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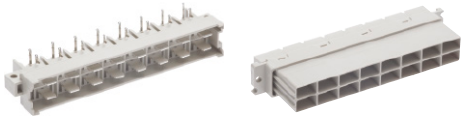
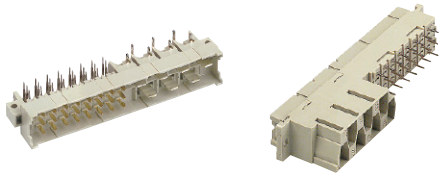
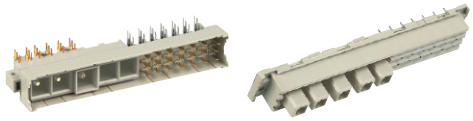
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Types H, H15, H16, H3, MH 24 + 7, MH 21 + 5

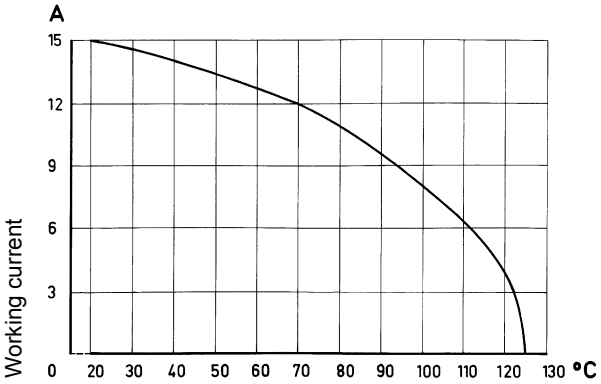
	Page
Technical characteristics type H	04.10
Type H15 connectors 	04.11
Type H16 connectors 	04.16
Type H3 connectors 	04.17
Technical characteristics type MH	04.20
Type MH 24 + 7 connectors 	04.21
Type MH 21 + 5 connectors 	04.23

Number of contacts		15, 16 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 H15: Type H3:	≥ 4.5 mm ≥ 4.0 mm
Creepage	Type H15: Type H3:	≥ 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 H15: Type H3:	≥ 3.1 kV ≥ 2.5 kV
Contact resistance		≤ 8 mΩ
Insulation resistance		≥ 10^{12} Ω for standard articles ≥ 10^{11} Ω for special NFF articles (with part-no. ending 222)
Temperature range The higher temperature limit includes the local ambient and heating effects of the contacts under load		– 55 °C … + 125 °C
Electrical termination		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 Cage clamp terminal 0.14-1.5 mm²
Insertion and withdrawal force	Type H15: Type H3:	≤ 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 chapter 00	

Current carrying capacity

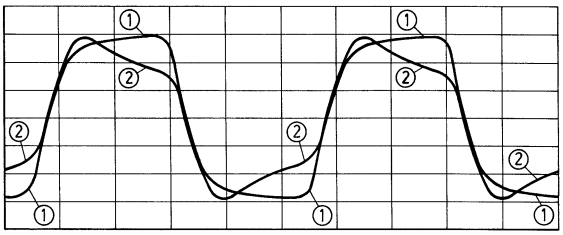
The current carrying capacity is limited by maximum temperature of materials for inserts and contacts including terminals. The current capacity curve is valid for continuous, non interrupted current loaded contacts of connectors when simultaneous power on all contacts is given, without exceeding the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

Control and test procedures according to DIN IEC 60 512



Low currents and voltages

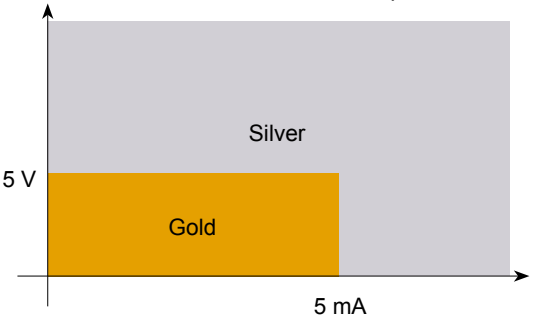
Type H standard contacts have a silver plated surface. This precious metal has excellent conductive properties. In the course of a contact's lifetime, the silver surface generates a black oxide layer due to its affinity to sulphur. This layer is smooth and very thin and is partly interrupted when the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

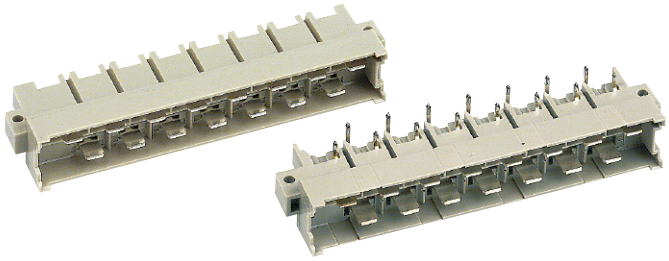
Below is a table derived from actual experiences.



