

Types H, H 3, MH 24 + 7, MH 21 + 5

Page

Technical characteristics type H

03.10

Type H connectors



03.11

Type H 3 connectors

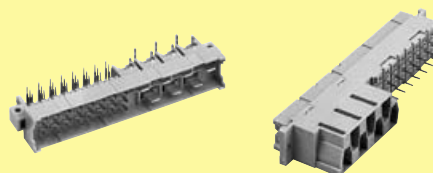


03.15

Technical characteristics type MH

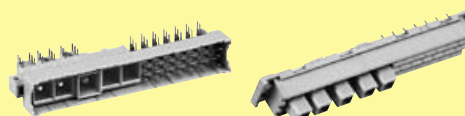
03.20

Type MH 24 + 7 connectors



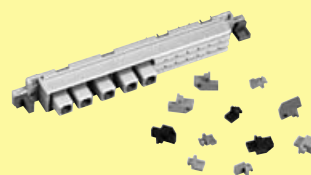
03.22

Type MH 21 + 5 connectors



03.24

Coding systems



03.26

Number of contacts	15
	14 + 1 leading contact (position z 32)
	13 + 2 leading contacts (position z 4 und z 32)
	3

Working current	15 A max. see current carrying capacity chart
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Clearance	Type H:	≥ 4.5 mm
	Type H 3:	≥ 4.0 mm

Creepage	Type H:	≥ 8.0 mm
	Type H 3:	≥ 3.7 mm

Working voltage	The working voltage also depends on the clearance and creepage dimensions of the pcb itself and the associated wiring	
	according to the safety regulations of the equipment	Explanations see chapter 00
	Connectors should not be mated under voltage	

Test voltage $U_{r.m.s.}$	Type H:	≥ 3.1 kV
	Type H 3:	≥ 2.5 kV

Contact resistance	≤ 8 mΩ
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Insulation resistance	≥ 10 ¹² Ω
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Temperature range	– 55 °C ... + 125 °C
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The higher temperature limit includes the local ambient and heating effects of the contacts under load

Electrical termination

Male connector	Connector with faston 6.3 x 2.5 (faston blade width x wire gauge) according to DIN 46 245 and DIN 46 247 Solder pins for pcb connections Ø 1.6 ± 0.1 mm DIN EN 60 097
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Female connector	Connector for faston 6.3 x 2.5 (faston blade width x wire gauge) according to DIN 46 245 and DIN 46 247 Solder pins for pcb connections Ø 1.6 ± 0.1 mm DIN EN 60 097 Cage clamp terminal 0.14-1.5 mm ²
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Insertion and withdrawal force

Type H:	≤ 90 N
Type H 3:	≤ 20 N

Materials

Mouldings	Thermoplastic resin, glass-fibre filled, UL 94-V0
Contacts	Copper alloy

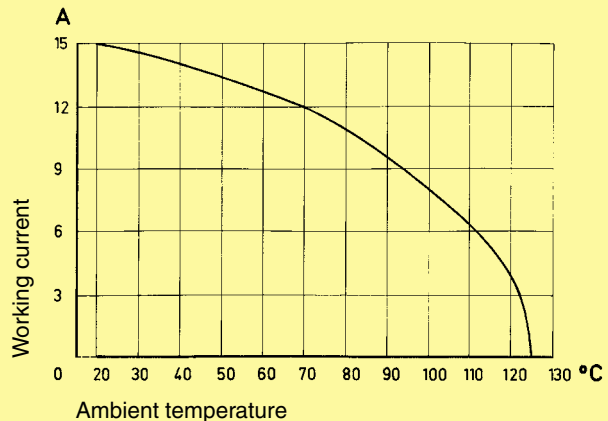
Contact surface	Hard silver plated or gold plated
Contact zone	

Mating conditions	see chapter 00
Coding systems	see page 03.26

Current carrying capacity

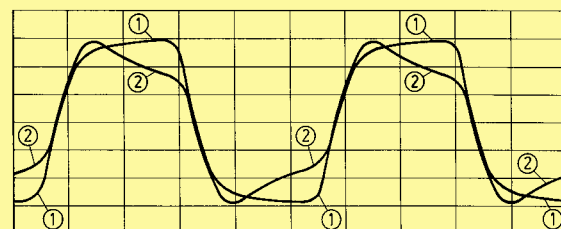
The current carrying capacity is limited by maximum temperature of materials for inserts and contacts including terminals. The current capacity curve is valid for continuous, non interrupted current loaded contacts of connectors when simultaneous power on all contacts is given, without exceeding the maximum temperature.

