

CIRCULAR CONNECTORS



SIGNAL // POWER // INDUSTRIAL ETHERNET



HUMMEL — smart & reliable



HUMMEL AG is a renowned manufacturer of connection technology and components for electric and heating areas. The medium sized family business stands for quality, precision, reliability and pronounced service consciousness. A wide vertical range of manufacture with in-house development, construction, toolmaking, manufacturing, electroplating and assembling from a single source, offers best conditions for implementing individual solutions.



Connectors M 12 Power

▶ 19



Connectors M 16

▶ 37



Connectors M 23 Fast Ethernet PoE

▶ 63



Connectors M 23 RJ 45

▶ 75



Connectors M 23 Signal

▶ 85



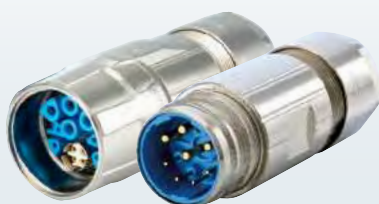
Connectors M 27 Signal

▶ 117



Connectors M 23 Power, M 23 Hybrid

▶ 127



Connectors M 40 Power (Size 1,5)

▶ 153



Connectors Stainless Steel (INOX) ▶ 171



Moulded Cordsets ▶ 181



Customized – No Limits ▶ 188



HUMMEL Highlights: product features ▶ 6

Technical Information ▶ 18

Index ▶ 196

HUMMEL International ▶ 198

LEGEND



Contacts



Accessories



Assembly Instructions



Crimping, Assembly and Disassembly of Contacts



Housing



Crimp Tool Settings



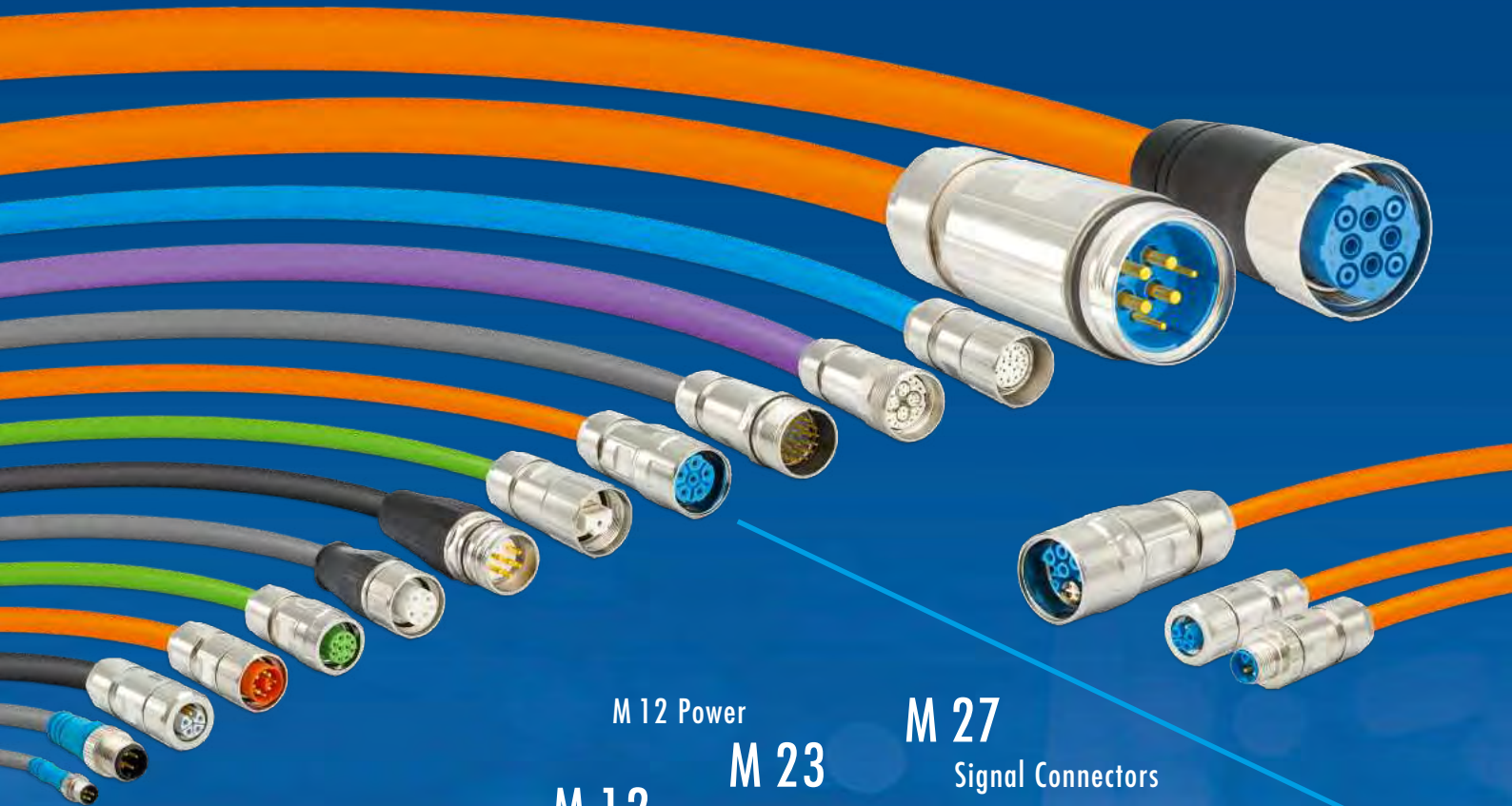
Inserts / Pinouts



Crimp Tool Assembly Instruction



HUGE RANGE: M 8 – M 40



M 12 Power
M 12
 M 23
 Power Connectors
 M 27
 Signal Connectors

CIRCULAR CONNECTORS

M 8
Industrial Ethernet

M 16
TWILOCK

PROFINET
M 23 RJ 45

M 40
Moulded Cordsets

Customized Solutions
M 23 Hybrid



Germanischer Lloyd



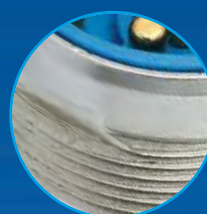
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TWILOCK / TWILOCK-S

- // Quick Connect with Polygon Lock
- // Multi functional: Ideal with TWILOCK and screw connection
- // Easy handling, exceptional functionality
- // Resistant to vibration



Clearly defined:
OPEN – CLOSE



Multi functional: Special thread
allows use of TWILOCK and
screw connection



Locking with a slight rotation
or release of the connection



TWILOCK-S-Version
intermateable with Speedtec

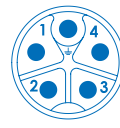


M 12 Power – compact and powerful

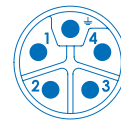
It is a major milestone in an age of miniaturization: the presentation of the M 12 Power Connector. This circular connector opens the door to entirely new applications and capabilities. Its high power transmission, the compact design and the large temperature range are the extraordinary features. The mechanical and electrical data of this compact power connector are convincing.

- // Power transmission to 630V and 16 A
- // Temperature range to 125 degree Celsius
- // K, L, S, T Coding
- // EMC shielding in standard version
- // Robust metal housing, optional stainless steel
- // Protection IP 67 and IP 69K
- // Compact designs
- // Cable diameter range to 11 mm
- // Moulded Cordsets

Coding:



K



L



S

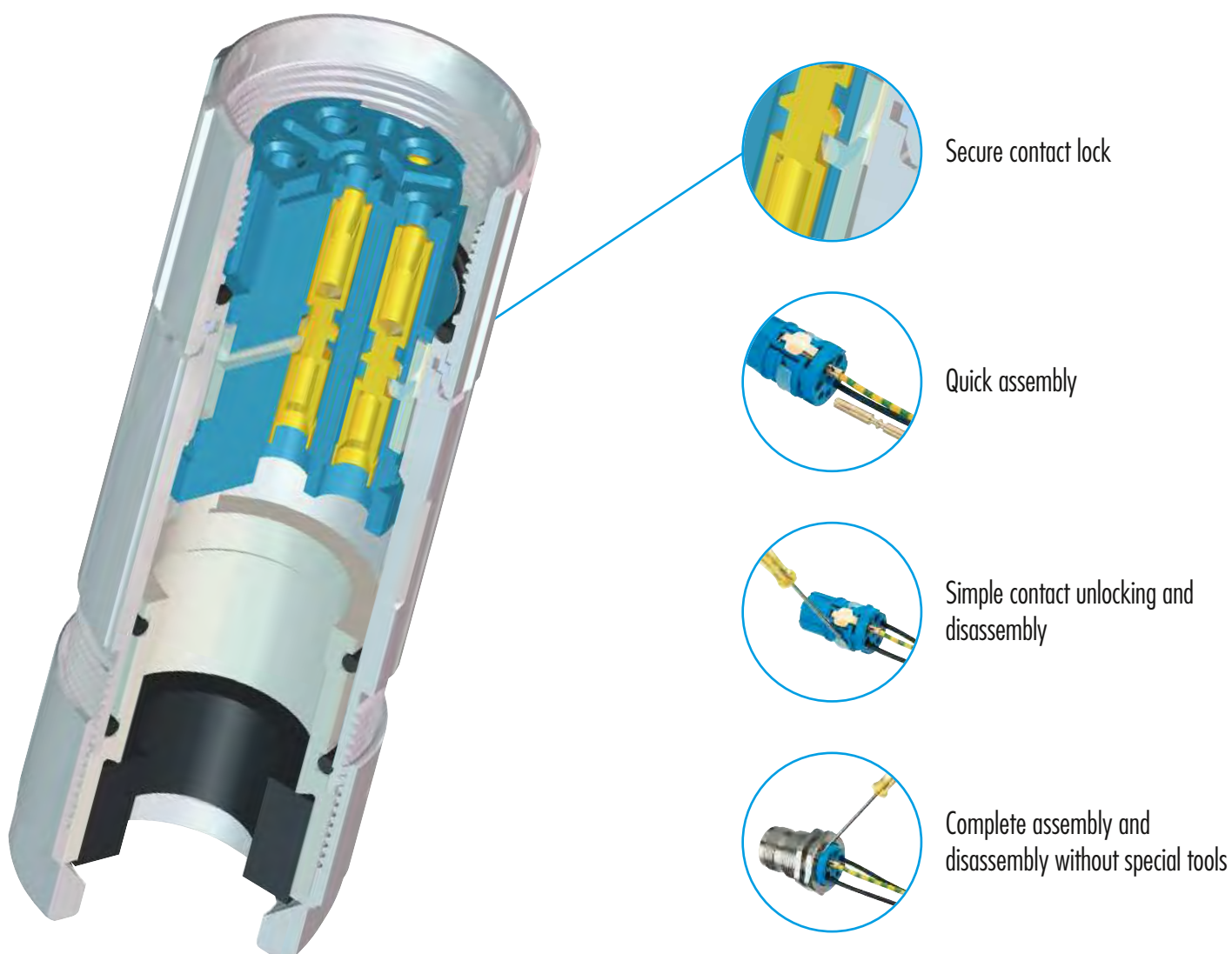


T



Euro-Lock-System – the patented locking system

- // The integrated locking clip secures the contacts in the insert
- // Easy assembly and disassembly of the contacts
- // No special tools required