Recommendation

Number of contacts

15



Male connectors

Identification	No. of contacts	Part number	Drawing	Dimensions in mm
Male connector for faston 6.3 x 2.5		Performance level 1 acc. to IEC 60603-2		
	15	09 06 015 2912[1)f)]		
1 leading contact (position z 32)	14 + 1	09 06 015 2931[1)f)]		
2 leading contacts (position z 4 + z 32)	13 + 2	09 06 015 2922[1)f)]		
Male connector with angled solder pins[3)]				
	15	09 06 115 2911[1)] 09 06 115 2911 222[1)f)]		
1 leading contact (position z 32)	14 + 1	09 06 115 2932[1)] 09 06 115 2932 222[1)f)]		
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	09 06 015 2913[1)f)]		
1 leading contact (position z 32)	14 + 1	09 06 015 2914[1)f)]		

Other contact arrangements on request

[1)] Variant with silver plated contacts

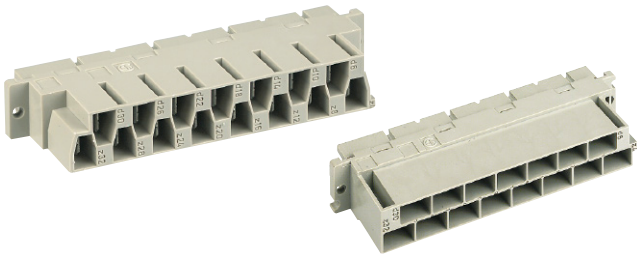
[2)] Variant with gold plated contacts

[3)] With shroud coding, see chapter 00

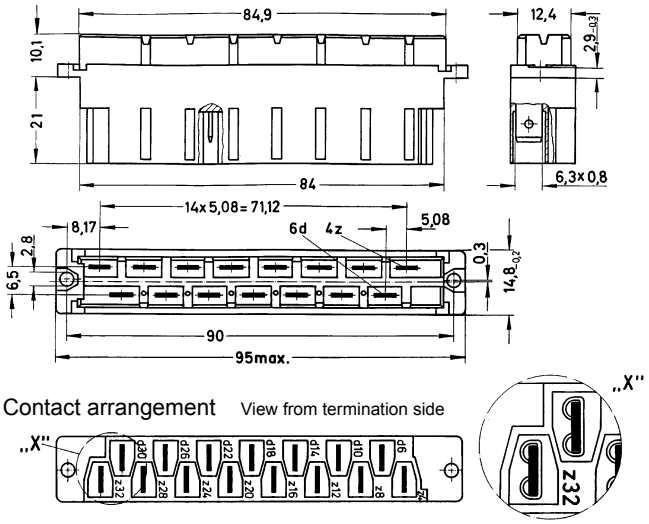
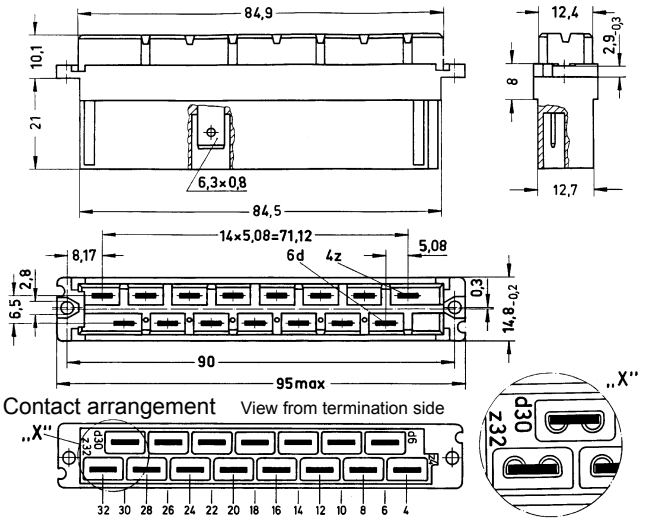
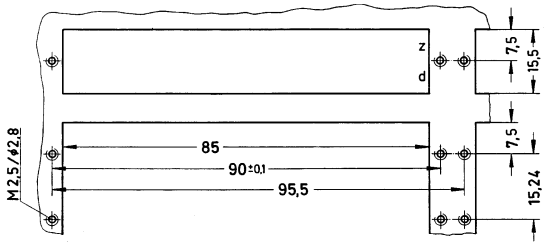
[f)] Railway classification NFF 16-101, Smoke index: F1, Flammability class: I2

Number of contacts

15



Female connectors

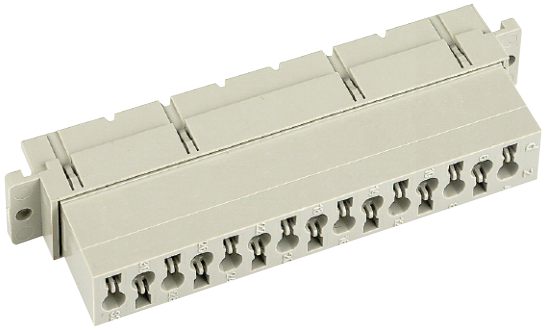
Identification	No. of contacts	Part number	Drawing	Dimensions in mm
Female connector for faston 6.3 x 2.5[1)] Cannot be used in a shell housing	15	Performance level 1 acc. to IEC 60603-2 09 06 215 2811		
Female connector for faston 6.3 x 2.5[1)] May be used in a shell housing	15 15	09 06 215 2871 09 06 215 2871 222[f)]	 Shell housing see chapter 20	
Panel cut out				

