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

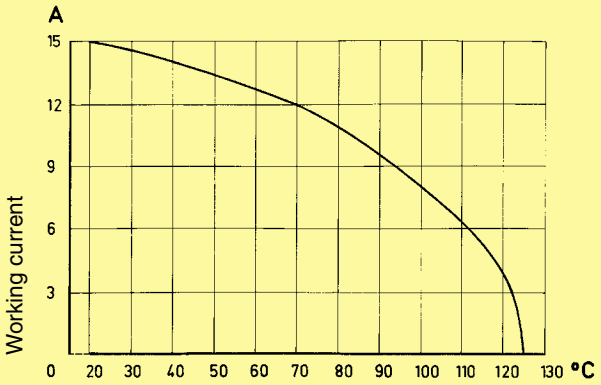
Number of contacts		15 14 + 1 leading contact (position z 32) 13 + 2 leading contacts (position z 4 und z 32) 3
Working current see current carrying capacity chart		15 A max.
Clearance	Type H: Type H 3:	≥ 4.5 mm ≥ 4.0 mm
Creepage	Type H: Type H 3:	≥ 8.0 mm ≥ 3.7 mm
Working voltage The working voltage 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: Type H 3:	≥ 3.1 kV ≥ 2.5 kV
Contact resistance		≤ 8 mΩ
Insulation resistance		≥ 10^{12} Ω
Temperature range The higher temperature limit includes the local ambient and heating effects of the contacts under load		– 55 °C … + 125 °C
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
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 mm²
Insertion and withdrawal force	Type H: Type H 3:	≤ 90 N ≤ 20 N
Materials		
Mouldings		Thermoplastic resin, glass-fibre filled, UL 94-V0
Contacts		Copper alloy
Contact surface		
Contact zone		Hard silver plated or gold plated

Mating conditions see chapter 00
Coding systems see page 03.26

Current carrying capacity

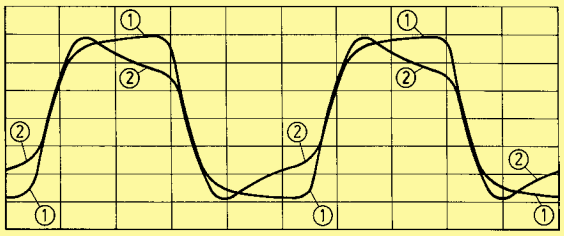
The current carrying capacity is limited by maximum temperature of materials for inserts and contacts including terminals. The current capacity curve is valid for continuous, non interrupted current loaded contacts of connectors when simultaneous power on all contacts is given, without exceeding the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

Control and test procedures according to DIN IEC 60 512



Low currents and voltages

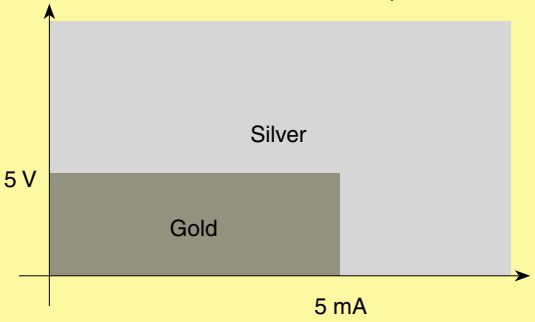
Type H standard contacts have a silver plated surface. This precious metal has excellent conductive properties. In the course of a contact's lifetime, the silver surface generates a black oxide layer due to its affinity to sulphur. This layer is smooth and very thin and is partly interrupted when the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



Changes to the transmitted signal after artifical 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.

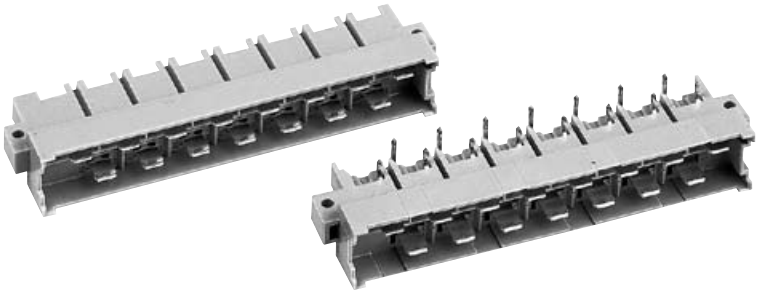
Below is a table derived from actual experiences.



