



Pushing Performance
Since 1945

DIN-Power MH24+7FTC1-1-NFF



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

Part number	09 06 231 2881 222
Specification	DIN-Power MH24+7FTC1-1-NFF
HARTING eCatalogue	https://harting.com/09062312881222

Identification

Category	Connectors
Series	DIN 41612
Identification	Type MH 24+7
Element	Female connector

Version

Termination method	Crimp termination
	Faston termination
Connection type	PCB to cable
Number of contacts	31
Number of signal contacts	24
Number of power contacts	7
Contact configuration	Row d, positions 22, 26, 30 and row z, positions 20, 24, 28, 32
Coding	Hole coding
	Shroud coding
	Coding with loss of contacts
PCB fixing	With fixing flange
Details	Please order crimp contacts separately.

Technical characteristics

Contact spacing (mating side)	3.81 mm
	5.08 mm
Rated current	6 A
	15 A
Rated current	Rated current measured at 20 °C, see derating curve for details



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Technical characteristics

Rated current (signal)	6 A
Rated current (power)	15 A
Clearance distance	≥1.6 mm ≥4.5 mm
Creepage distance	≥3 mm ≥8 mm
Insulation resistance	>10 ¹¹ Ω
Contact resistance	≤20 mΩ
Limiting temperature	-55 ... +125 °C
Insertion force	≤85 N
Withdrawal force	≤85 N
Test voltage U _{r.m.s.}	1.55 kV (contact-contact) 1.55 kV (contact-ground) 3.1 kV (contact-contact) 3.1 kV (contact-ground)
Isolation group	II (400 ≤ CTI < 600)
Hot plugging	No

Material properties

Material (insert)	Thermoplastic resin, glass-fibre filled
Colour (insert)	RAL 7035 (light grey)
Material (contacts)	Copper alloy
Surface (contacts)	Silver plated Mating side, power contacts Silver plated Termination side, power contacts
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

Specifications and approvals

Specifications	IEC 60603-2 (complementary)
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Specifications and approvals

Railway classification F1/I2 acc. to NFF 16-101/102

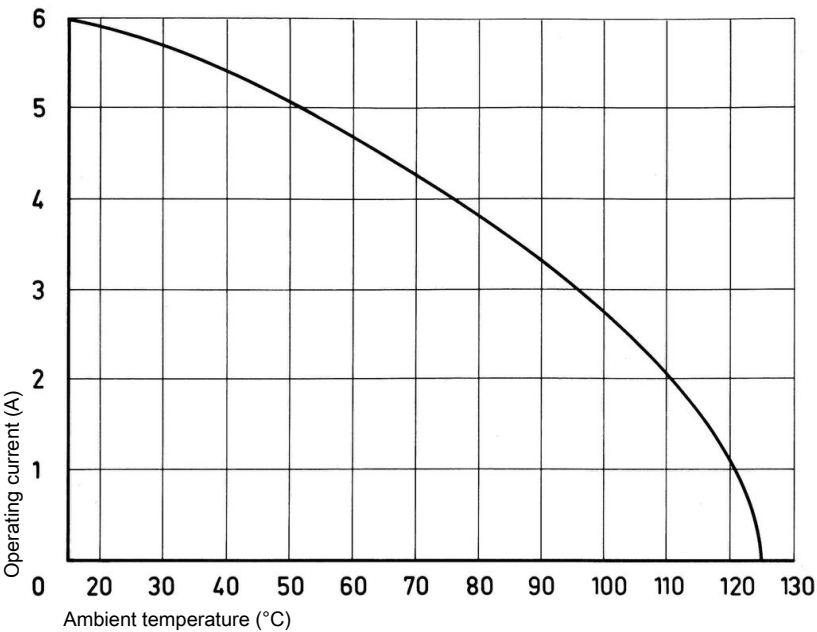
Commercial data

Packaging size	20
Net weight	38.55 g
Country of origin	Germany
European customs tariff number	85366990
GTIN	5713140013001
eCl@ss	27460201 PCB connector (board connector)
ETIM	EC002637
UNSPSC 24.0	39121415