DIN Power up to 15 A

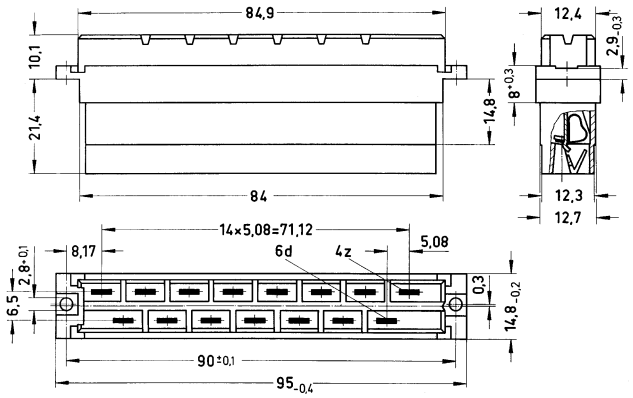
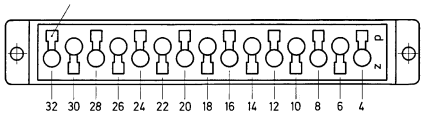
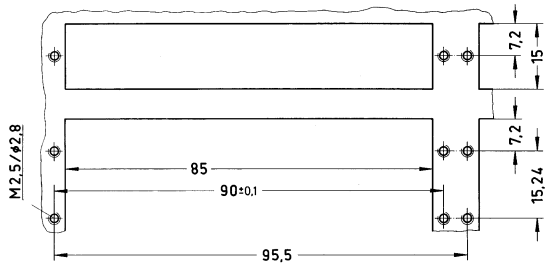
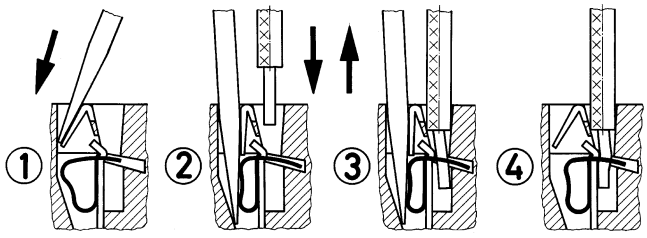
[1)] With shroud coding, see chapter 00
[f)] Railway classification NFF 16-101, Smoke index: F1, Flammability class: I2

Number of contacts

15



Female connectors

Identification	No. of contacts	Part number	Drawing	Dimensions in mm
Female connector with cage clamp May be used in a shell housing	15	Performance level 1 acc. to IEC 60603-2 09 06 015 2813[f]	 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 - 10 mm Wire gauge: 0.14 - 1.5 mm² (AWG 26 - 16)	

[f] Railway classification NFF 16-101, Smoke index: F1, Flammability class: I2

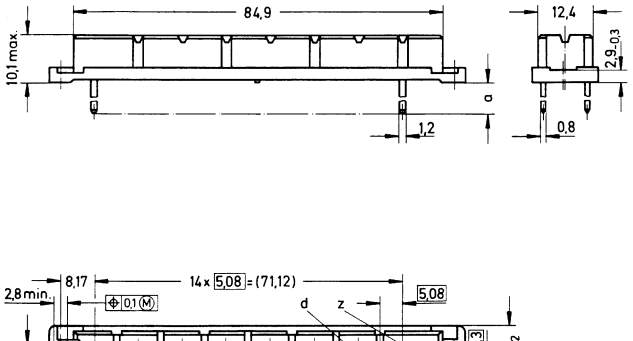
Number of contacts

15



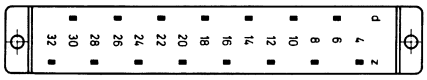
Female connectors

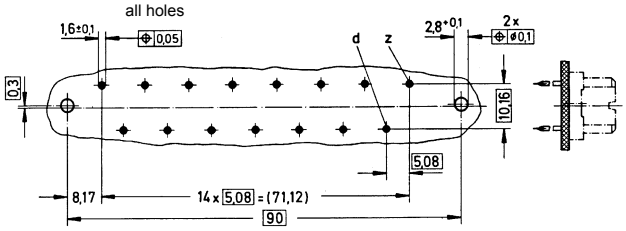
Identification	No. of contacts	Part number	Drawing	Dimensions in mm
Female connector “low profile“ with solder pins[3]		Performance level 1 acc. to IEC 60 603-2		
2.7 mm	15	09 06 215 2812[1]		
4 mm	15	09 06 215 2821[1] 09 06 215 2821 222[1)f)] 09 06 215 2892[2] 09 06 215 2892 222[2)f)]		
5.5 mm	15	09 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





[1)] Variant with silver plated contacts
[2)] Variant with gold plated contacts
[3)] With shroud coding, see chapter 00