Recommendation

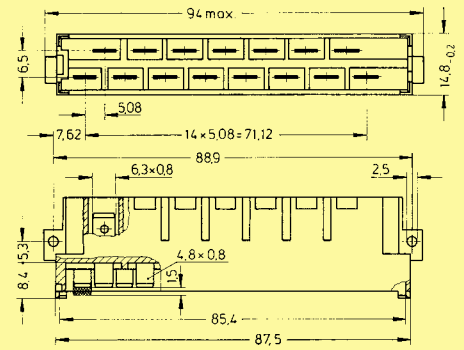
Number of contacts

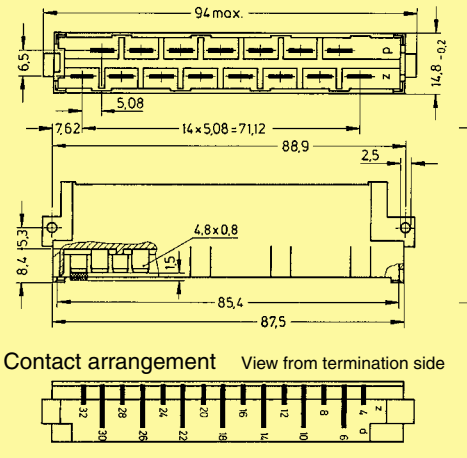
15



Male connectors

Identification	Number of contacts	Part No.	Drawing	Dimensions in mm
Male connector for faston 6.3 x 2.5		Performance level 1[4]		
	15	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]		Performance level 1[4]		
	15	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		Performance level 1[4]		
	15	09 06 015 2913[1]		
1 leading contact (position z 32)	14 + 1	09 06 015 2914[1]		

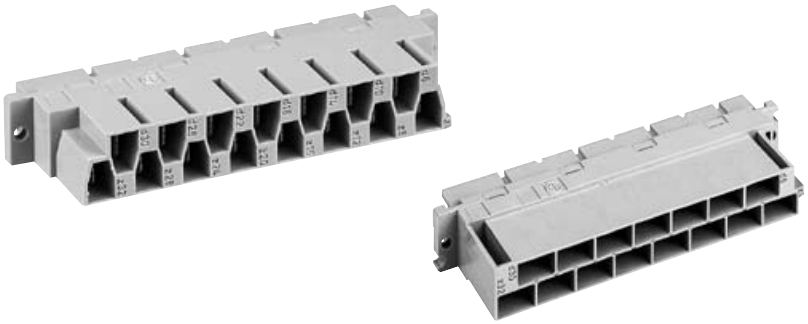




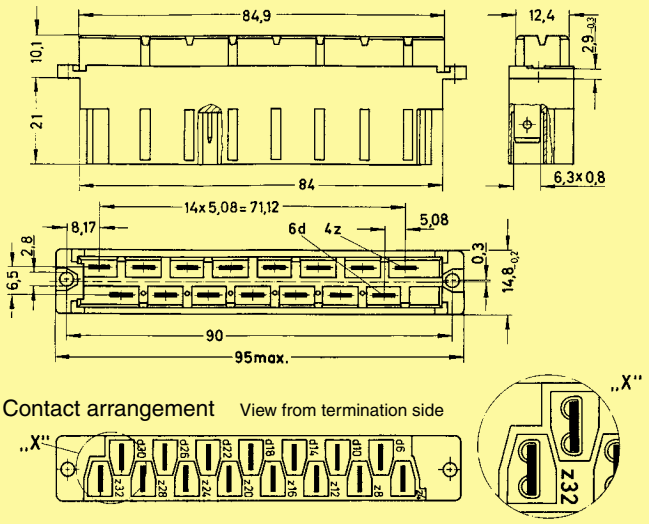
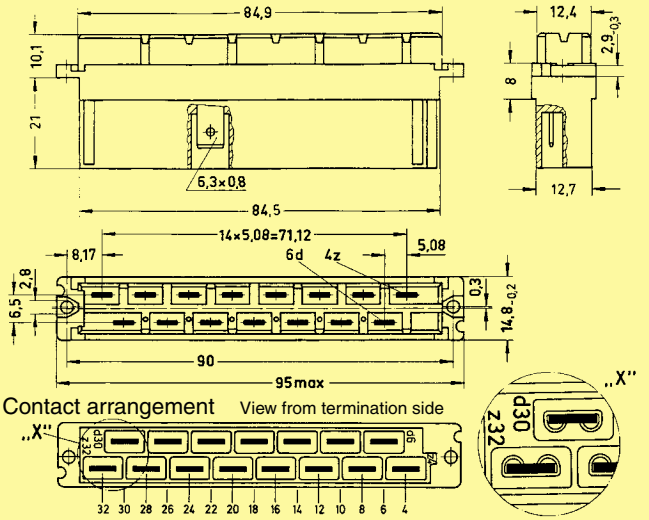
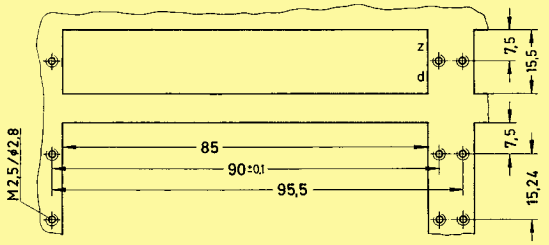
[1] Variant with silver plated contacts
[2] Variant with gold plated contacts
[3] With shroud coding, see also page 03.26
[4] Acc. to IEC 60 603-2

