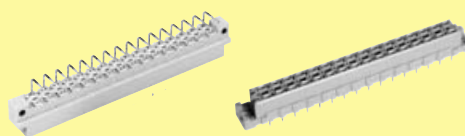


Types D, E, F, FM, 2F, F9, interface connectors I/U

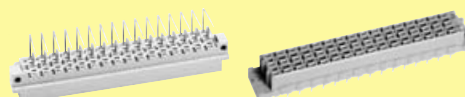
Page

Technical characteristics types D and E **02.10**

Type D connectors **02.11**

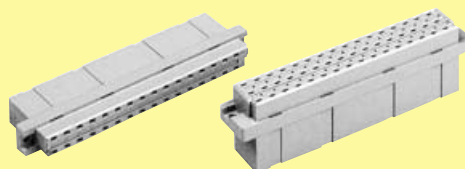


Type E connectors **02.15**



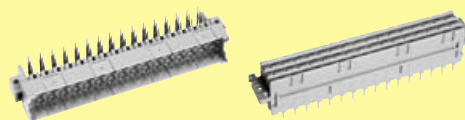
Technical characteristics piggyback connectors **02.20**

Piggyback connectors **02.21**



Technical characteristics types F, F9, FM and 2F **02.24**

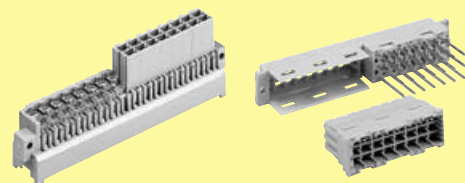
Type F connectors **02.25**



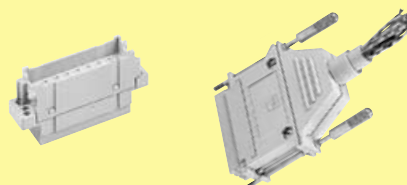
Type F9 connectors **02.35**



Type FM connectors **02.36**



Type 2F connectors **02.38**



Coding systems **02.41**

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 und E | ≥ 3.0 mm |
| Type E male connector row separation 2.54 mm | ≥ 1.6 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 for wire wrap and solder connections
≤ 20 mΩ including crimp connections

Insulation resistance

≥ 10¹² Ω

Temperature range

– 55 °C ... + 125 °C

The higher temperature limit includes the local ambient and heating effects of the contacts under load

Degree of protection for crimp terminal

IP 20 according to DIN 40 050

Electrical termination

| | |
|------------------|--|
| Male connector | Solder pins for pcb connections Ø 1.0 ± 0.1 mm according to IEC 60 326-3 |
| Female connector | Wrap posts 1 x 1 mm diagonal 1.34-1.45 mm |
| | Solder pins for pcb connections Ø 1.0 ± 0.1 mm according to IEC 60 326-3 |
| | 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 |

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

Mating conditions

see chapter 00

Coding systems

see pages 02.41 and 02.42

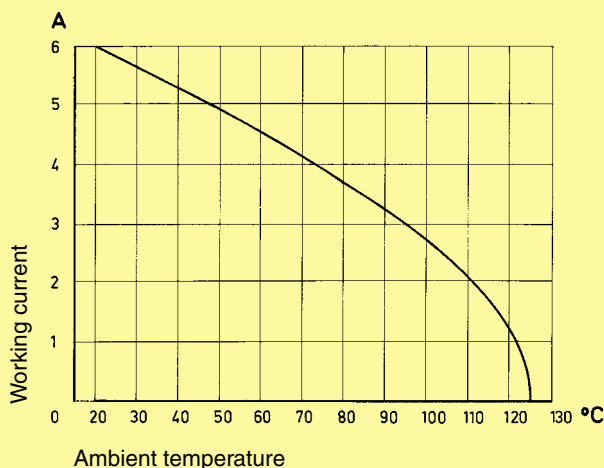
Mounting clips

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

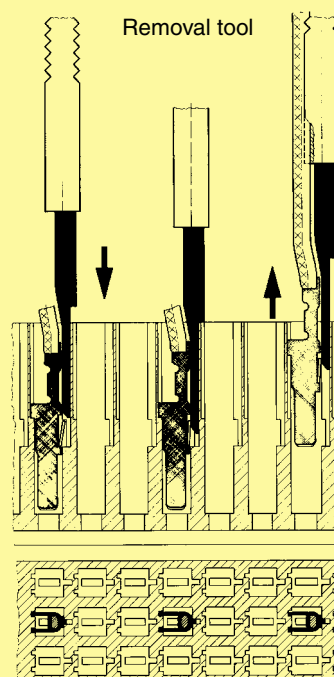


Fitting the crimp contacts

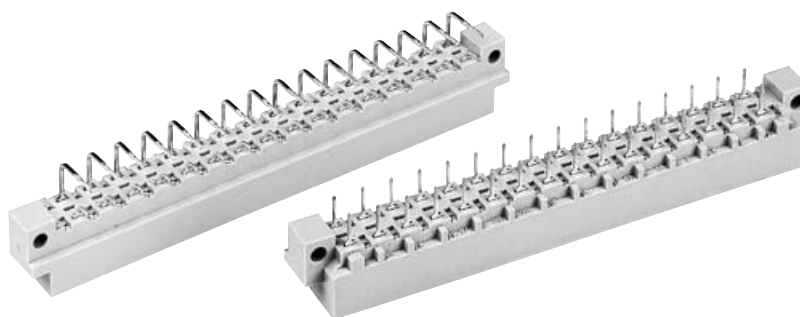
After crimping the wires onto the contacts with the help of a crimping tool or an automatic crimping machine the contacts should be correctly oriented and inserted into the cavities of the connector moulding in the required configuration. They snap into position and are firmly held in place. A light 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).



32



Male connectors

DIN Power to 6 A

Technical drawing of the 10-pin connector showing dimensions in mm. The drawing includes a top view, a side view, and an angled view of the solder pins.

Top View Dimensions:

- Overall length: 94 max.
- Pin pitch: 2a, 2c
- Pin diameter: 1.1
- Pin spacing from edge: 5.08
- Pin diameter: 1.5 x 5.08 = 76.20

Side View Dimensions:

- Pin height: 2.5
- Pin diameter: 1.3
- Pin spacing from edge: 3.7
- Pin diameter: 85.2
- Pin diameter: 87.5
- Pin diameter: 88.9
- Pin diameter: 6.4

Angled solder pins dimensions:

- Pin height: 2.54
- Pin diameter: 5.08
- Pin diameter: 6
- Pin diameter: 3-0.4
- Pin diameter: 18
- Pin diameter: 0.5
- Pin diameter: 8.7

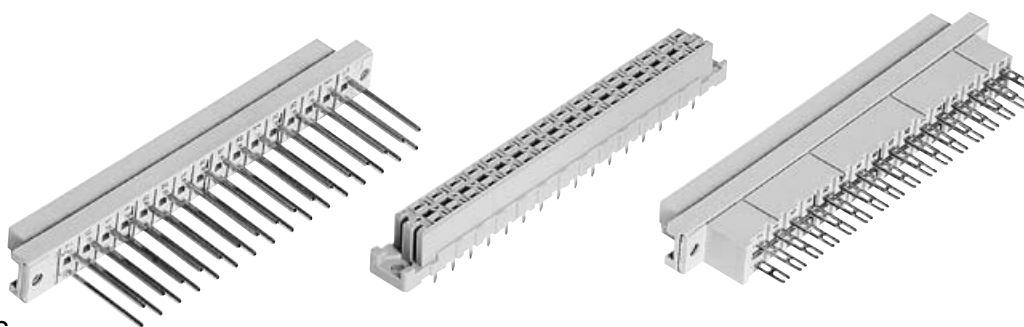
Straight solder pins dimensions:

- Pin height: 3.25 ± 0.3





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11

- Downloaded from
- Arrow.com
- .