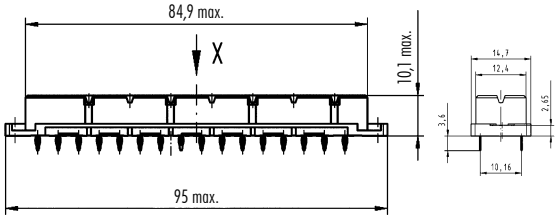
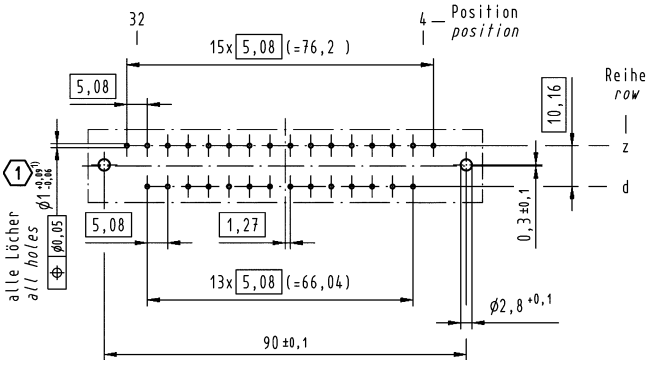
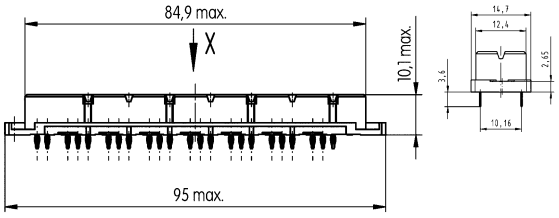
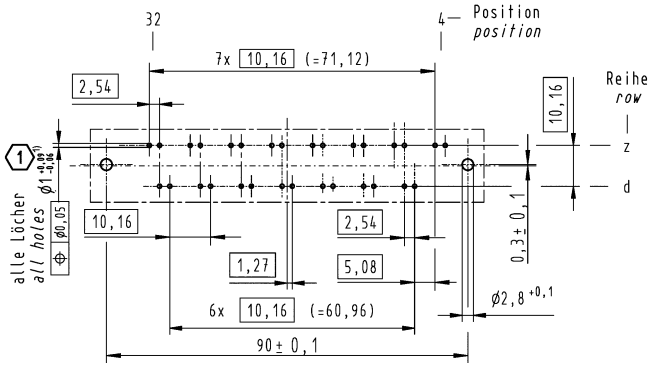
[f)] Railway classification NFF 16-101, Smoke index: F1, Flammability class: I2

Number of contacts

15



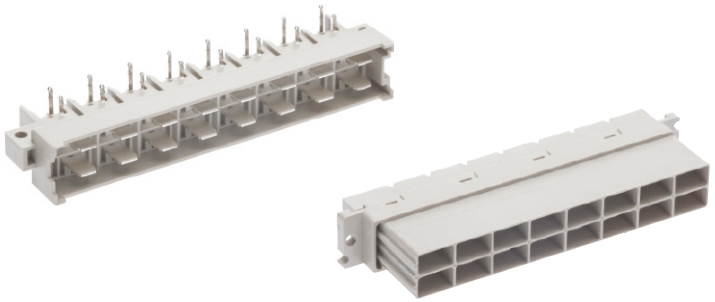
Female connectors

Identification	No. of contacts	Part number	Drawing	Dimensions in mm
Female connector “low profile“ with press-in pins 3.6 mm		Performance level 1 acc. to IEC 60603-2		
Contact space termination side 5.08 mm	15	09 06 215 2854 09 06 215 2854 222[f)]	Board drillings Mounting side 	
Contact space termination side 2.54 mm	15	09 06 215 2856 09 06 215 2856 222[f)]		
			Board drillings Mounting side 	

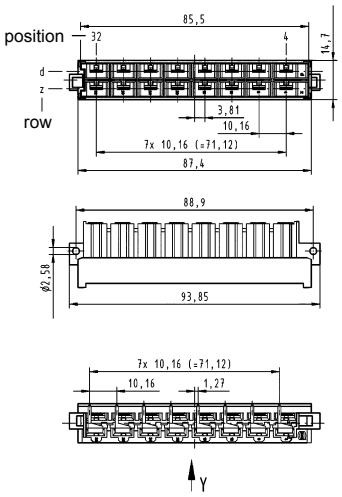
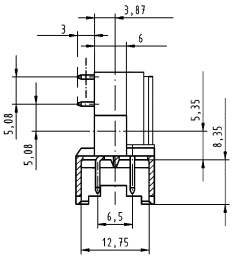
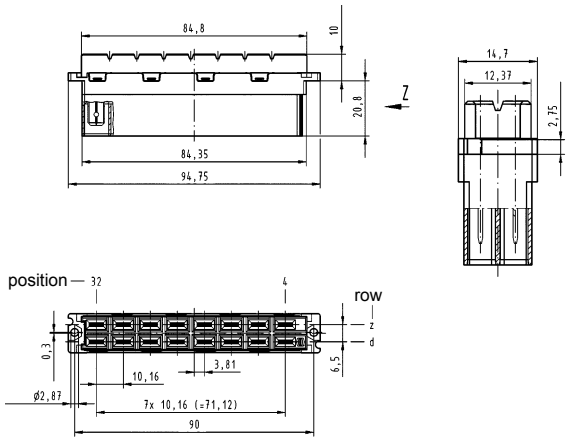
[1)] Refer to recommended configuration of pcb holes, see page 00.25
[f)] Railway classification NFF 16-101, Smoke index: F1, Flammability class: I2

Number of contacts

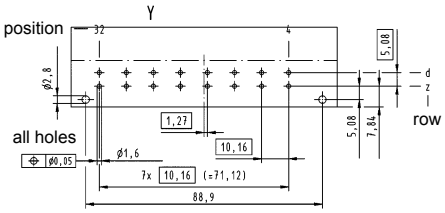
16



Male connectors

Identification	No. of contacts	Part number	Drawing	Dimensions in mm
Male connector with angled solder pins		Performance level 1 acc. to IEC 60603-2		
	16	09 06 116 2511		
	16	09 06 316 2511[b)]		
Female connector for faston 6.3 x 2.5	16	09 06 216 2411		