Number of contacts

15



Female connectors

Identification	Number of contacts	Part No.	Drawing	Dimensions in mm
Female connector for faston 6.3 x 2.5[1)] Cannot be used in a shell housing	15	Performance level 1[2)] 09 06 215 2811		
Female connector for faston 6.3 x 2.5[1)] May be used in a shell housing	15	Performance level 1[2)] 09 06 215 2871	 Shell housing see chapter 20	
Panel cut out				

DIN Power to 15 A

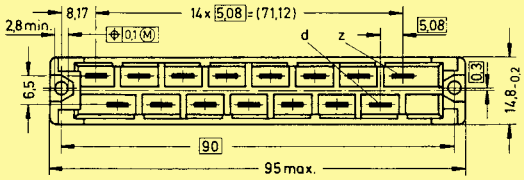
[1)] With shroud coding, see also page 03.26
[2)] Acc. to IEC 60 603-2

Number of contacts

15

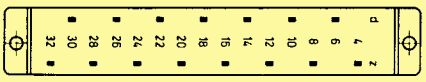
Female connectors

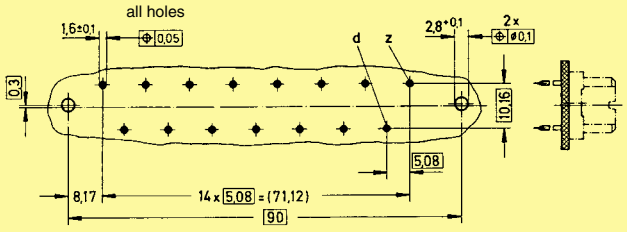
Identification	Number of contacts	Part No.	Drawing	Dimensions in mm
Female connector* with solder pins “low profile“[3]		Performance level 1 acc. to IEC 60 603-2		
2.7 mm	15	09 06 215 2812[1]		
4 mm	15	09 06 215 2821[1] 09 06 215 2892[2]		
5.5 mm	15	09 06 215 2890[2]		
7 mm	15	09 06 215 2831[1] 09 06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



