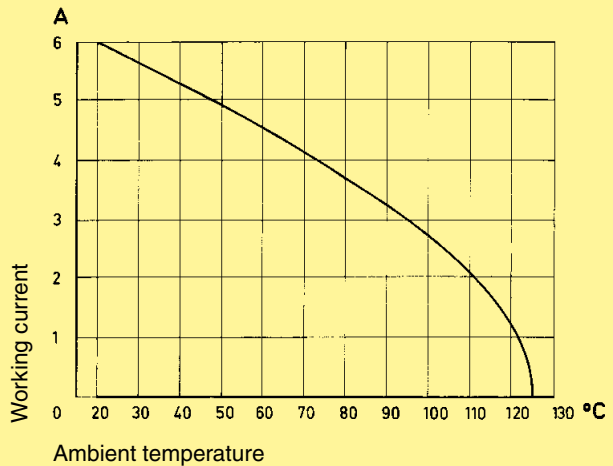


<b>Number of contacts</b>	
Type D	32
Type E	48
<b>Contact spacing (mm)</b>	
Type D	5,08
Type E	male connector 5.08 x 5.08 male connector 2.54 x 5.08 female connector 5.08 x 5.08
<b>Working current</b>	6 A max.
see current carrying capacity chart	1 A max. for female connector type E angled
<b>Clearance</b>	
Types D and E	≥ 3.0 mm
Type E male connector row separation 2.54 mm	≥ 1.6 mm
<b>Creepage</b>	≥ 3.0 mm
<b>Working voltage</b>	
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
<b>Test voltage <math>U_{r.m.s.}</math></b>	1.55 kV
<b>Contact resistance</b>	≤ 15 mΩ ≤ 20 mΩ for female connector type E angled
<b>Insulation resistance</b>	≥ 10 <sup>12</sup> Ω for standard articles ≥ 10 <sup>11</sup> Ω for special NFF articles (with part-no. ending 222)
<b>Temperature range</b>	- 55 °C ... + 125 °C The higher temperature limit includes the local ambient and heating effects of the contacts under load
<b>Degree of protection for crimp terminal according to DIN 40 050</b>	IP 20
<b>Electrical termination</b>	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 <sup>2</sup> Compliant press-in terminations PCB thickness Recommended PCB holes for press-in technology
<b>Insertion and withdrawal force</b>	32 way ≤ 40 N 48 way ≤ 75 N
<b>Materials</b>	
Mouldings	Thermoplastic resin, glass-fibre filled, UL 94-V0
Contacts	Copper alloy
<b>Contact surface</b>	
Contact zone	Selectively gold plated according to performance level <sup>1)</sup>
<sup>1)</sup> 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

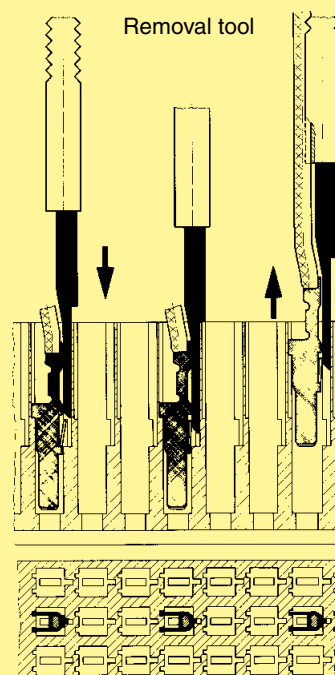


## Fitting the crimp contacts

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 mm<sup>2</sup> an insertion tool is necessary.