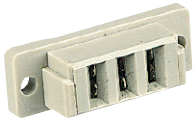
Board drillings

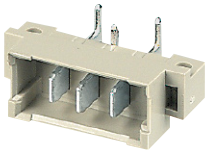


b) Connectors with snap-in clips see chapter 00

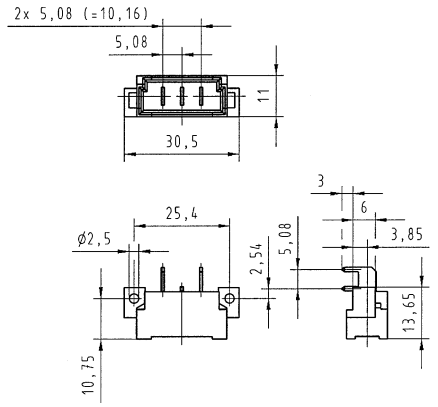
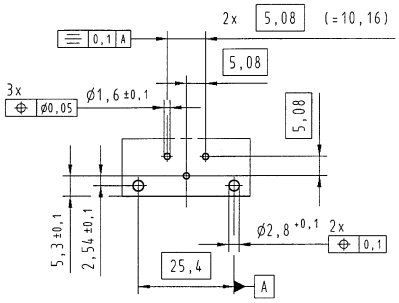
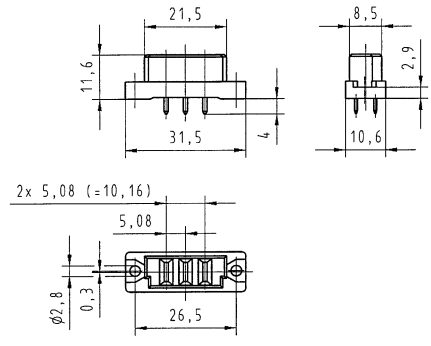
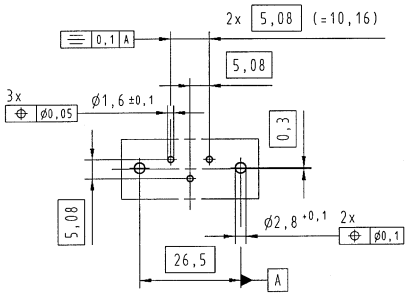
Number of contacts

3





Male and female connectors

Identification	No. of contacts	Part number	Drawing	Dimensions in mm
Male connector with angled solder pins and preleading middle contact	3	Performance level 1 acc. to IEC 60603-2 09 06 203 2911	 Board drillings 	
Female connector with solder pins	3	09 06 203 2811	 Board drillings 	

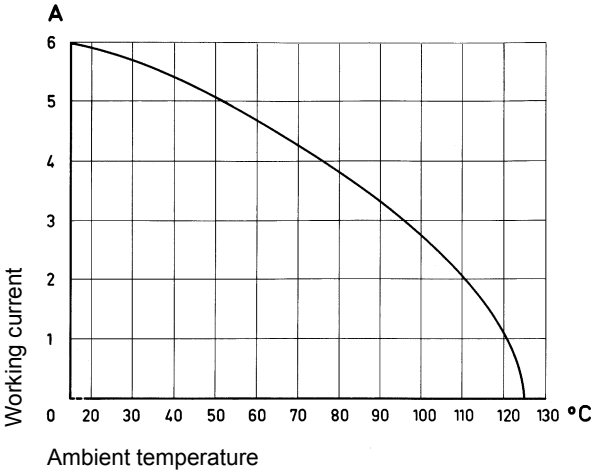
ELECTRONIC SECTION	
Number of contacts	21, 24 + 7
Contact spacing (mm)	
Male connector	2.54 x 5.08
Female connector	5.08
Working current	6 A max.
see current carrying capacity chart	
Clearance	≥ 1.6 mm
Creepage	≥ 3 mm
Working voltage	
The working voltage also depends on the clearance and creepage dimensions 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	Solder pins for pcb connection Ø 1 ± 0.1 mm acc. to IEC 60 326-3 Wrap posts 1 x 1 mm diagonal 1.34-1.45 mm 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	Connector for faston 6.3 x 2.5 (faston width x wire gauge) acc. to DIN 46 245 and DIN 46 247 Solder pins for pcb connection Ø 1.6± 0.1 mm acc. to DIN EN 60 097
Contact surface	
Contact zone	Hard silver plated
BOTH PARTS	
Insulation resistance	≥ 10^{12} Ω for standard articles ≥ 10^{11} Ω for special NFF articles (with part-no. ending 222)
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

Current carrying capacity

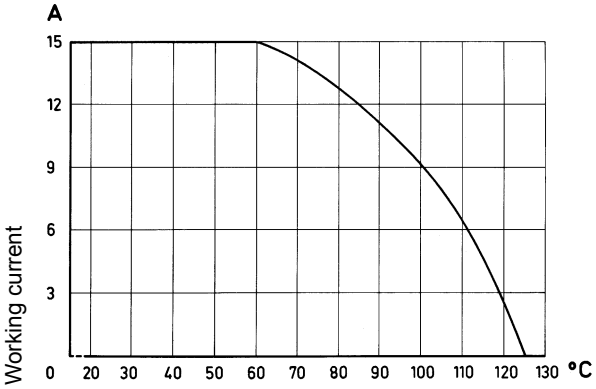
The current carrying capacity is limited by maximum temperature of materials for inserts and contacts including terminals. The current capacity curve is valid for continuous, non interrupted current loaded contacts of connectors when simultaneous power on all contacts is given, without exceeding the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