a
2.7
4
5.5
7
10

Contact arrangement View from termination side



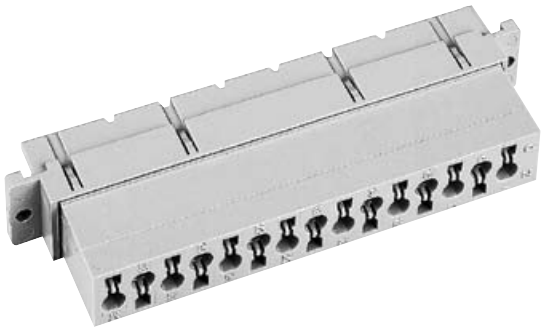


DIN Power to 15 A

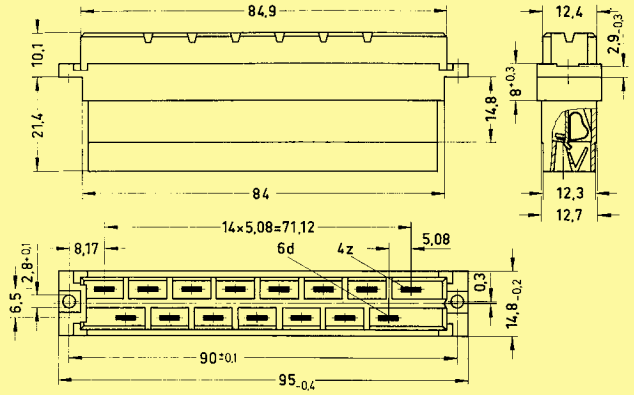
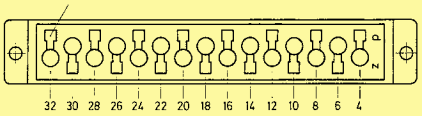
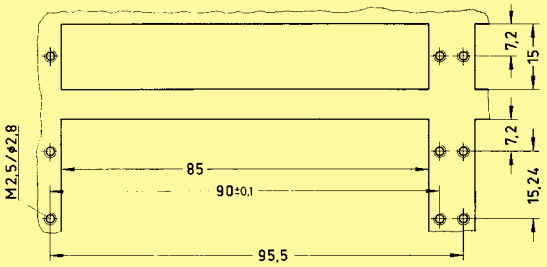
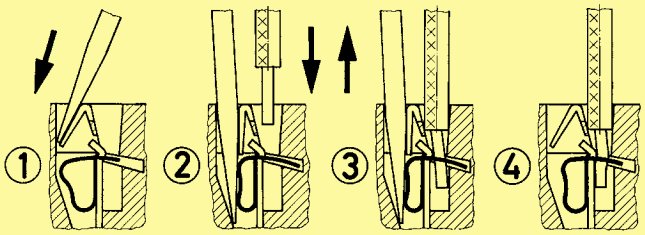
[1] Variant with silver plated contacts
[2] Variant with gold plated contacts
[3] With shroud coding, see also page 03.26

Number of contacts

15

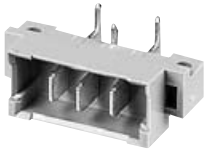


Female connectors

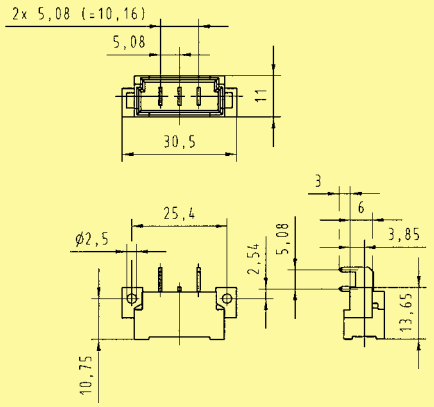
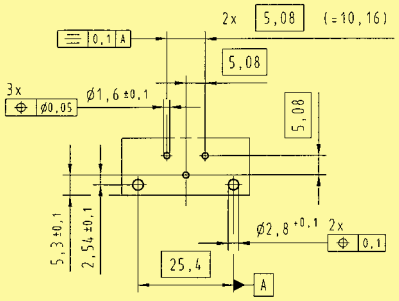
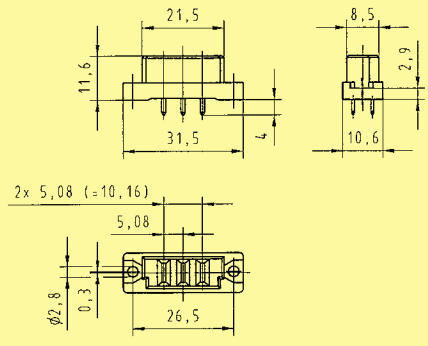
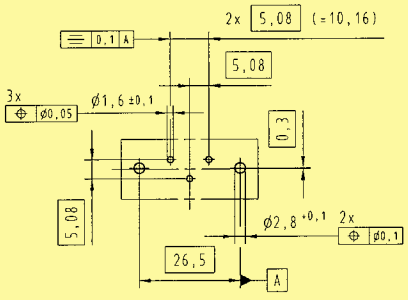
Identification	Number of contacts	Part No.	Drawing	Dimensions in mm
Female connector with cage clamp May be used in a shell housing	15	Performance level 1 acc. to IEC 60 603-2 09 06 015 2813	 Contact arrangement View from termination side Slot for screw driver  Shell housing see chapter 20	
Panel cut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

Number of contacts

3



Male and female connectors

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	 Board drillings 	
Female connector with solder pins	3	Performance level 1[1)] 09 06 203 2811	 Board drillings 	

[1)] Acc. to IEC 60 603-2

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	
The working voltage also depends on the clearance and creepage dimensions on the pcb itself, and the associated wiring	according to the safety regulations of the equipment. Explanations see chapter 00
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 60326-3
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 60326-3 Crimp terminal 0.09-1.5 mm²
Contact surface	
Contact zone	Selectively plated according to performance level[1)]
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	
The working voltage also depends on the clearance and creepage dimensions on the pcb itself, and the associated wiring	according to the safety regulations of the equipment. Explanations see chapter 00
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 46245 and DIN 46247
Male connector	Solder pins for pcb connection Ø 1.6± 0.1 mm acc. to DIN EN 60097
Contact surface	
Contact zone	Hard silver plated
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

