# PLASTIC R SERIES CONNECTORS

SERIES

LEMO

# Table of Contents

# General Production Program

**Connectors**

Unipole from 2 to 150 Amps
Coaxial 50 and 75 Ω
Coaxial 50 Ω (NIM-CAMAC)
Coaxial 50 Ω for frequency → 12 GHz
Multicoaxial 50 and 75 Ω
● Multipole from 2 to 66 contacts
Multipole up to 106 contacts
High Voltage 3, 5, 8, 10, 15, 30 and 50 kV cc
Multi High Voltage 3, 5, and 10 kV cc
Triaxial 50 and 75 Ω
Quadrax
● Mixed: High Voltage (HV) + Low Voltage (LV)
● Mixed: Coax + LV
Mixed: Triax + LV
Thermocouple
Multithermocouple
Fiber optic singlemode
Fiber optic multimode
● Mixed: fiber optic + LV
Mixed: fiber optic + coax + LV
Fluidic
Multifluidic
● Mixed: fluidic + LV
Subminiature
Miniature
Plastic
Printed circuit board
Remote handling
Watertight
Sealed (pressure and/or vacuum)
● With plastic outer shell
With aluminum outer shell
With stainless steel outer shell
With special radiation resistant insulator material
With screw thread coupling for very high pressure
With microswitch

**Patch Panels**

For audio-mono applications: triax
For audio-mono applications: 3 contacts
For audio-stereo applications: quadrax
For audio-stereo applications: 6 contacts
For video applications: coax 75 Ω
For video HDTV applications: 3 coax 75 Ω + 2LV

**Patch Panels**

For fiber optic applications

**Adapters**

For BNC, C, UHF, N, CINCH, GEN-RADIO connectors
For TNC, SMA connectors

**Accessories**

● Insulator for crimp contacts
● Crimp contacts
● Coaxial contacts
Triaxial contacts
● Fiber optic contacts
● Fiber optic ferrules
Caps
Bend relief
Heatshrink boot
Insulating washers
Double plastic panel washers
Locking washers
Tapered washers
Hexagonal nuts
Conical nuts
Round nuts
Notched nuts
Earthing washers
Lead-through with cable collet

**Tooling**

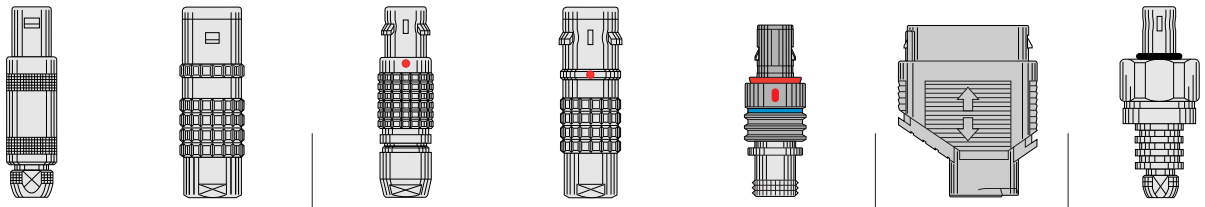
Wrenches
Assembly tool
Pliers
Taps
● Crimping tools
● Positioners
Crimping dies
● Extractors
Banding tool
Retention testing tool for crimp contacts
Fiber optic termination workstation
Fiber optic polishing tools

**On request**

Filtered connectors
Connectors with special housing
Mixed special configuration
Assembly onto cable

● Connectors, accessories and tools found in this catalog.

# Main Characteristics and Types



| | STANDARD | WATERTIGHT | KEYED | KEYED WATERTIGHT | HARSH ENVIRONMENTS | RECTANGULAR | SCREW |
|---|---|---|---|---|---|---|---|
| **Series** | 01 (Minax)<br>00 (NIM-CAMAC)<br>00 (unipole)<br>05 / R0<br>0S to 6S<br>0A / 4A<br>1D / 2C<br>1Y-3Y-6Y | 0E to 6E<br>3T<br>4M | 00 (multipole)<br>0B to 5B<br>2G / 5G | 0K to 5K<br>2N to 5N | FF to 5F | RR / 0R / 1R | 03<br>0V to 5V<br>0W to 5W<br>2U to 5U<br>0M-1M-2M |
| **Latching** | Push-Pull | | | | | | Screw |
| **Key** | Stepped insert (Half-Moon) | | Key (G) or other key-way code | | Key (N) or other key-way code | Key G or A | Key (G) or stepped insert (Half-Moon) |
| **Shell** | Metal or plastic | Metal | Metal or plastic | Metal | | Plastic | Metal |
| **Insert** | Hermaphroditic or cylindrical | | Cylindrical | | | Rectangular | Hermaphroditic or cylindrical |
| **Contact** | Solder or print | | Solder, crimp or print | | Crimp or print | Crimp or print | Solder (crimp or print) |

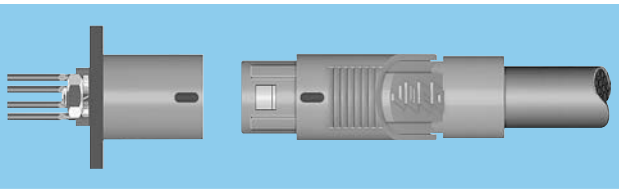
## Series and Types

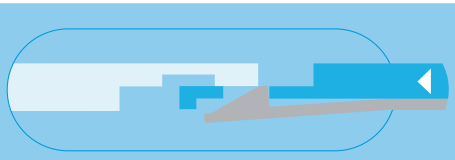
| | Series | Types | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Unipole | Coaxial 50 Ω | Coaxial 75 Ω | Multipole | High Voltage | Triaxial 50 Ω | Triaxial 75 Ω | Quadrax | Multi HV | Multi Coaxial | Mixed HV+LV | Mixed Coax+LV | Mixed Triax+LV | Fiber Optic | Multi FO | Mixed FO+LV | Fluidic | Multi fluidic | Mixed fluidic+LV | Thermocouple |
| **Standard** | 01 | | ● | | | | | | | | | | | | | | | | | | |
| | 00 | ● | ● | | | | ● | | | | | | | | | | | ● | | | |
| | 05 | | | | | ● | | | | | | | | | | | | | | | |
| | R0 | | ● | | | | | | | | | | | | | | | | | | |
| | 0A | | ● | ● | | | | | | | | | | | | | | | | | |
| | 0S | ● | ● | | ● | ● | ● | | | | | | | | | | | | | | ● |
| | 1S | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | ● |
| | 2S | ● | ● | ● | ● | ● | ● | ● | | | | ● | | | | | | | | | ● |
| | 3S | ● | ● | ● | ● | ● | ● | ● | | ● | | ● | ● | | | | | | | | |
| | 4S | ● | ● | ● | ● | ● | ● | ● | | ● | ● | ● | ● | | | | | | | | |
| | 5S | ● | ● | ● | ● | | | | | ● | ● | ● | ● | | | | | | | | |
| | 6S | | | | ● | | | | | | ● | | ● | | | | | | | | |
| | 1D | | | | | | | | ● | | | | | | | | | | | | |
| | 2C | | ● | | ● | | | | | | | | | | | | | | | | |
| | 4A | | | | | | | ● | | | | | | | | | | | | | |
| | 1Y-3Y-6Y | | | | | ● | | | | | | | | | | | | | | | |
| **Watertight** | 0E | ● | ● | | ● | ● | ● | | | | | | | | | | | | | | ● |
| | 1E | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | ● |
| | 2E | ● | ● | ● | ● | ● | ● | ● | | | | ● | | | | | | | | | ● |
| | 3E | ● | ● | ● | ● | ● | ● | ● | | ● | | ● | ● | | | | | | | | |
| | 4E | ● | ● | ● | ● | | ● | ● | | | | ● | ● | | | | | | | | |
| | 5E | ● | | | ● | | | | | ● | ● | ● | ● | | | | | | | | |
| | 6E | | | | ● | | | | | | ● | | ● | | | | | | | | |
| | 3T | | | ● | | | | ● | | | | | | | | | | | | | |
| | 4M | | | | | | ● | ● | | | | | | | | | | | | | |
| **Keyed** | 00 | | | | ● | | | | | | | | | | ● | | | | | | |
| | 0B | | | | ● | | | | | | | | | | ● | | | ● | | | ● |
| | 1B | | | | ● | | | | | | | ● | | | | | | | | | ● |
| | 2B | | | | ● | | | | | ● | ● | ● | ● | ● | | | ● | | | ● | ● |
| | 3B | | | | ● | | | | | | ● | ● | ● | ● | | ● | ● | | ● | ● | |
| | 4B | | | | ● | | | | | ● | ● | ● | ● | ● | | ● | ● | | ● | ● | |
| | 5B | | | | ● | | | | | ● | ● | ● | ● | ● | | ● | | | | | |
| | 2G | | | | ● | | | | | | | | | | | | | | | | |
| | 5G | | | | | | | | | ● | | | | | | | | | | | |
| **Keyed watertight** | 0K | | | | ● | | | | | | | | | | ● | | | ● | | | ● |
| | 1K | | | | ● | | | | | | | ● | | | | | | | | | ● |
| | 2K | | | | ● | | | | | | ● | ● | ● | ● | | | ● | | | ● | ● |
| | 3K | | | ● | ● | | | | | | ● | ● | ● | ● | | ● | ● | | ● | ● | |
| | 4K | | | | ● | | | | | ● | ● | ● | ● | ● | | ● | ● | | ● | ● | |
| | 5K | | | | ● | | | | | ● | ● | ● | ● | ● | | ● | | | | | |
| | FF to 5F | | | | ● | | | | | | | | | | | | | | | | |
| | 2N to 5N | | | | ● | | | | | | | | | | | | | | | | |
| **Rectangular** | RR | | | | ● | | | | | | | | ● | | | | | | | | |
| | 0R | | | | ● | | | | | | | ● | ● | | | | | | | ● | |
| | 1R | | | | ● | | | | | | | ● | ● | | | | | | | ● | |
| **Screw** | 03 | | ● | | ● | | | | | | | | | | | | | | | | |
| | 0V | ● | ● | | ● | | ● | | | | | | | | | | | | | ● | |
| | 1V | ● | ● | ● | ● | | ● | | | | | | | | | | | | | ● | |
| | 2V | ● | ● | ● | ● | | ● | ● | | | | ● | | | | | | | | ● | |
| | 3V | ● | ● | ● | ● | | ● | ● | | ● | | ● | ● | | | | | | | | |
| | 4V | ● | ● | ● | ● | | ● | ● | | | | ● | ● | | | | | | | | |
| | 5V | ● | | | ● | | | | | ● | ● | ● | ● | | | | | | | | |
| | 0W to 5W | | | | ● | | | | | | ● | ● | ● | ● | | | ● | | | ● | ● |
| | 2U to 5U | | | | ● | | | | | | | | | | ● | ● | ● | | | | |
| | 0M to 2M | | | | ● | | | | | | | | | | | | | | | | |