Control and test procedures according to DIN IEC 60 512



Low currents and voltages

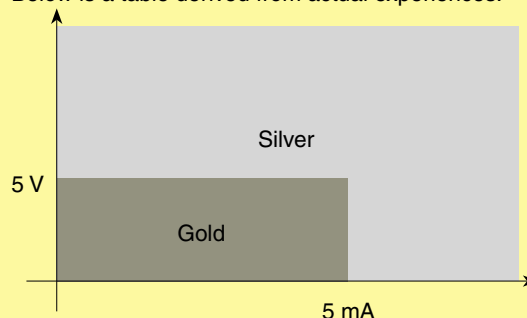
Type H standard contacts have a silver plated surface. This precious metal has excellent conductive properties. In the course of a contact's lifetime, the silver surface generates a black oxide layer due to its affinity to sulphur. This layer is smooth and very thin and is partly interrupted when the 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 below where an artificially aged contact representing a twenty year life is compared with a new contact.



Changes to the transmitted signal after artificial ageing
① new contact ② after ageing

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.

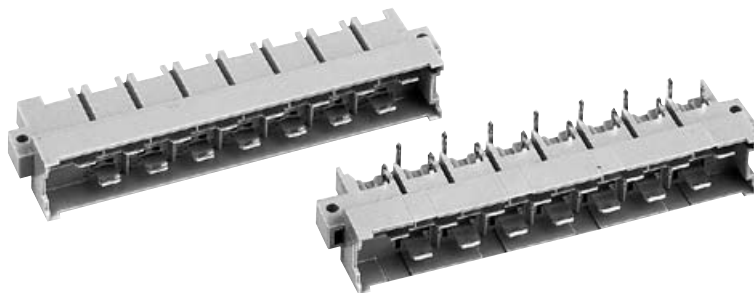
Below is a table derived from actual experiences.



Recommendation

Number of contacts

15



Male connectors

Identification	Number of contacts	Part No.	Drawing	Dimensions in mm
Male connector for faston 6.3 x 2.5	15	Performance level 1 ⁴⁾ 09 06 015 2912 ¹⁾		
1 leading contact (position z 32)	14 + 1	09 06 015 2931 ¹⁾		
2 leading contacts (position z 4 + z 32)	13 + 2	09 06 015 2922 ¹⁾		
Male connector with angled solder pins ³⁾	15	Performance level 1 ⁴⁾ 09 06 115 2911 ¹⁾		
1 leading contact (position z 32)	14 + 1	09 06 115 2932 ¹⁾		
2 leading contacts (position z 4 + z 32)	13 + 2	09 06 115 2921 ¹⁾ 09 06 115 2991 ²⁾		
Male connector with straight solder pins	15	Performance level 1 ⁴⁾ 09 06 015 2913 ¹⁾		
1 leading contact (position z 32)	14 + 1	09 06 015 2914 ¹⁾		

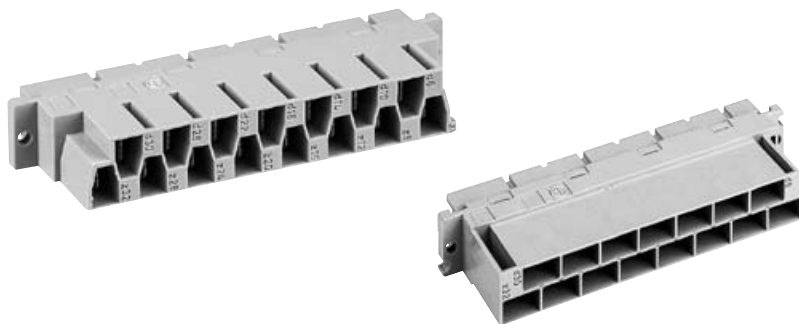
1) Variant with silver plated contacts

2) Variant with gold plated contacts

3) With shroud coding, see also page 03.26

4) Acc. to IEC 60 603-2

15

[illegible]

