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Pushing Performance

DIN-Power FM045MC-3,0C1-1

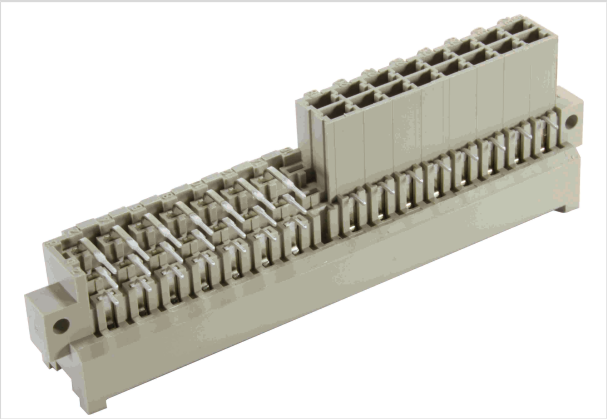

Image is for illustration purposes only. Please refer to product description.

Part number	09 06 145 2971
Specification	DIN-Power FM045MC-3,0C1-1
HARTING eCatalogue	https://b2b.harting.com/09061452971

Identification

Category	Connectors
Series	DIN 41612
Identification	Type FM
Element	Male connector
Description of the contact	Angled
Features	lead-free

Version

Termination method	Wave soldering termination Crimp termination
Connection type	Motherboard to daughtercard PCB to cable Cable to cable
Number of contacts	45
Contact configuration	Rows z, b and d, positions 2, 4, 6, 8, 10, 12, 14 Row a, positions 18, 20, 22, 24, 26, 28, 30, 32
Coding	Coding with loss of contacts
PCB fixing	With fixing flange
Details	Please order crimp contacts separately.

Technical characteristics

Contact rows	3
Contact spacing (termination side)	2.54 mm 5.08 mm

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Technical characteristics

Contact spacing (mating side)	3.81 mm 5.08 mm
Rated current	6 A
Rated current	Rated current measured at 20 °C, see derating curve for details
Clearance distance	≥1.6 mm
Creepage distance	≥3 mm
Insulation resistance	$>10^{12}$ Ω
Contact resistance	≤15 mΩ
Limiting temperature	-55 ... +125 °C
Insertion and withdrawal force	≤70 N
Performance level	1 acc. to IEC 60603-2
Mating cycles	≥500
Test voltage $U_{r.m.s.}$	1.55 kV (contact-contact) 2.5 kV (contact-ground)
Isolation group	IIIa (175 ≤ CTI < 400)
Hot plugging	No

Material properties

Material (insert)	Thermoplastic resin, glass-fibre filled
Colour (insert)	RAL 7032 (pebble grey)
Material (contacts)	Copper alloy
Surface (contacts)	Noble metal over Ni Mating side Sn over Ni Termination side
Material flammability class acc. to UL 94	V-0
RoHS	compliant
ELV status	compliant
China RoHS	e
REACH Annex XVII substances	Not contained
REACH ANNEX XIV substances	Not contained
REACH SVHC substances	Not contained
California Proposition 65 substances	Yes
California Proposition 65 substances	Nickel Lead Antimony trioxide

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Specifications and approvals

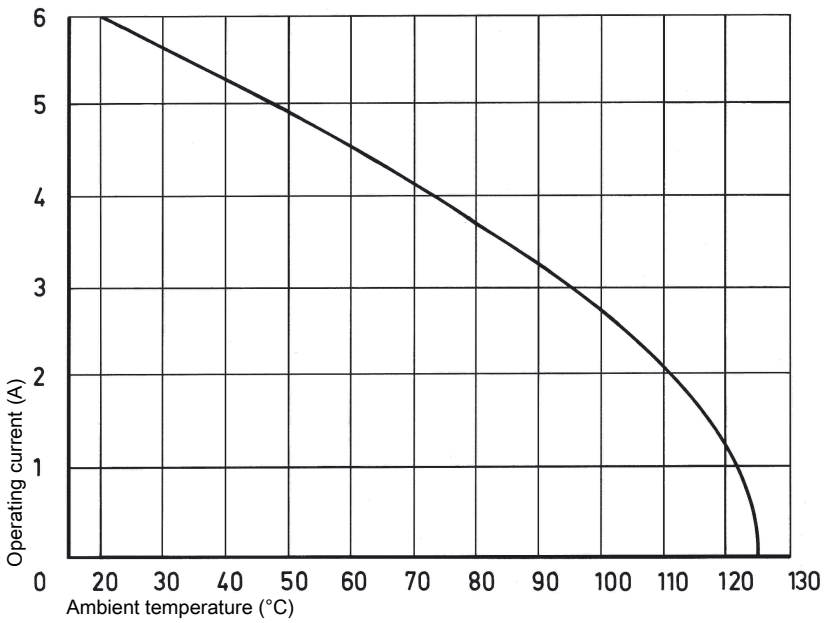
Specifications	IEC 60603-2 (complementary)
UL / CSA	UL 1977 ECBT2.E102079 CSA-C22.2 No. 182.3 ECBT8.E102079
Railway classification	F4/I3 acc. to NFF 16-101/102

