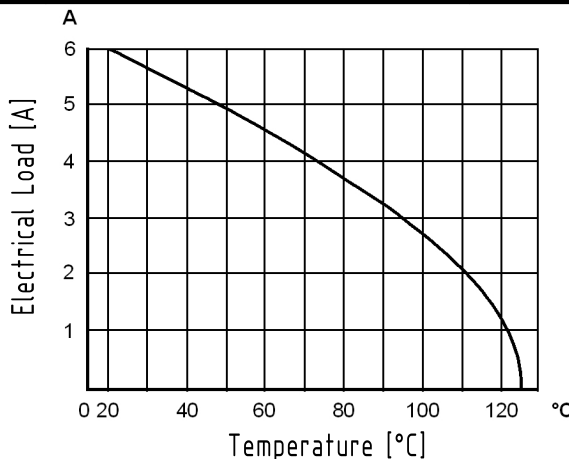
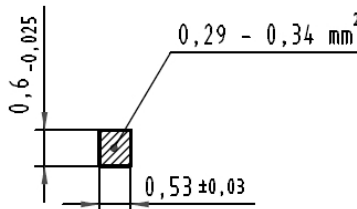
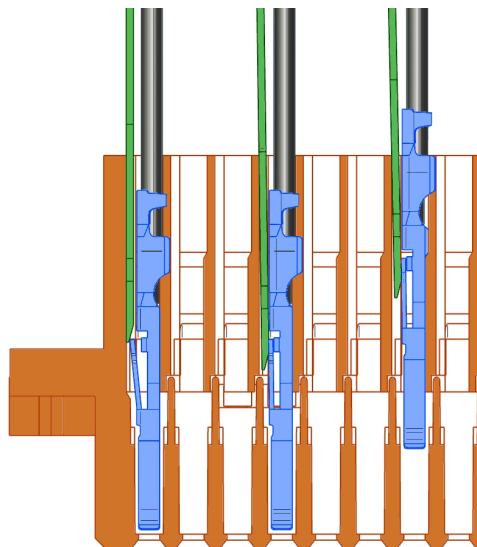


1		2		3		4		5		6		7		8			
A				DIN power male connector				 								A	
General information																	
Design		IEC 60603-2				types: F9, FM male											
No. of contacts		max. 9 for F9, 21+24 for FM															
Contact spacing		5,08 mm															
Test voltage		1550V															
Contact resistance		max. 15mOhm															
Insulation resistance		min. 10 ¹⁰ Ohm														B	
Working current		max. 6A at 20°C (see derating diagram)															
Temperature range		-55°C ... +125°C															
Termination technology		solder pins, crimp															
Clearance		min. 1,6 mm															
Creepage		min. 3,0 mm															
Insertion and withdrawal force		9-pole max. 14N 45-pole max. 70N															
Mating cycles		- PL1 acc. to IEC 60603-2 => 500 mating cycles - PL2 acc. to IEC 60 603-2 => 400 mating cycles															
UL file		E102079														C	
RoHS - compliant		Yes															
Leadfree		Yes															
Hot plugging		No															
Insulator material																	
Material		PBT (thermoplastics, glass fiber reinforcement 30%)															
Colour		RAL 7032 (grey)															
UL classification		UL 94-V0															
Material group acc. to IEC 60664-1		IIIa (175 ≤ CTI < 400)														D	
NFF classification		I3, F4															
Contact material																	
Contact material		Copper alloy															
Plating termination zone		Sn over Ni for solder Ni for crimp															
Plating contact zone		Au 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																	
F																F	
1		2		3		4		5		6		7		8			

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.								A					
Cross section of solder pins													
								B					
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 mm² an insertion tool is necessary.								C					
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). 								D					
								E					
				All Dimensions in mm Original Size DIN A3		Scale 1:1		Free size tol.		Ref. Sub. DS 09 06 120 00 02 / EC01557 / 28.04.11			
		All rights reserved Department EC PD - DE		Created by HAGEMEYERE		Inspected by TADJE		Standardisation HOFFMANN		Date 2014-09-12		State Final Release	
HARTING Electronics GmbH D-32339 Espelkamp				Title DIN power male connector								Doc-Key / ECM-Nr. 100580644/UGD/000/A 500000076069	
				Type DS		Number 090612000002				Rev. A		Page 1/1	



DIN power male connector

RoHS compliant 

General information

Design	IEC 60603-2 types: F9, FM male	
No. of contacts	max. 9 for F9, 21+24 for FM	
Contact spacing	5,08 mm	
Test voltage	1550V	
Contact resistance	max. 15mOhm	
Insulation resistance	min. 10 ¹⁰ Ohm	
Working current	max. 6A at 20°C (see derating diagram)	
Temperature range	-55°C ... +125°C	
Termination technology	solder pins, crimp	
Clearance	min. 1,6 mm	
Creepage	min. 3,0 mm	
Insertion and withdrawal force	9-pole max. 14N 45-pole max. 70N	
Mating cycles	- PL1 acc. to IEC 60603-2 => 500 mating cycles - PL2 acc. to IEC 60 603-2 => 400 mating cycles	
UL file	E102079	
RoHS - compliant	Yes	
Leadfree	Yes	
Hot plugging	No	

Insulator material

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

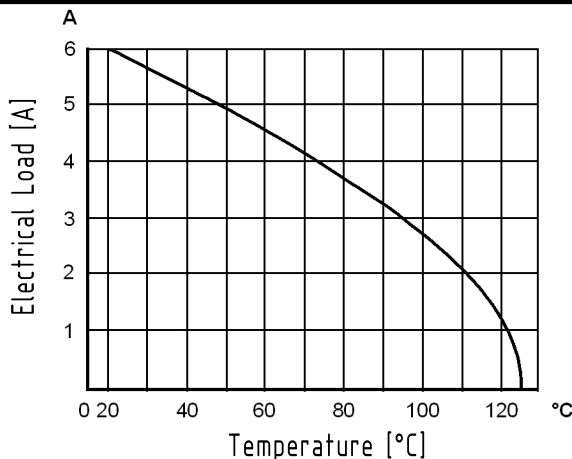
Contact material

Contact material	Copper alloy	
Plating termination zone	Sn over Ni for solder	Ni for crimp
Plating contact zone	Au 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



All Dimensions in mm
Original Size DIN A3

Scale
1:1

Free size tol.

Ref.

Sub. DS 09 06 120 00 02 / EC01557 / 28.04.11



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Department EC PD - DE

Created by

HAGEMEYERE

Inspected by

TADJE

Standardisation

HOFFMANN

Date

2014-09-12

State

Final Release

Title
DIN power male connector

Doc-Key / ECM-Nr.
100580644/UGD/000/A
500000076069

Type
DS

Number
09061200002

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