 43 652)

special housings for 2 locking-lever systems,  
 according to DIN EN 175 301 - 801 (DIN 43 652)

PG-Gewinde  
 PG-thread

| Bezeichnung - Abbildung<br>Description - Figure                                                                                                | Maßzeichnung<br>Drawing                                                             | PG | Kabelabgang<br>cable outlet | Bestell Nr. / Part No.         |                             |
|------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----|-----------------------------|--------------------------------|-----------------------------|
|                                                                                                                                                |                                                                                     |    |                             | Niedrige Bauform / Low profile | Hohe Bauform / High profile |
| <b>Gehäuseoberteile / Hoods</b>                                                                                                                |                                                                                     |    |                             |                                |                             |
| Tüllengehäuse ohne Stutzen<br>Hood without stud<br>           |    | 21 | Oben / top                  | C146 21G024 600 1              |                             |
|                                                                                                                                                |                                                                                     |    | Seite / side                | C146 21G024 500 1              |                             |
|                                                                                                                                                |    | 29 | Oben / top                  |                                | C146 21G024 601 8           |
|                                                                                                                                                |                                                                                     |    | Seite / side                |                                | C146 21G024 501 8           |
| Tüllengehäuse, 2 x Abgang Oben<br>Hood, 2 top entry<br>     |  | 21 |                             |                                | C146 10G024 903 8           |
|                                                                                                                                                |                                                                                     |    | 29                          |                                |                             |
| <b>Schutzkappen / covers</b>                                                                                                                   |                                                                                     |    |                             |                                |                             |
| Schutzkappe für Gehäuseunterteile<br>Cover for housings<br> |  | —  |                             |                                | C146 10Z024 100 1           |
| Schutzkappe für Gehäuseoberteile<br>Cover for hoods<br>     |  | —  |                             |                                | C146 10Z024 200 1           |

Verschraubung für Tüllen- und Sockelgehäuse siehe Seite 170-173 / gland bushings for hoods and housing see page 170-173




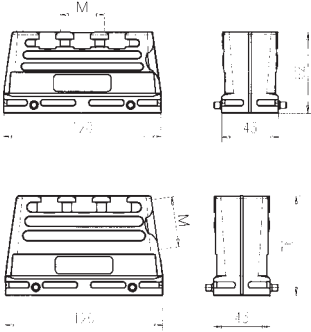

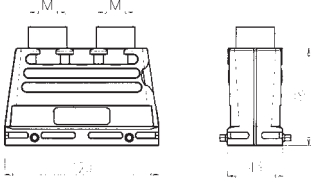

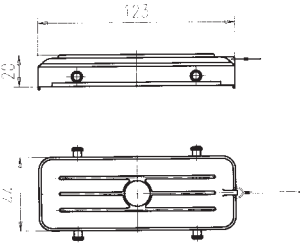

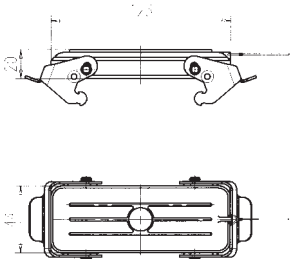
C 146 E 24 pol.  
 C 146 M 7 Module  
 C 146 D 64 pol.  
 C 146 DD 108 pol.  
 C 146 HvE 10 pol.  
 C 146 EE 46 pol.

Gehäuse, Schutzkappen  
 Housings, covers

Sondergehäuse für Querbügelverriegelung, nach  
 DIN EN 175 301 - 801 (DIN 43 652)

special housings for 2 locking-lever systems,  
 according to DIN EN 175 301 - 801 (DIN 43 652)

Metrisches Gewinde  
 Metric thread

| Bezeichnung - Abbildung<br>Description - Figure                                                                                                    | Maßzeichnung<br>Drawing                                                             | M     | Kabelabgang<br>cable outlet | Bestell Nr. / Part No.         |                             |
|----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------|-----------------------------|--------------------------------|-----------------------------|
|                                                                                                                                                    |                                                                                     |       |                             | Niedrige Bauform / Low profile | Hohe Bauform / High profile |
| <b>Gehäuseoberteile / Hoods</b>                                                                                                                    |                                                                                     |       |                             |                                |                             |
| Tüllengehäuse ohne Stutzen<br>Hood without stud<br><br>           |    | 25    | Oben / top                  | C146 21R024 650 1              | C146 21R024 650 8           |
|                                                                                                                                                    |                                                                                     |       | Seite / side                | C146 21R024 600 1              | C146 21R024 550 8           |
|                                                                                                                                                    |                                                                                     | 32    | Oben / top                  | C146 21R024 500 1              | C146 21R024 600 8           |
|                                                                                                                                                    |                                                                                     |       | Seite / side                |                                | C146 21R024 500 8           |
| Tüllengehäuse, 2 x Abgang Oben<br>Hood, 2 top entry<br><br>     |  | 32/40 |                             |                                | C146 10R024 909 8           |
|                                                                                                                                                    |                                                                                     | 32    |                             |                                | C146 10R024 903 8           |
|                                                                                                                                                    |                                                                                     | 40    |                             |                                | C146 10R024 908 8           |
|                                                                                                                                                    |                                                                                     |       |                             |                                |                             |
| <b>Schutzkappen / covers</b>                                                                                                                       |                                                                                     |       |                             |                                |                             |
| Schutzkappe für Gehäuseunterteile<br>Cover for housings<br><br> |  | —     |                             | C146 10Z024 100 1              |                             |
| Schutzkappe für Gehäuseoberteile<br>Cover for hoods<br><br>     |  | —     |                             | C146 10Z024 200 1              |                             |

Verschraubung für Tüllen- und Sockelgehäuse siehe Seite 170-173 / gland bushings for hoods and housing see page 170-173

# C 146 HvE 16 pol.

Gehäuse für Querbügelverriegelung nach  
DIN EN 175 301 - 801 (DIN 43 652)


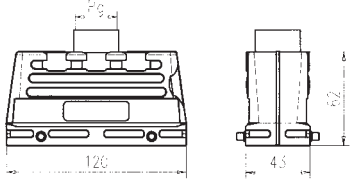

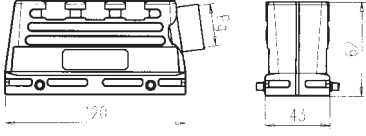

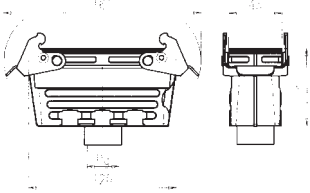

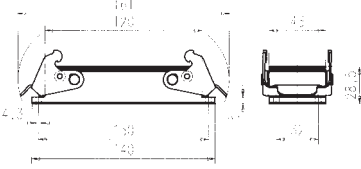

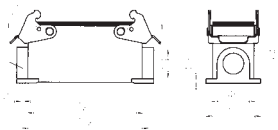
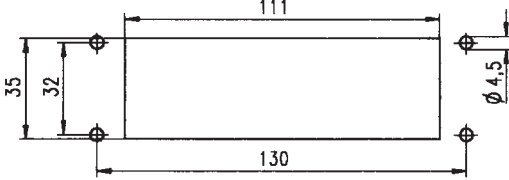
housings for 2 locking-lever-system according to  
DIN EN 175 301 - 801 (DIN 43 652)

- mit Isolationsauskleidung
- ohne Kodiersteg

- with insulation inside
- with removed coding element

Gehäuse  
Housings

PG-Gewinde  
PG-thread

| Bezeichnung - Abbildung<br>Description - Figure                                                                                                               | Maßzeichnung<br>Drawing                                                                                                                                     | PG | Bestell Nr. / Part No.<br>Niedrige Bauform / Low profile |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|----|----------------------------------------------------------|
| <b>Gehäuseoberteile / Hoods</b>                                                                                                                               |                                                                                                                                                             |    |                                                          |
| Tüllengehäuse, Abgang oben<br>Hood, top entry<br>                            |                                                                            | 21 | C146 10G024 600 3                                        |
| Tüllengehäuse, Abgang Seite<br>Hood, side entry<br>                          |                                                                            | 21 | C146 10G024 500 3                                        |
| <b>Gehäuseunterteile / Housings</b>                                                                                                                           |                                                                                                                                                             |    |                                                          |
| Kupplungsgehäuse<br>Hood, coupling application<br>                         |                                                                          | 21 | C146 10G024 802 3                                        |
| Anbaugehäuse <sup>1)</sup><br>Housing, bulkhead mounting <sup>1)</sup><br> |                                                                          | -  | C146 10F024 000 3                                        |
| Sockelgehäuse<br>Housing<br>                                               | <br><br>1 Geschlossen bei einem Kabelausgang<br>1 closed if single entry | 21 | 1 Kabelabgang / Single side entry                        |
|                                                                                                                                                               |                                                                                                                                                             |    | C146 10F024 500 3                                        |
| <b>Montageausschnitt für Anbaugehäuse / Panel cut out for housing bulkhead mounting</b>                                                                       |                                                                                                                                                             |    |                                                          |
|                                                                           |                                                                                                                                                             |    |                                                          |

<sup>1)</sup> incl. Flachdichtung / incl. gasket

Verschraubung für Tüllen- und Sockelgehäuse siehe Seite 170-173 / gland bushings for hoods and housing see page 170-173

# C 146 HvE 16 pol.

Gehäuse für Querbügelverriegelung nach  
DIN EN 175 301 - 801 (DIN 43 652)


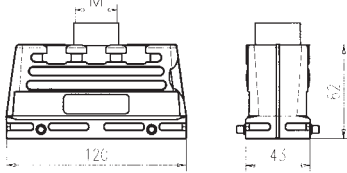

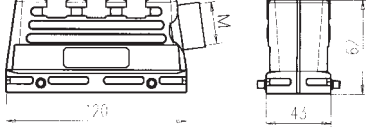

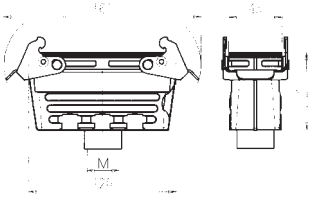

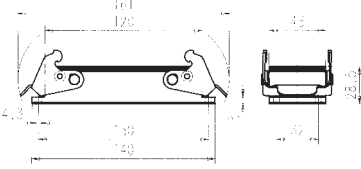

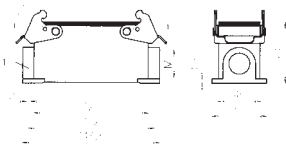
housings for 2 locking-lever-system according to  
DIN EN 175 301 - 801 (DIN 43 652)

- mit Isolationsauskleidung
- ohne Kodiersteg

- with insulation inside
- with removed coding element

Gehäuse  
Housings

Metrisches Gewinde  
Metric thread

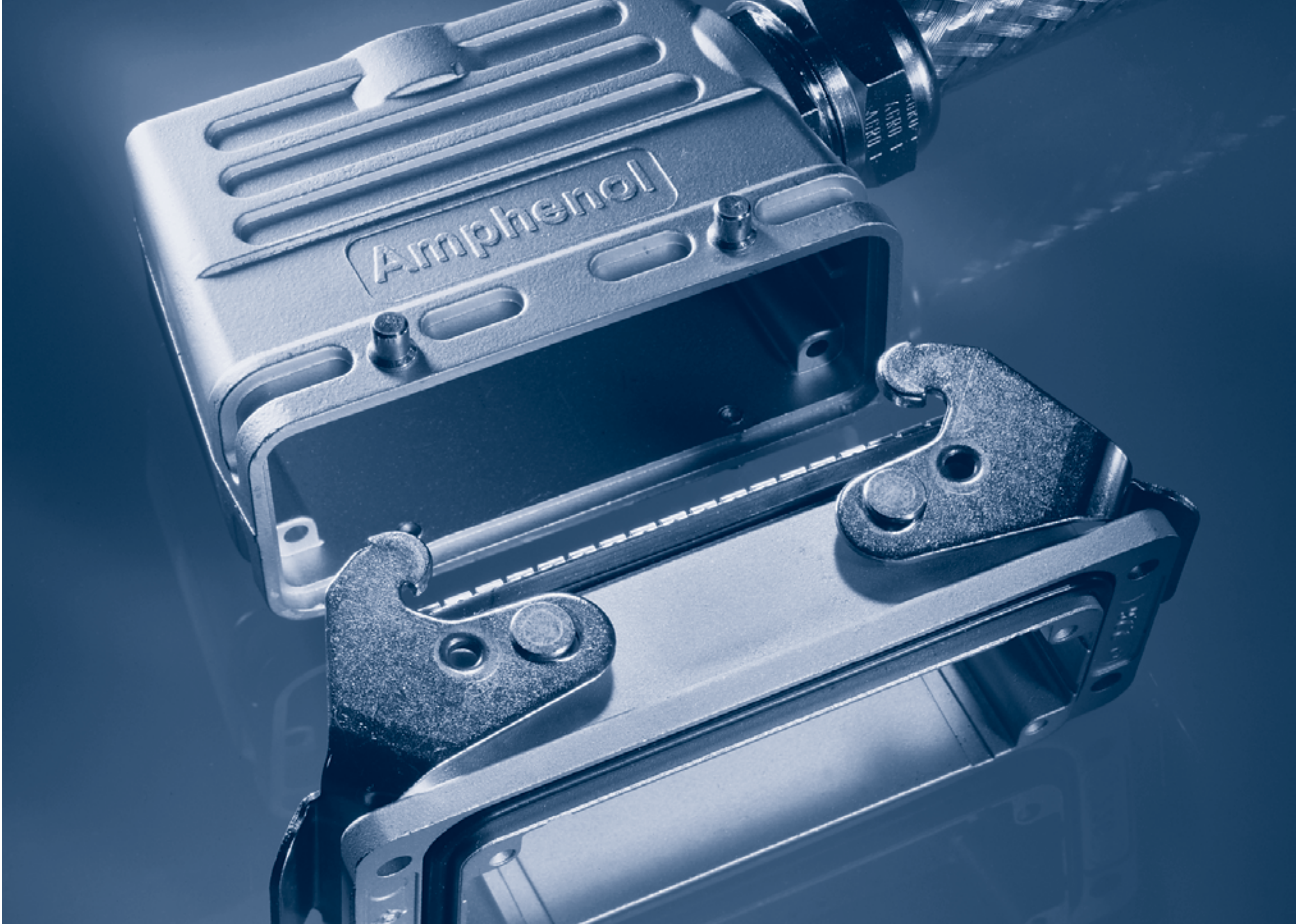
| Bezeichnung - Abbildung<br>Description - Figure                                                                                                                   | Maßzeichnung<br>Drawing                                                                                                                                      | M  | Bestell Nr. / Part No.<br>Niedrige Bauform / Low profile |                               |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|----|----------------------------------------------------------|-------------------------------|
| <b>Gehäuseoberteile / Hoods</b>                                                                                                                                   |                                                                                                                                                              |    |                                                          |                               |
| Tüllengehäuse, Abgang oben<br>Hood, top entry<br><br>                            |                                                                             | 25 | C146 10R024 650 3                                        |                               |
|                                                                                                                                                                   |                                                                                                                                                              | 32 | C146 10R024 600 3                                        |                               |
| Tüllengehäuse, Abgang Seite<br>Hood, side entry<br><br>                          |                                                                             | 25 | C146 10R024 550 3                                        |                               |
|                                                                                                                                                                   |                                                                                                                                                              | 32 | C146 10R024 500 3                                        |                               |
| <b>Gehäuseunterteile / Housings</b>                                                                                                                               |                                                                                                                                                              |    |                                                          |                               |
| Kupplungsgehäuse<br>Hood, coupling application<br><br>                         |                                                                           | 25 | C146 10R024 852 3                                        |                               |
|                                                                                                                                                                   |                                                                                                                                                              | 32 | C146 10R024 802 3                                        |                               |
| Anbaugehäuse <sup>1)</sup><br>Housing, bulkhead mounting <sup>1)</sup><br><br> |                                                                           | –  | C146 10F024 000 3                                        |                               |
| Sockelgehäuse<br>Housing<br><br>                                               |  <p>1 Geschlossen bei einem Kabelausgang<br/>1 closed if single entry</p> | 25 | 1 Kabelabgang / Single side entry                        | 2 Kabelabgänge / 2 side entry |
|                                                                                                                                                                   |                                                                                                                                                              |    | C146 10N024 500 3                                        | C146 10N024 600 3             |

<sup>1)</sup> incl. Flachdichtung / incl. gasket

Verschraubung für Tüllen- und Sockelgehäuse siehe Seite 170-173 / gland bushings for hoods and housing see page 170-173



# C 146 EMV Gehäuse / *EMC Housings*



## **Für Serien**

- C 146 E 6 - 24 pol
- C 146 D 40 - 64 pol
- C 146 M 2 - 7 Module
- C 146 HSE 6 pol

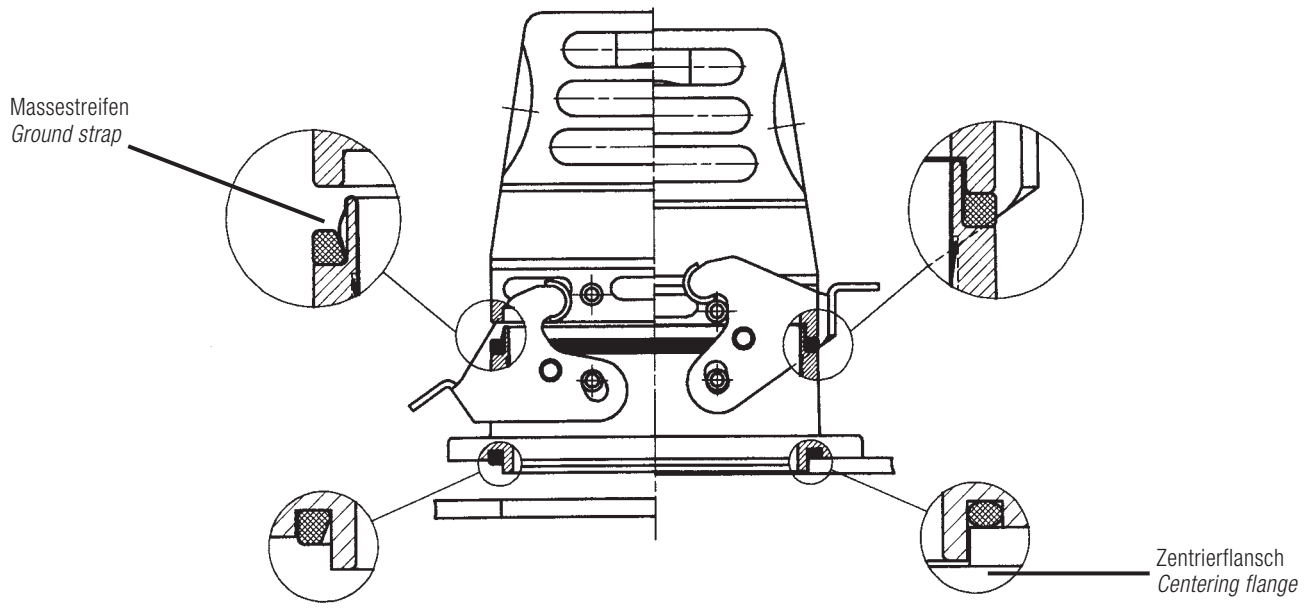
## ***For series***

- *C 146 E 6 - 24 contacts*
- *C 146 D 40 - 64 contacts*
- *C 146 M 2 - 7 Module*
- *C 146 HSE 6 contacts*

EMV-Gehäuse  
EMC housings

- leitfähige Oberfläche
- Standard Verriegelungssystem
- gleiche Gehäuseabmessungen wie Standard Gehäuse
- zwei Bauhöhen
- mit und ohne Massestreifen
- hohe Dämpfungseigenschaften
- Schutzart IP 65
- Steckzyklen > 500

- *conductive surface*
- *standard locking levers*
- *same housing dimensions like standard housings*
- *two housing sizes*
- *with or without ground strap*
- *high attenuation*
- *protection class IP 65*
- *mating cycles > 500*



Standard Gehäuse C 146  
Standard housing C 146

Version A Standardflansch, ohne Massestreifen  
Version A Standard flange, without ground strap

Version B Standardflansch, mit Massestreifen  
Version B Standard flange, with ground strap

Version C Zentrierflansch, mit Massestreifen  
Version C Centering flange, with ground strap





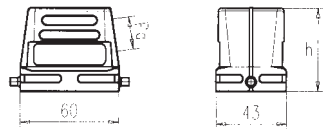
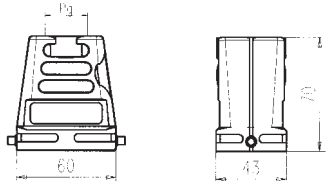


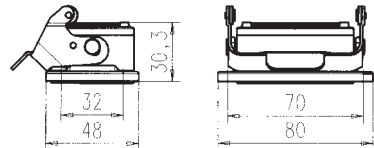
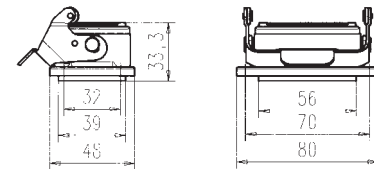
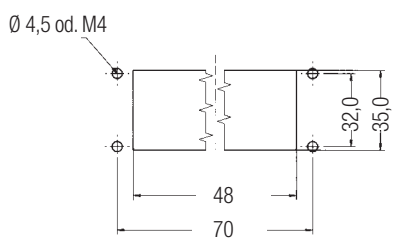
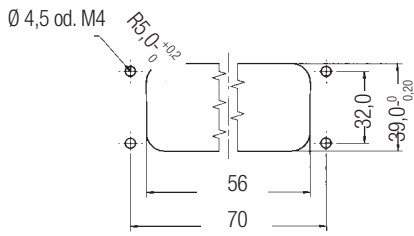


C 146 E 6 pol.  
 C 146 M 2 Module  
 C 146 DD 24 pol.  
 C 146 EE 10 pol.

Gehäuse für Längsbügelverriegelung  
 Housings for 1 locking-lever-system

EMV-Gehäuse  
 EMC housings

PG-Gewinde  
 PG-thread

| Bezeichnung - Abbildung<br>Description - Figure                                                                                                                                                                          | Maßzeichnung<br>Drawing                                                                                                                                                                 | PG                                                                                                | Kabelabgang<br>Cable outlet | Bestell Nr. / Part No.          |                              |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|-----------------------------|---------------------------------|------------------------------|
|                                                                                                                                                                                                                          |                                                                                                                                                                                         |                                                                                                   |                             | Niedrige Bauform<br>Low profile | Hohe Bauform<br>High profile |
| <b>Gehäuseoberteile / Hoods</b>                                                                                                                                                                                          |                                                                                                                                                                                         |                                                                                                   |                             |                                 |                              |
| Tüllengehäuse / Hood<br><br>                           | <br>                  | 11                                                                                                | Seite / side                | C146 11G006 556 1               |                              |
|                                                                                                                                                                                                                          |                                                                                                                                                                                         | 13,5                                                                                              | Oben / top                  |                                 |                              |
|                                                                                                                                                                                                                          |                                                                                                                                                                                         | 13,5                                                                                              | Seite / side                | C146 11G006 506 1               |                              |
|                                                                                                                                                                                                                          |                                                                                                                                                                                         | 16                                                                                                | Oben / top                  | C146 11G006 607 1               |                              |
|                                                                                                                                                                                                                          |                                                                                                                                                                                         | 16                                                                                                | Seite / side                | C146 11G006 507 1               |                              |
|                                                                                                                                                                                                                          |                                                                                                                                                                                         | 21                                                                                                | Oben / top                  |                                 | C146 11G006 606 8            |
|                                                                                                                                                                                                                          |                                                                                                                                                                                         | 21                                                                                                | Seite / side                |                                 | C146 11G006 506 8            |
|                                                                                                                                                                                                                          |                                                                                                                                                                                         | 29                                                                                                | Oben / top                  |                                 | C146 11G006 607 8            |
|                                                                                                                                                                                                                          |                                                                                                                                                                                         | 29                                                                                                | Seite / side                |                                 | C146 11G006 507 8            |
| <b>Gehäuseunterteile / Housings</b>                                                                                                                                                                                      |                                                                                                                                                                                         |                                                                                                   | <b>Version</b>              |                                 |                              |
| Anbaugehäuse<br>Housing, bulkhead mounting<br><br> | Version A + B                                                                                                                                                                           | A                                                                                                 | C146 11F006 901 8           |                                 |                              |
|                                                                                                                                                                                                                          | <br>Version C<br> | B                                                                                                 | C146 11F006 902 8           |                                 |                              |
|                                                                                                                                                                                                                          |                                                                                                                                                                                         | C                                                                                                 | C146 11F006 001 8           |                                 |                              |
| <b>Montageausschnitt / Panel cutout</b>                                                                                                                                                                                  |                                                                                                                                                                                         |                                                                                                   |                             |                                 |                              |
| <br>Version A + B                                                                                                                     |                                                                                                                                                                                         | <br>Version C |                             |                                 |                              |

EMV Verschraubung für Tüllengehäuse siehe Seite 173 / EMC gland bushings for hoods see page 173


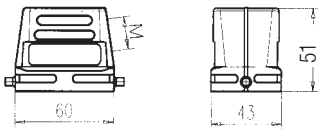
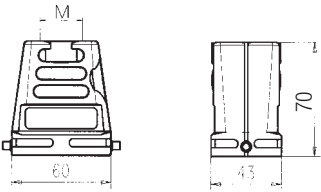

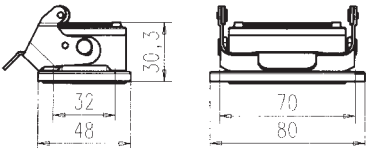
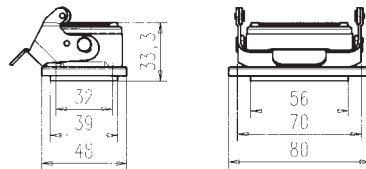


C 146 E 6 pol.  
 C 146 M 2 Module  
 C 146 DD 24 pol.  
 C 146 EE 10 pol.