**Note:** ● = included in this catalog, ● = available but not included in this catalog.

## LEMO's Push-Pull Self-Latching Connection System

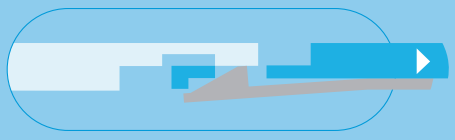
This self-latching system is renowned worldwide for its easy and quick mating and unmating features. It provides absolute security against vibration, shock or pull on the cable, and facilitates operation in a very limited space.





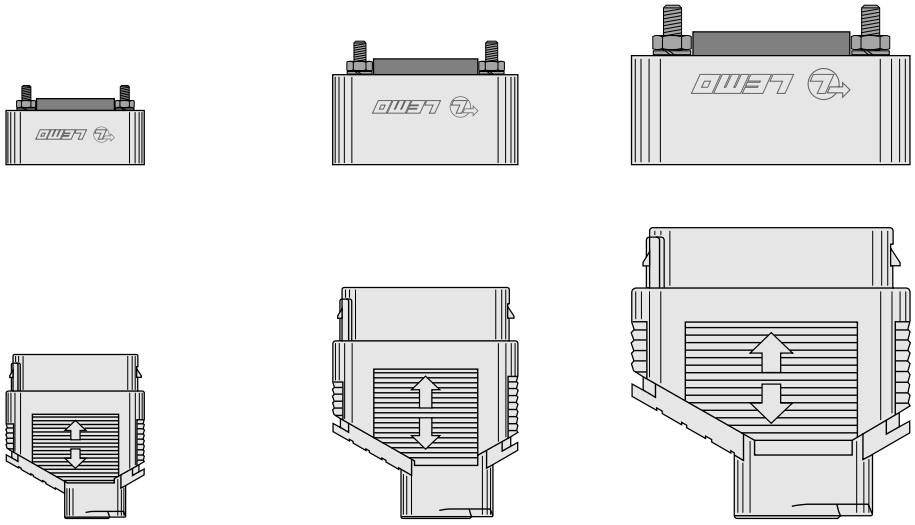
The plug and the receptacle can be mated by simply pushing axially the outer shell of the plug.

Pulling on the cable or any other component of the plug than the outer release sleeve cannot break the connection.



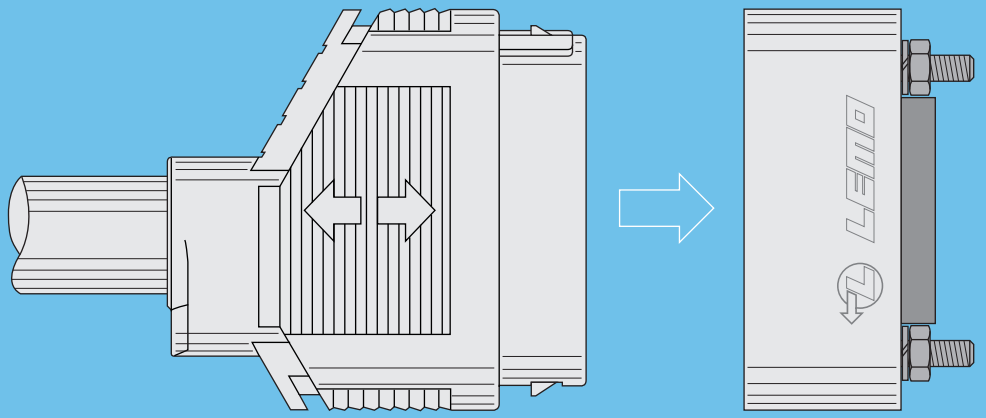
The connector can be unmated by a single axial pull on the plug outer release sleeve.

## R Series Production Program



| Series | | RR | 0R | 1R |
|---|---|---|---|---|
| Cable ø range (mm) | min. | 1.0 | 1.5 | 2.0 |
| | max. | 4.0 | 6.2 | 9.2 |
| Number of contacts (multipole) | | 13 | 10, 17, 37 | 28, 36, 67 |
| Number of contacts (mixed HV+LV) | | – | 4 HV + 4 LV, 2 HV + 13 LV | 8 HV + 3 LV |
| Number of contacts (mixed coax+LV) | | 1 coax + 4 LV | 4 coax + 4 LV, 2 coax + 13 LV | 8 coax + 3 LV |
| Number of contacts (mixed fluidic+LV) | | – | 4 fluidic + 4 LV, 2 fluidic + 13 LV | 8 fluidic + 3 LV |

**Note:** «LV» stands for low voltage.



# R SERIES

# R Series

The R series is a rectangular connector with high pin density in a flat profile. It uses LEMO's well proven Push-Pull latching system for a smooth, hassle free connection. The ergonomic and flat profile offers high panel density, in a wide choice of colors for excellent visual aesthetics.

The R series is made of lightweight polyester resin Crastin® PBT from Dupont™. The high flexibility of its design enables various contact configuration, such as multipole, coaxial, high voltage and fluidic.

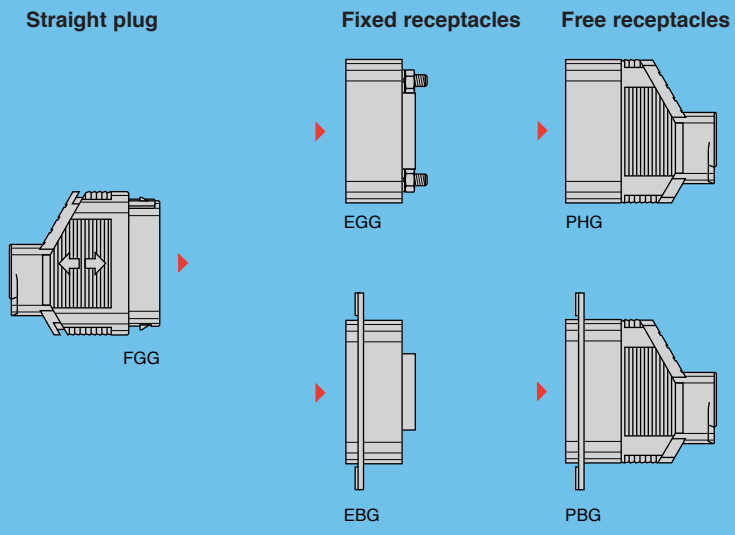
R series connectors provide the following main features:

- plastic shell for lightweight yet rugged structure
- push-pull latching enable fast and secure connections
- crimp or printed circuit contacts
- choice of 4 colors for aesthetics and quick identification
- high pin density for improved panel space
- 3 sizes and various models for design choices
- standard or hybrid pin configurations for flexibility
- thin footprint for reduced rack space and high density panel.

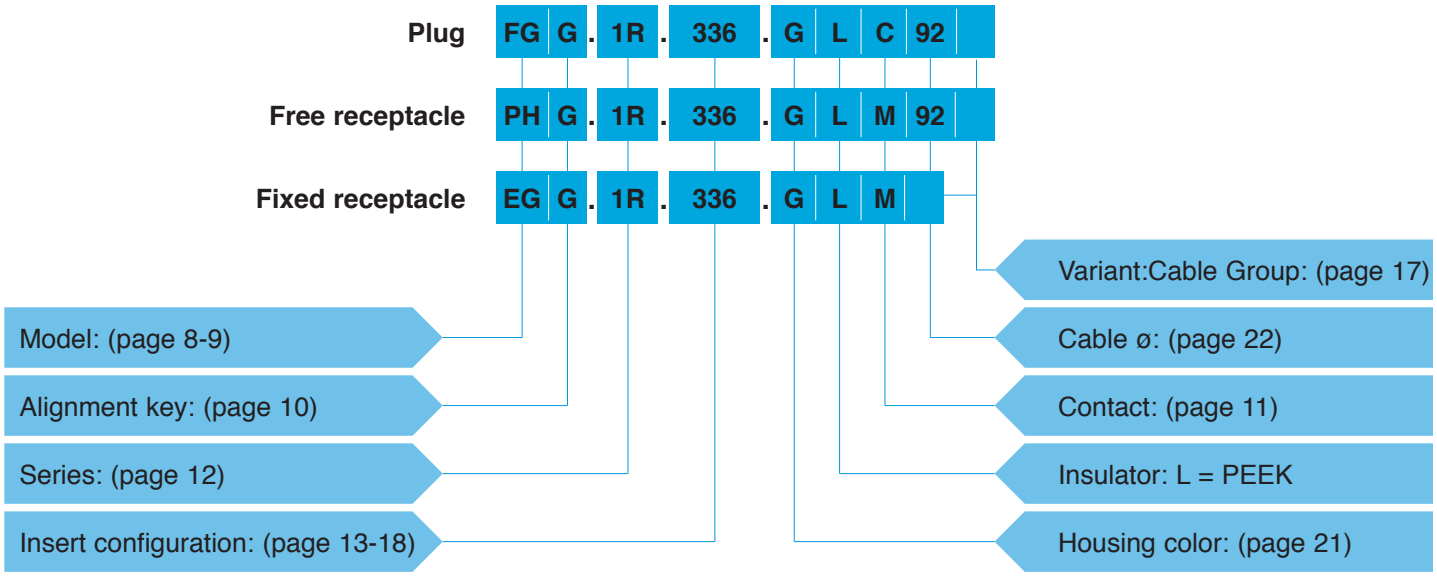
The R series, is initially designed to interconnect systems in medical application where aesthetics and safety is required. This connector series can also be used for test & measurement, aerospace and automotive testing, where an extensive number of contacts are needed in a limited space.