The new Low-Cost-Standard for Drives

- // Minimized Size
- // Free choice of Signal and Power Inserts
- // Flange 20 x 20 and 25 x 25

Connector 4 small drives

TWINTUS



Colour coded inserts
(DESINA colour code)



IP 67 (NEMA 4x) self sealing,
even for threaded holes



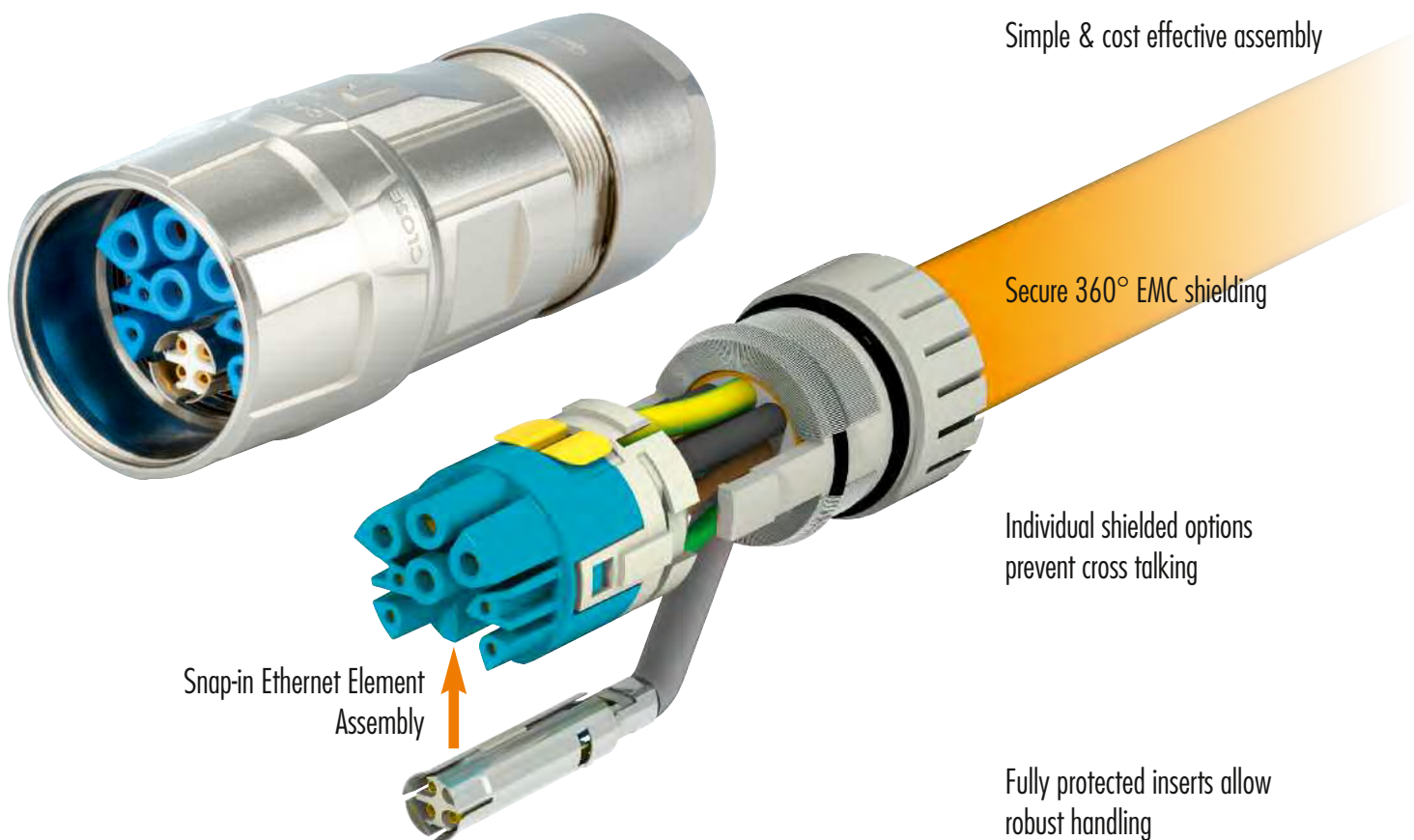
Optional EMC-sheet for separating
signal and power areas



Version M 16 / M 12 available

Fully integrated solution for Industrial Ethernet applications

- // Fits perfect for single cable and hybrid solutions for HIPERFACE® DSL and EnDat 2.2 use
- // High Performance
- // Full modularity with Nickel Plated Brass and Stainless Steel Shells
- // TWILOCK quick connect system





M 23 RJ 45: ROBUST, SIMPLE & SMALL!



Design allows for terminated patch cable



Integrated coupler accommodates off-the-shelf RJ 45 patch cables



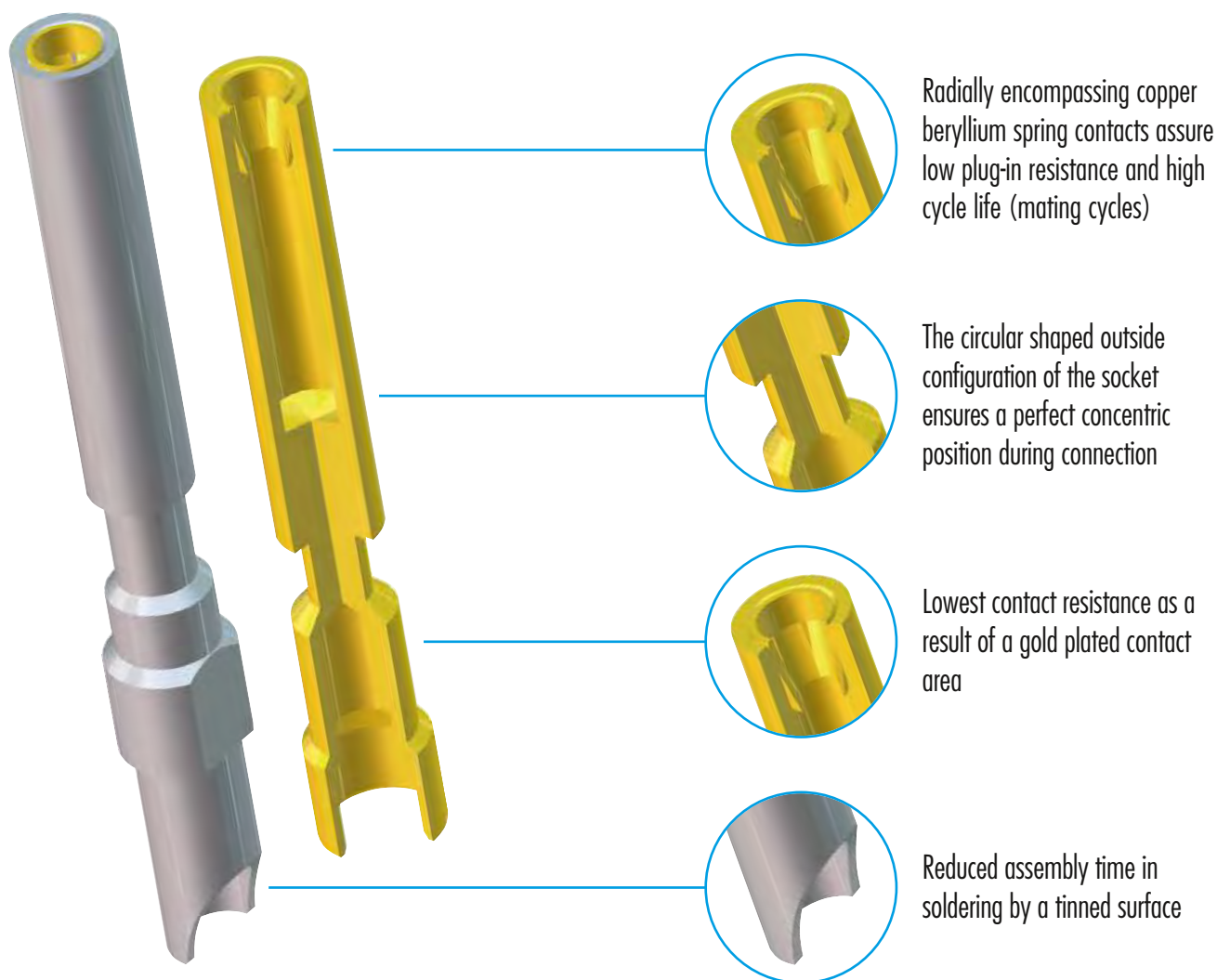
Integrated cable strain relief warrant an IP 67 / IP 69K rating making the M 23 based RJ 45 Connector an ideal solution for robust applications



A standard RJ 45 connection is suitable as service and programmable interface

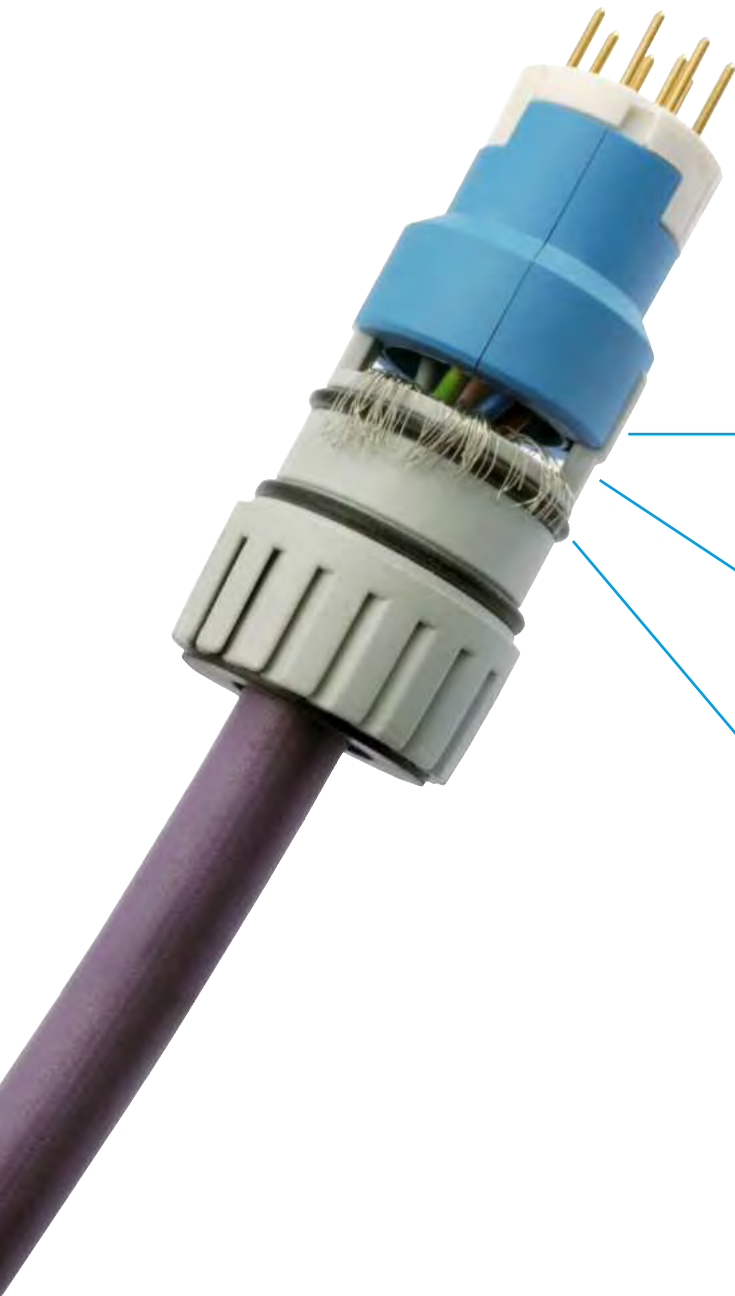
The new, high performance type of contacts – HUMMEL SLS-Technology (Spring Loaded Socket)