EMV-Gehäuse  
 EMC housings

Gehäuse für Längsbügelverriegelung  
 Housings for 1 locking-lever-system

Metrisches Gewinde  
 Metric thread

| Bezeichnung - Abbildung<br>Description - Figure                                                                                       | Maßzeichnung<br>Drawing                                                             | M                                   | Kabelabgang<br>Cable outlet | Bestell Nr. / Part No.             |                              |
|---------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------|-----------------------------|------------------------------------|------------------------------|
|                                                                                                                                       |                                                                                     |                                     |                             | Niedrige Bauform<br>Low profile    | Hohe Bauform<br>High profile |
| <b>Gehäuseoberteile / Hoods</b>                                                                                                       |                                                                                     |                                     |                             | <b>ohne Stutzen / without stud</b> |                              |
|                                                      |    | 16                                  | Seite / side                | C146 11R006 556 1                  |                              |
|                                                                                                                                       |                                                                                     | 20                                  | Oben / top                  | C146 11R006 606 1                  |                              |
|                                                                                                                                       |                                                                                     | 20                                  | Seite / side                | C146 11R006 506 1                  |                              |
|                                                                                                                                       |                                                                                     | 25                                  | Oben / top                  | C146 11R006 607 1                  |                              |
|                                                                                                                                       |                                                                                     | 25                                  | Seite / side                | C146 11R006 507 1                  |                              |
|                                                                                                                                       |    | 25                                  | Oben / top                  |                                    | C146 11R006 656 8            |
|                                                                                                                                       |                                                                                     | 25                                  | Seite / side                |                                    | C146 11R006 556 8            |
|                                                                                                                                       |                                                                                     | 32                                  | Oben / top                  |                                    | C146 11R006 606 8            |
|                                                                                                                                       |                                                                                     | 32                                  | Seite / side                |                                    | C146 11R006 506 8            |
|                                                                                                                                       |                                                                                     | <b>Gehäuseunterteile / Housings</b> |                             |                                    |                              |
| Anbaugehäuse<br>Housing, bulkhead mounting<br><br> | Version A + B                                                                       |                                     | A                           | C146 11F006 901 8                  |                              |
|                                                                                                                                       |  |                                     | B                           | C146 11F006 902 8                  |                              |
|                                                                                                                                       |                                                                                     | Version C                           |                             | C                                  | C146 11F006 001 8            |
|                                                                                                                                       |  |                                     |                             |                                    |                              |
|                                                                                                                                       |                                                                                     |                                     |                             |                                    |                              |



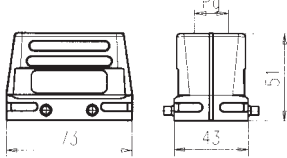
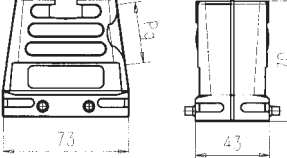
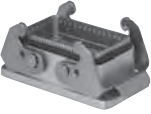

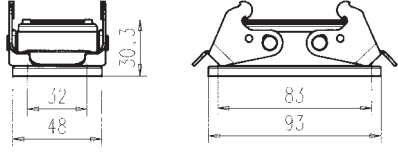
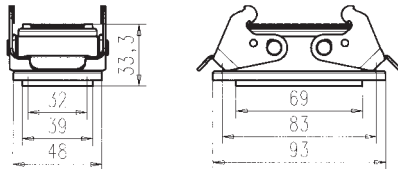
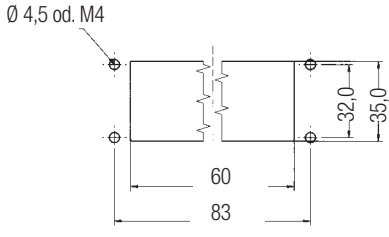
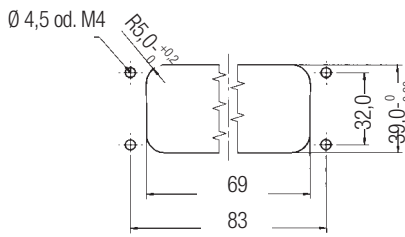
EMV Verschraubung für Tüllengehäuse siehe Seite 173 / EMC gland bushings for hoods see page 173

C 146 E 10 pol.  
 C 146 M 3 Module  
 C 146 DD 42 pol.  
 C 146 EE 18 pol.

Gehäuse für Querbügelverriegelung  
 Housings for 2 locking-lever-system

EMV-Gehäuse  
 EMC housings

PG-Gewinde  
 PG-thread

| Bezeichnung - Abbildung<br>Description - Figure                                                                                                                                                                                  | Maßzeichnung<br>Drawing                                                                                                                                                    | PG                                                                                   | Kabelabgang<br>Cable outlet | Bestell Nr. / Part No.          |                              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-----------------------------|---------------------------------|------------------------------|
|                                                                                                                                                                                                                                  |                                                                                                                                                                            |                                                                                      |                             | Niedrige Bauform<br>Low profile | Hohe Bauform<br>High profile |
| <b>Gehäuseoberteile / Hoods</b>                                                                                                                                                                                                  |                                                                                                                                                                            |                                                                                      |                             |                                 |                              |
| Tüllengehäuse / Hood<br><br><br><br>                          | <br><br> | 16                                                                                   | Oben / top                  | C146 11G010 600 1               |                              |
|                                                                                                                                                                                                                                  |                                                                                                                                                                            | 16                                                                                   | Seite / side                |                                 |                              |
| 21                                                                                                                                                                                                                               | Oben / top                                                                                                                                                                 | C146 11G010 601 1                                                                    |                             |                                 |                              |
| 21                                                                                                                                                                                                                               | Seite / side                                                                                                                                                               | C146 11G010 501 1                                                                    |                             |                                 |                              |
|                                                                                                                                                                                                                                  |                                                                                                                                                                            | 21                                                                                   | Oben / top                  |                                 | C146 11G010 600 8            |
|                                                                                                                                                                                                                                  |                                                                                                                                                                            | 21                                                                                   | Seite / side                |                                 | C146 11G010 500 8            |
|                                                                                                                                                                                                                                  |                                                                                                                                                                            | 29                                                                                   | Oben / top                  |                                 | C146 11G010 601 8            |
|                                                                                                                                                                                                                                  |                                                                                                                                                                            | 29                                                                                   | Seite / side                |                                 | C146 11G010 501 8            |
| <b>Gehäuseunterteile / Housings</b>                                                                                                                                                                                              |                                                                                                                                                                            |                                                                                      | <b>Version</b>              |                                 |                              |
| Anbaugehäuse<br>Housing, bulkhead mounting<br><br><br><br> | Version A + B<br><br>                                                                   | A                                                                                    |                             | C146 11F010 901 8               |                              |
|                                                                                                                                                                                                                                  |                                                                                                                                                                            |                                                                                      | B                           |                                 | C146 11F010 902 8            |
|                                                                                                                                                                                                                                  | Version C<br><br>                                                                       | C                                                                                    |                             | C146 11F010 000 8               |                              |
| <b>Montageausschnitt / Panel cutout</b>                                                                                                                                                                                          |                                                                                                                                                                            |                                                                                      |                             |                                 |                              |
|                                                                                                                                               |                                                                                                                                                                            |  |                             |                                 |                              |
| Version A + B                                                                                                                                                                                                                    |                                                                                                                                                                            | Version C                                                                            |                             |                                 |                              |


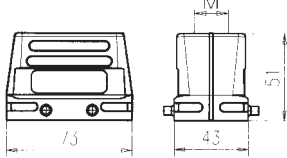
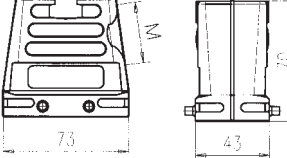

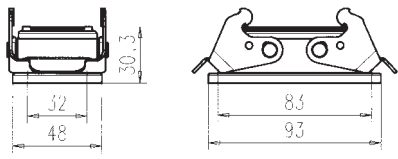
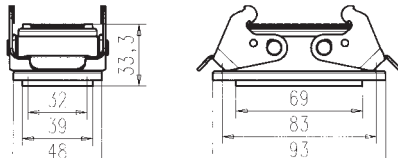
EMV Verschraubung für Tüllengehäuse siehe Seite 173 / EMC gland bushings for hoods see page 173

C 146 E 10 pol.  
 C 146 M 3 Module  
 C 146 DD 42 pol.  
 C 146 EE 18 pol.

EMV-Gehäuse  
 EMC housings

Gehäuse für Querbügelverriegelung  
 Housings for 2 locking-lever-system

Metrisches Gewinde  
 Metric thread

| Bezeichnung - Abbildung<br>Description - Figure                                                                                         | Maßzeichnung<br>Drawing                                                             | M  | Kabelabgang<br>Cable outlet | Bestell Nr. / Part No.             |                              |
|-----------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----|-----------------------------|------------------------------------|------------------------------|
|                                                                                                                                         |                                                                                     |    |                             | Niedrige Bauform<br>Low profile    | Hohe Bauform<br>High profile |
| <b>Gehäuseoberteile / Hoods</b>                                                                                                         |                                                                                     |    |                             | <b>ohne Stutzen / without stud</b> |                              |
| Tüllengehäuse / Hood<br><br>                          |    | 20 | Oben / top                  | C146 11R010 650 1                  |                              |
|                                                                                                                                         |                                                                                     | 20 | Seite / side                | C146 11R010 550 1                  |                              |
|                                                                                                                                         |                                                                                     | 25 | Oben / top                  | C146 11R010 600 1                  |                              |
|                                                                                                                                         |                                                                                     | 25 | Seite / side                | C146 11R010 500 1                  |                              |
|                                                                                                                                         |                                                                                     | 32 | Oben / top                  | C146 11R010 601 1                  |                              |
|                                                                                                                                         |    | 25 | Oben / top                  |                                    | C146 11R010 650 8            |
|                                                                                                                                         |                                                                                     | 25 | Seite / side                |                                    | C146 11R010 550 8            |
|                                                                                                                                         |                                                                                     | 32 | Oben / top                  |                                    | C146 11R010 600 8            |
|                                                                                                                                         |                                                                                     | 32 | Seite / side                |                                    | C146 11R010 500 8            |
|                                                                                                                                         |                                                                                     | 40 | Oben / top                  |                                    | C146 11R010 601 8            |
| <b>Gehäuseunterteile / Housings</b>                                                                                                     |                                                                                     |    | <b>Version</b>              |                                    |                              |
| Anbaugeschäule<br>Housing, bulkhead mounting<br><br> | Version A + B                                                                       |    | A                           | C146 11F010 901 8                  |                              |
|                                                                                                                                         |  |    | B                           | C146 11F010 902 8                  |                              |
|                                                                                                                                         |                                                                                     |    | Version C                   |                                    | C                            |
|                                                                                                                                         |  |    |                             |                                    |                              |
|                                                                                                                                         |                                                                                     |    |                             |                                    |                              |


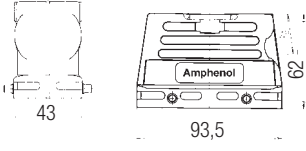

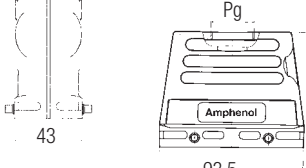

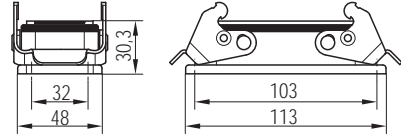
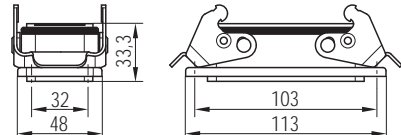
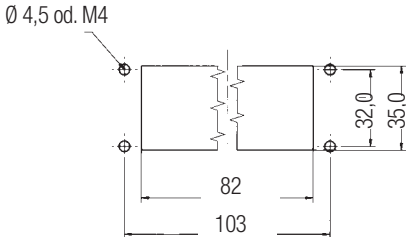
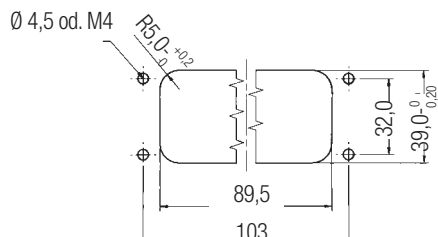
EMV Verschraubung für Tüllengehäuse siehe Seite 173 / EMC gland bushings for hoods see page 173

C 146 E 16 pol.  
 C 146 M 5 Module  
 C 146 D 40 pol.  
 C 146 DD 72 pol.  
 C 146 HSE 6 pol.  
 C 146 EE 32 pol.

EMV-Gehäuse  
 EMC housings

Gehäuse für Querbügelverriegelung  
 Housings for 2 locking-lever-system

PG-Gewinde  
 PG-thread

| Bezeichnung - Abbildung<br>Description - Figure                                                                                   | Maßzeichnung<br>Drawing                                                                              | PG                                                                                   | Kabelabgang<br>Cable outlet | Bestell Nr. / Part No.          |                              |
|-----------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-----------------------------|---------------------------------|------------------------------|
|                                                                                                                                   |                                                                                                      |                                                                                      |                             | Niedrige Bauform<br>Low profile | Hohe Bauform<br>High profile |
| <b>Gehäuseoberteile / Hoods</b>                                                                                                   |                                                                                                      |                                                                                      |                             |                                 |                              |
| Tüllengehäuse / Hood<br>                         |                     | 21                                                                                   | Oben / top                  | C146 11G016 600 1               |                              |
|                                                                                                                                   |                                                                                                      | 21                                                                                   | Seite / side                | C146 11G016 500 1               |                              |
|                                                 |                    | 29                                                                                   | Oben / top                  | C146 11G016 601 1               |                              |
|                                                                                                                                   |                                                                                                      | 29                                                                                   | Seite / side                | C146 11G016 501 1               |                              |
|                                                                                                                                   |                                                                                                      | 21                                                                                   | Oben / top                  |                                 | C146 11G016 600 8            |
|                                                                                                                                   |                                                                                                      | 21                                                                                   | Seite / side                |                                 | C146 11G016 500 8            |
|                                                                                                                                   |                                                                                                      | 29                                                                                   | Oben / top                  |                                 | C146 11G016 601 8            |
|                                                                                                                                   |                                                                                                      | 29                                                                                   | Seite / side                |                                 | C146 11G016 501 8            |
| <b>Gehäuseunterteile / Housings</b>                                                                                               |                                                                                                      |                                                                                      | <b>Version</b>              |                                 |                              |
| Anbaugehäuse<br>Housing, bulkhead mounting<br> | Version A + B<br> | A                                                                                    | C146 11F016 901 8           |                                 |                              |
|                                                                                                                                   | Version C<br>     | B                                                                                    | C146 11F016 902 8           |                                 |                              |
|                                                                                                                                   |                                                                                                      | C                                                                                    | C146 11F016 000 8           |                                 |                              |
| <b>Montageausschnitt / Panel cutout</b>                                                                                           |                                                                                                      |                                                                                      |                             |                                 |                              |
|                                                |                                                                                                      |  |                             |                                 |                              |
| Version A + B                                                                                                                     |                                                                                                      | Version C                                                                            |                             |                                 |                              |



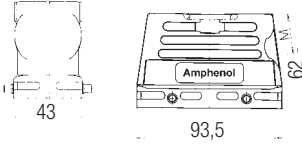
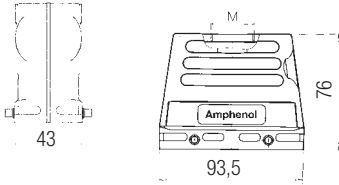


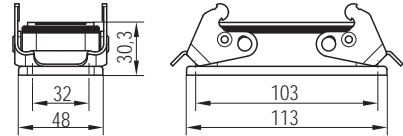
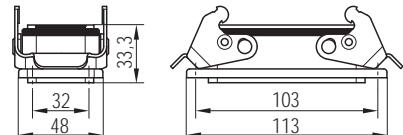
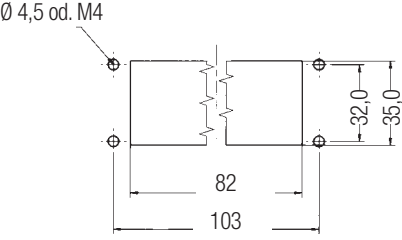
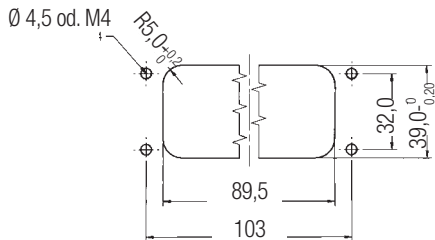
EMV Verschraubung für Tüllengehäuse siehe Seite 173 / EMC gland bushings for hoods see page 173

**C 146 E** 16 pol.  
**C 146 M** 5 Module  
**C 146 D** 40 pol.  
**C 146 DD** 72 pol.  
**C 146 HSE** 6 pol.  
**C 146 EE** 32 pol.

EMV-Gehäuse  
 EMC housings

Gehäuse für Querbügelverriegelung  
 Housings for 2 locking-lever-system

Metrisches Gewinde  
 Metric thread

| Bezeichnung - Abbildung<br>Description - Figure                                                                                                                                                                                  | Maßzeichnung<br>Drawing                                                                                                                            | M                                                                                                                                                                                              | Kabelabgang<br>Cable outlet | Bestell Nr. / Part No.                                                                                                                                                                                                     |                                   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
|                                                                                                                                                                                                                                  |                                                                                                                                                    |                                                                                                                                                                                                |                             | Niedrige Bauform<br>Low profile                                                                                                                                                                                            | Hohe Bauform<br>High profile      |
| <b>Gehäuseoberteile / Hoods</b>                                                                                                                                                                                                  |                                                                                                                                                    |                                                                                                                                                                                                |                             |                                                                                                                                                                                                                            |                                   |
| Tüllengehäuse / Hood<br><br><br><br>                          | <br>43      93,5                                                  | 25                                                                                                                                                                                             | Oben / top                  | <a href="#">C146 11R016 650 1</a><br><a href="#">C146 11R016 550 1</a><br><a href="#">C146 11R016 600 1</a><br><a href="#">C146 11R016 500 1</a>                                                                           |                                   |
|                                                                                                                                                                                                                                  |                                                                                                                                                    | 25                                                                                                                                                                                             | Seite / side                |                                                                                                                                                                                                                            |                                   |
| 32                                                                                                                                                                                                                               | Oben / top                                                                                                                                         |                                                                                                                                                                                                |                             |                                                                                                                                                                                                                            |                                   |
| 32                                                                                                                                                                                                                               | Seite / side                                                                                                                                       |                                                                                                                                                                                                |                             |                                                                                                                                                                                                                            |                                   |
|                                                                                                                                                                                                                                  | <br>43      93,5                                                 | 25                                                                                                                                                                                             | Oben / top                  | <a href="#">C146 11R016 650 8</a><br><a href="#">C146 11R016 550 8</a><br><a href="#">C146 11R016 600 8</a><br><a href="#">C146 11R016 500 8</a><br><a href="#">C146 11R016 601 8</a><br><a href="#">C146 11R016 501 8</a> |                                   |
| 25                                                                                                                                                                                                                               |                                                                                                                                                    | Seite / side                                                                                                                                                                                   |                             |                                                                                                                                                                                                                            |                                   |
| 32                                                                                                                                                                                                                               | Oben / top                                                                                                                                         |                                                                                                                                                                                                |                             |                                                                                                                                                                                                                            |                                   |
| 32                                                                                                                                                                                                                               | Seite / side                                                                                                                                       |                                                                                                                                                                                                |                             |                                                                                                                                                                                                                            |                                   |
| 40                                                                                                                                                                                                                               | Oben / top                                                                                                                                         |                                                                                                                                                                                                |                             |                                                                                                                                                                                                                            |                                   |
| 40                                                                                                                                                                                                                               | Seite / side                                                                                                                                       |                                                                                                                                                                                                |                             |                                                                                                                                                                                                                            |                                   |
| <b>Gehäuseunterteile / Housings</b>                                                                                                                                                                                              |                                                                                                                                                    |                                                                                                                                                                                                | <b>Version</b>              |                                                                                                                                                                                                                            |                                   |
| Anbaugehäuse<br>Housing, bulkhead mounting<br><br><br><br> | Version A + B<br><br><br>32      30,3      48      103      113 | A                                                                                                                                                                                              |                             | <a href="#">C146 11F016 901 8</a><br><br><a href="#">C146 11F016 902 8</a>                                                                                                                                                 |                                   |
|                                                                                                                                                                                                                                  | Version C<br><br><br>32      33,3      48      103      113     | C                                                                                                                                                                                              |                             |                                                                                                                                                                                                                            | <a href="#">C146 11F016 000 8</a> |
| <b>Montageausschnitt / Panel cutout</b>                                                                                                                                                                                          |                                                                                                                                                    |                                                                                                                                                                                                |                             |                                                                                                                                                                                                                            |                                   |
| <br>Ø 4,5 od. M4<br>82      103      32,0      35,0<br>Version A + B                                                                          |                                                                                                                                                    | <br>Ø 4,5 od. M4<br>R5,0 <sub>0,20</sub><br>89,5      103      32,0      39,0 <sub>0,20</sub><br>Version C |                             |                                                                                                                                                                                                                            |                                   |


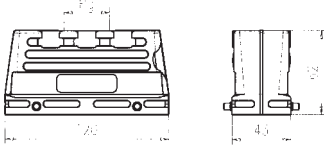

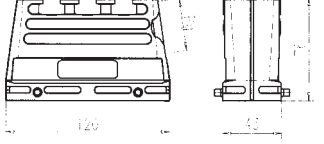

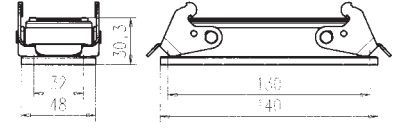

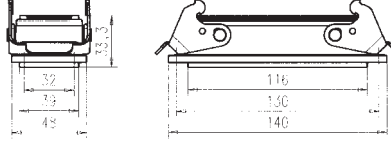
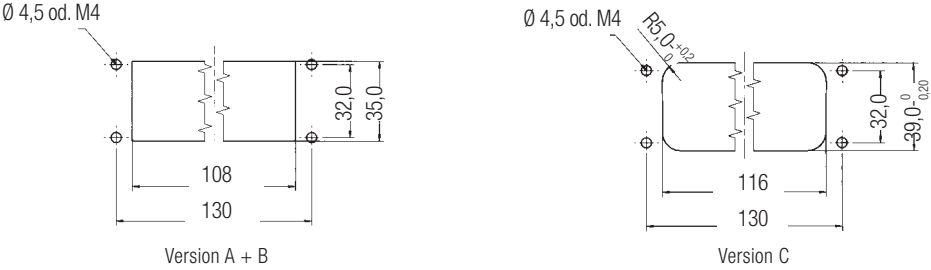
EMV Verschraubung für Tüllengehäuse siehe Seite 173 / EMC gland bushings for hoods see page 173

C 146 E 24 pol.  
 C 146 M 7 Module  
 C 146 D 64 pol.  
 C 146 DD 108 pol.  
 C 146 EE 46 pol.

EMV-Gehäuse  
 EMC housings

Gehäuse für Querbügelverriegelung  
 Housings for 2 locking-lever systems

PG-Gewinde  
 PG-thread

| Bezeichnung - Abbildung<br>Description - Figure                                                                                                | Maßzeichnung<br>Drawing                                                                              | PG | Kabelabgang<br>Cable outlet | Bestell Nr. / Part No.          |                              |
|------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|----|-----------------------------|---------------------------------|------------------------------|
|                                                                                                                                                |                                                                                                      |    |                             | Niedrige Bauform<br>Low profile | Hohe Bauform<br>High profile |
| <b>Gehäuseoberteile / Hoods</b>                                                                                                                |                                                                                                      |    |                             |                                 |                              |
| Tüllengehäuse / Hood<br>                                      |                     | 21 | Oben / top                  | C146 11G024 600 1               |                              |
|                                                                                                                                                |                                                                                                      | 21 | Seite / side                | C146 11G024 500 1               |                              |
|                                                              |                    | 29 | Oben / top                  | C146 11G024 601 1               |                              |
|                                                                                                                                                |                                                                                                      | 29 | Seite / side                | C146 11G024 501 1               |                              |
| <b>Gehäuseunterteile / Housings</b>                                                                                                            |                                                                                                      |    |                             |                                 |                              |
| Anbaugehäuse<br>Housing, bulkhead mounting<br>              | Version A + B<br> | A  |                             | C146 11F024 901 8               |                              |
|                                                                                                                                                |                                                                                                      | B  |                             | C146 11F024 902 8               |                              |
|                                                                                                                                                |                                                                                                      | C  |                             | C146 11F024 000 8               |                              |
|                                                             | Version C<br>     |    |                             |                                 |                              |
|                                                                                                                                                |                                                                                                      |    |                             |                                 |                              |
|                                                                                                                                                |                                                                                                      |    |                             |                                 |                              |
| <b>Montageausschnitt / Panel cutout</b>                                                                                                        |                                                                                                      |    |                             |                                 |                              |
|  <p>Ø 4,5 od. M4</p> <p>Version A + B</p> <p>Version C</p> |                                                                                                      |    |                             |                                 |                              |


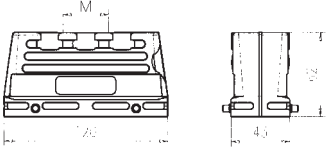

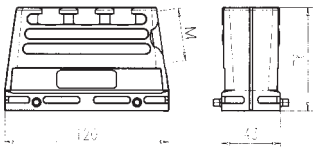

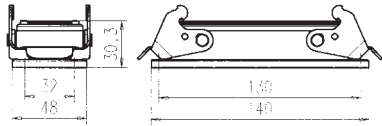
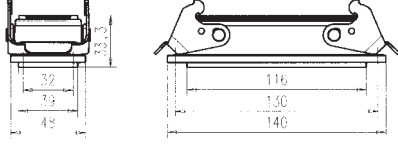
EMV Verschraubung für Tüllengehäuse siehe Seite 173 / EMC gland bushings for hoods see page 173

C 146 E 24 pol.  
 C 146 M 7 Module  
 C 146 D 64 pol.  
 C 146 DD 108 pol.  
 C 146 EE 46 pol.