Plastic material used for manufacturing insulators is selected according to the required electric and thermal properties. The thermoplastic used is PEEK (Polyether-Etherketone) with the addition of glass fibers to improve mechanical characteristics and to increase dielectric strength.

**Plastic housing models**



## Part Numbering System




## Part Number Example

**Straight plug with cable collet:**
**FGG.1R.336.GLC92** = straight plug with key (G) and cable collet, 1R series, multipole type with 36 contacts, outer shell in gray PBT, PEEK insulator, male crimp contacts, collet for 9.2 mm maximum diameter cable.

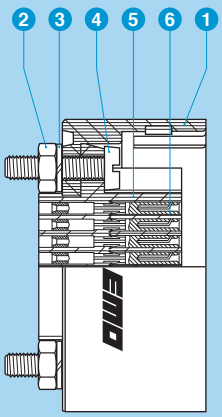
**Free receptacle:**
**PHG.1R.336.GLM92** = free receptacle with key (G) and cable collet, 1R series, multipole type with 36 contacts, outer shell in gray PBT, PEEK insulator, female crimp contacts, collet for 9.2 mm maximum diameter cable.

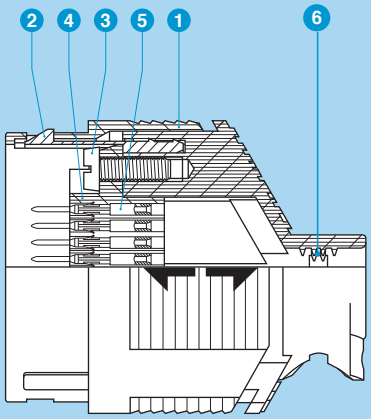
**Fixed receptacle:**
**EGG.1R.336.GLM** = fixed receptacle, nut fixing, with key (G), 1R series, multipole type with 36 contacts, outer shell in gray PBT, PEEK insulator, female crimp contacts.

## Part Section Showing Internal Components

**Fixed receptacle**

1. outer shell
2. hexagonal nut
3. locking washer
4. screw
5. insulator
6. female contact

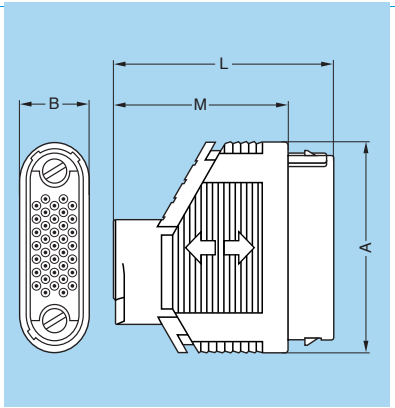



**Straight plug**

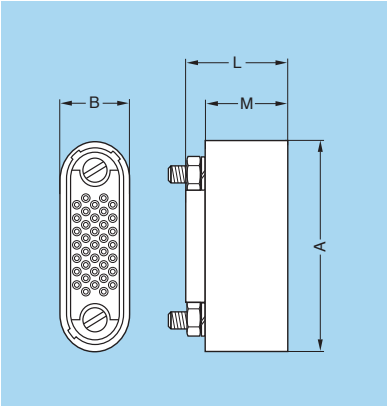
1. outer shell
2. latch sleeve
3. screw
4. insulator
5. male contact
6. cable clamping

# Housing models




## FGG Straight plug, key (G) or key (A), with cable collet

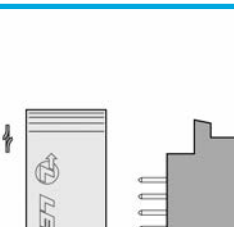
| Reference | | Dimensions (mm) | | | |
|---|---|---|---|---|---|
| Model | Series | A | B | L | M |
| FGG | RR | 18.0 | 6.0 | 21.5 | 17.0 |
| FGG | 0R | 24.5 | 9.0 | 30.5 | 23.5 |
| FGG | 1R | 37.0 | 12.5 | 39.0 | 31.0 |

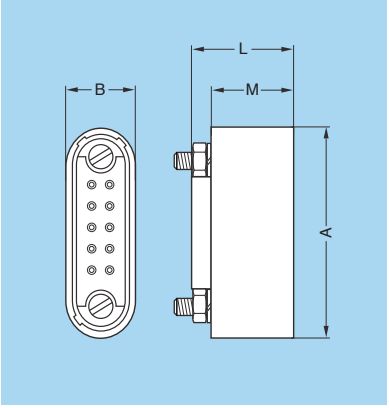



## EGG Fixed receptacle, key (G) or key (A)

| Reference | | Dimensions (mm) | | | |
|---|---|---|---|---|---|
| Model | Series | A | B | L | M |
| EGG | RR | 18.0 | 6.0 | 12.0 | 7.0 |
| EGG | 0R | 24.5 | 9.0 | 14.0 | 12.0 |
| EGG | 1R | 37.0 | 12.5 | 18.0 | 14.5 |

P1 Panel cut-out page 26)

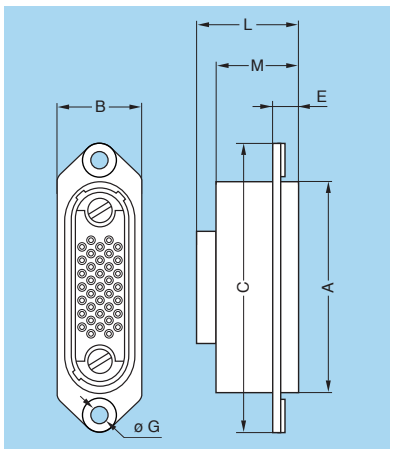





## EGG Fixed socket, key (G) or key (A) with visible shell

| Reference | | Dimensions (mm) | | | |
|---|---|---|---|---|---|
| Model | Series | A | B | L | M |
| EGG | RR | 18.0 | 6.0 | 12.0 | 7.0 |
| EGG | 0R | 24.5 | 9.0 | 14.0 | 12.0 |
| EGG | 1R | 37.0 | 12.5 | 18.0 | 14.5 |

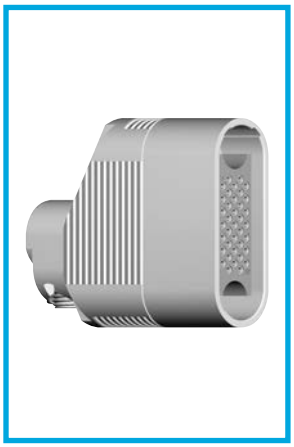
P1 Panel cut-out page 26)

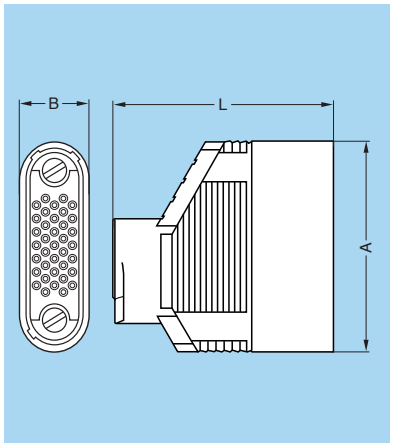



## EBG Fixed receptacle, key (G) or key (A), with flange

| Reference | | Dimensions (mm) | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Model | Series | A | B | C | E | G | L | M |
| EBG | 1R | 37.0 | 15.0 | 51.0 | 4.5 | 3.2 | 19.5 | 14.5 |
| EBG | 0R | 24.5 | 10.5 | 24.5 | 3.2 | 2.2 | 18.0 | 12.0 |

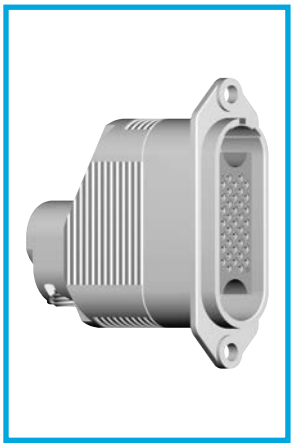
P2 Panel cut-out page 26

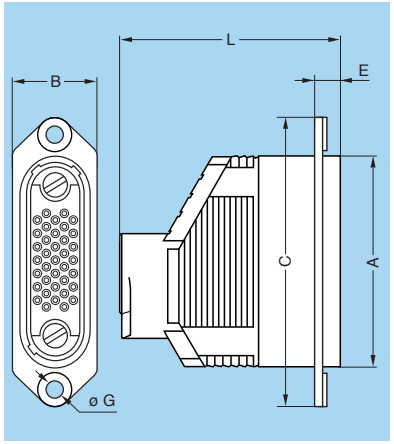





## PHG Free receptacle, key (G) or key (A), with cable collet

| Reference | | Dimensions (mm) | | |
|---|---|---|---|---|
| Model | Series | A | B | L |
| PHG | RR | 18.0 | 6.0 | 22.3 |
| PHG | 0R | 24.5 | 9.0 | 31.5 |
| PHG | 1R | 37.0 | 12.5 | 39.0 |