Number of contacts

15



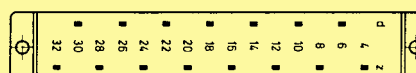
Female connectors

Identification	Number of contacts	Part No.	Drawing	Dimensions in mm
Female connector* with solder pins "low profile" ³⁾		Performance level 1 acc. to IEC 60 603-2		
2.7 mm	15	09 06 215 2812 ¹⁾		
4 mm	15	09 06 215 2821 ¹⁾ 09 06 215 2892 ²⁾		
5.5 mm	15	09 06 215 2890 ²⁾		
7 mm	15	09 06 215 2831 ¹⁾ 09 06 215 2891 ²⁾		
10 mm	15	09 06 215 2841 ¹⁾		
Board drillings Mounting side				

DIN Power
to 15 A

a
2.7
4
5.5
7
10

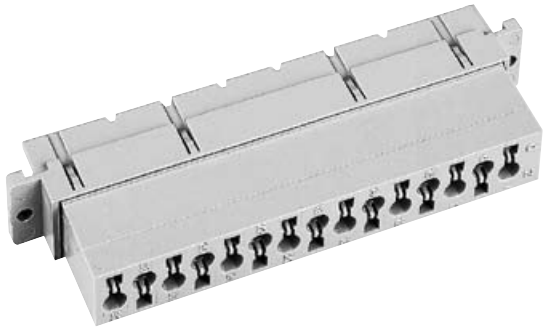
Contact arrangement View from termination side



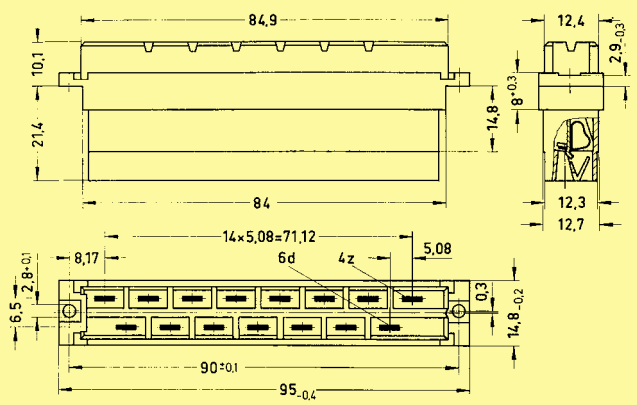
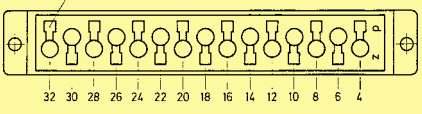
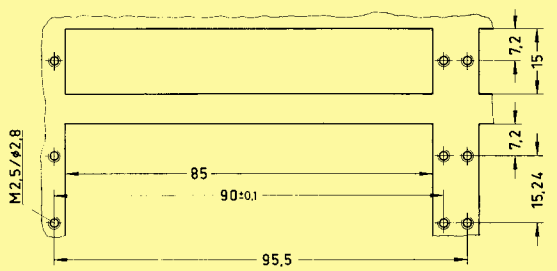
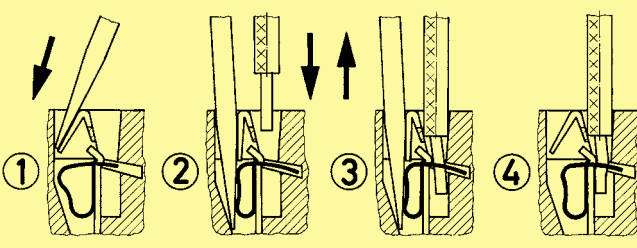
¹⁾ Variant with silver plated contacts
²⁾ Variant with gold plated contacts
³⁾ With shroud coding, see also page 03.26

Number of contacts

15



Female connectors

Identification	Number of contacts	Part No.	Drawing	Dimensions in mm
<div><div><div>DIN Power to 15 A</div></div><div><div>Female connector with cage clamp</div><div>May be used in a shell housing</div></div></div>	15	<div>Performance level 1 acc. to IEC 60 603-2</div> <div>09 06 015 2813</div>	<div><p>Contact arrangement View from termination side</p><p>Slot for screw driver</p></div> <div>Shell housing see chapter 20</div>	
Termination instructions			<div><p>Screw driver width: 2.5 x 0.4 mm Stripping length: 4 - 7 mm Wire gauge: 0.14 - 1.5 mm² (AWG 26 - 16)</p></div>	