EMV-Gehäuse  
 EMC housings

Gehäuse für Querbügelverriegelung  
 Housings for 2 locking-lever systems

Metrisches Gewinde  
 Metric thread

| Bezeichnung - Abbildung<br>Description - Figure                                                                                   | Maßzeichnung<br>Drawing                                                                              | M  | Kabelabgang<br>Cable outlet | Bestell Nr. / Part No.          |                              |
|-----------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|----|-----------------------------|---------------------------------|------------------------------|
|                                                                                                                                   |                                                                                                      |    |                             | Niedrige Bauform<br>Low profile | Hohe Bauform<br>High profile |
| <b>Gehäuseoberteile / Hoods</b>                                                                                                   |                                                                                                      |    |                             |                                 |                              |
| Tüllengehäuse / Hood<br>                         |                     | 25 | Oben / top                  | C146 11R024 650 1               |                              |
|                                                                                                                                   |                                                                                                      | 25 | Seite / side                | C146 11R024 550 1               |                              |
|                                                 |                     | 32 | Oben / top                  | C146 11R024 600 1               |                              |
|                                                                                                                                   |                                                                                                      | 32 | Seite / side                | C146 11R024 500 1               |                              |
|                                                                                                                                   |                                                                                                      | 25 | Oben / top                  |                                 | C146 11R024 650 8            |
|                                                                                                                                   |                                                                                                      | 25 | Seite / side                |                                 | C146 11R024 550 8            |
|                                                                                                                                   |                                                                                                      | 32 | Oben / top                  |                                 | C146 11R024 600 8            |
|                                                                                                                                   |                                                                                                      | 32 | Seite / side                |                                 | C146 11R024 500 8            |
| 40                                                                                                                                | Oben / top                                                                                           |    | C146 11R024 601 8           |                                 |                              |
| 40                                                                                                                                | Seite / side                                                                                         |    | C146 11R024 501 8           |                                 |                              |
| <b>Gehäuseunterteile / Housings</b>                                                                                               |                                                                                                      |    | <b>Version</b>              |                                 |                              |
| Anbaugehäuse<br>Housing, bulkhead mounting<br> | Version A + B<br> | A  |                             | C146 11F024 901 8               |                              |
|                                                                                                                                   | Version C<br>     | B  |                             | C146 11F024 902 8               |                              |
| C                                                                                                                                 |                                                                                                      |    | C146 11F024 000 8           |                                 |                              |

EMV Verschraubung für Tüllengehäuse siehe Seite 173 / EMC gland bushings for hoods see page 173





# C 146 Zubehör / Accessories


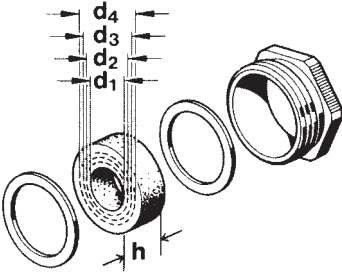

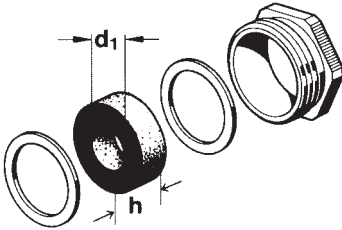


## Übersicht


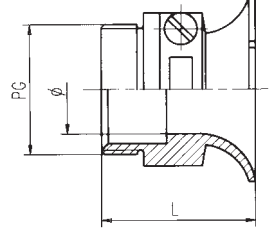

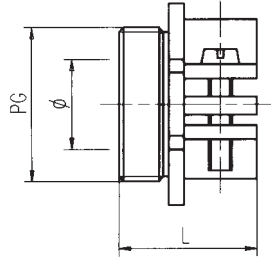

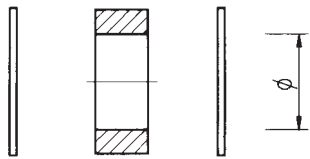

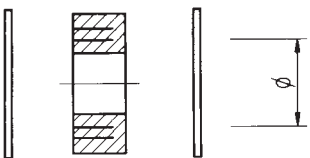

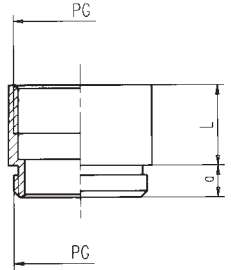

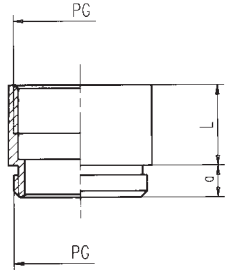
- Verschraubungen
- EMV Verschraubungen
- Verschraubungen mit Zugentlastung
- Codierbolzen
- Führungsstifte / Buchsen
- D-Sub Adapterplatten
- Moosgummidichtungen
- Klebeschild nach CSA-Vorschrift

## Overview


- gland bushings
- EMC gland bushings
- Cable seals with cable clamp
- Key pin
- Guide pin / bush
- D-Sub adaptors
- Foam rubber sealing
- Label for CSA regulation

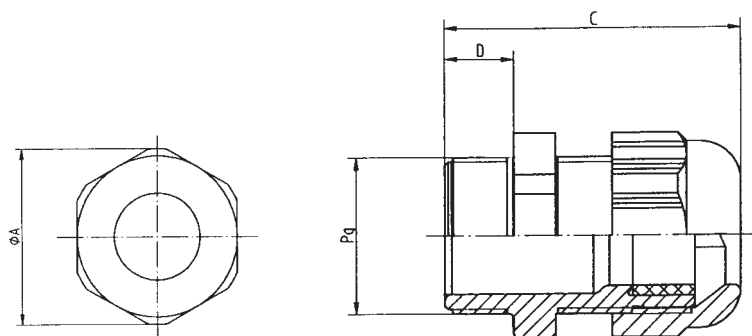
| Bezeichnung - Abbildung<br>Description - Figure                                                                                                                                        | Zeichnung<br>Drawing                                                                | PG<br>PG | M<br>M          | Stückzahl<br>Pieces | Bestell Nr.<br>Part No.          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------|-----------------|---------------------|----------------------------------|
| Metall, mit ausschneidbaren Dichtungen (Zwiebelringen)<br>Metal, with variable inner diameter<br><br> |   | 11       | -               | 10                  | VN16 110 0014 X<br>(Thermoplast) |
|                                                                                                                                                                                        |                                                                                     | -        | 20              | 10                  | VN16 200 0114 X<br>(Thermoplast) |
|                                                                                                                                                                                        |                                                                                     | 13,5     | -               | 10                  | VN16 135 0014 X                  |
|                                                                                                                                                                                        |                                                                                     | 16       | -               | 10                  | VN16 160 0014 X                  |
|                                                                                                                                                                                        |                                                                                     | -        | 20              | 10                  | VN16 200 0114 X                  |
|                                                                                                                                                                                        |                                                                                     | 21       | -               | 10                  | VN16 210 0014 X                  |
|                                                                                                                                                                                        |                                                                                     | -        | 25              | 10                  | VN16 250 0114 X                  |
|                                                                                                                                                                                        |                                                                                     | 29       | -               | 10                  | VN16 290 0014 X                  |
|                                                                                                                                                                                        |                                                                                     | -        | 32              | 10                  | VN16 320 0114 X                  |
|                                                                                                                                                                                        |                                                                                     | 36       | -               | 10                  | VN16 360 0014 X                  |
|                                                                                                                                                                                        |                                                                                     | -        | 40              | 10                  | VN16 400 0114 X                  |
|                                                                                                                                                                                        |                                                                                     | 42       | -               | 10                  | VN16 420 0014 X                  |
| -                                                                                                                                                                                      | 50                                                                                  | 10       | VN16 500 0114 X |                     |                                  |
| Metall, mit Standard Dichtung<br>Metal, with standard diameter<br><br>                              |  | 11       | -               | 10                  | VN16 110 0013 X<br>(Thermoplast) |
|                                                                                                                                                                                        |                                                                                     | 13,5     | -               | 10                  | VN16 135 0013 X                  |
|                                                                                                                                                                                        |                                                                                     | 16       | -               | 10                  | VN16 160 0013 X                  |
|                                                                                                                                                                                        |                                                                                     | 21       | -               | 10                  | VN16 210 0013 X                  |
|                                                                                                                                                                                        |                                                                                     | 29       | -               | 10                  | VN16 290 0013 X                  |
|                                                                                                                                                                                        |                                                                                     | 36       | -               | 10                  | VN16 360 0013 X                  |
|                                                                                                                                                                                        |                                                                                     | 42       | -               | 10                  | VN16 420 0013 X                  |

<sup>1)</sup> Achtung: nicht für Gehäuse ohne Stützen geeignet / Attention: not usable for hoods without stud

| Bezeichnung - Abbildung<br>Description - Figure                                                                                                                                                    | Zeichnung<br>Drawing                                                                | PG<br>PG | M<br>M          | Stückzahl<br>Pieces | Bestell Nr.<br>Part No.          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------|-----------------|---------------------|----------------------------------|
| Kabelverschraubung ohne Dichtung<br>Cable clamp without gasket<br><br>                                            |    | 11       | -               | 5                   | VN16 110 0004 V<br>(Thermoplast) |
|                                                                                                                                                                                                    |                                                                                     | 13,5     | -               | 5                   | VN16 135 0002 V                  |
|                                                                                                                                                                                                    |                                                                                     | - 16     | -               | 5                   | VN16 160 0102 V                  |
|                                                                                                                                                                                                    |                                                                                     | 16       | -               | 5                   | VN16 160 0002 V                  |
|                                                                                                                                                                                                    |                                                                                     | - 20     | -               | 5                   | VN16 200 0102 V                  |
|                                                                                                                                                                                                    |                                                                                     | 21       | -               | 5                   | VN16 210 0002 V                  |
|                                                                                                                                                                                                    |                                                                                     | - 25     | -               | 5                   | VN16 250 0102 V                  |
|                                                                                                                                                                                                    |                                                                                     | 29       | -               | 5                   | VN16 290 0002 V                  |
| - 32                                                                                                                                                                                               | -                                                                                   | 5        | VN16 320 0102 V |                     |                                  |
| Kabelverschraubung ohne Dichtung<br>Cable clamp without gasket<br><br>                                           |   | 13,5     | -               | 5                   | VN16 135 0003 V                  |
|                                                                                                                                                                                                    |                                                                                     | 16       | -               | 5                   | VN16 160 0003 V                  |
|                                                                                                                                                                                                    |                                                                                     | - 20     | -               | 5                   | VN16 200 0103 V                  |
|                                                                                                                                                                                                    |                                                                                     | 21       | -               | 5                   | VN16 210 0003 V                  |
|                                                                                                                                                                                                    |                                                                                     | - 25     | -               | 5                   | VN16 250 0103 V                  |
|                                                                                                                                                                                                    |                                                                                     | 29       | -               | 5                   | VN16 290 0003 V                  |
| - 32                                                                                                                                                                                               | -                                                                                   | 5        | VN16 320 0103 V |                     |                                  |
| Dichtung, Druckscheibe<br>Sealing, pressure disk<br><br>                                                        |  | 11       | -               | 10                  | VN16 110 0028 X                  |
|                                                                                                                                                                                                    |                                                                                     | 13,5     | -               | 10                  | VN16 135 0028 X                  |
|                                                                                                                                                                                                    |                                                                                     | 16       | -               | 10                  | VN16 160 0028 X                  |
|                                                                                                                                                                                                    |                                                                                     | 21       | -               | 10                  | VN16 210 0028 X                  |
| Ausschneidbare Dichtung,<br>Druckscheibe<br>Sealing with variable inner diameter,<br>and pressure rings<br><br> |  | 29       | -               | 10                  | VN16 290 0028 X                  |
|                                                                                                                                                                                                    |                                                                                     | 11       | -               | 10                  | VN16 110 0029 X                  |
|                                                                                                                                                                                                    |                                                                                     | 13,5     | -               | 10                  | VN16 135 0029 X                  |
|                                                                                                                                                                                                    |                                                                                     | 16       | -               | 10                  | VN16 160 0029 X                  |
| Zwischenstutzen<br>Stud<br><br>                                                                                 |  | 21       | -               | 10                  | VN16 210 0029 X                  |
|                                                                                                                                                                                                    |                                                                                     | 11       | -               | 1                   | N16 011 0010                     |
|                                                                                                                                                                                                    |                                                                                     | 13,5     | -               | 1                   | N16 013 0010                     |
|                                                                                                                                                                                                    |                                                                                     | 16       | -               | 1                   | N16 016 0010                     |
| Zwischenstutzen<br>Stud<br><br>                                                                                 |  | 21       | -               | 1                   | N16 021 0010                     |
|                                                                                                                                                                                                    |                                                                                     | 29       | -               | 1                   | N16 029 0010                     |
|                                                                                                                                                                                                    |                                                                                     | 29       | -               | 1                   | N16 029 0010                     |


<sup>1)</sup> Achtung: nicht für Gehäuse ohne Stutzen geeignet / Attention: not usable for hoods without stud

| Bezeichnung - Abbildung<br>Description - Figure                                    | Klemmbereich Ø<br>Clamping range Ø | A<br>mm | PG<br>PG    | M<br>M    | Stückzahl<br>Pieces | Bestell Nr. / Part No. |
|------------------------------------------------------------------------------------|------------------------------------|---------|-------------|-----------|---------------------|------------------------|
|  | 4 - 10 mm                          | 24,4    | <b>11</b>   | -         | 10                  | VN16 110 0027 X        |
|                                                                                    | 4 - 10 mm                          | 20      | -           | <b>16</b> | 10                  | VN16 160 0127 X        |
|                                                                                    | 5 - 12 mm                          | 26,5    | <b>13,5</b> | -         | 10                  | VN16 135 0027 X        |
|                                                                                    | 6 - 12 mm                          | 24      | -           | <b>20</b> | 10                  | VN16 200 0127 X        |
|                                                                                    | 9 - 14 mm                          | 29,5    | <b>16</b>   | -         | 10                  | VN16 160 0027 X        |
|                                                                                    | 9 - 16 mm                          | 28      | -           | <b>25</b> | 10                  | VN16 250 0127 X        |
|                                                                                    | 13 - 18 mm                         | 36,2    | <b>21</b>   | -         | 10                  | VN16 210 0027 X        |
|                                                                                    | 10 - 21 mm                         | 36      | -           | <b>32</b> | 10                  | VN16 320 0127 X        |
|                                                                                    | 14 - 25 mm                         | 43,6    | <b>29</b>   | -         | 10                  | VN16 290 0027 X        |
|                                                                                    | 16 - 28 mm                         | 46      | -           | <b>40</b> | 10                  | VN16 400 0127 X        |



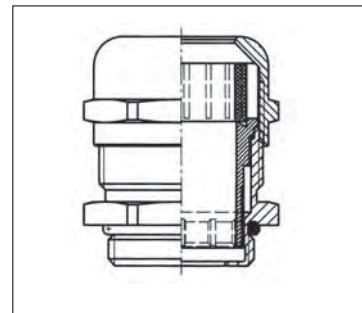
|                                                                                                                 |  |             |    |                     |
|-----------------------------------------------------------------------------------------------------------------|--|-------------|----|---------------------|
| Blindstopfen aus Messing vernickelt mit Einstich und O-Ring<br>Plugs brass nickel-plated with recess and o-ring |  | <b>M 20</b> | 10 | VN16 020 0113 (1) X |
|                                                                                                                 |  | <b>M 25</b> | 10 | VN16 025 0113 (1) X |
|                                                                                                                 |  | <b>M 32</b> | 10 | VN16 032 0113 (1) X |
|                                                                                                                 |  | <b>M 40</b> | 10 | VN16 040 0113 (1) X |

**EMV Verschraubung IP 68 (Material CuZn / PA / - 30 °C + 120 °C)**  
**EMC gland bushings IP 68 (Material CuZn / PA / - 30 °C + 120 °C)**

| Bezeichnung - Abbildung<br>Description - Figure                                                                                      | Klemmbereich F<br>Clamping range F | PG<br>PG    | M<br>M    | Stückzahl<br>Pieces | Bestell Nr.<br>Part No. |
|--------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|-------------|-----------|---------------------|-------------------------|
| Kabelverschraubung EMV<br>Gland bushing EMC<br><br> | 4 - 10 mm                          | <b>11</b>   | –         | 10                  | VN16 110 0026 X         |
|                                                                                                                                      | 5,5 - 10 mm                        | –           | <b>16</b> | 10                  | VN16 160 0126 X         |
|                                                                                                                                      | 5 - 12 mm                          | <b>13,5</b> | –         | 10                  | VN16 135 0026 X         |
|                                                                                                                                      | 8 - 13 mm                          | –           | <b>20</b> | 10                  | VN16 200 0126 X         |
|                                                                                                                                      | 8 - 14 mm                          | <b>16</b>   | –         | 10                  | VN16 160 0026 X         |
|                                                                                                                                      | 11 - 18 mm                         | –           | <b>25</b> | 10                  | VN16 250 0126 X         |
|                                                                                                                                      | 11 - 17,5 mm                       | <b>21</b>   | –         | 10                  | VN16 210 0026 X         |
|                                                                                                                                      | 15 - 21 mm                         | –           | <b>32</b> | 10                  | VN16 320 0126 X         |
|                                                                                                                                      | 16 - 25 mm                         | <b>29</b>   | –         | 10                  | VN16 290 0026 X         |
| 19 - 27 mm                                                                                                                           | –                                  | <b>40</b>   | 10        | VN16 400 0126 X     |                         |

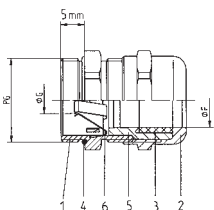
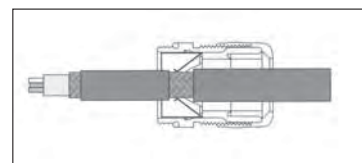
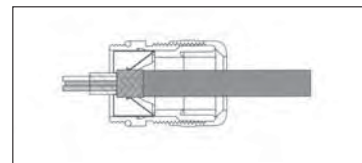
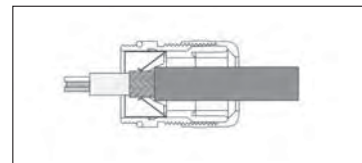
**Montagehinweise für metrische Verschraubung / Assembly instructions for metric clamp**

- Der Außenmantel des Kabels wird entfernt bis Unterseite Lamellen-Klemmkäfig, das Drahtgeflecht wird erst ein Stück weiter unten abgeschnitten und dann als ringförmiger Wulst ausgebildet. Der innere Schutzmantel kann am Kabel dranbleiben, sofern er durch die untere Öffnung der Verschraubung passt.
- Bei der Montage, beim Zusammenschrauben der Kabelverschraubung wird der ringförmige Wulst durch die Lamellentülle auf den Boden des Unterteils verpresst und findet in einer Auskoffnung Platz. Dadurch wird die EMV-Sicherheit hergestellt.
- *The cable jacket should be removed as far as the underside of the cable clamping; the wire netting is then to be cut down a little further and subsequently must be formed into a circular rim. The protective jacket can remain attached to the cable provided that it passes through the lower opening of the clamp.*
- *On assembly, while screwing the cable clamp, the circular rim has to be pushed through and pressed on the fins commutator on the base of the underside and settle into a depression. By doing this the EMC security will remain.*



**Montagehinweise für PG-Verschraubung / Assembly instructions for PG-Clamp**


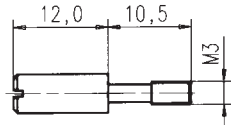

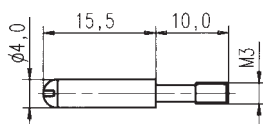

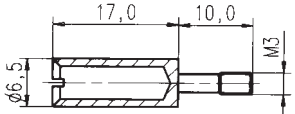
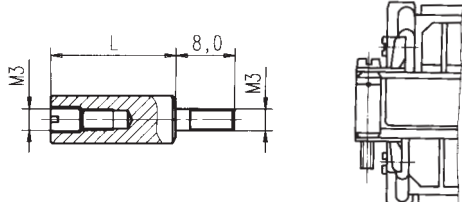

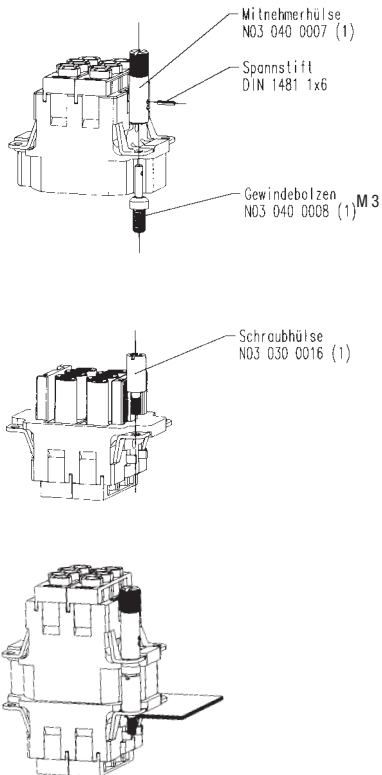
- Außenmantel und Schirm absetzen
- Außenmantel nach ca. 15 mm mit Rundschnitt versehen, jedoch nicht abziehen
- Leitung durch die Verschraubung führen
- Außenmantel abziehen
- Leitung zurückziehen bis die Verbindung zwischen Leitungsschirm und Kontaktfeder hergestellt ist
- *Cut and remove cable jacket and braid*
- *Cut cable jacket appr. 15 mm further but don't remove it yet*
- *Insert cable through backshell*
- *Remove now the cut jacket part*
- *Pull back cable until connection is made between grounding fingers and braid*
- Außenmantel absetzen
- Schirmgeflecht ca. 15 - 20 mm über den Außenmantel zurückschlagen
- Leitungen in Verschraubung einführen, bis Verbindung zwischen Leitungsschirm und Kontaktfeder hergestellt ist
- *Cut and remove cable jacket*
- *Fold braid appr. 15 to 20 mm back over jacket*
- *Insert cable into backshell until grounding fingers connect with braid*
- Schirmgeflecht ca. 10 mm freilegen
- Leitung durch die Verschraubung führen bis Verbindung zwischen Leitungsschirm und Kontaktfeder hergestellt ist
- *Expose braid appr. 10 mm*
- *Insert cable through backshell until grounding fingers rest on braid*



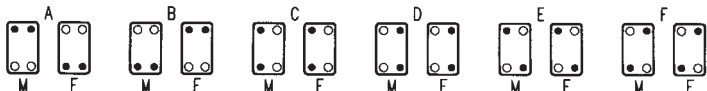
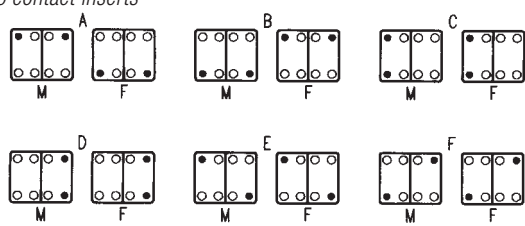
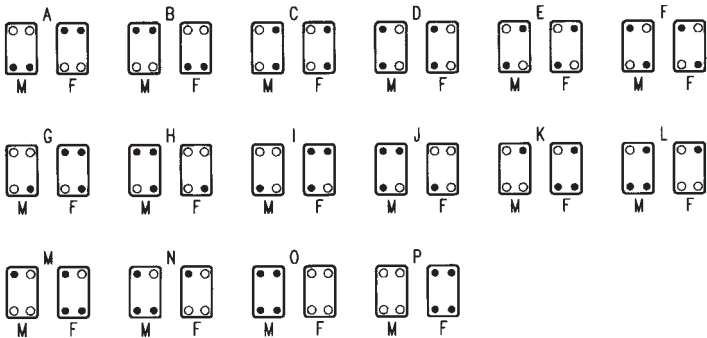
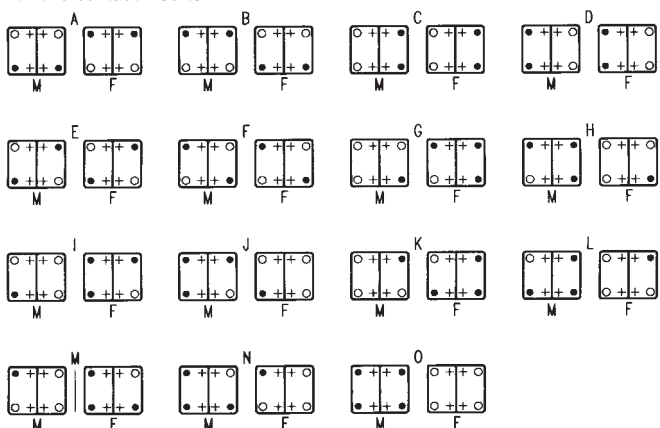
- |                     |                      |
|---------------------|----------------------|
| 1 = Zwischenstutzen | 1 = Screwed gland    |
| 2 = Hutmutter       | 2 = Cap nut          |
| 3 = Dichtung        | 3 = Sealing          |
| 4 = O-Ringe         | 4 = O ring           |
| 5 = Einsatz         | 5 = Insert           |
| 6 = Erdungsfinger   | 6 = Grounding finger |


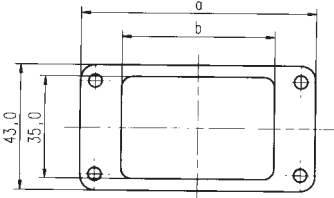

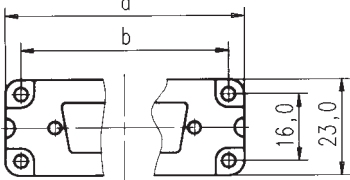

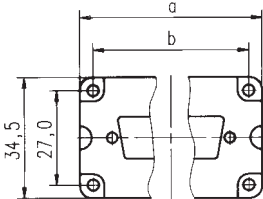

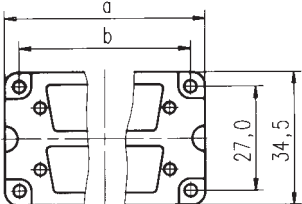
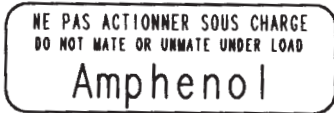
# C 146

## Zubehör Accessories

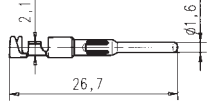
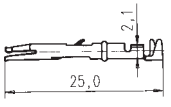
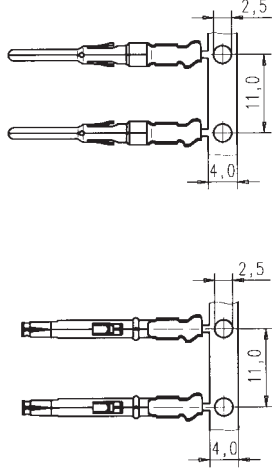
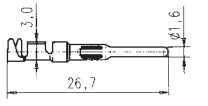
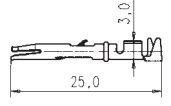
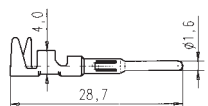
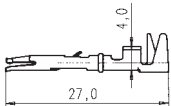
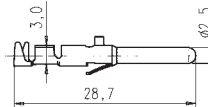
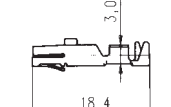
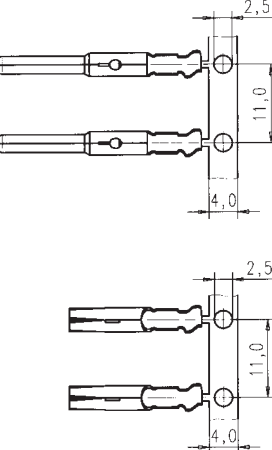
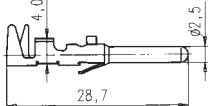
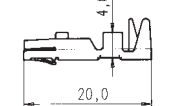
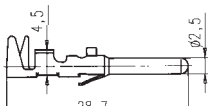
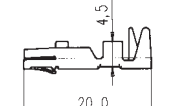
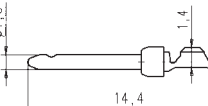
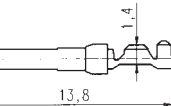
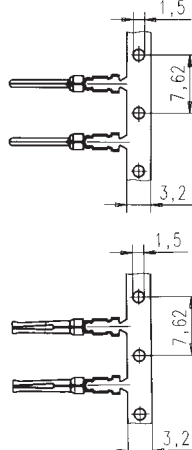
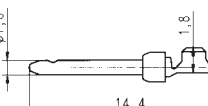
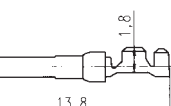
| Bezeichnung - Abbildung<br>Description - Figure                                                                                                     | Zeichnung<br>Drawing                                                                 | Stückzahl<br>Pieces | Bestell Nr.<br>Part No.                  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------|------------------------------------------|
| Kodierbolzen mit Sicherungsscheibe<br>Key pin with lock washer<br> |     | 10<br>100           | VN17 050 0004 (1)<br>VN17 050 0004 (101) |
| Führungsstift<br>Guide pin<br>                                     |     | 10                  | VN13 040 0009 (1) X                      |
| Führungsbuchse<br>Guide socket<br>                                 |     | 10                  | VN13 040 0008 (1) X                      |
| Verriegelungsschraube für<br>Kontakteinsätze<br>Locking screw for contact inserts<br>C146 D 15, 25<br>C146 A 10, 16                                 |   | L<br>23             | VN03 030 0021                            |
| Verriegelungsschraube für<br>Kontakteinsätze<br>Locking screw for contact inserts<br>C146 E; M; D 40, 64; H                                         |                                                                                      | 20                  | VN03 030 0020                            |
| Verriegelungsset<br>Locking set<br>C146 E; M; D 40, 64; H<br>    |  | 10                  | VN03 030 3000 X                          |

Kodierschema  
Polarization system

| Bezeichnung<br>Description                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Kodierschema mit Kodierbolzen<br/><i>Polarization system with key pin</i></p>                                        | <p>Für Gehäuse mit einem Kontakteinsatz<br/><i>For housings with one contact insert</i></p>  <p>Für Gehäuse mit zwei Kontakteinsätzen<br/><i>For housings with two contact inserts</i></p>  <ul style="list-style-type: none"> <li>● Kodierbolzen</li> <li>○ Befestigungsschrauben</li> <li>M - Stifteinsatz</li> <li>F - Buchseneinsatz</li> </ul> <ul style="list-style-type: none"> <li>● Key pin</li> <li>○ Locking screw</li> <li>M - Male insert</li> <li>F - Female insert</li> </ul>                                                          |
| <p>Kodierschema mit Führungsstift und Führungsbuchse<br/><i>Polarization system with guide pin and guide socket</i></p> | <p>Für Gehäuse mit einem Kontakteinsatz<br/><i>For housings with one contact insert</i></p>  <p>Für Gehäuse mit zwei Kontakteinsätzen<br/><i>For housings with two contact inserts</i></p>  <ul style="list-style-type: none"> <li>● Führungsstift</li> <li>○ Führungsbuchse</li> <li>+ Befestigungsschrauben</li> <li>M - Stifteinsatz</li> <li>F - Buchseneinsatz</li> </ul> <ul style="list-style-type: none"> <li>● Guide pin</li> <li>○ Guide socket</li> <li>+ Locking screw</li> <li>M - Male insert</li> <li>F - Female insert</li> </ul> |

