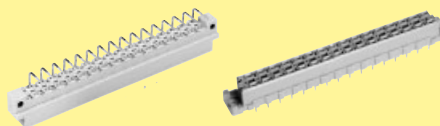


Types D, E, F, FM, 2F, F9, interface connectors I/U

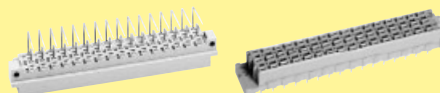
Page

Technical characteristics types D and E **03.10**

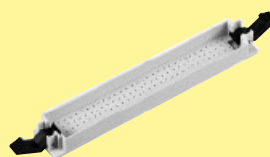
Type D connectors **03.11**



Type E connectors **03.15**



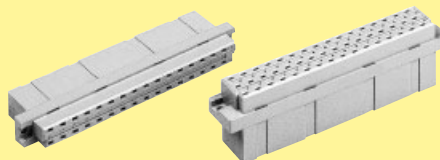
Pin shrouds **03.19**



Application examples types E and F **03.20**

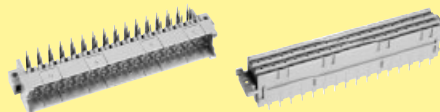
Technical characteristics piggyback connectors **03.22**

Piggyback connectors **03.23**



Technical characteristics types F, F9, FM and 2F **03.26**

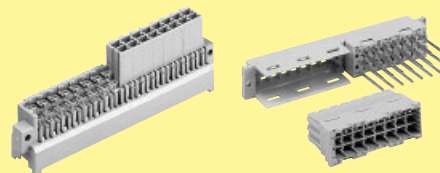
Type F connectors **03.27**



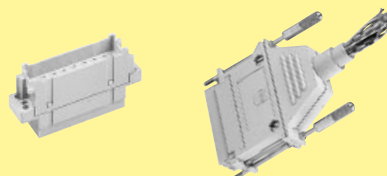
Type F9 connectors **03.37**



Type FM connectors **03.38**



Type 2F connectors **03.40**



DIN Power
up to 6 A

Number of contacts	
Type D	32
Type E	48

Contact spacing (mm)	
Type D	5,08
Type E	male connector 5.08 x 5.08 male connector 2.54 x 5.08 female connector 5.08 x 5.08

Working current	6 A max.
see current carrying capacity chart	

Clearance	
Types D and E	≥ 3.0 mm
Type E male connector	≥ 1.6 mm
row separation	2.54 mm

Creepage	≥ 3.0 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

Test voltage $U_{r.m.s.}$	1.55 kV
---	---------

Contact resistance	≤ 15 mΩ
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
	- 40 °C ... + 105 °C for press-in connectors

Degree of protection for crimp terminal according to DIN 40 050	IP 20
--	-------

Electrical termination	Solder pins for pcb connections Ø 1.0 ± 0.1 mm according to IEC 60 326-3 Wrap posts 1 x 1 mm diagonal 1.34-1.45 mm Angled solder pins 1 x 1 mm for pcb connections Ø 1.6 ± 0.1 mm Solder lugs Crimp terminal 0.09-1.5 mm ² Compliant press-in terminations
PCB thickness	≥ 1.6 mm
Recommended PCB holes for press-in technology	see recommendation page 00.25 in acc. to EN 60 352-5

Insertion and withdrawal force	32 way ≤ 40 N 48 way ≤ 75 N
---------------------------------------	--------------------------------

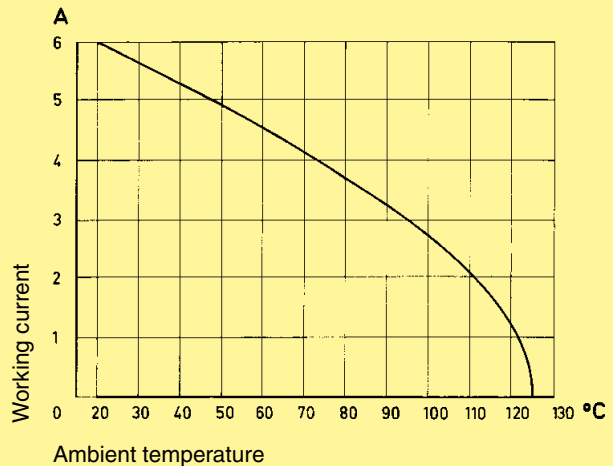
Materials	
Mouldings	Thermoplastic resin, glass-fibre filled, UL 94-V0
Contacts	Copper alloy
Contact surface	
Contact zone	Selectively gold plated according to performance level ¹⁾

¹⁾ Explanation of performance levels 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

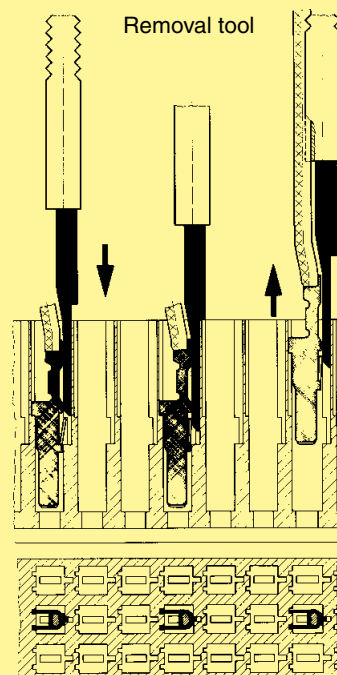


Fitting the crimp contacts

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.

Removing the crimp contacts

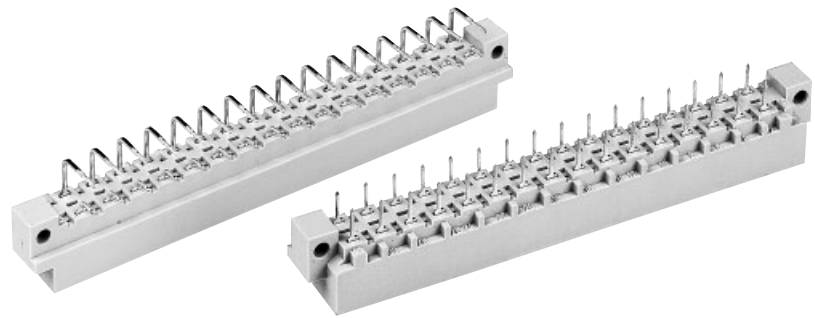
The removal tool is inserted into a slot on the side of the respective crimp cavity. This action compresses the contact retaining spring therefore the contact can then be easily withdrawn using a light pull on the wire. This action will cause no damage to the contact/wire which can be repositioned/refitted as necessary. The drawing demonstrates the crimp removal procedure (max. 5x).



DIN Power up to 6 A

Number of contacts

32

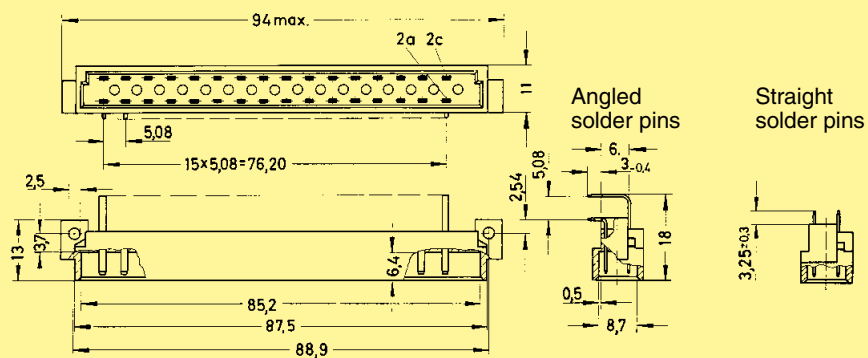


Male connectors

Identification	Number of contacts	Contact arrangement	Part No.	Performance levels according to IEC 60603-2. Explanation chapter 00		
				3	2	1
Male connector with angled solder pins	32		09 04 132 7921	09 04 132 6921	09 04 132 2921	
				09 04 132 6921 222 ^{f)}	09 04 132 2921 222 ^{f)}	
				09 04 332 6921 ^{b)}		
SMC	32			09 04 332 6919 ^{b)d)}		
	30 + 2 [▲]			09 04 132 6951	09 04 632 2951 ^{c)}	
Male connector with straight solder pins	32			09 04 132 6922		
	30 + 2 [▲]			09 04 132 6952		

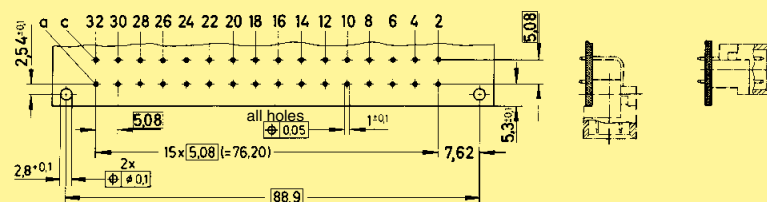
DIN Power up to 6 A

Dimensions



Board drillings

Mounting side



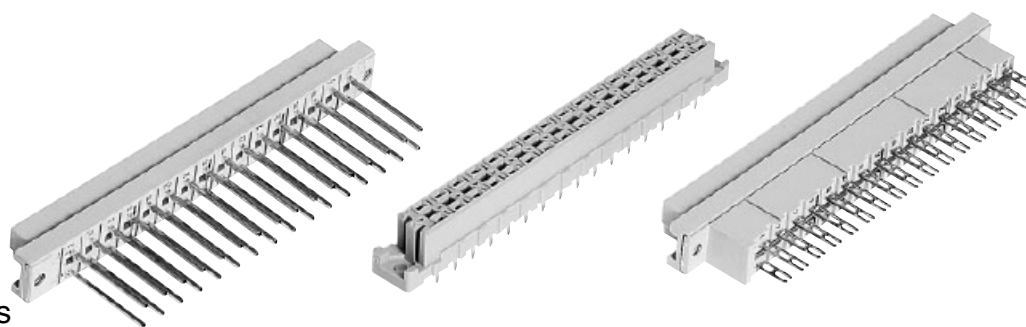
Dimensions in mm

▲ Male connectors with 2 leading contacts [(0.8 mm) pos. a2 and a32]
 Other contact arrangements on request
 b) Connectors with snap-in clips see chapter 00
 c) Connectors with coding see chapter 00

d) CTI > 400
 f) Railway classification NFF 16-101, Smoke index: F1, Flammability class: I2

Number of contacts

32

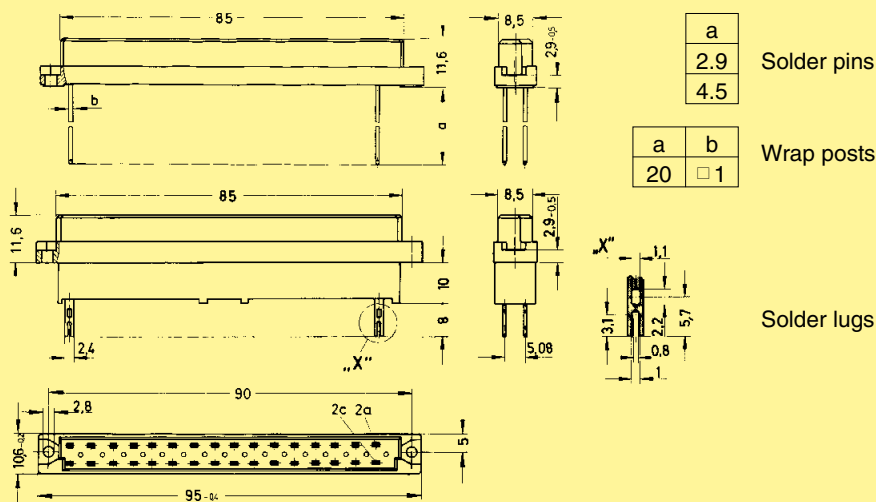


Female connectors

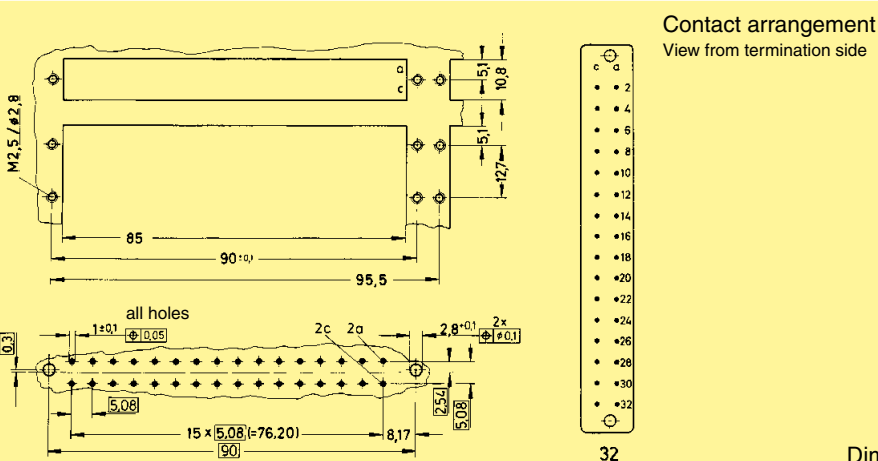
DIN Power
up to 6 A

Identification	Number of contacts	Contact arrangement	Part No.	Performance levels according to IEC 60603-2. Explanation chapter 00
			3	2 1
Female connector with solder pins 2.9 mm	32		09 04 232 7832	09 04 232 6832 09 04 732 6832 ^{c)}
Female connector with solder pins 4.5 mm	32		09 04 232 7831	09 04 232 6831 09 04 232 6831 222 ^{f)} 09 04 332 6831 ^{b)} 09 04 732 6831 ^{c)}
Female connector with wrap posts 20 mm	32		09 04 232 7821	09 04 232 6821 09 04 732 6821 ^{c)}
Female connector with solder lugs	32		09 04 232 7823	09 04 232 6823