3



Identification	Number of contacts	Part No.	Drawing	Dimensions in mm
Male connector with angled solder pins and preleading middle contact	3	Performance level 1 ¹⁾ 09 06 203 2911	<p>The drawing shows three views of the male connector. The top view indicates a width of 30.5 mm and a pitch of 5.08 mm between two rows of contacts. The side view shows a height of 11 mm. The board drilling view shows a 3x array of holes with diameters of 1.6 ± 0.1 mm and 2.8 ± 0.1 mm, and a 2x array of larger holes with diameters of 5.08 mm. It also specifies dimensions for mounting holes and overall board size.</p>	
Female connector with solder pins	3	Performance level 1 ¹⁾ 09 06 203 2811	<p>The drawing shows three views of the female connector. The top view indicates a width of 31.5 mm and a pitch of 5.08 mm. The side view shows a height of 11.6 mm. The board drilling view shows a 3x array of holes with diameters of 1.6 ± 0.1 mm and 2.8 ± 0.1 mm, and a 2x array of larger holes with diameters of 5.08 mm. It also specifies dimensions for mounting holes and overall board size.</p>	

DIN Power to 15 A

ELECTRONIC SECTION

Number of contacts	21, 24
Contact spacing (mm)	
Male connector	2.54 x 5.08
Female connector	5.08
Working current	6 A max. see current carrying capacity chart
Clearance	≥ 1.6 mm
Creepage	≥ 3 mm
Working voltage	according to the safety regulations of the equipment. Explanations see chapter 00
The working voltage also depends on the clearance and creepage dimensions on the pcb itself, and the associated wiring	
Test voltage $U_{r.m.s.}$	1.55 kV
Contact resistance	≤ 15 mΩ wrap, solder termination ≤ 20 mΩ including crimp connection

Electrical termination

Male connector	Solder pins for pcb connection Ø 1 ± 0.1 mm acc. to IEC 60 326-3
Female connector	Wrap posts 1 x 1 mm diagonal 1.34-1.45 mm Solder pins for pcb connection Ø 1 ± 0.1 mm acc. to IEC 60 326-3 Crimp terminal 0.09-1.5 mm ²

Contact surface

Contact zone	Selectively plated according to performance level ¹⁾
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HEAVY DUTY SECTION*

Number of contacts	7
Working current	15 A max. see current carrying capacity chart
Clearance	≥ 4.5 mm
Creepage	≥ 8.0 mm
Working voltage	according to the safety regulations of the equipment. Explanations see chapter 00
The working voltage also depends on the clearance and creepage dimensions on the pcb itself, and the associated wiring	
Test voltage $U_{r.m.s.}$	3.1 kV
Contact resistance	≤ 8 mΩ

Electrical termination

Male and female connector	Connector for faston 6.3 x 2.5 (faston width x wire gauge) acc. to DIN 46 245 and DIN 46 247
Male connector	Solder pins for pcb connection Ø 1.6 ± 0.1 mm acc. to DIN EN 60 097

Contact surface

Contact zone	Hard silver plated
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BOTH PARTS

Insulation resistance	≥ 10 ¹² Ω
Temperature range	– 55 °C ... + 125 °C
The higher temperature limit includes the local ambient and heating effects of the contacts under load	

Insertion and withdrawal force ≤ 85 N

Materials

Mouldings	Thermoplastic resin, glass-fibre filled, UL 94-V0
Contacts	Copper alloy

* only for type MH 24 + 7

¹⁾ Explanation of performance levels see chapter 00

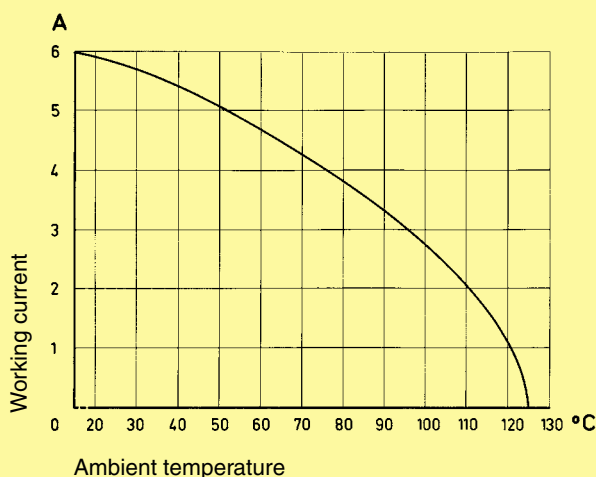
Mating conditions	see chapter 00
Coding systems	see page 03.26