- // Integrated spring mates with the pin contact and encompasses it radially
- // Exceptional electrical performance with ultimate contact reliability
- // Tinned solder contacts assure easy and quick assembly



USER FRIENDLY ASSEMBLY

- // Clear and modular structure of all connector series
- // Patented modular strain relief insert and contact insert
- // One step cable assembly and shielding
- // Simple, quick and reliable assembly into the connector housing



Colour coding of spacers for male and female inserts



Cable assembly and shielding is possible in a single operation



Strain relief insert with four fingers, secured in a recess, prevents cable rotation



Flexible EMC-O-ring guarantees reliable EMC-protection for light and heavy braided shields.

A giant modular construction set

The modular design is what makes it possible: Many types of HUMMEL connector housing can be combined with numerous other contact inserts. For clients, this means that every conceivable number of contacts can be created using just one type of connector as a basis. The system works like a giant modular construction set. There are many benefits:

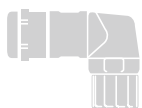
- // huge amount of combinations
- // consistent assembly
- // easy procurement
- // minimized storage
- // assembly with standard tools



Straight Connector, Male- & Female Thread



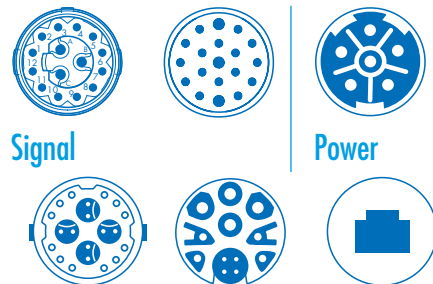
Panel Connector



Right Angle Connector



Versions TWILOCK / TWILOCK-S



Signal

Power

Industrial Ethernet

This is how the system works:

- // decide on one of the connector series based on the intended application and the desired number of positions (M 12 Power, M 16, M 23 Fast Ethernet PoE, M 23 RJ 45, M 23 Signal, M 27 Signal, M 23 Power / Hybrid, M 40 Power)
- // choose a housing (straight connector male or female thread, right-angle or panel connector) with the requested connect system (screw, TWILOCK, TWILOCK-S)
- // select a suitable insert
- // choose the corresponding contacts (pin or socket) in the requested number

M 23 CIRCULAR CONNECTORS

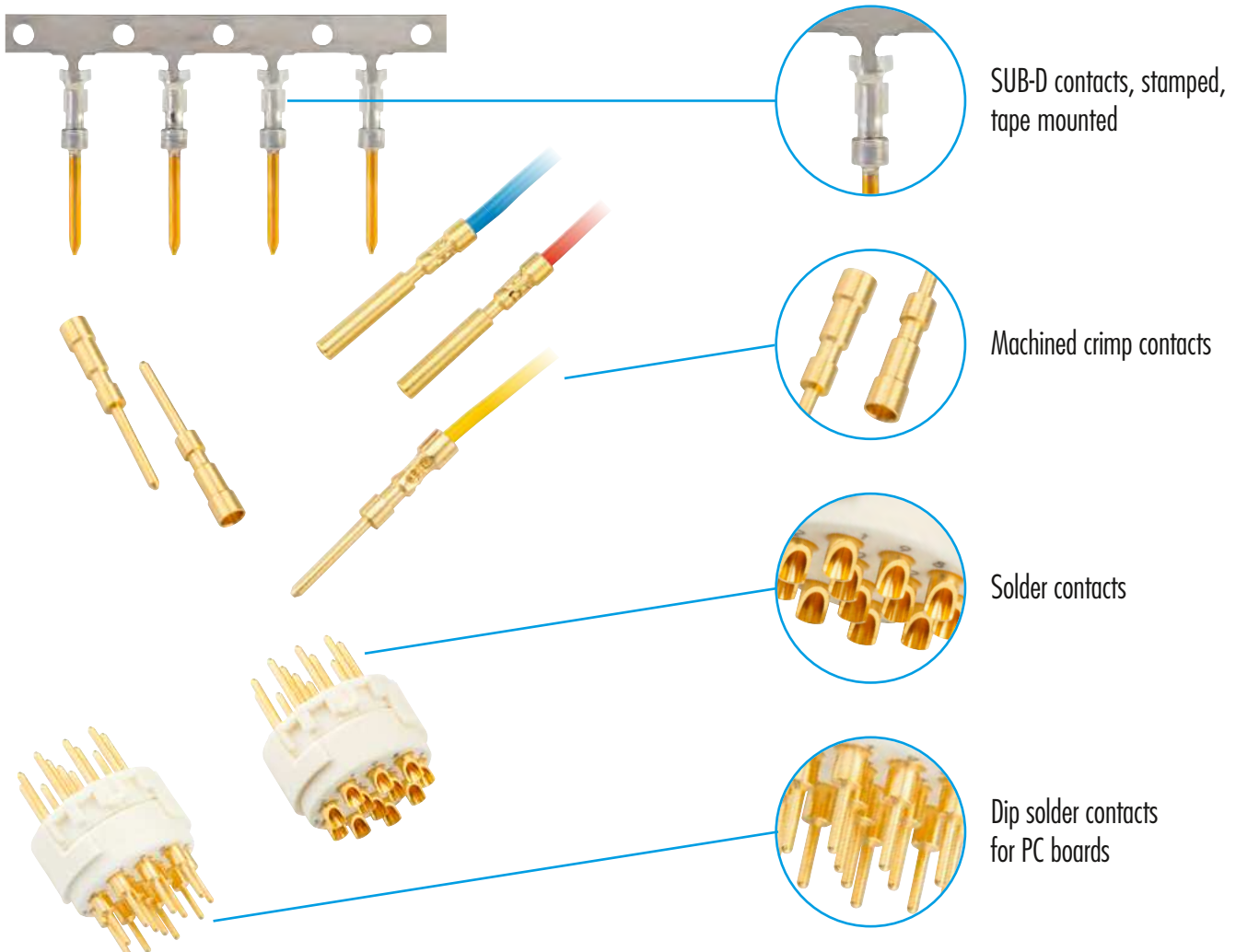
The success serie

Robust and easy to mount: These are the highlights of the successful M23 serie. With HUMMEL connectors the housings, the inserts and the contacts can be combined. Therefore the system is extremely flexible and suitable for nearly every application. The mechanical and electrical data are also outstanding and prove absolute industrial suitability

- // Applications: signal, power, industrial ethernet (Hybrid, RJ45, Profinet)
- // screw connection, quick connection TWILOCK and TWILOCK-S (intermateable with Speedtec)
- // compact design for assembling in small spaces
- // Protection IP 67 and IP 69 K (connected)
- // Temperature range -40° C to + 125° C
- // certified for UL, CSA and VDE



- // Insert can be used for all types of contacts
- // Crimp contacts machined or on tape
- // Solder contacts for manual soldering or dip soldered for PC boards



Nominal Current

Allowable current (Amp), that can be transmitted by each contact continuously and simultaneously.

Nominal Voltage

Allowable voltage (Volt), that can be applied to each contact continuously and simultaneously.

Test Voltage

Voltage which, under certain conditions, a connector can be exposed to without breakdown.

Degree of Protection

Potential dirt accumulation of a disconnected connector in a certain environment.

Degree of Protection 2

No permanent conductive dirt accumulation will occur. Temporary conductive dirt accumulation, such as condensation, is possible. Typical for households, offices, laboratories and test labs.

Degree of Protection 3

Conductive, as well as dry non-conductive dirt accumulation can occur. It can be temporarily conductive due to condensation. Typical for industrial and factory environments.

Additional remarks (pollution level)

If connectors being defined for pollution degree 1 and overvoltage category 1 are applied for other conditions (higher pollution degree and higher overvoltage category) voltages level reduce correspondingly. But the connectors can be used without any problems at reduced maximum voltages.

Mating cycles

Mating cycles are the number of insertion and extraction cycles a connector can withstand before the electrical or mechanical failure in relationship to the connector's design specification.

Air gap

The minimum gap of air between two conducting surfaces permissible at given voltage.

Creep distance

The minimum dimension along the surface of an insulating material between two conducting surfaces.

PE

The PE-Contact is a ground contact for security reasons.

Safety Guidelines

When HUMMEL connectors are used for voltages greater than 50 Volts with conductive shell components they must be used in accordance with the safety regulations DIN VDE Part 410; IEC 60364-4-41. This regulation basically dictates that the power source should be turned off before mating and unmating connector. This regulation does not provide protection against electrical shock when mating and unmating connectors in the field.



