



# DIN Power female connector



## General information

Design	IEC 60603-2	types: F, F9, FM female
No. of contacts	max. 48	
Contact spacing	5,08 mm	3,81mm between rows
Test voltage	1550V contact/contact	2500V contact/ground
Contact resistance	max. 15 mOhm for wirewrap and solder	
Insulation resistance	min. 10 <sup>10</sup> Ohm	
Working current	6A at 20°C (see derating diagram)	
Temperature range	-55°C ... +125°C	
Termination technology	solder pins, soldering eye, wirewrap, crimp	
Clearance	min. 1,6 mm	
Creepage	min. 3,0 mm	
Insertion and withdrawal force	24-pole max. 37N	32-pole max. 50N
	45-pole max. 70N	48-pole max. 75N
Mating cycles	acc. to performance level, see table below	
UL file	E102079	
RoHS - compliant	Yes	
Leadfree	Yes	
Hot plugging	No	

## Insulator material

Material	PBT (thermoplastics, glass fiber reinforcement 30%) / PC (thermoplastics, glass fiber reinforcement 20%) only for FM	
Colour	RAL 7032 (grey)	
UL classification	UL 94-V0	
Material group acc. to IEC 60664-1	IIIa (175 ≤ CTI < 400)	
NFF classification	I3, F4	/ I2, F2 only for FM

## Contact material

Contact material	Copper alloy
Plating termination zone	Sn over Ni for solder, Ni for wirewrap and crimp
Plating contact zone	acc. to performance level, see table below

performance level	mating cycles		plating contact zone
	acc. to IEC 60603-2	complementary acc. to IEC 60603-2	
1	500		<i>Au over PdNi over Ni</i>
2	400		<i>Au over PdNi over Ni</i>
3	50		<i>Au over PdNi over Ni</i>
Au2	400		Au over Ni
Au30		500	min. 0,76µm (30pinch) Au over Ni
Au70		500	min. 1,60µm (70pinch) Au over Ni
Au90		500	min. 2,00µm (90pinch) Au over Ni

Standard plating options highlighted in *italic*, other plating options are available on request.

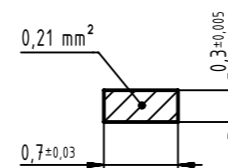
## Soldering instructions

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

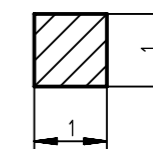
(1) For prototypes and short runs protect the connectors with an industrial adhesive tape, e.g. Tesaband 4331 (www.tesa.de). Cover the underside of the connector moulding and the adjacent parts of the pcb as well as the open sides of the connector. This will prevent heat and gases of the soldering apparatus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

## Cross section of solder pins



## Cross section of wirewrap posts



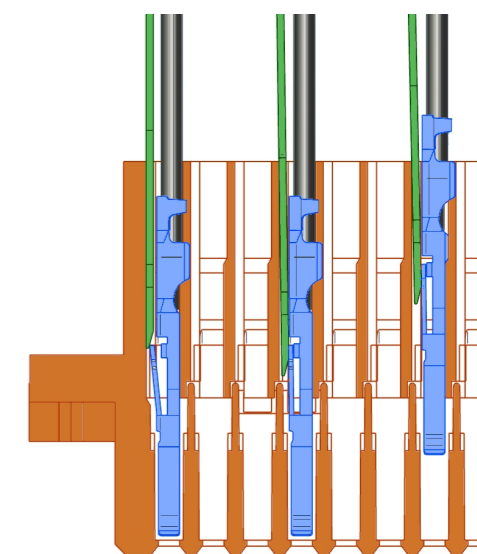
## Installation of crimp contacts

### Fitting the crimp contacts

After crimping the wires onto the contacts with the help of a crimping tool or an automatic crimping machine the contacts should be correctly oriented and inserted into the cavities of the connector moulding in the required configuration. They snap into position and are firmly held in place. A light pull on the wire assures the correct tensile strength of the contact. When using stranded wires with a gauge below 0,37 mm<sup>2</sup> an insertion tool is necessary.

### Removing the crimp contacts

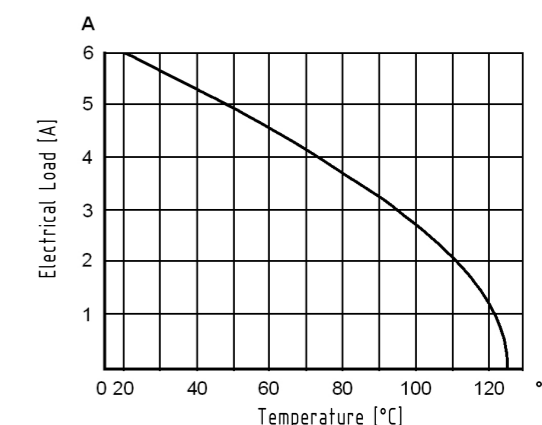
The removal tool is inserted into a slot on the side of the respective crimp cavity. This action compresses the contact retaining spring therefore the contact can then be easily withdrawn using a light pull on the wire. This action will cause no damage to the contact/wire which can be repositioned/refitted as necessary. The drawing demonstrates the crimp removal procedure (max. 5x).



## 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



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