## PBG Fixed receptacle, key (G) or key (A), with flange and cable collet

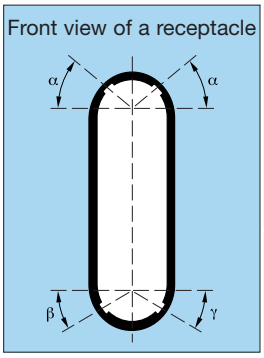
| Reference | | Dimensions (mm) | | | | | |
|---|---|---|---|---|---|---|---|
| Model | Series | A | B | C | E | G | L |
| PBG | 1R | 37.0 | 15.0 | 51.0 | 4.5 | 3.2 | 39.0 |
| PBG | 0R | 24.5 | 10.5 | 34.5 | 3.2 | 2.2 | 31.5 |

P2 Panel cut-out page 26

# Alignment Key

## Alignment Key and Polarized Keying System

R series connector model part numbers are composed of three letters. The LAST LETTER indicates the key position.




| Model | Nb of keys | Angles | Series | | | Contact type | | Note |
|---|---|---|---|---|---|---|---|---|
| | | | RR | 0R | 1R | Plug | Receptacle | |
| ●●G | 2 | α | 50° | 50° | 50° | male | female | ● |
| | | β | 30° | 30° | 30° | male | female | ● |
| ●●A | 2 | α | 42° | 42° | 42° | male | female | ○ |
| | | γ | 30° | 30° | 30° | male | female | ○ |

● First choice alternative
○ Special order alternative

# Crimp Contacts

## Contacts for plugs, free or fixed receptacles

| Ref. | Contact type |
|---|---|
| C | Male crimp (fig. 1)[1)] |
| B | Male crimp (fig. 2)[1)] |
| G | Male crimp (fig. 2)[1)] |
| M | Female crimp (fig. 1)[1)] |

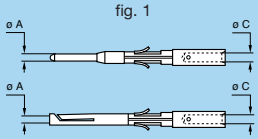
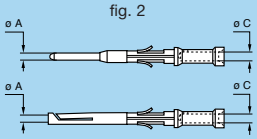
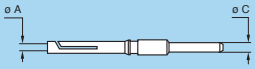
| Ref. | Contact type |
|---|---|
| P | Female crimp (fig. 2)[1)] |
| U | Female crimp (fig. 2)[1)] |
| N | Female straight print |
| | |

**Note:** [1)] there are two forms of crimp barrels. Please consult adjacent table for contact selection

## Dimension of crimp barrels

| Contact | | | Ref. contact type | | Conductor | | | |
|---|---|---|---|---|---|---|---|---|
| ø A (mm) | ø C (mm) | Form per fig. | Male | Female | AWG | | Section (mm²) | |
| | | | | | min. | max. | min. | max. |
| 0.5 | 0.45 | 1 | C | M | 32 | 28 | 0.035 | 0.09 |
| 0.7 | 0.80 | 1 | C | M | 26 | 22 | 0.140 | 0.34 |
| | 0.45 | 2 | B | P | 32 | 28 | 0.035 | 0.09 |
| 0.9 | 1.10 | 1 | C | M | 24 | 20 | 0.250 | 0.50 |
| | 0.80 | 2 | B | P | 26 | 22 | 0.140 | 0.34 |
| | 0.45 | 2 | G | U | 32 | 28 | 0.035 | 0.09 |

## Contacts reference for plugs, free or fixed receptacles

| Contact type | Reference | | Contact | | | Conductor | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Stranded | | | |
| | Male | Female | ø A (mm) | ø C (mm) | Form per fig. | AWG | | Section (mm²) | |
| | | | | | | min. | max. | min. | max. |
| Crimp<br>fig. 1  fig. 2  | C | M | 0.5 | 0.45 | 1 | 32 | 28 | 0.035 | 0.09 |
| | C | M | 0.7 | 0.80 | 1 | 26 | 22[1)] | 0.140 | 0.34 |
| | B | P | | 0.45 | 2 | 32 | 28 | 0.035 | 0.09 |
| | C | M | 0.9 | 1.10 | 1 | 24 | 20 | 0.250 | 0.50 |
| | B | P | | 0.80 | 2 | 26 | 22[1)] | 0.140 | 0.34 |
| | G | U | | 0.45 | 2 | 32 | 28 | 0.035 | 0.09 |
| Print  | – | N | C dimensions are detailed in the section on PCB drilling pattern. See page 26. | | | | | | |

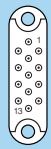
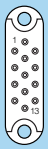
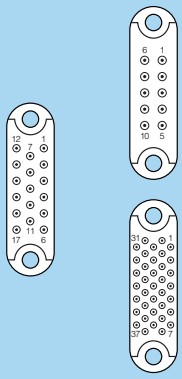
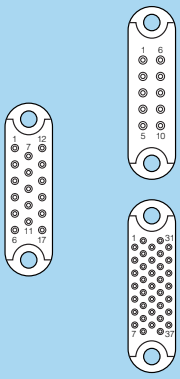
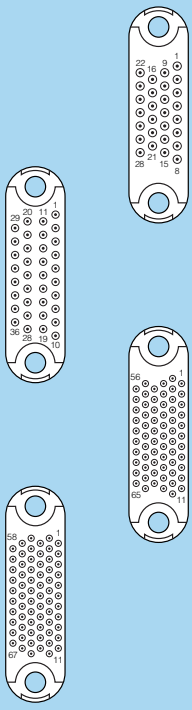
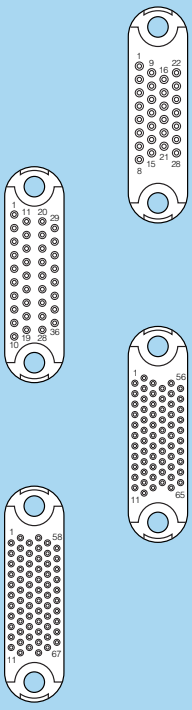
**Note:** [1)] for a given AWG, the diameter of some stranded conductor designs is larger than the crimp barrel diameter. Make sure that the maximum conductor diameter is smaller than ø C.

## Mixed / Hybrid Overview

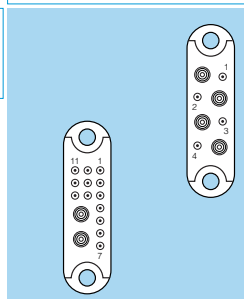
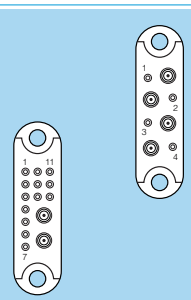
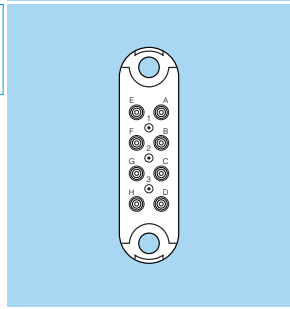
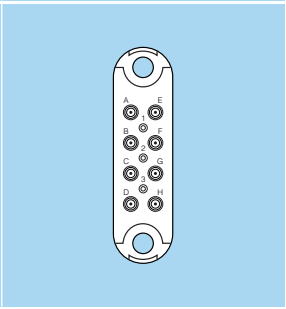
| Size | Ref | Number of LV Contacts | Diameter | Number of Hybrid Contact and Type | Insert |
|---|---|---|---|---|---|
| RR | 804 | 4 | 0.5mm | 1 coax, 50 ohm |  |
| 0R | 004 | 4 | 0.7mm | 4 pneumatic/fluidic<br>5 bars max pressure<br>3mm tube diameter |  |
| 0R | 704 | 4 | 0.7mm | 4 high voltage<br>2.7 kV rms (test volt)<br>7.5 kV dc (test volt) |  |
| 0R | 804 | 4 | 0.7mm | 4 coax, 50 ohms |  |
| 0R | 813 | 13 | 0.7mm | 2 coax, 50 ohm |  |
| 1R | 703 | 3 | 0.9mm | 8 high voltage<br>2.7 kV rms (test volt)<br>7.5 kV dc (test volt) |  |
| 1R | 803 | 3 | 0.9mm | 8 coax, 50 ohm |  |
| 1R | 855 | 22<br>33 | 0.5mm<br>0.7mm | 1 coax, 50 ohm |  |

# Insert configuration

## Multipole

| | Male crimp contacts | Female crimp contacts | Reference | Number of contacts | ø A (mm) | Contact type: Crimp | Contact type: Print (straight) | Contact type: Print (elbow) | Crimp contact: Test voltage (kV rms)[1] Contact-contact | Rated current (A)[1] |
|---|---|---|---|---|---|---|---|---|---|---|
| RR |  |  | 313 | 13 | 0.5 | ● | ● | – | 0.6 | 0.5 |
| 0R |  |  | 310 | 10 | 0.9 | ● | ● | – | 1.5 | 3.5 |
| | | | 317 | 17 | 0.7 | ● | ● | ● | 1.35 | 2.0 |
| | | | 337 | 37 | 0.5 | ● | ● | – | 0.6 | 0.5 |
| 1R |  |  | 328 | 28 | 0.9 | ● | ● | – | 1.5 | 3.0 |
| | | | 336 | 36 | 0.7 | ● | ● | – | 1.5 | 2.5 |
| | | | 365 | 65 | 0.5 | ● | ● | – | 0.6 | 0.5 |
| | | | 367 | 67 | 0.5 | ● | ● | – | 0.6 | 0.5 |