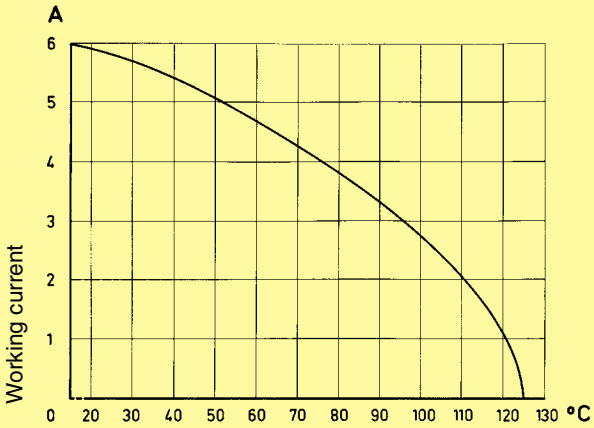
Coding systems see page 03.26

Current carrying capacity

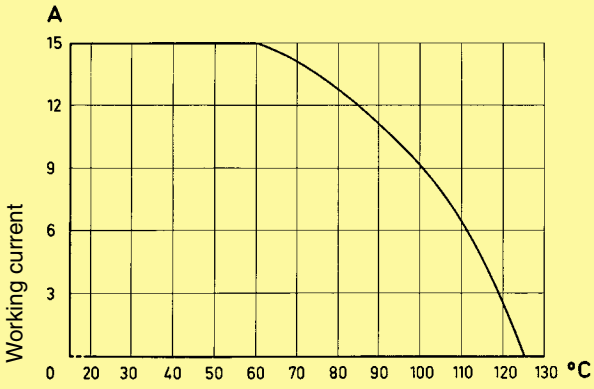
The current carrying capacity is limited by maximum temperature of materials for inserts and contacts including terminals. The current capacity curve is valid for continuous, non interrupted current loaded contacts of connectors when simultaneous power on all contacts is given, without exceeding the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

Control and test procedures according to DIN IEC 60512

Electronic section



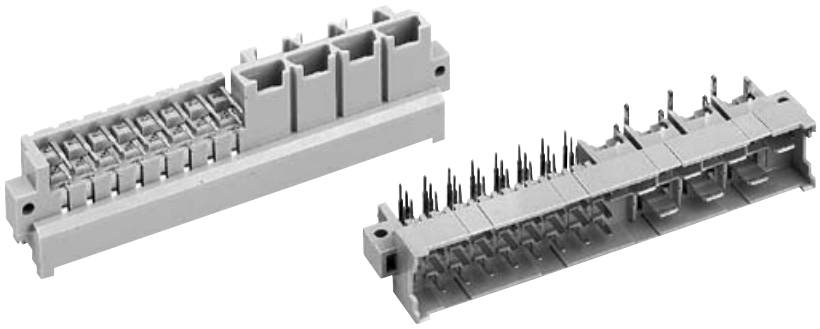
Heavy duty section



Number of contacts

24 + 7

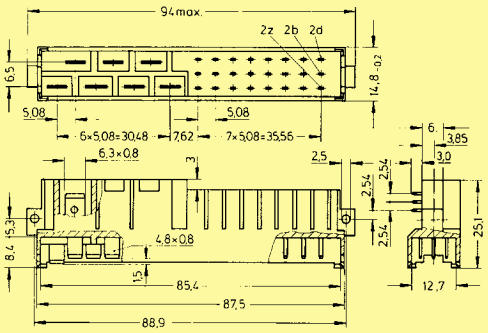
F + H



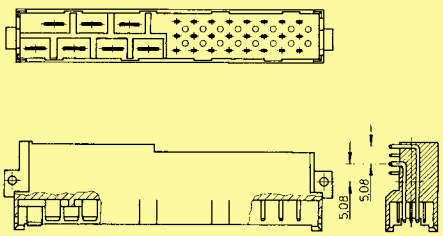
Male connectors

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 pins[1)]				
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	

