

Contents

Page

| | |
|--|--------------|
| Technical characteristics Han E [®] | 03.02 |
| Technical characteristics Han [®] EE | 03.04 |
| Technical characteristics Han [®] EEE | 03.06 |
| Technical characteristics Han [®] ES | 03.08 |
| Technical characteristics Han [®] ESS | 03.10 |
| Han [®] 6 E / Han [®] 6 ES / Han [®] 6 ESS | 03.12 |
| Han [®] 10 EE | 03.13 |
| Han [®] 10 E / Han [®] 10 ES / Han [®] 10 ESS | 03.14 |
| Han [®] 18 EE | 03.15 |
| Han [®] 16 E / Han [®] 16 ES / Han [®] 16 ESS | 03.16 |
| Han [®] 32 EE | 03.17 |
| Han [®] 40 EEE | 03.18 |
| Han [®] 24 E / Han [®] 24 ES / Han [®] 24 ESS | 03.19 |
| Han [®] 46 EE | 03.20 |
| Han [®] 64 EEE | 03.21 |
| Han [®] 32 E / Han [®] 32 ES / Han [®] 32 ESS | 03.22 |
| Han [®] 64 EE | 03.23 |
| Han [®] 48 E / Han [®] 48 ES / Han [®] 48 ESS | 03.24 |
| Han [®] 92 EE | 03.25 |
| Han [®] EE Modified contact arrangements | 03.26 |

Han
E/EE

Features

- Available in different termination techniques
 - Han E® Crimp terminal
 - Han E® Screw terminal
 - Han® ES Cage-clamp terminal
 - Han® ESS Cage-clamp terminal
 - Han® EE Crimp terminal
 - Han® EEE Crimp terminal
- Han E® covers a wide range of cross core sections
- Wire protection for Han E® screw

Specifications

DIN EN 60 664-1
DIN EN 61 984

Approvals



Inserts

Number of contacts 6, 10, 16, 24, 32 (2x 16),
48 (2x 24) + PE

Electrical data

acc. to EN 61 984 **16 A 500 V 6 kV 3**
 Rated current 16 A
 Rated voltage 500 V
 Rated impulse voltage 6 kV
 Pollution degree 3
 Pollution degree 2 also 16 A 400/690 V 6 kV 2

Rated voltage

acc. to UL/CSA 600 V
 Insulation resistance $\geq 10^{10} \Omega$
 Material polycarbonate
 Limiting temperatures -40 °C ... +125 °C
 Flammability acc. to UL 94 V 0
 Mechanical working life
 - mating cycles ≥ 500

Contacts

Material copper alloy
 Surface - hard-gold plated 2 μm Au over 3 μm Ni
 Surface - hard-silver plated 3 μm Ag
 Contact resistance $\leq 1 \text{ m}\Omega$
 Crimp terminal - min 0.14 mm² / AWG 26
 Crimp terminal - max 4 mm² / AWG 12
 Screw terminal - min 0.14 mm² / AWG 26
 Screw terminal - max 2.5 mm² / AWG 14
 Tightening/test torque 0.5 Nm
 Stripping length 7 mm

Hoods/Housings

Material aluminium die-cast
 Surface powder-coated
 Locking element Han-Easy Lock®
 Flammability acc. to UL 94 V 0
 Hoods/Housings seal NBR
 Limiting temperatures -40 °C ... +125 °C
 Degree of protection acc. to DIN EN 60 529
 for coupled connector IP 65

Further selection of hoods/housings see chapter 30 / chapter 31

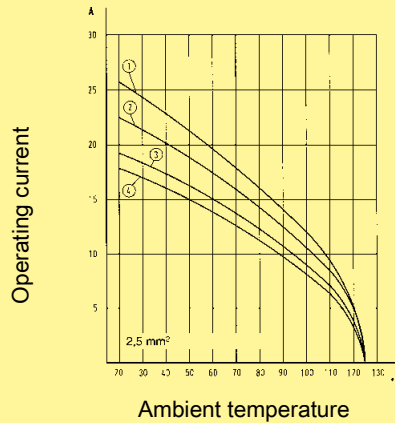
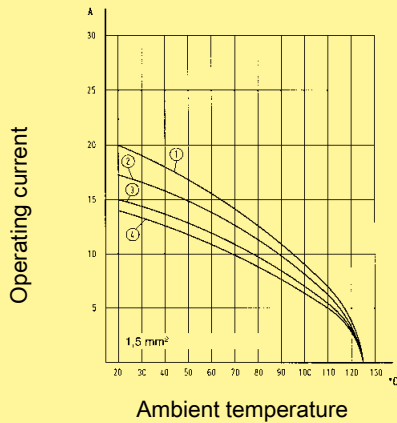
Accessories

Crimping tools chapter 99
 Cable clamps chapter 40
 Coding of hoods/housings chapter 40
 Label acc. to CSA-approval chapter 40
 Han-Snap® chapter 11
 Assembly plates for test connector chapter 40
 Special insert fixing screws chapter 40

Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5



- ① Han® 6 E
- ② Han® 10 E
- ③ Han® 16 E
- ④ Han® 24 E

| Identification | Wire gauge (mm²) | Male contact | Female contact | Drawing | Dimensions in mm |
|---|------------------|-----------------------|-----------------------|--|------------------|
| Crimp contacts | | | | | |
| Power contacts | | | | | |
| | 0.14-0.37 | 09 33 000 6127 | 09 33 000 6227 | | |
| | 0.5 | 09 33 000 6121 | 09 33 000 6220 | | |
| silver plated | 0.75 | 09 33 000 6114 | 09 33 000 6214 | | |
| | 1 | 09 33 000 6105 | 09 33 000 6205 | | |
| | 1.5 | 09 33 000 6104 | 09 33 000 6204 | | |
| | 2.5 | 09 33 000 6102 | 09 33 000 6202 | | |
| | 3 | 09 33 000 6106 | 09 33 000 6206 | | |
| | 4 | 09 33 000 6107 | 09 33 000 6207 | | |
| | 0.14-0.37 | 09 33 000 6117 | 09 33 000 6217 | | |
| gold plated | 0.5 | 09 33 000 6122 | 09 33 000 6222 | | |
| | 0.75 | 09 33 000 6115 | 09 33 000 6215 | | |
| | 1 | 09 33 000 6118 | 09 33 000 6218 | | |
| | 1.5 | 09 33 000 6116 | 09 33 000 6216 | | |
| | 2.5 | 09 33 000 6123 | 09 33 000 6223 | | |
| | 4 | 09 33 000 6119 | 09 33 000 6221 | | |
| Relay contact silver plated | 0.75-1 | 09 33 000 6109 | | | |
| | 1.5 | 09 33 000 6110 | | | |
| | 2.5 | 09 33 000 6111 | | | |
| F.O. contacts | | | | | |
| for 1 mm plastic fibre | | 20 10 001 3311 | 20 10 001 3321 | | |
| Coding pin for crimp inserts only | | | 09 33 000 9954 | <p>Use of the coding pin prevents incorrect mating to other connectors of the same type. The male pin should be omitted from the opposing cavity in the male insert.</p> | |
| | | | | | |

| Identification | Wire gauge | Stripping length | |
|----------------|---------------|------------------|--------|
| no groove | 0.14-0.37 mm² | AWG 26-22 | 7.5 mm |
| no groove | 0.5 mm² | AWG 20 | 7.5 mm |
| 1 groove* | 0.75 mm² | AWG 18 | 7.5 mm |
| 1 groove | 1 mm² | AWG 18 | 7.5 mm |
| 2 grooves | 1.5 mm² | AWG 16 | 7.5 mm |
| 3 grooves | 2.5 mm² | AWG 14 | 7.5 mm |
| wide groove | 3 mm² | AWG 12 | 7.5 mm |
| no groove | 4 mm² | AWG 12 | 7.5 mm |

* on the back crimp collar

Features

- Han E® contacts with crimp termination
- High density of crimping contacts
- Polarised insert
- Contacts available with either hard silver plated or hard gold plated surface
- Suitable for hoods/housings of series Han® B, Han® M, Han® EMV, Han® HPR