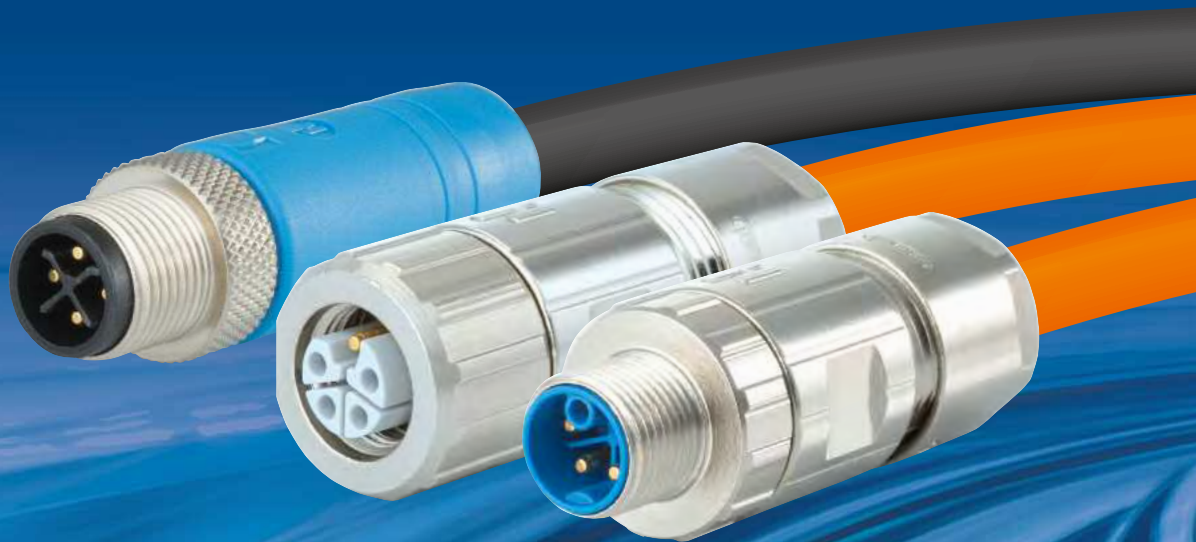
Don't connect or disconnect HUMMEL Connectors under load.

The dimensions for processing refer to harmonized cables. In practice, these dimensions may differ for individual cables.

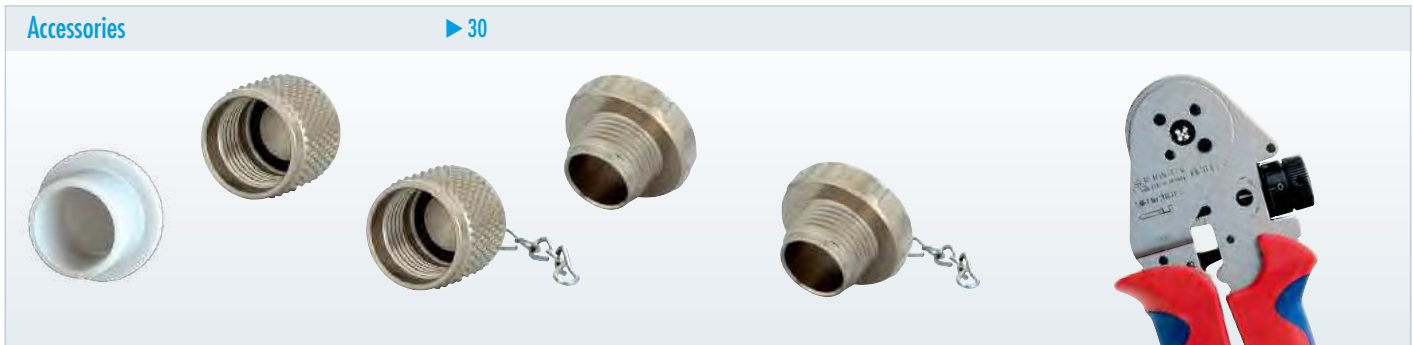
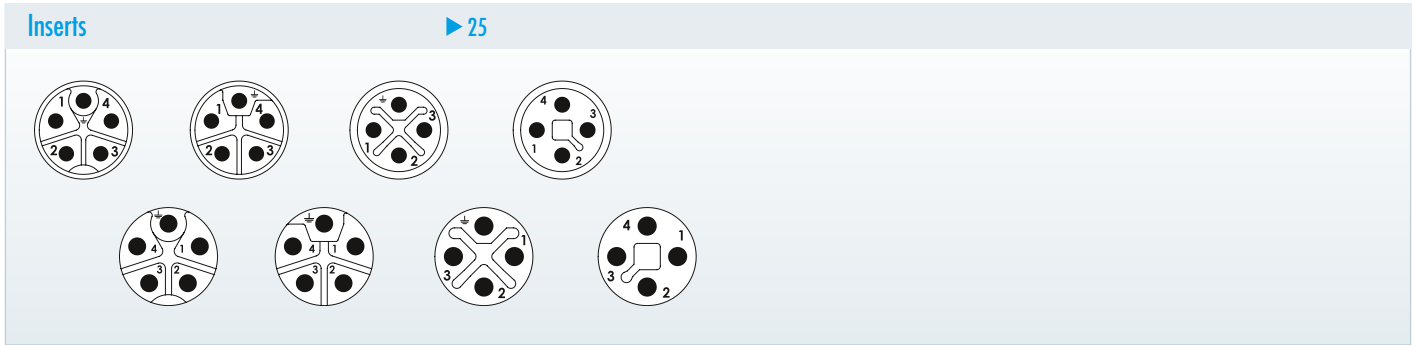
CONNECTORS M 12 POWER

The M 12 Power connector impresses with its compact design and high power transmission. This connector enables entirely new applications and capabilities. It is available in numerous versions.

- // Straight Connector, male and female thread
- // Right Angle Connector, male and female thread
- // Panel Connectors
- // Moulded Cordsets
- // Field Attachable connectors
- // Accessories
- // Cable Assembly



Product overview



| Mechanical Data | Materials and Technical Data |
|------------------------|---|
| Housing | Brass / Die Cast INOX AISI 316 L TPU (moulded versions) |
| Housing surface | Nickel plated Other surfaces upon request |
| Inserts (for contacts) | PBT Fire protection class V-0 |
| Contacts | Copper alloy / Brass |
| Contact Area | Gold plated |
| Minimum mating cycles | > 100 |
| Sealings / O-rings | Viton® (FKM / FPM) / Buna-N / HNBR |
| Temperature range | -40°C – 125°C (-40°F – 257°F) (K + L) -40°C – 85°C (-40°F – 185°F) (S + T) |
| Type of contacts | Crimp (K + L) / Screw Terminal (S + T) |
| Protection Class | IP 67 / IP 69K |
| Cable diameter range | 3 – 11 mm (.11 – .43") |

| Electrical Data | S | T | K | L |
|---|------------------|------------------|------------------|------------------|
| Coding | S | T | K | L |
| Colours | black | dark grey | blue | grey |
| Number of positions | 4 (3 + PE) | 4 | 5 (4 + PE) | 5 (4 + FE) |
| Terminal Cross Section [mm ²] | 0,5 – 1,5 | 0,5 – 1,5 | 0,75 – 2,5 | 0,75 – 2,5 |
| AWG | AWG 20 – 16 | AWG 20 – 16 | AWG 18 – 14 | AWG 18 – 14 |
| Nominal current ¹ [A] | 12 | 12 | 16 | 16 |
| Nominal voltage ² [V~] degree of protection ^{3 4} | 630 | 63 | 630 | 63 |
| Test voltage (Breakdown voltage) ³ [V~] | 3310 | 840 | 3310 | 840 |
| Insulation resistance [MΩ] | >10 ² | >10 ² | >10 ² | >10 ² |
| Max. contact resistance [mΩ] | <3 | <3 | <3 | <3 |

^{1), 2), 3), 4)} See Technical Information page 18



Housings

⚠ Pin inserts mountable with male thread housings only. Socket inserts mountable with female thread housings only.

Straight Connector, Female Thread

| Cable-Ø | Coding | Part Number |
|------------------------|----------------|--------------------|
| 3 – 6 mm (.11 – .23") |K, L..... | A712-7.K10.300.000 |
| 5 – 9 mm (.20 – .35") |K, L..... | A712-7.K10.400.000 |
| 8 – 11 mm (.31 – .43") |K, L..... | A712-7.K10.500.000 |
| 3 – 6 mm (.11 – .23") |S, T..... | A712-7.S10.300.000 |
| 5 – 9 mm (.20 – .35") |S, T..... | A712-7.S10.400.000 |
| 8 – 11 mm (.31 – .43") |S, T..... | A712-7.S10.500.000 |

▶ 25 | ▶ 30 | ▶ 31/32

Straight Connector, Male Thread

| Cable-Ø | Coding | Part Number |
|------------------------|----------------|--------------------|
| 3 – 6 mm (.11 – .23") |K, L..... | A712-7.K20.300.000 |
| 5 – 9 mm (.20 – .35") |K, L..... | A712-7.K20.400.000 |
| 8 – 11 mm (.31 – .43") |K, L..... | A712-7.K20.500.000 |
| 3 – 6 mm (.11 – .23") |S, T..... | A712-7.S20.300.000 |
| 5 – 9 mm (.20 – .35") |S, T..... | A712-7.S20.400.000 |
| 8 – 11 mm (.31 – .43") |S, T..... | A712-7.S20.500.000 |

▶ 25 | ▶ 30 | ▶ 31/32

Right Angle Connector, Female Thread

| Cable-Ø | Coding | Part Number |
|------------------------|----------------|--------------------|
| 3 – 6 mm (.11 – .23") |K, L..... | A712-7.K30.300.000 |
| 5 – 9 mm (.20 – .35") |K, L..... | A712-7.K30.400.000 |
| 8 – 11 mm (.31 – .43") |K, L..... | A712-7.K30.500.000 |
| 3 – 6 mm (.11 – .23") |S, T..... | A712-7.S30.300.000 |
| 5 – 9 mm (.20 – .35") |S, T..... | A712-7.S30.400.000 |
| 8 – 11 mm (.31 – .43") |S, T..... | A712-7.S30.500.000 |

▶ 25 | ▶ 30 | ▶ 33/34

Right Angle Connector, Male Thread

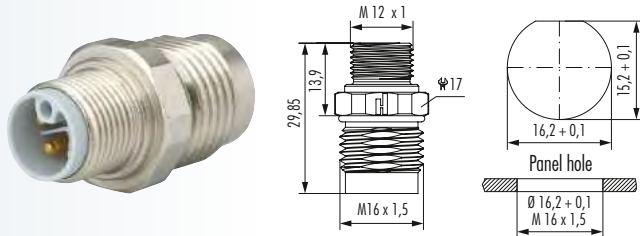
| Cable-Ø | Coding | Part Number |
|------------------------|----------------|--------------------|
| 3 – 6 mm (.11 – .23") |K, L..... | A712-7.K31.300.000 |
| 5 – 9 mm (.20 – .35") |K, L..... | A712-7.K31.400.000 |
| 8 – 11 mm (.31 – .43") |K, L..... | A712-7.K31.500.000 |
| 3 – 6 mm (.11 – .23") |S, T..... | A712-7.S31.300.000 |
| 5 – 9 mm (.20 – .35") |S, T..... | A712-7.S31.400.000 |
| 8 – 11 mm (.31 – .43") |S, T..... | A712-7.S31.500.000 |

▶ 25 | ▶ 30 | ▶ 33/34

Housing without inserts and contacts

Pin inserts mountable with male thread housings only. Socket inserts mountable with female thread housings only.