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 2.9 mm | 32 |  | 09 04 232 7832 | 09 04 232 6832 09 04 732 6832 ^{c)} | 09 04 232 2832 |
| Female connector with solder pins 4.5 mm | 32 |  | 09 04 232 7831 | 09 04 232 6831 09 04 332 6831 ^{b)} 09 04 732 6831 ^{c)} | 09 04 232 2831 |
| Female connector with wrap posts 20 mm | 32 |  | 09 04 232 7821 | 09 04 232 6821 09 04 732 6821 ^{c)} | 09 04 232 2821 |
| Female connector with solder lugs | 32 |  | 09 04 232 7823 | 09 04 232 6823 | 09 04 232 2823 |

Solder pins

| a |
|-----|
| 2.9 |
| 4.5 |

Wrap posts

| a | b |
|----|---|
| 20 | 1 |

Solder lugs

| a | b | c |
|-----|-----|-----|
| 2.9 | 1.1 | 0.8 |
| 4.5 | 1.1 | 0.8 |

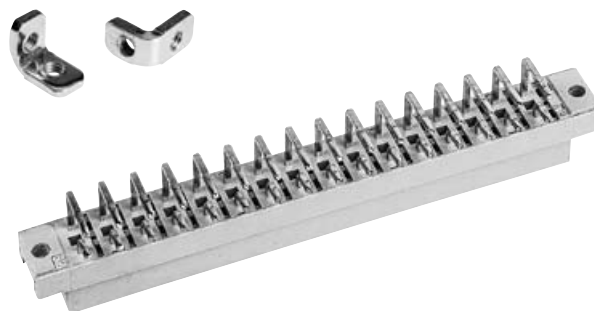
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Board drillings
Mounting side


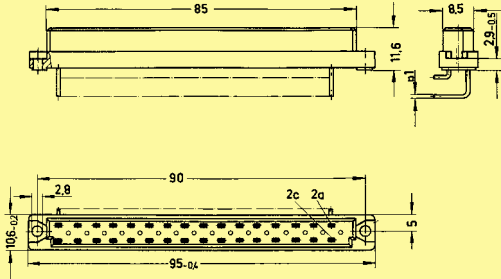
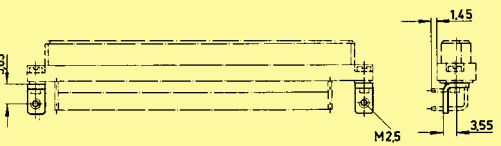
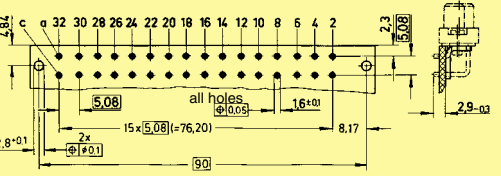
Dimensions in mm

Number of contacts

32



Female connectors

| Identification | Number of contacts | Contact arrangement | Part No. | Performance levels according to IEC 60603-2. Explanation chapter 00 | | |
|---|--------------------|---|------------------------------|--|----------------|--|
| | | | 3 | 2 | 1 | |
| Female connector with angled solder pins 1 x 1 mm | 32 |  | 09 04 232 7826 | 09 04 232 6826 | 09 04 232 2826 | |
| Dimensions | | | |  | | |
| Fixing bracket Metal | | | 09 06 000 9912 ¹⁾ |  | | |
| Board drillings Mounting side | | | |  | | |

Dimensions in mm

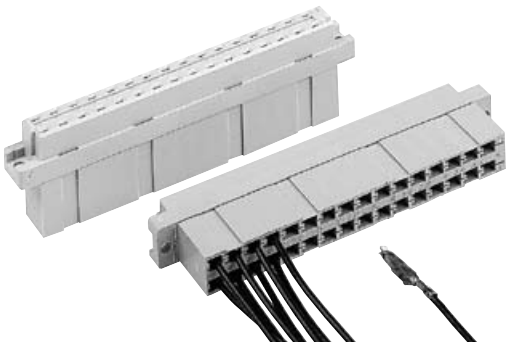
¹⁾ order 2 pieces
for one connector

Dimensions in mm

DIN Power
to 6 A02
13

Number of contacts

max. 32



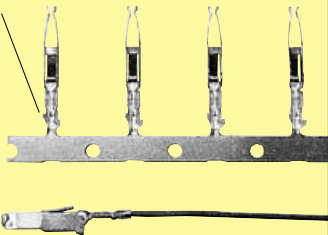
Female connectors

DIN Power
to 6 A

| Identification | Number of contacts | Part No. | Drawing | Dimensions in mm |
|--|--------------------|----------------|---------|---|
| Female connector for crimp contacts Order contacts separately | 32 | 09 04 032 3213 | | Shell housing 09 03 096 0501 see chapter 20 |

| Identification | Identification Wire gauge | Part No. | Performance levels according to IEC 60 603-2. Explanation chapter 00 |
|---|---------------------------|----------------|--|
| 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 | 1 | 0.09 - 0.25 | 28 - 24 | 0.7 - 1.5 | Bandoliered contacts |
| FC 2 | 2 | 0.14 - 0.56 | 26 - 20 | 0.8 - 2.0 | Individual contacts |
| 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 | | | | | |
| Insertion, removal and crimping tools see chapter 30 | | | | | |



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

48



| 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 ① | 48 | | 09 05 148 7921 | 09 05 148 6921 09 05 348 6921 ^{b)} 09 05 648 6921 ^{c)} | 09 05 148 2921 09 05 648 2921 ^{c)} |
| | 46 + 2 [▲] | | | 09 05 148 6951 | |
| Row separation termination side 2.54 mm ② | 48 | | 09 05 148 7931 | 09 05 148 6931 | 09 05 148 2931 |
| | 46 + 2 [▲] | | | 09 05 148 6961 | |

Technical drawing of a reinforced concrete slab (Table 1.1) showing two views: a plan view (top) and a section view (bottom).

Plan View (Top):

- Overall dimensions: 88.9 ± 0.1 m (width) by 7.62 m (length).
- Grid lines: a, c, e (vertical) and 32, 30, 28, 26, 24, 22, 20, 18, 16, 14, 12, 10, 8, 6, 4, 2 (horizontal).
- Reinforcement bars: 15 x 5.08 = 76.20 m (width) by 7.62 m (length).
- Bar diameters: 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32 mm.
- Section view: 242.5 mm ± 0.16 mm (thickness) by 7.62 m (length).

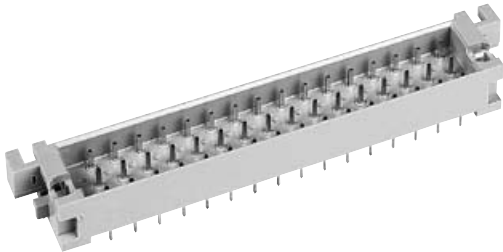
Section View (Bottom):

- Overall dimensions: 88.9 ± 0.1 m (width) by 7.62 m (length).
- Grid lines: a, b, c (vertical) and 32, 30, 28, 26, 24, 22, 20, 18, 16, 14, 12, 10, 8, 6, 4, 2 (horizontal).
- Reinforcement bars: 15 x 5.08 = 76.20 m (width) by 7.62 m (length).
- Bar diameters: 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32 mm.
- Section view: 242.5 mm ± 0.16 mm (thickness) by 7.62 m (length).

**DIN Power
to 6 A**

Number of contacts

48



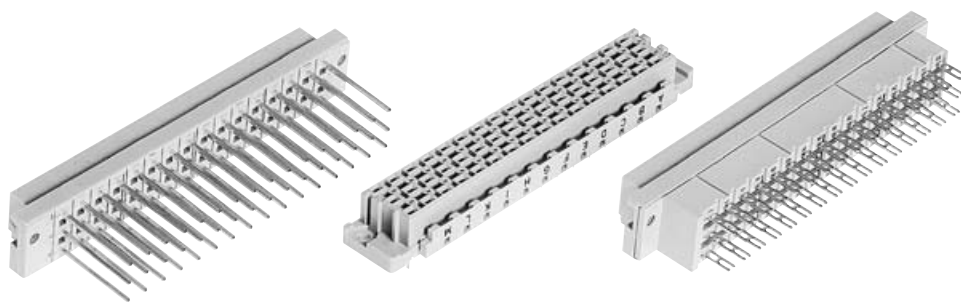
Interface connector I

| 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 | Contact arrangement View from termination side | |
| Panel cut out | | | | |
| Board drillings Mounting side | | | | |

DIN Power to 6 A

Number of contacts

48



Female connectors

| 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 | | | | | | | |
| Female connector with solder pins 4.5 mm | 48 | | 09 05 248 7831 | 09 05 248 6831 09 05 348 6831 ^{b)} 09 05 748 6831 ^{c)} | 09 05 248 2831 09 05 748 2831 ^{c)} | | | | | | | |
| 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 | Part Nos. and variants see chapter 04 | | | | | | | | | | | |
| Dimensions | <div><div><table><tr><td>a</td></tr><tr><td>2.9</td></tr><tr><td>4.5</td></tr></table>Solder pins</div><div><table><tr><td>a</td><td>b</td></tr><tr><td>20</td><td>1</td></tr></table>Wrap posts</div><div>Solder lugs</div></div> | | | | | a | 2.9 | 4.5 | a | b | 20 | 1 |
| a | | | | | | | | | | | | |
| 2.9 | | | | | | | | | | | | |
| 4.5 | | | | | | | | | | | | |
| a | b | | | | | | | | | | | |
| 20 | 1 | | | | | | | | | | | |
| Panel cut out | <div><div>Contact arrangement View from termination side</div></div> | | | | | | | | | | | |
| Board drillings Mounting side | | | | | | | | | | | | |