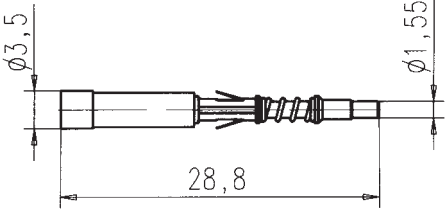
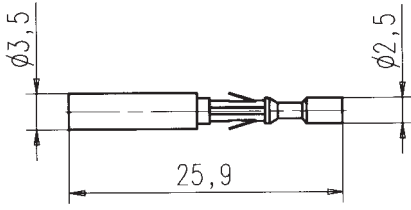
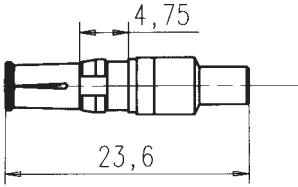
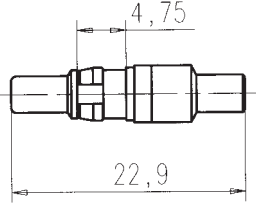
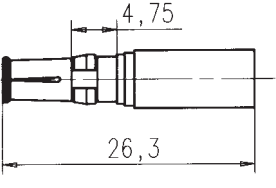
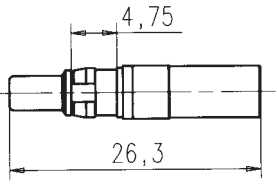
| Bezeichnung - Abbildung<br>Description - Figure                                                                                                                   | Zeichnung<br>Drawing                                                                                                                                                           | Größe<br>Size |           |                       | Bestell Nr.<br>Part No.   |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-----------|-----------------------|---------------------------|
| Moosgummidichtung 2 mm<br>Foam rubber sealing 2 mm<br><br>                       |                                                                                               | a<br>80       | b<br>70   | 6                     | N06 080 0003 1            |
|                                                                                                                                                                   |                                                                                                                                                                                | 93            | 83        | 10                    | N06 080 0003 2            |
|                                                                                                                                                                   |                                                                                                                                                                                | 113           | 103       | 16                    | N06 080 0003 3            |
|                                                                                                                                                                   |                                                                                                                                                                                | 140           | 130       | 24                    | N06 080 0003 4            |
| Adapterplatte D-Sub Set Metall<br>Adaptor for D-Sub Set metal<br><br>          |  <p data-bbox="464 1122 639 1200">2 x Platte / adaptor<br/>4 x M3 x 6,5<br/>8 x M3 x 14</p>  | a<br>57       | b<br>49,5 | D-Sub<br>15           | 15<br><br>C146 N32 015 G2 |
|                                                                                                                                                                   |                                                                                                                                                                                | 57            | 49,5      | 25                    | 25<br><br>C146 N32 025 G2 |
| Adapterplatte D-Sub Set einreihig<br>Adaptor for D-Sub set single-row<br><br>  |  <p data-bbox="464 1507 639 1585">2 x Platte / adaptor<br/>4 x M3 x 6,5<br/>8 x M3 x 14</p> | a<br>51,5     | b<br>44   | D-Sub<br>9            | 6<br><br>C146 N32 009 G1  |
|                                                                                                                                                                   |                                                                                                                                                                                | 51,5          | 44        | 15                    | 6<br><br>C146 N32 015 G1  |
|                                                                                                                                                                   |                                                                                                                                                                                | 64,5          | 57        | 25                    | 10<br><br>C146 N32 025 G1 |
|                                                                                                                                                                   |                                                                                                                                                                                | 85            | 77,5      | 37                    | 16<br><br>C146 N32 037 G1 |
|                                                                                                                                                                   |                                                                                                                                                                                | 85            | 77,5      | 50                    | 16<br><br>C146 N32 050 G1 |
| Adapterplatte D-Sub Set zweireihig<br>Adaptor for D-Sub set double-row<br><br> |  <p data-bbox="464 1877 639 1955">2 x Platte / adaptor<br/>4 x M3 x 6,5<br/>8 x M3 x 14</p> | a<br>51,5     | b<br>44   | D-Sub<br>9            | 6<br><br>C146 N33 009 G1  |
|                                                                                                                                                                   |                                                                                                                                                                                | 51,5          | 44        | 15                    | 6<br><br>C146 N33 015 G1  |
|                                                                                                                                                                   |                                                                                                                                                                                | 64,5          | 57        | 25                    | 10<br><br>C146 N33 025 G1 |
|                                                                                                                                                                   |                                                                                                                                                                                | 85            | 77,5      | 37                    | 16<br><br>C146 N33 037 G1 |
|                                                                                                                                                                   |                                                                                                                                                                                | 85            | 77,5      | 50                    | 16<br><br>C146 N33 050 G1 |
| Hinweisschild für CSA-Anwendung<br>Label for CSA application<br><br>           |                                                                                                                                                                                |               |           | 50<br>Stück<br>Pieces | N07 045 0001 L            |



| Serie<br>Series | Maßzeichnung Einzelkontakt<br>Drawing single contact                                                                                   |                                                                                                                                        | Maßzeichnung Bandkontakt<br>Drawing contacts on reel                                  |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| C146 D, M       | .N01 016 0003 1<br>                                   | .N02 016 0003 1<br>                                   |    |
|                 | .N01 016 0002 1<br>.N01 016 0015 1 <sup>1)</sup><br>  | .N02 016 0002 1<br>.N02 016 0015 1 <sup>1)</sup><br>  |                                                                                       |
|                 | .N01 016 0005 1<br>.N01 016 0016 1 <sup>1)</sup><br> | .N02 016 0005 1<br>.N02 016 0016 1 <sup>1)</sup><br> |                                                                                       |
| C146 E, M       | .N01 025 0001 1<br>                                 | .N02 025 0001 1<br>                                 |  |
|                 | .N01 025 0010 1<br>                                 | .N02 025 0010 1<br>                                 |                                                                                       |
|                 | .N01 025 0043 1<br>                                 | .N02 025 0043 1<br>                                 |                                                                                       |
| C146 M          | .N01 010 0130 2<br>                                 | .N02 010 0130 2<br>                                 |  |
|                 | .N01 010 0131 2<br>                                 | .N02 010 0131 2<br>                                 |                                                                                       |

<sup>1)</sup> gekennzeichnet mit „H“ / marked with „H“

| Serie<br>Series | Maßzeichnung<br>Drawing | Querschnitt<br>Wire gauge | A    | B    | Stückzahl<br>Pieces | Bestell Nr.<br>Part No. |
|-----------------|-------------------------|---------------------------|------|------|---------------------|-------------------------|
| C146 D, DD, M   | .N01 016 002X<br>       | 0,14 - 0,37               | 0,9  | 2,6  | 100                 | VN01 016 0024 (1)C      |
|                 |                         | 0,5                       | 1,1  | 2,6  | 100                 | VN01 016 0025 (1)C      |
|                 |                         | 0,75 - 1,0                | 1,45 | 2,6  | 100                 | VN01 016 0026 (1)C      |
|                 |                         | 1,5                       | 1,75 | 3,0  | 100                 | VN01 016 0027 (1)C      |
|                 |                         | 2,5                       | 2,25 | 3,2  | 100                 | VN01 016 0028 (1)C      |
|                 | .N02 016 002X<br>       | 0,14 - 0,37               | 0,9  | 2,6  | 100                 | VN02 016 0024 (1)C      |
|                 |                         | 0,5                       | 1,1  | 2,6  | 100                 | VN02 016 0025 (1)C      |
|                 |                         | 0,75 - 1,0                | 1,45 | 2,6  | 100                 | VN02 016 0026 (1)C      |
|                 |                         | 1,5                       | 1,75 | 3,0  | 100                 | VN02 016 0027 (1)C      |
|                 |                         | 2,5                       | 2,25 | 3,2  | 100                 | VN02 016 0028 (1)C      |
| C146 E, EE      | .N01 025 003X<br>       | 0,5                       | 1,1  | 2,6  | 100                 | VN01 025 0035 (1)C      |
|                 |                         | 0,75 - 1,0                | 1,45 | 2,6  | 100                 | VN01 025 0036 (1)C      |
|                 |                         | 1,5                       | 1,75 | 3,0  | 100                 | VN01 025 0037 (1)C      |
|                 |                         | 2,5                       | 2,3  | 3,2  | 100                 | VN01 025 0038 (1)C      |
|                 |                         | 4,0                       | 2,9  | 4,0  | 100                 | VN01 025 0039 (1)C      |
|                 | .N02 025 003X<br>       | 0,5                       | 1,1  | 2,6  | 100                 | VN02 025 0035 (1)C      |
|                 |                         | 0,75 - 1,0                | 1,45 | 2,6  | 100                 | VN02 025 0036 (1)C      |
|                 |                         | 1,5                       | 1,75 | 3,0  | 100                 | VN02 025 0037 (1)C      |
|                 |                         | 2,5                       | 2,3  | 3,2  | 100                 | VN02 025 0038 (1)C      |
|                 |                         | 4,0                       | 2,9  | 4,0  | 100                 | VN02 025 0039 (1)C      |
| C146 M          | .N01 025 00XX<br>       | 0,5                       | 1,1  | 2,6  | 100                 | VN01 025 0029 (1)C      |
|                 |                         | 0,75 - 1,0                | 1,45 | 2,6  | 100                 | VN01 025 0030 (1)C      |
|                 |                         | 1,5                       | 1,75 | 3,0  | 100                 | VN01 025 0031 (1)C      |
|                 |                         | 2,5                       | 2,25 | 3,45 | 100                 | VN01 025 0032 (1)C      |
|                 |                         | 4,0                       | 2,85 | 3,9  | 100                 | VN01 025 0033 (1)C      |
|                 | .N02 025 00XX<br>       | 0,5                       | 1,1  | 2,6  | 100                 | VN02 025 0029 (1)C      |
|                 |                         | 0,75 - 1,0                | 1,45 | 2,6  | 100                 | VN02 025 0030 (1)C      |
|                 |                         | 1,5                       | 1,75 | 3,0  | 100                 | VN02 025 0031 (1)C      |
|                 |                         | 2,5                       | 2,25 | 3,45 | 100                 | VN02 025 0032 (1)C      |
|                 |                         | 4,0                       | 2,85 | 3,9  | 100                 | VN02 025 0033 (1)C      |
|                 | .N01 036 000X<br>       | 1,5                       | 1,75 | 3,0  | 100                 | VN01 036 0004 (1)C      |
|                 |                         | 2,5                       | 2,25 | 3,45 | 100                 | VN01 036 0005 (1)C      |
|                 |                         | 4,0                       | 2,85 | 3,9  | 100                 | VN01 036 0001 (1)C      |
|                 |                         | 6,0                       | 3,55 | 4,9  | 100                 | VN01 036 0002 (1)C      |
|                 |                         | 10,0                      | 4,4  | 5,9  | 100                 | VN01 036 0003 (1)C      |
|                 | .N02 036 000X<br>       | 1,5                       | 1,75 | 3,0  | 100                 | VN02 036 0004 (1)C      |
|                 |                         | 2,5                       | 2,25 | 3,45 | 100                 | VN02 036 0005 (1)C      |
|                 |                         | 4,0                       | 2,85 | 3,9  | 100                 | VN02 036 0001 (1)C      |
| 6,0             |                         | 3,55                      | 4,9  | 100  | VN02 036 0002 (1)C  |                         |
| 10,0            |                         | 4,4                       | 5,9  | 100  | VN02 036 0003 (1)C  |                         |

| Serie<br><i>Series</i>         | Maßzeichnung Einzelkontakt<br><i>Drawing single contact</i>                         | Bestell Nr.<br><i>Part No.</i> |
|--------------------------------|-------------------------------------------------------------------------------------|--------------------------------|
| C146 M LWL<br><br>C146 M FO    |   | N01 016 0040 8                 |
|                                |   | N02 016 0040 8                 |
| C146 M Koax<br><br>C146 M Coax |  | 17 DM 537 421                  |
|                                |  | 17 DM 537 401                  |
|                                |  | 17 DM 537 425                  |
|                                |  | 17 DM 537 405                  |




**Einteilung**  
**Classification**
**nach DIN EN 61984 (VDE 0627)**  
**according to DIN EN 61984 (VDE 0627)**

| Ausführung<br><i>Style</i>                                                                 | gekapselt<br><i>enclosed</i> | ungekapselt<br><i>unenclosed</i> | Schutzleiter<br><i>protective earthing contact</i> | Zugentastung<br><i>cable clamp</i> | Fingersicherheit<br>gesteckt<br><i>finger safety mated</i> | Fingersicherheit<br>ungesteckt<br><i>finger safety unmated</i> | Handrücken-<br>sicherheit gesteckt<br><i>hand back safety mated</i> | Steckverbinder mit<br>Schaltleistung <sup>1)</sup><br><i>Connector with<br/>breaking capacity<sup>1)</sup></i> | Wiederanschießbar<br><i>rewirable</i> | Zugentlastung<br><i>Cable clamp</i> |                                      |
|--------------------------------------------------------------------------------------------|------------------------------|----------------------------------|----------------------------------------------------|------------------------------------|------------------------------------------------------------|----------------------------------------------------------------|---------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|---------------------------------------|-------------------------------------|--------------------------------------|
|                                                                                            |                              |                                  |                                                    |                                    |                                                            |                                                                |                                                                     |                                                                                                                |                                       | mit <sup>2)</sup><br><i>with</i>    | ohne <sup>3)</sup><br><i>without</i> |
| Tüllengehäuse mit<br>Stifteinsatz<br><br><i>Hood with pin<br/>insert</i>                   | X                            |                                  | X                                                  |                                    | X                                                          |                                                                | X                                                                   | X                                                                                                              | X                                     | X                                   | X                                    |
| Stifteinsatz<br><br><i>Pin insert</i>                                                      |                              | X                                | X                                                  |                                    |                                                            |                                                                |                                                                     | X                                                                                                              | X                                     | 4)                                  | X                                    |
| Tüllengehäuse mit<br>Buchseinsatz<br><br><i>Hood with<br/>socket insert</i>                | X                            |                                  | X                                                  |                                    | X                                                          | X                                                              | X                                                                   | X                                                                                                              | X                                     | X                                   | X                                    |
| Buchseinsatz<br><br><i>socket insert</i>                                                   |                              | X                                | X                                                  |                                    |                                                            |                                                                |                                                                     | X                                                                                                              | X                                     | 4)                                  | X                                    |
| Kupplungsgehäuse mit<br>Stifteinsatz<br><br><i>Coupling housing with<br/>pin insert</i>    | X                            |                                  | X                                                  |                                    | X                                                          |                                                                |                                                                     | X                                                                                                              | X                                     | X                                   | X                                    |
| Kupplungsgehäuse mit<br>Buchseinsatz<br><br><i>Coupling housing with<br/>socket insert</i> | X                            |                                  | X                                                  |                                    | X                                                          | X                                                              | X                                                                   | X                                                                                                              | X                                     | X                                   | X                                    |
| Anbau-Sockelgehäuse<br>mit Stifteinsatz<br><br><i>Housing with<br/>pin insert</i>          | X                            |                                  | X                                                  |                                    | X                                                          |                                                                | X                                                                   | X                                                                                                              | X                                     | X                                   | X                                    |
| Anbau-Sockelgehäuse<br>mit Buchseinsatz<br><br><i>Housing with<br/>socket insert</i>       | X                            |                                  | X                                                  |                                    | X                                                          | X                                                              | X                                                                   | X                                                                                                              | X                                     | X                                   | X                                    |

<sup>1)</sup> Bei Verwendung als Steckverbinder mit Schaltleistung ist der Strom zu begrenzen / *When used as connector with braking capacity the load shall be reduced*

<sup>2)</sup> Bei Verwendung von Kabelverschraubungen (siehe Seite 169) / *When using cable seals (see page 169)*

<sup>3)</sup> Bei Standard Verschraubung / *When using standard gland bushings*

<sup>4)</sup> siehe Einzelangaben / *see detail information*

**Sofern nicht anders angegeben, sind zur Sicherstellung der Schutzleiterfunktion die Kontakteinsätze in metallisch leitende Gehäuse einzubauen, bzw. auf Schienen oder Montageplatten zu montieren.**

***If not otherwise stated the contact inserts have to be mounted in metallic conductive housings resp. on bars or mounting boards to complete the protective earth grounding.***

### ! Allgemeine technische Informationen

Hinweise:

- Die Sicherheit von Steckverbindern/Steckverbinder mit Schaltleistung (Steckvorrichtung) ist abhängig von der richtigen Auswahl der Produkte, dem ordnungsgemäßen Einbau und der sachgemäßen Montage.
- Verbindlich für den Einsatz von Steckverbindern sind die jeweiligen Anforderungen der Gerätevorschriften. Dies gilt insbesondere für die Festlegung der Bemessungsspannung und der damit zusammenhängenden Luft- und Kriechstrecken.
- Alle Angaben der Bemessungsdaten der in diesem Katalog aufgeführten Steckverbindern sind auf die Überspannungskategorie III sowie den Verschmutzungsgrad 3 (Anwendung im Maschinenbau) bezogen.
- Alle technischen Angaben beziehen sich auf Steckverbinder, also Betriebsmittel, die bei bestimmungsgemäßer Verwendung (unter elektrischer Spannung) nicht gesteckt oder getrennt werden dürfen. Soweit Steckverbinder im Sinne von Steckvorrichtungen (Steckverbinder mit Schaltleistung) verwendet werden, ist dies in der Kurzinformation der betreffenden Abschnitte aufgeführt.
- Der Berührungsschutz der Kontakteinsätze im Anschlussbereich ist durch den Einbau sicherzustellen.
- Beim Einbau der Steckverbinder in nicht leitende Gehäuse sind beide Schutzleiter (Ausführung 2x PE) anzuschließen.
- Ein ausführliches Kompendium von Steckverbinder-Begriffen befindet sich am Ende dieses Kapitels.
- Nachstehend aufgeführte Auszüge aus Normen dienen der allgemeinen Information. Im konkreten Anwendungsfall sind die jeweils gültigen Normen anzuwenden.
- Prüfverfahren nach IEC 60512 entsprechen den Prüfverfahren nach DIN EN 60512 oder DIN IEC 60512. Die DIN IEC 60664-1 entspricht DIN VDE 0110-1

#### Anschlussstechniken

##### • Schraubverbindung

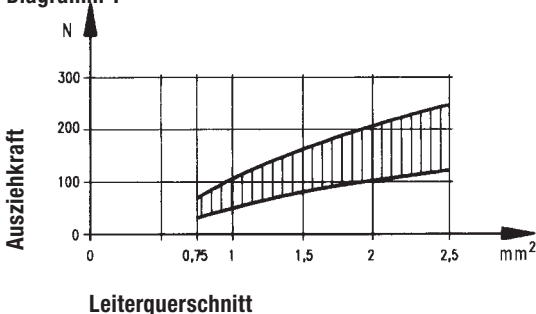
Schraubklemmen werden nach EN 60999-1/VDE 0609 bemessen. Die Gewindegröße in Abhängigkeit vom Leiterquerschnitt sowie das dazugehörige Anzugs- und Prüfdrehmoment können untenstehender Tabelle 1 entnommen werden.

Tabelle 1

| Leiterquerschnitt (mm <sup>2</sup> ) | 1     | 1,5 | 2,5 | 4     | 6   | 10  |
|--------------------------------------|-------|-----|-----|-------|-----|-----|
| Schraubengewinde                     | M 2,6 | M 3 | M 3 | M 3,5 | M 4 | M 4 |
| Prüfdrehmoment (Ncm)                 | 40    | 50  | 50  | 80    | 120 | 120 |

Die Ausziehungskräfte (Streubereich) der Leiter aus einer Schraubverbindung eines Kontaktelementes zeigt das untenstehende Diagramm 1 für eine Klemmschraube M 3, angezogen mit einem Drehmoment von 50 Ncm.

Diagramm 1



### ! General technical information

Remarks:

- The Safty of connectors/connectors with braking capacity (CBC) depends on the right selection of products, the correct installation and a proper assembly.
- Decisions for the application of connectors are the requirements of the equipment specifications. This is especially the case for the definition of the rated voltage and the related clearances and creepage distances.
- All rated data for the connectors listed in this catalogue is based on overvoltage category III and pollution degree 3 (machine tool application).
- All technical data is specified for connectors, which are not under load when mated or disconnected. If in special cases connectors can be used in the sense of plug and socket devices (connector with breaking capacity), this is mentioned in the brief information of the particular section.
- Correct mounting will protect against electrical shock when mating the connectors.
- It connectors are mounted in non conductive housings both protective earthing terminals shall be mounted.
- A detailed connector glossary can be found at the end of this catalogue.
- All mentioned excerpts of standards are for general information only. For specific cases the valid original standards have to be consulted.
- Test methods acc. IEC 60512 comply with test methods acc. DIN EN 60512 or DIN IEC 60512. IEC 60664-1 complies with DIN VDE 0110-1

#### Termination methods

##### • Screw connection

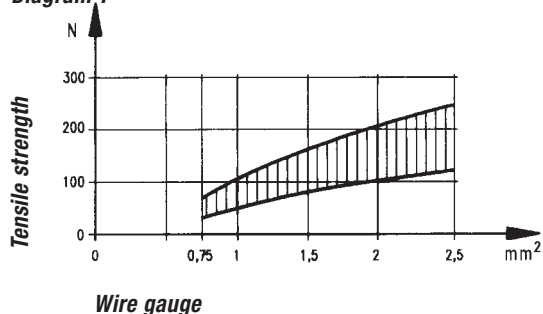
Screw clamps are designed acc. to EN 60999-1/VDE 0609. Chart 1 below shows the screw size depending on wire size and the required clamping and testing torque.

Chart 1

| Wire size (mm <sup>2</sup> ) | 1     | 1,5 | 2,5 | 4     | 6   | 10  |
|------------------------------|-------|-----|-----|-------|-----|-----|
| Screw size                   | M 2,6 | M 3 | M 3 | M 3,5 | M 4 | M 4 |
| Test torque (Ncm)            | 40    | 50  | 50  | 80    | 120 | 120 |

Diagram 1 below shows the range of tensile strength for a screw connection with a clamp screw M3, fastened with a torque of 50 Ncm, depending on the wire size.

Diagram 1



### • Crimpverbindung

Eine Crimpverbindung ist eine nicht lösbare elektrische Verbindung zwischen einem Leiter und einem Crimpkontakt mit Hilfe der Crimptechnik. Durch genau auf Crimphülse und Leiterquerschnitt abgestimmte Crimpprofile werden durch Druck und gezielte Verformung zuverlässige elektrische Verbindungen hergestellt. Es gibt offene Crimphülsen (gestanzte Kontakte) und geschlossene Crimphülsen (gedrehte Kontakte).

Die wesentlichen Vorteile von Crimpverbindungen sind:

- Rationelle Verarbeitung der Kontakte
- Konstante elektrische und mechanische Werte durch gleichbleibende Crimpqualität.

**(Eine ausführliche Beschreibung der Crimptechnologie finden Sie in unserem Katalog „Werkzeuge“.)**

Die Anforderungen an Crimpverbindungen sind in der DIN EN 60352-2, festgelegt.

Ein wesentliches Merkmal für die Qualität einer Crimpverbindung ist die erreichte Zugfestigkeit des Anschlusses. Sie kann mit einfachen Mitteln zur Überwachung der Qualität herangezogen werden. Aus untenstehender Tabelle 2 kann die Mindest-Zugfestigkeit entnommen werden.

**Tabelle 2**

#### Zugfestigkeit von Crimpverbindungen

| Leiterquerschnitt |                   | Zugfestigkeit |
|-------------------|-------------------|---------------|
| mm <sup>2</sup>   | AWG <sup>1)</sup> | N             |
| 0,05              | 30                | 6             |
| 0,08              | 28                | 11            |
| 0,12              | 26                | 15            |
| 0,14              |                   | 18            |
| 0,22              | 24                | 28            |
| 0,25              |                   | 32            |
| 0,32              | 22                | 40            |
| 0,5               | 20                | 60            |
| 0,75              |                   | 85            |
| 0,82              | 18                | 90            |
| 1,0               |                   | 108           |
| 1,3               | 16                | 135           |
| 1,5               |                   | 150           |
| 2,1               | 14                | 200           |
| 2,5               |                   | 230           |
| 3,3               | 12                | 275           |
| 4,0               |                   | 310           |
| 5,3               | 10                | 355           |
| 6,0               |                   | 360           |
| 8,4               | 8                 | 370           |
| 10,0              |                   | 380           |

<sup>1)</sup>Nur zur Information

### • Crimp connection

A crimp connection is a non-detachable electrical connection between a wire and a crimp contact produced with the crimp technology. Precise crimping dies are matched to the crimp barrel and the wire size and a defined deformation results in a reliable electrical connection. There are open barrels (stamped contacts) and closed crimp barrels (turned contacts).

The main advantages of crimp connections are:

- Efficient termination of contacts.
- Reproducible electrical and mechanical figures by a constant crimp quality.

**(A detailed description of the crimp technology can be found in our catalogue „tools“.)**

The requirements for crimp connections are defined in DIN EN 60352-2.

An important point for the quality of a crimp connection is the achieved tensile strength of the termination. Measuring the tensile strength is a practicable means for quality control purposes. Chart 2 below shows the required minimum tensile strength for open and closed barrels according to the wire size.

**Chart 2**

#### Tensile strength for crimp connections

| Wire size       |                   | Tensile strength |
|-----------------|-------------------|------------------|
| mm <sup>2</sup> | AWG <sup>1)</sup> | N                |
| 0,05            | 30                | 6                |
| 0,08            | 28                | 11               |
| 0,12            | 26                | 15               |
| 0,14            |                   | 18               |
| 0,22            | 24                | 28               |
| 0,25            |                   | 32               |
| 0,32            | 22                | 40               |
| 0,5             | 20                | 60               |
| 0,75            |                   | 85               |
| 0,82            | 18                | 90               |
| 1,0             |                   | 108              |
| 1,3             | 16                | 135              |
| 1,5             |                   | 150              |
| 2,1             | 14                | 200              |
| 2,5             |                   | 230              |
| 3,3             | 12                | 275              |
| 4,0             |                   | 310              |
| 5,3             | 10                | 355              |
| 6,0             |                   | 360              |
| 8,4             | 8                 | 370              |
| 10,0            |                   | 380              |

<sup>1)</sup> only for information

Da in verschiedenen Bereichen der Industrie auch mit Leitern nach der amerikanischen Drahtlehre AWG (American Wire Gauge) gearbeitet wird, folgt hiernach Tabelle 3 zur Umrechnung von AWG in mm<sup>2</sup>.

Tabelle 3

| AWG | Leiteraufbau                      | Leiter-Ø | Leiterquerschnitt    |
|-----|-----------------------------------|----------|----------------------|
| 30  | 1 x 0,25<br>7 x 0,10              | 0,25 mm  | 0,05 mm <sup>2</sup> |
|     |                                   | 0,36 mm  | 0,06 mm <sup>2</sup> |
| 28  | 1 x 0,32<br>7 x 0,13              | 0,32 mm  | 0,08 mm <sup>2</sup> |
|     |                                   | 0,38 mm  | 0,09 mm <sup>2</sup> |
| 26  | 1 x 0,40<br>7 x 0,16<br>19 x 0,10 | 0,40 mm  | 0,13 mm <sup>2</sup> |
|     |                                   | 0,48 mm  | 0,14 mm <sup>2</sup> |
|     |                                   | 0,51 mm  | 0,15 mm <sup>2</sup> |
| 24  | 1 x 0,51<br>7 x 0,20<br>19 x 0,13 | 0,51 mm  | 0,21 mm <sup>2</sup> |
|     |                                   | 0,61 mm  | 0,23 mm <sup>2</sup> |
|     |                                   | 0,64 mm  | 0,24 mm <sup>2</sup> |
| 22  | 1 x 0,64<br>7 x 0,25<br>19 x 0,16 | 0,64 mm  | 0,33 mm <sup>2</sup> |
|     |                                   | 0,76 mm  | 0,36 mm <sup>2</sup> |
|     |                                   | 0,81 mm  | 0,38 mm <sup>2</sup> |
| 20  | 1 x 0,81<br>7 x 0,32<br>19 x 0,20 | 0,81 mm  | 0,52 mm <sup>2</sup> |
|     |                                   | 0,97 mm  | 0,56 mm <sup>2</sup> |
|     |                                   | 1,02 mm  | 0,62 mm <sup>2</sup> |
| 18  | 1 x 1,02<br>19 x 0,25             | 1,02 mm  | 0,79 mm <sup>2</sup> |
|     |                                   | 1,27 mm  | 0,96 mm <sup>2</sup> |
| 16  | 19 x 0,29                         | 1,44 mm  | 1,23 mm <sup>2</sup> |
| 14  | 19 x 0,36                         | 1,80 mm  | 1,95 mm <sup>2</sup> |
| 12  | 19 x 0,46                         | 2,29 mm  | 3,09 mm <sup>2</sup> |
| 10  | 37 x 0,40                         | 3,10 mm  | 4,60 mm <sup>2</sup> |
| 8   | 133 x 0,29                        | 4,0 mm   | 8,80 mm <sup>2</sup> |
| 6   | 133 x 0,36                        | 5,5 mm   | 13,5 mm <sup>2</sup> |

Zu beachten ist, dass Leiter mit gleicher AWG-Nummer, aber unterschiedlichem Aufbau, leicht unterschiedliche Querschnitte aufweisen!