## Removing the crimp contacts

The removal tool is inserted into a slot on the termination 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

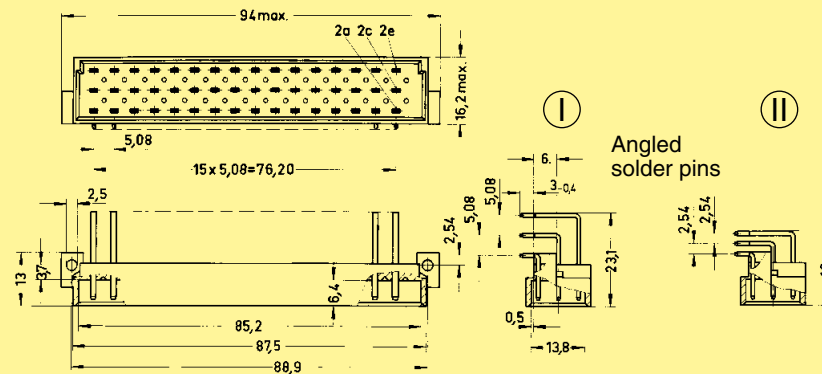


Male connectors

Identification	Number of contacts	Contact arrangement	Part No. Performance levels according to IEC 60603-2. Explanation chapter 00		
			3	2	1
<b>Male connector with angled solder pins</b>  Row separation termination side 5.08 mm (I)  Row separation termination side 2.54 mm (II)  SMC	48		09 05 148 7921	09 05 148 6921 09 05 148 6921 222 <sup>f)</sup> 09 05 348 6921 <sup>b)</sup> 09 05 648 6921 <sup>c)</sup> 09 05 848 6921 <sup>b)c)</sup>	09 05 148 2921 09 05 148 2921 222 <sup>f)</sup>  09 05 648 2921 <sup>c)</sup>
	46 + 2▲			09 05 148 6951	
	48		09 05 148 7931	09 05 148 6931 09 05 348 6931 <sup>b)</sup> 09 05 648 6931 <sup>c)</sup>	09 05 148 2931
	48			09 05 148 6920 <sup>d)</sup> 09 05 348 6920 <sup>b)d)</sup>	
	46 + 2▲			09 05 148 6961	

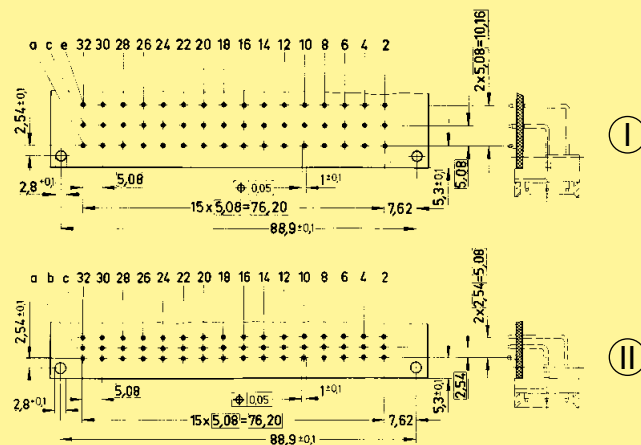
DIN Power up to 6 A

Dimensions



Board drillings

Mounting side



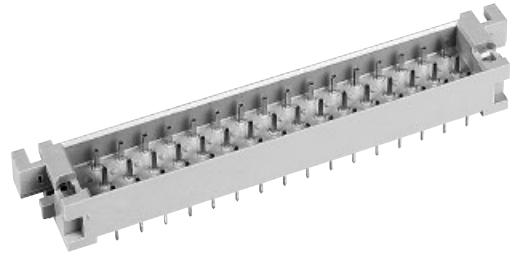
Dimensions in mm

▲ Male connectors with 2 leading contacts [(0.8 mm) pos. a2 and 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

48



Interface connector I

Identification	Number of contacts	Part No.	Drawing	Dimensions in mm
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 6924 <sup>1)</sup>	<p>                             Drawing showing top and side views of the connector with dimensions: 95, 2, 2a, 2c, 2e, 13,8, 16,2, 90±0,1, 97,5, 6,4, 85,2, 88, 106, 5,25, 4, 12,2, 5,25, 17,5.                         </p> <p>                             Contact arrangement View from termination side                         </p>	
Panel cut out			<p>                             Drawing showing panel cut out dimensions: 85,2, 90±0,1, 106,5, 10,2, 5,35, 16,4, 5,35, 17,78.                         </p>	
Board drillings Mounting side			<p>                             Drawing showing board drillings dimensions: 0,3, 5,08, 15 x 5,08=76,20, 90±0,1, 1±0,1, 2,54, 5,08, 2,8±0,1, 2 x 5,08=10,16, 6,2.                         </p> <p>                             M 2,5 DIN EN ISO 4 032                         </p>	