Dimensions in mm

DIN Power
to 6 A

Dimensions in mm

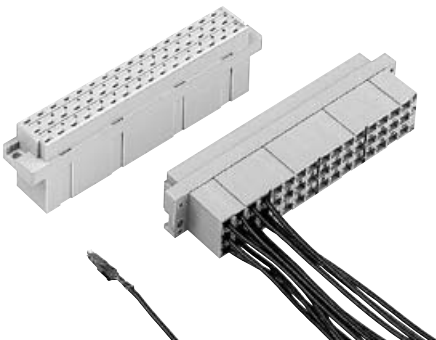
02
17

b) Connectors with snap-in clips see chapter 00

c) Connectors with coding see page 02.42

Number of contacts

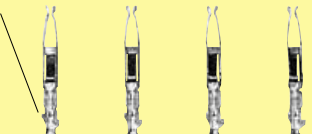
max. 48




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 09 05 548 3202 ^{c)} | <p>View from termination side</p> | |
| Shell housing 09 05 048 0501 see chapter 20 | | | | |

| Identification | Identification Wire gauge | Part No. | Performance levels according to IEC 60 603-2. Explanation chapter 00 |
|---|---------------------------|----------------|--|
| Female crimp FC contacts | | 2 | 1 |
| 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 | 1 | 0.09 - 0.25 | 28 - 24 | 0.7 - 1.5 |  |
| 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 | |

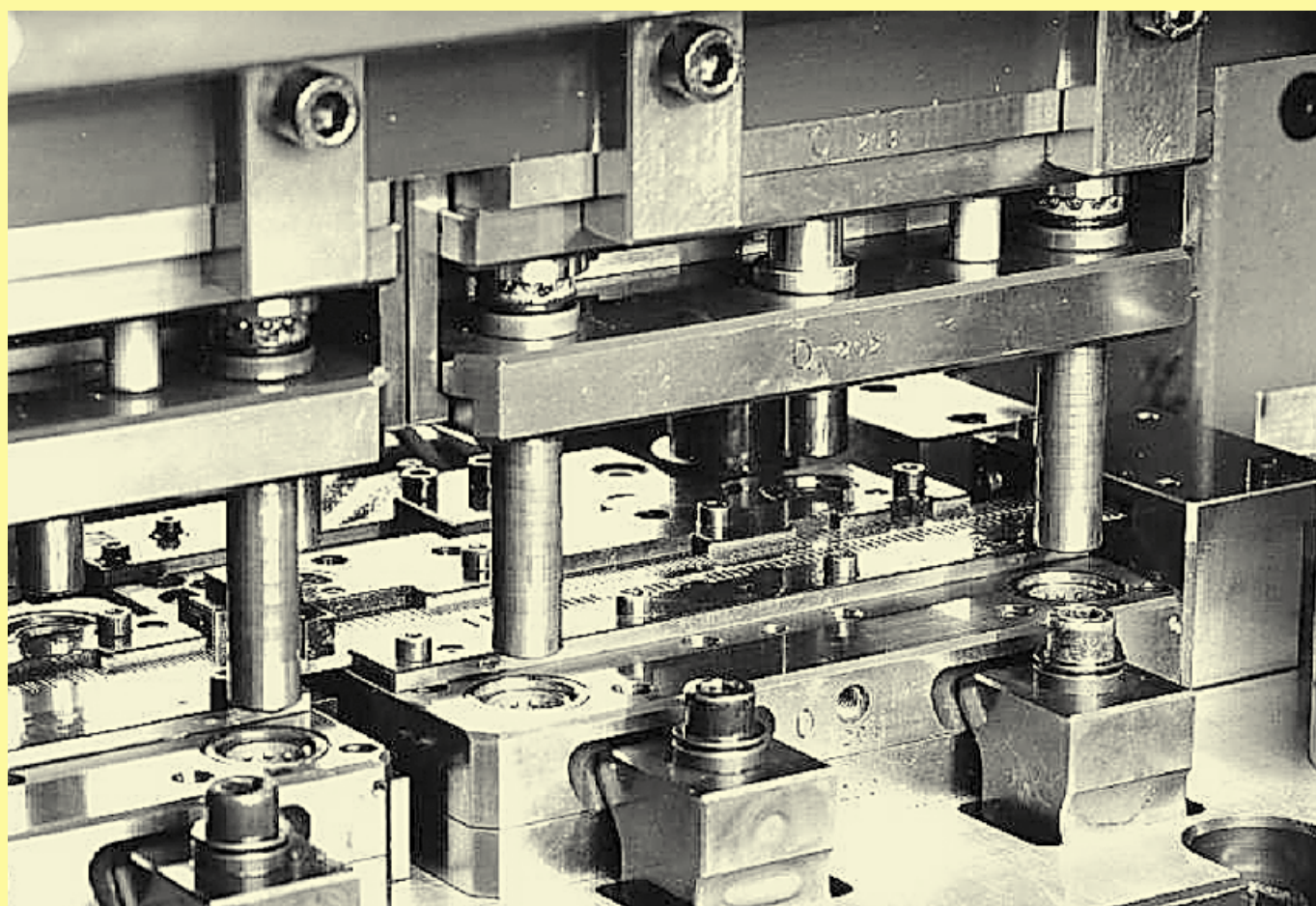
Bandoliered contacts

Individual contacts 

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

Insertion, removal and crimping tools see chapter 30

^{c)} Connectors with coding see page 02.42
¹⁾ Packaging unit 1,000 pieces
²⁾ Solder contacts must not be used together with shell housing A. Special contact surface: 2 µm gold.



DIN Power
to 6 A



Our claim is quality.

Simultaneous and fully automated high-speed stamping of several contacts with small tolerances.

Number of contacts 16, 32, 48

Working current 6 A max.
see current carrying capacity chart

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 m Ω

Insulation resistance $\geq 10^{12}$ Ω

Termination Crimp terminal
0.09-1.5 mm²

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.

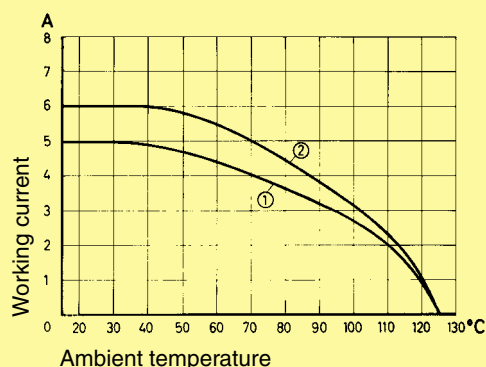
After crimping they can be easily inserted into the chambers of the connector body with the aid of an insertion tool. Insertion errors can be simply rectified with the use of a removal tool.

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.