Current carrying capacity

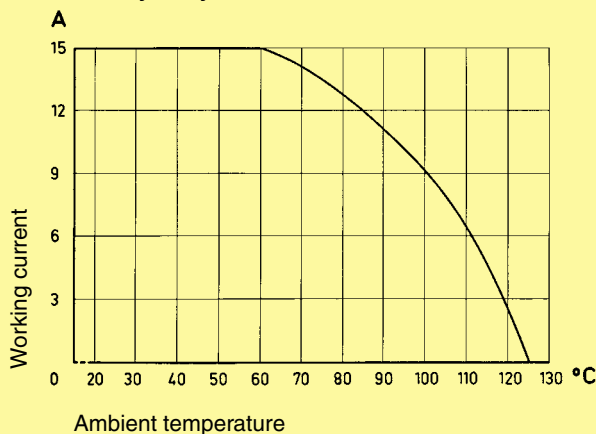
The current carrying capacity is limited by maximum temperature of materials for inserts and contacts including terminals. The current capacity curve is valid for continuous, non interrupted current loaded contacts of connectors when simultaneous power on all contacts is given, without exceeding the maximum temperature.

Control and test procedures according to DIN IEC 60 512

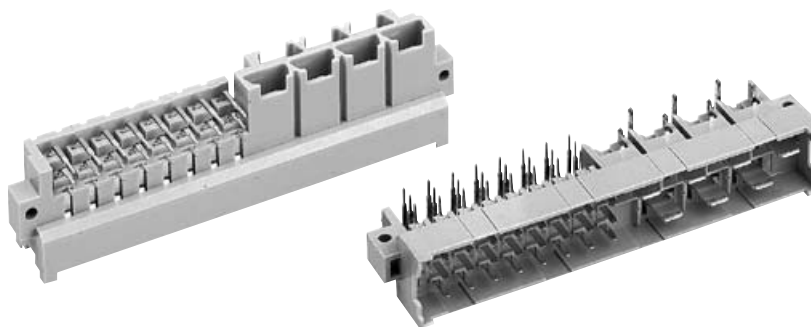
Electronic section



Heavy duty section

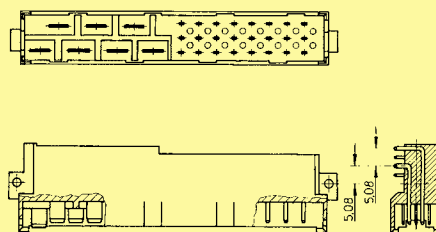
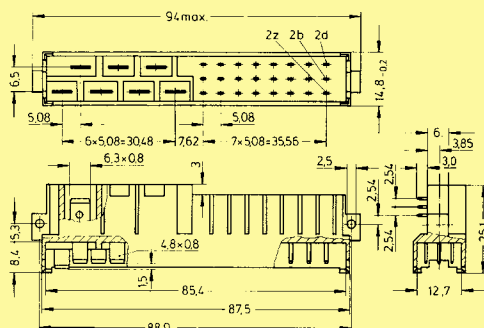




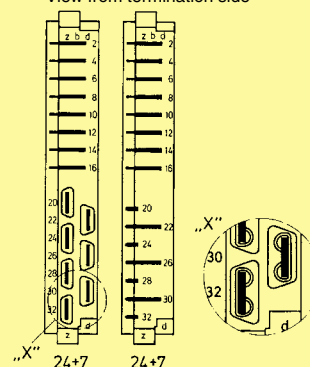
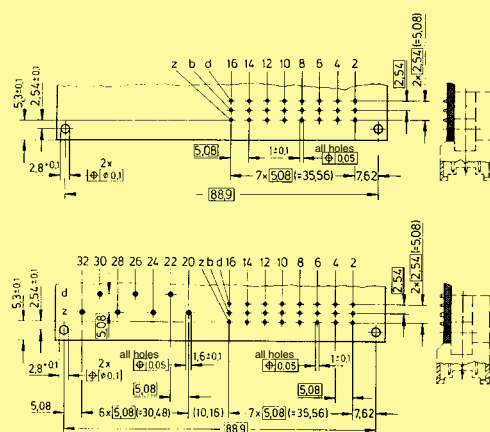
$$\begin{array}{ccc} 24 & + & 7 \\ \text{F} & + & \text{H} \end{array}$$