Dimensions



Panel cut out



Board drillings
Mounting side

^{b)} Connectors with snap-in clips see chapter 00
^{c)} Connectors with coding see chapter 00

^{f)} Railway classification NFF 16-101, Smoke index: F1, Flammability class: I2

Number of contacts

32



Female connectors

Identification	Number of contacts	Contact arrangement	Part No.	Performance levels according to IEC 60603-2. Explanation chapter 00	
				2	1
Female connector with angled solder pins 1 x 1 mm	32			09 04 232 6826 09 04 232 6826 222 ^{f)}	09 04 232 2826
Dimensions				 	
Fixing bracket Metal			09 06 000 9912 ¹⁾		
Board drillings Mounting side					

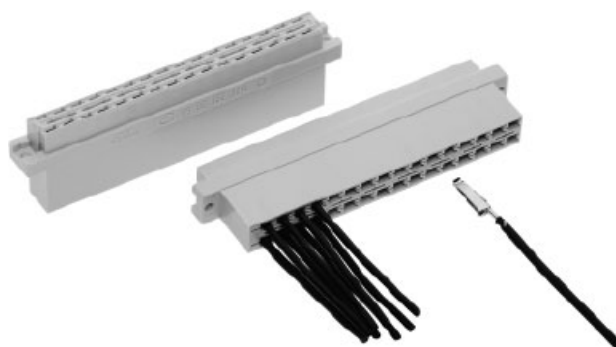
DIN Power up to 6 A

Dimensions in mm

^{f)} Railway classification NFF 16-101, Smoke index: F1, Flammability class: I2

Number of contacts

max. 32



Female connectors

Identification	Number of contacts	Part No.	Drawing	Dimensions in mm
----------------	--------------------	----------	---------	------------------

Female connector for crimp contacts Order contacts separately	32	09 04 032 3213 ^{f)}		
	32	09 04 532 3213 ^{c)} f)		
Shell housing 09 03 096 0501 see chapter 20				

Identification	Identification Wire gauge	Part No.	Performance levels according to IEC 60603-2. Explanation chapter 00
----------------	---------------------------	----------	---

Female crimp FC contacts Bandoliered contacts (approx. 2,500 pieces) Bandoliered contacts (approx. 250 pieces) Individual contacts ¹⁾ Female contacts with solder lugs ²⁾ (lockable)			2	1
	1	09 06 000 6484		09 06 000 6474
	2	09 06 000 6481		09 06 000 6471
	3	09 06 000 6482		09 06 000 6472
	1	09 06 000 7484		09 06 000 7474
	2	09 06 000 7481		09 06 000 7471
	3	09 06 000 7482		09 06 000 7472
	1	09 06 000 8484		09 06 000 8474
	2	09 06 000 8481		09 06 000 8471
3	09 06 000 8482		09 06 000 8472	
				09 06 000 6420

FC	Wire gauge mm ²	AWG	Insulation ø mm	Identification
FC 1	0.09 - 0.25	28 - 24	0.7 - 1.5	
FC 2	0.14 - 0.56	26 - 20	0.8 - 2.0	
FC 3	0.5 - 1.5	20 - 16	1.6 - 2.8	
3.5 + 0.5 mm of insulation is stripped from the wires to be crimped For the fabrication in line with the specification please use exclusively crimp tools approved by HARTING (see DIN EN 60352-2) Insertion, removal and crimping tools see chapter 30				

DIN Power up to 6 A

1) Packaging unit 1,000 pieces
 2) Solder contacts must not be used together with shell housing A. Special contact surface: 2 µm gold.
 3) Connectors with coding see chapter 00
 4) Railway classification NFF 16-101, Smoke index: F1, Flammability class: I2

Number of contacts

48

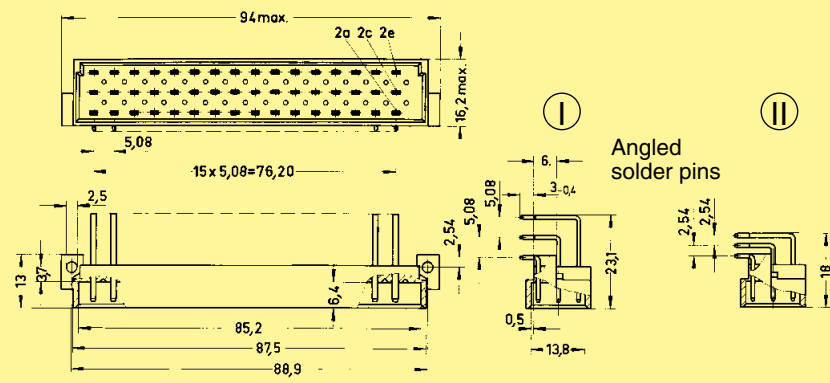


Male connectors

Identification	Number of contacts	Contact arrangement	Part No.	Performance levels according to IEC 60603-2. Explanation chapter 00	3	2	1
Male connector with angled solder pins Row separation termination side 5.08 mm (I)	48		09 05 148 7921	09 05 148 6921 09 05 148 6921 222 ^{f)} 09 05 348 6921 ^{b)} 09 05 648 6921 ^{c)}		09 05 148 2921 09 05 148 2921 222 ^{f)} 09 05 648 2921 ^{c)}	
	46 + 2▲			09 05 148 6951			
	48		09 05 148 7931	09 05 148 6931 09 05 648 6931 ^{c)}		09 05 148 2931	
	48				09 05 148 6920 ^{d)}		
SMC Row separation termination side 2.54 mm (II)	46 + 2▲					09 05 148 6961	

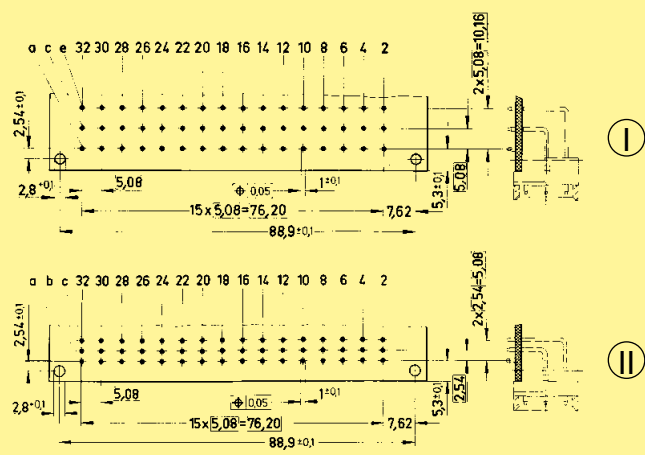
DIN Power up to 6 A

Dimensions



Board drillings

Mounting side



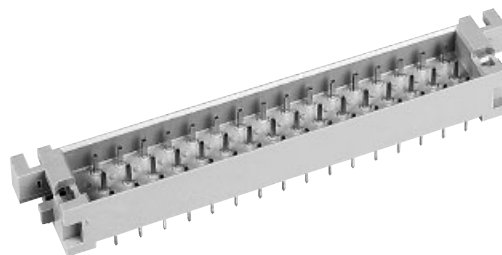
Dimensions in mm

▲ Male connectors with 2 leading contacts [(0.8 mm) pos. a2 and a3]
 Other contact arrangements on request
 b) Connectors with snap-in clips see chapter 00
 c) Connectors with coding see chapter 00

d) CTI > 400
 f) Railway classification NFF 16-101, Smoke index: F1, Flammability class: I2

Number of contacts

48



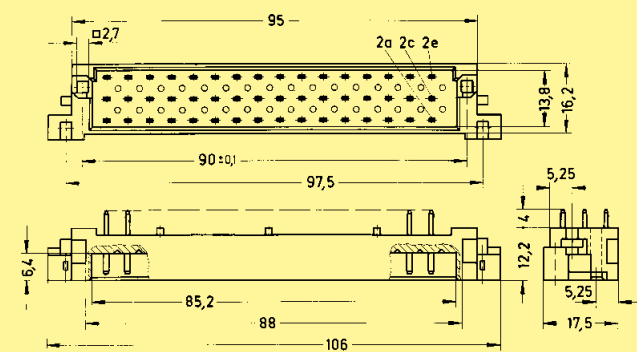
Interface connector I

Identification	Number of contacts	Part No.	Drawing	Dimensions in mm
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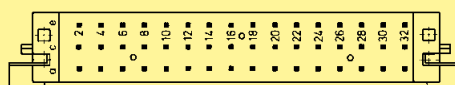
Interface connector I with solder pins
0.6 x 0.6 mm

48

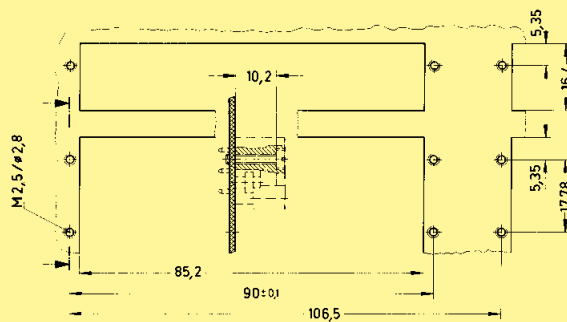
Performance level 2 acc. to IEC 60 603-2
09 05 048 6924¹⁾



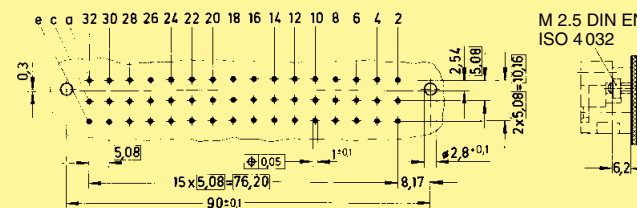
Contact arrangement View from termination side



Panel cut out



Board drillings
Mounting side



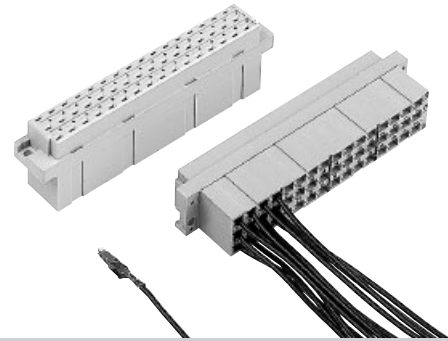
DIN Power up to 6 A

03
16

¹⁾ Railway classification NFF 16-101, Smoke index: F1, Flammability class: I2

Number of contacts

max. 48



Female connectors

Identification	Number of contacts	Part No.	Drawing	Dimensions in mm
Female connector for crimp contacts Order contacts separately	48	09 05 048 3202 ¹⁾ 09 05 548 3202 ²⁾	<p>85, 84, 11,6, 14,8, 13,6, 2,9, 15,1, 2,8^{+0,1}, 50^{±0,1}, 2e, 2c, 2a, 5, 5,1, 15,7, 0,2, 5,08, 15 x 5,08 = 76,20, 8,17, 95-0,4</p> <p>View from termination side</p>	
Shell housing 09 05 048 0501 see chapter 20				

DIN Power up to 6 A

Identification	Identification Wire gauge	Part No.	Performance levels according to IEC 60603-2. Explanation chapter 00
		2	1
Female crimp FC contacts			
Bandoliered contacts (approx. 2,500 pieces)	1	09 06 000 6484	09 06 000 6474
	2	09 06 000 6481	09 06 000 6471
	3	09 06 000 6482	09 06 000 6472
Bandoliered contacts (approx. 250 pieces)	1	09 06 000 7484	09 06 000 7474
	2	09 06 000 7481	09 06 000 7471
	3	09 06 000 7482	09 06 000 7472
Individual contacts ¹⁾	1	09 06 000 8484	09 06 000 8474
	2	09 06 000 8481	09 06 000 8471
	3	09 06 000 8482	09 06 000 8472
Female contacts with solder lugs ²⁾ (lockable)			09 06 000 6420

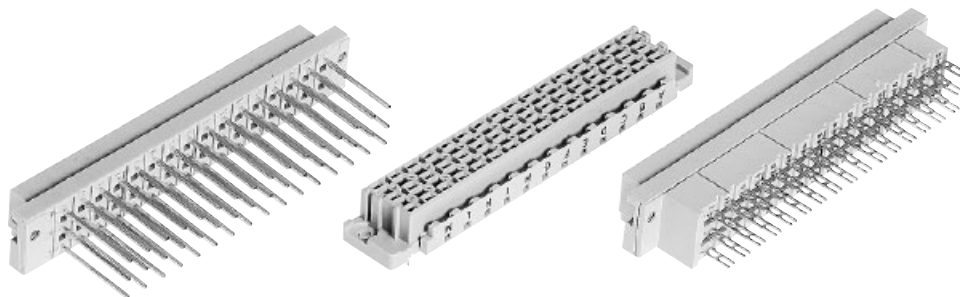
	Wire gauge mm ²	AWG	Insulation ø mm	Identification
FC 1	0.09 - 0.25	28 - 24	0.7 - 1.5	<p>Bandoliered contacts</p> <p>Individual contacts</p>
FC 2	0.14 - 0.56	26 - 20	0.8 - 2.0	
FC 3	0.5 - 1.5	20 - 16	1.6 - 2.8	
3.5 + 0.5 mm of insulation is stripped from the wires to be crimped For the fabrication in line with the specification please use exclusively crimp tools approved by HARTING (see DIN EN 60352-2) Insertion, removal and crimping tools see chapter 30				

¹⁾ Connectors with coding see chapter 00
²⁾ Railway classification NFF 16-101, Smoke index: F1, Flammability class: I2

¹⁾ Packaging unit 1,000 pieces
²⁾ Solder contacts must not be used together with shell housing A. Special contact surface: 2 µm gold.