## Mixed: High Voltage + Low Voltage

| | Male HV contacts | Female HV contacts | Reference | High Voltage (HV) | | | Low Voltage (LV) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Number of Contacts | Test voltage (kV dc)[1] | Rated current (A) | Number of contacts | ø A (mm) | Crimp | Test voltage (kV rms)[1] Contact-contact | Rated Current (A)[1] |
| 0R |  |  | 704 | 4 | 7.5 | 2.0 | 4 | 0.7 | ● | 1.35 | 2.0 |
| | | | 713 | 2 | 7.5 | 2.0 | 13 | 0.7 | ● | 1.35 | 3.0 |
| 1R |  |  | 703 | 8 | 7.5 | 2.0 | 3 | 0.9 | ● | 1.5 | 3.5 |

## Male

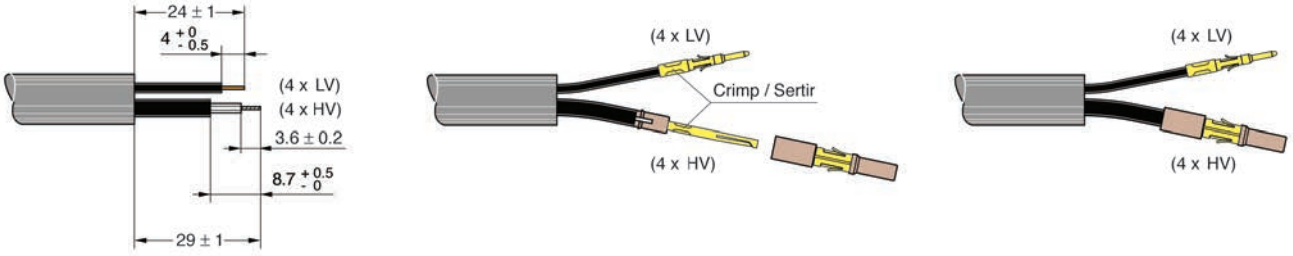
| | |
|---|---|
| **FGG.0R.403.ZLME15**<br>**HV contact**<br>**Contact HT** |  |

## Female

| | |
|---|---|
| **EGG.0R.403.ZLCE15**<br>**HV contact**<br>**Contact HT** |  |

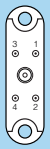
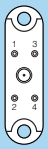
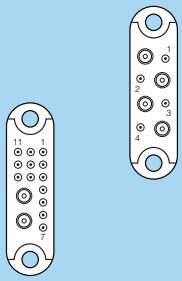
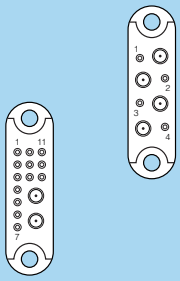
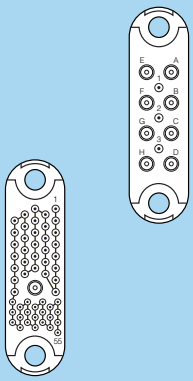
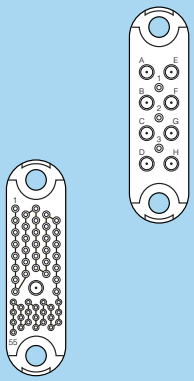
### Typical Assembly of High Voltage Contact

HV Contacts: Fit the HV sleeve onto the cable dielectric, check that all the HV conductor strands pass through the small hole.
Crimp the contact using tool DPC.91.701.V fitted with positioner DCE.91.051.BVCM, set to position 3. Fit by turning the HV sub-assembly on the HV sleeve and push until it butts. The two insulators should be at the same level.




| | | |
|---|---|---|
| **HV Contact** | **Conductor Range** | **26-28 AWG** |
| **HV Contact** | **Maximum Dielectric** | **1.5mm** |

# Mixed Coax + Low Voltage

| | Male coax contacts | Female coax contacts | Reference | Coax | | | | Low voltage (LV) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Number of contacts | Impedance (Ω) | Type | Cable group | Number of contacts | ø A (mm) | Crimp contact | Test voltage (kV rms)[1] | Rated current (A)[1] |
| RR |  |  | 804 | 1 | 0.5 | RR | 1 | 4 | 0.5 | ● | 0.6 | 0.5 |
| 0R |  |  | 804 | 4 | 50 | 0R | 1 | 4 | 0.7 | ● | 1.35 | 2 |
| | | | 813 | 2 | 50 | 0R | 1 | 13 | 0.7 | ● | 1.35 | 2 |
| 1R |  |  | 803 | 8 | 50 | 1R | 1 | 3 | 0.9 | ● | 1.5 | 3 |
| | | | 855 | 1 | 50 | 1R | 1 | 22 | 0.5 | ● | 0.6 | 0.5 |
| | | | | | | | | 33 | 0.7 | ● | 1.35 | 2.0 |

## Male

| | |
|---|---|
| **FGG.0R.250.ZLME28**<br>**Coax contact**<br>**Contact coax** |  |

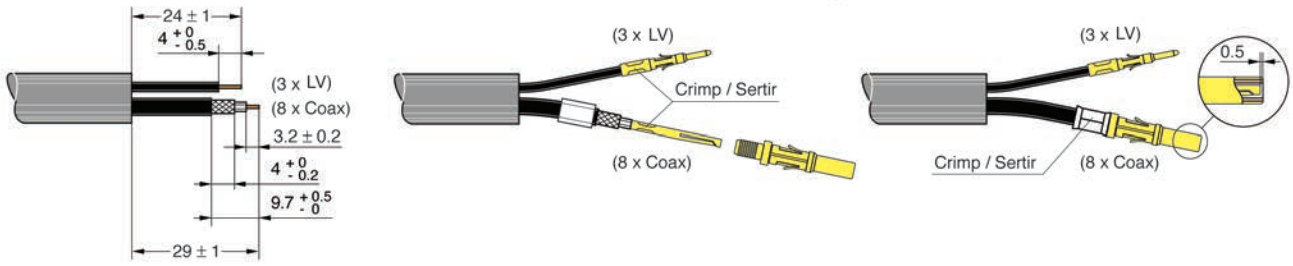
## Female

| | |
|---|---|
| **EGG.0R.250.ZLCE28**<br>**Coax contact**<br>**Contact coax** |  |

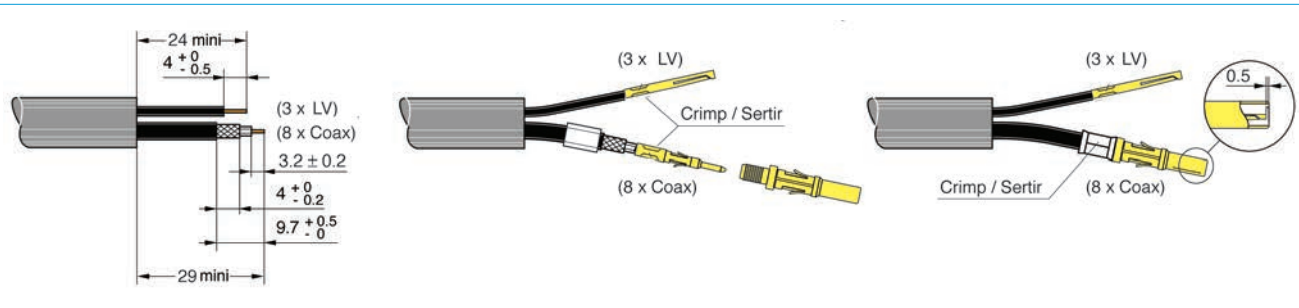
### Typical Assembly of Coax Contact (Coax Types - RG-174/U, RG-188 A/U, RG-316/U) = Cable Group 1

Coax contacts: Fit the crimp ferrule onto the cable. Crimp the contact using tool DPC.91.701.V fitted with postioner DCE.91.050.RVCM, set to position 3. Fit by turning the coax sub-assembly on the central contact until the stop is reached, check that the central contact is in the correct position in relation to the sub-assembly (0.5 mm), fold back the cable screen, place the crimp ferrule over the crimping area and complete the crimp using tool DPE.99.003.1K.

## Male

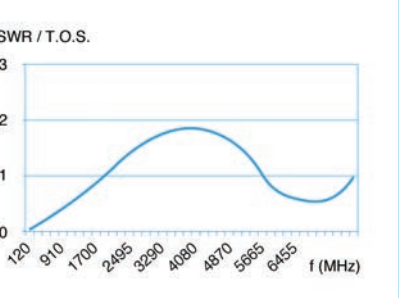



## Female

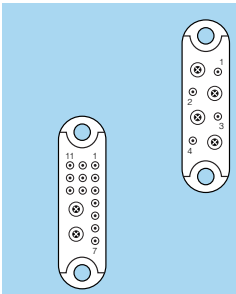
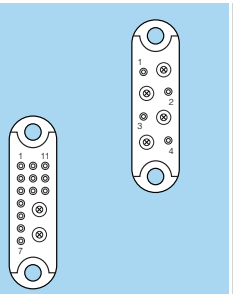
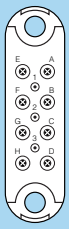
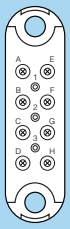



## Typical Performance

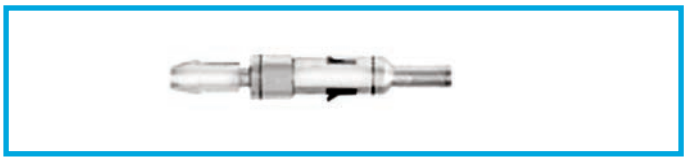
### VSWR / T.O.S.