Faston terminal

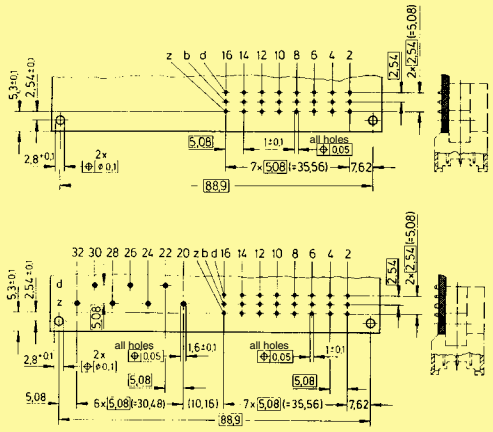


Angled solder pins



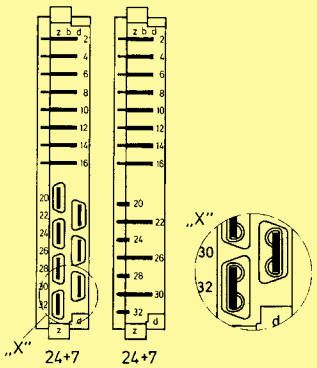
Board drillings

Mounting side



Contact arrangement

View from termination side



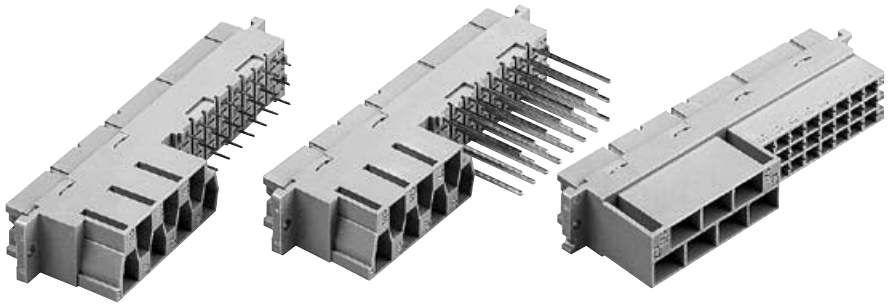
Dimensions in mm

[1)] With shroud coding, see also page 03.26

Number of contacts

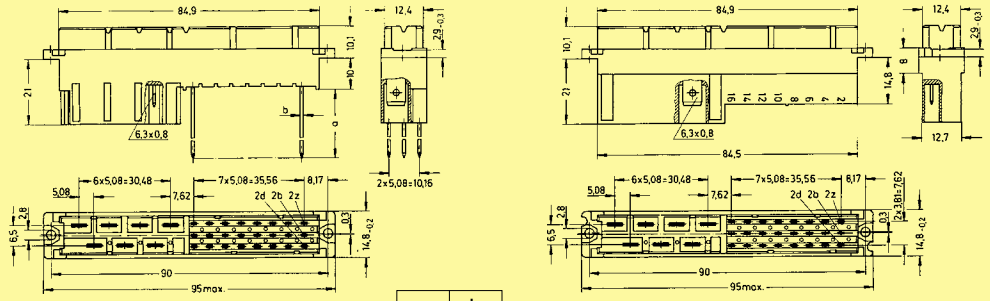
24 + 7

F + H



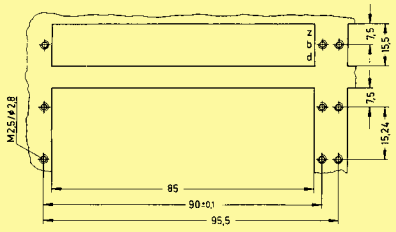
Female connectors

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



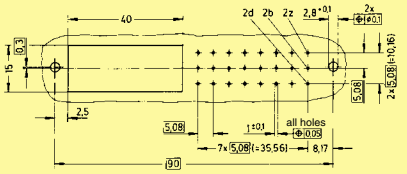
a	b
4.5	□0.6
22	□1

Panel cut out



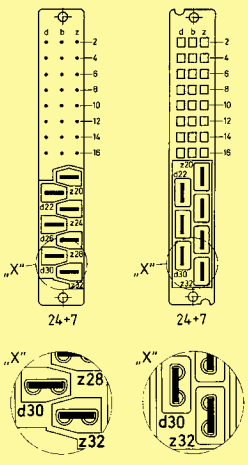
Board drillings

Mounting side



Contact arrangement

View from termination side



Shell housing for female connector with crimp contacts see chapter 20

Dimensions in mm

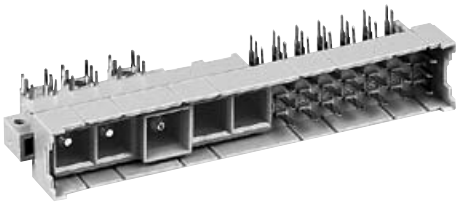
DIN Power to 15 A

[1)] With shroud coding, see also page 03.26