Specifications

DIN EN 60 664-1
DIN EN 61 984

Approvals



Inserts

Number of contacts 10, 18, 32, 46, 64 (2x 32),
92 (2x 46) + PE

Electrical data acc. to EN 61 984 **16 A 500 V 6 kV 3**

Rated current 16 A

Rated voltage 500 V

Rated impulse voltage 6 kV

Pollution degree 3

Pollution degree 2 also 16 A 830 V 8 kV 2

Rated voltage acc. to UL/CSA 600 V

Insulation resistance $\geq 10^{10} \Omega$

Material polycarbonate

Limiting temperatures -40 °C ... +125 °C

Flammability acc. to UL 94 V 0

Mechanical working life - mating cycles ≥ 500

Contacts

Material copper alloy

Surface - hard-gold plated 2 μm Au over 3 μm Ni

Surface - hard-silver plated 3 μm Ag

Contact resistance $\leq 1 \text{ m}\Omega$

Crimp terminal - min 0.14 mm² / AWG 26

Crimp terminal - max 4 mm² / AWG 12

Hoods/Housings

Material aluminium die-cast

Surface powder-coated

Locking element Han-Easy Lock®

Flammability acc. to UL 94 V 0

Hoods/Housings seal NBR

Limiting temperatures -40 °C ... +125 °C

Degree of protection acc. to DIN EN 60 529

for coupled connector IP 65

Further selection of hoods/housings see chapter 30 / chapter 31

Accessories

Crimping tools chapter 99

Cable clamps chapter 40

Coding of hoods/housings chapter 40

Label acc. to CSA-approval chapter 40

Han-Snap® chapter 11

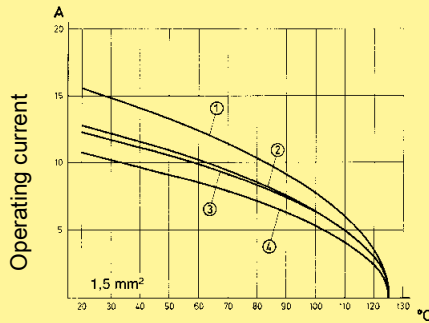
Assembly plates for test connector chapter 40

Special insert fixing screws chapter 40

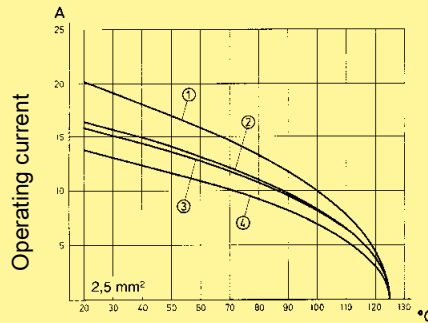
Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5



Ambient temperature



Ambient temperature

- ① Han® 10 EE
- ② Han® 18 EE
- ③ Han® 32 EE
- ④ Han® 46 EE

| Identification | Wire gauge (mm²) | Male contact | Female contact | Drawing | Dimensions in mm |
|---|------------------|-----------------------|-----------------------|---|------------------|
| Crimp contacts | | | | | |
| Power contacts | | | | | |
| | 0.14-0.37 | 09 33 000 6127 | 09 33 000 6227 | | |
| | 0.5 | 09 33 000 6121 | 09 33 000 6220 | | |
| silver plated | 0.75 | 09 33 000 6114 | 09 33 000 6214 | | |
| | 1 | 09 33 000 6105 | 09 33 000 6205 | | |
| | 1.5 | 09 33 000 6104 | 09 33 000 6204 | | |
| | 2.5 | 09 33 000 6102 | 09 33 000 6202 | | |
| | 3 | 09 33 000 6106 | 09 33 000 6206 | | |
| | 4 | 09 33 000 6107 | 09 33 000 6207 | | |
| | 0.14-0.37 | 09 33 000 6117 | 09 33 000 6217 | | |
| gold plated | 0.5 | 09 33 000 6122 | 09 33 000 6222 | | |
| | 0.75 | 09 33 000 6115 | 09 33 000 6215 | | |
| | 1 | 09 33 000 6118 | 09 33 000 6218 | | |
| | 1.5 | 09 33 000 6116 | 09 33 000 6216 | | |
| | 2.5 | 09 33 000 6123 | 09 33 000 6223 | | |
| | 4 | 09 33 000 6119 | 09 33 000 6221 | | |
| Relay contact silver plated | 0.75-1 | 09 33 000 6109 | | | |
| | 1.5 | 09 33 000 6110 | | | |
| | 2.5 | 09 33 000 6111 | | | |
| F.O. contacts | | | | | |
| for 1 mm plastic fibre | | 20 10 001 3311 | 20 10 001 3321 | | |
| Coding pin for crimp inserts only | | | 09 33 000 9954 | Use of the coding pin prevents incorrect mating to other connectors of the same type. The male pin should be omitted from the opposing cavity in the male insert. | |
| | | | | | |

| Identification | Wire gauge | Stripping length | |
|----------------|---------------|------------------|--------|
| no groove | 0.14-0.37 mm² | AWG 26-22 | 7.5 mm |
| no groove | 0.5 mm² | AWG 20 | 7.5 mm |
| 1 groove* | 0.75 mm² | AWG 18 | 7.5 mm |
| 1 groove | 1 mm² | AWG 18 | 7.5 mm |
| 2 grooves | 1.5 mm² | AWG 16 | 7.5 mm |
| 3 grooves | 2.5 mm² | AWG 14 | 7.5 mm |
| wide groove | 3 mm² | AWG 12 | 7.5 mm |
| no groove | 4 mm² | AWG 12 | 7.5 mm |

* on the back crimp collar

Features

- Han E® contacts with crimp termination
- Polarised insert
- Contacts available with either hard silver plated or hard gold plated surface
- Suitable for hoods/housings of series Han® B, Han® M, Han® EMV, Han® HPR

Specifications

DIN EN 60 664-1
DIN EN 61 984

Approvals

Inserts

| | |
|--|--------------------------|
| Number of contacts | 40, 64 + PE |
| Electrical data acc. to EN 61 984 | 16 A 500 V 6 kV 3 |
| Rated current | 16 A |
| Rated voltage | 500 V |
| Rated impulse voltage | 6 kV |
| Pollution degree | 3 |
| Insulation resistance | $\geq 10^{10} \Omega$ |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life - mating cycles | ≥ 500 |

Contacts

| | |
|------------------------------|--|
| Material | copper alloy |
| Surface - hard-gold plated | 2 μm Au over 3 μm Ni |
| Surface - hard-silver plated | 3 μm Ag |
| Contact resistance | $\leq 1 \text{ m}\Omega$ |
| Crimp terminal - min | 0.14 mm ² / AWG 26 |
| Crimp terminal - max | 4 mm ² / AWG 12 |

Hoods/Housings

| | |
|---|--------------------|
| Material | aluminium die-cast |
| Surface | powder-coated |
| Locking element | Han-Easy Lock® |
| Flammability acc. to UL 94 | V 0 |
| Hoods/Housings seal | NBR |
| Limiting temperatures | -40 °C ... +125 °C |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 65 |

Further selection of hoods/housings see chapter 30 / chapter 31

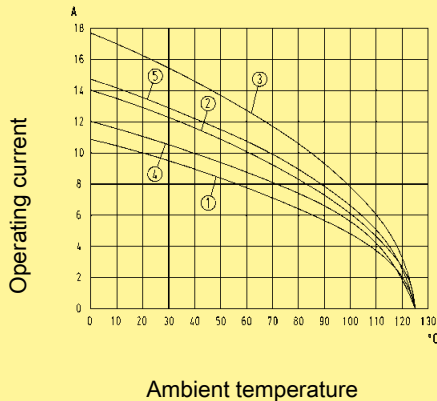
Accessories

| | |
|------------------------------------|------------|
| Crimping tools | chapter 99 |
| Cable clamps | chapter 40 |
| Coding of hoods/housings | chapter 40 |
| Label acc. to CSA-approval | chapter 40 |
| Han-Snap® | chapter 11 |
| Assembly plates for test connector | chapter 40 |
| Special insert fixing screws | chapter 40 |

Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5



- ① Han® 64 EEE / 1.5 mm²
- ② Han® 64 EEE / 2.5 mm²
- ③ Han® 64 EEE / 4.0 mm²
- ④ Han® 40 EEE / 1.5 mm²
- ⑤ Han® 40 EEE / 2.5 mm²