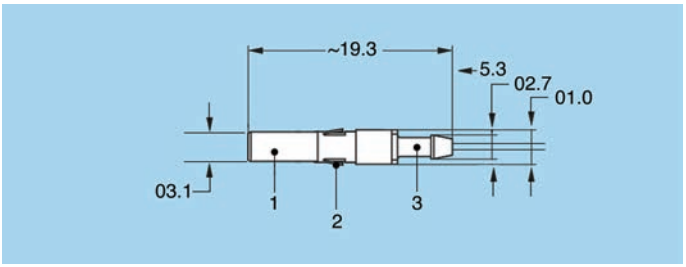


# Mixed: Fluidic + Low Voltage

| | Male fluidic contacts | Female fluidic contacts | Reference | Fluidic | | | Low voltage (LV) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Number of contacts | Flow (l/min) | Operating pressure (bars) | Number of contacts | ø A (mm) | Crimp contact | Test voltage (kV rms)[1)] | Rated current (A)[1)] |
| 0R |  |  | 004 | 4 | 8 | 5 | 4 | 0.7 | ● | 1.35 | 2.0 |
| | | | 013 | 2 | 8 | 5 | 13 | 0.7 | ● | 1.35 | 2.0 |
| 1R |  |  | 003 | 8 | 8 | 5 | 3 | 0.9 | ● | 1.5 | 3.0 |

## Fluidic / pneumatic male contact



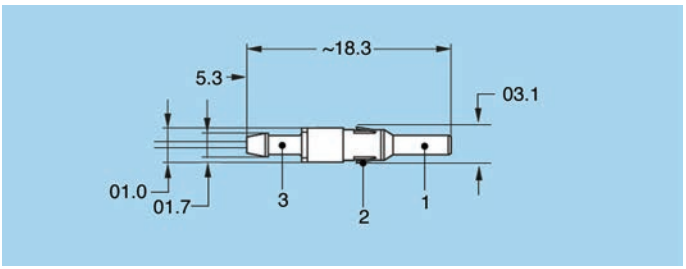



### FGG.0R.010.AZ05 Male fluidic / pnuematic contact

| Part number |
|---|
| FGG.0R.010.AZ05 (2.7mm hose barb and valve) |

**Note:** 3 – Hose fitting/ barb, 2 – retaining clips, 1 – male sleeve

## Fluidic / pneumatic male contact

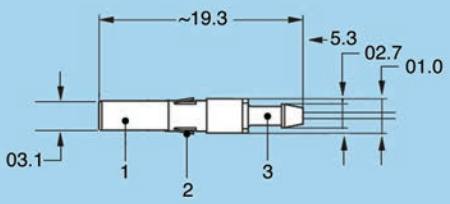



### FGG.0R.010.AZL05 Male fluidic /pnuematic contact

| Part number |
|---|
| FGG.0R.010.AZL05 (1.7mm hose barb and non-valve) |

**Note:** 3 – Hose fitting/ barb, 2 – retaining clips, 1 – male sleeve

## Fluidic / pneumatic female contact

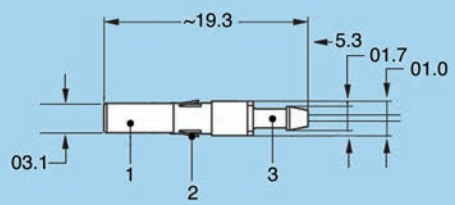



### EGG.0R.010.AZ05 Female fluidic / pnuematic contact

| Part number |
|---|
| EGG.0R.010.AZ05 (2.7mm hose barb and valve) |

**Note:** 1 – female sleeve, 2 – retaining clips, 3 – Hose fitting/ barb,

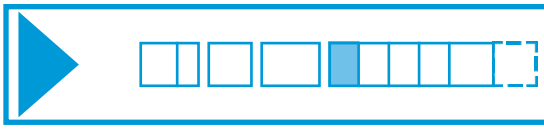
## Fluidic / pneumatic female contact




### EGG.0R.010.AZL05 Female fluidic /pnuematic contact

| Part number |
|---|
| EGG.0R.010.AZL05 (1.7mm hose barb and non-valve) |

**Note:** 1 – female sleeve, 2 – retaining clips, 3 – Hose fitting/ barb,



# Housings

| Ref. | Color | RAL code |
|---|---|---|
| G | gray | 7035 |
| A | blue | 6034 |
| S | ochre | 1028 |
| V | green | 6019 |

The exact color depends on manufacturing process and material pigments. For this reason some colors may differ from present RAL code.

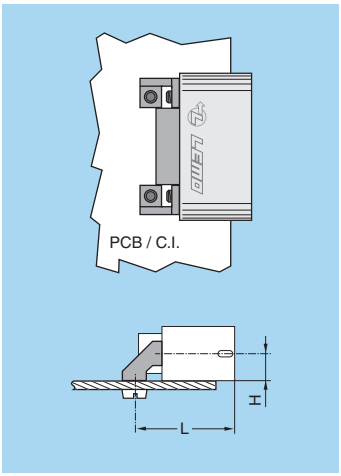
**Note:** the connector shell material is Crastin® PBT.

# Accessories

## Collets

### FGG Kit for cable clamping

| Part number | Series | Collet size | min. | max. |
|---|---|---|---|---|
| FGG.RR.740.IZG | RR | 40 | 1.0 | 4.0 |
| FGG.0R.762.IZG | 0R | 62 | 1.6 | 6.2 |
| FGG.1R.792.IZG | 1R | 92 | 2.0 | 9.2 |




### GEE Bracket

| Part number | Series | Dimensions (mm) | |
|---|---|---|---|
| | | L | H |
| GEE.RR.145.NZZ | RR | 10.00 | 3.00 |
| GEE.RR.146.NZZ | | 12.25 | 5.25 |
| GEE.RR.147.NZZ | | 14.00 | 7.00 |
| GEE.0R.145.NZZ | 0R | 16.50 | 4.50 |
| GEE.0R.146.NZZ | | 18.25 | 6.25 |
| GEE.0R.147.NZZ | | 22.50 | 10.50 |
| GEE.1R.145.NZZ | 1R | 20.75 | 6.25 |
| GEE.1R.146.NZZ | | 25.00 | 10.50 |
| GEE.1R.147.NZZ | | 32.50 | 18.00 |

- Body material: Brass (UNS C 34500)
- Screws: Brass (UNS C 34500)

# Spare parts

male

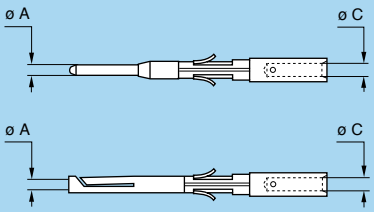
female

## FGG-EGG Insulators for crimp contacts

| | Type | Insulator part number | |
|---|---|---|---|
| | | Male contact | Female contact |
| RR | 313 | FGG.RR.313.YL | EGG.RR.413.YL |
| 0R | 310 | FGG.0R.310.YL | EGG.0R.410.YL |
| | 317 | FGG.0R.317.YL | EGG.0R.417.YL |
| | 337 | FGG.0R.337.YL | EGG.0R.437.YL |
| 1R | 328 | FGG.1R.328.YL | EGG.1R.428.YL |
| | 336 | FGG.1R.336.YL | EGG.1R.436.YL |
| | 365 | FGG.1R.365.YL | EGG.1R.465.YL |
| | 367 | FGG.1R.367.YL | EGG.1R.467.YL |

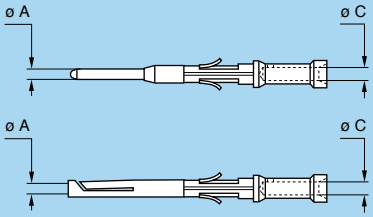
## FGG-EGG Crimp contacts

Fig. 1




| | Types | ø A (mm) | ø C (mm) | Contact part number | |
|---|---|---|---|---|---|
| | | | | Male | Female |
| RR | 313 | 0.5 | 0.45 | FGG.00.554.ZZC | EGG.00.654.ZZM |
| 0R | 310 | 0.9 | 1.10 | FGG.0B.560.ZZC | EGG.0B.660.ZZM |
| | 317 | 0.7 | 0.80 | FGG.0B.555.ZZC | EGG.0B.655.ZZM |
| | 337 | 0.5 | 0.45 | FGG.00.554.ZZC | EGG.00.654.ZZM |
| 1R | 328 | 0.9 | 1.10 | FGG.0B.560.ZZC | EGG.0B.660.ZZM |
| | 336 | 0.7 | 0.80 | FGG.0B.555.ZZC | EGG.0B.655.ZZM |
| | 365/367 | 0.5 | 0.45 | FGG.0B.554.ZZC | EGG.1B.654.ZZM |

Fig. 2



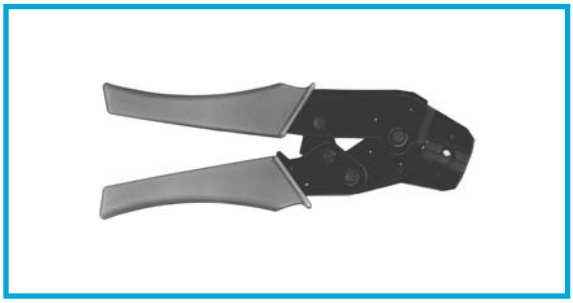

| | Types | ø A (mm) | ø C (mm) | Contact part number | |
|---|---|---|---|---|---|
| | | | | Male | Female |
| 0R | 310 | 0.9 | 0.80 | FGG.0B.561.ZZC | EGG.0B.661.ZZM |
| | 310 | 0.9 | 0.45 | FGG.0B.562.ZZC | EGG.0B.662.ZZM |
| | 317 | 0.7 | 0.45 | FGG.0B.556.ZZC | EGG.0B.656.ZZM |
| 1R | 328 | 0.9 | 0.80 | FGG.0B.561.ZZC | EGG.0B.661.ZZM |
| | 328 | 0.9 | 0.45 | FGG.0B.562.ZZC | EGG.0B.662.ZZM |
| | 336 | 0.7 | 0.45 | FGG.0B.556.ZZC | EGG.0B.656.ZZM |

# Tooling

## Manual crimping tools

| Supplier | Part number contact ø 0.5-0.7-0.9 |
|---|---|
| LEMO | DPC.91.701.V[1)] |
| DANIELS | MH860[1)] |
| ASTRO | 616336[1)] |

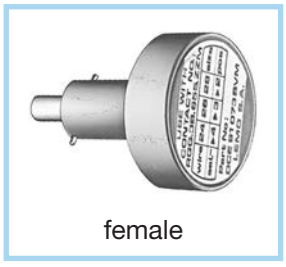
[1)] According to specification MIL-C-22520/7-01.



