



Design	IEC 60603-13
No. of contacts	6,10,14,16,20,26,30,34,40,50,60,64
Contact spacing	2,54 mm x 2,54 mm
Test voltage Ur.m.s	1 kV
Working voltage	500 V for pollution degree 1
Working current acc. to IEC 60512-2	See derating diagram
Contact resistance	max. 20mOhm
Insulation resistance	min. 10 ⁹ Ohm
Temperature range	-55°C ... +125°C (solder) -55°C ... +105°C (press-in)
Termination technology	solder, press-in
Clearance & creepage distance	min. 0,5 mm clearance min. 0,56 creepage

Insertion and withdrawal forces	6-pole max. 12N for PL1-2 / 18N for PL3	; 30-pole max. 60N for PL1-2 / 90N for PL3
	10-pole max. 20N for PL1-2 / 30N for PL3	; 34-poles max. 68N for PL1-2 / 102N for PL3
	14-pole max. 28N for PL1-2 / 42 for PL3	; 40-poles max. 80N for PL1-2 / 120N for PL3
	16-pole max. 32N for PL1-2 / 48N for PL3	; 50-poles max. 100N for PL1-2 / 150N for PL3
	20-pole max. 40N for PL1-2 / 60N for PL3	; 60-poles max. 120N for PL1-2 / 180N for PL3
	26-pole max. 52N for PL1-2 / 78N for PL3	; 64-poles max. 128N for PL1-2 / 192N for PL3

	S4 surface treatment	Au over PdNi (min. 0,76 µm)	
Mating cycles	PL 1 acc. to IEC 60603-13	500 mating cycles	10 days gas test
	PL 2 acc. to IEC 60603-13	250 mating cycles	4 days gas test
	PL 3 acc. to IEC 60603-13	50 mating cycles	No gas test
UL file	E 102079		
RoHS – compliant	Yes		
Leadfree	Yes		
Hot plugging	No		

Material	PBT (thermoplastics, glass fiber reinforcement 30%)
Color	black (RAL 7001) or grey (RAL 7032) for solder grey (RAL 7053) for press-in
UL classification	UL94-V0
Material group acc. IEC 60664-1	IIIa (175 < CTI < 400)
NF F 16-101 classification	I3,F3

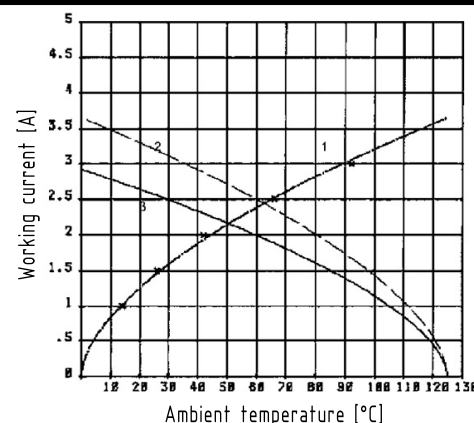
Contact material	Copper alloy
Plating termination zone	Sn over Ni for solder, Ni for press-in
Plating contact sliding side	Au or Au over PdNi (according to performance level)

The current carrying capacity is limited by maximum temperature of materials for inserts and contacts including terminals.

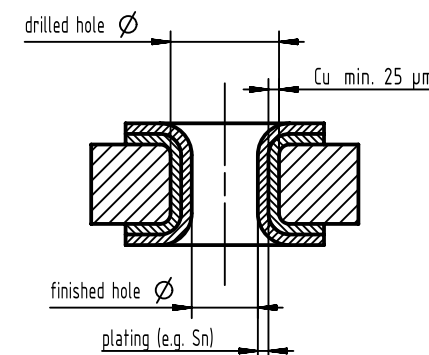
The current capacity-curve is valid for continuous, not interrupted current-loaded contacts of connectors when simultaneous power on all contacts is given without exceeding the maximum temperature. Control and test procedures according to DIN IEC 60512.