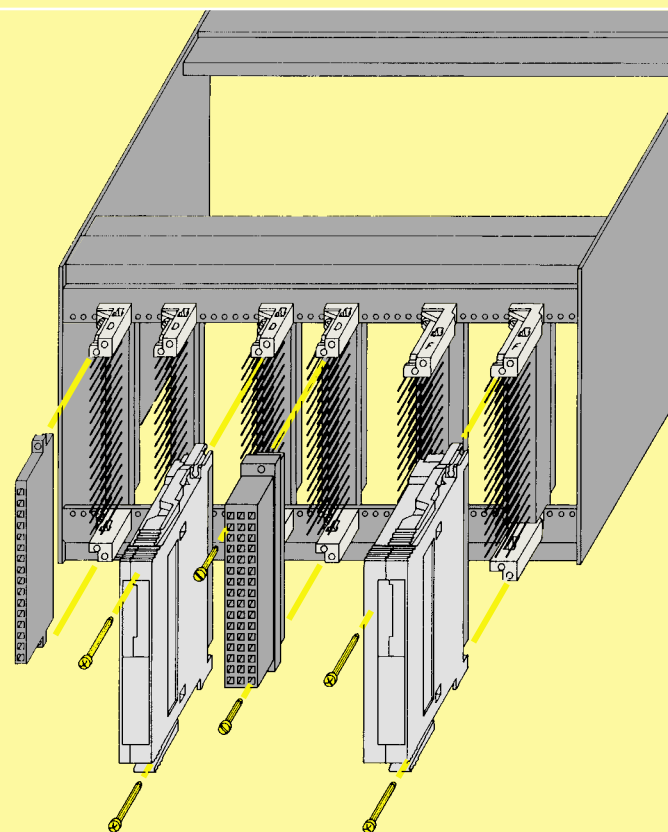
Current carrying capacity

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



Piggyback connectors



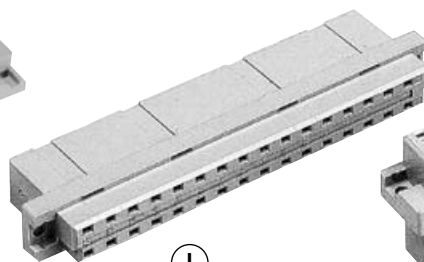
Number of contacts

max. 48

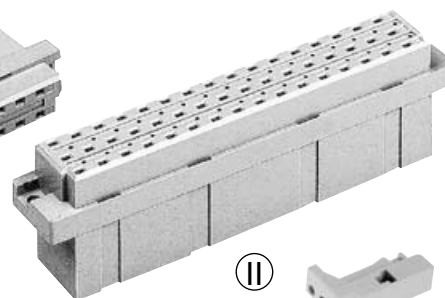
III



I



II



IV



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 | 16 | 09 04 016 3201 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 32 | 09 04 032 3215 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 48 | 09 05 048 3204 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Female FC crimp contacts individual contacts ¹⁾ FC1 FC2 FC3 Bandoliered contacts FC1 (approx. 2,500 pcs.) FC2 FC3 | | 09 06 000 6464 09 06 000 6461 09 06 000 6462 09 06 000 6454 09 06 000 6451 09 06 000 6452 | <table><tr><th>Identi- fication</th><th>Wire gauge mm²</th><th>AWG</th><th>Insulations ø mm</th></tr><tr><td>1</td><td>0.09-0.25</td><td>28-24</td><td>0.7-1.5</td></tr><tr><td>2</td><td>0.14-0.56</td><td>26-20</td><td>0.8-2.0</td></tr><tr><td>3</td><td>0.50-1.50</td><td>20-16</td><td>1.6-2.8</td></tr></table> <table><tr><td>1</td><td>0.09-0.25</td><td>28-34</td><td>0.7-1.5</td></tr><tr><td>2</td><td>0.14-0.56</td><td>26-20</td><td>0.8-2.0</td></tr><tr><td>3</td><td>0.50-1.50</td><td>20-16</td><td>1.6-2.8</td></tr></table> | 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 | 1 | 0.09-0.25 | 28-34 | 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 | |
| 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 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 0.09-0.25 | 28-34 | 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 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mateable with 1 x 1 mm wrap posts | | | 3.5 + 0.5 mm of insulation is stripped from the wires to be crimped. Crimping tools see chapter 30 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Distance fixing bra- ckets for female con- nectors Type D Type E | | top (pos. 2) 09 04 000 9907 bottom (pos. 32) 09 04 000 9906 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Type F | | top (pos. 2) 09 06 000 9936 bottom (pos. 32) 09 06 000 9937 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

DIN Power to 6 A

02
21

¹⁾ Packaging unit 1,000 pieces

Identification

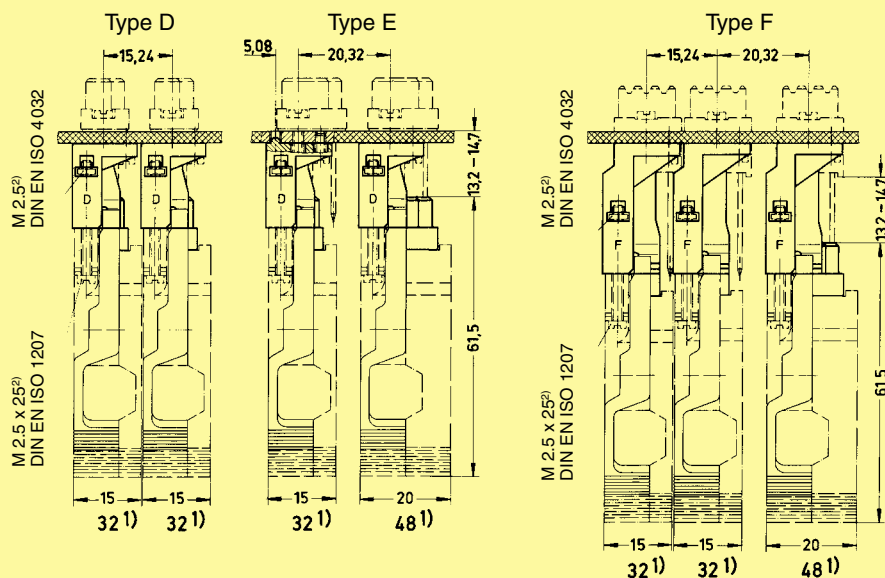
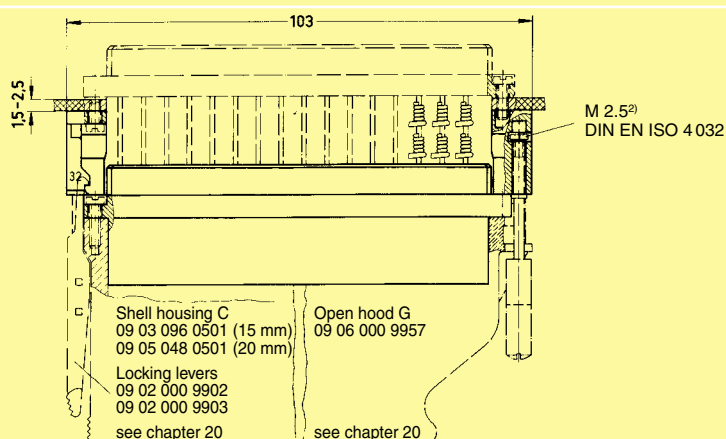
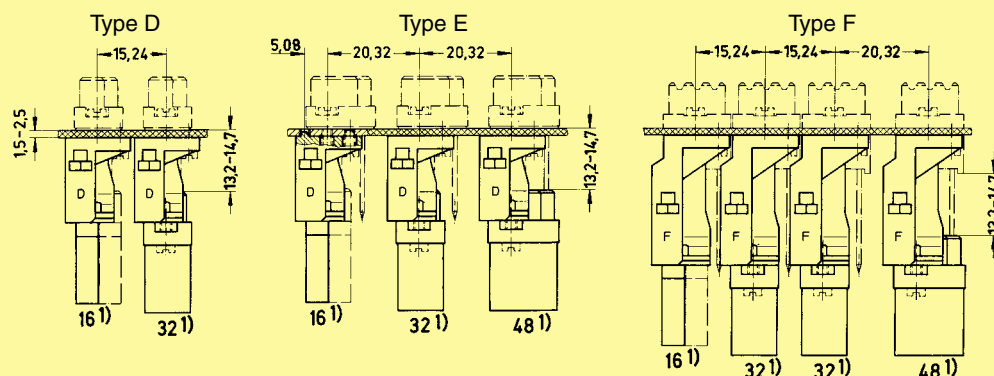
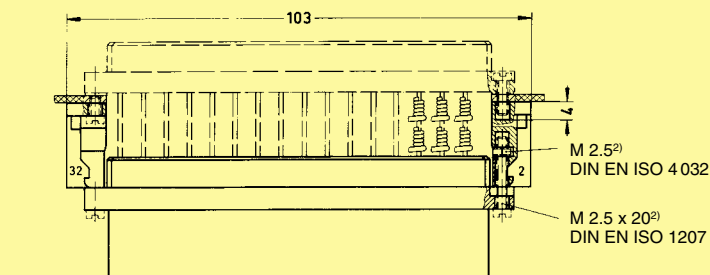
Drawing

Dimensions in mm

Mounting examples
of piggyback
connectors

without housings

with housings



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 for wire wrap and solder connections
≤ 20 mΩ including crimp connections

Insulation resistance

≥ 10¹² Ω

Temperature range

– 55 °C ... + 125 °C

The higher temperature limit includes the local ambient and heating effects of the contacts under load

Electrical termination

Male connector

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

Female connector

Wrap posts 1 x 1 mm diagonal 1.34-1.45 mm
Solder pins for pcb connections Ø 1 ± 0.1 mm according to IEC 60 326-3
Angled solder pins 1 x 1 mm for pcb connections Ø 1.6 ± 0.1 mm
Solder lugs
Crimp terminal 0.09-1.5 mm²
Crimp terminal 0.09-1.5 mm²