Number of contacts

21 + 5

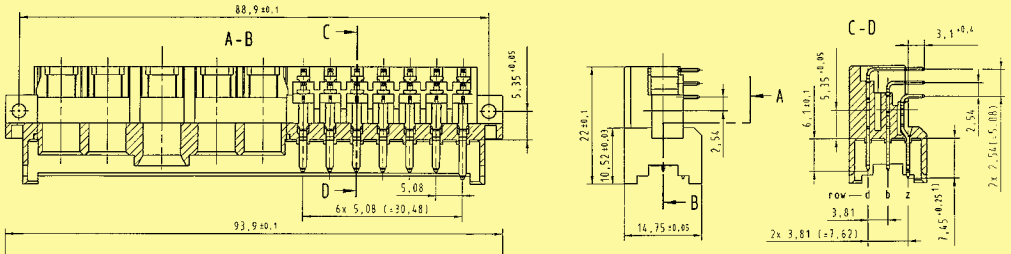
F + M



Male connectors

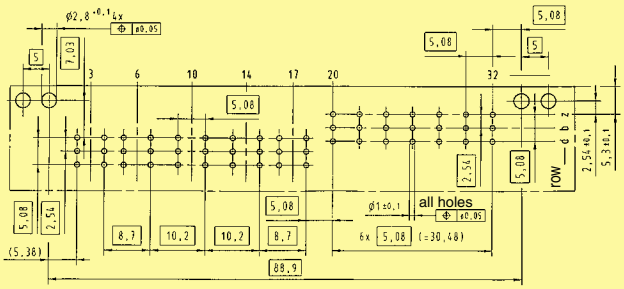
Identification	Number of contacts	Part No. 3	Performance levels according to IEC 60 603-2. Explanation chapter 00 2	1
Male connector with angled solder pins (without special contacts)*	21 + 5	Performance level 3 on request	09 06 121 6981	Performance level 1 on request
High current contact for printed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

Dimensions



Board drillings

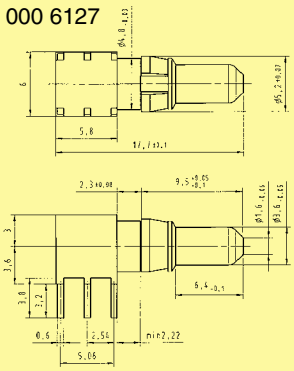
Mounting side



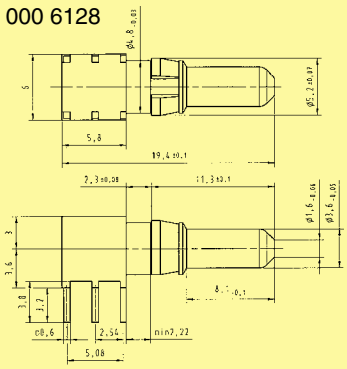
[1] Leading contact in position z 32

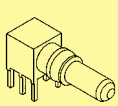
Dimensions

09 03 000 6127



09 03 000 6128





Dimensions in mm

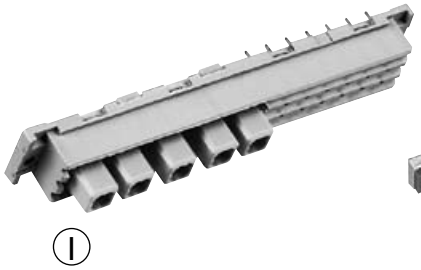
* Pre-loaded with special contacts on request
Code keys see page 03.26