Identification	Number of contacts	Part No. 3	Performance levels according to IEC 60 603-2. Explanation chapter 00	
			2	1
Male connector for faston 6.3 x 2.5				
1 leading contact (position z 32)	24 + 7		09 06 031 6921	09 06 031 2921
2 leading contacts (position z 2 + z 32)	24 + 7		09 06 031 6923	
Male connector with angled solder pins¹⁾				
1 leading contact (position z 32)	24 + 7		09 06 131 6922	
2 leading contacts (position z 2 + z 32)	24 + 7		09 06 131 6924	

Angled solder pins



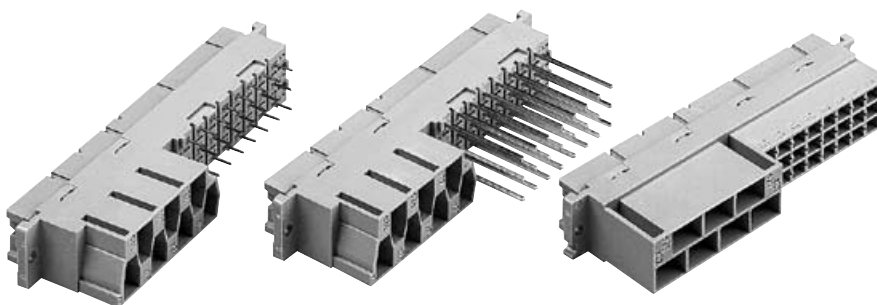
Contact arrangement
View from termination side



Dimensions in mm

Number of contacts

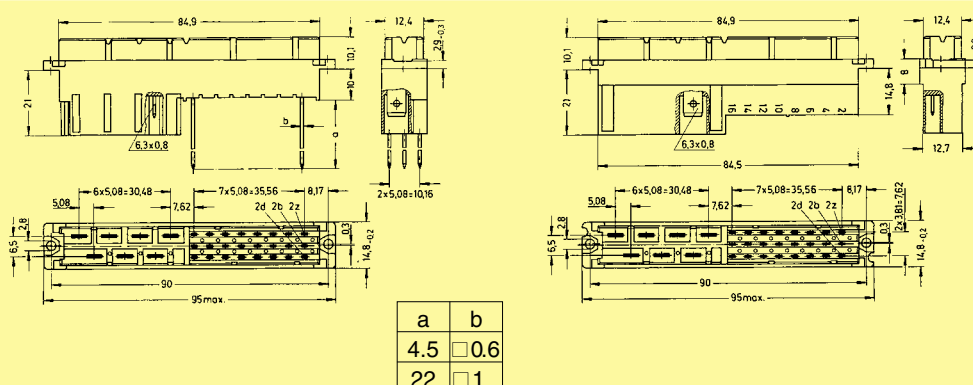
24 + 7
F + H



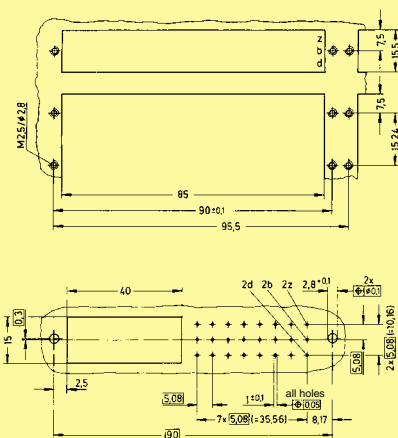
Female connectors

Identification	Number of contacts	Part No. 3	Performance levels according to IEC 60 603-2. Explanation chapter 00 2	1
Female connector with solder pins 4.5 mm ¹⁾	24 + 7		09 06 231 6822	09 06 231 2822
Female connector with wrap posts 1 x 1 mm ¹⁾	24 + 7		09 06 231 6821	09 06 231 2821
Female connector for crimp contacts ¹⁾ Order contacts separately, see chapter 02	24 + 7			09 06 231 2881

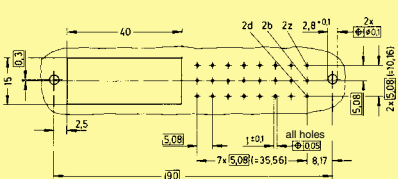
DIN Power to 15 A



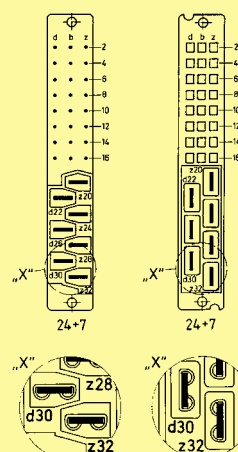
Panel cut out



Board drillings
Mounting side



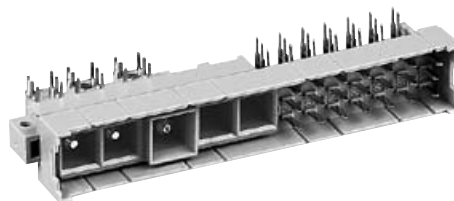
Contact arrangement
View from termination side