Number of contacts

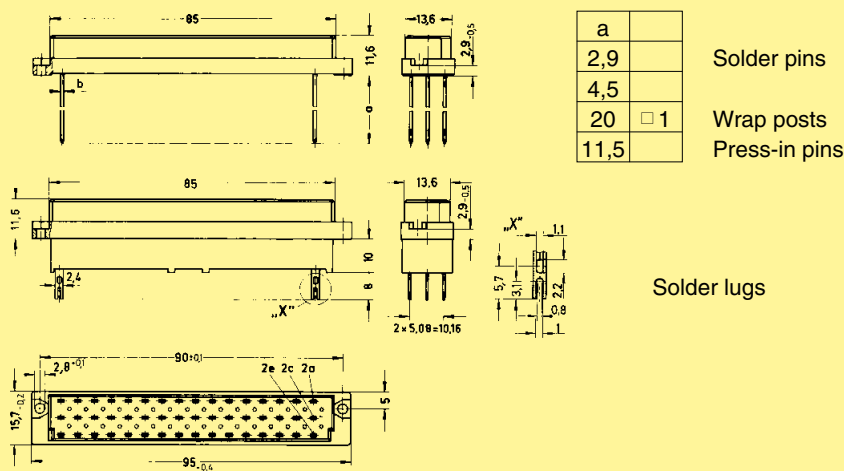
48



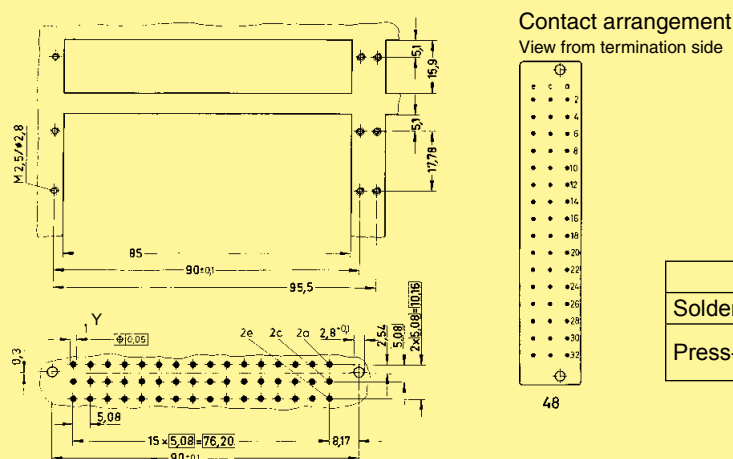
Female connectors

Identification	Number of contacts	Contact arrangement	Performance levels according to IEC 60603-2. Explanation chapter 00		
			Part No.	3	2
Female connector with solder pins 2,9 mm 4,5 mm	48		09 05 248 7832	09 05 248 6832	09 05 248 2832
	48			09 05 248 6831 09 05 348 6831 ^{b)} 09 05 748 6831 ^{c)}	09 05 248 2831 09 05 248 2831 222 ^{f)} 09 05 748 2831 ^{c)}
	48		09 05 248 7821	09 05 248 6821	09 05 248 2821
Female connector with solder lugs	48		09 05 248 7823	09 05 248 6823	09 05 248 2823
Female connector with press-in pins 11,5 mm	48			09 05 248 6851* 09 05 248 6851 222 ^{*f)}	09 05 248 2851*

Dimensions



Panel cut out



Board drillings
Mounting side

	Y
Solder	1 ± 0.1
Press-in	see recommendation page 00.25

Dimensions in mm

• Wrap posts for interfacing selectively gold plated (performance level 2)
 b) Connectors with snap-in clips see chapter 00
 c) Connectors with coding see chapter 00

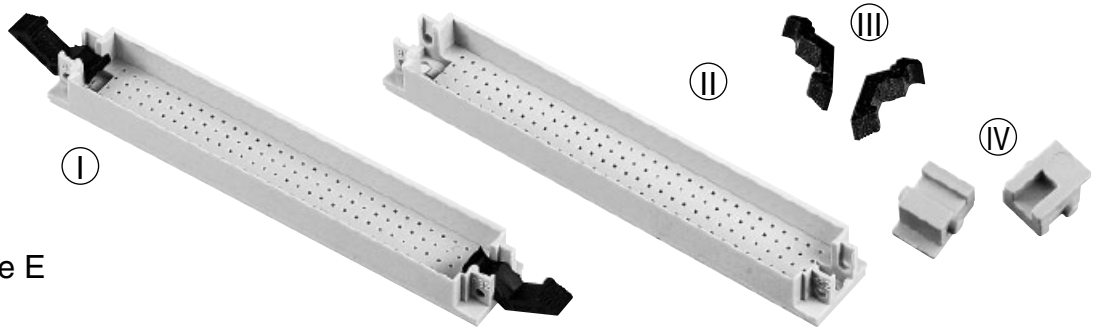
f) Railway classification NFF 16-101, Smoke index: F1, Flammability class: I2

Pin shroud



Number of contacts

48

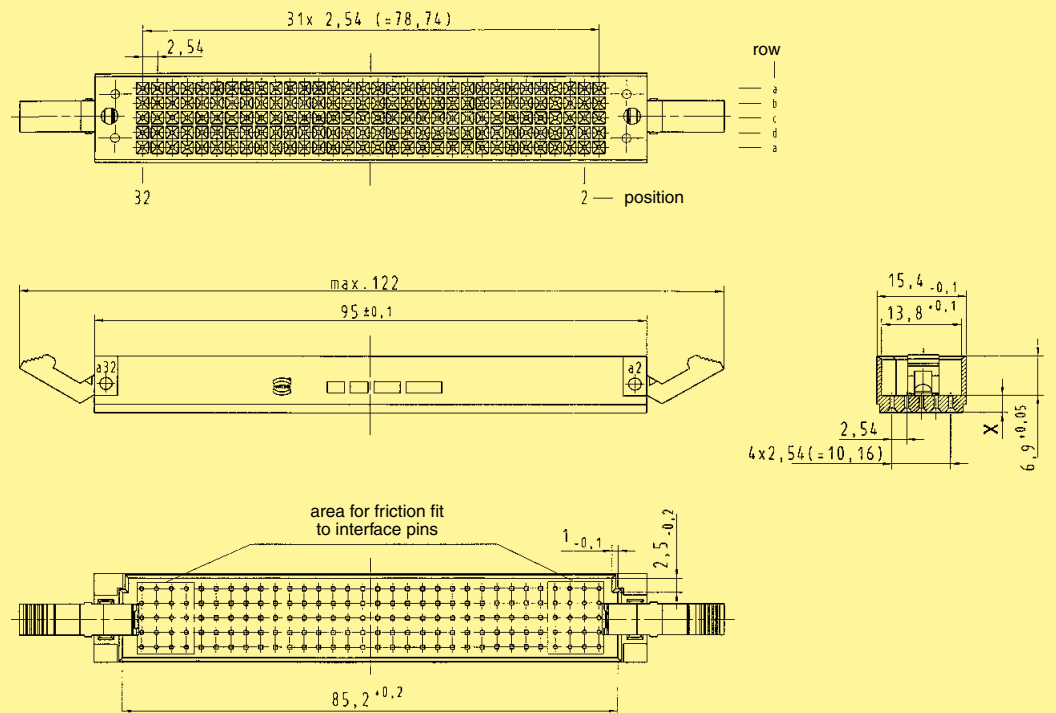


Pin shrouds for type E
with press-in pins

Identification	pcb-thickness + 0.2 / - 0.3	Dimension X - 0.1	Part No.
Pin shrouds			
Ⓘ with locking levers	2.8	3.6	09 05 000 9924
Ⓜ without locking levers	2.8	3.6	09 05 000 9914 ¹⁾
Ⓘ with locking levers	3.4	3.0	09 05 000 9922
Ⓜ without locking levers	3.4	3.0	09 05 000 9912 ¹⁾
Ⓜ Locking lever for female connector type E ¹⁾			09 03 000 9914
Ⓜ Fixing brackets for shell housing C ¹⁾			09 03 000 9921 ¹⁾

DIN Power
up to 6 A

Dimensions



Dimensions in mm

¹⁾ order 2 pieces per connector

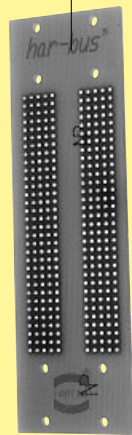
¹⁾ Railway classification NFF 16-101, Smoke index: F1, Flammability class: I2

Application 1

Female connector
09 05 248 6851



Backplane



Pin shroud
09 05 000 9912



Fixing brackets
09 03 000 9921



Shell housing C
09 05 048 0501



Female connector
with crimp contacts
09 05 048 3202

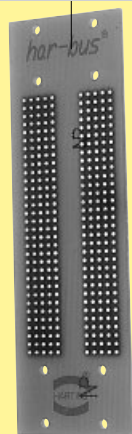
Locking lever
left 09 02 000 9902
right 09 02 000 9903

Application 2

Female connector
09 05 248 6851



Backplane



Pin shroud
09 05 000 9912



Locking lever
09 03 000 9914

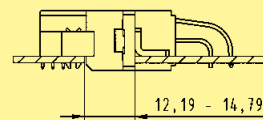
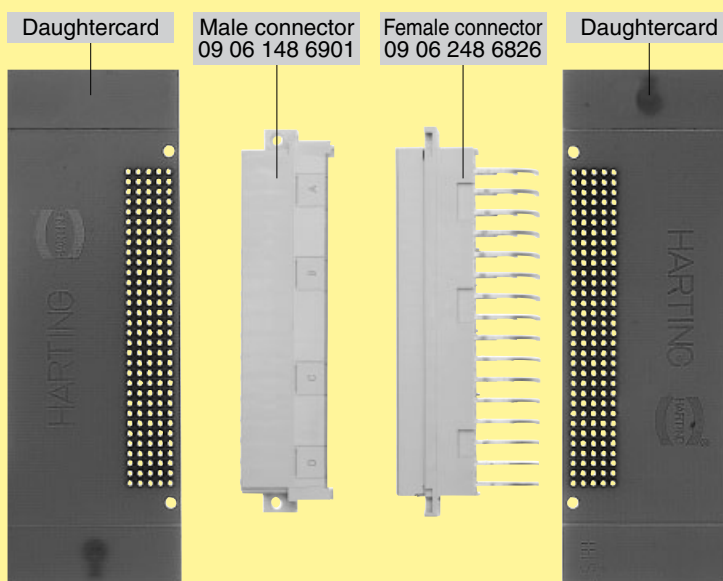


Female connector
for crimp contacts
09 05 048 3202

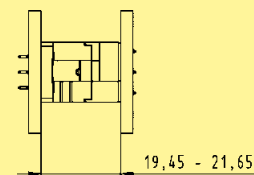
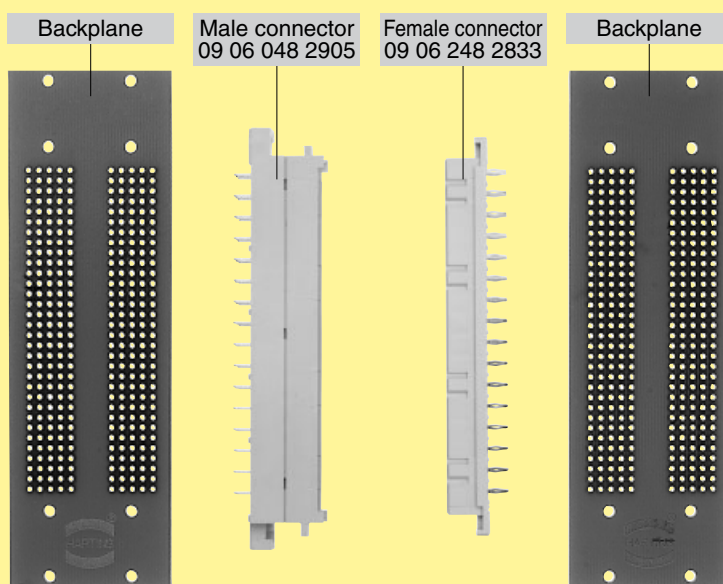


DIN Power
up to 6 A

Application 1



Application 2



DIN Power
up to 6 A

Number of contacts	16, 32, 48
Working current see current carrying capacity chart	6 A max.
Clearance	
16 ways	≥ 1.6 mm
32, 48 ways	≥ 1.6 mm
Creepage	
16 ways	≥ 1.6 mm
32, 48 ways	≥ 3.0 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
Contact resistance	≤ 20 mΩ
Insulation resistance	≥ 10 ¹² Ω for standard articles

Termination	Crimp terminal 0.09-1.5 mm ²
-------------	--

Materials	
Mouldings and hoods	Thermoplastic resin, glass-fibre filled
Contacts	Copper alloy

Piggyback connectors for interfacing with female connectors with wrap posts 1 x 1 mm

The problem of interfacing systems designed for the distribution or collection of electronic signals can be overcome by the use of piggyback connectors. Designed to be mounted on the rear of DIN 41 612 type wire wrap female connectors (1 x 1 mm posts) these piggyback elements can be used to terminate input and output cables.