Distributor

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

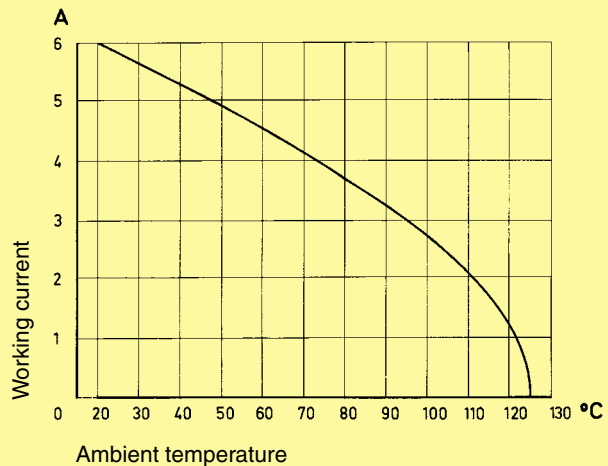
Mating conditions
Coding systems
Mounting clips

see chapter 00
see pages 02.41 and 02.42
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

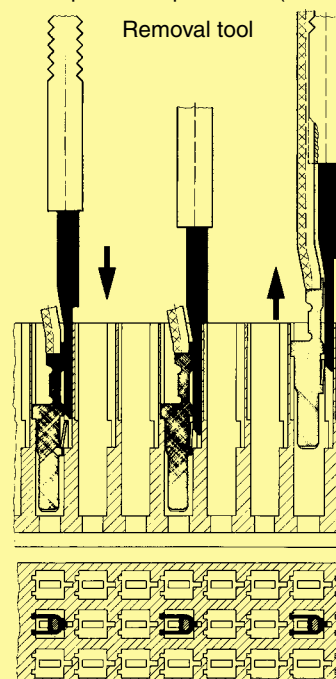


Fitting the crimp contacts

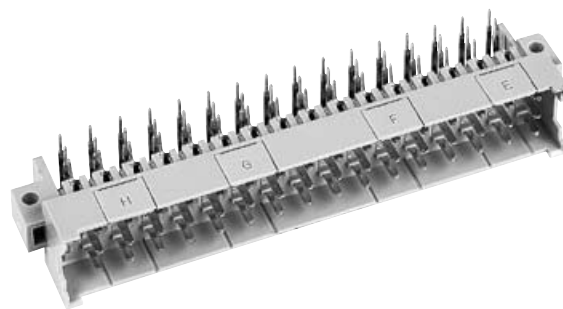
After crimping the wires onto the contacts with the help of a crimping tool or an automatic crimping machine the contacts should be correctly oriented and inserted into the cavities of the connector moulding in the required configuration. They snap into position and are firmly held in place. A light 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).



48, 32



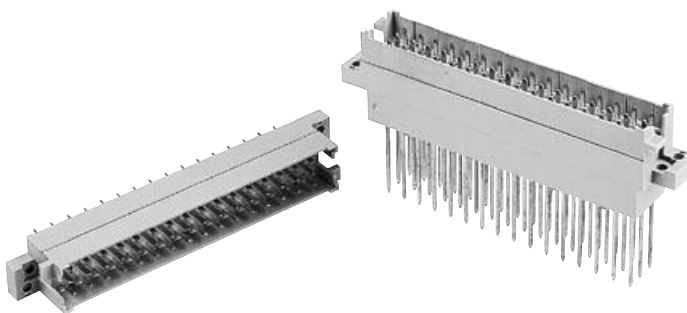
| Identification | Number of contacts | Contact arrangement | Part No. | Performance levels according to IEC 60603-2. Explanation chapter 00 | | |
|--|--------------------|---------------------|--|---|----------------|--|
| | | | 3 | 2 | 1 | |
| Male connector with angled solder pins ¹⁾ | 48 | | 09 06 148 7901 | 09 06 148 6901 09 06 348 6901 ^{b)} | 09 06 148 2901 | |
| | 32 | | 09 06 132 7901 09 06 332 7901 ^{b)} | 09 06 132 6901 | 09 06 132 2901 | |
| | 32 | | 09 06 132 7931 | 09 06 132 6931 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 2925 | |

[illegible][illegible]

**DIN Power
to 6 A**

Number of contacts

48, 32



Interface connectors I

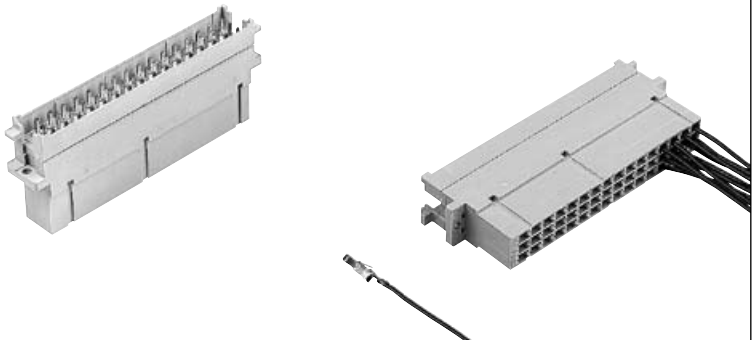
| Identification | Number of contacts | Contact arrangement | Part No. | Drawing | Dimensions in mm |
|---|--------------------|---------------------|-----------------------------|---|------------------|
| Interface connector I with solder pins¹⁾ 0.6 x 0.6 mm Board drillings Mounting side | | | Performance level 1* | | |
| | 48 | | 09 06 048 2905 | | |
| | 32 | | 09 06 032 2905 | | |
| | 32 | | 09 06 032 2941 | | |
| Interface connector I with wrap posts¹⁾ 1 x 1 mm Panel cut out | | | Performance level 1* | | |
| | without nut | | 09 06 048 2903 | | |
| | with nut | | 09 06 048 2963 | | |
| | without nut | | 09 06 032 2903 | | |
| | with nut | | 09 06 032 2963 | | |
| | | | | Contact arrangement View from termination side | |
| | | | | | |

* Acc. to IEC 60 603-2, performance level 2 on request

¹⁾ With shroud coding, see also page 02.41

Number of contacts

48



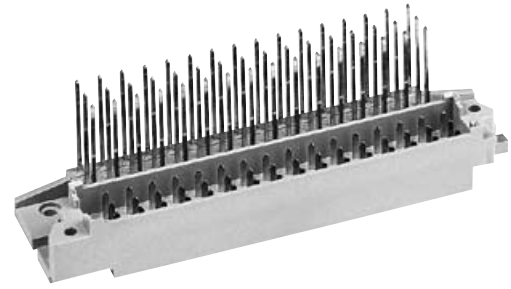
Interface connector I

| Identification | Number of contacts | Part No. | Drawing | Dimensions in mm |
|---|--------------------|---|---|------------------|
| <p>Interface connector I utilising female crimp contacts¹⁾</p> <p>Order crimp contacts separately see page 02.29</p> | 48 | <p>Performance level 1 acc. to IEC 60 603-2</p> <p>09 06 048 2906</p> | <p>Drawing</p> <p>5,08 90 2z 2b 2d 2,8 0,3 15 x 5,08 = 76,20 8,17 95 -0,4 84 12,7 12,3 20 14,8 8 0,3 2,9 -0,3 38 14,8 -0,2 85,4</p> <p>2x 381 = 762</p> <p>Contact arrangement View from termination side</p> <p>32 30 28 26 24 22 20 18 16 14 12 10 8 6 4 2</p> <p>„X“</p> <p>Shell housing see chapter 20</p> | |
| <p>Panel cut out</p> <p>Mounted in shell housing B</p> | | | <p>M 2,5 / # 2,8 85 90 ± 0,1 95,5 7,5 15,5 7,5 15,24</p> <p>09 06 048 0503 09 06 048 0504 09 06 048 0505</p> | |

DIN Power
to 6 A

¹⁾ With shroud coding, see also page 02.41

48



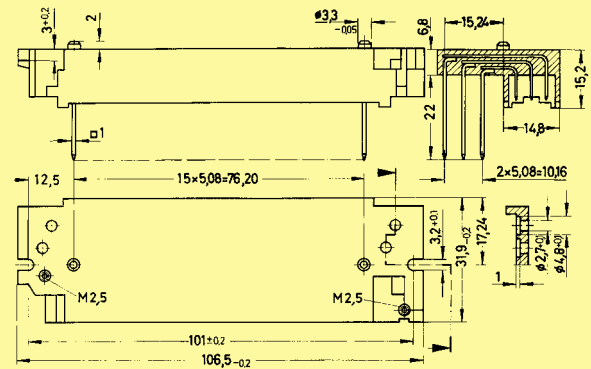
Identification

Part No.