Panel connector male thread, single hole front mounted



| Type | Part Number |
|------|-------------|
|------|-------------|

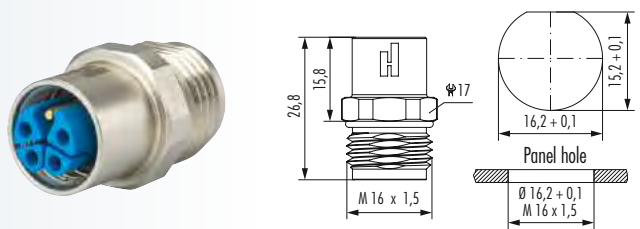
| | |
|-----------------------|--------------------|
| Thread M 16 K, L..... | A712-7.K42.000.000 |
| Thread M 20 K, L..... | A712-7.K42.100.000 |
| Thread M 20 S, T..... | A712-7.S42.000.000 |

with lock nut „rotation protection“

| | |
|-----------------------|--------------------|
| Thread M 16 K, L..... | A712-7.K42.000.00G |
| Thread M 20 K, L..... | A712-7.K42.100.00G |
| Thread M 20 S, T..... | A712-7.S42.000.00G |



Panel connector female thread, single hole front mounted



| Type | Part Number |
|------|-------------|
|------|-------------|

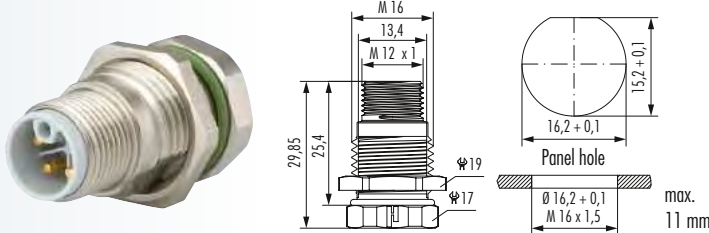
| | |
|-----------------------|--------------------|
| Thread M 16 K, L..... | A712-7.K44.000.000 |
| Thread M 20 K, L..... | A712-7.K44.100.000 |
| Thread M 20 S, T..... | A712-7.S44.000.000 |

with lock nut „rotation protection“

| | |
|-----------------------|--------------------|
| Thread M 16 K, L..... | A712-7.K44.000.00G |
| Thread M 20 K, L..... | A712-7.K44.100.00G |
| Thread M 20 S, T..... | A712-7.S44.000.00G |



Panel connector male thread, single hole rear mounted

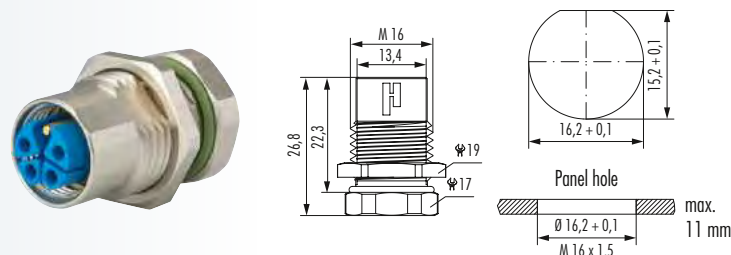


| Type | Part Number |
|------|-------------|
|------|-------------|

| | |
|-----------------------|--------------------|
| Thread M 16 K, L..... | A712-7.K50.000.000 |
| Thread M 20 S, T..... | A712-7.S50.000.000 |



Panel connector female thread, single hole rear mounted



| Type | Part Number |
|------|-------------|
|------|-------------|

| | |
|-----------------------|--------------------|
| Thread M 16 K, L..... | A712-7.K51.000.000 |
| Thread M 20 S, T..... | A712-7.S51.000.000 |



Housing without inserts and contacts

Drawings apply for coding K and L only. Find measures for coding S and T at www.hummel.com



Housings

Pin inserts mountable with male thread housings only. Socket inserts mountable with female thread housings only.

| Panel connector male thread, front mounting | Type | Part Number |
|---|------------------------------------|-----------------------|
| | with flange 20 x 20 mm, 4 x 2,7 mm | |
| | K, L..... | A712-7.K40.000.000 |
| | with flange 25 x 25 mm, 4 x 2,7 mm | |
| S, T..... | A712-7.S40.000.000 | |
| 4 x holes 3,2 mm ¹ | | |
| | | ▶ 25 \| ▶ 30 \| ▶ 35/36 |

| Panel connector male thread, single hole front mounted, orientable | Type | Part Number |
|--|----------------------------|-----------------------|
| | Thread M 16 K, L..... | A712-7.K42.200.000 |
| | Thread M 20 S, T..... | A712-7.S42.200.000 |
| | Drawing shows coding S + T | |
| | | ▶ 25 \| ▶ 30 \| ▶ 35/36 |

| Panel connector female thread, single hole front mounted, orientable | Type | Part Number |
|--|----------------------------|-----------------------|
| | Thread M 16 K, L..... | A712-7.K44.200.000 |
| | Thread M 20 S, T..... | A712-7.S44.200.000 |
| | Drawing shows coding S + T | |
| | | ▶ 25 \| ▶ 30 \| ▶ 35/36 |

Housing without inserts and contacts

Drawings apply for coding K and L only. Find measures for coding S and T at www.hummel.com

¹ upon request



Pin inserts mountable with male thread housings only. Socket inserts mountable with female thread housings only.




| Inserts K-coding | | Type | Part Number |
|------------------------|---------------------------|--|--------------------|
| | | Crimp insert, pins, 4 + PE without contacts..... | A712-7.K03.941.101 |
| Insert pin mating view | Insert socket mating view | Required contacts: 4 x pins, 1 x socket PE | |
| | | Crimp insert, sockets, 4 + PE without contacts..... | A712-7.K03.941.102 |
| | | Required contacts: 4 x sockets, 1 x pin | |
| | | max. wire insulation \varnothing 2,9 mm | |
| | | ▶ 26 | |

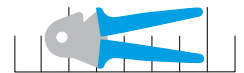
| Inserts L-coding | | Type | Part Number |
|------------------------|---------------------------|--|--------------------|
| | | Crimp insert, pins, 4 + FE without contacts..... | A712-7.L03.941.101 |
| Insert pin mating view | Insert socket mating view | Required contacts: 4 x pins, 1 x socket PE | |
| | | Crimp insert, sockets, 4 + FE without contacts..... | A712-7.L03.941.102 |
| | | Required contacts: 4 x sockets, 1 x pin | |
| | | max. wire insulation \varnothing 2,9 mm | |
| | | ▶ 26 | |

| Inserts S-coding | | Type | Part Number |
|------------------------|---------------------------|--|--------------------|
| | | Insert with pins 3 + PE contacts with screw termination..... | A712-7.S05.931.105 |
| Insert pin mating view | Insert socket mating view | Insert with sockets 3 + PE contacts with screw termination..... | A712-7.S05.931.106 |

| Inserts T-coding | | Type | Part Number |
|------------------------|---------------------------|--|--------------------|
| | | Insert with pins 4-pole contacts with screw termination..... | A712-7.T05.904.105 |
| Insert pin mating view | Insert socket mating view | Insert with sockets 4-pole contacts with screw termination..... | A712-7.T05.904.106 |


Contacts / Crimp Tool Setting for HUMMEL Crimp Contacts (Crimp Tool 7.000.900.908)

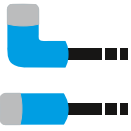
| Contacts | Type | Crimp Range | Part Number |
|---|--|----------------------------|---------------------------------|
|  | Crimp pin 1,5 mm, machined | 0,75 mm ² | A712-7.010.901.521 ¹ |
| | Crimp pin 1,5 mm, machined | 1,5 mm ² | A712-7.010.901.531 |
| | Crimp pin 1,5 mm, machined | 2,5 mm ² | A712-7.010.901.541 |
|  | Crimp socket 1,5 mm PE, machined | 0,75 mm ² | A712-7.010.911.522 ¹ |
| | Crimp socket 1,5 mm PE, machined | 1,5 mm ² | A712-7.010.911.532 |
| | Crimp socket 1,5 mm PE, machined | 2,5 mm ² | A712-7.010.911.542 |
|  | Crimp socket 1,5 mm, machined | 0,75 mm ² | A712-7.010.901.522 ¹ |
| | Crimp socket 1,5 mm, machined | 1,5 mm ² | A712-7.010.901.532 |
| | Crimp socket 1,5 mm, machined | 2,5 mm ² | A712-7.010.901.542 |



| Part Number | Crimp Contact | Cross Section (mm ²) | AWG | Crimp Tool Setting mm | Locator Setting |
|--------------------|------------------------|----------------------------------|-----|-----------------------|-----------------|
| A712-7.010.901.531 | Crimp pin 1,5 mm | 1,5 | 16 | 1,45 | P1 |
| A712-7.010.901.541 | Crimp pin 1,5 mm | 2,5 | 14 | 1,70 | P1 |
| A712-7.010.911.532 | Crimp socket 1,5 mm PE | 1,5 | 16 | 1,45 | P2 |
| A712-7.010.911.542 | Crimp socket 1,5 mm PE | 2,5 | 14 | 1,70 | P2 |
| A712-7.010.901.532 | Crimp socket 1,5 mm | 1,5 | 16 | 1,45 | P3 |
| A712-7.010.901.542 | Crimp socket 1,5 mm | 2,5 | 14 | 1,70 | P3 |

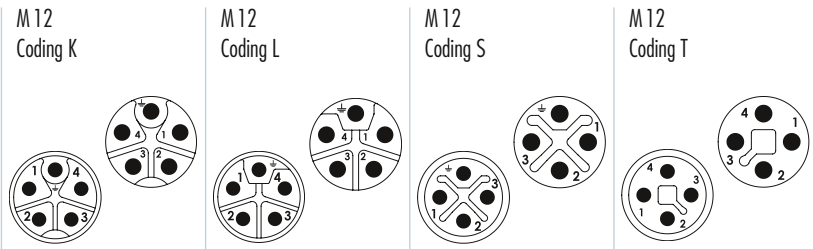
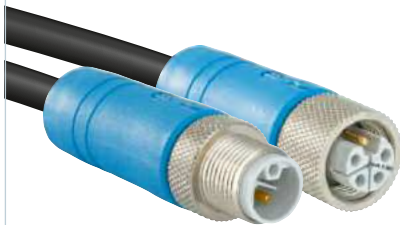
These values are only guidelines and actual conductor cross sections depend on manufacturer tolerances.