Shell housing for female connector with crimp contacts
see chapter 20

Dimensions in mm

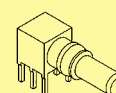
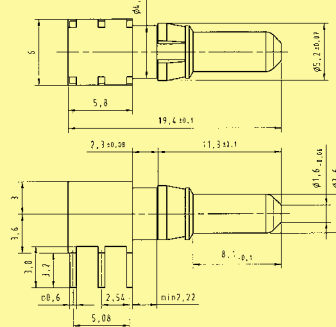
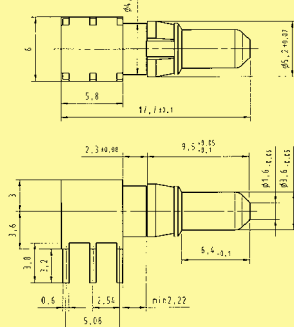
¹⁾ With shroud coding, see also page 03.26

$$\begin{array}{ccc} 21 & + & 5 \\ \text{F} & + & \text{M} \end{array}$$


Identification	Number of contacts	Part No.	Performance levels according to IEC 60 603-2. Explanation chapter 00	
		3	2	1
Male connector with angled solder pins (without special contacts)*	21 + 5	Performance level 3 on request	09 06 121 6981	Performance level 1 on request
High current contact for printed circuit terminations max. 40 A ²⁾ leading contact max. 40 A ²⁾			09 03 000 6127 09 03 000 6128	
Removal tool			09 99 000 0328	

[illegible]