Distance fixing brackets are fitted to provide either a latching or screw fixing facility over the two level wire wrap plane.

The female crimp contacts used in these versions are designed for 1 x 1 mm posts.

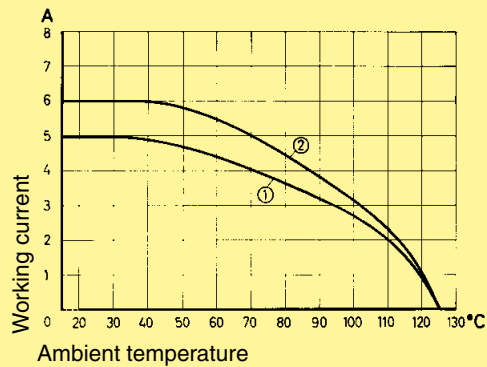
After crimping they can be easily inserted into the chambers of the connector body with the aid of an insertion tool. Insertion errors can be simply rectified with the use of a removal tool.

2 and 3 row piggyback connectors can be mounted in shell housings C and open hood G. Security is provided by either latches or screws to the distance fixing brackets.

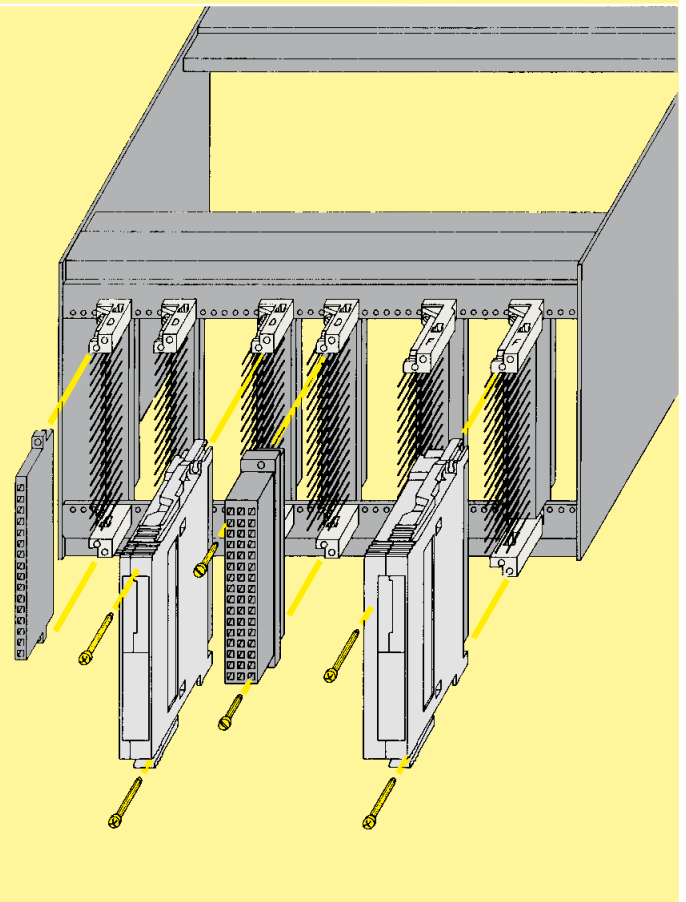
Current carrying capacity

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



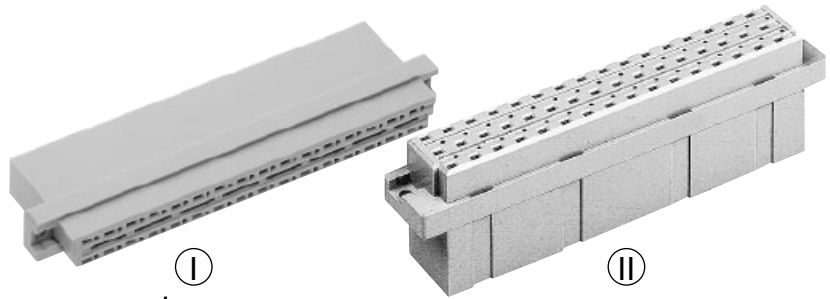
① with shell housing ② without shell housing



DIN Power up to 6 A

Number of contacts

max. 48



Piggyback connectors for 1 x 1 mm wrap posts

Identification	Number of contacts	Part No.	Drawing	Dimensions in mm
Piggyback connector for crimp contacts Order contacts separately I	16	09 04 016 3201 ¹⁾		
	32	09 04 032 3215 ¹⁾	<p>Reihe row a c Position position</p>	
	48	09 05 048 3204 ¹⁾		

DIN Power up to 6 A

¹⁾ Railway classification NFF 16-101, Smoke index: F1, Flammability class: I2

Number of contacts

max. 48



Accessories

DIN Power up to 6 A

Identification	Number of contacts	Part No.	Drawing	Dimensions in mm
----------------	--------------------	----------	---------	------------------

Female FC crimp contacts

individual contacts¹⁾

FC1
FC2
FC3

09 06 000 6464
09 06 000 6461
09 06 000 6462

Bandoliered contacts

(approx. 2,500 pcs.)

FC1
FC2
FC3

09 06 000 6454
09 06 000 6451
09 06 000 6452

Identi- fication	Wire gauge mm ²	AWG	Insulations ø mm
1	0.09-0.25	28-24	0.7-1.5
2	0.14-0.56	26-20	0.8-2.0
3	0.50-1.50	20-16	1.6-2.8

3.5 + 0.5 mm of insulation is stripped from the wires to be crimped.

For the fabrication in line with the specification please use exclusively crimp tools approved by HARTING (see DIN EN 60352-2)

Crimping tools see chapter 30

Mateable with
1 x 1 mm wrap posts

Identification

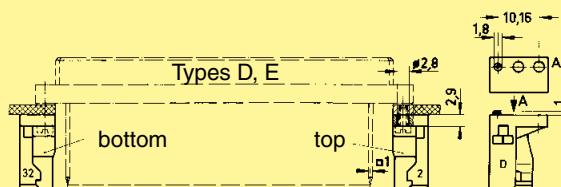


Distance fixing brackets for female connectors

Type D
Type E

top (pos. 2)
09 04 000 9907¹⁾

bottom (pos. 32)
09 04 000 9906¹⁾

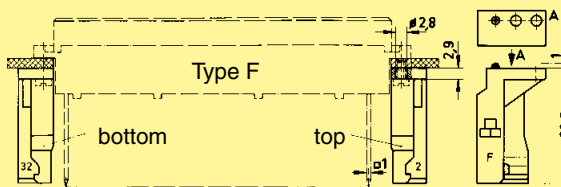


Type F



top (pos. 2)
09 06 000 9936¹⁾

bottom (pos. 32)
09 06 000 9937¹⁾



¹⁾ Packaging unit 1,000 pieces

¹⁾ Railway classification NFF 16-101, Smoke index: F1, Flammability class: I2

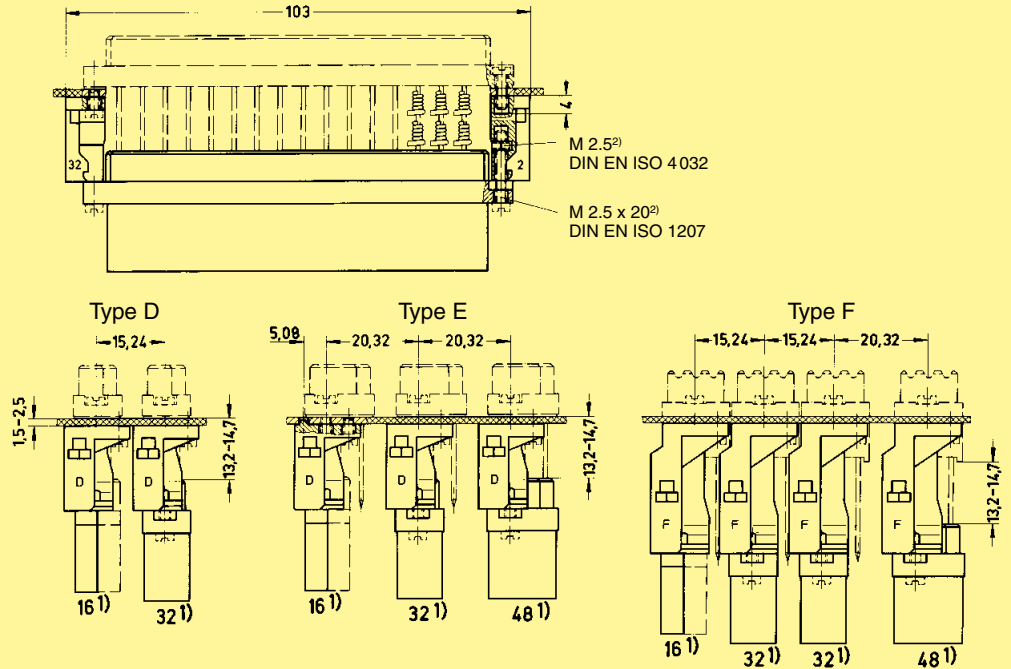
Identification

Drawing

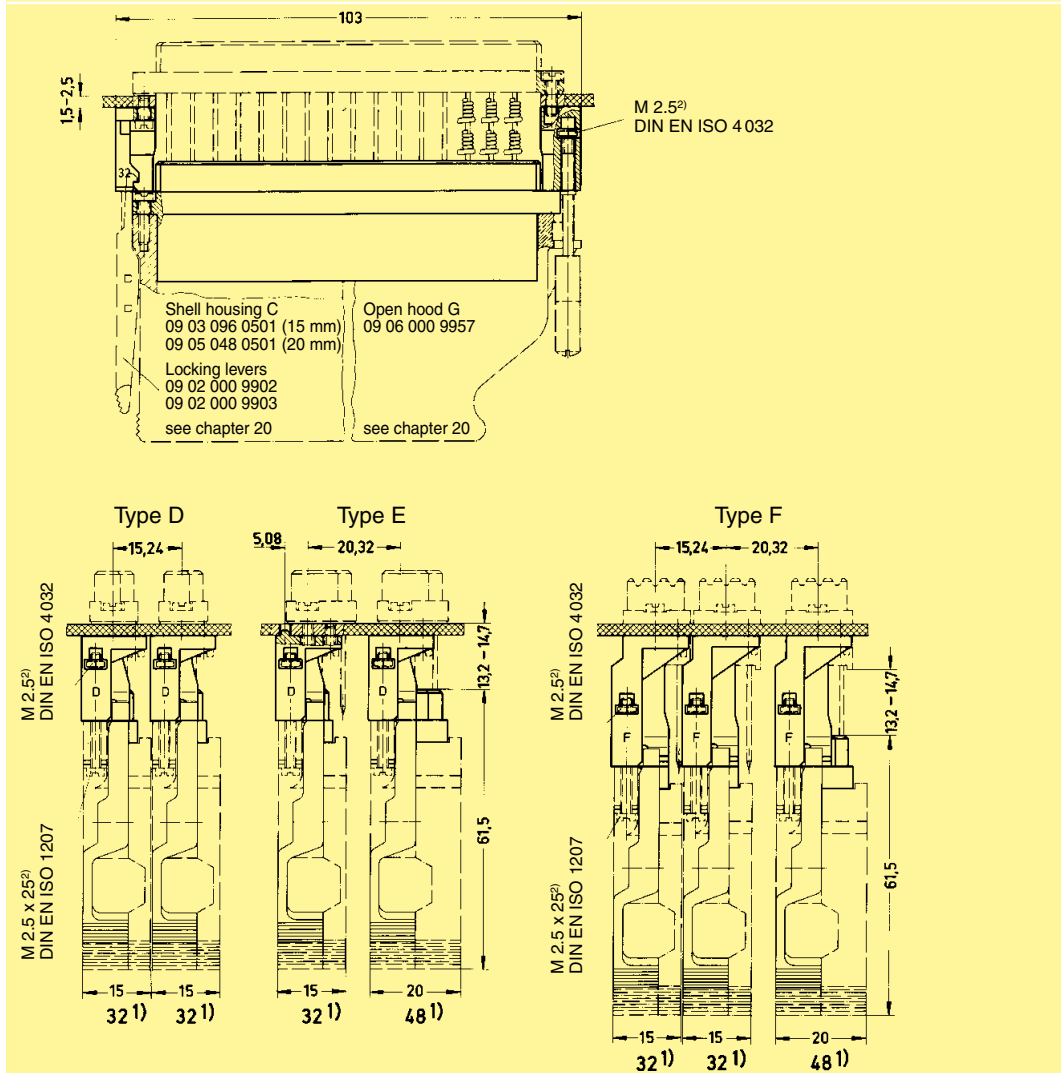
Dimensions in mm

Mounting examples
of piggyback
connectors

without housings



with housings



DIN Power
up to 6 A

¹ Number of contacts piggyback connector
² Doesn't belong to the scope of supply

Number of contacts

Type F	48, 32
Type FM	45
Type 2F	max. 24
Type F9	max. 9

Contact spacing (mm)