¹ upon request



M 12 Power Moulded Cordsets, Open cable end

Straight Connector / Open cable end ¹



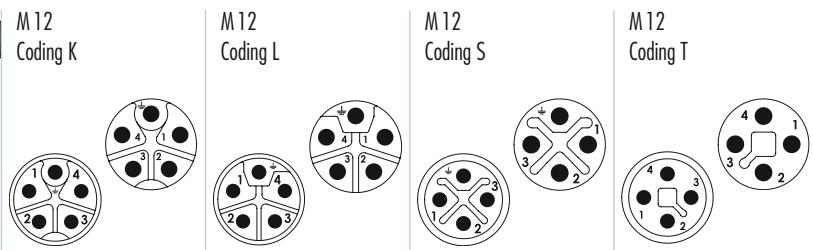
Cable (1,5 mm²) PUR

| | | | | | |
|------------|--------|------------------|------------------|------------------|------------------|
| unshielded | female | A712-KFS413UPxxx | A712-LFS413UPxxx | A712-SFS313UPxxx | A712-TFS043UPxxx |
| | male | A712-KMS413UPxxx | A712-LMS413UPxxx | A712-SMS313UPxxx | A712-TMS043UPxxx |
| shielded | female | A712-KFS413SPxxx | A712-LFS413SPxxx | A712-SFS313SPxxx | A712-TFS043SPxxx |
| | male | A712-KMS413SPxxx | A712-LMS413SPxxx | A712-SMS313SPxxx | A712-TMS043SPxxx |

Cable (2,5 mm²) PUR

| | | | | | |
|------------|--------|------------------|------------------|--|--|
| unshielded | female | A712-KFS414UPxxx | A712-LFS414UPxxx | | |
| | male | A712-KMS414UPxxx | A712-LMS414UPxxx | | |
| shielded | female | A712-KFS414SPxxx | A712-LFS414SPxxx | | |
| | male | A712-KMS414SPxxx | A712-LMS414SPxxx | | |

Right Angle Connector / Open cable end ¹



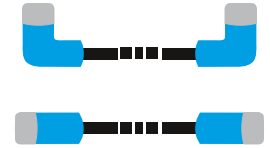
Cable (1,5 mm²) PUR

| | | | | | |
|------------|--------|------------------|------------------|------------------|------------------|
| unshielded | female | A712-KFA413UPxxx | A712-LFA413UPxxx | A712-SFA313UPxxx | A712-TFA043UPxxx |
| | male | A712-KMA413UPxxx | A712-LMA413UPxxx | A712-SMA313UPxxx | A712-TMA043UPxxx |

Please add required cable length to part number:

| | |
|-------|----------------------|
| 1,5 m | xxx replaced by: 015 |
| 2 m | xxx replaced by: 020 |
| 5 m | xxx replaced by: 050 |
| 10 m | xxx replaced by: 100 |
| 15 m | xxx replaced by: 150 |

The length can be chosen in decimetre (0,1 m) steps.



M 12 Power Moulded Cordsets, Extension Cord

Extension cord: Straight Connector / Straight Connector ¹

| | | M 12 Coding K | M 12 Coding L | M 12 Coding S | M 12 Coding T |
|---------------------------------------|---------------|--------------------|--------------------|--------------------|--------------------|
| | | | | | |
| Cable (1,5 mm²) PUR | | | | | |
| unshielded | female / male | A712-KFSMS413UPxxx | A712-LFSMS413UPxxx | A712-SFSMS313UPxxx | A712-TFSMS043UPxxx |
| shielded | female / male | A712-KFSMS413SPxxx | A712-LFSMS413SPxxx | A712-SFSMS313SPxxx | A712-TFSMS043SPxxx |
| Cable (2,5 mm²) PUR | | | | | |
| unshielded | female / male | A712-KFSMS414UPxxx | A712-LFSMS414UPxxx | | |
| shielded | female / male | A712-KFSMS414SPxxx | A712-LFSMS414SPxxx | | |

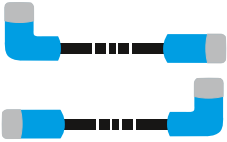
Extension cord: Right Angle Connector / Right Angle Connector ¹

| | | M 12 Coding K | M 12 Coding L | M 12 Coding S | M 12 Coding T |
|---------------------------------------|---------------|--------------------|--------------------|--------------------|--------------------|
| | | | | | |
| Cable (1,5 mm²) PUR | | | | | |
| unshielded | female / male | A712-KFAMA413UPxxx | A712-LFAMA413UPxxx | A712-SFAMA313UPxxx | A712-TFAMA043UPxxx |

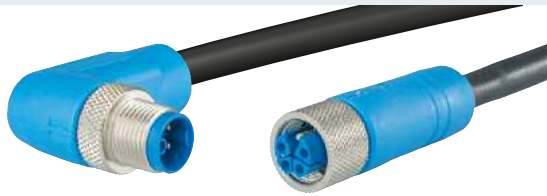
Please add required cable length to part number:

| | |
|-------|----------------------|
| 1,5 m | xxx replaced by: 015 |
| 2 m | xxx replaced by: 020 |
| 5 m | xxx replaced by: 050 |
| 10 m | xxx replaced by: 100 |
| 15 m | xxx replaced by: 150 |

The length can be chosen in decimetre (0,1 m) steps.



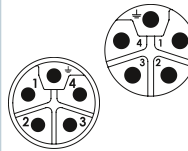
Extension cord: Straight Connector / Right Angle Connector ¹



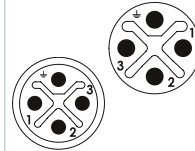
M 12
Coding K



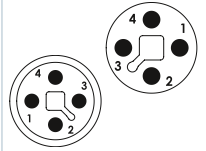
M 12
Coding L



M 12
Coding S



M 12
Coding T



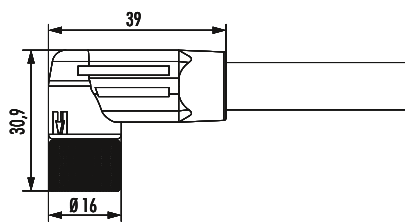
Female Straight Connector / Male Right Angle Connector, Cable (1,5 mm²) PUR

| | | | | | |
|------------|---------------|--------------------|--------------------|--------------------|--------------------|
| unshielded | female / male | A712-KFSMA413UPxxx | A712-LFSMA413UPxxx | A712-SFSMA313UPxxx | A712-TFSMA043UPxxx |
|------------|---------------|--------------------|--------------------|--------------------|--------------------|

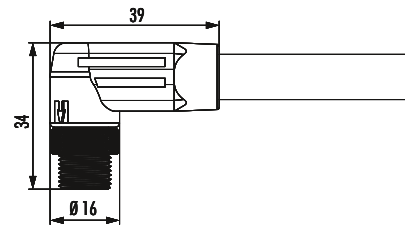
Female Right Angle Connector / Male Straight Connector, Cable (1,5 mm²) PUR

| | | | | | |
|------------|---------------|--------------------|--------------------|--------------------|--------------------|
| unshielded | female / male | A712-KFAMS413UPxxx | A712-LFAMS413UPxxx | A712-SFAMS313UPxxx | A712-TFAMS043UPxxx |
|------------|---------------|--------------------|--------------------|--------------------|--------------------|

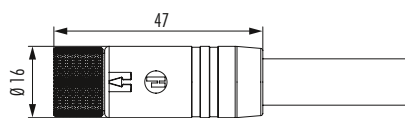
Right Angle Connector, female thread



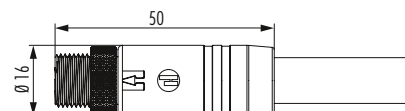
Right Angle Connector, male thread



Straight Connector, female thread



Straight Connector, male thread

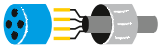




Accessories

| Accessories | Type | Part Number |
|-------------|---|--|
| | Plastic protective cap for connectors with male thread with female thread | A712-7.000.980.161 A712-7.000.980.162 |
| | Brass protective cap for connectors with female thread | A712-7.010.900.163 |
| | Brass protective cap for connectors with male thread | A712-7.010.900.162 |
| | Brass protective cap with chain for connectors with female thread Length 70 mm | A712-7.010.950.705 ¹ |
| | Brass protective cap with chain for connectors with male thread Length 70 mm | A712-7.010.950.704 ¹ |
| | Crimp tool for manual crimping of machined crimp contacts for signal connectors M 12 | 7.000.900.908 |
| | ▶ 26 \| ▶ 108 | |
| | Tool Adapter for tightening or loosening knurled nuts for M 12 Power/M 16 | 7.010.900.191 |
| | Screw Tool, adjustable 0.5 – 1.7 Nm | 7.010.900.190 |

¹ upon request



Straight Connector Female / Male Thread, K- / L-Coding

1. max. 25 mm
2. 5 mm
3. crimp
4. crimp
5. click
6. code
7. 18
8. 18

max. wire insulation Ø 2,9 mm

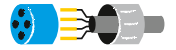
click

click

code

Shield is not allowed to touch second O-ring

M 12
M 16
M 23 PoE
M 23 RJ45
M 23 Signal
M 27 Signal
M 23 Power
M 40 Power
INOX
Moulded Cordsets
Customized



Assembly Instructions

Straight Connector Female/Male Thread, S-/T-Coding

1. 25 mm
2. 10 mm
3. Ferrules are not included
crimp
4. 5 mm
5. 0,2 Nm
6. code
7. 18
8. 18

Shield is not allowed to touch second O-ring

Right Angle Connector Female / Male Thread, K- / L-Coding

1. Strip 30 mm of outer jacket.

2. Strip 5 mm of insulation from conductors.

3. Insert conductors into the connector.

4. Crimp conductors.

5. Push connector onto cable.

6. Push second connector onto cable.

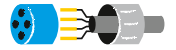
7. Trim excess jacket.