Han
E/EE

| Identification | Wire gauge (mm ²) | Male contact | Female contact | Drawing | Dimensions in mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|-------------------------------|-----------------------|-----------------------|---------|---|----------------|------------|------------------|-----------|---------------------------|-----------|--------|-----------|---------------------|--------|--------|-----------|----------------------|--------|--------|----------|-------------------|--------|--------|-----------|---------------------|--------|--------|-----------|---------------------|--------|--------|-------------|-------------------|--------|--------|-----------|-------------------|--------|--------|
| Crimp contacts | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Power contacts | | | | | <table border="1"> <thead> <tr> <th>Identification</th> <th>Wire gauge</th> <th>Stripping length</th> </tr> </thead> <tbody> <tr> <td>no groove</td> <td>0.14-0.37 mm²</td> <td>AWG 26-22</td> <td>7.5 mm</td> </tr> <tr> <td>no groove</td> <td>0.5 mm²</td> <td>AWG 20</td> <td>7.5 mm</td> </tr> <tr> <td>1 groove*</td> <td>0.75 mm²</td> <td>AWG 18</td> <td>7.5 mm</td> </tr> <tr> <td>1 groove</td> <td>1 mm²</td> <td>AWG 18</td> <td>7.5 mm</td> </tr> <tr> <td>2 grooves</td> <td>1.5 mm²</td> <td>AWG 16</td> <td>7.5 mm</td> </tr> <tr> <td>3 grooves</td> <td>2.5 mm²</td> <td>AWG 14</td> <td>7.5 mm</td> </tr> <tr> <td>wide groove</td> <td>3 mm²</td> <td>AWG 12</td> <td>7.5 mm</td> </tr> <tr> <td>no groove</td> <td>4 mm²</td> <td>AWG 12</td> <td>7.5 mm</td> </tr> </tbody> </table> | Identification | Wire gauge | Stripping length | no groove | 0.14-0.37 mm ² | AWG 26-22 | 7.5 mm | no groove | 0.5 mm ² | AWG 20 | 7.5 mm | 1 groove* | 0.75 mm ² | AWG 18 | 7.5 mm | 1 groove | 1 mm ² | AWG 18 | 7.5 mm | 2 grooves | 1.5 mm ² | AWG 16 | 7.5 mm | 3 grooves | 2.5 mm ² | AWG 14 | 7.5 mm | wide groove | 3 mm ² | AWG 12 | 7.5 mm | no groove | 4 mm ² | AWG 12 | 7.5 mm |
| Identification | Wire gauge | Stripping length | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| no groove | 0.14-0.37 mm ² | AWG 26-22 | 7.5 mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| no groove | 0.5 mm ² | AWG 20 | 7.5 mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 groove* | 0.75 mm ² | AWG 18 | 7.5 mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 groove | 1 mm ² | AWG 18 | 7.5 mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 grooves | 1.5 mm ² | AWG 16 | 7.5 mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 grooves | 2.5 mm ² | AWG 14 | 7.5 mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| wide groove | 3 mm ² | AWG 12 | 7.5 mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| no groove | 4 mm ² | AWG 12 | 7.5 mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| silver plated | 0.14-0.37 | 09 33 000 6127 | 09 33 000 6227 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0.5 | 09 33 000 6121 | 09 33 000 6220 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0.75 | 09 33 000 6114 | 09 33 000 6214 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 1 | 09 33 000 6105 | 09 33 000 6205 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 1.5 | 09 33 000 6104 | 09 33 000 6204 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 2.5 | 09 33 000 6102 | 09 33 000 6202 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 3 | 09 33 000 6106 | 09 33 000 6206 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 4 | 09 33 000 6107 | 09 33 000 6207 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| gold plated | 0.14-0.37 | 09 33 000 6117 | 09 33 000 6217 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0.5 | 09 33 000 6122 | 09 33 000 6222 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0.75 | 09 33 000 6115 | 09 33 000 6215 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 1 | 09 33 000 6118 | 09 33 000 6218 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 1.5 | 09 33 000 6116 | 09 33 000 6216 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 2.5 | 09 33 000 6123 | 09 33 000 6223 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 4 | 09 33 000 6119 | 09 33 000 6221 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Relay contact silver plated | 0.75-1 | 09 33 000 6109 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 1.5 | 09 33 000 6110 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 2.5 | 09 33 000 6111 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| F.O. contacts | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| for 1 mm plastic fibre | | 20 10 001 3311 | 20 10 001 3321 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Coding pin for crimp inserts only | | | 09 33 000 9954 | | Use of the coding pin prevents incorrect mating to other connectors of the same type. The male pin should be omitted from the opposing cavity in the male insert. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Crimp contacts 0.14 ... 0.37 mm² only used with BUCHANAN crimping tool
09 99 000 0001

Stock items in bold type

Features

- Reliabel cage clamp termination
- No special tools required
- Vibration proofed

Hoods/Housings

| | |
|---|--------------------|
| Material | aluminium die-cast |
| Surface | powder-coated |
| Locking element | Han-Easy Lock® |
| Flammability acc. to UL 94 | V 0 |
| Hoods/Housings seal | NBR |
| Limiting temperatures | -40 °C ... +125 °C |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 65 |

Further selection of hoods/housings see chapter 30 / chapter 31

Specifications

DIN EN 60 664-1
DIN EN 61 984

Approvals



Inserts

| | |
|--|---|
| Number of contacts | 6, 10, 16, 24, 32 (2x 16), 48 (2x 24) + PE |
| Electrical data acc. to EN 61 984 | 16 A 500 V 6 kV 3 |
| Rated current | 16 A |
| Rated voltage | 500 V |
| Rated impulse voltage | 6 kV |
| Pollution degree | 3 |
| Pollution degree 2 also | 16 A 400/690 V 6 kV 2 |
| Rated voltage acc. to UL/CSA | 600 V |
| Insulation resistance | $\geq 10^{10} \Omega$ |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life - mating cycles | ≥ 500 |

Contacts

| | |
|------------------------------|-------------------------------|
| Material | copper alloy |
| Surface - hard-silver plated | 3 μm Ag |
| Contact resistance | $\leq 1 \text{ m}\Omega$ |
| Cage clamp terminal - min | 0.14 mm ² / AWG 26 |
| Cage clamp terminal - max | 2.5 mm ² / AWG 14 |

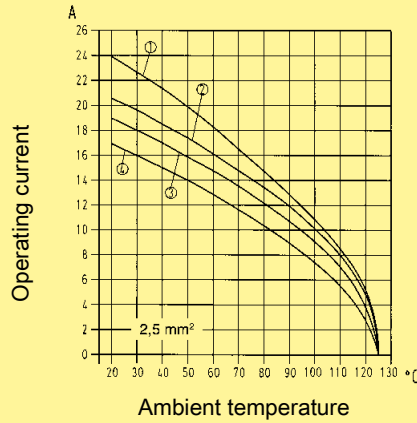
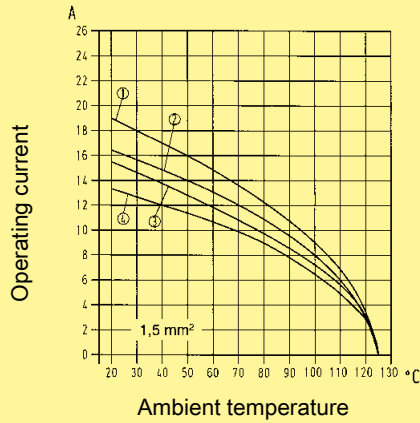
Accessories

| | |
|------------------------------------|------------|
| Cable clamps | chapter 40 |
| Coding of hoods/housings | chapter 40 |
| Label acc. to CSA-approval | chapter 40 |
| Han-Snap® | chapter 11 |
| Assembly plates for test connector | chapter 40 |
| Special insert fixing screws | chapter 40 |

Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5



- ① Han® 6 ES
- ② Han® 10 ES
- ③ Han® 16 ES
- ④ Han® 24 ES

Han
E/EE

Features

- Reliabel cage clamp termination
- No special tools required
- Vibration proofed
- 2 termination points per contact
- Possible for star delta bridges

Hoods/Housings

| | |
|---|--------------------|
| Material | aluminium die-cast |
| Surface | powder-coated |
| Locking element | Han-Easy Lock® |
| Flammability acc. to UL 94 | V 0 |
| Hoods/Housings seal | NBR |
| Limiting temperatures | -40 °C ... +125 °C |
| Degree of protection acc. to DIN EN 60 529 for coupled connector | IP 65 |