## DPE Manual crimping tool for coax contacts

| Part number | Cable group |
|---|---|
| DPE.99.003.1K | 1 |

male



female

These positioners are suitable for use with both manual and pneumatic crimping tools according to the MIL-C-22520/7-01 standard.

Fig. 1

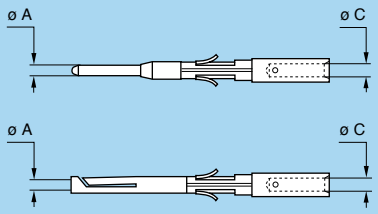
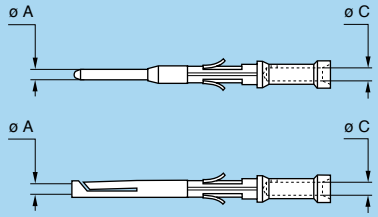


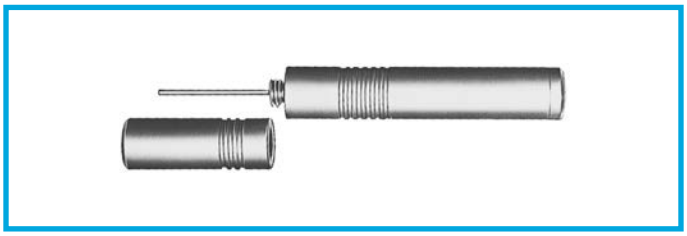

Fig. 2

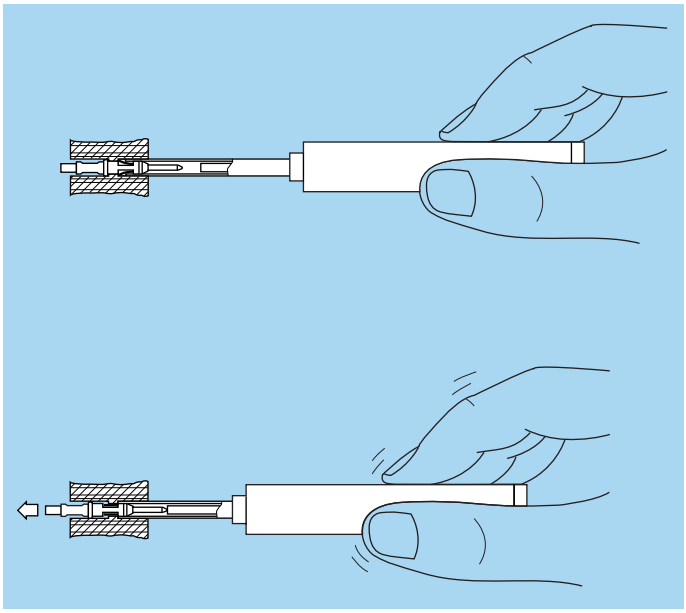



## DCE Positioners for crimp contacts ø 0.5-0.7 and 0.9 mm

| | Connector + Contact | | | | | Positioners part number | |
|---|---|---|---|---|---|---|---|
| | Type | ø A | ø C | Fig. | Conductor AWG | For male contact | For female contact |
| RR | 313 | 0.5 | 0.45 | 1 | 28-30-32 | DCE.91.050.0VC | DCE.91.050.0VM |
| 0R | 310 | 0.9 | 1.10 | 1 | 20-22-24 | DCE.91.090.BVC | DCE.91.090.BVM |
| | | 0.9 | 0.80 | 2 | 22-24-26 | | |
| | | 0.9 | 0.45 | 2 | 28-30-32 | DCE.91.090.AVC | DCE.91.090.AVM |
| | 317 | 0.7 | 0.80 | 1 | 22-24-26 | DCE.91.070.BVC | DCE.91.070.BVM |
| | | 0.7 | 0.45 | 2 | 28-30-32 | | |
| | 337 | 0.5 | 0.45 | 1 | 28-30-32 | DCE.91.050.0VC | DCE.91.050.0VM |
| 1R | 328 | 0.9 | 1.10 | 1 | 20-22-24 | DCE.91.090.BVC | DCE.91.090.BVM |
| | | 0.9 | 0.80 | 2 | 22-24-26 | | |
| | | 0.9 | 0.45 | 2 | 28-30-32 | DCE.91.090.AVC | DCE.91.090.AVM |
| | 336 | 0.7 | 0.80 | 1 | 22-24-26 | DCE.91.070.BVC | DCE.91.070.BVM |
| | | 0.7 | 0.45 | 2 | 28-30-32 | | |
| | 365/367 | 0.5 | 0.45 | 1 | 28-30-32 | DCE.91.050.BVC | DCE.91.051.BVM |

**Note:** a wide variation of strand number and diameter combinations are quoted as being AWG, some of which do not have a large enough cross section to guarantee a crimp as per either MIL-C-22520/1-01 or /7-01. Our technical department is at your disposal to study and propose a solution to all your applications.

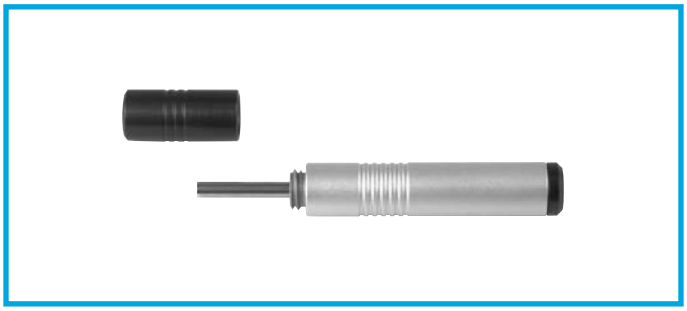




## DCF Extraction tools for crimp contacts

| | Connector | | Extractors |
|---|---|---|---|
| | Type | Contact ø A | Part number |
| RR | 313 | 0.5 | DCF.91.050.2LT |
| 0R | 310 | 0.9 | DCF.91.090.2LT |
| | 317 | 0.7 | DCF.91.070.2LT |
| | 337 | 0.5 | DCF.91.050.2LT |
| 1R | 328 | 0.9 | DCF.91.090.2LT |
| | 336 | 0.7 | DCF.91.070.2LT |
| | 365/367 | 0.5 | DCF.91.050.2LT |

**Note:** this model is used for male and female contacts.



## DCF Extraction tools for coax or HV contacts

| Part number | Series |
|---|---|
| DCF.91.215.1LT | RR |
| DCF.91.270.1LT | 0R |
| DCF.91.270.1LT | 1R |

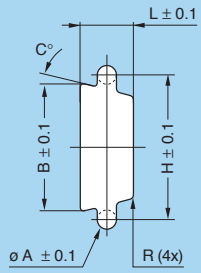
## DCT Cable clamping tool

| Part number | Series |
|---|---|
| DCT.91.165.PR | RR |
| DCT.91.205.PR | 0R |
| DCT.91.205.PR | 1R |

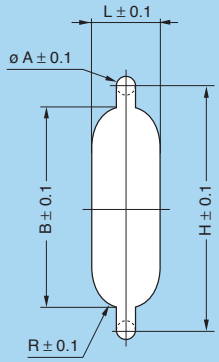
- Material: translucent plastic and steel

# Panel cut-outs

P1 - EGG




P2 - EBG, PBG



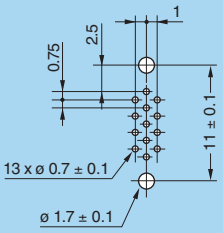

## R series

| Series | P1 | | | | | | P2 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | ø A | B | C | H | L | R | ø A | B | H | L | R |
| RR | 1.7 | 7.8 | 5 | 11 | 3.5 | – | – | – | – | – | – |
| 0R | 2.2 | 14.2 | 7 | 17 | 5.7 | 1.0 | 2.2 | 24.9 | 30 | 9.3 | 4.65 |
| 1R | 3.2 | 22.2 | 10 | 25 | 8.5 | 1.2 | 3.2 | 37.4 | 45.0 | 12.8 | 6.4 |