8. Tighten with wrench 17 and 18.

Shield is not allowed to touch second O-ring

max. wire insulation Ø 2,9 mm

Orientation in 45° increments



Assembly Instructions

Right Angle Connector Female / Male Thread, S-/T-Coding

- 35 mm
-
-
- ⚠ Ferrules are not included**

crimp

10 mm
-
- click

code
- pull

push

Orientation in 45° increments
- 22

⚠ Shield is not allowed to touch second O-ring
- 18

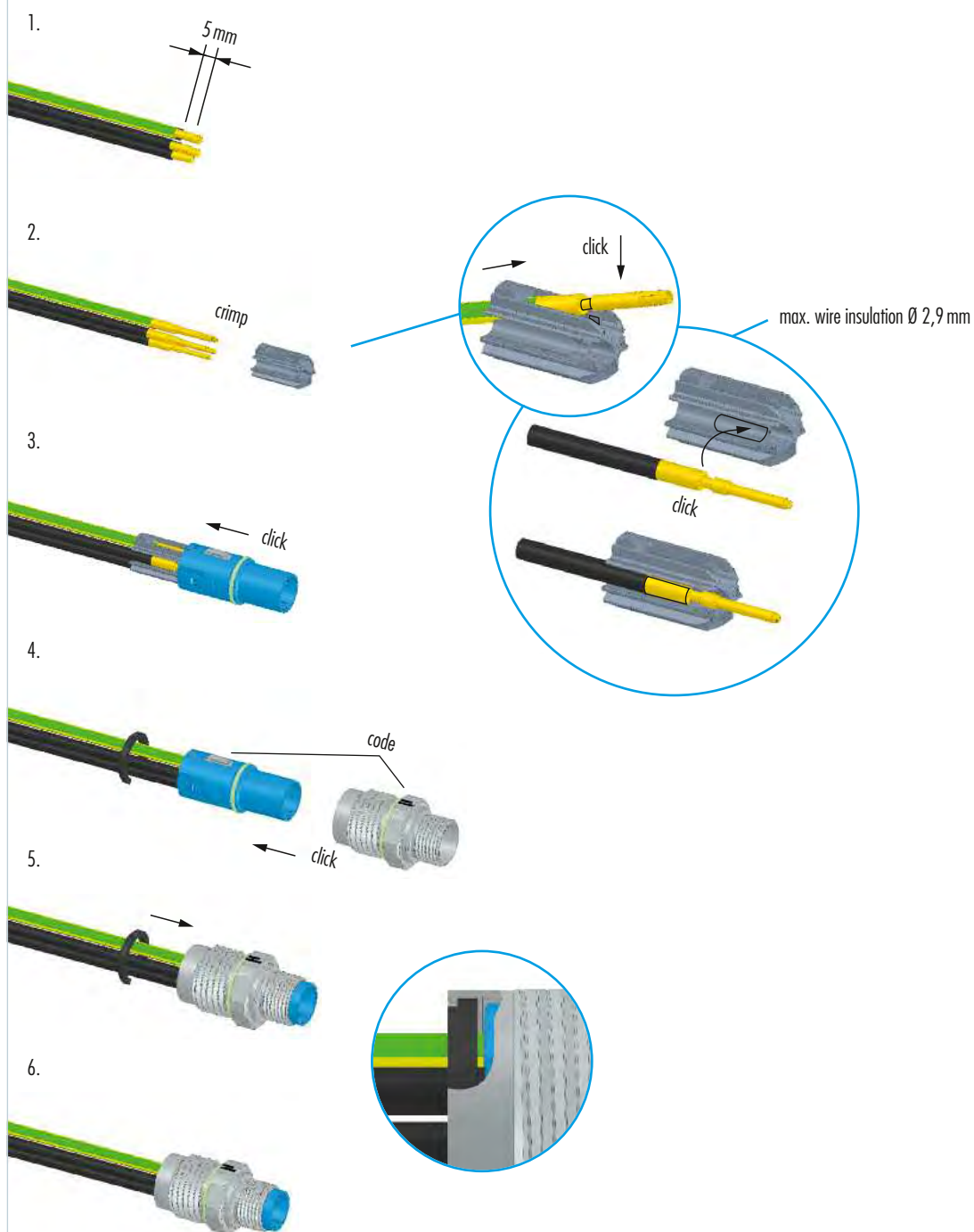
5 mm (twice)

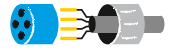
0,2 Nm

45°



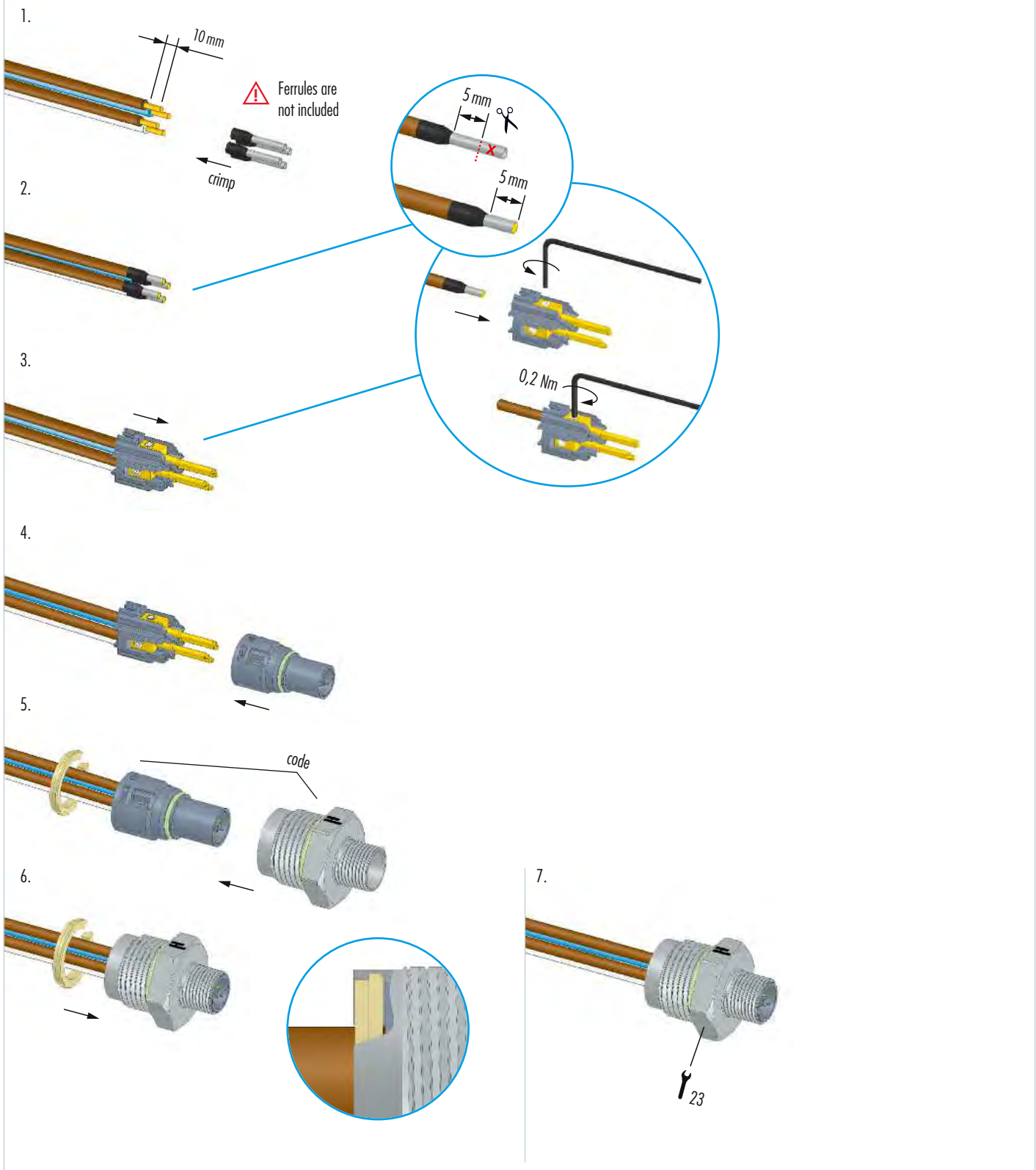
Panel Connector Female / Male Thread, K- / L-Coding





Assembly Instructions

Panel Connector Female / Male Thread, S-/T-Coding



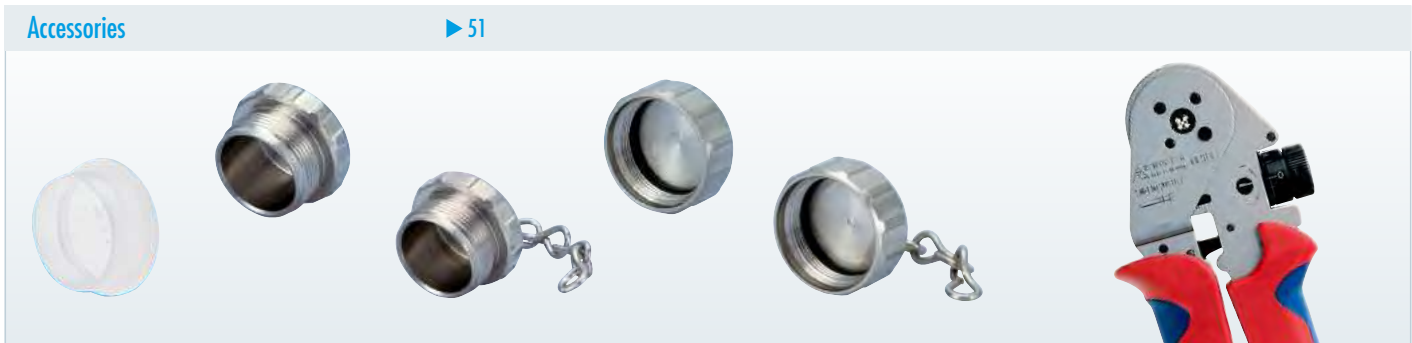
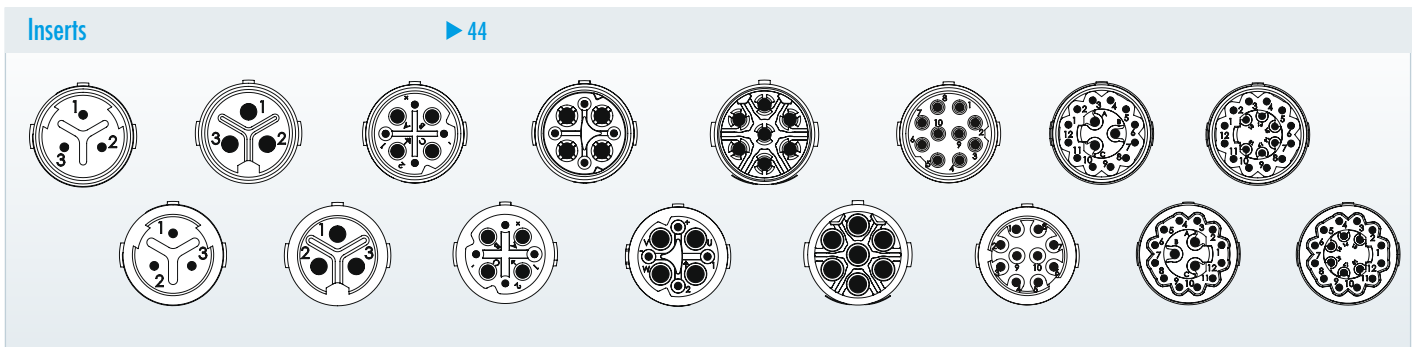
M 16 CONNECTORS

Traditionally M 16 Connectors are very popular with its users. The reason for that is high capability with a low space requirement. A special version is TWINTUS. This compact connector is able to combine signal and power for small drives within one housing.