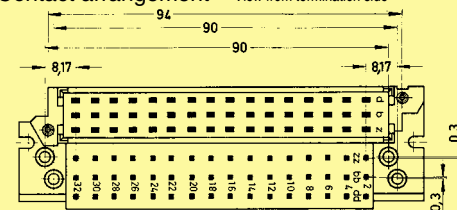
Dimensions in mm

48

09 06 048 2981

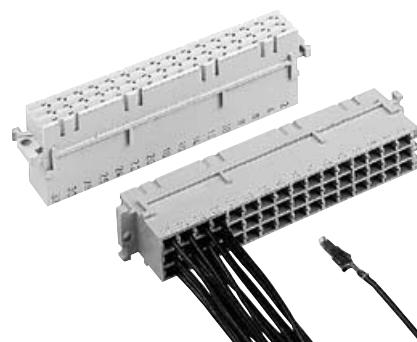


View from termination side



Number of contacts

max. 48



Female connectors

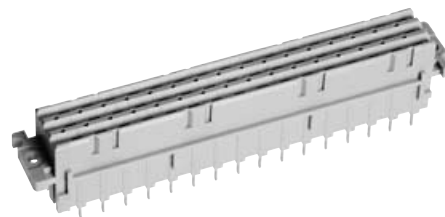
| Identification | Number of contacts | Part No. | Drawing | Dimensions in mm |
|--|--------------------|----------------|--|------------------|
| Female connector for crimp contacts¹⁾ Order contacts separately | 48 | 09 06 248 3201 | Contact arrangement View from termination side Shell housing see chapter 20 | |

DIN Power
to 6 A

| Identification | Identification Wire gauge | Part No. | Performance levels according to IEC 60 603-2. 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 1 | 1 | Wire gauge mm ² 0.09 - 0.25 AWG 28 - 24 Insulation ø mm 0.7 - 1.5 | Identification |
| FC 2 | 2 | 0.14 - 0.56 26 - 20 0.8 - 2.0 | Bandoliered contacts |
| FC 3 | 3 | 0.5 - 1.5 20 - 16 1.6 - 2.8 | Individual contacts |
| 3.5 + 0.5 mm of insulation is stripped from the wires to be crimped Insertion, removal and crimping tools see chapter 30 | | | |

¹⁾ With shroud coding, see also page 02.41²⁾ Packaging unit 1,000 pieces³⁾ Solder contacts must not be used together with shell housing A. Special contact surface: 2 µm gold.

48, 32



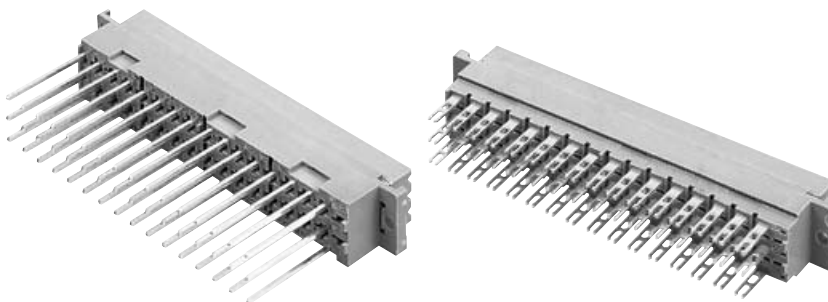
| Identification | Number of contacts | Contact arrangement | Part No. | Performance levels according to IEC 60 603-2. Explanation chapter 00 | | |
|--|--------------------|---------------------|----------------|--|----------------|--|
| | | | 3 | 2 | 1 | |
| Female connector with solder pins 3.7 mm ¹⁾ | 48 | | 09 06 248 7848 | 09 06 248 6848 | 09 06 248 2848 | |
| | 32 | | | 09 06 232 6848 | 09 06 232 2848 | |
| | 32 | | | 09 06 232 6858 | 09 06 232 2858 | |
| Female connector with solder pins 4.5 mm ¹⁾ | 48 | | 09 06 248 7835 | 09 06 248 6835 | 09 06 248 2835 | |
| | 32 | | | 09 06 232 6835 | 09 06 232 2835 | |
| | 32 | | | 09 06 232 6845 | 09 06 232 2845 | |

[illegible]

Dimensions in mm

Number of contacts

48, 32

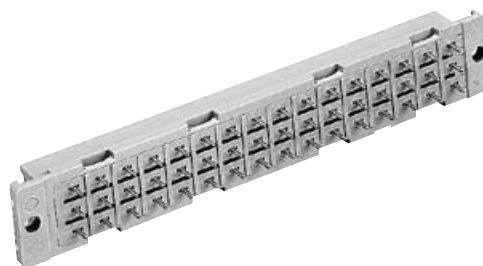


Female connectors

| Identification | Number of contacts | Contact arrangement | Part No. 3 | Performance levels according to IEC 60 603-2. 2 | Explanation chapter 00 1 |
|--|--------------------|---------------------|----------------|--|-----------------------------|
| Female connector with wrap posts 22 mm | 48 | | 09 06 248 7821 | 09 06 248 6821 | 09 06 248 2821 |
| | 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 2843 |
| Dimensions | | | | | |
| Panel cut out | | | | | |

Identification strips for female connectors with wrap posts 09 06 000 9939

48, 32



| Identification | Number of contacts | Contact arrangement | Part No. | Performance levels according to IEC 60 603-2. | Explanation chapter 00 |
|----------------|--------------------|---------------------|----------|---|------------------------|
| | | | 3 | 2 | 1 |

**DIN Power
to 6 A**

Part Nos. and variants
see chapter 04

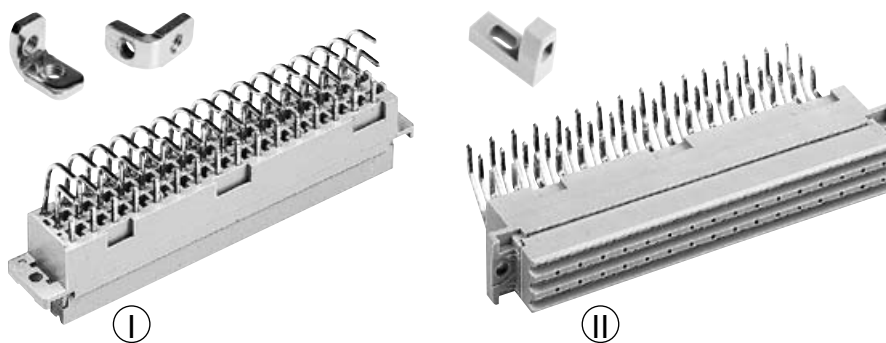
| |
|-----|
| a |
| 3.2 |
| 4.5 |

Solder pins

Technical drawing of a mechanical part with dimensions and tolerances. The drawing shows a side view of a component with a central section of length 15 x [5.08] (= 76,20) and a total length of 90. The central section has a diameter of 2d, 2b, and 2z. The end section has a diameter of 2.8 x 0.1 and a length of 8.17. The end section also has a diameter of 2 x [5.08] (= 7.62) and a length of 3.81. The drawing includes a detail view of a hole with a diameter of 1 x 0.1 and a tolerance of 0.05. The drawing also shows a cross-section of the part with a diameter of 2d, 2b, and 2z. The drawing includes a detail view of a hole with a diameter of 1 x 0.1 and a tolerance of 0.05. The drawing also shows a cross-section of the part with a diameter of 2d, 2b, and 2z.