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

Electronic section





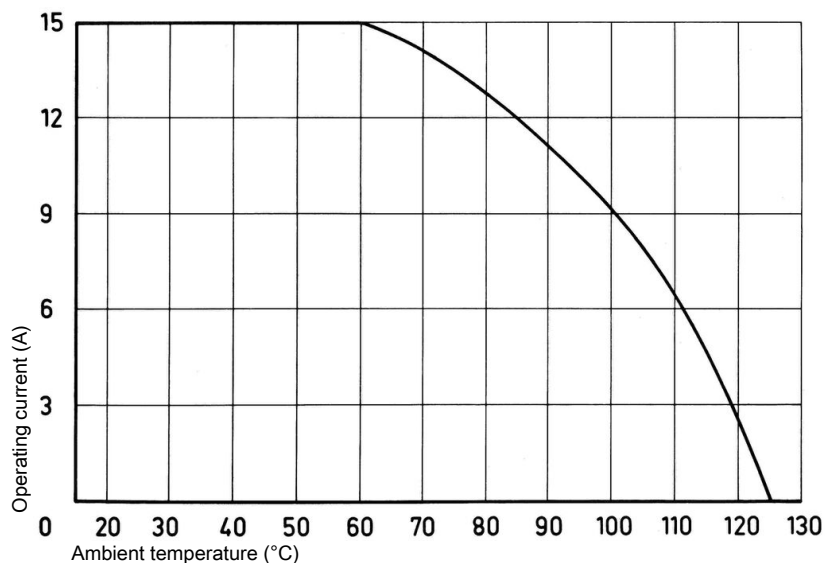
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Current carrying capacity

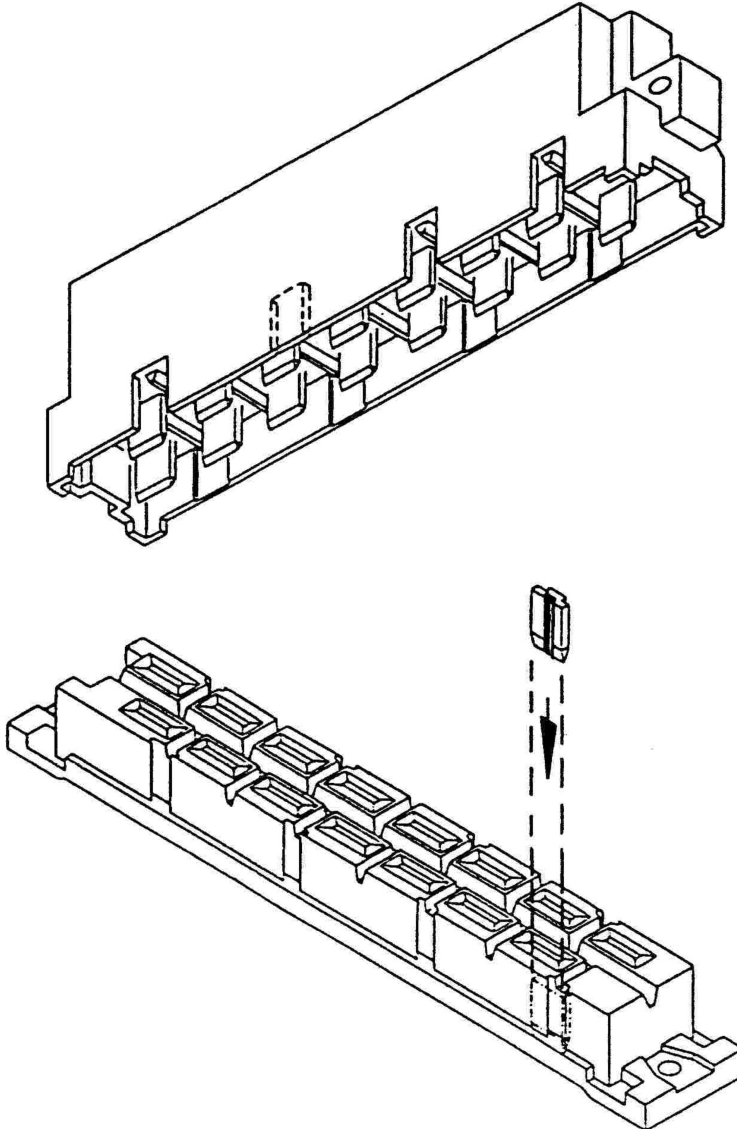
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Measuring and testing techniques acc. to IEC 60512-5-2