5.08

Working current

6 A max.

see current carrying capacity chart

Clearance

≥ 1.6 mm

Creepage

≥ 3.0 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 $U_{r.m.s.}$

1.55 kV (contact-contact)
2.5 kV (contact-ground)

Contact resistance

≤ 15 mΩ

Insulation resistance

≥ 10¹² Ω for standard articles
≥ 10¹¹ 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

– 40 °C ... + 105 °C
for press-in connector

During reflow soldering

max. + 240 °C for 15 s
for SMC connectors

Electrical termination

Solder pins for pcb connections Ø 1 ± 0.1 mm according to IEC 60 326-3
Wrap posts 1 x 1 mm diagonal 1.34-1.45 mm
Crimp terminal 0.09-1.5 mm²
Angled solder pins 1 x 1 mm for pcb connections Ø 1.6 ± 0.1 mm
Solder lugs
Compliant press-in terminations
pcb thickness ≥ 1.6 mm
Recommended pcb holes for press-in technology See recommendation page 00.25 in acc. to EN 60 352-5

Insertion and withdrawal force

48 way ≤ 75 N
45 way ≤ 70 N
32 way ≤ 50 N
24 way ≤ 37 N

Materials

Mouldings

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

Contacts

Contact surface

Contact zone

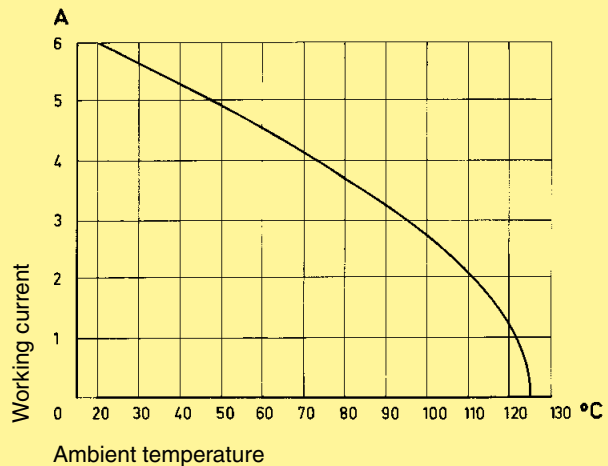
Selectively plated according to performance level¹⁾

¹⁾ Explanation of performance levels 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

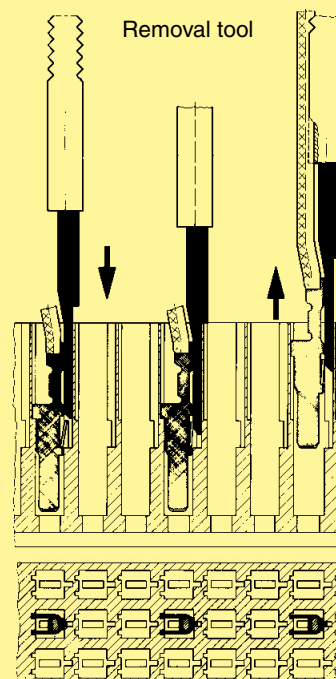


Fitting the crimp contacts

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.

Removing the crimp contacts

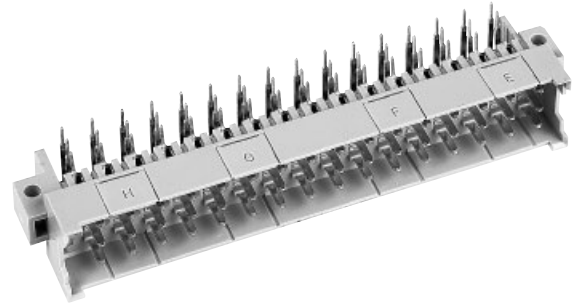
The removal tool is inserted into a slot on the side of the respective crimp cavity. This action compresses the contact retaining spring therefore the contact can then be easily withdrawn using a light pull on the wire. This action will cause no damage to the contact/wire which can be repositioned/refitted as necessary. The drawing demonstrates the crimp removal procedure (max. 5x).



DIN Power up to 6 A

Number of contacts

48, 32

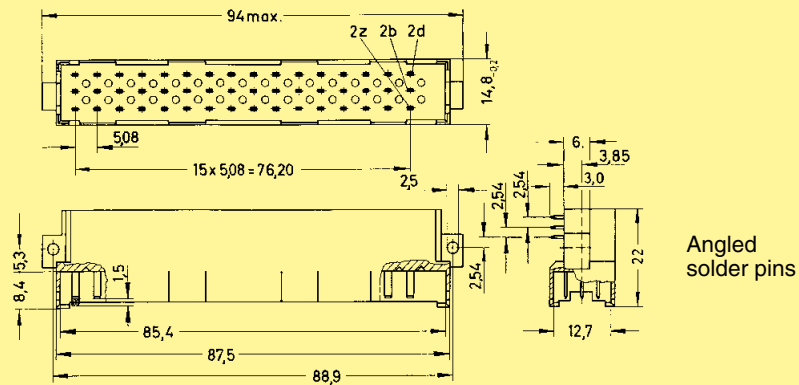


Male connectors

Identification	Number of contacts	Contact arrangement	Part No. Performance levels according to IEC 60603-2. Explanation chapter 00			
			3	2	1	
Male connector with angled solder pins ¹⁾	48		09 06 148 7901	09 06 148 6901 09 06 148 6901 222 ^{f)} 09 06 348 6901 ^{b)} 09 06 348 6901 222 ^{b)f)}	09 06 148 2901 09 06 148 2901 222 ^{f)}	
			09 06 348 7951 ^{b)d)}	09 06 148 6951 ^{d)} 09 06 348 6951 ^{b)d)}	09 06 348 2951 ^{b)d)}	
	32		09 06 132 7901 09 06 332 7901 ^{b)}	09 06 132 6901 09 06 132 6901 222 ^{f)}	09 06 132 2901	
			09 06 132 7931	09 06 132 6931 09 06 132 6931 222 ^{f)} 09 06 332 6931 ^{b)}	09 06 132 2931	
	1 leading contact (position z 32)	47 + 1			09 06 148 6921 09 06 348 6921 ^{b)}	09 06 148 2921
		31 + 1		09 06 132 7921	09 06 132 6921	09 06 132 2921
2 leading contacts (positions b 2 + b 32)	46 + 2			09 06 148 6925 09 06 148 6925 222 ^{f)}	09 06 148 2925	

DIN Power up to 6 A

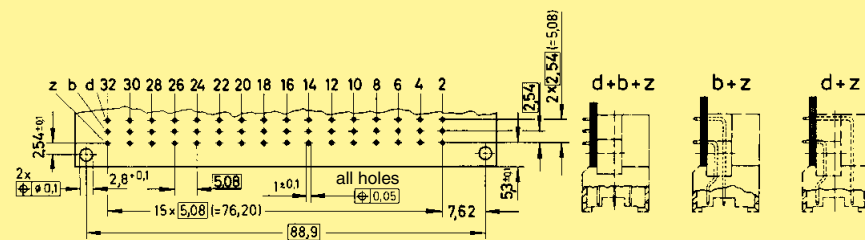
Dimensions



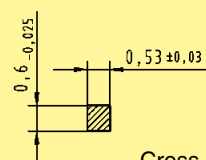
Angled solder pins

Board drillings

Mounting side



Cross section of solder terminations



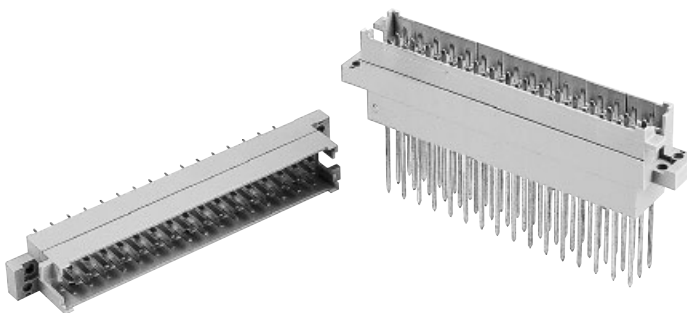
Cross area (A) of contacts row z, b, d: $A = 0.29 - 0.34 \text{ mm}^2$

Dimensions in mm

¹⁾ With shroud coding, see also chapter 00
^{b)} Connectors with snap-in clips see chapter 00
^{d)} CTI > 400
^{f)} Railway classification NFF 16-101, Smoke index: F1, Flammability class: I2

Number of contacts

48, 32



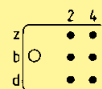
Interface connectors I

DIN Power
up to 6 A

Identification	Number of contacts	Contact arrangement	Part No.	Drawing	Dimensions in mm
----------------	--------------------	---------------------	----------	---------	------------------

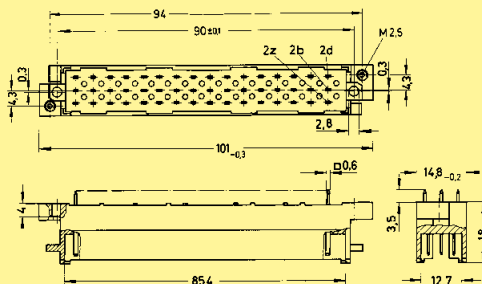
Interface connector I with solder pins¹⁾
0.6 x 0.6 mm

48

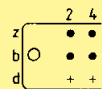


Performance level 1*

09 06 048 2905^{f)}

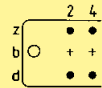


32



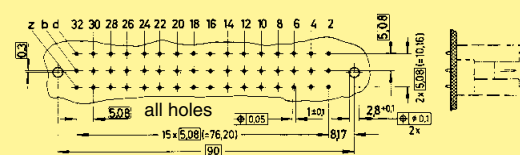
09 06 032 2905^{f)}

32



09 06 032 2941^{f)}

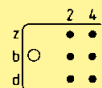
Board drillings
Mounting side



Interface connector I with wrap posts¹⁾
1 x 1 mm

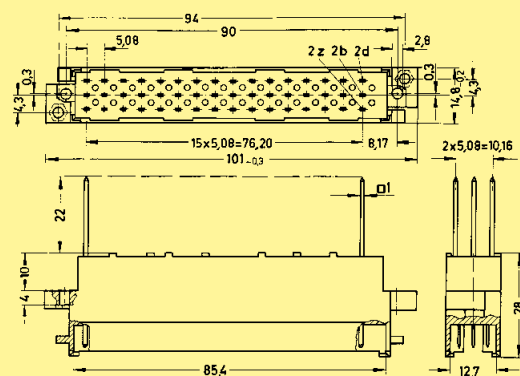
without nut

48



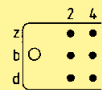
Performance level 1*

09 06 048 2903^{f)}



with nut

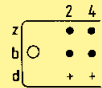
48



09 06 048 2963^{f)}

without nut

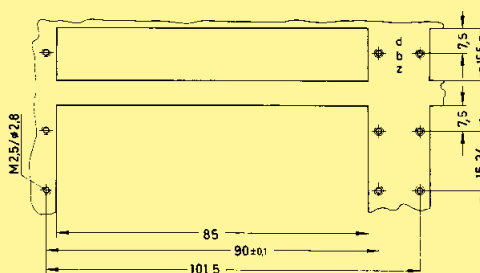
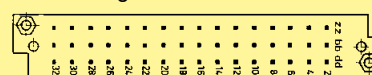
32



09 06 032 2903^{f)}

Panel cut out

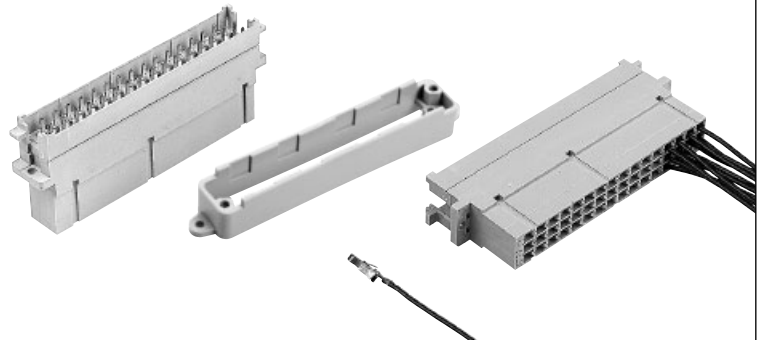
Contact arrangement View from termination side



* Acc. to IEC 60 603-2, performance level 2 on request
¹⁾ With shroud coding, see also chapter 00
^{f)} Railway classification NFF 16-101, Smoke index: F1, Flammability class: I2

Number of contacts

48



Interface connector I

Identification	Number of contacts	Part No.	Drawing	Dimensions in mm
----------------	--------------------	----------	---------	------------------

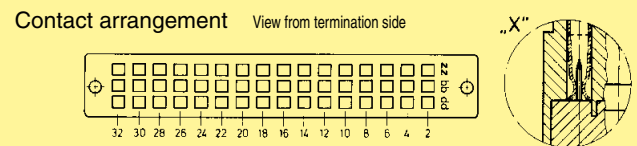
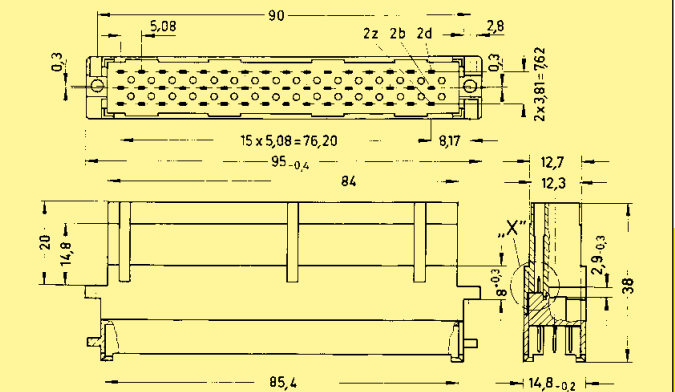
Interface connector I utilising female crimp contacts¹⁾