Further selection of hoods/housings see chapter 30 / chapter 31

Specifications

DIN EN 60 664-1
DIN EN 61 984

Approvals



Accessories

| | |
|------------------------------------|------------|
| Cable clamps | chapter 40 |
| Coding of hoods/housings | chapter 40 |
| Label acc. to CSA-approval | chapter 40 |
| Han-Snap® | chapter 11 |
| Assembly plates for test connector | chapter 40 |
| Special insert fixing screws | chapter 40 |

Inserts

| | |
|--|---|
| Number of contacts | 6, 10, 16, 24, 32 (2x 16), 48 (2x 24) + PE |
| Electrical data acc. to EN 61 984 | 16 A 500 V 6 kV 3 |
| Rated current | 16 A |
| Rated voltage | 500 V |
| Rated impulse voltage | 6 kV |
| Pollution degree | 3 |
| Pollution degree 2 also | 16 A 400/690 V 6 kV 2 |
| Rated voltage acc. to UL/CSA | 600 V |
| Insulation resistance | $\geq 10^{10} \Omega$ |
| Material | polycarbonate |
| Limiting temperatures | -40 °C ... +125 °C |
| Flammability acc. to UL 94 | V 0 |
| Mechanical working life - mating cycles | ≥ 500 |

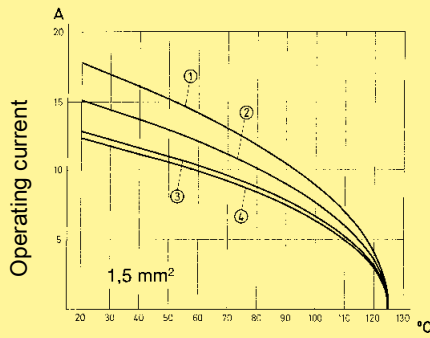
Contacts

| | |
|------------------------------|-------------------------------|
| Material | copper alloy |
| Surface - hard-silver plated | 3 μm Ag |
| Contact resistance | $\leq 1 \text{ m}\Omega$ |
| Cage clamp terminal - min | 0.14 mm ² / AWG 26 |
| Cage clamp terminal - max | 2.5 mm ² / AWG 14 |

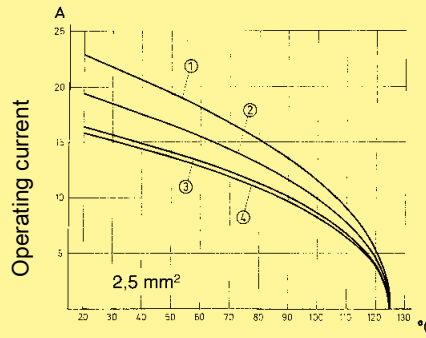
Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5



Ambient temperature



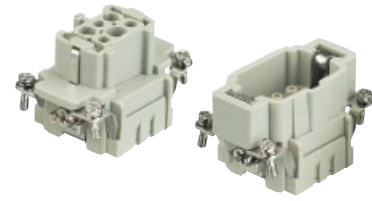
Ambient temperature

- ① Han® 6 ESS
- ② Han® 10 ESS
- ③ Han® 16 ESS
- ④ Han® 24 ESS

Han
E/EE


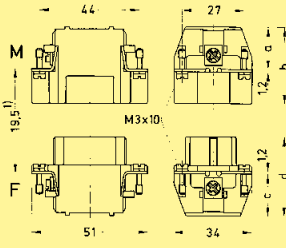
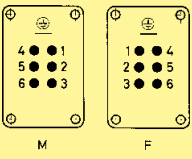
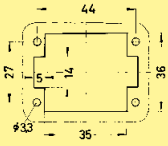



Number of contacts

6 +



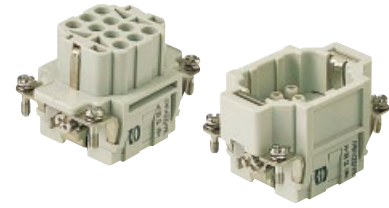
Inserts

Han E/EE

| Identification | Series | Part number | | Drawing | Dimensions in mm | | | | | | | | | | | | | | | | | | | | | | |
|---|----------|-----------------------|-----------------------|---|------------------|---|---|---|---|--------------|----|----|----|----|------------------------|----|----|----|----|----------|----|----|----|----|--|--|--|
| | | Male insert (M) | Female insert (F) | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Crimp terminal</p> <p>Order crimp contacts separately (see Technical characteristics on page 03.03)</p>  | Han E® | 09 33 006 2602 | 09 33 006 2702 |  <p>1) Distance for contact max. 21 mm</p> <table border="1" data-bbox="949 929 1444 1052"> <thead> <tr> <th></th> <th>a</th> <th>b</th> <th>c</th> <th>d</th> </tr> </thead> <tbody> <tr> <td>Han E® screw</td> <td>18</td> <td>33</td> <td>18</td> <td>35</td> </tr> <tr> <td>Han® ES / Han E® crimp</td> <td>19</td> <td>34</td> <td>19</td> <td>36</td> </tr> <tr> <td>Han® ESS</td> <td>34</td> <td>49</td> <td>32</td> <td>49</td> </tr> </tbody> </table> <p>Contact arrangement view from termination side</p>  <p>Panel cut out</p>  | | a | b | c | d | Han E® screw | 18 | 33 | 18 | 35 | Han® ES / Han E® crimp | 19 | 34 | 19 | 36 | Han® ESS | 34 | 49 | 32 | 49 | | | |
| | a | b | c | d | | | | | | | | | | | | | | | | | | | | | | | |
| Han E® screw | 18 | 33 | 18 | 35 | | | | | | | | | | | | | | | | | | | | | | | |
| Han® ES / Han E® crimp | 19 | 34 | 19 | 36 | | | | | | | | | | | | | | | | | | | | | | | |
| Han® ESS | 34 | 49 | 32 | 49 | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Screw terminal with wire protection</p>  | Han E® | 09 33 006 2601 | 09 33 006 2701 | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Cage-clamp terminal</p>  | Han® ES | 09 33 006 2616 | 09 33 006 2716 | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Cage-clamp terminal two terminals per contact</p>  | Han® ESS | 09 33 006 2672 | 09 33 006 2772 | | | | | | | | | | | | | | | | | | | | | | | | |

Number of contacts

10 +



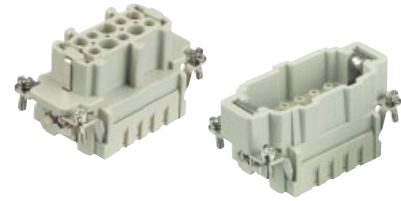
Inserts

| Identification | Series | Part number | | Drawing | Dimensions in mm |
|--|------------|-----------------------|-----------------------|--|------------------|
| | | Male insert (M) | Female insert (F) | | |
| <p>Crimp termination</p> <p>Order crimp contacts separately (see Technical characteristics on page 03.05)</p> | Han® EE | 09 32 010 3001 | 09 32 010 3101 | <p>1) Distance for contact max. 21 mm</p> <p>Contact arrangement view from termination side</p> <p>Panel cut out</p> | |