Commercial data

Packaging size	20
Net weight	21.6 g
Country of origin	Germany
European customs tariff number	85366990
eCl@ss	27460201 PCB connector (board connector)

Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.
Measuring and testing techniques acc. to IEC 60512-5-2



Coding with loss of contacts
To avoid cross-plugging of adjacent connectors a coding system is required.
Coding pin 09 04 000 9908
Removal tool for male contacts 09 99 000 0038

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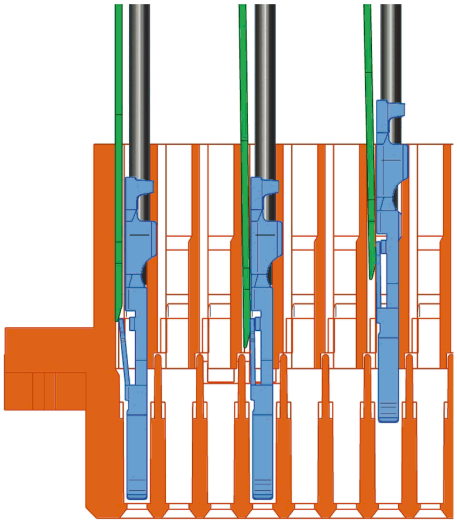
Installation of crimp contacts



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.Insertion tool part number: 09 99 000 0100
Insertion tool part number: 09 99 000 0100
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 damange to the contact / wire which can be repositioned / refitted as necessary. The drawing demonstrates the crimp removal procedure (max. 5x).
Removal tool part number: 09 99 000 0101

Soldering instructions

The connectors should be protected when being soldered. 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 devie 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.

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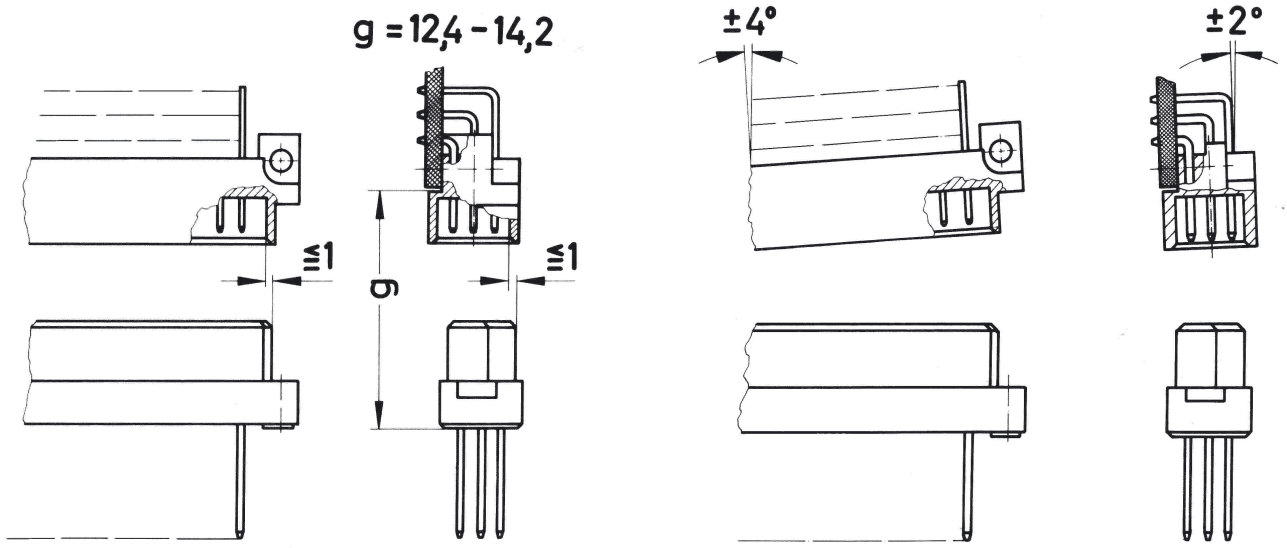
Mating conditions



To ensure reliable connections and prevent unnecessary damage, please refer to the application data diagrams. These recommendations are set out in IEC 60603-2.
The connectors should not be coupled and decoupled under electrical load.

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