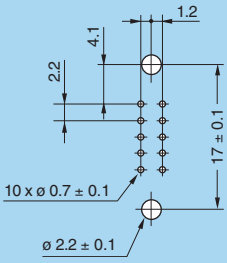
## PCB drilling pattern

### Fixed receptacle with straight print contact (EGG models)

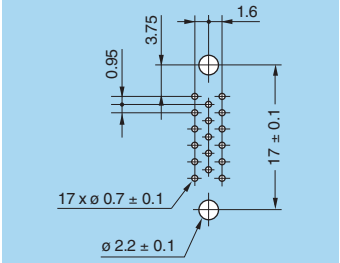
RR.313



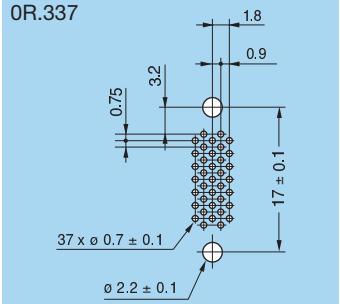

0R.310



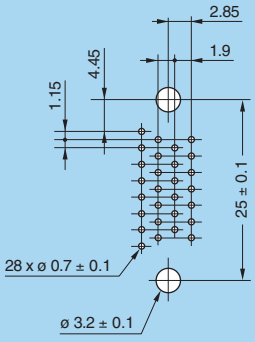

0R.317



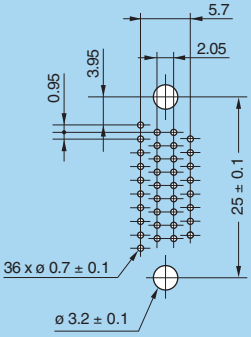

0R.337



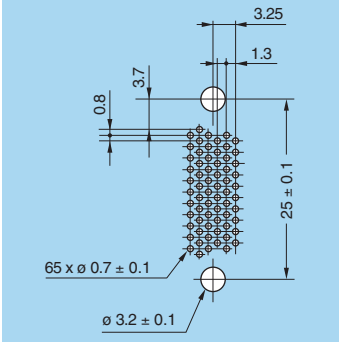

1R.328



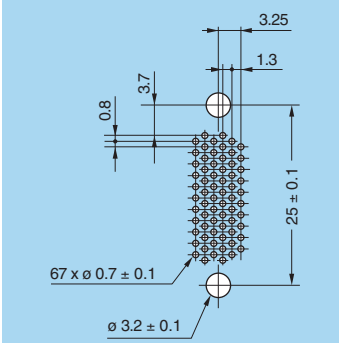

1R.336




1R.365

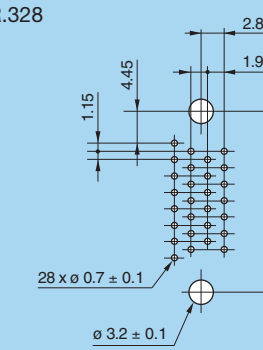



1R.367

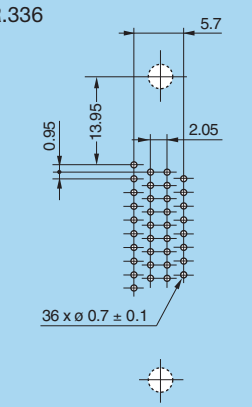



### Fixed receptacle with straight print contact (EBG models)

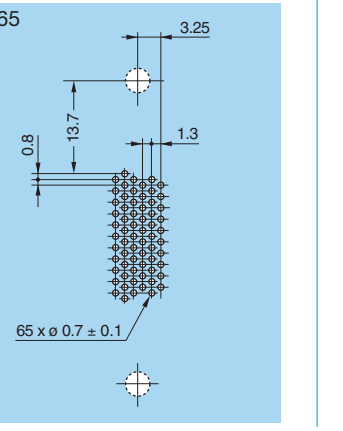
1R.328



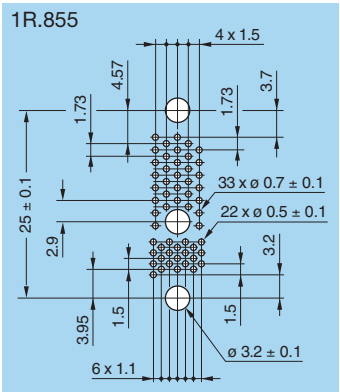

1R.336



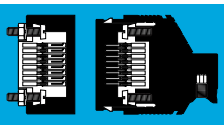

1R.365




1R.855

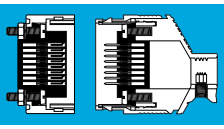


## Technical characteristics



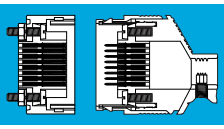
### Outer shell

**The R series is made of lightweight polyester resin Crastin® PBT from Dupont™ with metal latches.**



### Insulator

**The insulators are made of PEEK plastic. The insulators of the coax contact and the high voltage contact are Teflon™.**

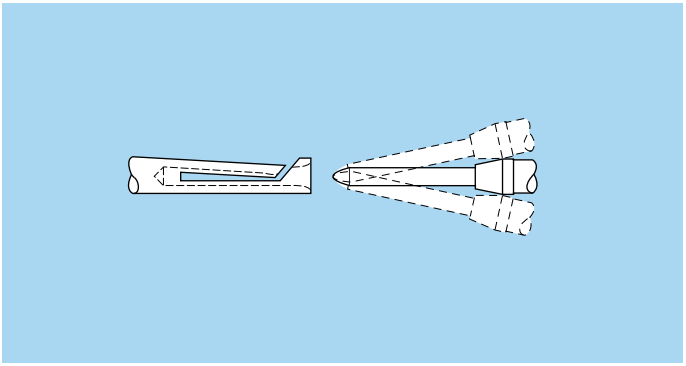


## Electrical contact

### Technical description

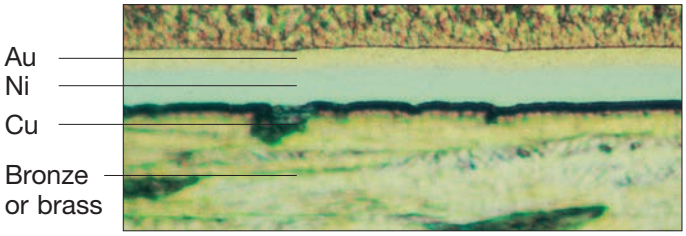
The secure reliable electromechanical connection achieved with LEMO female cylindrical contacts is mainly due to two important design features:

1. *Prod proof entry* on the mating side which ensures perfect concentric mating even with carelessly handled connectors.
2. *The pressure spring*, with good elasticity, maintains a constant even force on the male contact when mated. The leading edge of the pressure spring preserves the surface treatment (gold-plated) and prevents undue wear.



### Contact material and treatment

LEMO female contacts are made of bronze beryllium (QQ-C-530) or bronze (UNS C 54400). These materials are chosen because of their high modulus of elasticity, their excellent electrical conductivity and a high mechanical strength.




LEMO male solder and print contacts are made of brass (UNS C 38500). Male crimp contacts are made of brass (UNS C 34500) or annealed brass (UNS C 38500) with optimum hardness (HV) for crimping onto the wire.

| Type | Material (standard) | Surf. treatment (µm) | | |
|---|---|---|---|---|
| | | Cu | Ni | Au[1] |
| Male crimp | Brass (UNS C 34500) | 0.5 | 3 | 1.0 |
| | Brass (UNS C 38500) | | | |
| Male print | Brass (UNS C 38500) | | | |
| Femalle crimp | Bronze (UNS C 54400) Cu-Be (FS QQ-C-530) | 0.5 | 3 | 1.5 |
| Female print | | | | |
| Clips | Cu-Be (FS QQ-C-530) | – | – | – |
| | Stainless steel | | | |
| Wire[2] | Brass | – | 3[3] | – |

**Notes:** the standard surface treatment are as follows:
– nickel: FS QQ-N-290A or MIL-C-26074C
– gold: ISO 4523.
[1] minimum value
[2] for elbow print contacts
[3] treatment completed by 6 µm Sn-Pb tin-plating

## Crimp contacts

The square form crimp method is used (MIL-C-22520F, class I, type 2) photo 1 for unipole contacts.

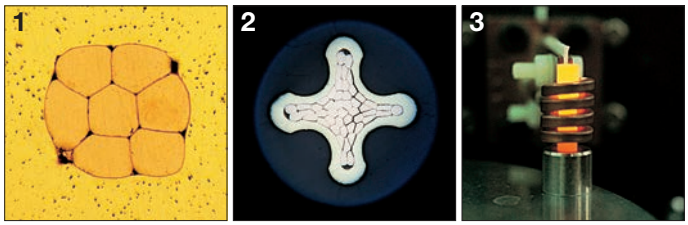
For multipole contacts the standard four identer crimp method is used, MIL-C-22520F, class I, type 1), photo 2. The crimp method requires a controlled compression to obtain a symmetrical deformation of the conductor strand and of the contact material. The radial hole in the side of the contact makes it possible to check whether the conductor is correctly positioned within the contact. A good crimping is characterized by only slightly reduced conductor section and practically no gap.

For optimum crimping of bronze or brass contacts they are annealed to relieve internal stress and reduce material hardening during the crimping process.
Only the crimping zone is annealed with the help of an induction heating machine designed by the LEMO Research and Development Department (see photo 3).

## Advantages of crimping

- practical, quick contact fixing outside the insulator
- possible use at high temperature
- no risk of heating the insulator during the conductor-contact fixing
- high tensile strength

Crimp contacts are available in standard version (form 1) for mounting maximum size conductors.
For some dimensions, these crimp contacts can be produced with reduced crimp barrels (form 2) for mounting reduced size conductors.




## Crimp contacts

The crimp contacts can be with two forms: a standard crimp barrel for large conductors (see fig. 1) or with a reduced crimp barrel for smaller conductors (see fig. 2).

The range of cable dimensions that can be crimped into our contacts are indicated on the table on page 9.

Fig. 1

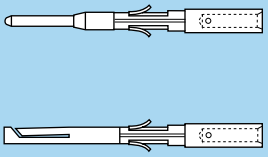
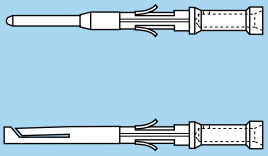


Fig. 2



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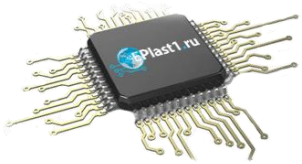
Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits,General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.




**Как с нами связаться**

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