Han
E/EE


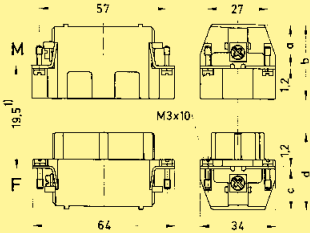

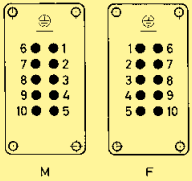

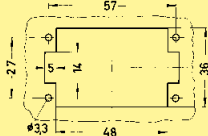

Number of contacts

10 +



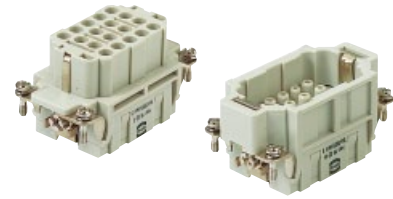
Inserts

Han E/EE


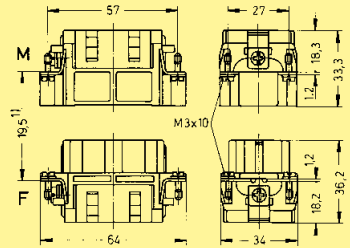
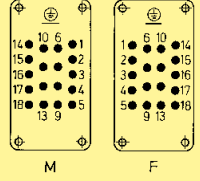
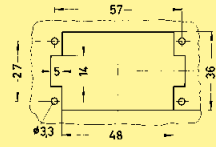
| Identification | Series | Part number | | Drawing | Dimensions in mm | | | | | | | | | | | | | | | | | | | | |
|---|----------|-----------------------|-----------------------|--|------------------|---|---|---|---|--------------|----|----|----|----|------------------------|----|----|----|----|----------|----|----|----|----|--|
| | | Male insert (M) | Female insert (F) | | | | | | | | | | | | | | | | | | | | | | |
| <p>Crimp terminal</p> <p>Order crimp contacts separately (see Technical characteristics on page 03.03)</p>  | Han E® | 09 33 010 2602 | 09 33 010 2702 |  | | | | | | | | | | | | | | | | | | | | | |
| <p>Screw terminal with wire protection</p>  | Han E® | 09 33 010 2601 | 09 33 010 2701 | <p>1) Distance for contact max. 21 mm</p> <table border="1"> <thead> <tr> <th></th> <th>a</th> <th>b</th> <th>c</th> <th>d</th> </tr> </thead> <tbody> <tr> <td>Han E® screw</td> <td>18</td> <td>33</td> <td>18</td> <td>35</td> </tr> <tr> <td>Han® ES / Han E® crimp</td> <td>19</td> <td>34</td> <td>19</td> <td>36</td> </tr> <tr> <td>Han® ESS</td> <td>34</td> <td>49</td> <td>32</td> <td>49</td> </tr> </tbody> </table> <p>Contact arrangement view from termination side</p>  | | a | b | c | d | Han E® screw | 18 | 33 | 18 | 35 | Han® ES / Han E® crimp | 19 | 34 | 19 | 36 | Han® ESS | 34 | 49 | 32 | 49 | |
| | a | b | c | d | | | | | | | | | | | | | | | | | | | | | |
| Han E® screw | 18 | 33 | 18 | 35 | | | | | | | | | | | | | | | | | | | | | |
| Han® ES / Han E® crimp | 19 | 34 | 19 | 36 | | | | | | | | | | | | | | | | | | | | | |
| Han® ESS | 34 | 49 | 32 | 49 | | | | | | | | | | | | | | | | | | | | | |
| <p>Cage-clamp terminal</p>  | Han® ES | 09 33 010 2616 | 09 33 010 2716 | <p>Panel cut out</p>  | | | | | | | | | | | | | | | | | | | | | |
| <p>Cage-clamp terminal two terminals per contact</p>  | Han® ESS | 09 33 010 2672 | 09 33 010 2772 | | | | | | | | | | | | | | | | | | | | | | |

Number of contacts

18 +



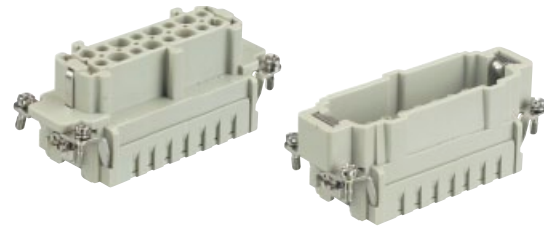
Inserts

| Identification | Series | Part number | | Drawing | Dimensions in mm |
|--|---------|-----------------------|-----------------------|---|------------------|
| | | Male insert (M) | Female insert (F) | | |
| <p>Crimp termination</p> <p>Order crimp contacts separately (see Technical characteristics on page 03.05)</p>  | Han® EE | 09 32 018 3001 | 09 32 018 3101 |  <p>1) Distance for contact max. 21 mm</p> <p>Contact arrangement view from termination side</p>  <p>Panel cut out</p>  | |

Han E/EE


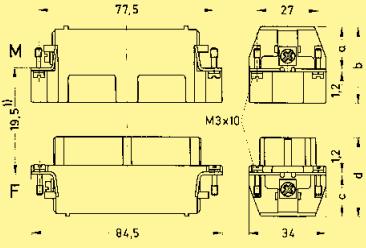
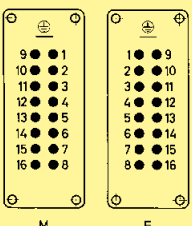
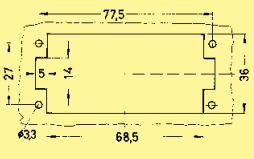
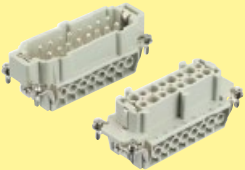

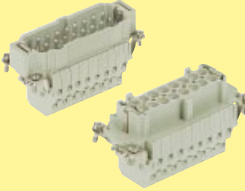
Number of contacts

16 +



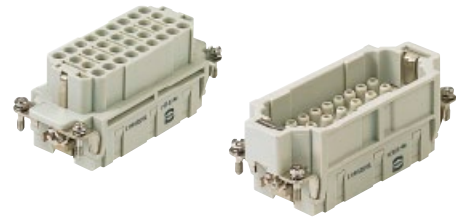
Inserts

Han E/EE

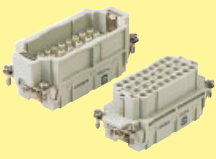
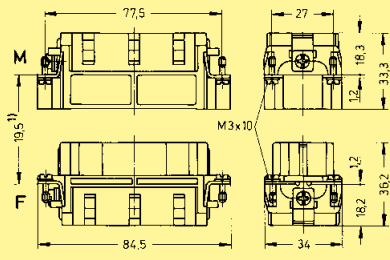
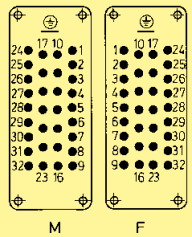
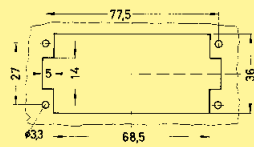
| Identification | Series | Part number | | Drawing | Dimensions in mm | | | | | | | | | | | | | | | | | | | | | | |
|---|----------|-----------------------|-----------------------|---|------------------|---|---|---|---|--------------|----|----|----|----|------------------------|----|----|----|----|----------|----|----|----|----|--|--|--|
| | | Male insert (M) | Female insert (F) | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Crimp terminal</p> <p>Order crimp contacts separately (see Technical characteristics on page 03.03)</p>  | Han E® | 09 33 016 2602 | 09 33 016 2702 |  <p>1) Distance for contact max. 21 mm</p> <table border="1" data-bbox="949 929 1444 1052"> <thead> <tr> <th></th> <th>a</th> <th>b</th> <th>c</th> <th>d</th> </tr> </thead> <tbody> <tr> <td>Han E® screw</td> <td>18</td> <td>33</td> <td>18</td> <td>35</td> </tr> <tr> <td>Han® ES / Han E® crimp</td> <td>19</td> <td>34</td> <td>19</td> <td>36</td> </tr> <tr> <td>Han® ESS</td> <td>34</td> <td>49</td> <td>32</td> <td>49</td> </tr> </tbody> </table> <p>Contact arrangement view from termination side</p>  <p>Panel cut out</p>  | | a | b | c | d | Han E® screw | 18 | 33 | 18 | 35 | Han® ES / Han E® crimp | 19 | 34 | 19 | 36 | Han® ESS | 34 | 49 | 32 | 49 | | | |
| | a | b | c | d | | | | | | | | | | | | | | | | | | | | | | | |
| Han E® screw | 18 | 33 | 18 | 35 | | | | | | | | | | | | | | | | | | | | | | | |
| Han® ES / Han E® crimp | 19 | 34 | 19 | 36 | | | | | | | | | | | | | | | | | | | | | | | |
| Han® ESS | 34 | 49 | 32 | 49 | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Screw terminal with wire protection</p>  | Han E® | 09 33 016 2601 | 09 33 016 2701 | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Cage-clamp terminal</p>  | Han® ES | 09 33 016 2616 | 09 33 016 2716 | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Cage-clamp terminal two terminals per contact</p>  | Han® ESS | 09 33 016 2672 | 09 33 016 2772 | | | | | | | | | | | | | | | | | | | | | | | | |