Tabelle 4

Aufbau und Abmessungen von Kupferleitungen

| Leiterquerschnitt    | Leiteraufbau | Leiter-Ø |
|----------------------|--------------|----------|
| 0,09 mm <sup>2</sup> | 12 x 0,10    | 0,48 mm  |
| 0,14 mm <sup>2</sup> | 18 x 0,10    | 0,50 mm  |
| 0,25 mm <sup>2</sup> | 14 x 0,15    | 0,70 mm  |
| 0,34 mm <sup>2</sup> | 7 x 0,25     | 0,78 mm  |
| 0,5 mm <sup>2</sup>  | 16 x 0,20    | 1,0 mm   |
| 0,75 mm <sup>2</sup> | 24 x 0,20    | 1,2 mm   |
| 1,0 mm <sup>2</sup>  | 32 x 0,20    | 1,4 mm   |
| 1,5 mm <sup>2</sup>  | 30 x 0,25    | 1,6 mm   |
| 2,5 mm <sup>2</sup>  | 35 x 0,30    | 2,2 mm   |
| 4,0 mm <sup>2</sup>  | 56 x 0,30    | 2,8 mm   |
| 6,0 mm <sup>2</sup>  | 19 x 0,64    | 3,4 mm   |
| 10 mm <sup>2</sup>   | 19 x 0,80    | 4,3 mm   |

The chart below allows a cross reference between American Wire Gauge (AWG) and metric wire sizes (mm<sup>2</sup>).

Chart 3

| AWG | Wire composition                  | Wire diameter | Wire size            |
|-----|-----------------------------------|---------------|----------------------|
| 30  | 1 x 0,25<br>7 x 0,10              | 0,25 mm       | 0,05 mm <sup>2</sup> |
|     |                                   | 0,36 mm       | 0,06 mm <sup>2</sup> |
| 28  | 1 x 0,32<br>7 x 0,13              | 0,32 mm       | 0,08 mm <sup>2</sup> |
|     |                                   | 0,38 mm       | 0,09 mm <sup>2</sup> |
| 26  | 1 x 0,40<br>7 x 0,16<br>19 x 0,10 | 0,40 mm       | 0,13 mm <sup>2</sup> |
|     |                                   | 0,48 mm       | 0,14 mm <sup>2</sup> |
|     |                                   | 0,51 mm       | 0,15 mm <sup>2</sup> |
| 24  | 1 x 0,51<br>7 x 0,20<br>19 x 0,13 | 0,51 mm       | 0,21 mm <sup>2</sup> |
|     |                                   | 0,61 mm       | 0,23 mm <sup>2</sup> |
|     |                                   | 0,64 mm       | 0,24 mm <sup>2</sup> |
| 22  | 1 x 0,64<br>7 x 0,25<br>19 x 0,16 | 0,64 mm       | 0,33 mm <sup>2</sup> |
|     |                                   | 0,76 mm       | 0,36 mm <sup>2</sup> |
|     |                                   | 0,81 mm       | 0,38 mm <sup>2</sup> |
| 20  | 1 x 0,81<br>7 x 0,32<br>19 x 0,20 | 0,81 mm       | 0,52 mm <sup>2</sup> |
|     |                                   | 0,97 mm       | 0,56 mm <sup>2</sup> |
|     |                                   | 1,02 mm       | 0,62 mm <sup>2</sup> |
| 18  | 1 x 1,02<br>19 x 0,25             | 1,02 mm       | 0,79 mm <sup>2</sup> |
|     |                                   | 1,27 mm       | 0,96 mm <sup>2</sup> |
| 16  | 19 x 0,29                         | 1,44 mm       | 1,23 mm <sup>2</sup> |
| 14  | 19 x 0,36                         | 1,80 mm       | 1,95 mm <sup>2</sup> |
| 12  | 19 x 0,46                         | 2,29 mm       | 3,09 mm <sup>2</sup> |
| 10  | 37 x 0,40                         | 3,10 mm       | 4,60 mm <sup>2</sup> |
| 8   | 133 x 0,29                        | 4,0 mm        | 8,80 mm <sup>2</sup> |
| 6   | 133 x 0,36                        | 5,5 mm        | 13,5 mm <sup>2</sup> |

It has to be noted that wires of the same AWG number but with different composition have slightly different mm<sup>2</sup>.

Chart 4

Composition and Dimensions of Copper Wires

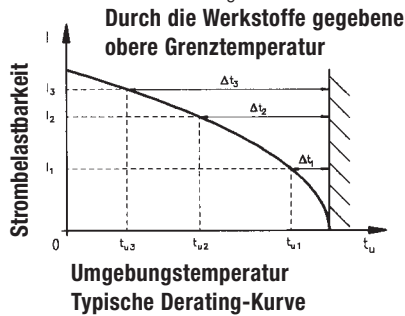
| Wire Size            | Wire Composition | Wire diameter |
|----------------------|------------------|---------------|
| 0,09 mm <sup>2</sup> | 12 x 0,10        | 0,48 mm       |
| 0,14 mm <sup>2</sup> | 18 x 0,10        | 0,50 mm       |
| 0,25 mm <sup>2</sup> | 14 x 0,15        | 0,70 mm       |
| 0,34 mm <sup>2</sup> | 7 x 0,25         | 0,78 mm       |
| 0,5 mm <sup>2</sup>  | 16 x 0,20        | 1,0 mm        |
| 0,75 mm <sup>2</sup> | 24 x 0,20        | 1,2 mm        |
| 1,0 mm <sup>2</sup>  | 32 x 0,20        | 1,4 mm        |
| 1,5 mm <sup>2</sup>  | 30 x 0,25        | 1,6 mm        |
| 2,5 mm <sup>2</sup>  | 35 x 0,30        | 2,2 mm        |
| 4,0 mm <sup>2</sup>  | 56 x 0,30        | 2,8 mm        |
| 6,0 mm <sup>2</sup>  | 19 x 0,64        | 3,4 mm        |
| 10 mm <sup>2</sup>   | 19 x 0,80        | 4,3 mm        |



**Strombelastbarkeit**





Die Strombelastbarkeit eines Steckverbinders wird mit einer Derating-Kurve dargestellt. Aus ihr kann abgelesen werden, welche Ströme dauernd und gleichzeitig über alle Kontakte fließen dürfen. Die Kurve wird durch Prüfung ermittelt. Als Basis dient dazu die Norm DIN EN 60512. Die obere Grenztemperatur wird durch die verwendeten Kontakt- und Isolierwerkstoffe bestimmt. Die Summe aus der Umgebungstemperatur und der durch die Strombelastung hervorgerufenen Übertemperatur darf die obere Grenztemperatur des Steckverbinders nicht übersteigen. Somit ist die Strombelastbarkeit kein konstanter Wert, sondern sinkt mit steigender Umgebungstemperatur. Als allgemeines Beispiel sei gesagt, dass bei einem vorgegebenen Steckverbinder, der bei einer Umgebungstemperatur von 40°C mit einem Dauerstrom von 16A auf allen Kontakten belastet werden darf, dieser Wert bei einer Umgebungstemperatur von 80°C auf z.B. 12A sinken kann. Auf der anderen Seite ist es in der Praxis sehr oft der Fall, dass nicht alle Anschlüsse gleichzeitig mit dem maximal zulässigen Strom belastet werden, so dass dann einzelne Kontakte mit einem höheren Strom als nach der Derating-Kurve zulässig, beaufschlagt werden können. Diese Grenzwerte sind durch Prüfung zu ermitteln.

**Diagramm 3**



**Tabelle 5**

Strombelastbarkeit von Kupferleitern in (A)

| Installationsart<br><i>Installation type</i>                                                                                                                                                                                 | Querschnitt (mm <sup>2</sup> )<br><i>Wire size (mm<sup>2</sup>)</i> | 0,25 | 0,34 | 0,5 | 0,75 | 1    | 1,5  | 2,5  | 4  | 6  | 10 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|------|------|-----|------|------|------|------|----|----|----|
| <br>B1 Leiter in Schutzrohren und Installationskanälen<br><i>Wires in conduits and installation channels</i>                              |                                                                     | -    | -    | -   | 7,6  | 10,4 | 13,5 | 18,3 | 25 | 32 | 44 |
| <br>B2 Kabel und Leitungen in Schutzrohren oder Installationskanälen<br><i>Cables and conductors in conduits or installation channels</i> |                                                                     | -    | -    | -   | -    | 9,6  | 12   | 16,5 | 23 | 29 | 40 |
| <br>C Kabel und Leitungen an Wänden<br><i>Cables and conductors along walls</i>                                                           |                                                                     | 4,0  | 5,0  | 7,1 | 9,1  | 11,7 | 15,2 | 21   | 28 | 36 | 50 |
| <br>E Kabel und Leitungen auf Kabeltrassen<br><i>Cables and conductors on plank</i>                                                       |                                                                     | 4,0  | 5,0  | 7,1 | 9,1  | 11,5 | 16,1 | 22   | 30 | 37 | 52 |

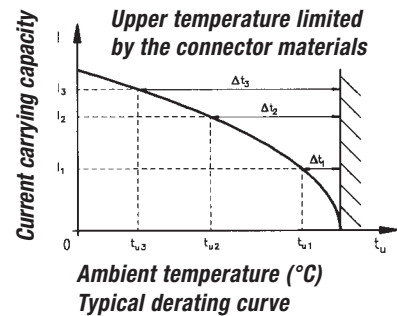
Darstellung in Anlehnung an DIN EN 60204 für PVC-isolierte Kupferleiter in einer Umgebungstemperatur von +40°C unter Dauerbetriebsbedingungen. Für abweichende Bedingungen wie andere Temperaturen, Installationen, Isoliermaterialien oder Leitern sind entsprechende Korrekturfaktoren zu verwenden (siehe nächste Seite).

**Current carrying capacity**

The current carrying capacity of a connector is shown by a derating curve. The curve shows the currents that the connector can carry continuously and simultaneously through all its contacts. The curve is determined by testing following the standard DIN EN 60512. The upper temperature is limited by the contact and insulation material used. The sum of the ambient temperature and the temperature created by the current flow may not exceed the upper temperature. This means that the current carrying capacity has no fixed value but decreases with increasing ambient temperatures.

As a general example it can be said that a given connector which can carry 16A through all its contacts at 40°C ambient temperature can carry less, e.g. 12A, at an ambient temperature of 80°C. On the other hand it is often the case that not all contacts carry the whole rated current, which means that some single contacts may carry a higher current than that according to the derating curve. These currents have to be defined by testing.

**Diagram 3**



**Chart 5**

Current carrying capacity of copper wires in (A)

Description according to DIN EN 60204 for PVC insulated copper wires with a working temperature of +40°C. For other requirements, such as for other temperatures, mountings, or wires corresponding correction factors are used (see next page).

**Reduktionsfaktoren**

Die Werte in der Tabelle 5 beziehen sich auf eine Umgebungstemperatur von 40°C. Für andere Umgebungstemperaturen muss der Wert mit den Faktoren aus der folgenden Tabelle 6 korrigiert werden.

**Tabelle 6**

| Umgebungstemperatur (°C) | Korrekturfaktor |
|--------------------------|-----------------|
| 30                       | 1,15            |
| 35                       | 1,03            |
| 40                       | 1,00            |
| 45                       | 0,91            |
| 50                       | 0,82            |
| 55                       | 0,71            |
| 60                       | 0,58            |

Für Installationen mit vielen belasteten Kabeln und Leitungen/Paaren verringern sich die Werte der Strombelastbarkeit entsprechend den nachfolgenden Tabellen 7 und 8.

**Tabelle 7**

Reduktionsfaktoren für Leitungsanhäufung

| Art der Installation<br><i>Installation type</i>                                                                               | Anzahl der belasteten Kabel und Leitungen / Paare<br><i>Number of cables and conductors / pairs under load</i> |      |      |      |
|--------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|------|------|------|
|                                                                                                                                | 2                                                                                                              | 4    | 6    | 9    |
| Drehstromkabel und -leitung<br><i>Threephase cable and conductor</i>                                                           |                                                                                                                |      |      |      |
| B1 und/and B2                                                                                                                  | 0,80                                                                                                           | 0,85 | 0,87 | 0,86 |
| C                                                                                                                              | 0,65                                                                                                           | 0,75 | 0,78 | 0,76 |
| E-einlagig / <i>one row</i>                                                                                                    | 0,57                                                                                                           | 0,72 | 0,75 | 0,72 |
| E-mehrlagig / <i>multi row</i>                                                                                                 | 0,50                                                                                                           | 0,70 | 0,73 | 0,88 |
| Gleichstromleitung (Paar), unabhängig von der Installationsart<br><i>DC conductor (pair), independent of installation type</i> | 1,0                                                                                                            | 0,76 | 0,64 | 0,43 |

**Tabelle 8**

Reduktionsfaktoren für Mehraderkabel (-leitungen) bis zu 10 mm<sup>2</sup>

| Anzahl der belasteten Leitungen (Paare)<br><i>Number of conductors (pairs) under load</i> | Wechselstrom (Leiter >1 mm <sup>2</sup> )<br><i>AC (conductor &gt; 1 mm<sup>2</sup>)</i> | Gleichstrom (Paare 0,2 bis 0,75 mm <sup>2</sup> )<br><i>DC (Pairs 0,2 to 0,75 mm<sup>2</sup>)</i> |
|-------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| 5                                                                                         | 0,75                                                                                     | 0,52                                                                                              |
| 7                                                                                         | 0,65                                                                                     | 0,45                                                                                              |
| 10                                                                                        | 0,55                                                                                     | 0,39                                                                                              |
| 24                                                                                        | 0,40                                                                                     | 0,27                                                                                              |

Leiter von Steuerkreisen benötigen normalerweise keine Herabsetzung.

**Reduction values**

The values in chart 5 are based on an ambient temperature of 40 °C. For other ambient temperatures the values have to be adjusted using the correction values of chart 6 below.

**Chart 6**

| Ambient temperature (°C) | Correction value |
|--------------------------|------------------|
| 30                       | 1,15             |
| 35                       | 1,03             |
| 40                       | 1,00             |
| 45                       | 0,91             |
| 50                       | 0,82             |
| 55                       | 0,71             |
| 60                       | 0,58             |

For installations with many cables and conductors under load the current carrying capacity is reduced according to the two following charts 7 and 8.

**Chart 7**

Reduction values for accumulated conductors

**Chart 8**

Reduction values for multicore cable and conductors up to 10mm<sup>2</sup>

Conductors of control circuits generally do not need a reduction.

**Stoßstrombelastbarkeit**

Eine besondere Belastung kann sich für Steckverbinder und deren Kontakte durch einen Stoßstrom ergeben, der z.B. durch einen Kurzschluss in der Anlage oder durch Schaltvorgänge entstehen kann. Die kurzzeitig sehr hohe Stromerwärmung kann nach außen nicht schnell genug abgeführt werden, so dass es zu einer örtlich sehr starken Erwärmung der Kontakte kommt, die z.B. in extremen Fällen zu einer Verschweißung führen kann. Durch unsere robuste Kontaktkonstruktion sind die hier beschriebenen Steckverbinder gegenüber Stoßströmen relativ unempfindlich. Richtwerte können dem nachfolgenden Diagramm 4 entnommen werden.

**Diagramm 4**

Stoßstrombelastbarkeit von Einzelkontakten

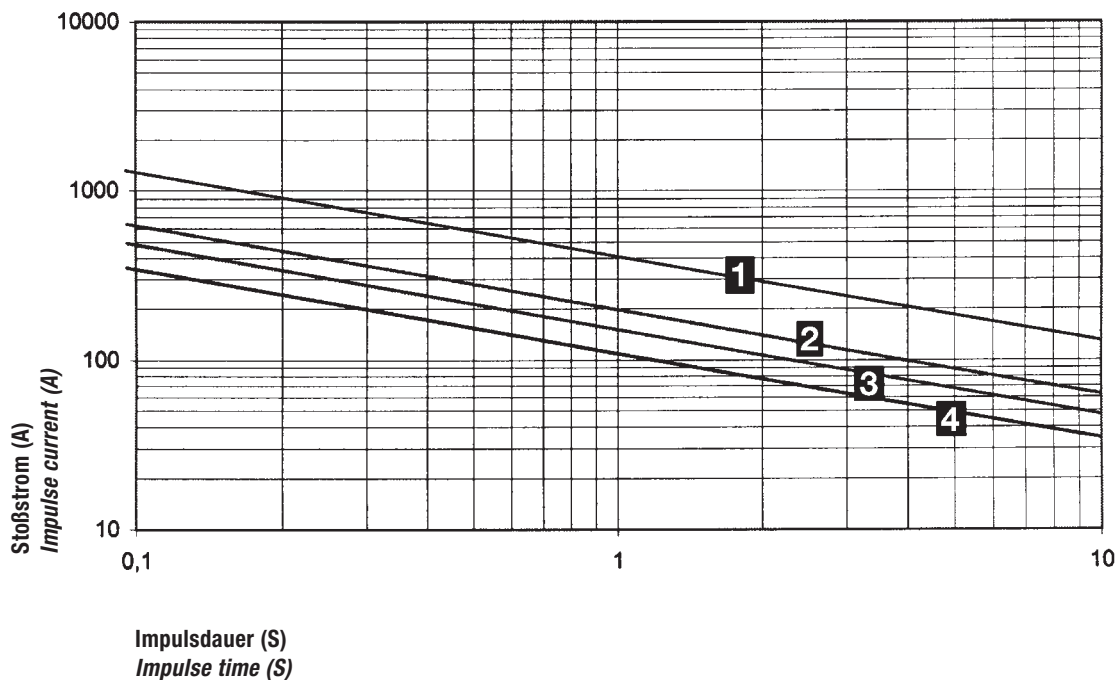
**Impulse current carrying capacity**

A surge can happen to a connector and its contacts by an impulse current, e.g. through a short circuit in the system or by switching operations. The short-timed high current heat cannot be transferred outside fast enough so the contacts are stressed by the high temperature which in the worst case can lead to a local weld. The robust design of our connectors prevents most damage by impulse currents.

The diagram 4 below can be used as a guideline.

**Diagramm 4**

Impulse current carrying capacity of single contacts



| Kurve Nr. | Steckverbinder-Bauform             | Curve No. | Connector style                   |
|-----------|------------------------------------|-----------|-----------------------------------|
| 1         | C146 E oder A mit Schraubkontakt   | 1         | C146 E or A with screw contact    |
| 2         | C146 E mit gestanztem Crimpkontakt | 2         | C146 E with stamped crimp contact |
| 3         | C146 S mit gestanztem Crimpkontakt | 3         | C146 S with stamped crimp contact |
| 4         | C146 D mit gestanztem Crimpkontakt | 4         | C146 D with stamped crimp contact |

**Spannungseinstufung der Steckverbinder****Allgemeines**

Zur Spannungseinstufung von Steckverbindern werden die Luft- und Kriechstrecken herangezogen. Die Beurteilung und Bemessung der Luft- und Kriechstrecken hat sich durch die Einführung der Isolationskoordination geändert.

Es gelten dafür die folgenden Normen:

IEC 60664-1/10.92  
Insulation coordination for equipment within low-voltage systems

DIN VDE 0110-1/4.97  
Isolationskoordination für elektrische Betriebsmittel in Niederspannungsanlagen

Isolationskoordination umfasst die Auswahl der elektrischen Isolationseigenschaften eines Betriebsmittels hinsichtlich dessen Anwendung und in Bezug auf seine Umgebung.

**Luftstrecken**

Die Luftstrecke ist die kürzeste Entfernung in Luft zwischen zwei leitenden Teilen. Ein wichtiger Punkt bei der Bemessung von Luftstrecken ist zunächst die Festlegung der Überspannungskategorie. Die Norm hat die möglichen Überspannungen in die nachstehenden vier Kategorien eingeteilt:

**Überspannungskategorie I**

Betriebsmittel, die zur Anwendung in Geräten oder Teilen von Anlagen bestimmt sind, in denen keine Überspannungen auftreten können. Hierunter fallen Geräte, die vorwiegend mit Kleinspannungen betrieben werden.

**Überspannungskategorie II**

Betriebsmittel, die zur Anwendung in Anlagen oder Teilen von diesen bestimmt sind, in denen Blitzüberspannungen nicht berücksichtigt werden müssen, aber wohl Überspannungen durch Schaltvorgänge. Hierunter fallen z.B. elektrische Haushaltsgeräte.

**Überspannungskategorie III**

Betriebsmittel, die zur Anwendung in Anlagen oder Teilen von diesen bestimmt sind, bei denen Blitzüberspannungen nicht berücksichtigt werden müssen, wohl aber Überspannungen durch Schaltvorgänge und an die im Hinblick auf die Sicherheit und Verfügbarkeit des Betriebsmittels oder von davon abhängigen Netzen besondere Anforderungen gestellt werden. Hierunter fallen Betriebsmittel für feste Installationen, z.B. Schutzeinrichtungen, Schütze, Schalter und Steckdosen.

**Überspannungskategorie IV**

Betriebsmittel, die zur Anwendung in Anlagen oder Teilen von diesen bestimmt sind, bei denen Blitzüberspannungen zu berücksichtigen sind. Hierunter fallen Betriebsmittel zum Anschluss an Freileitungen, z.B. Rundsteuerempfänger, Zähler.

**Voltage grading of connectors****General**

*Clearances and creepage distances are the base for voltage grading of connectors. Valuation and dimensioning of clearances and creepage distances have changed since the introduction of insulation coordination.*

*The following standards apply for this:*

*IEC 60664-1/10.92  
Insulation coordination for equipment within low-voltage systems*

*DIN VDE 0110-1/4.97  
Isolationskoordination für elektrische Betriebsmittel in Niederspannungsanlagen*

*Insulation coordination comprises the selection of the electrical insulation performances of the equipment, taking into account the expected use and its environment.*

**Clearances**

*The clearance is the shortest distance in air between two conductive parts. An important point for the dimensioning of clearances is the determination of the overvoltage category. The above standard specifies the possible overvoltages into the four following categories:*

**Overvoltage category I**

*Equipment intended for the use in appliances or parts of installations in which no overvoltage can occur.  
Examples are low-voltage equipments.*

**Overvoltage category II**

*Equipment intended for the use in installations or parts of it in which lightning overvoltages do not need to be considered, but switching overvoltages generated by the equipment do need to be considered.  
Examples are household appliances.*

**Overvoltage category III**

*Equipment intended for the use in installations or parts of it in which lightning overvoltages do not need to be considered, however switching overvoltages generated by the equipment, and for cases where the reliability and the availability of the equipment or its dependent circuits are subject to special requirements.  
Examples are protecting means, switches and sockets.*

**Overvoltage category IV**

*Equipment intended for the use in installations or parts of it in which lightning overvoltage has to be considered.  
Examples are electricity meters, overcurrent protection switches.*

Liegt die Überspannungskategorie fest, dann kann je nach Nennspannungsbereich des Stromversorgungs-Systems und der Überspannungskategorie die Bemessungs-Stoßspannung für das Betriebsmittel ermittelt werden. Es gilt dabei die folgende Tabelle 9:

*Once the overvoltage category has been defined the rated impulse withstand voltage can be selected for the equipment based on the nominal voltage of the supply system and the overvoltage category using chart 9 below:*

Tabelle 9

Chart 9

| Nennspannung des Stromversorgungs-Systems in V (nach IEC 60038)<br><i>Nominal voltage of the supply system in V (based on IEC 60038)</i> | Bemessungs-Stoßspannung in kV für Überspannungskategorie<br><i>Rated impulse voltage in kV for overvoltage category</i> |     |     |     |
|------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|-----|-----|-----|
| Drei-phasige Systeme / <i>Three phase systems</i>                                                                                        | IV                                                                                                                      | III | II  | I   |
| 230/400 277/480                                                                                                                          | 6                                                                                                                       | 4   | 2,5 | 1,5 |
| 400/690                                                                                                                                  | 8                                                                                                                       | 6   | 4   | 2,5 |
| 1000                                                                                                                                     | 12                                                                                                                      | 8   | 6   | 4   |

Ist die Bemessungs-Stoßspannung ermittelt, so muss jetzt der Verschmutzungsgrad entsprechend der zu erwartenden Verschmutzung der unmittelbaren Umgebung des Betriebsmittels festgelegt werden. Hierzu dienen die folgenden vier festgelegten Grade:

*After the rated impulse withstand voltage has been selected the pollution degree must be defined taking the expected pollution around the equipment into account. The following four degrees of pollution are established:*

#### Verschmutzungsgrad 1

Es tritt keine oder nur trockene, nicht leitfähige Verschmutzung auf. Die Verschmutzung hat keinen Einfluss.

#### *Pollution degree 1*

*No pollution or only dry, non-conductive pollution occurs. The pollution has no influence.*

#### Verschmutzungsgrad 2

Es tritt nur nicht leitfähige Verschmutzung auf. Gelegentlich muss jedoch mit vorübergehender Leitfähigkeit durch Betauung gerechnet werden.

#### *Pollution degree 2*

*Only non-conductive pollution occurs except occasionally a temporary conductivity caused by condensation is to be expected.*

#### Verschmutzungsgrad 3

Es tritt leitfähige Verschmutzung auf oder trockene, nicht leitfähige Verschmutzung, die leitfähig wird, da Betauung zu erwarten ist.

#### *Pollution degree 3*

*Conductive pollution occurs or dry non-conductive pollution occurs which becomes conductive due to condensation which is to be expected.*

#### Verschmutzungsgrad 4

Die Verunreinigung führt zu einer beständigen Leitfähigkeit, hervorgerufen durch leitfähigen Staub, Regen oder Schnee.

#### *Pollution degree 4*

*The pollution generates persistent conductivity caused by conductive dust or by rain or snow.*

**Zu beachten ist, dass Teile von Steckverbindern und Steckvorrichtungen mit ausreichender Kapselung (min. IP 54) auch nach einem niedrigeren Verschmutzungsgrad bemessen werden können. Dies gilt auch für Steckverbinder im Trennbereich, bei denen die Kapselung im gesteckten Zustand durch das Steckverbindergehäuse erreicht wird und die nur für Prüf- und Wartungszwecke getrennt werden.**

***It has to be noted that for a connector or plug and socket device with a degree of protection of min. IP 54 the parts inside the enclosure may be dimensioned for a lower pollution degree. This also applies to mated connectors which enclosure is ensured through the connector housing and which may only be disengaged for test and maintenance purposes.***

Aus der Bemessungs-Stoßspannung und dem Verschmutzungsgrad können jetzt aus Tabelle 10 die Mindest-Luftstrecken ermittelt werden.