02
32

48, 32



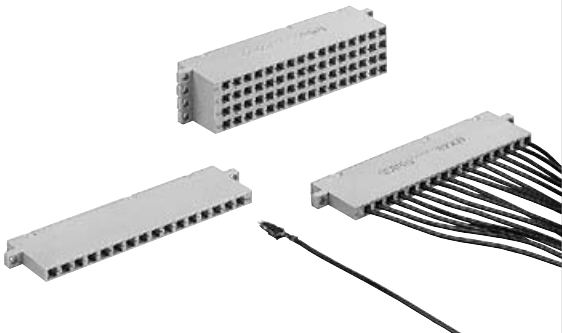
Female connectors

| Identification | | Number of contacts | Contact arrangement | Part No. 3 | Performance levels according to IEC 60 603-2. Explanation chapter 00 | | |
|---|----|--------------------|---|------------------------------|--|----------------|--|
| | | | | | 2 | 1 | |
| Female connector with angled solder pins 1 x 1 mm | 48 | | performance level 3 or special gold plating on request | 09 06 248 6826 | performance level 1 or special gold plating on request | | |
| | 32 | | | | | 09 06 232 6826 | |
| | 48 | | | | | 09 06 248 6836 | |
| | 32 | | | | | 09 06 232 6846 | |
| | 32 | | | | | 09 06 232 6836 | |
| Dimensions | | | | | | | |
| Fixing bracket | | | Metal | 09 06 000 9912 ¹⁾ | for version I | | |
| ¹⁾ Order 2 pieces for one connector | | | Plastic | 09 06 000 9975 ¹⁾ | for version II | | |
| Board drillings Mounting side | | | | | | | |
| Dimensions in mm | | | | | | | |

**DIN Power
to 6 A**

Number of contacts

64, 16

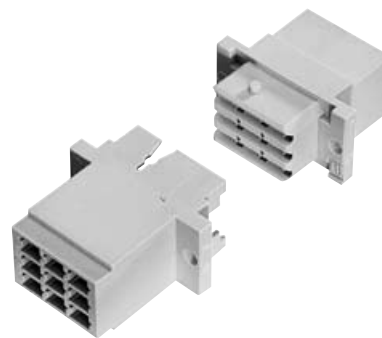


Universal adaptors

DIN Power
to 6 A

| Identification | Number of contacts | Part No. | Drawing | Dimensions in mm |
|---|--------------------|----------------|---------|------------------|
| Universal adaptor utilising crimp contacts crimp contacts see page 02.29 | 4 x 4 | 09 06 016 3301 | | |
| | 16 x 1 | 09 06 016 3302 | | |
| | 16 x 4 | 09 06 064 3302 | | |
| Panel cut out | | | | |

Number of contacts

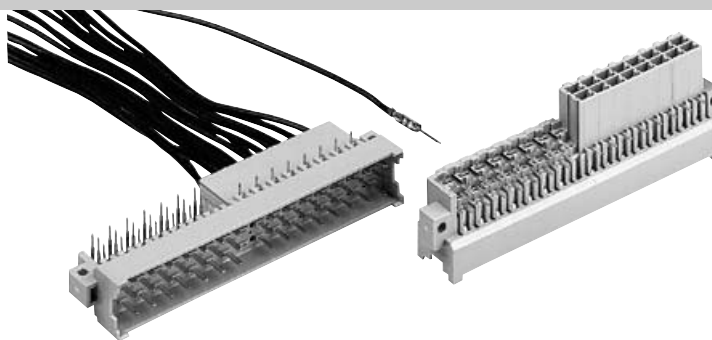
max. 9

Female and male connectors

| Identification | Number of contacts | Part No. | Drawing | Dimensions in mm |
|--|--------------------|----------------|---------|------------------|
| Female connector for crimp contacts Order contacts separately | 9 | 09 06 209 3201 | | |
| Female crimp contacts | | see page 02.29 | | |
| Male connector for crimp contacts Order contacts separately | 9 | 09 06 109 3401 | | |
| Male crimp contacts | | see page 02.38 | | |

DIN Power
to 6 A

45

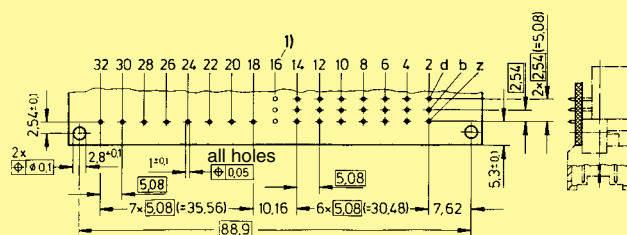
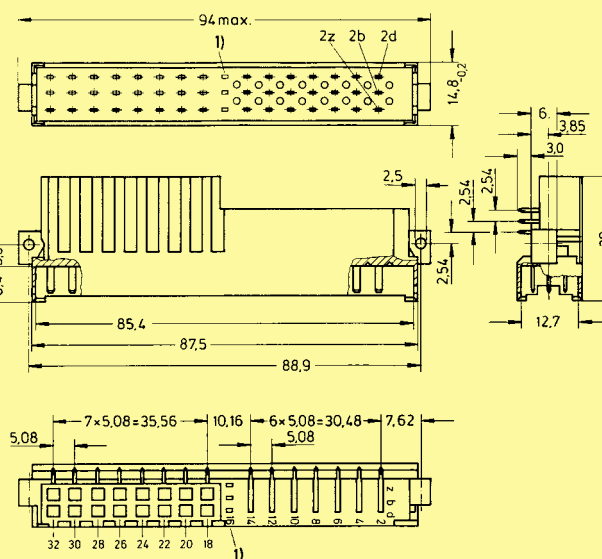


Identification

Part No.

Dimensions in mm

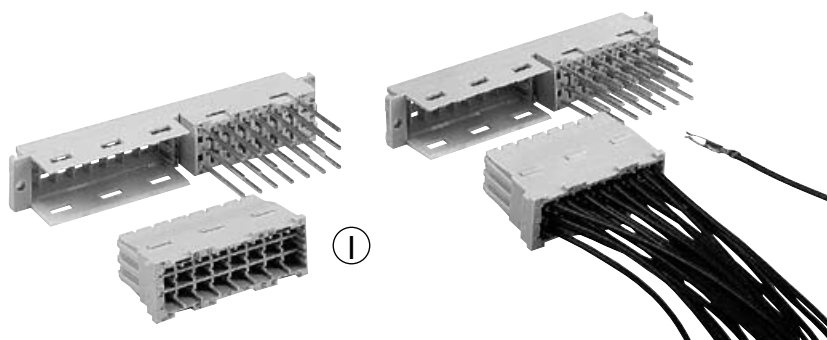
09 06 145 2971



02
36

Number of contacts

45



Female connectors

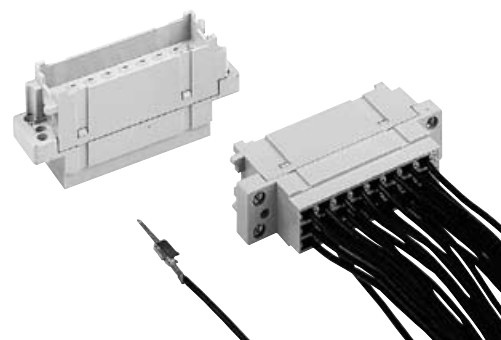
| Identification | Number of contacts | Part No. | Drawing | Dimensions in mm |
|---|--------------------|---|---|------------------|
| Female connector | | Performance level 1 acc. to IEC 60 603-2 | | |
| Female moulding with 21 wrap posts 22 mm | 45 | 09 06 045 2871 | <p>Latches</p> <p>Crimp moulding is supplied with the female moulding</p> <p>Contact arrangement View from termination side</p> | |
| with 21 solder pins 4.5 mm | 45 | 09 06 045 2875 | | |
| Crimp moulding for 24 female crimp contacts | | 09 06 024 3202 | | |
| crimp contacts see page 02.29 | | | | |
| Panel cut out | | | | |
| Removal tool for the crimp moulding | | 09 99 000 0172 | | |
| | | | <p>The crimp moulding can be extracted with the help of the removal tool.</p> | |

DIN Power
to 6 A

Number of contacts

max. 24

Interface connector I

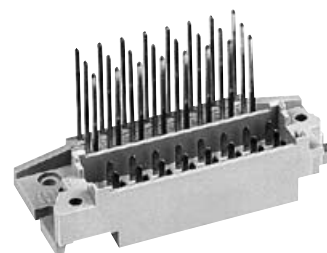


| Identification | Number of contacts | Part No. | Drawing | Dimensions in mm |
|--|--------------------|----------------|---------|------------------|
| Interface connector I for male crimp contacts Order contacts separately | 24 | 09 26 024 3411 | | |

| Identification | Identification Wire gauge | Part No. | Performance levels according to IEC 60 603-2. Explanation chapter 00 |
|---|---------------------------|---|--|
| Male crimp FC contacts | | | 2 |
| 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 | 1 | Wire gauge mm ² 0.09 - 0.25 | AWG 28 - 24 |
| FC 2 | 2 | 0.14 - 0.56 | 26 - 20 |
| FC 3 | 3 | 0.5 - 1.5 | 20 - 16 |
| | | Insulation ø mm | 0.7 - 1.5 |
| | | | 0.8 - 2.0 |
| | | | 1.6 - 2.8 |
| | | Identification | |
| | | Bandoliered contacts | |
| | | Individual contacts | |
| | | 3.5 + 0.5 mm of insulation is stripped from the wires to be crimped | |
| | | Insertion, removal and crimping tools see chapter 30 | |