Number of contacts

32 +



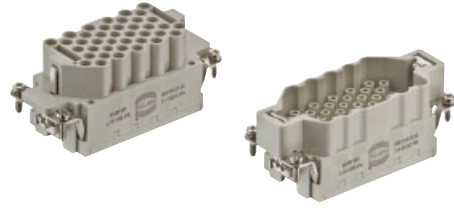
Inserts

| Identification | Series | Part number | | Drawing | Dimensions in mm |
|--|---------|-----------------------|-----------------------|---|------------------|
| | | Male insert (M) | Female insert (F) | | |
| <p>Crimp termination</p> <p>Order crimp contacts separately (see Technical characteristics on page 03.05)</p>  | Han® EE | 09 32 032 3001 | 09 32 032 3101 |  <p>1) Distance for contact max. 21 mm</p> <p>Contact arrangement view from termination side</p>  <p>Panel cut out</p>  | |
| | | | | | |

Han E/EE

Number of contacts

40 +



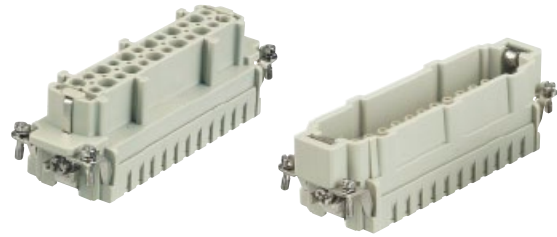
Inserts

Han
E/EE

| Identification | Series | Part number | | Drawing | Dimensions in mm |
|--|-------------|-----------------------|-----------------------|--|------------------|
| | | Male insert (M) | Female insert (F) | | |
| <p>Crimp termination</p> <p>Order crimp contacts separately (see Technical characteristics on page 03.07)</p> | Han® EEE | 09 32 040 3001 | 09 32 040 3101 | <p>1) Distance for contact max. 21 mm</p> <p>Contact arrangement view from termination side</p> <p>Panel cut out</p> | |

Number of contacts

24 +



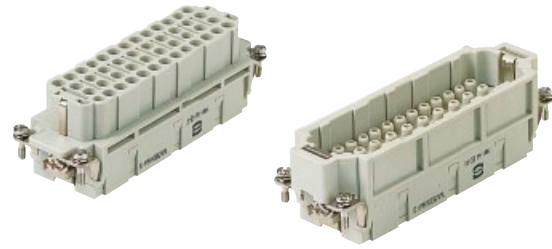
Inserts

| Identification | Series | Part number | | Drawing | Dimensions in mm | | | | | | | | | | | | | | | | | | | | |
|---|----------|-----------------------|-----------------------|--|------------------|---|---|---|---|--------------|----|----|----|----|------------------------|----|----|----|----|----------|----|----|----|----|--|
| | | Male insert (M) | Female insert (F) | | | | | | | | | | | | | | | | | | | | | | |
| <p>Crimp terminal</p> <p>Order crimp contacts separately (see Technical characteristics on page 03.03)</p> | Han E® | 09 33 024 2602 | 09 33 024 2702 | <p>1) Distance for contact max. 21 mm</p> <table border="1"> <thead> <tr> <th></th> <th>a</th> <th>b</th> <th>c</th> <th>d</th> </tr> </thead> <tbody> <tr> <td>Han E® screw</td> <td>18</td> <td>33</td> <td>18</td> <td>35</td> </tr> <tr> <td>Han® ES / Han E® crimp</td> <td>19</td> <td>34</td> <td>19</td> <td>36</td> </tr> <tr> <td>Han® ESS</td> <td>34</td> <td>49</td> <td>32</td> <td>49</td> </tr> </tbody> </table> <p>Contact arrangement view from termination side</p> <p>Panel cut out</p> | | a | b | c | d | Han E® screw | 18 | 33 | 18 | 35 | Han® ES / Han E® crimp | 19 | 34 | 19 | 36 | Han® ESS | 34 | 49 | 32 | 49 | |
| | a | b | c | d | | | | | | | | | | | | | | | | | | | | | |
| Han E® screw | 18 | 33 | 18 | 35 | | | | | | | | | | | | | | | | | | | | | |
| Han® ES / Han E® crimp | 19 | 34 | 19 | 36 | | | | | | | | | | | | | | | | | | | | | |
| Han® ESS | 34 | 49 | 32 | 49 | | | | | | | | | | | | | | | | | | | | | |
| <p>Screw terminal with wire protection</p> | Han E® | 09 33 024 2601 | 09 33 024 2701 | | | | | | | | | | | | | | | | | | | | | | |
| <p>Cage-clamp terminal</p> | Han® ES | 09 33 024 2616 | 09 33 024 2716 | | | | | | | | | | | | | | | | | | | | | | |
| <p>Cage-clamp terminal two terminals per contact</p> | Han® ESS | 09 33 024 2672 | 09 33 024 2772 | | | | | | | | | | | | | | | | | | | | | | |

Han E/EE

Number of contacts


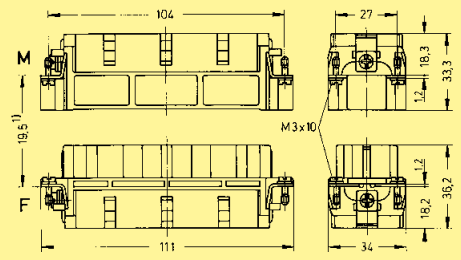
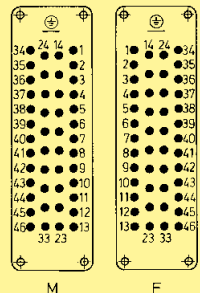
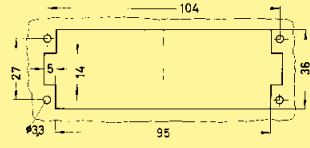
46 +



Inserts

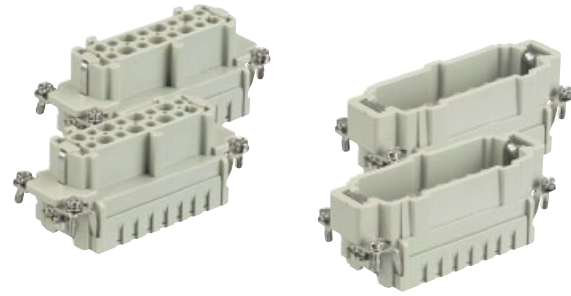
Han
E/EE

| Identification | Series | Part number | | Drawing | Dimensions in mm |
|----------------|--------|-----------------|-------------------|---------|------------------|
| | | Male insert (M) | Female insert (F) | | |

| | | | | |
|---|--------------------|------------------------------|------------------------------|---|
| <p>Crimp termination</p> <p>Order crimp contacts separately (see Technical characteristics on page 03.05)</p>  | <p>Han® EE</p> | <p>09 32 046 3001</p> | <p>09 32 046 3101</p> |  <p>1) Distance for contact max. 21 mm</p> <p>Contact arrangement view from termination side</p>  <p>Panel cut out</p>  |
|---|--------------------|------------------------------|------------------------------|---|

Number of contacts

32 +



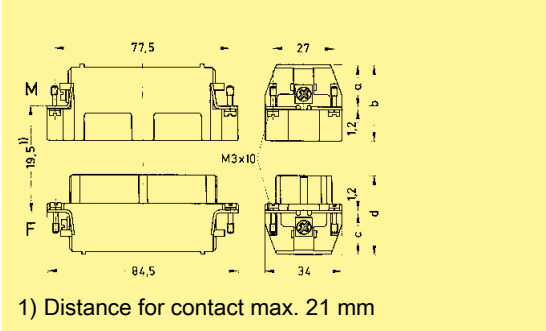
Inserts

Han E/EE

| Identification | Series | Part number | | Drawing | Dimensions in mm |
|----------------|--------|-----------------|-------------------|---------|------------------|
| | | Male insert (M) | Female insert (F) | | |

Crimp terminal
Order crimp contacts separately (see Technical characteristics on page 03.03)

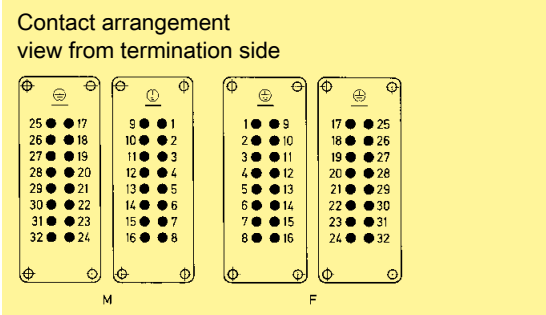
| | | | |
|--------|---------|-----------------------|-----------------------|
| Han E® | 1 - 16 | 09 33 016 2602 | 09 33 016 2702 |
| | 17 - 32 | 09 33 016 2612 | 09 33 016 2712 |



| | a | b | c | d |
|------------------------|----|----|----|----|
| Han E® screw | 18 | 33 | 18 | 35 |
| Han® ES / Han E® crimp | 19 | 34 | 19 | 36 |
| Han® ESS | 34 | 49 | 32 | 49 |