Control and test procedures according to DIN IEC 60 512

Electronic section



Heavy duty section



* only for type MH 24 + 7

[1)] Explanation of performance levels see chapter 00

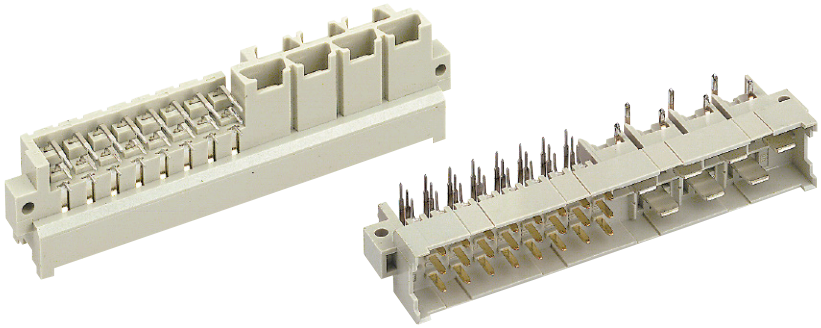
Mating conditions see chapter 00
Coding systems see chapter 00

DIN Power up to 15 A

Number of contacts

24 + 7

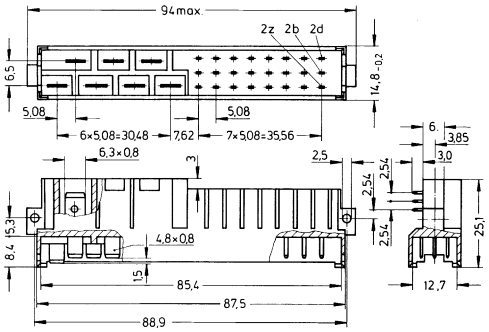
F + H



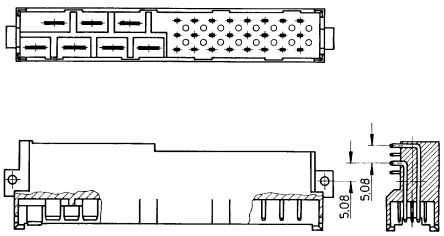
Male connectors

Identification	No. of of contacts	Part number 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[f)]	09 06 031 2921[f)]
2 leading contacts (position z 2 + z 32)	24 + 7		09 06 031 6923[f)]	
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 09 06 331 6924[b)]	

Faston terminal

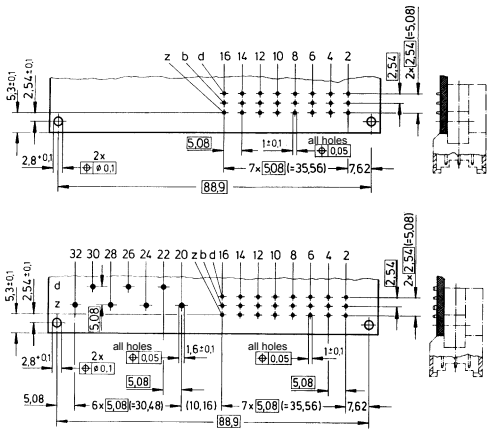


Angled solder pins



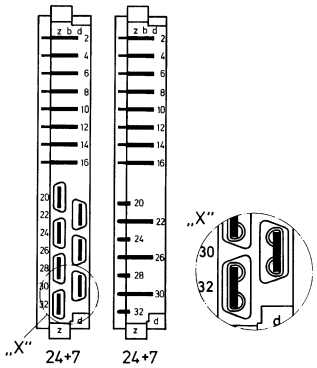
Board drillings

Mounting side



Contact arrangement

View from termination side



Dimensions in mm

[1)] With shroud coding, see chapter 00

[b)] Connector with fixing clip see chapter 00

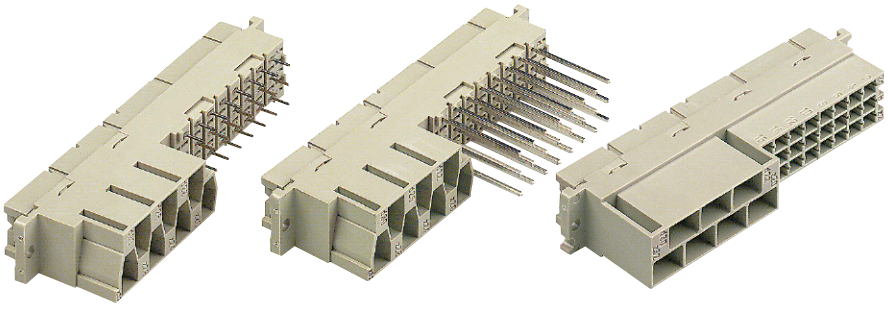
[f)] Railway classification NFF 16-101, Smoke index: F1, Flammability class: I2

