



DIN power female connector low profile



General information

Design	IEC 60603-2	types: F low profile female
No. of contacts	max. 48	
Contact spacing	5,08 mm between contacts	3,81 mm between rows
Test voltage	1550V contact/contact	2500V contact/ground
Contact resistance	≤ 15 mOhm for solder-termination	
Insulation resistance	≥ 10 ¹² Ohm	
Working current	6 A@20°C (see derating diagram) for unmounted connector, limitations may occur due to PCB material	
Temperature range	-55°C ... +125°C -40°C ... +105°C for press-in connectors (due to limitations of PCB-material)	
Termination technology signal contacts	press-in, solder pins	
Clearance	min. 1,6 mm	
Creepage	min. 3,0 mm	
Insertion and withdrawal force	32pol. ≤ 50N 48pol. ≤ 75N	
Mating cycles	- PL1 acc. to IEC 60 603-2 => 500 mating cycles - PL2 acc. to IEC 60 603-2 => 400 mating cycles - PL3 acc. to IEC 60 603-2 => 50 mating cycles	
UL file	E102079	
RoHS - compliant	Yes	
Leadfree	Yes	
Hot plugging	No	

Insulator material

Material	PBT (thermoplastics, glass fiber reinforcement 30%)
Color	RAL 7032 (grey)
UL classification	UL 94-V0
Material group acc. IEC 60664-1	IIIa (175 ≤ CTI < 400)
NFF classification	I3, F4

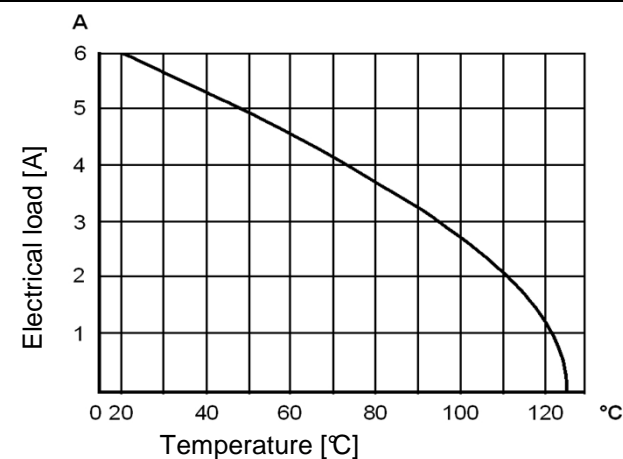
Contact material

Contact material	Copper alloy
Plating termination zone signal contacts	Sn over Ni for solder, Ni for press-in
Plating contact zone signal contacts	Au over Pd/Ni over Ni

Derating diagram acc. to IEC 60512-5 (Current carrying capacity)

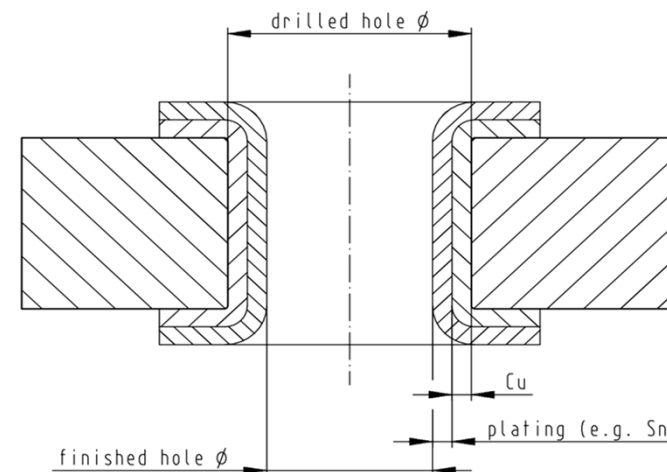
The current carrying capacity is limited by maximum temperature of materials for inserts and contacts including terminals.
The current capacity curve is valid for continuous, non interrupted current loaded contacts of connectors when simultaneous power on all contacts is given, without exceeding the maximum temperature.

Control and test procedures according to DIN IEC 60512-5



Recommended configuration of plated through holes for press-in termination

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.



PCB Type	Plating Layer	Thickness
Tin plated PCB (HAL) acc. to EN 60352-5	Drilled hole Ø	1,15±0,025 mm
	Cu	min. 25 µm
	Sn	max. 15 µm
Chemical tin plated PCB	plated hole Ø	0,94 – 1,09 mm
	Drilled hole Ø	1,15±0,025 mm
	Cu	min. 25 µm
Gold /Nickel plated PCB	Sn	min. 0,8 µm
	plated hole Ø	1,00 – 1,10 mm
	Drilled hole Ø	1,15±0,025 mm
	Cu	min. 25 µm
Silver plated PCB	Ni	3-7 µm
	Au	0,05-0,12 µm
	plated hole Ø	1,00 – 1,10 mm
	Drilled hole Ø	1,15±0,025 mm
Copper plated PCB (OSP)	Cu	min. 25 µm
	plated hole Ø	1,00 – 1,10 mm
	Drilled hole Ø	1,15±0,025 mm

Soldering instructions

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.

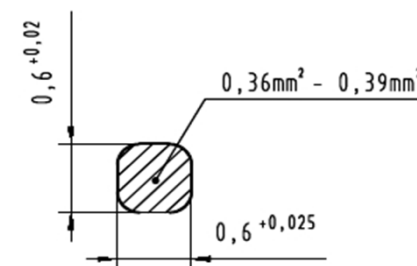
(1) For prototypes and short runs protect the connectors with an industrial adhesive tape, e.g. Tesaband 4331 (www.tesa.de). Cover the underside of the connector moulding and the adjacent parts of the pcb as well as the open sides of the connector. This will prevent heat and gases of the soldering apparatus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

Assembly instructions

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.

Cross section of solder terminations



Mod.	Date	Name	Date	Name
			28/04/11	mte
			28/04/11	TD
EC01557				



Technical data sheet
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low profile

DS 09 06 210 00 02