# DIN power female connector

RoHS compliant

## 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. $10^{12}$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 | - PL1 acc. to IEC 60603-2 => | | 500 mating cycles |
| | - PL2 acc. to IEC 60603-2 => | | 400 mating cycles |
| | - PL3 acc. to IEC 60603-2 => | | 50 mating cycles |
| 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 |

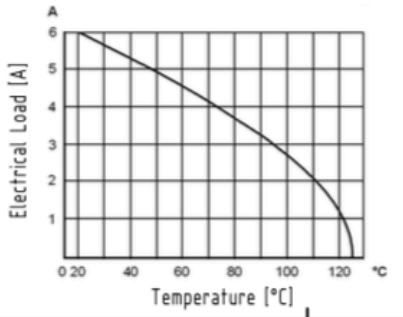
## Contact material

| | |
|---|---|
| Contact material | Copper alloy |
| Plating termination zone | Sn over Ni for solder, Ni for wirewrap and crimp |
| Plating contact zone | Au over PdNi 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



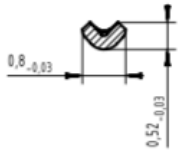

## Soldering instructions

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.

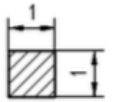
(1) For prototypes and short runs protect the connectors with an industrial adhesive tape, e.g. Tesaband 4331 (www.tesa.de). Cover the underside of the connector moulding and the adjacent parts of the pcb as well as the open sides of the connector. This will prevent heat and gases of the soldering apparatus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



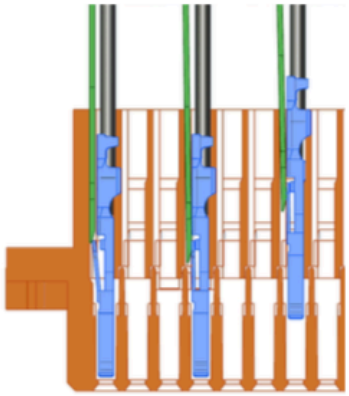

Cross section of wirewrap posts




## 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 $mm^2$ 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).



All Dimensions in mm
Original Size DIN A3

Scale 1:1 | Free size tol. | Ref. | Sub.



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| Created by | Inspected by | Standardisation | Date | State |
|---|---|---|---|---|
| STORCK | ZWAHR | HOFFMANN | 2017-05-24 | Final Release |

Title: DIN power female connector

Doc-Key / ECM-Nr.: 100581033/UGD/000/C 500000119355

Type: DS | Number: 0906100001 | Rev.: C | Page: 1/1

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