Number of contacts

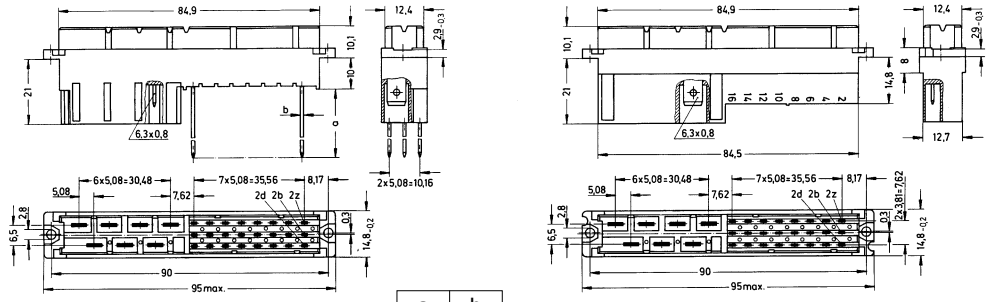
24 + 7

F + H

Female connectors

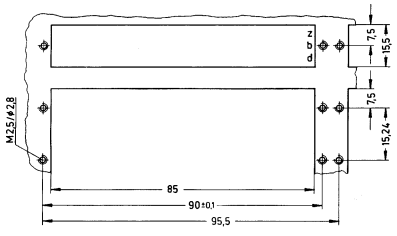


Identification	No. of of contacts	Part number 3	Performance levels according to IEC 60 603-2. Explanation chapter 00 2	1
Female connector with solder pins 4.5 mm[1)]	24 + 7		09 06 231 6822	09 06 231 2822
Female connector with wrap posts 1 x 1 mm[1)]	24 + 7		09 06 231 6821	09 06 231 2821
Female connector for crimp contacts[1)] Order contacts separately, see chapter 03	24 + 7			09 06 231 2881 09 06 231 2881 222[f)]



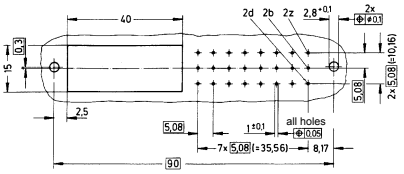
a	b
4.5	□0.6
22	□1

Panel cut out



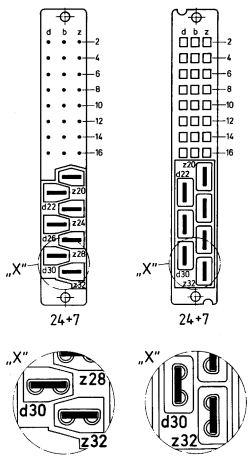
Board drillings

Mounting side



Contact arrangement

View from termination side



Shell housing for female connector with crimp contacts see chapter 20

Dimensions in mm

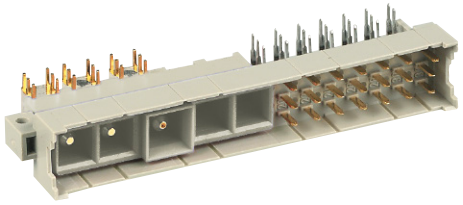
[1)] With shroud coding, see chapter 00

[f)] Railway classification NFF 16-101, Smoke index: F1, Flammability class: I2

Number of contacts

21 + 5

F + M



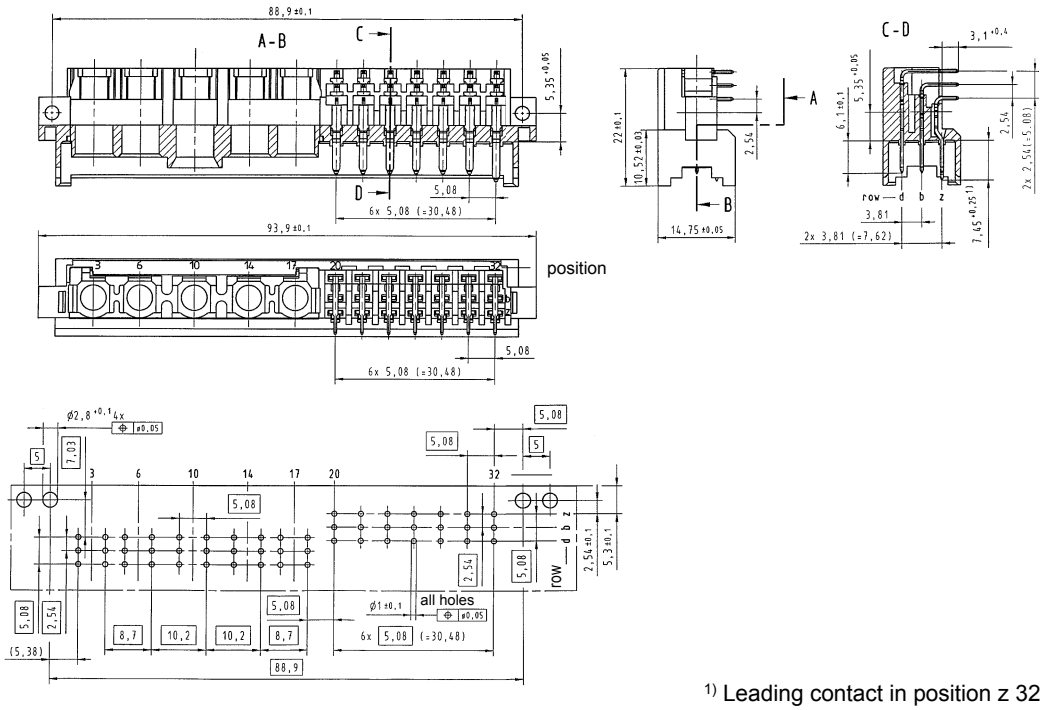
Male connectors

Identification	No. of contacts	Part number 3	Performance levels according to IEC 60603-2. 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