*When impulse withstand voltage and the pollution degree are defined the minimum clearances can be selected from chart 10.*

Tabelle 10

Chart 10

| Bemessungs-<br>Stoßspannung<br>in kV<br><i>Impulse<br/>withstand<br/>voltage<br/>in kV</i> | Mindestluftstrecken in mm bis zu 2000 m über NN<br><i>Minimum clearances in air in mm up to 2000 m above sea level</i> |      |     |     |                                                              |      |     |     |
|--------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|------|-----|-----|--------------------------------------------------------------|------|-----|-----|
|                                                                                            | Fall A (inhomogenes Feld)<br><i>Case A (non homogeneous field)</i>                                                     |      |     |     | Fall B (homogenes Feld)<br><i>Case B (homogeneous field)</i> |      |     |     |
|                                                                                            | Verschmutzungsgrad<br><i>Pollution degree</i>                                                                          |      |     |     | Verschmutzungsgrad<br><i>Pollution degree</i>                |      |     |     |
|                                                                                            | 1                                                                                                                      | 2    | 3   | 4   | 1                                                            | 2    | 3   | 4   |
| 0,33                                                                                       | 0,01                                                                                                                   | 0,2  | 0,8 | 1,6 | 0,01                                                         | 0,2  | 0,8 | 1,6 |
| 0,40                                                                                       | 0,02                                                                                                                   |      |     |     | 0,02                                                         |      |     |     |
| 0,50                                                                                       | 0,04                                                                                                                   |      |     |     | 0,04                                                         |      |     |     |
| 0,60                                                                                       | 0,06                                                                                                                   | 0,25 | 1,0 | 2   | 0,06                                                         | 0,3  | 1,2 | 2   |
| 0,80                                                                                       | 0,10                                                                                                                   |      |     |     | 0,1                                                          |      |     |     |
| 1,0                                                                                        | 0,15                                                                                                                   |      |     |     | 0,15                                                         |      |     |     |
| 1,2                                                                                        | 0,25                                                                                                                   | 0,5  | 1,5 | 3   | 0,2                                                          | 0,45 | 1,5 | 3   |
| 1,5                                                                                        | 0,5                                                                                                                    |      |     |     | 0,3                                                          |      |     |     |
| 2,0                                                                                        | 1,0                                                                                                                    |      |     |     | 0,45                                                         |      |     |     |
| 2,5                                                                                        | 1,5                                                                                                                    | 1,5  | 2   | 4   | 0,6                                                          | 0,6  | 1,2 | 4   |
| 3,0                                                                                        | 2                                                                                                                      |      |     |     | 0,8                                                          |      |     |     |
| 4,0                                                                                        | 3                                                                                                                      |      |     |     | 1,2                                                          |      |     |     |
| 5,0                                                                                        | 4                                                                                                                      | 4    | 4   | 5,5 | 1,5                                                          | 1,5  | 1,5 | 2   |
| 6,0                                                                                        | 5,5                                                                                                                    |      |     |     | 2                                                            |      |     |     |
| 8,0                                                                                        | 8                                                                                                                      |      |     |     | 3                                                            |      |     |     |
| 10                                                                                         | 11                                                                                                                     | 11   | 11  | 11  | 3,5                                                          | 3,5  | 3,5 | 3,5 |
| 12                                                                                         | 14                                                                                                                     |      |     |     | 4,5                                                          |      |     |     |
| 15                                                                                         | 18                                                                                                                     |      |     |     | 5,5                                                          |      |     |     |
| 20                                                                                         | 25                                                                                                                     | 25   | 25  | 25  | 8                                                            | 8    | 8   | 8   |
| 25                                                                                         | 33                                                                                                                     |      |     |     | 10                                                           |      |     |     |
| 30                                                                                         | 40                                                                                                                     |      |     |     | 12,5                                                         |      |     |     |
| 40                                                                                         | 60                                                                                                                     | 60   | 60  | 60  | 17                                                           | 17   | 17  | 17  |
| 50                                                                                         | 75                                                                                                                     |      |     |     | 22                                                           |      |     |     |
| 60                                                                                         | 90                                                                                                                     |      |     |     | 27                                                           |      |     |     |
| 80                                                                                         | 130                                                                                                                    | 130  | 130 | 130 | 35                                                           | 35   | 35  | 35  |
| 100                                                                                        | 170                                                                                                                    |      |     |     | 45                                                           |      |     |     |

Bei der Festlegung der Mindestluftstrecken von Steckverbindern sind in der Regel die Werte des inhomogenen Falls anzuwenden bzw. ist die entsprechende Luftstrecke durch eine Spannungsprüfung zu überprüfen.

#### Kriechstrecken

Die Kriechstrecke ist die kürzeste Entfernung entlang der Oberfläche eines Isolierstoffes zwischen zwei leitenden Teilen.

Zur Bemessung der Kriechstrecke wird die aus der entsprechenden Netzart abgeleitete Bemessungsspannung und die bereits bei der Luftstrecke gewählte Zuordnung des Verschmutzungsgrades herangezogen. Außerdem wird die Kriechwegbildung des vom Hersteller verwendeten Isolierstoffes berücksichtigt. Die Isolierstoffe werden entsprechend ihrem Kriechwegbildungsfaktor CTI (Comparative Tracking Index) in vier Gruppen eingeteilt:

|                         |                             |
|-------------------------|-----------------------------|
| Isolierstoffgruppe I    | $600 \leq \text{CTI}$       |
| Isolierstoffgruppe II   | $400 \leq \text{CTI} < 600$ |
| Isolierstoffgruppe IIIa | $175 \leq \text{CTI} < 400$ |
| Isolierstoffgruppe IIIb | $100 \leq \text{CTI} < 175$ |

When defining the minimum clearances for connectors generally the values of the inhomogeneous field can be chosen or the required clearance has to be defined by a voltage test.

#### Creepage distances

The creepage distance is the shortest distance along the surface of the insulating material between two conductive parts.

For the dimensioning of the creepage distance the following factors are taken into account: the rated voltage, the pollution degree and the tracking formation of the insulating material. The materials are separated into four groups according to their CTI values (Comparative Tracking Index):

|                     |                             |
|---------------------|-----------------------------|
| Material group I    | $600 \leq \text{CTI}$       |
| Material group II   | $400 \leq \text{CTI} < 600$ |
| Material group IIIa | $175 \leq \text{CTI} < 400$ |
| Material group IIIb | $100 \leq \text{CTI} < 175$ |

Die Mindestkriechstrecken können dann aus der Tabelle 11 entnommen werden.

The minimum creepage distances can be selected from chart 11.

Tabelle 11

Chart 11

| Bemes-<br>sungs-<br>spannung<br>U-eff<br>Rated<br>voltage<br>U in V | Mindestkriechstrecke in mm / Min. creepage distance in mm |       |                                      |                                        |                                      |       |                                      |                                        |                                      |       |                                      |                                        |                                      |       |   |  |
|---------------------------------------------------------------------|-----------------------------------------------------------|-------|--------------------------------------|----------------------------------------|--------------------------------------|-------|--------------------------------------|----------------------------------------|--------------------------------------|-------|--------------------------------------|----------------------------------------|--------------------------------------|-------|---|--|
|                                                                     | Gedruckte<br>Schaltungen<br>Printed circuits              |       |                                      | Übrige Betriebsmittel / Other devices  |                                      |       |                                      |                                        |                                      |       |                                      |                                        |                                      |       |   |  |
|                                                                     | Verschmutzungs-<br>grad<br>Pollution degree               |       |                                      | Verschmutzungsgrad<br>Pollution degree |                                      |       |                                      | Verschmutzungsgrad<br>Pollution degree |                                      |       |                                      | Verschmutzungsgrad<br>Pollution degree |                                      |       |   |  |
|                                                                     | 1                                                         |       | 2                                    |                                        | 1                                    |       | 2                                    |                                        | 3                                    |       | 3                                    |                                        | 4                                    |       | 4 |  |
|                                                                     | 1                                                         | 2     | Isolierstoffgruppe<br>Material group |                                        | Isolierstoffgruppe<br>Material group |       | Isolierstoffgruppe<br>Material group |                                        | Isolierstoffgruppe<br>Material group |       | Isolierstoffgruppe<br>Material group |                                        | Isolierstoffgruppe<br>Material group |       |   |  |
| 2)                                                                  | 3)                                                        | 2)    | I                                    | II                                     | III a                                | III b | I                                    | II                                     | III a                                | III b | I                                    | II                                     | III a                                | III b |   |  |
| 10                                                                  | 0,025                                                     | 0,04  | 0,08                                 | 0,4                                    | 0,4                                  | 0,4   |                                      | 1                                      | 1                                    | 1     |                                      | 1,6                                    | 1,6                                  | 1,6   |   |  |
| 12,5                                                                | 0,025                                                     | 0,04  | 0,09                                 | 0,42                                   | 0,42                                 | 0,42  |                                      | 1,05                                   | 1,05                                 | 1,05  |                                      | 1,6                                    | 1,6                                  | 1,6   |   |  |
| 16                                                                  | 0,025                                                     | 0,04  | 0,1                                  | 0,45                                   | 0,45                                 | 0,45  |                                      | 1,1                                    | 1,1                                  | 1,1   |                                      | 1,6                                    | 1,6                                  | 1,6   |   |  |
| 20                                                                  | 0,025                                                     | 0,04  | 0,11                                 | 0,48                                   | 0,48                                 | 0,48  |                                      | 1,2                                    | 1,2                                  | 1,2   |                                      | 1,6                                    | 1,6                                  | 1,6   |   |  |
| 25                                                                  | 0,025                                                     | 0,04  | 0,125                                | 0,5                                    | 0,5                                  | 0,5   |                                      | 1,25                                   | 1,25                                 | 1,25  |                                      | 1,7                                    | 1,7                                  | 1,7   |   |  |
| 32                                                                  | 0,025                                                     | 0,04  | 0,14                                 | 0,53                                   | 0,53                                 | 0,53  |                                      | 1,3                                    | 1,3                                  | 1,3   |                                      | 1,8                                    | 1,8                                  | 1,8   |   |  |
| 40                                                                  | 0,025                                                     | 0,04  | 0,16                                 | 0,56                                   | 0,8                                  | 1,1   |                                      | 1,4                                    | 1,6                                  | 1,8   |                                      | 1,9                                    | 2,4                                  | 3     |   |  |
| 50                                                                  | 0,025                                                     | 0,04  | 0,18                                 | 0,6                                    | 0,85                                 | 1,2   |                                      | 1,5                                    | 1,7                                  | 1,9   |                                      | 2                                      | 2,5                                  | 3,2   |   |  |
| 63                                                                  | 0,04                                                      | 0,063 | 0,2                                  | 0,63                                   | 0,9                                  | 1,25  |                                      | 1,6                                    | 1,8                                  | 2     |                                      | 2,1                                    | 2,6                                  | 3,4   |   |  |
| 80                                                                  | 0,063                                                     | 0,1   | 0,22                                 | 0,67                                   | 0,95                                 | 1,3   |                                      | 1,7                                    | 1,9                                  | 2,1   |                                      | 2,2                                    | 2,8                                  | 3,6   |   |  |
| 100                                                                 | 0,1                                                       | 0,16  | 0,25                                 | 0,71                                   | 1                                    | 1,4   |                                      | 1,8                                    | 2                                    | 2,2   |                                      | 2,4                                    | 3,0                                  | 3,8   |   |  |
| 125                                                                 | 0,16                                                      | 0,25  | 0,28                                 | 0,75                                   | 1,05                                 | 1,5   |                                      | 1,9                                    | 2,1                                  | 2,4   |                                      | 2,5                                    | 3,2                                  | 4     |   |  |
| 160                                                                 | 0,25                                                      | 0,4   | 0,32                                 | 0,8                                    | 1,1                                  | 1,6   |                                      | 2                                      | 2,2                                  | 2,5   |                                      | 3,2                                    | 4                                    | 5     |   |  |
| 200                                                                 | 0,4                                                       | 0,63  | 0,42                                 | 1                                      | 1,4                                  | 2     |                                      | 2,5                                    | 2,8                                  | 3,2   |                                      | 4                                      | 5                                    | 6,3   |   |  |
| 250                                                                 | 0,56                                                      | 1     | 0,56                                 | 1,25                                   | 1,8                                  | 2,5   |                                      | 3,2                                    | 3,6                                  | 4     |                                      | 5                                      | 6,3                                  | 8     |   |  |
| 320                                                                 | 0,75                                                      | 1,6   | 0,75                                 | 1,6                                    | 2,2                                  | 3,2   |                                      | 4                                      | 4,5                                  | 5     |                                      | 6,3                                    | 8                                    | 10    |   |  |
| 400                                                                 | 1                                                         | 2     | 1                                    | 2                                      | 2,8                                  | 4     |                                      | 5                                      | 5,6                                  | 6,3   |                                      | 8                                      | 10                                   | 12,5  |   |  |
| 500                                                                 | 1,3                                                       | 2,5   | 1,3                                  | 2,5                                    | 3,6                                  | 5     |                                      | 6,3                                    | 7,1                                  | 8,0   |                                      | 10                                     | 12,5                                 | 16    |   |  |
| 630                                                                 | 1,8                                                       | 3,2   | 1,8                                  | 3,2                                    | 4,5                                  | 6,3   |                                      | 8                                      | 9                                    | 10    |                                      | 12,5                                   | 16                                   | 20    |   |  |
| 800                                                                 | 2,4                                                       | 4     | 2,4                                  | 4                                      | 5,6                                  | 8     |                                      | 10                                     | 11                                   | 12,5  |                                      | 16                                     | 20                                   | 25    |   |  |
| 1000                                                                | 3,2                                                       | 5     | 3,2                                  | 5                                      | 7,1                                  | 10    |                                      | 12,5                                   | 14                                   | 16    |                                      | 20                                     | 25                                   | 32    |   |  |
| 1250                                                                |                                                           |       | 4,2                                  | 6,3                                    | 9                                    | 12,5  |                                      | 16                                     | 18                                   | 20    |                                      | 25                                     | 32                                   | 40    |   |  |
| 1600                                                                |                                                           |       | 5,6                                  | 8                                      | 11                                   | 16    |                                      | 20                                     | 22                                   | 25    |                                      | 32                                     | 40                                   | 50    |   |  |
| 2000                                                                |                                                           |       | 7,5                                  | 10                                     | 14                                   | 20    |                                      | 25                                     | 28                                   | 32    |                                      | 40                                     | 50                                   | 63    |   |  |
| 2500                                                                |                                                           |       | 10                                   | 12,5                                   | 18                                   | 25    |                                      | 32                                     | 36                                   | 40    |                                      | 50                                     | 63                                   | 80    |   |  |
| 3200                                                                |                                                           |       | 12,5                                 | 16                                     | 22                                   | 32    |                                      | 40                                     | 45                                   | 50    |                                      | 63                                     | 80                                   | 100   |   |  |
| 4000                                                                |                                                           |       | 16                                   | 20                                     | 28                                   | 40    |                                      | 50                                     | 56                                   | 63    |                                      | 80                                     | 100                                  | 125   |   |  |
| 5000                                                                |                                                           |       | 20                                   | 25                                     | 36                                   | 50    |                                      | 63                                     | 71                                   | 80    |                                      | 100                                    | 125                                  | 160   |   |  |
| 6300                                                                |                                                           |       | 25                                   | 32                                     | 45                                   | 63    |                                      | 80                                     | 90                                   | 100   |                                      | 125                                    | 160                                  | 200   |   |  |
| 8000                                                                |                                                           |       | 32                                   | 40                                     | 56                                   | 80    |                                      | 100                                    | 110                                  | 125   |                                      | 160                                    | 200                                  | 250   |   |  |
| 10000                                                               |                                                           |       | 40                                   | 50                                     | 71                                   | 100   |                                      | 125                                    | 140                                  | 160   |                                      | 200                                    | 250                                  | 320   |   |  |

Die in diesem Katalog beschriebenen Steckverbinder sind festen Bemessungsspannungen zugeordnet, die sich auf den allgemeinen Anwendungsfall im Maschinenbau beziehen. Liegen davon abweichende Anwendungsfälle vor, so kann aufgrund der obigen Tabelle eine andere Bemessungsspannung ermittelt werden.

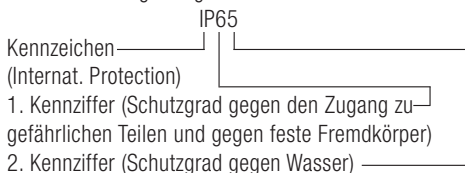
Connectors in this catalogue are allocated to fixed rated voltages which apply to the machine building industry. In case of other applications the above chart can be used to determine other rated voltages.

**Schutzarten**

Elektrische Betriebsmittel, zu denen Steckverbinder zählen, müssen aus Sicherheitsgründen gegen Einflüsse von außen, wie z.B. Staub, Fremdkörper, Berührung, Feuchtigkeit und Wasser geschützt werden. Diesen Schutz übernehmen bei Industrie-Steckverbindern die Gehäuse mit ihrer Verriegelung und dem abgedichteten Kabeleinlass.

Den Grad der Schutzart kann man dem Einsatz entsprechend wählen. In der Norm IEC 60529 bzw. DIN EN 60529 sind die Schutzgrade festgelegt und in verschiedene Klassen eingeteilt.

Die Bezeichnung erfolgt in nachstehender Weise:



Die nachfolgenden Tabellen 12 und 13 zeigen alle Schutzarten in einer Übersicht.

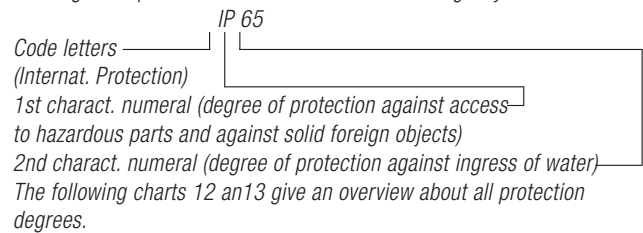
**Tabelle 12**

| 1. Kennziffer | Kurzbeschreibung                                                                                                                   | Definition                                                                                                                                                                                                                                                          |
|---------------|------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0             | Nicht geschützt                                                                                                                    | –                                                                                                                                                                                                                                                                   |
| 1             | Geschützt gegen den Zugang zu gefährlichen Teilen mit dem Handrücken. Geschützt gegen feste Fremdkörper $\varnothing \geq 50$ mm.  | Die Sonde, Kugel $\varnothing$ 50 mm, darf nicht voll eindringen und muss ausreichenden Abstand zu gefährlichen Teilen haben.                                                                                                                                       |
| 2             | Geschützt gegen den Zugang zu gefährlichen Teilen mit einem Finger. Geschützt gegen feste Fremdkörper $\varnothing \geq 12,5$ mm.  | Der gegliederte Prüffinger, $\varnothing$ 12 mm, 80 mm Länge, muss ausreichenden Abstand zu gefährlichen Teilen haben. Die Sonde, $\varnothing$ 12,5 mm, darf nicht voll eindringen.                                                                                |
| 3             | Geschützt gegen den Zugang zu gefährlichen Teilen mit einem Werkzeug. Geschützt gegen feste Fremdkörper $\varnothing \geq 2,5$ mm. | Die Sonde, $\varnothing$ 2,5 mm, darf überhaupt nicht eindringen.                                                                                                                                                                                                   |
| 4             | Geschützt gegen den Zugang zu gefährlichen Teilen mit einem Draht. Geschützt gegen feste Fremdkörper $\varnothing \geq 1$ mm.      | Die Sonde, $\varnothing$ 1 mm, darf überhaupt nicht eindringen.                                                                                                                                                                                                     |
| 5             | Geschützt gegen den Zugang zu gefährlichen Teilen mit einem Draht. Staubgeschützt.                                                 | Die Sonde, $\varnothing$ 1 mm, darf nicht eindringen. Eindringen von Staub ist nicht vollständig verhindert, aber der Staub darf nicht in einer solchen Menge eindringen, dass das zufriedenstellende Arbeiten des Gerätes oder die Sicherheit beeinträchtigt wird. |
| 6             | Geschützt gegen den Zugang zu gefährlichen Teilen mit einem Draht. Staubdicht.                                                     | Die Sonde, $\varnothing$ 1 mm, darf nicht eindringen. Kein Eindringen von Staub.                                                                                                                                                                                    |

**Degree of protection**

Electrical connector devices have to be protected for safety reasons from outside influences like dust, foreign objects, direct contact, moisture and water. This protection is provided on industrial connectors by the housing latching devices and sealed cable entries. The degree of protection depends on the type of intended use. The standard IEC 60529 and/or DIN EN 60529 has specified the degree of protection and divided them into several classes.

The degree of protection is indicated in the following way:

**Chart 12**

| 1st charact. numeral | Brief description                                                                                                                                             | Definition                                                                                                                                                                                                             |
|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0                    | Non-protected                                                                                                                                                 | –                                                                                                                                                                                                                      |
| 1                    | Protected against access to hazardous parts with the back of a hand. Protected against solid foreign objects of $\geq 50$ mm $\varnothing$ .                  | The probe, sphere of 50mm $\varnothing$ , shall not fully penetrate and shall have adequate clearance from hazardous parts.                                                                                            |
| 2                    | Protected against access to hazardous parts with a finger. Protected against solid foreign objects of $\geq 12,5$ mm $\varnothing$ . Protected against access | The jointed test finger of 12mm $\varnothing$ , 80mm length, shall have adequate clearance from hazardous parts. The probe, sphere of 12,5mm $\varnothing$ , shall not fully penetrate.                                |
| 3                    | to hazardous parts with a tool. Protected against solid foreign objects of $\geq 2,5$ mm $\varnothing$ . Protected against access to                          | The probe of 2,5mm $\varnothing$ shall not penetrate at all.                                                                                                                                                           |
| 4                    | hazardous parts with a wire. Protected against solid foreign objects of $\geq 1$ mm $\varnothing$ .                                                           | The probe of 1mm $\varnothing$ shall not penetrate at all.                                                                                                                                                             |
| 5                    | Protected against access to hazardous parts with a wire. Dust-protected.                                                                                      | The probe of 1mm $\varnothing$ shall not penetrate. Intrusion of dust is not totally prevented, but dust shall not penetrate in a quantity to interfere with satisfactory operation of the device or to impair safety. |
| 6                    | Protected against access to hazardous parts with a wire. Dust-tight.                                                                                          | The probe of 1mm $\varnothing$ shall not penetrate. No intrusion of dust.                                                                                                                                              |



Tabelle 13

| 2. Kennziffer    | Kurzbeschreibung                                                       | Definition                                                                                                                                                                                                                                                                                     |
|------------------|------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0                | Nicht geschützt                                                        | –                                                                                                                                                                                                                                                                                              |
| 1                | Geschützt gegen Tropfwasser                                            | Senkrecht fallende Tropfen dürfen keine schädlichen Wirkungen haben.                                                                                                                                                                                                                           |
| 2                | Geschützt gegen Tropfwasser, wenn das Gehäuse bis zu 15° geneigt ist   | Senkrecht fallende Tropfen dürfen keine schädlichen Wirkungen haben, wenn das Gehäuse um einen Winkel bis zu 15° beiderseits der Senkrechten geneigt ist.                                                                                                                                      |
| 3                | Geschützt gegen Sprühwasser                                            | Wasser, das in einem Winkel bis zu 60° beiderseits der Senkrechten gesprüht wird, darf keine schädlichen Wirkungen haben.                                                                                                                                                                      |
| 4                | Geschützt gegen Spritzwasser                                           | Wasser, das aus jeder Richtung gegen das Gehäuse spritzt, darf keine schädlichen Wirkungen haben.                                                                                                                                                                                              |
| 5                | Geschützt gegen Strahlwasser                                           | Wasser, das aus jeder Richtung als Strahl gegen das Gehäuse gerichtet ist, darf keine schädlichen Wirkungen haben.                                                                                                                                                                             |
| 6                | Geschützt gegen starkes Strahlwasser                                   | Wasser, das aus jeder Richtung als starker Strahl gegen das Gehäuse gerichtet ist, darf keine schädlichen Wirkungen haben.                                                                                                                                                                     |
| 7                | Geschützt gegen die Wirkungen beim zeitweiligen Untertauchen in Wasser | Wasser darf nicht in einer Menge eintreten, die schädliche Wirkungen verursacht, wenn das Gehäuse für 30 Min. in 1 m Tiefe in Wasser untergetaucht ist.                                                                                                                                        |
| 8                | Geschützt gegen die Wirkungen beim dauernden Untertauchen in Wasser    | Wasser darf nicht in einer Menge eintreten, die schädliche Wirkungen verursacht, wenn das Gehäuse dauernd unter Wasser getaucht ist unter Bedingungen, die zwischen Hersteller und Anwender vereinbart werden müssen. Die Bedingungen müssen jedoch schwieriger sein als für die Kennziffer 7. |
| 9K <sup>1)</sup> | Geschützt gegen Wasser bei Hochdruck-/Dampfstrahl-Reinigung            | Wasser, das aus jeder Richtung unter stark erhöhtem Druck gegen das Gehäuse gerichtet ist, darf keine schädlichen Wirkungen haben.                                                                                                                                                             |

1) Anmerkung: Kennziffer nach DIN 40050 Teil 9 Straßenfahrzeuge, IP-Schutzarten

Chart 13

| 2nd charact. numeral | Brief description                                                                | Definition                                                                                                                                                                                                                                             |
|----------------------|----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0                    | Non-protected                                                                    | –                                                                                                                                                                                                                                                      |
| 1                    | Protected against vertically falling water drops                                 | Vertically falling drops shall have no harmful effects.                                                                                                                                                                                                |
| 2                    | Protected against vertically falling water drops when enclosure tilted up to 15° | Vertically falling drops shall have no harmful effects when the enclosure is tilted at any angle up to 15°.                                                                                                                                            |
| 3                    | Protected against spraying water                                                 | Water sprayed at any angle up to 60° shall have no harmful effects.                                                                                                                                                                                    |
| 4                    | Protected against splashing water                                                | Water splashed against the enclosure from any direction shall have no harmful effects.                                                                                                                                                                 |
| 5                    | Protected against water jets                                                     | Water projected in jets against the enclosure from any direction shall have no harmful effects.                                                                                                                                                        |
| 6                    | Protected against powerful water jets                                            | Water projected in powerful jets against the enclosure from any direction shall have no harmful effects.                                                                                                                                               |
| 7                    | Protected against the effects of temporary immersion in water                    | Intrusion of water in quantities causing harmful effects shall not be possible when the enclosure is temporarily immersed in water for 30 min. in 1 m depth.                                                                                           |
| 8                    | Protected against the effects of continuous immersion in water                   | Intrusion of water in quantities causing harmful effects shall not be possible when the enclosure is continuously immersed in water under conditions which shall be agreed between manufacturer and user but which are more severe than for numeral 7. |
| 9 K <sup>1)</sup>    | Protected against water during high pressure/steam jet cleaning                  | Water projected in powerful jets with high pressure and heat against the enclosure from any direction shall have no harmful effects.                                                                                                                   |

1) Remark: Numeral acc. to DIN 40050 part 9, vehicles IP code

**Kabel**

Zum Anschluss an alle Amphenol-Industrie-Steckverbinder wird die Verwendung von handelsüblichen hochflexiblen Kunststoff-Steuerleitungen nach VDE-Vorschriften empfohlen. Auf diese Leitungen sind unsere Steckverbinder in Bezug auf Kontaktanzahl und Kabeleinführung ausgelegt.

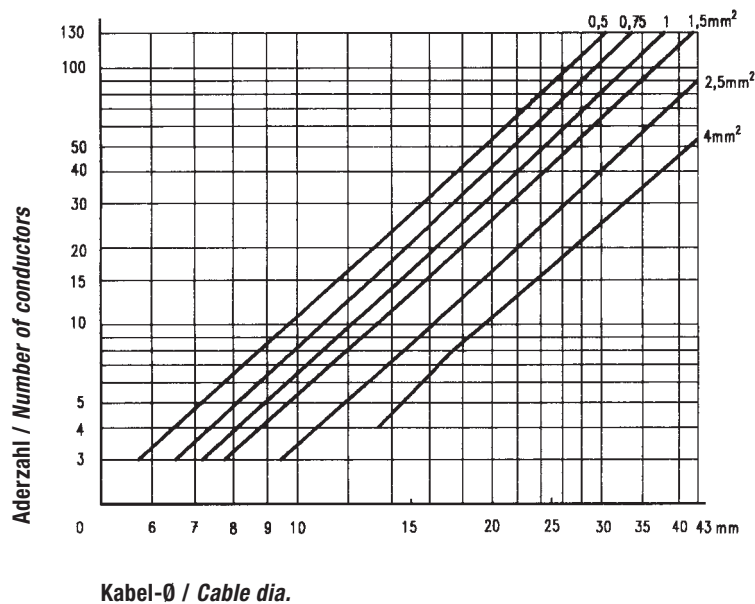
Bei der Leitungsauswahl ist darauf zu achten, dass die Leitungen den Steckverbinder nicht angreifen (Lösungsmittel) oder eine mögliche Feuerbeständigkeit aufheben.