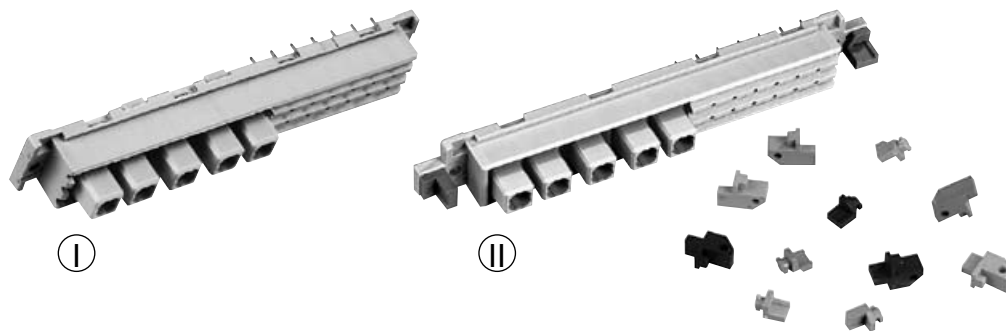
09 03 000 6128



Dimensions in mm

Number of contacts

21 + 5
F + M

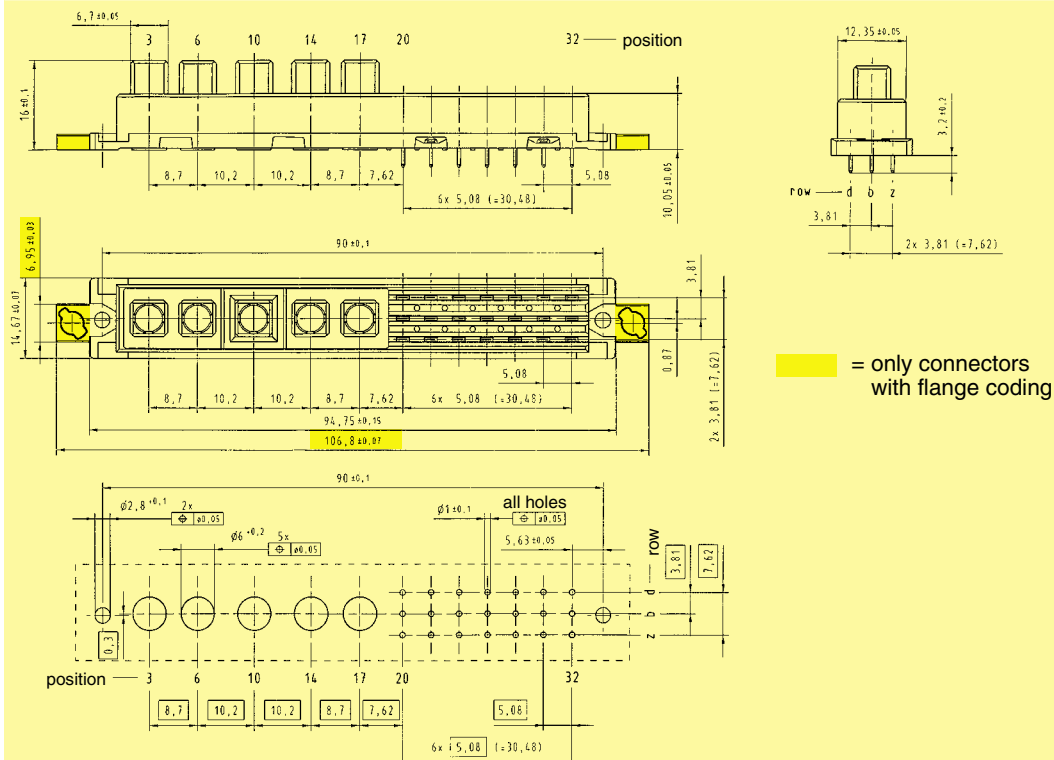


Female connectors

Identification	Number of contacts	Part No. 3	Performance levels according to IEC 60 603-2. Explanation chapter 00 2	1
Female connector with solder pins 3.2 mm (without special contacts)				
without flange coding I	21 + 5	Performance level 3 on request	09 06 221 6883	Performance level 1 on request
with flange coding ¹⁾ II	21 + 5		09 06 721 6883	
High current contact Crimp contacts for printed circuit termination 20 A			09 03 000 6220	

DIN Power
to 15 A

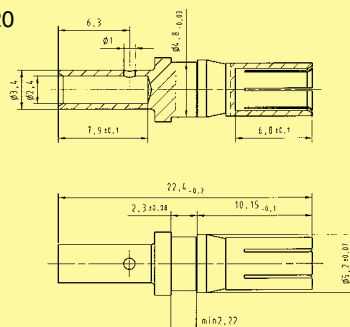
Dimensions



Board drillings
Mounting side

Dimensions

09 03 000 6220



Dimensions in mm

¹⁾ Code keys see page 03.26
Removal tool for contacts is available with part number 09 99 000 0174

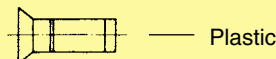
Identification	Part No.	Drawing	Dimensions in mm
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Coding system with contact loss

Code pin
Type MH
09 04 000 9908

Removal tool
for
male contacts
09 99 000 0038

To avoid accidental and incorrect mating 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.



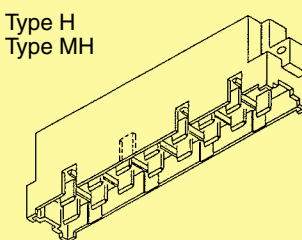
Coding system without contact loss

shroud coding

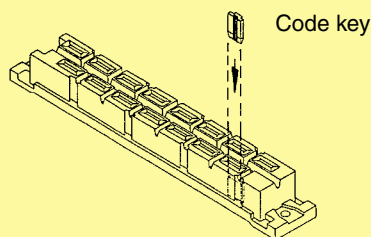
Types H, MH 24 + 7

Code key
09 06 001 9918

Type H
Type MH



Insert the code key 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.



flange coding

Type MH 21 + 5

colour red
blue
green
orange

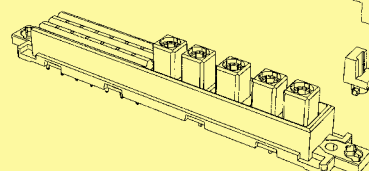
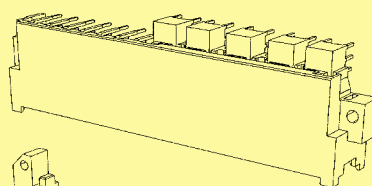
Code keys
for male connectors

09 06 001 9950
09 06 001 9951
09 06 001 9952
09 06 001 9953

for female connectors

colour red
blue
green
orange

09 06 001 9960
09 06 001 9961
09 06 001 9962
09 06 001 9963



can be mounted
with a screwdriver
(max. width 3 mm)

Tool for breaking out
the coding area of the
male shroud

09 99 000 0242