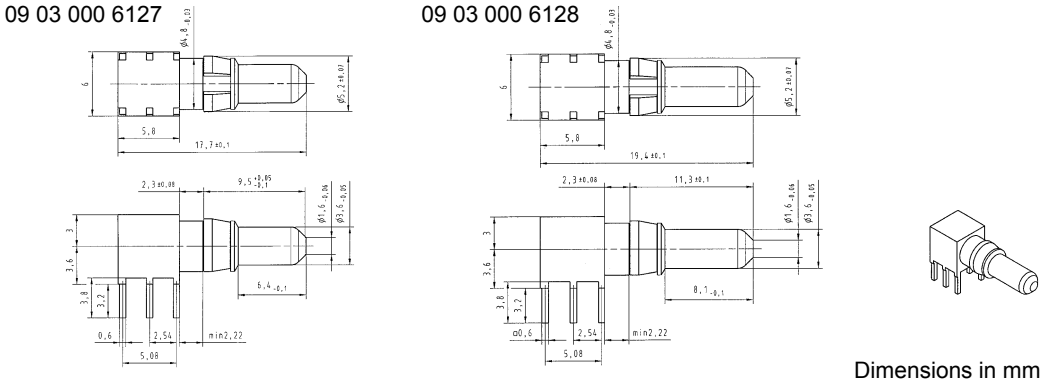


[1)] Leading contact in position z 32

Dimensions

09 03 000 6127

09 03 000 6128



Dimensions in mm

* Pre-loaded with special contacts on request
Code keys see chapter 00

[2)] Depending on the pcb design

Further special contacts see chapter 01

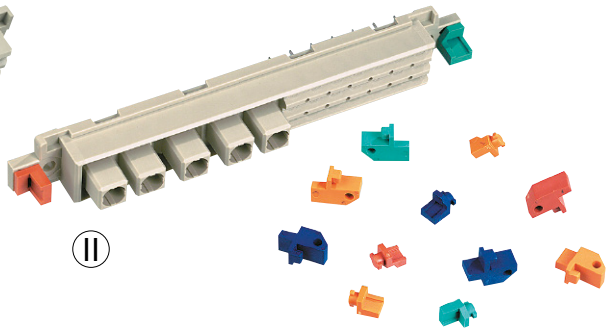
Number of contacts

21 + 5

F + M



Ⅰ

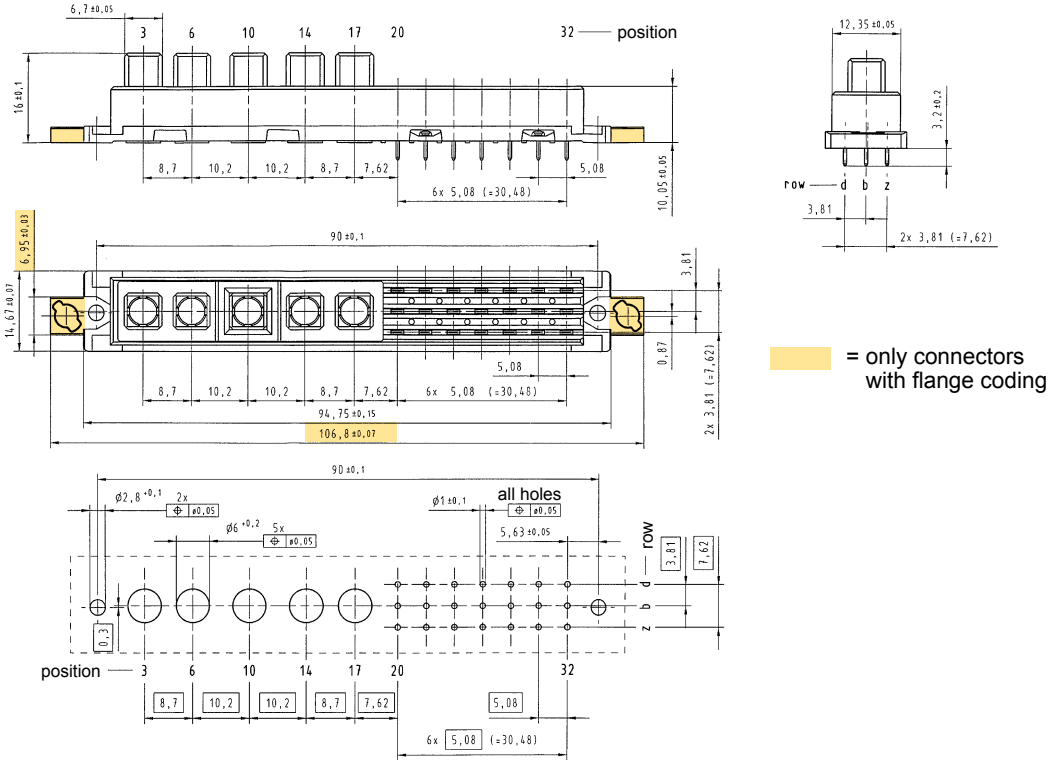


Ⅱ

Female connectors

Identification	No. of of contacts	Part number 3	Performance levels according to IEC 60603-2. 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	

Dimensions

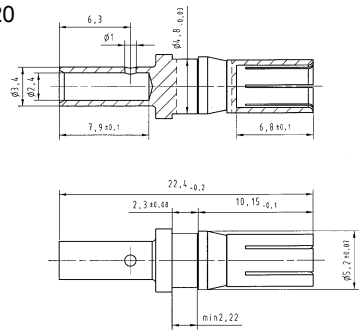


Board drillings

Mounting side

Dimensions

09 03 000 6220



Dimensions in mm

[1] Code keys see chapter 00

Removal tool for contacts is available with part number 09 99 000 0174

Further special contacts see chapter 01

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