**Abdichtung**

Die Abdichtung der Kabeleinführungen aller Amphenol-Industrie-Steckverbinder erfolgt mittels Verschraubungen. Wir verwenden grundsätzlich Dichtringe aus Neoprene, die eine gute Beständigkeit gegen Fette, Öle und Benzin besitzen.

**Auswahl der Verschraubungen**

Neben Dichtringen mit konstantem Innendurchmesser, dessen Maß der Bezeichnung der Verschraubung entspricht, gibt es auch ausschneidbare Dichtringe (Zwiebelringe), bei denen der Innendurchmesser durch Ausschneiden von Ringen in einem gewissen Maße variiert werden kann. Die Auswahl der Verschraubung für verschiedene Kabeldurchmesser (Kabelaufbau) kann von nachfolgendem Diagramm 5 abgeleitet werden (siehe auch Seite 184).

**Diagramm 5****Cable**

For the termination of all Amphenol-industrial connectors we recommend the use of commercially available high flexible cable acc. to VDE or other local specifications. Our connectors are designed to fit these cables especially as far as number of conductors and cable diameters are concerned.

When selecting cables care must be taken that the cables do not affect (solvent) the connector or preserve an existing fire resistance.

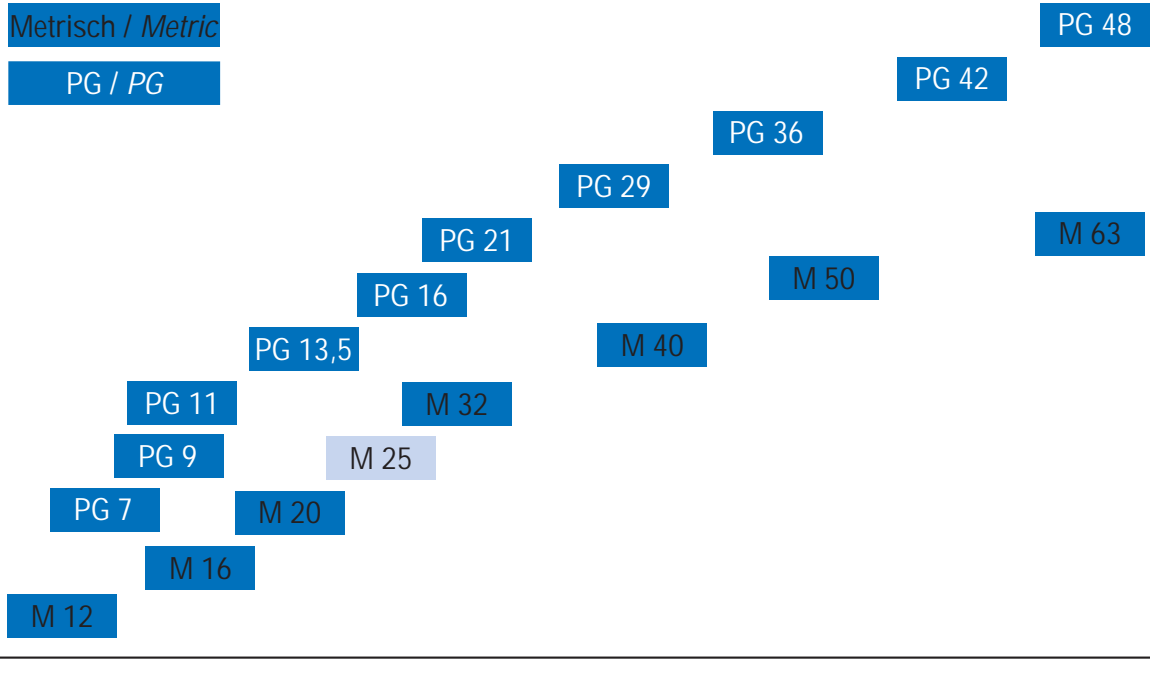
**Sealing**

The sealing of the cable entries of all Amphenol-industrial connectors is with gland bushings. All sealings are made from Neoprene which has a good resistance against grease, oil and gasoline.

**Selection of gland bushings**

Beside glands with a fixed inside diameter which equals the number, there are also glands with variable inside diameters available (so-called onion glands). The inside diameter of these glands can be adjusted to the outside cable diameter by cutting out the smaller rings. The selection of the appropriate gland bushing depends on the cable diameter (cable composition) can be made using the following diagram 5 (see page 184).

**Diagram 5**



**Dichtbereich / Area of Tightness**

Metrische Kabelverschraubungen passen nur in metrische Gehäuseöffnungen. Zusätzlich bieten wir weiterhin Gehäuse und Verschraubungen mit PG-Gewinde an.

*Metric cable glands fit only into metric housing openings. Additionally we offer further more housings and screw connections with PG threads.*

|                                      | PG / PG  | Metrisch / Metric |
|--------------------------------------|----------|-------------------|
| Aussendurchmesser/<br>Outer Diameter | PG 48    | M 63              |
|                                      | PG 42    |                   |
|                                      | PG 36    | M 50              |
|                                      | PG 29    | M 40              |
|                                      | PG 21/23 | M 32              |
|                                      | PG 16    | M 25              |
|                                      | PG 13,5  | M 20              |
|                                      | PG 11    |                   |
|                                      | PG 9     | M 16              |
|                                      | PG 7     | M 12              |

**Abschirmung**

Abschirmung innerer oder äußerer elektrischer Felder durch Bildung einer Äquipotentialfläche in Form von Metallklappen oder Metallisierungen auf der Innen- und Außenseite von Kappen aus Kunststoff. Die Abschirmung wird in der Regel mit dem Schirmgeflecht des angeschlossenen Kabels und mit dem Gerätegehäuse verbunden.

**Bemessungsgrößen, elektrische**

- Bemessungsspannung ist die Spannung, für die der Steckverbinder oder die Steckvorrichtung bemessen ist und auf die bestimmte Betriebsseigenschaften bezogen werden.
- Bemessungsstrom ist der Strom, den ein Steckverbinder oder eine Steckvorrichtung gleichzeitig durch alle Kontakte dauernd (nicht intermittierend) führen kann, ohne dass dabei die obere Grenztemperatur überschritten wird.
- Schaltleistung einer Steckvorrichtung ist die Leistung, welche die Steckvorrichtung unter festgelegten Bedingungen schalten kann.
- Prüfspannung ist die Spannung, der ein Steckverbinder oder eine Steckvorrichtung bei vorgegebenen Bedingungen ohne Durch- oder Überschlag widersteht.

**Bügelverriegelung**

Verriegelung von zwei Hälften eines Steckverbinderpaares durch ein formschlüssiges Element, das durch einen als Bügel ausgestalteten Hebel betätigt wird. Erst wenn die beiden Hälften vollständig zusammengesteckt sind, kommt der Bügel in seine Endlage.

**Crimpbacken**

Derjenige Teil eines Crimpwerkzeugs, der den Crimpbereich verformt. Er besteht üblicherweise aus dem Crimpamboss, dem Crimpstempel und dem Positionierstück.

**Crimpbereich**

Der Bereich der Crimphülse, in dem die Crimpverbindung durch Druckverformung oder Druckumformung der Hülse um den Leiter herum ausgeführt ist.

**Crimphülse**

Eine Anschlusschülse, die einen oder mehrere Leiter aufnehmen kann und durch Anwendung eines Crimpwerkzeugs gecrimpt werden kann.

**Crimpverbindung**

Durch systematisches Verformen einer Crimphülse um abisolierte Leiter herum hergestellte, dauerhafte elektrische und mechanische Verbindung; Crimpverbindung siehe IEC 60352-2, 2a; 2b; 2c, DIN EN 60 352-2 (siehe auch Katalog „Werkzeuge“)

**Durchgangswiderstand**

Der elektrische Widerstand in einem gesteckten bzw. geschalteten Kontaktpaar, gemessen zwischen den Anschlusspunkten unter vorgeschriebenen Messbedingungen. Prüfungen nach ICE 60512-2, DIN EN 60 512-2

**Elektromagnetische Einflüsse**

Bei Steckverbindern werden unerwünschte elektromagnetische Einflüsse auf die zu verbindenden Leitungen bzw. auf die Umgebung durch Abschirmung verhindert.

**Gehäuse**

Teil eines Steckverbinders, in dem Kontakträger und Kontakte montiert sind. Es kann zur Verriegelung dienen.

**Grenztemperaturen**

Untere und obere Temperaturen, die nicht zu einer Schädigung der Werkstoffe führen; dazwischen liegt der Betriebstemperaturbereich.

- Untere Grenztemperatur: Die tiefste zulässige Temperatur, bei der ein Steckverbinder oder eine Steckvorrichtung noch betrieben werden darf.
- Obere Grenztemperatur: Die höchste zulässige Temperatur, bei der ein Steckverbinder oder eine Steckvorrichtung noch betrieben werden darf. Sie ist die Summe aus Eigenerwärmung (einschließlich Kontaktwärmerung) und Umgebungstemperatur.

**Isolationswiderstand**

Widerstand der Isolierung zwischen zwei leitfähigen Teilen. Isoliervermögen eines Werkstoffes, der zwei benachbarte Kontakte oder einen Kontakt gegen Masse möglichst hochohmig trennt. Mess- und Prüfverfahren nach IEC 60512-2, 3a, DIN EN 60 512-2

**Isolierstoffgruppe**

Einteilung von Isolierstoffen entsprechend ihren CTI-Werten (CTI = Comparative Tracking Index / Vergleichszahl der Kriechwegbildung).

**Kompatible Steckverbinder**

Zwei Steckverbinder sind kompatibel, wenn sie mechanisch austauschbar und zusammensteckbar sind und den gleichen technischen Anforderungen entsprechen.

**Kontaktgröße**

Kennzeichnung zur Differenzierung der Kontakte nach folgendem Systemen

- a) Kennzeichnungssystem: Kennzeichnung des Kontaktes nach der maximal anschließbaren Leitergröße (AWG American Wire Gauge);

- b) Strombelastbarkeitssystem: Kennzeichnung des Kontaktes nach seiner maximalen Strombelastbarkeit.

- c) Querschnittssystem: Kennzeichnung des Kontaktes nach dem maximal anschließbaren Leiterquerschnitt. Leiterwiderstand.

**Kontaktmaterial**

Die Wahl des Kontaktmaterials – meist Kupfer oder Kupferlegierungen – hängt von den gewünschten Eigenschaften des Steckverbinders ab. Hierbei spielen Durchgangswiderstand; Steck- und Ziehkraften eine maßgebliche Rolle. Neben Stechkäufigkeit und Umwelteinflüssen bestimmen diese auch die Art der Oberflächenüberzüge Nickel, Zinn, Gold, Silber, Palladium. Sie werden galvanisch oder walztechnisch aufgebracht.

**Kriechstrecken**

Kürzeste Entfernung zwischen spannungsführenden Teilen auf der Oberfläche von Isolierkörpern, sofern festgelegte Mindestmaße vorliegen (Kriechstreckenverlängerung). Die Abstände dienen der Sicherheit gegen Überschläge. Sie werden in Abhängigkeit von der Reihenspannung, den Anwendungsbedingungen und den Eigenschaften des Isolierwerkstoffes festgelegt. Die unterschiedliche Kriechstromfestigkeit der Isolierstoffe ist bei der Festlegung der Kriechstrecken zu beachten (DIN VDE 0110-1.)

**Lebensdauer**

Anzahl der Steckzyklen, die noch nicht zum Durchrieb der leitenden Kontaktflächen führt und den Kontaktwiderstand nicht unzulässig erhöht. Mess- und Prüfverfahren nach IEC 60512-5, DIN EN 60512-5

**Luftstrecken**

Kürzeste, als Fadenmaß gemessene Entfernung zwischen zwei spannungsführenden Metallteilen in der Luft, nach DIN VDE 0110-1.

**Rechteck-Verbinder**

Steckverbinder mit vorwiegend rechteckiger Form des Steckgesichtes.

**Schaltleistung**

Die Schaltleistung einer Steckvorrichtung ist die Leistung, die die Steckvorrichtung unter festgelegten Bedingungen schalten kann.

**Spannungsfestigkeit**

Spannung, der ein Steckverbinder oder eine Steckvorrichtung bei vorgegebenen Bedingungen ohne Durchschlag oder Überschlag widersteht. Die Spannungsfestigkeit liegt über der Nennspannung, sie dient zum Nachweis des Isoliervermögens des Steckverbinders.

**Steckverbinder**

Ein Bauelement, das es gestattet elektrische Leiter anzuschließen, und dazu bestimmt ist, mit einem passenden Gegenstück Verbindungen herzustellen und zu trennen. Steckverbinder sind Betriebsmittel, die bei bestimmungsgemäßer Verwendung (unter elektrischer Spannung) nicht gesteckt oder getrennt werden dürfen (im Gegensatz Steckverbinder mit Schaltleistung). Nach der Befestigung werden freie und feste Steckverbinder unterschieden. Der Steckverbinder besteht aus dem Steckverbindergehäuse und den Kontaktelementen. Das Steckverbindergehäuse enthält den Kontakteinsatz.

**Steckverbindung**

Eine elektrische Steckverbindung besteht aus zwei Steckverbindern, d. h. aus mindestens zwei Kontaktelementen. Alle weiteren Komponenten wie Gehäuse, Kontakträger, Kontakthalterung usw., erfüllen sekundäre Funktionen.

**Steckverbinder mit Schaltleistung**

Ein Bauelement, das bei bestimmungsgemäßer Verwendung unter elektrischer Spannung oder Last gesteckt oder getrennt wird. Der Schutzleiterkontakt muss während des Steckens vor- und während des Trennens nachheilen (voreilender Kontakt).

**Steckzyklen**

Mechanisches Betätigen von Steckverbindern und Steckvorrichtungen durch Stecken und Ziehen. Ein Steckzyklus besteht aus je einem Steck- und Ziehvorgang.

**Überspannungskategorie**

Ein Zahlenwert, der eine Stehstoßspannung festlegt. Er werden die Überspannungskategorien I, II, III und IV verwendet.

**Verschmutzungsgrad**

Zahlenwert, der die erwartende Verschmutzung der Mikro-Umgebung angibt. Er werden die Verschmutzungsgrade 1, 2, 3 und 4 verwendet.

**Voreilender Kontakt**

Erfordert der Schaltungsaufbau, dass aus Schutzgründen, z. B. für Schutzleiter, ein oder mehrere Kontakte eines Steckverbinders beim Stecken zuerst Kontakt herstellen oder beim Ziehen als letzte getrennt werden, sind Steckverbinder mit voreilenden Kontakten (Stift bzw. Messer, Buchse oder Feder) zu verwenden.

**American Wire Gauge (AWG)**

System of numerical designations for wire sizes, based on specified ranges of cross-sectional areas. Starts with 4/0 (000) at the largest size, going to 3/0, 2/0, 1/0, 1, 2, and up to 40 and beyond for the smallest size. A step of one AWG number corresponds to a reduction of cross-sectional area of appr. 20 %.

**Attenuation**

A reduction of power. Occurs naturally when waves travel through lines, wave guides, or media such as air or water. Is produced additionally by imperfections in electrical or optical connections (attenuation in fibre optics), e. g. contact resistance, mismatch, etc.

**Bulkhead connector**

Connector designed to be inserted into a panel cutout from the rear of the panel, thus forming part of the barrier between two spaces. Back-mounted.

**Clearance**

The shortest distance in air between two conductive parts, see IEC 60664.

**Climatic stability**

General term describing the behavior of components under various climatic conditions, e. g. high and low temperatures, tropical climate, high humidity, moist heat, fungus, atmospheric conditions (industrial atmosphere), reduced air pressure, etc. Climatic conditions for test purposes are explained in IEC 60068, DIN 46 040.

**Connector**

A component which terminates conductors for the purpose of providing connection and disconnection to a suitable mating component which shall not be engaged or disengaged when live. Depending on the fastening to a cabinet, panel, rack etc. or a cable, they are classified as fixed or free connectors. A connector comprises one or more contacts and a housing which may have a separate connector insert and a separate outer housing or shell.

**Connector housing**

The part of a connector into which the insert and the contacts are assembled. It may function as part of the locking mechanism.

**Connector insert**

An insulating element designed to support and position contacts in a connector housing.

**Connector life**

The number of mating cycles prior to abrasion of the conductive contact surface and which does not result in a significant rise of the contact resistance. Tests according to test 9a of ICE 60512-5 / DIN EN 60512 Part 5.

**Contact**

The conductive element in a connector which mates with a corresponding element to provide an electrical path.

**Contact resistance**

The electrical resistance of a mated set of contacts under specified conditions. Tested according to tests 2a, 2b, 2c, of IEC 60 512 -2/ DIN EN 60 512-2.

**Contact size**

The designation used to differentiate one contact from another. It may be denoted by one of the following numbering systems:

- numbering system: assigned numbers used to denote the size of the contact and its related conductor accommodation (e. g. in AWG units),
- current rating system: the related current-carrying capacity is used to denote the size of the contact,
- cross-sectional area system: reference is made to the cross-sectional area of the maximum conductor accommodation to denote the size of the contact, e. g. in mm<sup>2</sup>.

**Creepage distance**

The shortest distance along the surface of the insulating material between two conductive parts. The longer the distance, the less the risk of arc damage or tracking. Minimum creepage distances are specified according to the rated voltage and the applicable pollution degree and Comperative Tracking Index.

**Crimped connection**

A solderless connection made by crimping. IEC 60352-2 / DIN IEC 60352 Part 2.

**Crimping die**

That part of a crimping tool which forms the crimp(s) and usually incorporates the crimp anvil(s) and the crimp indenter(s).

**Derating curve**

The method for determining derating is specified in IEC 60 512-3. Here the combination of ambient temperature (Tu) and the current (I) leading to the same maximum allowable temperature (Tb) at the hottest point of the connector are plotted.

**DIN**

Deutsches Institut für Normung. A German standards organization.

**Electromagnetic interference (EMI)**

General term describing the undesirable effects of the immission or emission of radio frequency fields. In connectors electromagnetic interference is prevented by shielding. Shielded connectors normally provide means to connect the screens of attached cables.

**Funnel entry (restricted entry C146 D series)**

Flared or widened entrance to a conductor barrel permitting easier insertion of the conductor.

**Insertion or withdrawal force**

The force required to fully insert or withdraw a set of mated connectors without the effect of coupling, locking or similar devices. The insertion force is usually greater than the withdrawal force.

**Insulation grip**

The area of a crimp contact that has been reshaped around the insulation of the conductor by compression during the crimping operation.

**Insulation resistance**

The resistance of the insulation between two conductive elements, in particular, the resistance between two contacts or between a contact and a metallic housing or shield. Tested according to test 3a of IEC 60512-2 / DIN IEC 60512 Part 2.

**Intermateable**

Two connectors are intermateable when they are capable of being connected electrically and mechanically but without regard to their performance and intermountability.

**Locator**

In a crimping tool the device used for positioning a crimp contact or terminal end.

**Locking lever**

A mechanical locking device operated by actuating a lever, designed to hold two mated connectors together. Typically the lever can only be fully locked if the two connectors are correctly mated.

**Mating cycle**

One mating cycle comprises one insertion and one withdrawal operation. Term used in the definition of connector life.

**Material group**

Classification of insulation materials according to their CTI values (CTI = Comperative Tracking Index)

**Overvoltage category**

A numeral defining a transient overvoltage condition. Overvoltage categories I, II, III and IV are used.

**Connector with braking capacity (CBC)**

A component which may be engaged or disengaged in normal use, when live or under load. Note: In the sense of this document the term - live- is used if contacts are under voltage not necessarily with a current flowing across the contacts. The term - load - is used if a current is flowing across the contacts.

**Rated current**

A current value assigned by the manufacturer which the connector or PSD can carry continuously (without interruption) and simultaneously through all its contacts wired with the largest conductor preferably at an ambient temperature of 40 °C without the upper temperature being exceeded.

**Shield, shielding**

Shielding of internal or external electric fields by means of a plane with a uniform electric potential, formed by metal shells or metallic layers on the inside or outside of plastic shells. The shield is normally connected to the shielding braid of the cable and/or chassis ground.

**Terminal block**

An assembly of terminals in a housing or body of insulating material to facilitate interconnection between multiple conductors. Also called terminal strip or barrier blocks if the terminals are separated by an insulation barrier.

**Wire range**

The range of wire cross sections which is compatible with the dimensions the terminals of the contact (wire barrel). The wire range is expressed in mm<sup>2</sup> or in AWG numbers.

Gestanzte Crimphülsen Serie C146 Abisolierlängen für  
anzuschließenden Leiter

## Stamped crimp contacts series C146, stripping length

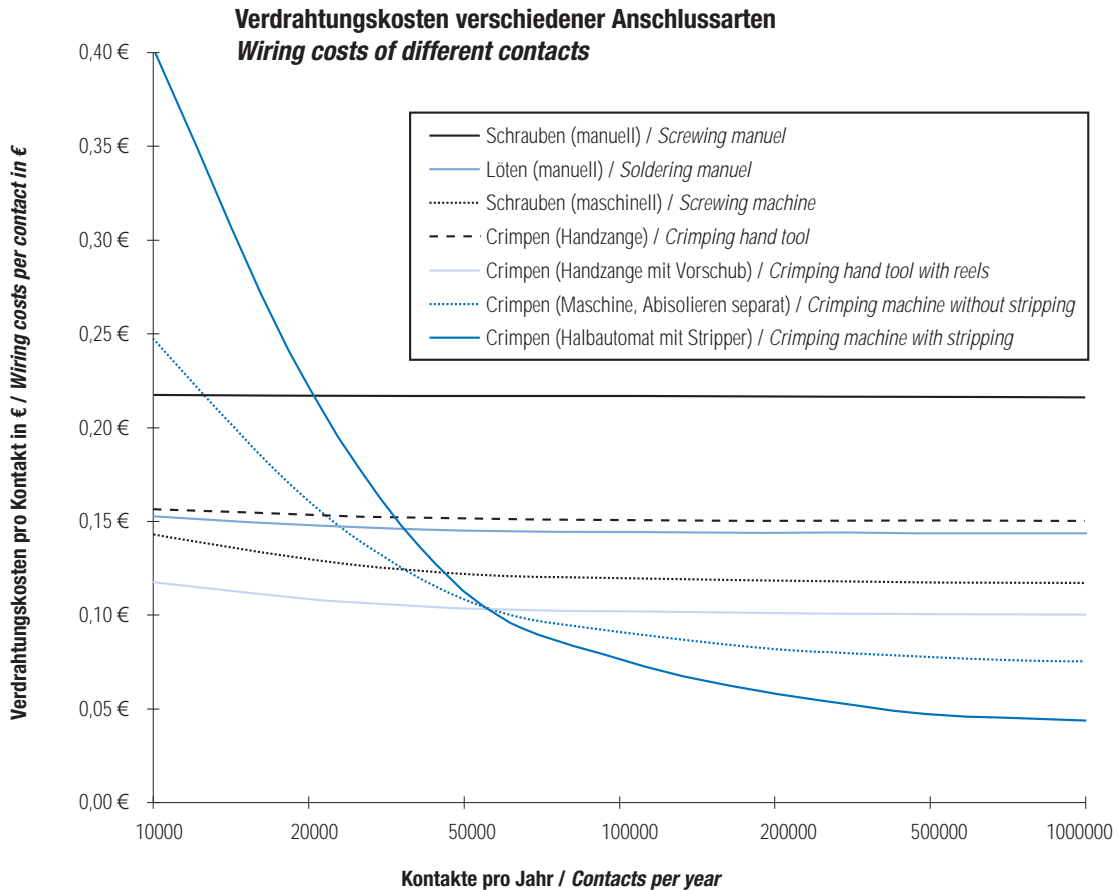
| Anschlussquerschnitt [mm <sup>2</sup> ]<br>Termination crimp [mm <sup>2</sup> ] | Leiterquerschnitt<br>Wire gauge |         | Isolierungsdurchmesser<br>der Leitung [mm]<br>Insulation diameter<br>of the wire [mm] | Mindestabisolierlänge<br>mit Toleranz [mm]<br>Min. stripping length<br>[mm] | Kontakt<br>Art.-Nr.<br>Contact<br>part No.                                                                   | in Serie<br>Series                                                    |
|---------------------------------------------------------------------------------|---------------------------------|---------|---------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|
|                                                                                 | mm <sup>2</sup>                 | AWG     |                                                                                       |                                                                             |                                                                                                              |                                                                       |
| 0,09 - 0,25                                                                     | 0,09 - 0,25                     | 28 - 24 | 0,7 - 1,6                                                                             | 2,3 + 0,4                                                                   | N01 010 0130 (2)<br>N02 010 0130 (2)                                                                         | C146M<br>C146M                                                        |
| 0,14 - 0,5                                                                      | 0,14                            | 26      | 1,0 - 2,0                                                                             | 3,0 + 0,5                                                                   | N01 016 0003<br>N02 016 0003                                                                                 | C146D/M<br>C146D/M                                                    |
|                                                                                 | 0,25                            | 24-22   |                                                                                       |                                                                             |                                                                                                              |                                                                       |
|                                                                                 | 0,5                             | 20      |                                                                                       |                                                                             |                                                                                                              |                                                                       |
| 0,25 - 0,5                                                                      | 0,25                            | 24-22   | 1,6 - 2,0                                                                             | 2,3 + 0,4                                                                   | N01 010 0131 (2)<br>N02 010 0131 (2)                                                                         | C146M<br>C146M                                                        |
|                                                                                 | 0,5                             | 20      |                                                                                       |                                                                             |                                                                                                              |                                                                       |
| 0,5 - 1,5                                                                       | 0,5                             | 20      | 1,8 - 2,8                                                                             | 3,5 + 1,0                                                                   | N01 016 0002<br>N02 016 0002<br>N01 016 0015<br>N02 016 0015<br>N01 025 0001<br>N02 025 0001<br>N01 025 0007 | C146D/M<br>C146D/M<br>C146D<br>C146D<br>C146E/M<br>C146E/M/S<br>C146S |
|                                                                                 | 0,75                            | 20 - 18 |                                                                                       |                                                                             |                                                                                                              |                                                                       |
|                                                                                 | 1,0                             | 18 - 16 |                                                                                       |                                                                             |                                                                                                              |                                                                       |
|                                                                                 | 1,5                             | 16 - 15 |                                                                                       |                                                                             |                                                                                                              |                                                                       |
| 1,5 - 2,5                                                                       | 1,5                             | 16 - 15 | 2,5 - 3,5                                                                             | 3,5 + 1,0                                                                   | N01 016 0005<br>N02 016 0005<br>N01 016 0016<br>N02 016 0016<br>N01 025 0010<br>N02 025 0010<br>N01 025 0008 | C146D/M<br>C146D/M<br>C146D<br>C146D<br>C146E/M<br>C146E/M/S<br>C146S |
|                                                                                 | 2,5                             | 14      |                                                                                       |                                                                             |                                                                                                              |                                                                       |
| 2,5 - 4,0                                                                       | 2,5                             | 14      | 3,3 - 4,2                                                                             | 3,5 + 1,0                                                                   | N01 025 0043<br>N02 025 0043                                                                                 | C146M<br>C146M                                                        |
|                                                                                 | 4,0                             | 12      |                                                                                       |                                                                             |                                                                                                              |                                                                       |