Order crimp contacts separately see page 03.31

48

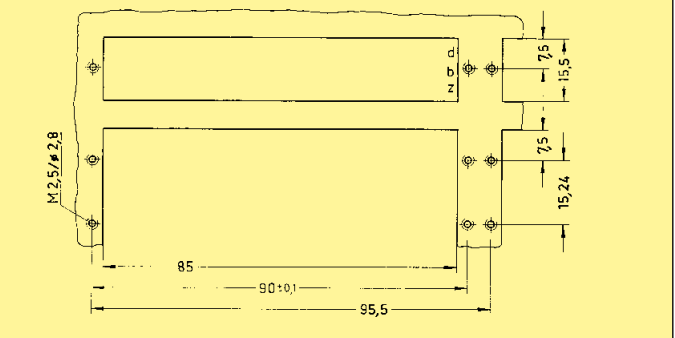
Performance level 1 acc. to IEC 60 603-2

09 06 048 2906¹⁾



Shell housing see chapter 20

Panel cut out

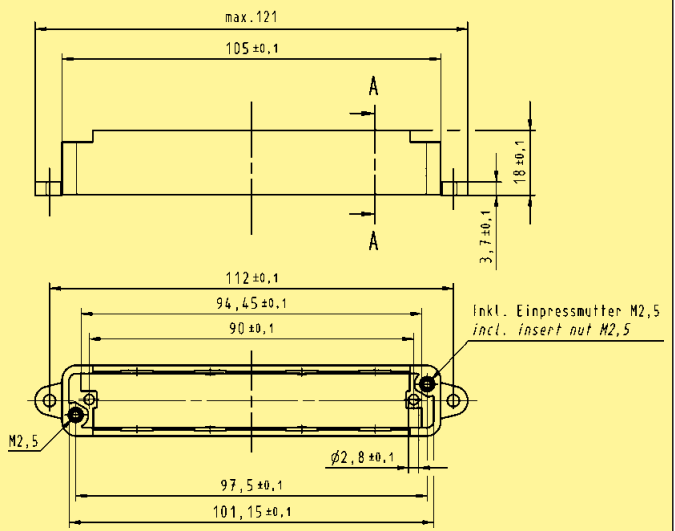


Shroud¹⁾

for screw-fixing of shell housing D20 plastic or D20 metallised .

The shroud is assembled onto the Interface connector I and is screwfixed onto the pcb or to the rack.

09 06 001 9964

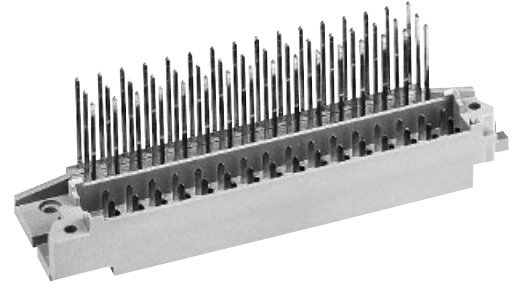


DIN Power up to 6 A

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

Number of contacts

48



Interface connector U

Identification	Number of contacts	Part No.	Drawing	Dimensions in mm
Interface connector U with wrap posts 1 x 1 mm	48	Performance level 1 acc. to IEC 60 603-2 09 06 048 2981 ¹⁾	<p>Contact arrangement View from termination side</p>	
Mounting example				

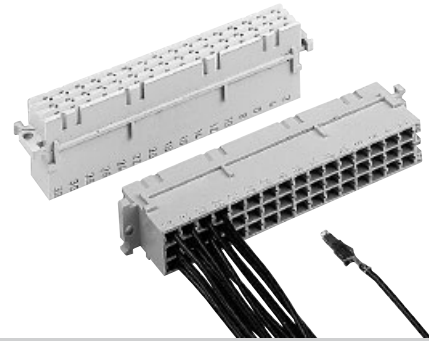
DIN Power up to 6 A

03 - 30

¹⁾ Railway classification NFF 16-101, Smoke index: F1, Flammability class: I2

Number of contacts

max. 48



Female connectors

Identification	Number of contacts	Part No.	Drawing	Dimensions in mm
Female connector for crimp contacts ¹⁾ Order contacts separately	48	09 06 248 3201 09 06 248 3201 222 ^{f)}	<p>Contact arrangement View from termination side</p>	
Shell housing see chapter 20				

DIN Power up to 6 A

Identification	Identification Wire gauge	Part No.	Performance levels according to IEC 60603-2. Explanation chapter 00
		2	1
Female crimp FC contacts			
Bandoliered contacts (approx. 2,500 pieces)	1	09 06 000 6484	09 06 000 6474
	2	09 06 000 6481	09 06 000 6471
	3	09 06 000 6482	09 06 000 6472
Bandoliered contacts (approx. 250 pieces)	1	09 06 000 7484	09 06 000 7474
	2	09 06 000 7481	09 06 000 7471
	3	09 06 000 7482	09 06 000 7472
Individual contacts ²⁾	1	09 06 000 8484	09 06 000 8474
	2	09 06 000 8481	09 06 000 8471
	3	09 06 000 8482	09 06 000 8472
Female contacts with solder lugs ³⁾ (lockable)			09 06 000 6420

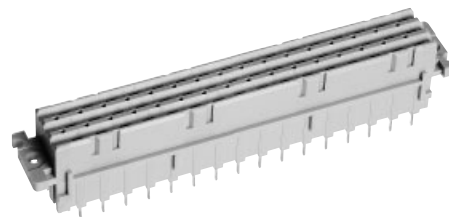
FC	Wire gauge mm ²	AWG	Insulation ø mm	Identification
FC 1	0.09 - 0.25	28 - 24	0.7 - 1.5	<p>Bandoliered contacts</p> <p>Individual contacts</p>
FC 2	0.14 - 0.56	26 - 20	0.8 - 2.0	
FC 3	0.5 - 1.5	20 - 16	1.6 - 2.8	

3.5 + 0.5 mm of insulation is stripped from the wires to be crimped
 For the fabrication in line with the specification please use exclusively crimp tools approved by HARTING (see DIN EN 60352-2)
 Insertion, removal and crimping tools see chapter 30

¹⁾ With shroud coding, see also chapter 30
²⁾ Packaging unit 1,000 pieces
³⁾ Solder contacts must not be used together with shell housing A. Special contact surface: 2 µm gold.
^{f)} Railway classification NFF 16-101, Smoke index: F1, Flammability class: I2

Number of contacts

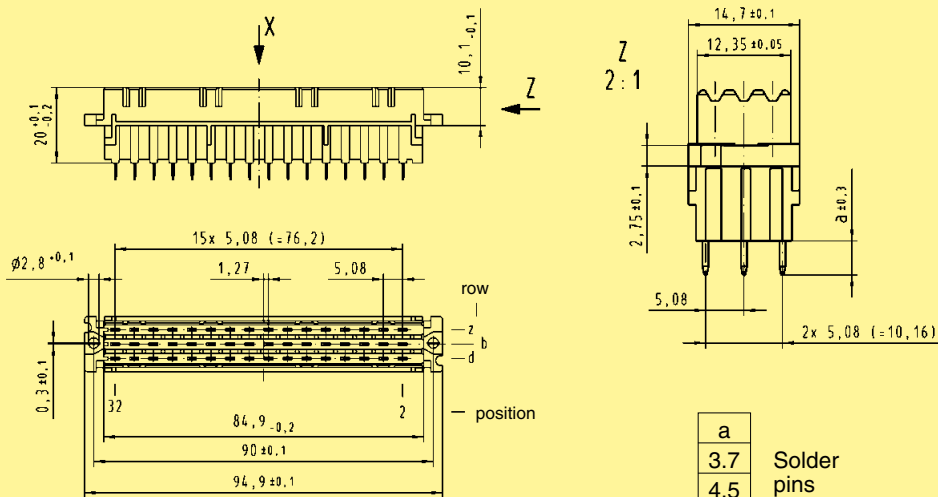
48, 32



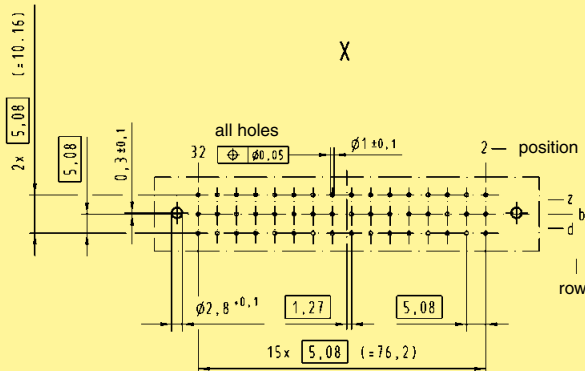
Female connectors

Identification	Number of contacts	Contact arrangement	Part No. Performance levels according to IEC 60 603-2. Explanation chapter 00		
			3	2	1
Female connector with solder pins 3.7 mm ¹⁾	48			09 06 248 6848	09 06 248 2848
	32			09 06 232 6848	09 06 232 2848
	32			09 06 232 6858	
Female connector with solder pins 4.5 mm ¹⁾	48		09 06 248 7835	09 06 248 6835 09 06 248 6835 222 ^{f)}	09 06 248 2835
	32			09 06 232 6835	09 06 232 2835
	32			09 06 232 6845	09 06 232 2845

Dimensions



Board drillings
Mounting side



Dimensions in mm

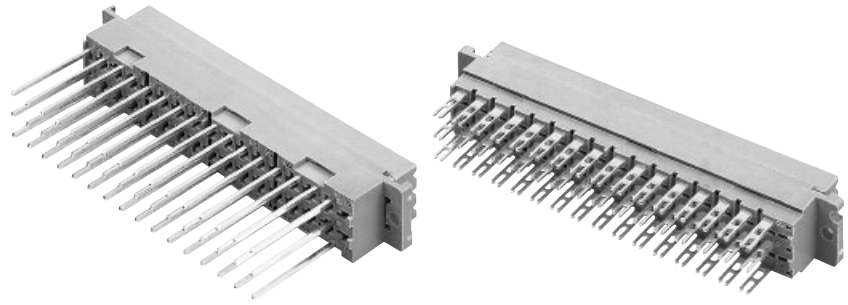
¹⁾ With shroud coding, see also chapter 00

^{f)} Railway classification NFF 16-101, Smoke index: F1, Flammability class: I2

DIN Power up to 6 A

Number of contacts

48, 32

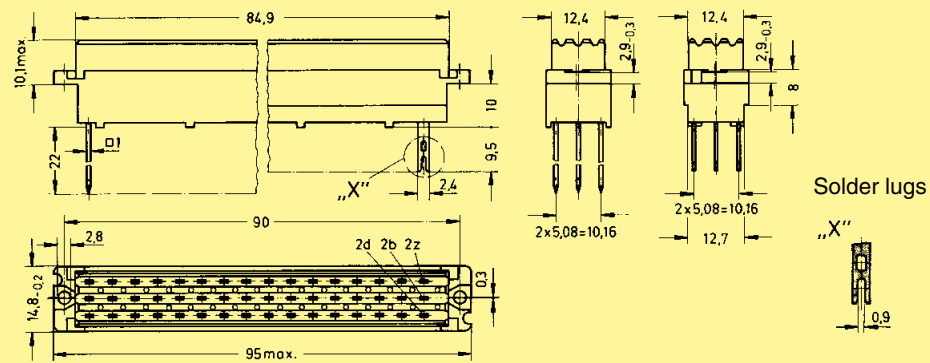


Female connectors

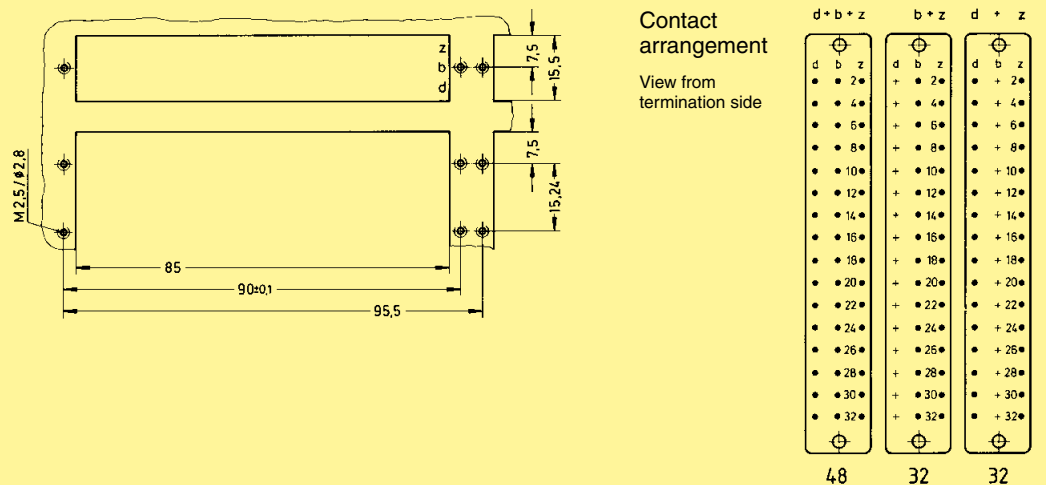
Identification	Number of contacts	Contact arrangement	Part No. Performance levels according to IEC 60 603-2. Explanation chapter 00		
			3	2	1
Female connector with wrap posts 22 mm	48		09 06 248 7821	09 06 248 6821 09 06 248 6821 222 ^{f)}	09 06 248 2821 09 06 248 2821 222 ^{f)}
	32		09 06 232 7821	09 06 232 6821	09 06 232 2821
	32		09 06 232 7831	09 06 232 6831	09 06 232 2831
Female connector with solder lugs open solder lug 	48		09 06 248 7823	09 06 248 6823	09 06 248 2823
	32		09 06 232 7823	09 06 232 6823	09 06 232 2823
	32		09 06 232 7843	09 06 232 6843 09 06 232 6843 222 ^{f)}	09 06 232 2843