Heavy duty section



Shroud coding
(without loss of contact)



To avoid cross-plugging of adjacent connectors a coding system is required. Insert the code key 09 06 001 9918 into one of the keyways of the female connector as shown in the drawing. Break out the corresponding area of the male shroud. Connectors coded this way can only be applied in a minimum rack spacing of 20.32 mm.

Coding with loss of contacts

To avoid cross-plugging of adjacent connectors a coding system is required.

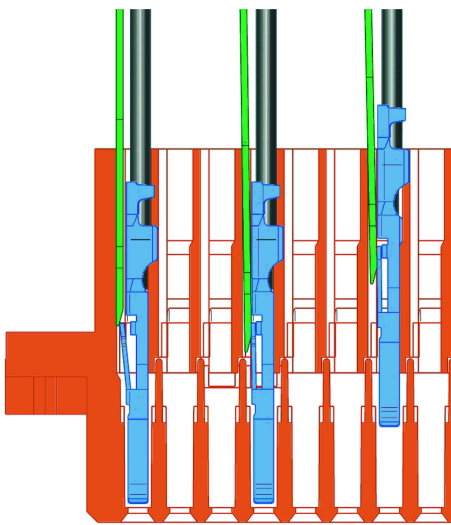
The coding is achieved by means of a code pin which is inserted into the selected chamber of the female connector (the contact cavity must be filled with a female contact!).

The opposite male contact must be removed with the help of the specially designed tool. It's recommended to use at least 3 pins.

Coding pin 09 04 000 9908

Removal tool for male contacts 09 99 000 0038

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. Insertion tool part number: 09 99 000 0100

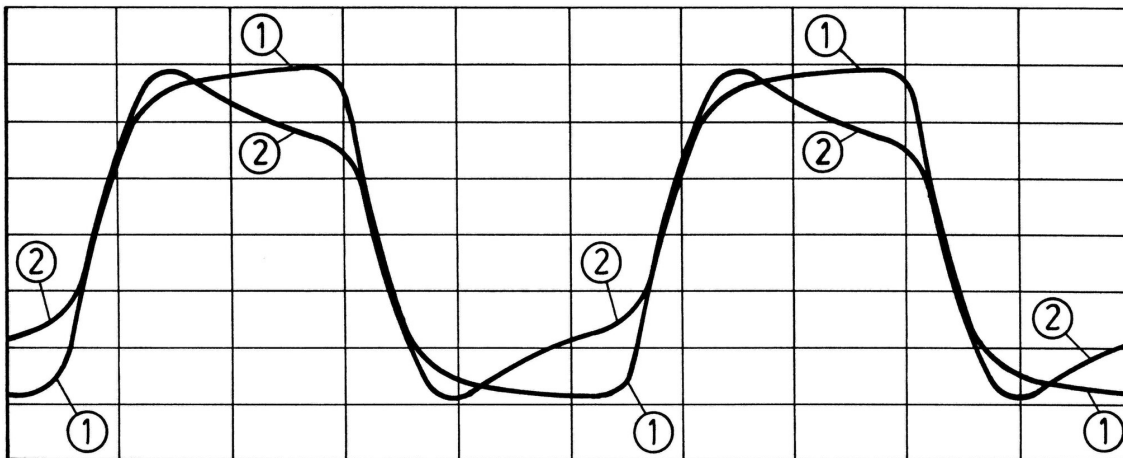
Insertion tool part number: 09 99 000 0088

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).