Gedrehte Crimpkontakte Serie C146 Abisolierlängen für  
anzuschließenden Leiter

## Turned crimp contacts series C146, stripping length

| Anschlussquerschnitt [mm <sup>2</sup> ]<br>Termination crimp [mm <sup>2</sup> ] | 1,6<br>(Kontakt ohne Clip)<br>(Contact without clip)                     |                                     |                    | 2,5<br>(Kontakt mit Clip)<br>(Contact with clip)                         |                                     |                    | 2,5<br>(Kontakt ohne Clip)<br>(Contact without clip)                     |                                     |                    | 3,6<br>(Kontakt mit Clip)<br>(Contact with clip)                         |                                     |                    |
|---------------------------------------------------------------------------------|--------------------------------------------------------------------------|-------------------------------------|--------------------|--------------------------------------------------------------------------|-------------------------------------|--------------------|--------------------------------------------------------------------------|-------------------------------------|--------------------|--------------------------------------------------------------------------|-------------------------------------|--------------------|
|                                                                                 | Mind.abisolierlänge+Toleranz [mm]<br>Min. stripping length+tolerance[mm] | Kontakt Art Nr.<br>Contact part No. | in Serie<br>Series | Mind.abisolierlänge+Toleranz [mm]<br>Min. stripping length+tolerance[mm] | Kontakt Art Nr.<br>Contact part No. | in Serie<br>Series | Mind.abisolierlänge+Toleranz [mm]<br>Min. stripping length+tolerance[mm] | Kontakt Art Nr.<br>Contact part No. | in Serie<br>Series | Mind.abisolierlänge+Toleranz [mm]<br>Min. stripping length+tolerance[mm] | Kontakt Art Nr.<br>Contact part No. | in Serie<br>Series |
| 0,14 - 0,37                                                                     | 8 + 1                                                                    | N01 016 0024<br>N02 016 0024        | C146<br>D/DD/M     |                                                                          |                                     |                    |                                                                          |                                     |                    |                                                                          |                                     |                    |
| 0,5                                                                             | 8 + 1                                                                    | N01 016 0025<br>N02 016 0025        | C146<br>D/DD/M     | 7 + 1                                                                    | N01 025 0029<br>N02 025 0029        | C146<br>M          | 7 + 1                                                                    | N01 025 0035<br>N02 025 0035        | C146<br>E/EE       |                                                                          |                                     |                    |
| 0,75 - 1,0                                                                      | 8 + 1                                                                    | N01 016 0026<br>N02 016 0026        | C146<br>D/DD/M     | 7 + 1                                                                    | N01 025 0030<br>N02 025 0030        | C146<br>M          | 7 + 1                                                                    | N01 025 0036<br>N02 025 0036        | C146<br>E/EE       |                                                                          |                                     |                    |
| 1,5                                                                             | 8 + 1                                                                    | N01 016 0027<br>N02 016 0027        | C146<br>D/DD/M     | 7 + 1                                                                    | N01 025 0031<br>N02 025 0031        | C146<br>M          | 7 + 1                                                                    | N01 025 0037<br>N02 025 0037        | C146<br>E/EE       | 10 + 1                                                                   | N01 036 0004<br>N02 036 0004        | C146<br>M          |
| 2,5                                                                             | 6 + 1                                                                    | N01 016 0028<br>N02 016 0028        | C146<br>D/DD/M     | 7 + 1                                                                    | N01 025 0032<br>N02 025 0032        | C146<br>M          | 7 + 1                                                                    | N01 025 0038<br>N02 025 0038        | C146<br>E/EE       | 10 + 1                                                                   | N01 036 0005<br>N02 036 0005        | C146<br>M          |
| 4,0                                                                             |                                                                          |                                     |                    | 7 + 1                                                                    | N01 025 0033<br>N02 025 0033        | C146<br>M          | 7 + 1                                                                    | N01 025 0039<br>N02 025 0039        | C146<br>E/EE       | 10 + 1                                                                   | N01 036 0001<br>N02 036 0001        | C146<br>M          |
| 6,0                                                                             |                                                                          |                                     |                    |                                                                          |                                     |                    |                                                                          |                                     |                    | 10 + 1                                                                   | N01 036 0002<br>N02 036 0002        | C146<br>M          |
| 10,0                                                                            |                                                                          |                                     |                    |                                                                          |                                     |                    |                                                                          |                                     |                    | 10 + 1                                                                   | N01 036 0003<br>N02 036 0003        | C146<br>M          |

**Zeitersparnis durch den Einsatz von gestanzten Kontakten**  
*Time saving through the introduction of stamped contacts*

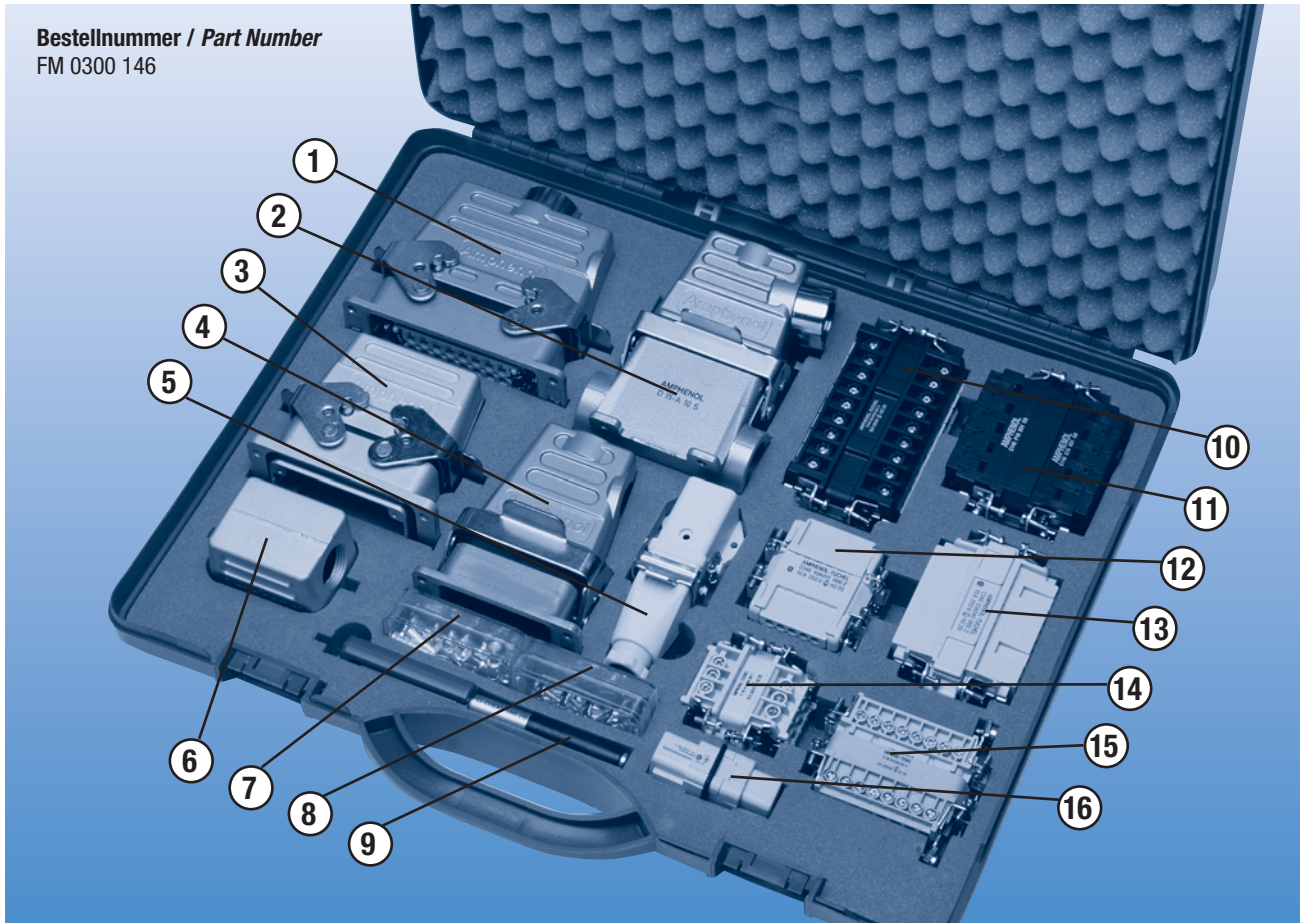


**Break Even bei**  
**ca. 60.000 Kontakten pro Jahr / contacts per year**

|                                                          |                        |
|----------------------------------------------------------|------------------------|
| <b>Rahmenbedingungen / General conditions:</b>           |                        |
| <b>Laufzeit (Abschreibung) / Maturity (Depreciation)</b> | <b>5 Jahre / years</b> |
| <b>Zins / Interest</b>                                   | <b>8%</b>              |
| <b>Wartung / Maintenance</b>                             | <b>5%</b>              |
| <b>Stundenlohn Bediener / Hourly wages</b>               | <b>20 €</b>            |

**Unverbindliche Angaben beruhen auf uns vorliegenden Erfahrungswerten.**  
*Non binding declarations are based on experienced values.*

Bestellnummer / Part Number  
FM 0300 146



- ① Steckverbinder Serie C 146 E 16 pol
- ② Steckverbinder Serie C 146 A 10 pol
- ③ EMV Gehäuse
- ④ Standard Gehäuse hohe Bauform ohne Stutzen
- ⑤ Steckverbinder Serie C 146 A 3 pol
- ⑥ EMV Tüllengehäuse
- ⑦ Gedrehte Crimpkontakte
- ⑧ Gestanzte Crimpkontakte
- ⑨ Lösewerkzeug für 1,6 mm Kontakte
- ⑩ Kontakteinsätze Serie C 146 HvE 16 pol
- ⑪ Rahmen und Module Serie C 146 M
- ⑫ Kontakteinsätze Serie C 146 D 15 pol (für gedrehte Kontakte)
- ⑬ Kontakteinsätze Serie C 146 D 40 pol (für gestanzte Kontakte)
- ⑭ Kontakteinsätze Serie C 146 E 6 pol
- ⑮ Kontakteinsätze Serie C 146 A 16 pol
- ⑯ Kontakteinsätze Serie C 146 D 7 pol

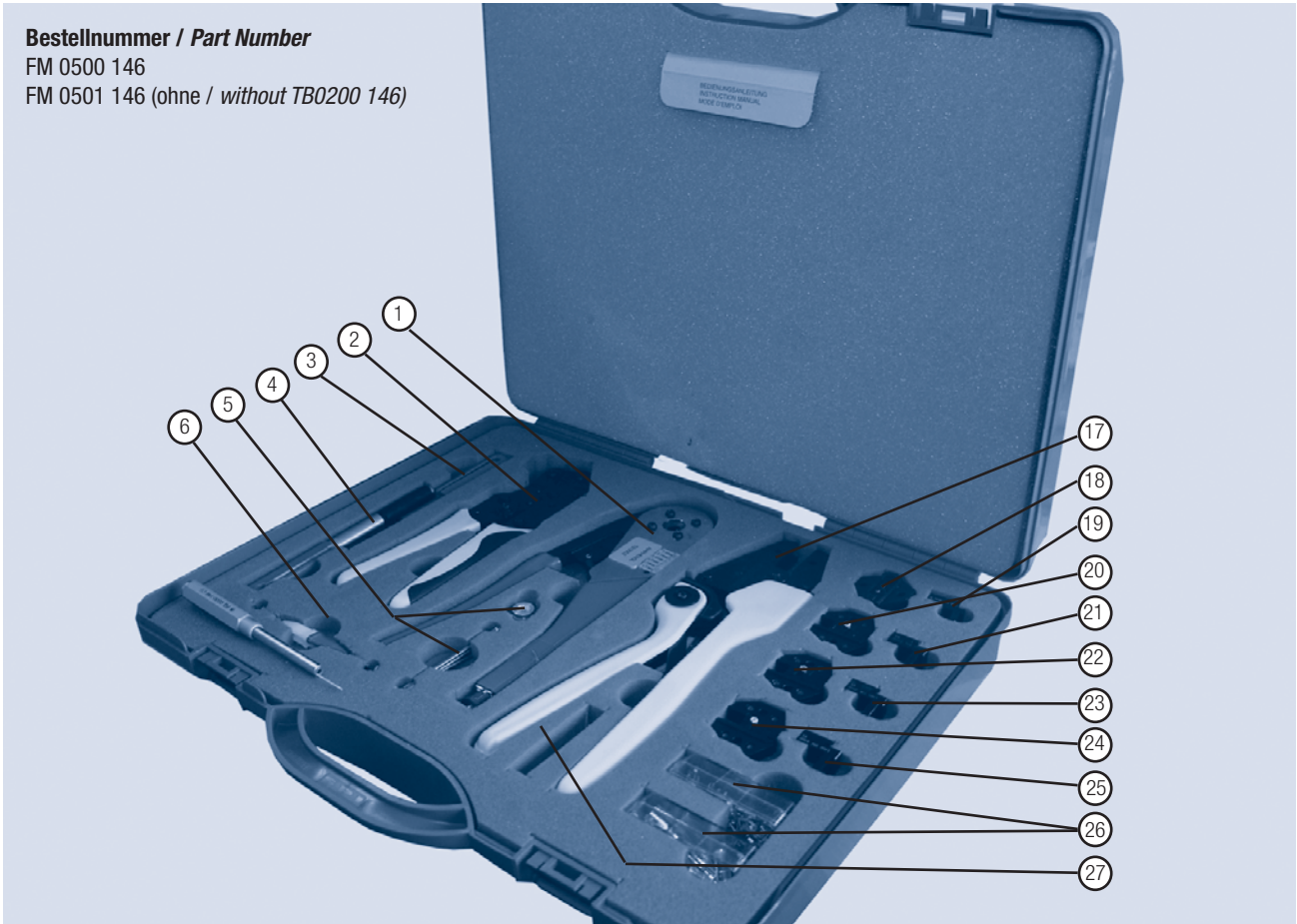
- ① Connector series C 146 E 16 contacts
- ② Connector series C 146 A 10 contacts
- ③ EMC housing
- ④ Standard housing high profile without stud
- ⑤ Connector series C 146 A 3 contacts
- ⑥ EMC hood
- ⑦ Turned crimp contacts
- ⑧ Stamped crimp contacts
- ⑨ Removal tool for 1,6 mm contacts
- ⑩ Contact insert series C 146 HvE 16 contacts
- ⑪ Frames and modules series C 146 M
- ⑫ Contact inserts series C 146 D 15 contacts (for turned contacts)
- ⑬ Contact inserts series C 146 D 40 contacts (for stamped contacts)
- ⑭ Contact inserts series C 146 E 6 contacts
- ⑮ Contact inserts series C 146 A 16 contacts
- ⑯ Contact inserts series C 146 D 7 contacts



**Bestellnummer / Part Number**

FM 0500 146

FM 0501 146 (ohne / without TB0200 146)



| Bezeichnung                  | Description                     | Katalog „Werkzeuge“ / Catalogue „Tools“ |              |
|------------------------------|---------------------------------|-----------------------------------------|--------------|
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| 1 4 - Kerb Crimpzange        | 1 4 - Indent hand crimping tool | TB 0200 146                             | 9            |
| 2 Service Hand Crimpwerkzeug | 2 Service hand crimping tool    | TA 0200 146                             | 12           |
| 3 Lösewerkzeug               | 3 Removal tool                  | FG 0300 146 1                           | 17           |
| 4 Lösewerkzeug               | 4 Removal tool                  | FG 0300 146 3                           | 17           |
| 5 Zubehör                    | 5 Accessories                   | TB 0200 146                             | 9            |
| 6 Lösewerkzeug               | 6 Removal tool                  | 17D 438 SP                              | 17           |
| 7 Zubehör                    | 7 Accessories                   | TA 0000                                 | 5            |
| 8 Kontaktbehältnis           | 8 Contact container             |                                         |              |
| 9 Kontaktaufnahme            | 9 Contact locator               | TA 0001 146<br>0001                     | 7            |
| 10 Crimpbacken               | 10 Crimping dies                | TA 0000 202                             | 7            |
| 11 Kontaktaufnahme           | 11 Contact locator              | TA 0007 146<br>0003                     | 7            |
| 12 Crimpbacken               | 12 Crimping dies                | TA 0000 141                             | 7            |
| 13 Kontaktaufnahme           | 13 Contact locator              | TA 0002 146<br>0001                     | 7            |
| 14 Crimpbacken               | 14 Crimping dies                | TA 0000 163                             | 7            |
| 15 Kontaktaufnahme           | 15 Contact locator              | TA 0010 146<br>0004                     | 7            |
| 16 Crimpbacken               | 16 Crimping dies                | TA 0000124                              | 7            |
| 17 Handcrimpwerkzeug         | 17 Hand crimping tool           | TA 0000                                 | 5            |

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| 17D 438 SP             | 61, 80       | C146 10A025 505 2      | 18           | C146 10B018 500 10     | 46           | C146 10F010 090 1      | 130, 131     |
| 17 DM 537 401          | 73, 179      | C146 10A032 500 10     | 46           | C146 10B024 000 1      | 40, 42       | C146 10F010 500 1      | 130          |
| 17 DM 537 405          | 73, 179      | C146 10A040 000 2      | 16           | C146 10B024 000 9      | 26           | C146 10F010 500 2      | 130          |
| 17 DM 537 421          | 73, 179      | C146 10A040 009 2      | 16           | C146 10B024 002 1      | 40, 42       | C146 10F010 501 2      | 130          |
| 17 DM 537 425          | 73, 179      | C146 10A040 060 2      | 16           | C146 10B024 005 1      | 42           | C146 10F010 502 1      | 132          |
| C146 10A003 002 4      | 84           | C146 10A040 500 2      | 16           | C146 10B024 102 1      | 40, 42       | C146 10F010 502 2      | 132          |
| C146 10A003 102 3      | 96           | C146 10A042 000 9      | 26           | C146 10B024 500 1      | 40, 42       | C146 10F010 503 2      | 132          |
| C146 10A004 002 4      | 84           | C146 10A046 500 10     | 46           | C146 10B024 505 1      | 42           | C146 10F010 504 1      | 134          |
| C146 10A006 000 1      | 34           | C146 10A057 000 6      | 104          | C146 10B024 810 1      | 52           | C146 10F010 504 2      | 134          |
| C146 10A006 002 1      | 34           | C146 10A057 801 6      | 104          | C146 10B025 000 2      | 14, 18       | C146 10F010 505 2      | 134          |
| C146 10A006 102 1      | 34           | C146 10A064 000 2      | 20, 22       | C146 10B025 005 2      | 18           | C146 10F010 506 1      | 132          |
| C146 10A006 102 3      | 97           | C146 10A064 005 2      | 22           | C146 10B025 009 2      | 14           | C146 10F010 506 2      | 132          |
| C146 10A006 102 5      | 91           | C146 10A064 009 2      | 20           | C146 10B025 060 2      | 14           | C146 10F010 507 2      | 132          |
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| C146 10A006 810 1      | 52           | C146 10A064 500 2      | 20, 22       | C146 10B032 500 10     | 46           | C146 10F010 509 2      | 134          |
| C146 10A007 000 2      | 10           | C146 10A064 505 2      | 22           | C146 10B040 000 2      | 16           | C146 10F010 600 1      | 130          |
| C146 10A007 500 2      | 10           | C146 10A072 000 9      | 26           | C146 10B040 009 2      | 16           | C146 10F010 600 2      | 130          |
| C146 10A008 000 2      | 10           | C146 10A108 000 9      | 26, 27       | C146 10B040 060 2      | 16           | C146 10F010 601 2      | 130          |
| C146 10A008 500 2      | 10           | C146 10A108 005 9      | 27           | C146 10B040 500 2      | 16           | C146 10F010 602 1      | 132          |
| C146 10A010 000 1      | 36           | C146 10B003 002 4      | 84           | C146 10B042 000 9      | 26           | C146 10F010 602 2      | 132          |
| C146 10A010 002 1      | 36           | C146 10B003 102 3      | 96           | C146 10B046 500 10     | 46           | C146 10F010 603 2      | 132          |
| C146 10A010 002 4      | 85           | C146 10B004 002 4      | 84           | C146 10B057 000 6      | 104          | C146 10F010 604 1      | 134          |
| C146 10A010 102 1      | 36           | C146 10B006 000 1      | 34           | C146 10B057 801 6      | 104          | C146 10F010 604 2      | 134          |
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| C146 10A010 102 4      | 85           | C146 10B006 102 1      | 34           | C146 10B064 005 2      | 22           | C146 10F010 606 1      | 132          |
| C146 10A010 104 3      | 100          | C146 10B006 102 3      | 97           | C146 10B064 009 2      | 20           | C146 10F010 606 2      | 132          |
| C146 10A010 500 1      | 36           | C146 10B006 102 5      | 91           | C146 10B064 060 2      | 20           | C146 10F010 607 2      | 132          |
| C146 10A010 500 10     | 46           | C146 10B006 500 1      | 34           | C146 10B064 500 2      | 20, 22       | C146 10F010 608 2      | 134          |
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| C146 10A015 000 2      | 12           | C146 10B007 000 2      | 10           | C146 10B072 000 9      | 26           | C146 10F010 802 1      | 132          |
| C146 10A015 009 2      | 12           | C146 10B007 500 2      | 10           | C146 10B108 000 9      | 26, 27       | C146 10F010 802 2      | 132          |
| C146 10A015 060 2      | 12           | C146 10B008 000 2      | 10           | C146 10B108 005 9      | 27           | C146 10F010 803 2      | 132          |
| C146 10A015 500 2      | 12           | C146 10B008 500 2      | 10           | C146 10F003 000 4      | 110, 111     | C146 10F010 804 1      | 134          |
| C146 10A016 000 1      | 38           | C146 10B010 000 1      | 36           | C146 10F003 004 4      | 110, 111     | C146 10F010 804 2      | 134          |
| C146 10A016 002 1      | 38           | C146 10B010 002 1      | 36           | C146 10F003 500 4      | 110          | C146 10F010 805 2      | 134          |
| C146 10A016 002 3      | 99           | C146 10B010 002 4      | 85           | C146 10F006 000 1      | 126, 127     | C146 10F010 806 1      | 132          |
| C146 10A016 002 4      | 86, 87       | C146 10B010 102 1      | 36           | C146 10F006 003 1      | 126, 127     | C146 10F010 806 2      | 132          |
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| C146 10A016 104 3      | 100          | C146 10B010 500 10     | 46           | C146 10F006 506 1      | 128          | C146 10F015 501 2      | 116          |
| C146 10A016 104 4      | 87           | C146 10B010 810 1      | 52           | C146 10F006 506 2      | 128          | C146 10F015 600 2      | 116          |
| C146 10A016 500 1      | 38           | C146 10B015 000 2      | 12           | C146 10F006 507 2      | 128          | C146 10F015 601 2      | 116          |
| C146 10A016 810 1      | 52           | C146 10B015 009 2      | 12           | C146 10F006 600 1      | 128          | C146 10F015 606 2      | 116          |
| C146 10A018 500 10     | 46           | C146 10B015 060 2      | 12           | C146 10F006 602 2      | 128          | C146 10F015 607 2      | 116          |
| C146 10A024 000 1      | 40, 42       | C146 10B015 500 2      | 12           | C146 10F006 603 2      | 128          | C146 10F015 806 2      | 116          |
| C146 10A024 000 9      | 26           | C146 10B016 000 1      | 38           | C146 10F006 606 1      | 128          | C146 10F015 807 2      | 116          |
| C146 10A024 002 1      | 40, 42       | C146 10B016 002 1      | 38           | C146 10F006 606 2      | 128          | C146 10F016 000 1      | 138, 139     |
| C146 10A024 005 1      | 42           | C146 10B016 002 3      | 99           | C146 10F006 607 2      | 128          | C146 10F016 001 1      | 140, 141     |
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| C146 10A024 500 1      | 40, 42       | C146 10B016 004 4      | 87           | C146 10F006 803 2      | 128          | C146 10F016 003 1      | 140, 141     |
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| C146 10F016 606 1      | 140          | C146 10F040 607 2      | 140          | C146 10G010 507 8      | 132          | C146 10G016 607 8      | 140          |
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| C146 10F016 609 2      | 142          | C146 10F040 803 2      | 140          | C146 10G010 600 1      | 130          | C146 10G016 802 8      | 138          |
| C146 10F016 802 1      | 140          | C146 10F040 804 2      | 142          | C146 10G010 600 4      | 114          | C146 10G016 803 1      | 138          |
| C146 10F016 804 1      | 142          | C146 10F040 805 2      | 142          | C146 10G010 600 8      | 130          | C146 10G016 803 8      | 138          |
| C146 10F016 806 1      | 140          | C146 10F040 806 2      | 140          | C146 10G010 601 1      | 130          | C146 10G016 804 1      | 140          |
| C146 10F024 000 1      | 146, 147     | C146 10F040 807 2      | 140          | C146 10G010 601 4      | 114          | C146 10G016 804 4      | 118          |
| C146 10F024 000 3      | 154, 155     | C146 10F064 500 2      | 146          | C146 10G010 601 8      | 130          | C146 10G016 804 8      | 140          |
| C146 10F024 001 1      | 148, 149     | C146 10F064 501 2      | 146          | C146 10G010 602 1      | 134          | C146 10G016 805 1      | 140          |
| C146 10F024 002 1      | 150, 151     | C146 10F064 502 2      | 148          | C146 10G010 602 8      | 134          | C146 10G016 805 4      | 118          |
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| C146 10F024 500 3      | 154          | C146 10F064 505 2      | 150          | C146 10G010 606 1      | 132          | C146 10G024 500 1      | 146          |
| C146 10F024 502 1      | 148          | C146 10F064 506 2      | 148          | C146 10G010 606 8      | 132          | C146 10G024 500 3      | 154          |
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| C146 10F024 506 1      | 148          | C146 10F064 600 2      | 146          | C146 10G010 607 8      | 132          | C146 10G024 501 1      | 146          |
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| C146 10F024 509 2      | 150          | C146 10F064 602 2      | 148          | C146 10G010 802 1      | 130          | C146 10G024 502 1      | 150          |
| C146 10F024 600 1      | 146          | C146 10F064 603 2      | 148          | C146 10G010 802 8      | 130          | C146 10G024 502 8      | 150          |
| C146 10F024 600 3      | 154          | C146 10F064 604 2      | 150          | C146 10G010 803 1      | 130          | C146 10G024 503 1      | 150          |
| C146 10F024 602 1      | 148          | C146 10F064 605 2      | 150          | C146 10G010 803 8      | 130          | C146 10G024 503 8      | 150          |
| C146 10F024 604 1      | 150          | C146 10F064 606 2      | 148          | C146 10G010 804 1      | 132          | C146 10G024 506 1      | 148          |
| C146 10F024 606 1      | 148          | C146 10F064 607 2      | 148          | C146 10G010 804 4      | 114          | C146 10G024 506 8      | 148          |
| C146 10F024 608 2      | 150          | C146 10F064 802 2      | 148          | C146 10G010 804 8      | 132          | C146 10G024 507 1      | 148          |
| C146 10F024 609 2      | 150          | C146 10F064 803 2      | 148          | C146 10G010 805 1      | 132          | C146 10G024 507 8      | 148          |
| C146 10F024 802 1      | 148          | C146 10F064 804 2      | 150          | C146 10G010 805 4      | 114          | C146 10G024 600 1      | 146          |
| C146 10F024 804 1      | 150          | C146 10F064 805 2      | 150          | C146 10G010 805 8      | 132          | C146 10G024 600 3      | 154          |
| C146 10F024 806 1      | 148          | C146 10F064 806 2      | 148          | C146 10G010 902 8      | 136          | C146 10G024 600 8      | 146          |
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| C146 10F025 500 2      | 120          | C146 10G003 600 4      | 110          | C146 10G015 600 2      | 114          | C146 10G024 602 1      | 150          |
| C146 10F025 501 2      | 120          | C146 10G003 804 4      | 110          | C146 10G015 601 2      | 114          | C146 10G024 602 8      | 150          |
| C146 10F025 600 2      | 120          | C146 10G006 500 1      | 126          | C146 10G015 804 2      | 114          | C146 10G024 603 1      | 150          |
| C146 10F025 601 2      | 120          | C146 10G006 501 1      | 126          | C146 10G016 500 1      | 138          | C146 10G024 603 8      | 150          |
| C146 10F025 606 2      | 120          | C146 10G006 506 8      | 126          | C146 10G016 500 4      | 118          | C146 10G024 606 1      | 148          |
| C146 10F025 607 2      | 120          | C146 10G006 507 8      | 126          | C146 10G016 500 8      | 138          | C146 10G024 606 8      | 148          |
| C146 10F025 806 2      | 120          | C146 10G006 556 8      | 126          | C146 10G016 501 1      | 138          | C146 10G024 607 1      | 148          |
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