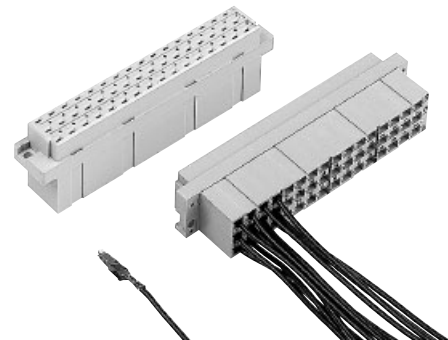
DIN Power up to 6 A

03  
16

<sup>1)</sup> 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 <sup>1)</sup> 09 05 548 3202 <sup>2)</sup>	<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 <sup>1)</sup>	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 <sup>2)</sup> (lockable)			09 06 000 6420

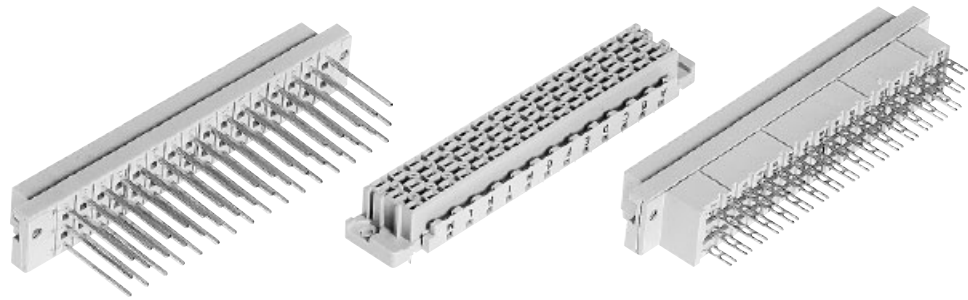
		Wire gauge mm <sup>2</sup>	AWG	Insulation ø mm	Identification
FC 1	1	0.09 - 0.25	28 - 24	0.7 - 1.5	<p>Bandoliered contacts</p> <p>Individual contacts</p>
FC 2	2	0.14 - 0.56	26 - 20	0.8 - 2.0	
FC 3	3	0.5 - 1.5	20 - 16	1.6 - 2.8	
3.5 + 0.5 mm of insulation is stripped from the wires to be crimped For the 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					

<sup>c)</sup> Connectors with coding see chapter 00  
<sup>f)</sup> Railway classification NFF 16-101, Smoke index: F1, Flammability class: I2