1) Temperature rise
2) Derating
3) Derating curve at $I_{max} \times 0.8$ (IEC 60512-2)

The graph plots Working current [A] on the Y-axis (0 to 5) against Ambient temperature [°C] on the X-axis (0 to 130). Curve 1 (solid) shows a linear increase from 0A at 0°C to 3.5A at 130°C. Curve 2 (dashed) shows a linear decrease from 3.5A at 0°C to 0A at 130°C. Curve 3 (dotted) shows a non-linear increase from 0A at 0°C to 3.5A at 130°C, representing the derating curve at $I_{max} \times 0.8$.



In addition to the hot-air-level (HAL), other PCB surfaces are getting more important. Due to their different properties - such as mechanical strength and coefficient of friction - we recommend the following configuration of PCB through holes.	Drilled hole Ø	1,15-0,03 mm
	Cu	min. 25 µm
	Sn	max. 15 µm
	plated hole Ø	0,01 - 1,00 mm



Tin plated PCB (HAL) acc. to EN 60352-5	Drilled hole Ø	1,15-0,03 mm
	Cu	min. 25 µm
	Sn	max. 15 µm
	plated hole Ø	0,94 - 1,09 mm
Chemical tin plated PCB	Drilled hole Ø	1,15-0,03 mm
	Cu	min. 25 µm
	Sn	min. 0,8µm
	plated hole Ø	1,00 - 1,10 mm
Gold /Nickel plated PCB	Drilled hole Ø	1,15-0,03 mm
	Cu	min. 25 µm
	Ni	3 - 7 µm
	Au	0,05 - 0,12 µm
	plated hole Ø	1,00 - 1,10 mm
Silver plated PCB	Drilled hole Ø	1,15-0,03 mm
	Cu	min. 25 µm
	Ag	0,1 - 0,3 µm
	plated hole Ø	1,00 - 1,10 mm
Copper plated PCB (OSP)	Drilled hole Ø	1,15-0,03 mm
	Cu	min. 25 µm
	plated hole Ø	1,00 - 1,10 mm

It is highly recommended to use HARTING press-in tools to ensure a reliable press-in process. Please refer to the catalogue for tools, machines and further information about the press-in process.

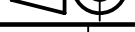
The connectors should be protected when being soldered in a dip, flow or film soldering baths. Otherwise, they might become contaminated as a result of soldering operations or deformed as a result of overheating.

(1) For prototypes and short runs protect the connectors with an industrial adhesive tape, e.g. Tesaband 4331 (www.tesa.de). Cover the underside of the connector moulding and the adjacent parts of the pcb as well as the open sides of the connector. This will prevent heat and gases of the soldering apparatus from damaging the connector. About 140 + 5 mm of the tape should suffice.

(2) For large series a jig is recommended. Its protective cover with a fast action mechanical locking device shields the connectors from gas and heat generated by the soldering apparatus. As an additional protection a foil can be used for covering the parts that should not be soldered.

Material	Polystyrol
Color	Yellow
Standardization	acc. to DIN EN / IEC 61340-5-1 and ANSI / ESD S541-2003
- Safe protection for electronic components against electrostatic charges	

Technical drawing of a square hole. The side length is dimensioned as $0,525 \pm 0,025$. The area is dimensioned as $0,315 \times 0,358 \text{ mm}^2$. The hole is filled with diagonal hatching.

		All Dimensions in mm Original Size DIN A3		Scale 1:1		Free size tol.		Ref. Sub. DS 09181100001 / 500000101780 / 2016-07-25	
		All rights reserved Department EC PD - DE		Created by STORCK		Inspected by LEHNERT		Standardisation HOFFMANN	
HARTING Electronics GmbH D-32339 Espelkamp		Title SEK 18 male low profile solder and press-in						Doc-Key / ECM-Nr 100554984/UGD/001/ 500000107692	
		Type DS		Number 09181100001				Rev. F	

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