DIN Power up to 6 A

Dimensions



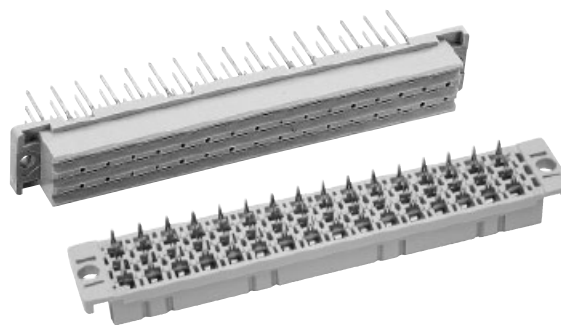
Panel cut out



Dimensions in mm

Number of contacts

48, 32

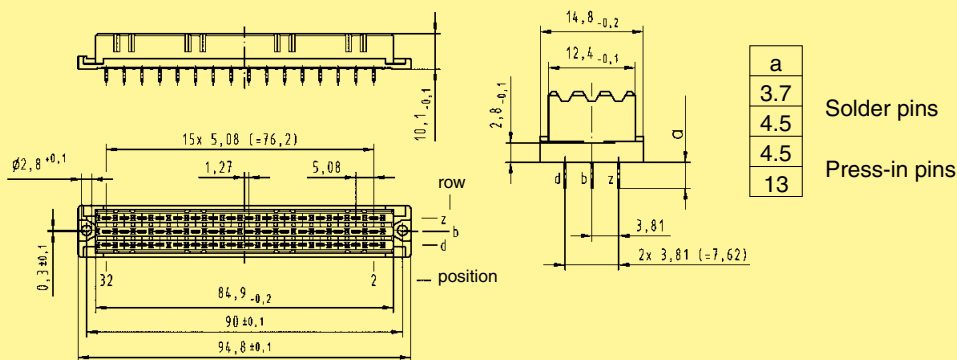


Female connectors

Identification	Number of contacts	Contact arrangement	Part No. Performance levels according to IEC 60 603-2. Explanation chapter 00		
			3	2	1
Female connector ¹⁾ "low profile" with solder pins 3.7 mm	48		09 06 248 7833	09 06 248 6833 09 06 248 6833 222 ^{f)}	09 06 248 2833 09 06 248 2833 222 ^{f)}
	32			09 06 232 6833	
	32			09 06 232 6893	
Female connector ¹⁾ "low profile" with solder pins 4.5 mm	48		09 06 248 7833	09 06 248 6834 09 06 248 6834 222 ^{f)}	09 06 248 2834
	32			09 06 232 6834	
	32			09 06 232 7894	09 06 232 6894
Female connector ¹⁾ "low profile" with press-in pins 4.5 mm	48		09 06 248 7832	09 06 248 6832	09 06 248 2832 09 06 248 2832 222 ^{f)}
	32			09 06 232 6832	09 06 232 2832
	32			09 06 232 6892	09 06 232 2832 222 ^{f)}
Female connector "low profile" with press-in pins 13 mm	48		09 06 248 7832	09 06 248 6837	
	32			09 06 232 6897	

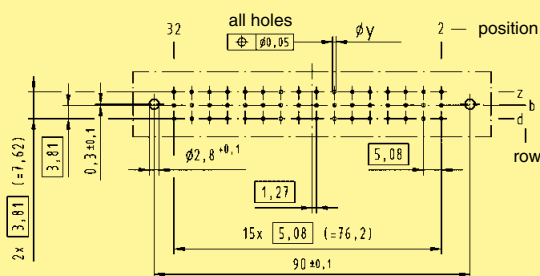
DIN Power
up to 6 A

Dimensions



Board drillings

Mounting side



	Y
Solder	1 ± 0.1
Press-in	see recommendation page 00.25

Dimensions in mm

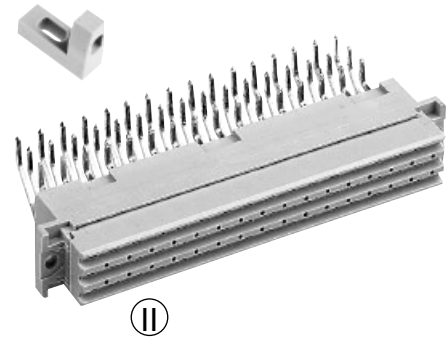
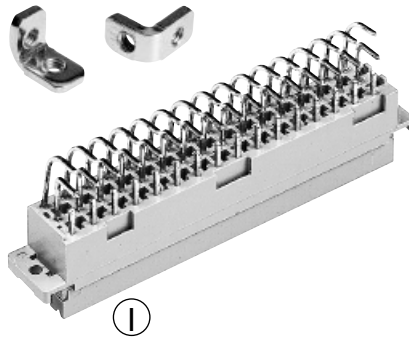
¹⁾ With shroud coding, see also chapter 00

^{f)} Railway classification NFF 16-101, Smoke index: F1, Flammability class: I2

Number of contacts

48, 32

Female connectors



Identification Number of contacts Contact arrangement Part No. Performance levels according to IEC 60 603-2. Explanation chapter 00

Identification	Number of contacts	Contact arrangement	Part No.	Performance level 3	Performance level 2	Performance level 1
Female connector with angled solder pins 1 x 1 mm	48		Performance level 3 on request	09 06 248 6826	09 06 232 6826	Performance level 1 on request
	32					
	48					
	32					
	32					

Dimensions						

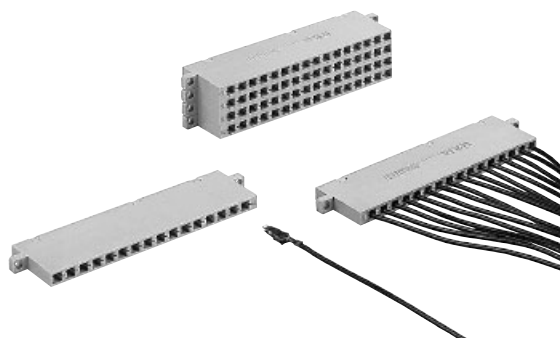
Fixing bracket		Metal	09 06 000 9912 ¹⁾	for version
¹⁾ Order 2 pieces for one connector		Plastic	09 06 000 9975 ¹⁾	for version

Board drillings Mounting side						

DIN Power up to 6 A

Number of contacts

64, 16



Universal adaptors

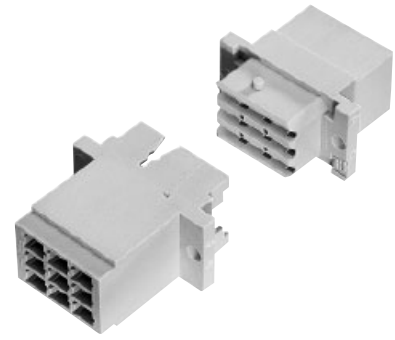
DIN Power
up to 6 A

Identification	Number of contacts	Part No.	Drawing	Dimensions in mm
Universal adaptor utilising crimp contacts crimp contacts see page 03.31	4 x 4	09 06 016 3301 ¹⁾		
	16 x 1	09 06 016 3302 ¹⁾		
	16 x 4	09 06 064 3302 ¹⁾		
Panel cut out				

¹⁾ Railway classification NFF 16-101, Smoke index: F1, Flammability class: I2

Number of contacts

max. 9



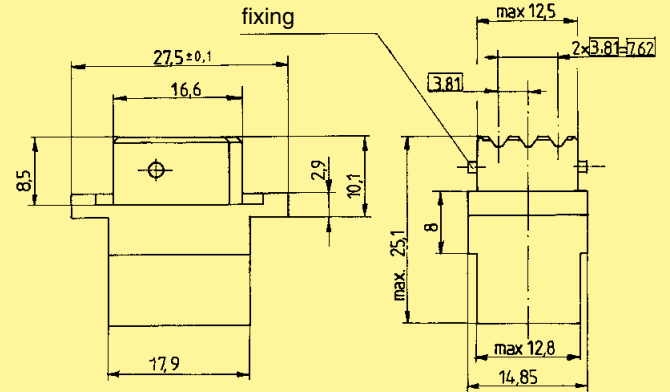
Female and male connectors

Identification	Number of contacts	Part No.	Drawing	Dimensions in mm
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Female connector for crimp contacts
Order contacts separately

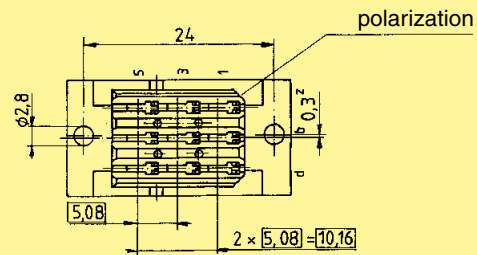
9

09 06 209 3201



Female crimp contacts

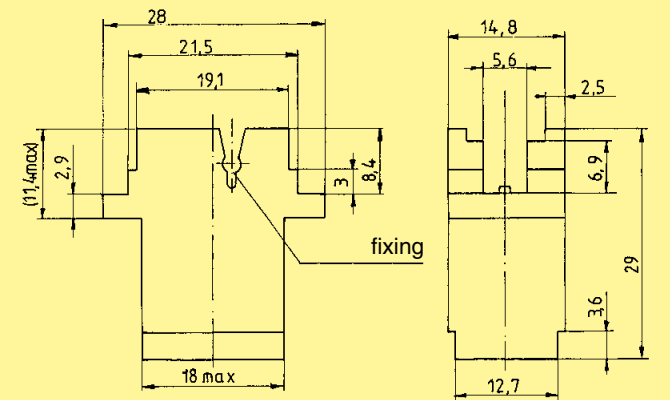
see page 03.31



Male connector for crimp contacts
Order contacts separately

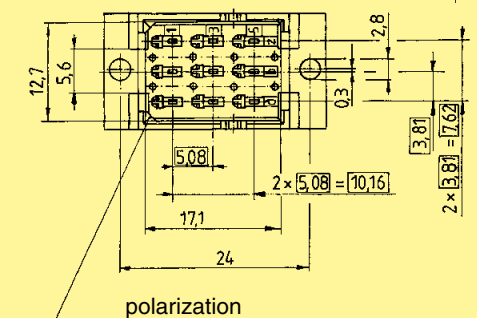
9

09 06 109 3401



Male crimp contacts

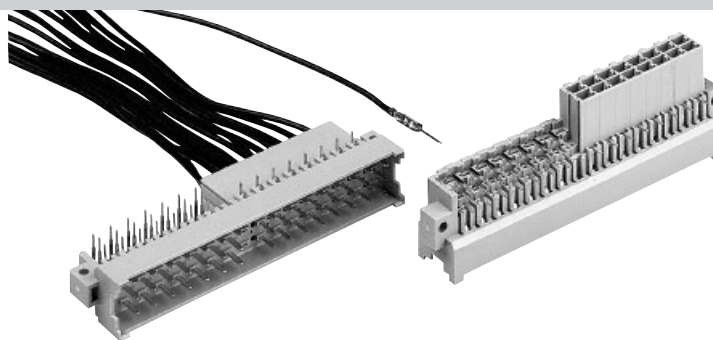
see page 03.40



DIN Power up to 6 A

Number of contacts

45



Male connectors

DIN Power
up to 6 A

Identification	Number of contacts	Part No.	Drawing	Dimensions in mm
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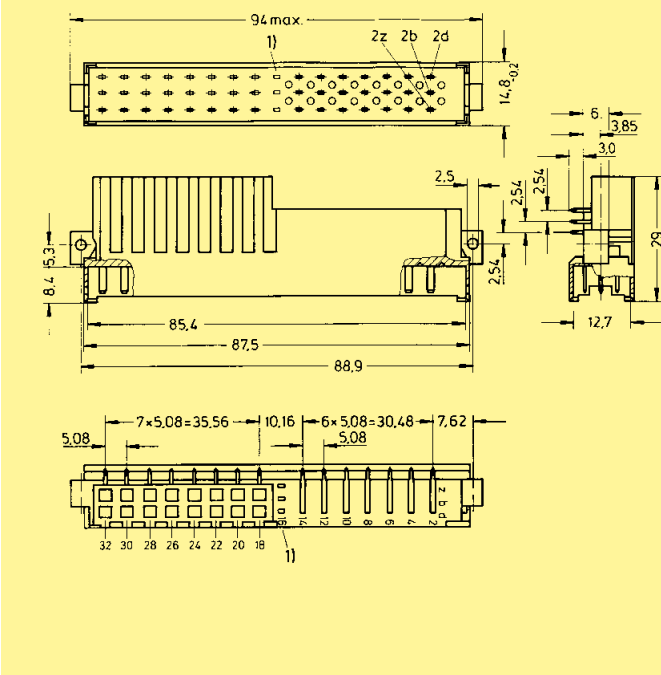
Male connector