Removal tool part number: 09 99 000 0087

Low currents and voltages



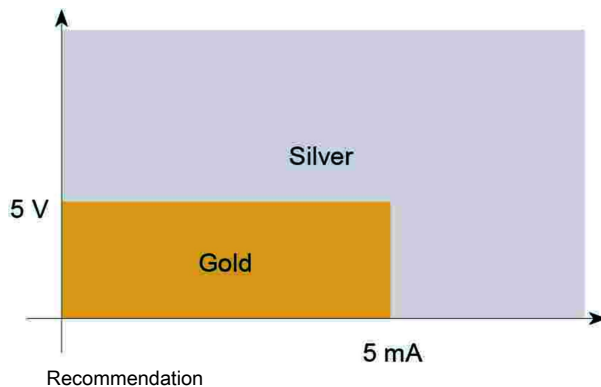
Changes to the transmitted signal after artificial ageing

- ① new contact
- ② after ageing

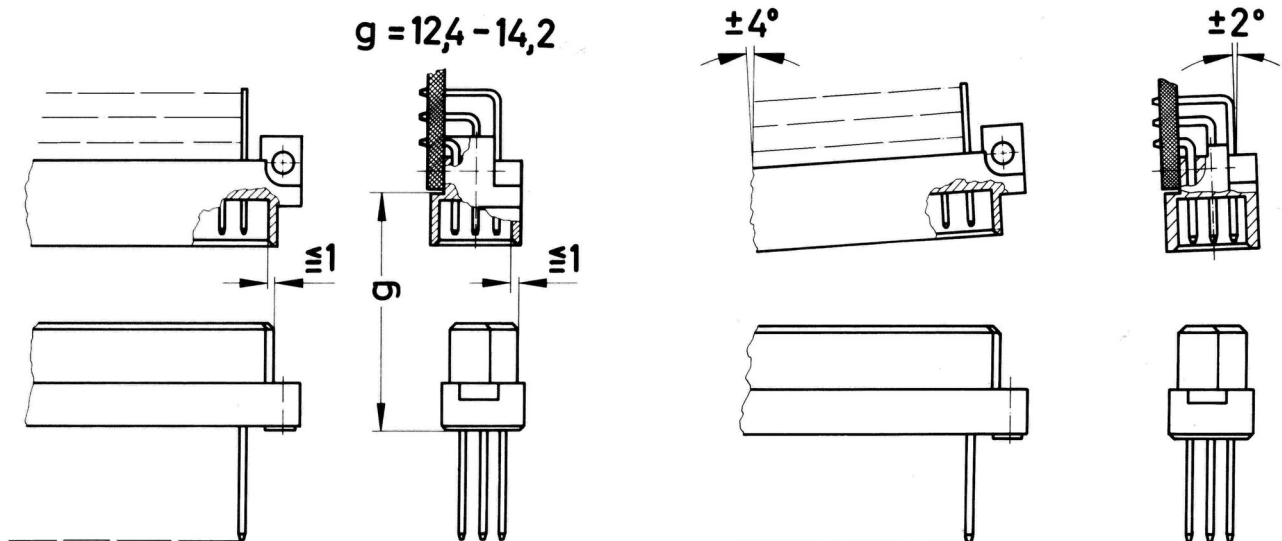
Type H standard contacts have a silver plated surface. This precious metal has excellent conductive properties. In the course of a contact's lifetime, the silver surface generates a black oxide layer due to its affinity to sulphur. This layer is smooth and very thin and is partly interrupted when the contacts are mated and unmated, thus guaranteeing very low contact resistances. In the case of very low currents or voltages small changes to the transmitted signal may be encountered. This is illustrated above where an artificially aged contact representing a twenty year life is compared with a new contact.

In systems where such a change to the transmitted signal could lead to faulty functions and also in extremely aggressive environments, HARTING recommend the use of gold plated contacts.

Below is a table derived from actual experiences.



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.