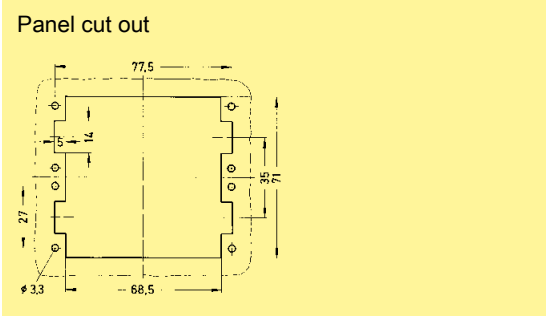
Screw terminal with wire protection

| | | | |
|--------|---------|-----------------------|-----------------------|
| Han E® | 1 - 16 | 09 33 016 2601 | 09 33 016 2701 |
| | 17 - 32 | 09 33 016 2611 | 09 33 016 2711 |



Cage-clamp terminal

| | | | |
|---------|---------|-----------------------|-----------------------|
| Han® ES | 1 - 16 | 09 33 016 2616 | 09 33 016 2716 |
| | 17 - 32 | 09 33 016 2626 | 09 33 016 2726 |

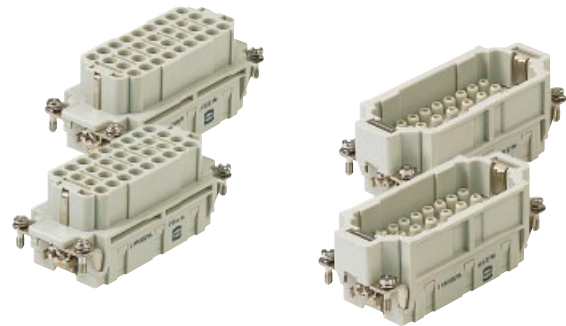


Cage-clamp terminal two terminals per contact

| | | | |
|----------|--------|-----------------------|-----------------------|
| Han® ESS | 1 - 16 | 09 33 016 2672 | 09 33 016 2772 |
| | 1 - 16 | 09 33 016 2672 | 09 33 016 2772 |

Number of contacts

64 +



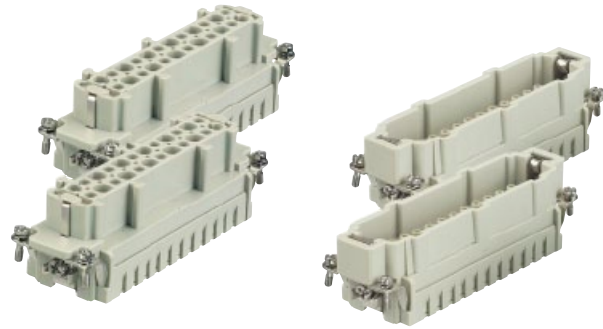
Inserts

| Identification | Series | Part number | | Drawing | Dimensions in mm |
|--|------------------------------|---|---|--|------------------|
| | | Male insert (M) | Female insert (F) | | |
| <p>Crimp termination</p> <p>Order crimp contacts separately (see Technical characteristics on page 03.05)</p> | <p>Han® EE</p> | | | | |
| | <p>1 - 32</p> <p>33 - 64</p> | <p>09 32 032 3001</p> <p>09 32 032 3011</p> | <p>09 32 032 3101</p> <p>09 32 032 3111</p> | <p>1) Distance for contact max. 21 mm</p> <p>Contact arrangement view from termination side</p> <p>Panel cut out</p> | |

Han E/EE

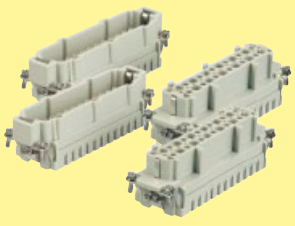
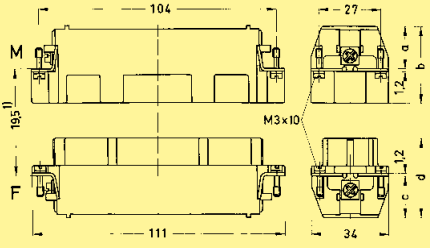
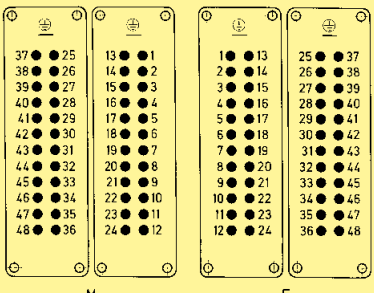
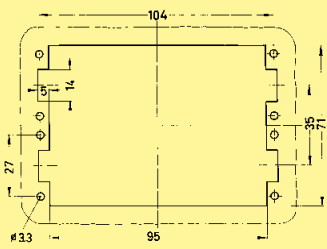
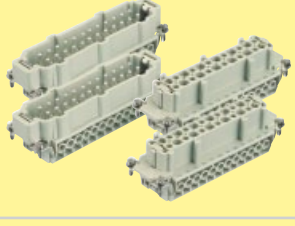
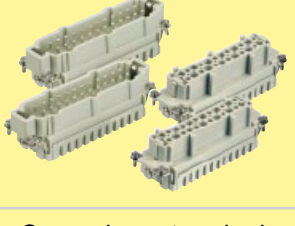
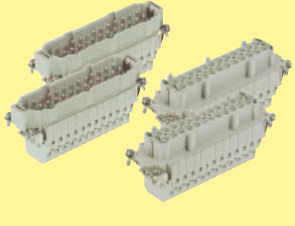
Number of contacts