29 angled solder pins
16 cavities for male crimp contacts

45

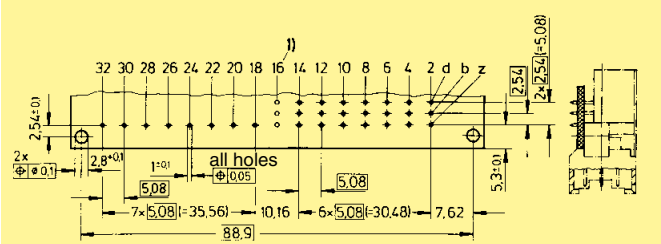
Performance level 1
acc. to IEC 60 603-2

09 06 145 2971



crimp contacts
see page 03.40

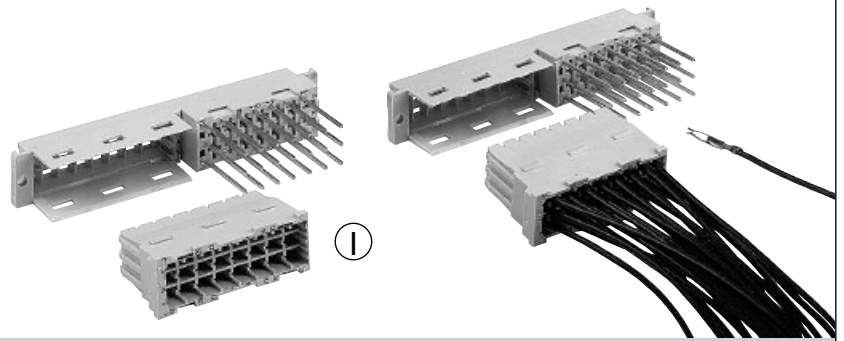
Board drillings
Mounting side



1) A special 48 way version with 3 extra angled solder contacts at position 16 (rows d, b, z) can be supplied

Number of contacts

45



Female connectors

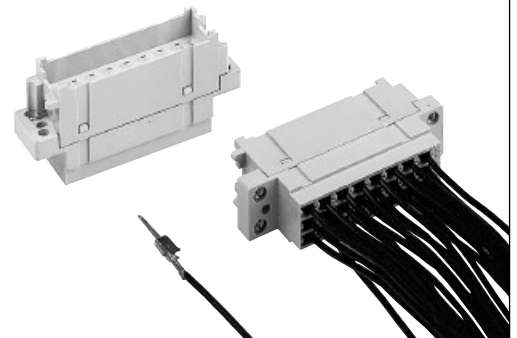
Identification	Number of contacts	Part No.	Drawing	Dimensions in mm
Female connector				
Female moulding with 21 wrap posts 22 mm	45	09 06 045 2871 ^{f)}	<p>Latches</p> <p>Crimp moulding is supplied with the female moulding</p>	<p>2 × 5,08 = 10,16</p> <p>2,8^{+0,01}</p> <p>90^{±0,1}</p> <p>2d 2b 2z</p> <p>0,3</p> <p>14,8^{-0,2}</p> <p>5,08</p> <p>7 × 5,08 = 35,56</p> <p>10,16</p> <p>6 × 5,08 = 30,48</p> <p>8,17</p> <p>95 max.</p> <p>2 × 3,81 = 7,62</p> <p>84,9</p> <p>10</p> <p>19,5</p> <p>13</p> <p>10</p> <p>22</p> <p>12,4</p> <p>2,9^{+0,03}</p>
with 21 solder pins 4.5 mm	45	09 06 045 2875 ^{f)}		
Crimp moulding for 24 female crimp contacts		09 06 024 3202 ^{f)}	<p>View from termination side</p>	
crimp contacts see page 03.31				
Panel cut out			<p>M2,5/∅2,8</p> <p>85</p> <p>90^{±0,1}</p> <p>95,5</p> <p>8,2</p> <p>17</p> <p>8,2</p> <p>20,32</p>	
Removal tool for the crimp moulding		09 99 000 0172	<p>20</p> <p>125</p>	
			<p>The crimp moulding can be extracted with the help of the removal tool.</p>	

DIN Power
up to 6 A

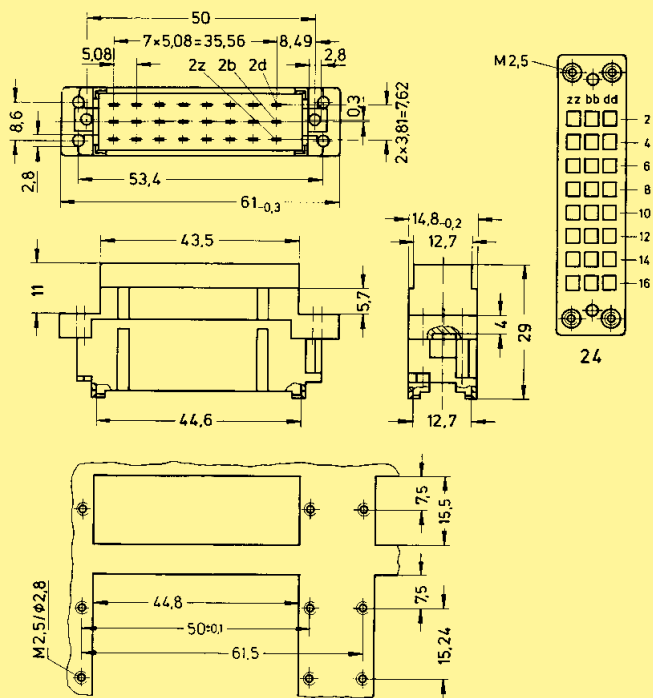
^{f)} Railway classification NFF 16-101, Smoke index: F1, Flammability class: I2

Number of contacts

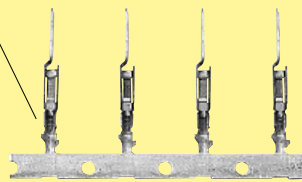

max. 24



Interface connector I

Identification	Number of contacts	Part No.	Drawing	Dimensions in mm
Interface connector I for male crimp contacts Order contacts separately	24	09 26 024 3411		

Identification	Identification Wire gauge	Part No.	Performance levels according to IEC 60603-2. Explanation chapter 00
			2 1
Male crimp FC contacts			
Bandoliered contacts (approx. 2,500 pieces)	1	09 06 000 9564	09 06 000 9544
	2	09 06 000 9561	09 06 000 9541
	3	09 06 000 9562	09 06 000 9542
Bandoliered contacts (approx. 250 pieces)	2		09 06 000 5541
	3		09 06 000 5542
Individual contacts ¹⁾	1	09 06 000 9574	09 06 000 9554
	2	09 06 000 9571	09 06 000 9551
	3	09 06 000 9572	09 06 000 9552

	FC 1	FC 2	FC 3	Wire gauge mm ²	AWG	Insulation ø mm	Identification
				0.09 - 0.25	28 - 24	0.7 - 1.5	 Bandoliered contacts
				0.14 - 0.56	26 - 20	0.8 - 2.0	
				0.5 - 1.5	20 - 16	1.6 - 2.8	
				3.5 + 0.5 mm of insulation is stripped from the wires to be crimped			 Individual contacts
				For the fabrication in line with the specification please use exclusively crimp tools approved by HARTING (see DIN EN 60352-2)			
				Insertion, removal and crimping tools see chapter 30			

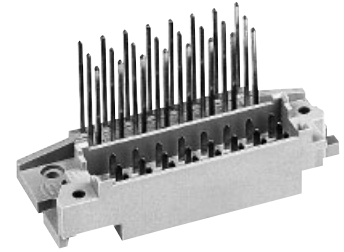
DIN Power up to 6 A

03
40

¹⁾ Packaging unit 1,000 pieces

Number of contacts

max. 24



Interface connector U

Identification	Number of contacts	Part No.	Drawing	Dimensions in mm
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Interface connector U
with wrap posts
1 x 1 mm

Number of contacts

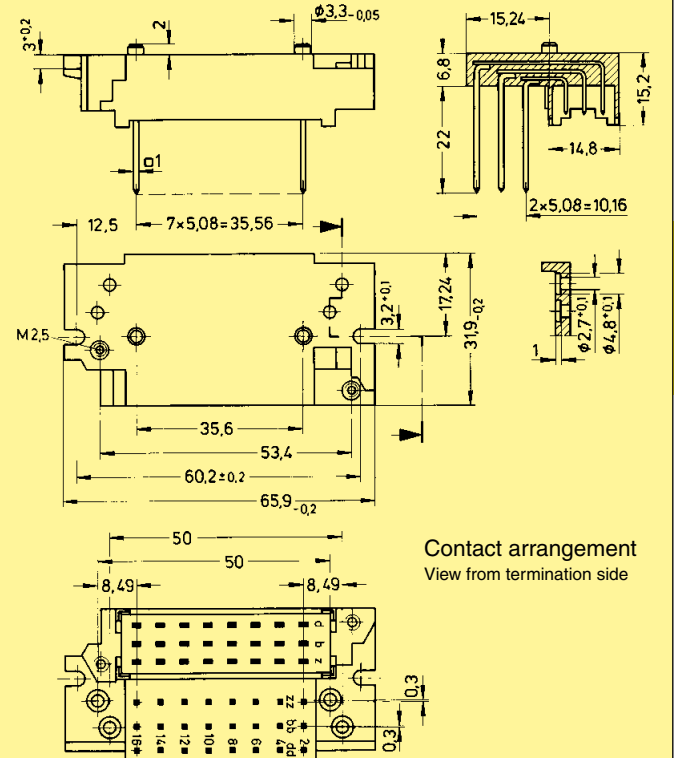
24

Part No.

Performance level 1
acc. to IEC 60 603-2

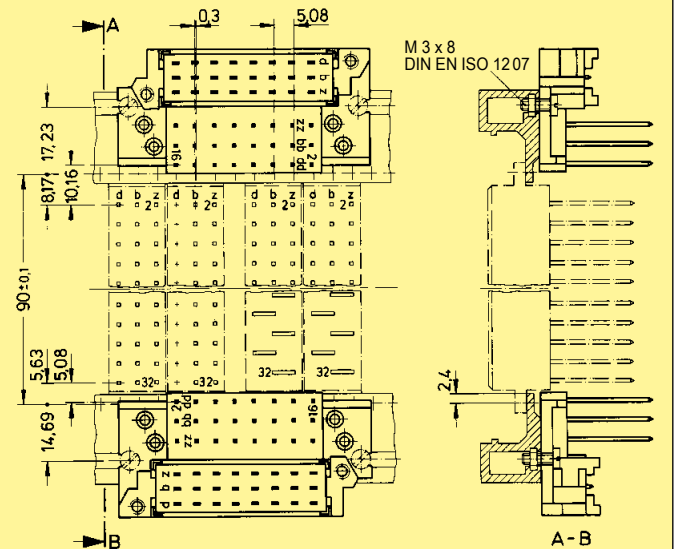
09 26 024 2981¹⁾

Drawing



Contact arrangement
View from termination side

Mounting example



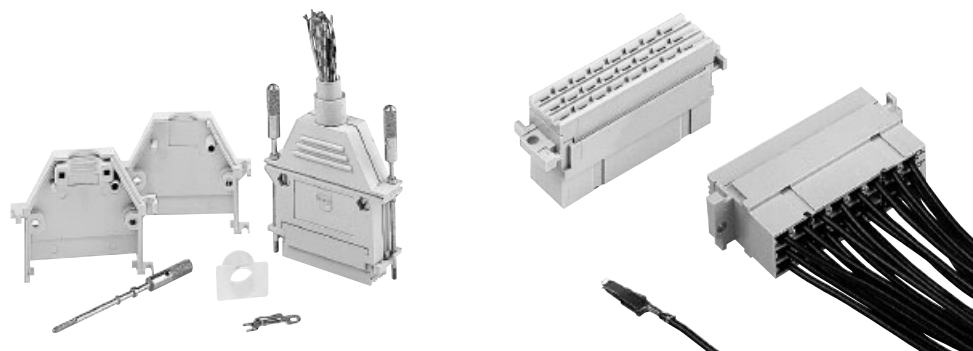
DIN Power
up to 6 A

03
41

¹⁾ Railway classification NFF 16-101, Smoke index: F1, Flammability class: I2

Number of contacts

max. 24



Female connectors

DIN Power
up to 6 A

Identification	Number of contacts	Part No.	Drawing	Dimensions in mm
<p>Female connector for crimp contacts</p> <p>Order contacts separately see page 03.31</p>	24	09 26 024 3201 ¹⁾		
<p>Shell housing A with integrated fixing screws</p> <p>Supplied with: Shell 2x Locking screw 2x Screw M3x10 2x Nut M3 2x Screw BZ 2.9x9.5 2x Cable clamp 1x Tension relief 1x</p>		09 26 024 0401 ¹⁾		
<p>Open hood</p> <p>Supplied with: Open hood 1x Locking screw 2x Screw BZ 2.2x9.5 2x Cable tie 1x</p>		09 26 000 9901 ¹⁾		

¹⁾ Railway classification NFF 16-101, Smoke index: F1, Flammability class: I2