¹⁾ Packaging unit 1,000 pieces

max. 24

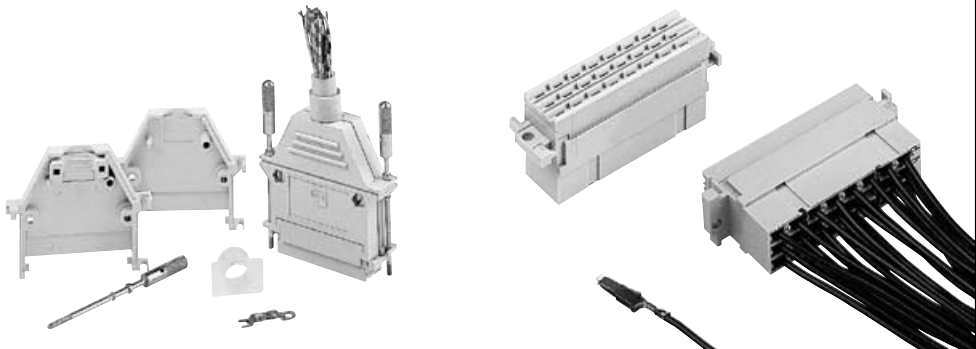


| Identification | Number of contacts | Part No. | Drawing | Dimensions in mm |
|--|-----------------------|----------------|---|------------------|
| Interface connector U with wrap posts 1 x 1 mm | 24 | 09 26 024 2981 | <p>Performance level 1 acc. to IEC 60 603-2</p> <p>Contact arrangement View from termination side</p> | |
| Mounting example | | | <p>M 3 x 8 DIN EN ISO 1207</p> <p>A-B</p> | |

**DIN Power
to 6 A**

Number of contacts

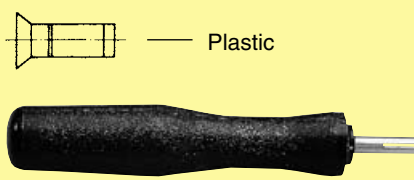
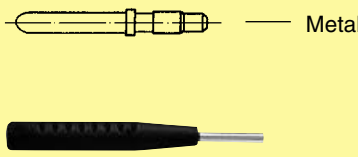
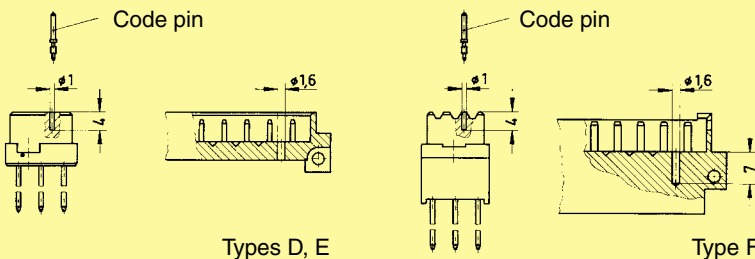
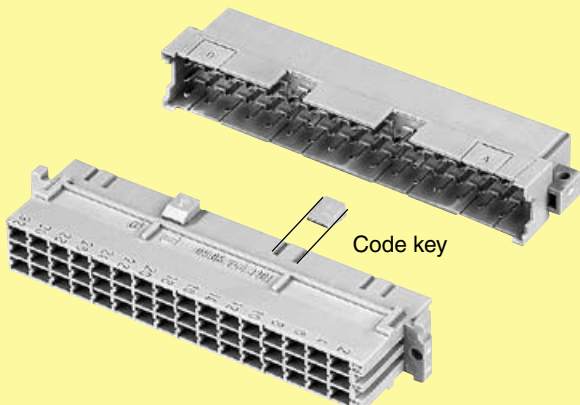

max. 24

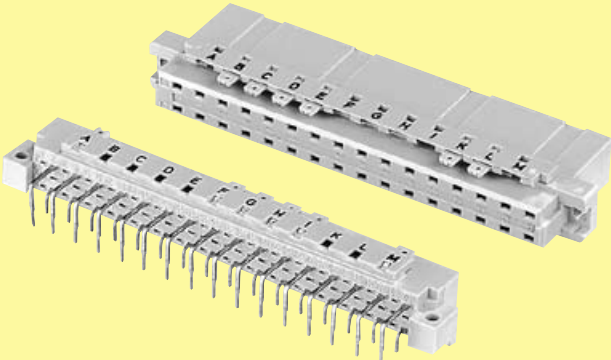

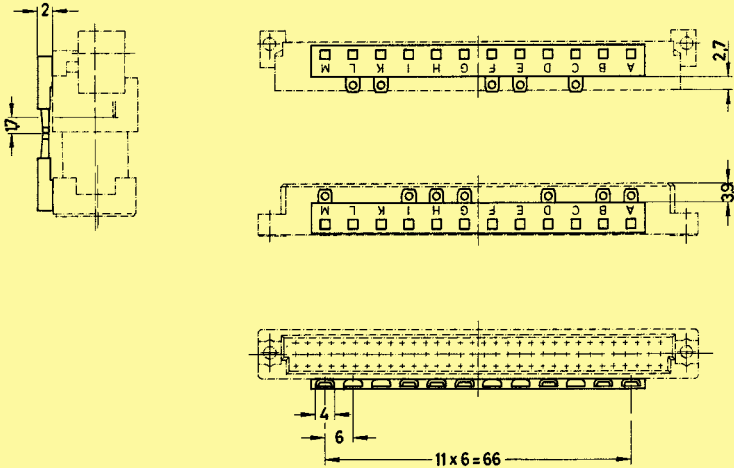


Female connectors

DIN Power
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 02.29</p> | 24 | 09 26 024 3201 | | |
| <p>Shell housing A with integrated fixing screws</p> <p>Supplied with:</p> <ul style="list-style-type: none">Shell 2xLocking screw 2xScrew M3x10 2xNut M3 2xScrew BZ 2.9x9.5 2xCable clamp 1xTension relief 1x | | 09 26 024 0401 | | |
| <p>Open hood</p> <p>Supplied with:</p> <ul style="list-style-type: none">Open hood 1xLocking screw 2xScrew BZ 2.2x9.5 2xCable tie 1x | | 09 26 000 9901 | | |

| Identification | Part No. | Drawing | Dimensions in mm |
|---|--|---|------------------|
| Coding system <u>with</u> contact loss | Code pin for types D, E, F, FM, 2F 09 04 000 9908 Removal tool for male contacts 09 99 000 0038 | <p>To avoid accidental and incorrect mating of adjacent connectors a coding system is required. The coding is achieved by means of a code pin which is inserted into the selected chamber of the female connector (the contact cavity must be filled with a female contact!). The opposite male contact must be removed with the help of the specially designed tool.</p>  | |
| Coding system <u>without</u> contact loss with code pin | Code pin 09 06 000 9950 Insertion tool 09 99 000 0103 | <p>With the aid of the marked indents between the contact rows of the male connector a hole has to be drilled at the desired position (also see drawing). The code pin can then be inserted into the corresponding cavity of the female connector by means of the insertion tool. This coding system is available only for the types D, E, F and interface connectors I</p>  <p>Mounting example</p>  | |
| shroud coding Type F | Code key 09 06 001 9919 | <p>Insert the code key into one of the keyways of the female connector as shown in the drawing. Break out the corresponding area of the male shroud. Connectors coded this way can only be applied in a minimum rack spacing of 20.32 mm.</p>  | |
| Tool for breaking out the coding area of the male shroud | 09 99 000 0242 |  | |

| Identification | Part No. | Drawing | Dimensions in mm |
|--|---|---|------------------|
| <p>Coding system <u>without</u> contact loss</p> | <p>Male and female connectors</p> <p>Types B, C, D and E</p> <p>see product pages or on request</p> | <p>To avoid accidental and incorrect mating of adjacent connectors a coding system is required. This coding system is an integral part of both male and female connectors. A comb with 12 coding pins, which is supplied under a single part number, allows over 900 coding variations. The pins are to be locked into the male and female connectors.</p> <p>The connectors with the integrated coding facility are supplied for types B, C, D and E and are available for all variants.</p> <p>Please contact us.</p>  | |
| <p>Coding pins</p> <p>Mounting example</p> | <p>12 pins on a comb</p> <p>09 02 000 9928</p> |   | |