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

Number of contacts

# 48

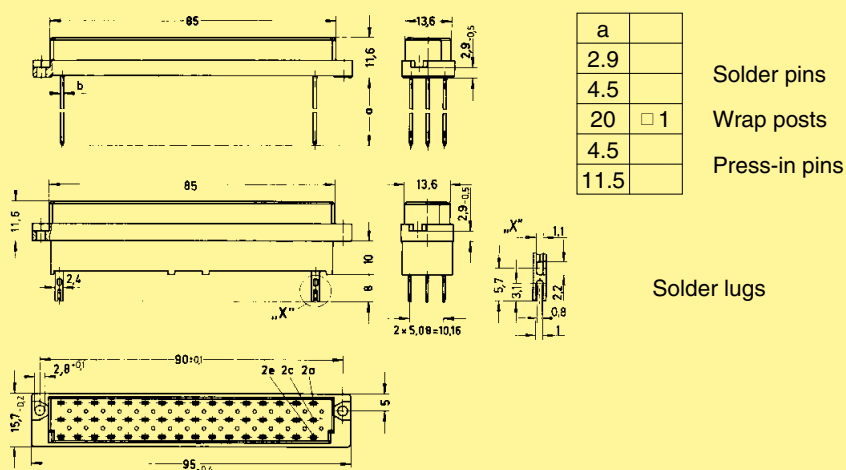


Female connectors

DIN Power  
up to 6 A

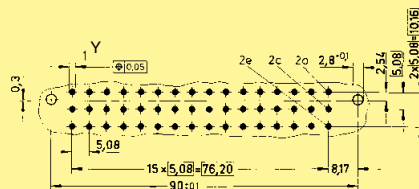
Identification	Number of contacts	Contact arrangement	Part No.	Performance levels according to IEC 60603-2. Explanation chapter 00	3	2	1
Female connector with solder pins 2.9 mm	48		09 05 248 7832		09 05 248 6832	09 05 248 2832	
4.5 mm	48				09 05 248 6831 09 05 348 6831 <sup>b)</sup> 09 05 748 6831 <sup>c)</sup> 09 05 848 6831 <sup>b)c)</sup>	09 05 248 2831 09 05 248 2831 222 <sup>f)</sup> 09 05 748 2831 <sup>c)</sup>	
Female connector with wrap posts 20 mm	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 4.5 mm	48					09 05 248 2854	
11.5 mm	48				09 05 248 6851* 09 05 248 6851 222 <sup>*f)</sup>	09 05 248 2851*	

## Dimensions



## 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)  
<sup>b)</sup> Connectors with snap-in clips see chapter 00  
<sup>c)</sup> Connectors with coding see chapter 00

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

Number of contacts

48

Female connectors



Identification

Female connector with angled solder pins

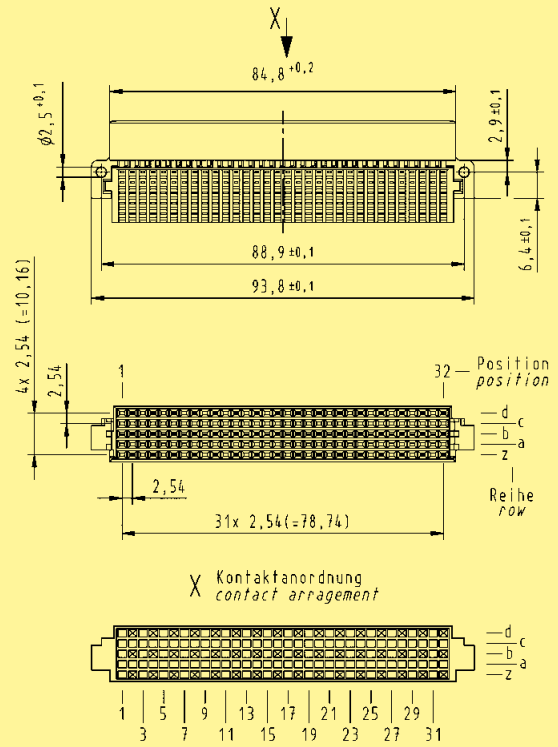
Part No.

Performance level 1

02 04 048 1101

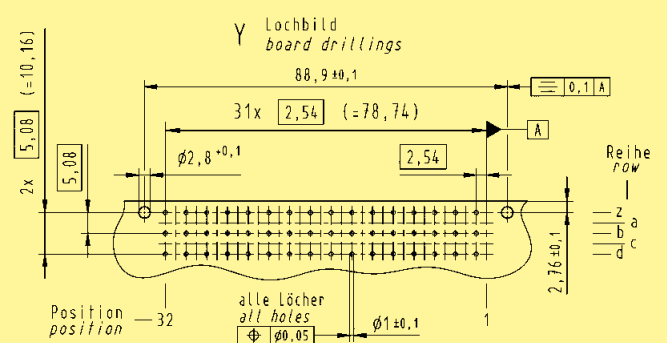
Drawing

Dimensions in mm



DIN Power up to 6 A

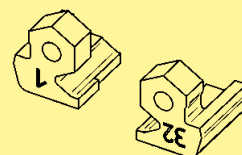
Board drillings  
Mounting side



Fixing bracket

Position 1  
Position 32

02 09 000 0018  
02 09 000 0017



Dimensions in mm