48 +



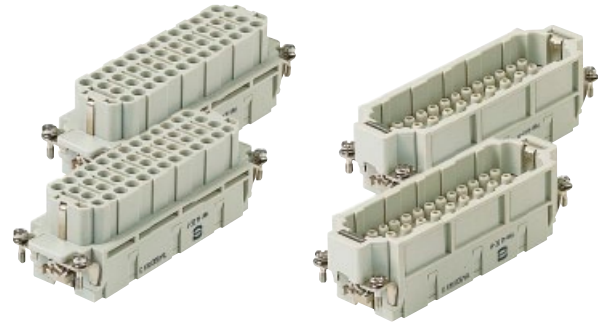
Inserts

Han E/EE


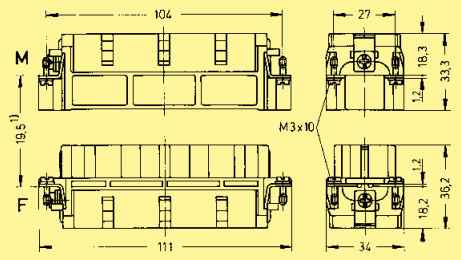
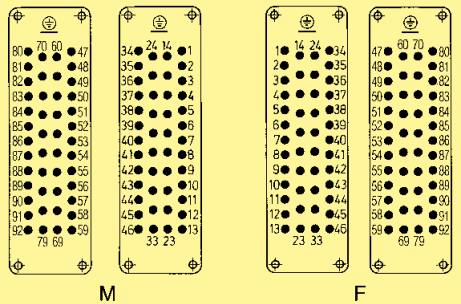
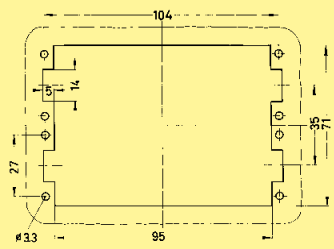
| Identification | Series | Part number | | Drawing | Dimensions in mm | | | | | | | | | | | | | | | | | | | | | | | |
|--|----------|-----------------|-----------------------|-----------------------|---|-----------------------|----------------|----------------|-----------------------|-----------------------|--------------|----|----|----|----|------------------------|----|----|----|----|----------|----|----|----|----|---------|----------------|----------------|
| | | Male insert (M) | Female insert (F) | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Crimp terminal</p> <p>Order crimp contacts separately (see Technical characteristics on page 03.03)</p>  | Han E® | 1 - 24 | 09 33 024 2602 | 09 33 024 2702 |  <p>1) Distance for contact max. 21 mm</p> <table border="1"> <thead> <tr> <th></th> <th>a</th> <th>b</th> <th>c</th> <th>d</th> </tr> </thead> <tbody> <tr> <td>Han E® screw</td> <td>18</td> <td>33</td> <td>18</td> <td>35</td> </tr> <tr> <td>Han® ES / Han E® crimp</td> <td>19</td> <td>34</td> <td>19</td> <td>36</td> </tr> <tr> <td>Han® ESS</td> <td>34</td> <td>49</td> <td>32</td> <td>49</td> </tr> </tbody> </table> <p>Contact arrangement view from termination side</p>  <p>Panel cut out</p>  | | a | b | c | d | Han E® screw | 18 | 33 | 18 | 35 | Han® ES / Han E® crimp | 19 | 34 | 19 | 36 | Han® ESS | 34 | 49 | 32 | 49 | 25 - 48 | 09 33 024 2612 | 09 33 024 2712 |
| | | a | b | c | | d | | | | | | | | | | | | | | | | | | | | | | |
| Han E® screw | 18 | 33 | 18 | 35 | | | | | | | | | | | | | | | | | | | | | | | | |
| Han® ES / Han E® crimp | 19 | 34 | 19 | 36 | | | | | | | | | | | | | | | | | | | | | | | | |
| Han® ESS | 34 | 49 | 32 | 49 | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Screw terminal with wire protection</p>  | Han E® | 1 - 24 | 09 33 024 2601 | 09 33 024 2701 | | 25 - 48 | 09 33 024 2611 | 09 33 024 2711 | | | | | | | | | | | | | | | | | | | | |
| <p>Cage-clamp terminal</p>  | | Han® ES | 1 - 24 | 09 33 024 2616 | | 09 33 024 2716 | | 25 - 48 | 09 33 024 2626 | 09 33 024 2726 | | | | | | | | | | | | | | | | | | |
| <p>Cage-clamp terminal two terminals per contact</p>  | Han® ESS | | 1 - 24 | 09 33 024 2672 | 09 33 024 2772 | | | 1 - 24 | 09 33 024 2672 | 09 33 024 2772 | | | | | | | | | | | | | | | | | | |

Number of contacts

92 +



Inserts

| Identification | Series | Part number | | Drawing | Dimensions in mm |
|--|---|---|---|--|------------------|
| | | Male insert (M) | Female insert (F) | | |
| <p>Crimp termination</p> <p>Order crimp contacts separately (see Technical characteristics on page 03.05)</p>  | <p>Han® EE</p> <p>1 - 46</p> <p>47 - 92</p> | <p>09 32 046 3001</p> <p>09 32 046 3011</p> | <p>09 32 046 3101</p> <p>09 32 046 3111</p> |  <p>1) Distance for contact max. 21 mm</p> <p>Contact arrangement view from termination side</p>  <p>M F</p> <p>Panel cut out</p>  | |

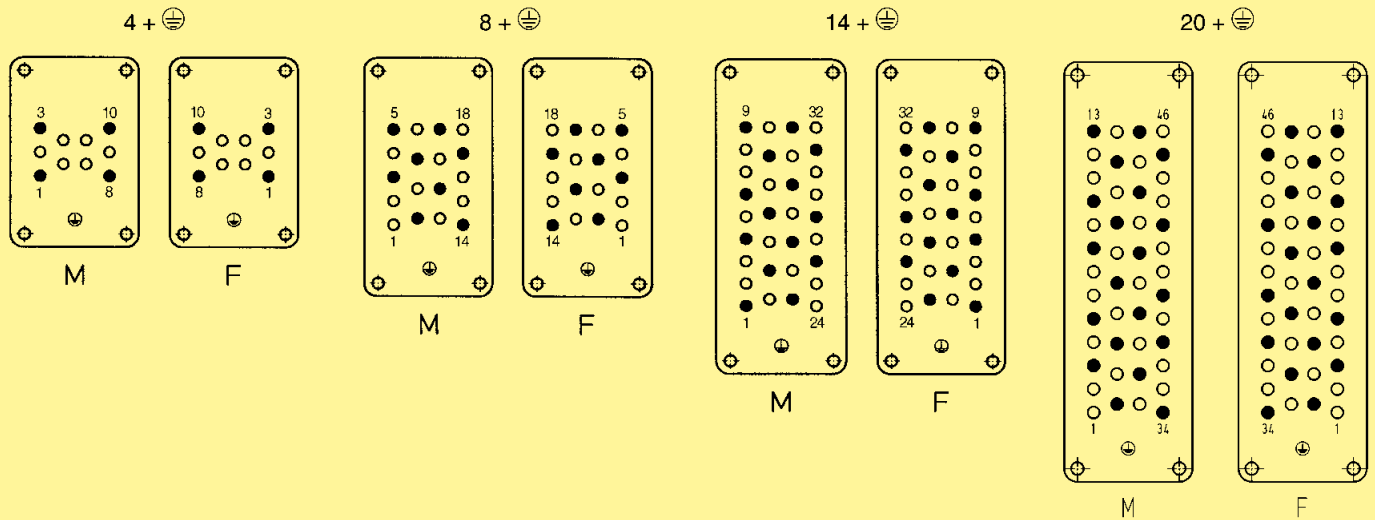
Han E/EE

Modified contact arrangement up to 1000 V

The connector series Han® EE equipped with all contacts may be used for voltages up to 500 V ~ pollution degree 3. A modified contact loading arrangement permits use up to 1000 V ~ pollution degree also in pollution degree C. Fully equipped connectors may also be used up to 1000 V ~ but in a lower pollution degree. See page 00.22. According to DIN EN 61 984 connectors should not be coupled or decoupled under electrical load.

690 V Pollution degree 3

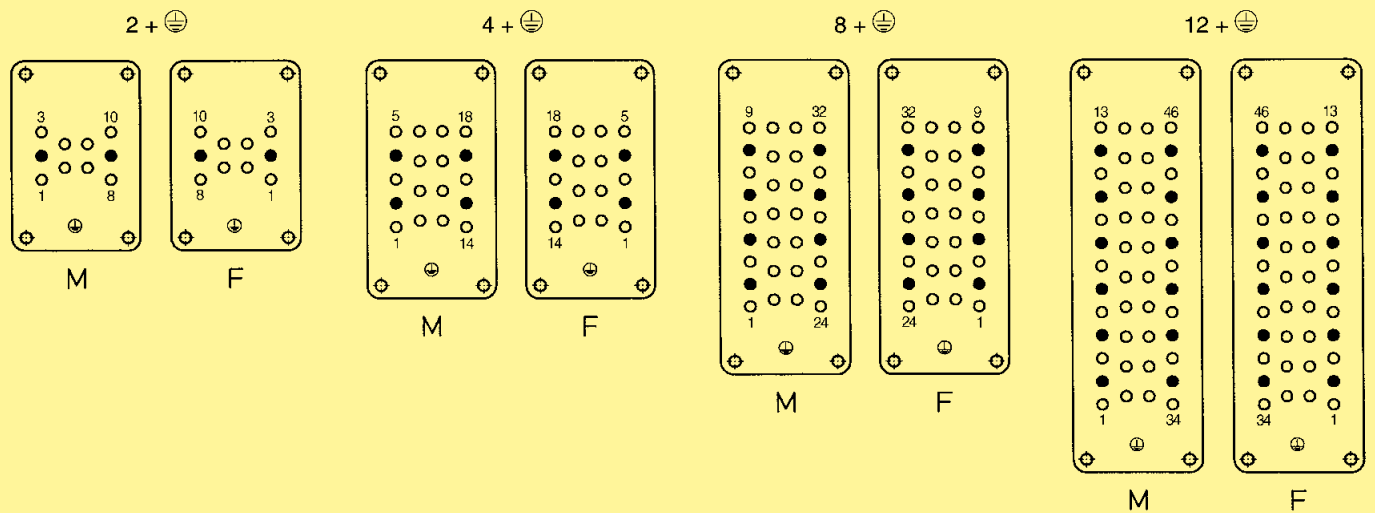
Contact arrangement view from termination side



• Working contact ○ Without contact M - Male insert F - Female insert

1000 V Pollution degree 3

Contact arrangement view from termination side



• Working contact ○ Without contact M - Male insert F - Female insert