[2] Depending on the pcb design

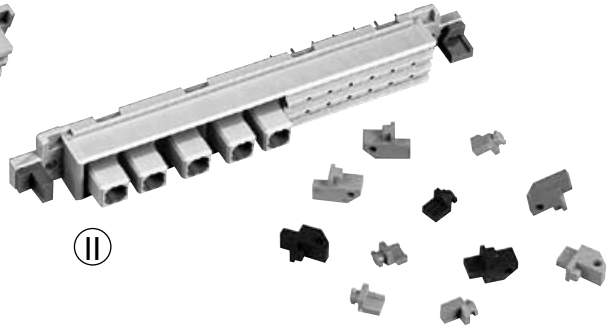
Number of contacts

21 + 5

F + M



Ⅰ



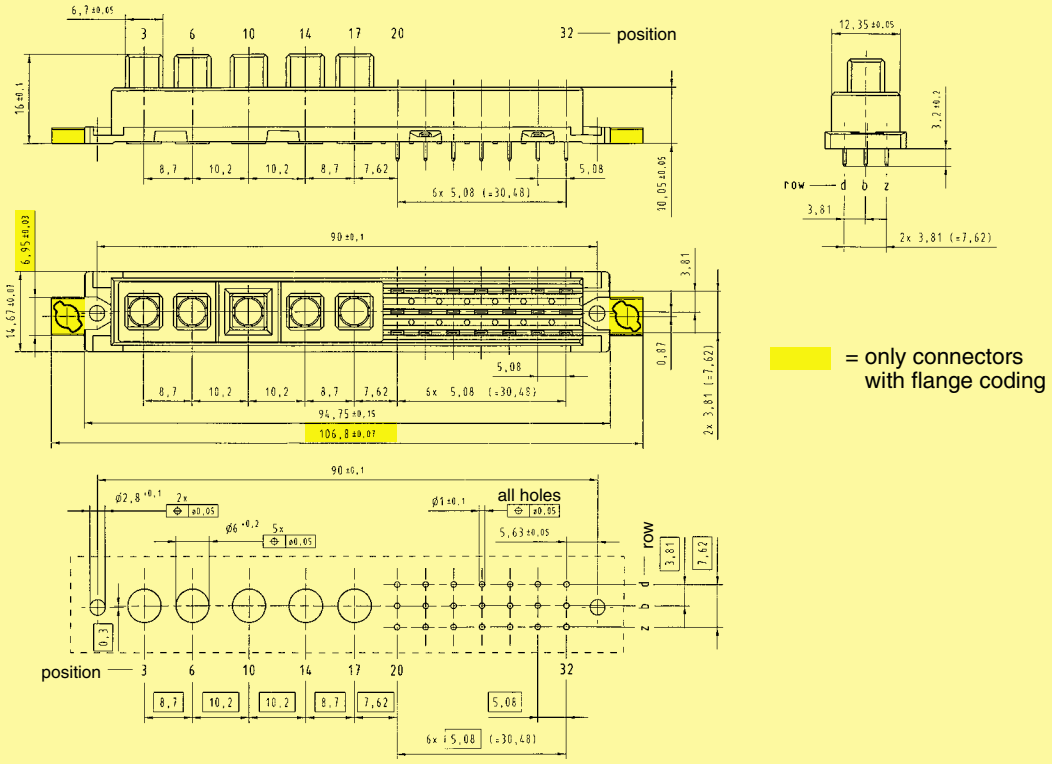
Ⅱ

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

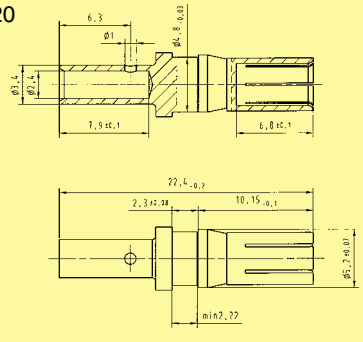


Board drillings

Mounting side

Dimensions

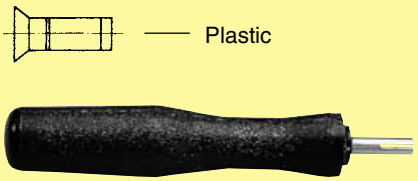
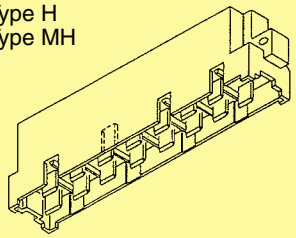
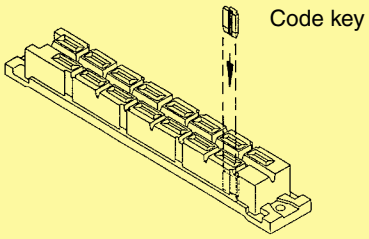
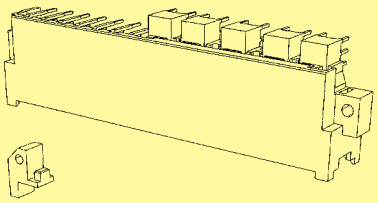
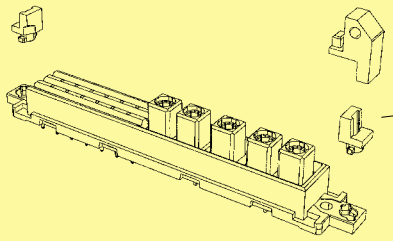
09 03 000 6220



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
Coding system with contact loss	Code pin Type MH 09 04 000 9908	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. 	
	Removal tool for male contacts 09 99 000 0038		
Coding system without contact loss		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.
shroud coding Types H, MH 24 + 7	Code key 09 06 001 9918		
flange coding Type MH 21 + 5	Code keys for male connectors		
colour red blue green orange	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		
Tool for breaking out the coding area of the male shroud	09 99 000 0242