- // M 16 power connector
- // M 16 signal connector
- // TWILOCK, quick release fastener
- // TWINTUS – Connector 4 small drives



Product overview



| Mechanical Data | Materials and Technical Data |
|-------------------------------------|---|
| Housing | Copper-Zinc alloy Die Cast |
| Housing surface | Nickel plated other surface upon request |
| Inserts (for contacts) | Thermoplastic Polyamid PA 6 (Nylon 6/6), PBT Fire protection class V-0 |
| Contacts | Brass Alloy |
| Contact surface at point of contact | Nickel and gold plated (0,25 µm) |
| Minimum mating cycles | > 1000* |
| Seals / O-Rings | Buna-N standard, optional Viton® (FPM /FKM) (Viton is a registered trademark of DuPont) |
| Temperature range | -40 °C – 125 °C (-40 °F – 257 °F) |
| Type of contacts | Crimp, dip-solder (PCB) (for printed circuit boards) |
| Protection | IP 67 / IP 69K per EN 60 529 (connected), NEMA 4x |
| Cable diameter range | 2 – 11 mm (.08 – .43") |

* HUMMEL to HUMMEL connector

| Electrical Data | 3 (3 x 1 mm) | | 3 (3 x 2 mm) | | 4 + 3 + PE / 320 V | | 4 + 3 + PE / 600 V | |
|---|--------------------|--|--------------------|--|--------------------|--|--------------------|--|
| Number of positions | 3 | | 3 | | 4 | | 4 | |
| Number of contacts | 3 | | 3 | | 4 | | 4 | |
| Contact-Ø [mm] | 1 | | 2 | | 0,8 | | 1,6 | |
| AWG [mm ²] | 0,14 – 1 | | 0,5 – 2,5 | | 0,08 – 0,34 | | 0,34 – 1,5 | |
| Nominal current ¹⁾ [A] | 8 | | 20 | | 5 | | 16 | |
| Nominal voltage ²⁾ [V~] degree of protection 3 ⁴⁾ | 400 | | 400 | | 160 | | 320 | |
| Test voltage (Breakdown voltage) ³⁾ [V~] | 2500 | | 2500 | | 1500 | | 2500 | |
| Insulation resistance [Ω] | > 10 ¹⁰ | | > 10 ¹⁰ | | > 10 ¹⁰ | | > 10 ¹⁰ | |
| Max. contact resistance [mΩ] | 3 | | 3 | | 3 | | 3 | |
| Number of positions | | | 6+PE | | 10 | | 12+3 | |
| Number of contacts | | | 7 | | 10 | | 3 | |
| Contact-Ø [mm] | | | 1,25 | | 1 | | 0,8 | |
| AWG [mm ²] | | | 0,5 – 1,5 | | 0,14 – 0,75 | | 0,08 – 0,34 | |
| Nominal current ¹⁾ [A] | | | 16 | | 8 | | 3 | |
| Nominal voltage ²⁾ [V~] degree of protection 3 ⁴⁾ | | | 600 | | 160 | | 24 | |
| Test voltage (Breakdown voltage) ³⁾ [V~] | | | 2500 | | 1500 | | 500 | |
| Insulation resistance [Ω] | | | > 10 ¹⁰ | | > 10 ⁶ | | > 10 ¹⁰ | |
| Max. contact resistance [mΩ] | | | 3 | | 3 | | 3 | |

^{1), 2), 3), 4)} See Technical Information page 18



Housings

Straight Connector, Female Thread / elongated *

elongated

| Cable-Ø | Part Number |
|--------------------|---------------|
| 3 – 6 mm | 7.810.300.000 |
| 5 – 9 mm | 7.810.400.000 |
| 8 – 11 mm | 7.810.500.000 |
| * elongated | |
| 3 – 6 mm | 7.811.300.000 |
| 5 – 9 mm | 7.811.400.000 |
| 8 – 11 mm | 7.811.500.000 |

▶ 44 |
 ▶ 51 |
 ▶ 57/58

Straight Connector, Female Thread TWILOCK

| Cable-Ø | Part Number |
|-----------|---------------|
| 3 – 6 mm | 7.816.300.000 |
| 5 – 9 mm | 7.816.400.000 |
| 8 – 11 mm | 7.816.500.000 |

▶ 44 |
 ▶ 51 |
 ▶ 57/58

Straight Connector, Male Thread

| Cable-Ø | Part Number |
|-----------|---------------|
| 3 – 6 mm | 7.820.300.000 |
| 5 – 9 mm | 7.820.400.000 |
| 8 – 11 mm | 7.820.500.000 |

▶ 44 |
 ▶ 51 |
 ▶ 57/58

Right Angle Connector with positioning

| Cable-Ø | Part Number |
|-----------|---------------|
| 3 – 6 mm | 7.831.300.000 |
| 5 – 9 mm | 7.831.400.000 |
| 8 – 11 mm | 7.831.500.000 |

▶ 44 |
 ▶ 51 |
 ▶ 59

Housing without inserts and contacts

Panel Connector with built in Cable Strain Relief

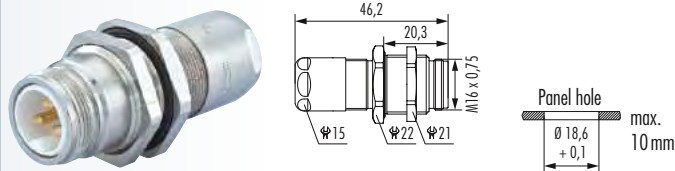
Cable-Ø

Part Number

Rear mounting, single hole mounted

| | | |
|----------|-------|---------------|
| 2 – 7 mm | ..... | 7.852.300.000 |
| 5 – 9 mm | ..... | 7.852.400.000 |

Including jam nut PG 11



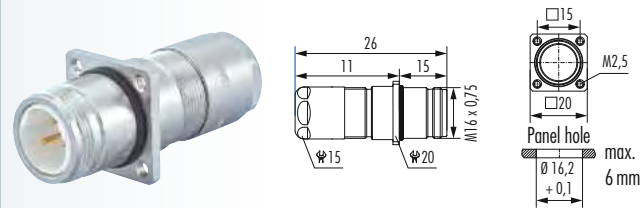
Panel Connector with built in Cable Strain Relief

Cable-Ø

Part Number

Rear mounting, M2,5 x 4 single hole mounted

| | | |
|----------|-------|---------------|
| 2 – 7 mm | ..... | 7.847.300.000 |
| 5 – 9 mm | ..... | 7.847.400.000 |



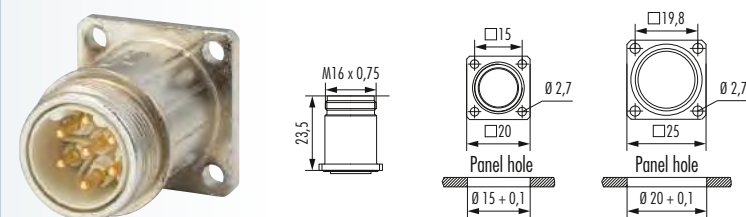
Panel Connector, Male Thread, Front Mounting

Type

Part Number

| | | |
|---------------------------|-------|---------------|
| 4 x holes Ø 2,7 mm (.11") | ..... | 7.840.000.000 |
| Flange 20 x 20 mm | | |

| | | |
|---------------------------|-------|---------------|
| 4 x holes Ø 2,7 mm (.11") | ..... | 7.840.100.000 |
| Flange 25 x 25 mm | | |



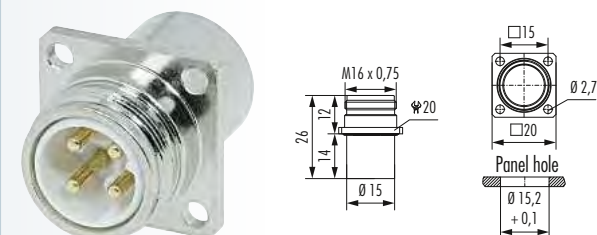
Panel Connector, Male Thread, Front Mounting

Type

Part Number

Short version

| | | |
|---------------------------|-------|---------------|
| 4 x holes Ø 2,7 mm (.11") | ..... | 7.840.200.000 |
| Flange 20 x 20 mm | | |


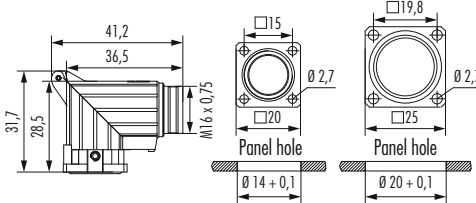


Housing without inserts and contacts








Housings


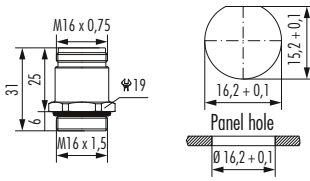
Right Angle Panel Connector, Male Thread, rotatable






| Type | Part Number |
|--|---------------|
| 300° rotatable, locking screw at flange | |
| 4 x holes Ø 2,7 mm (.11") | 7.843.000.000 |
| Flange 20 x 20 mm | |
| 4 x holes Ø 2,7 mm (.11") | 7.843.100.000 |
| Flange 25 x 25 mm | |


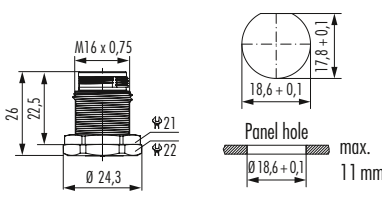
Panel Connector, Male Thread, Front Mounting






| Type | Part Number |
|--|---------------|
| Front mounting, single hole mounted | |
| Thread M 16 x 1,5 | 7.842.000.000 |


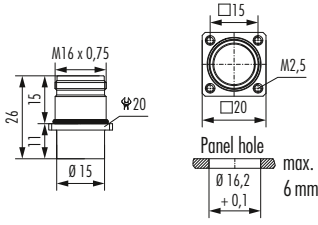
Panel Connector, Male Thread, Rear Mounting






| Type | Part Number |
|---|---------------|
| Rear mounting, single hole mounted | |
| Including jam nut | 7.850.000.000 |
| Including jam nut PG 11 | |








Panel Connector, Male Thread, Rear Mounting

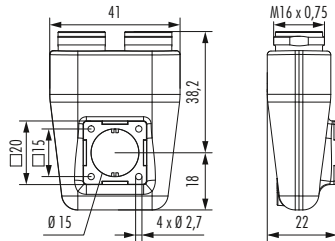
| Type | Part Number |
|--|---------------|
| Rear mounting, 4 x thread M 2,5 | |
| Flange 20 x 20 mm | 7.845.000.000 |

 Housing without inserts and contacts



TWINTUS



Type

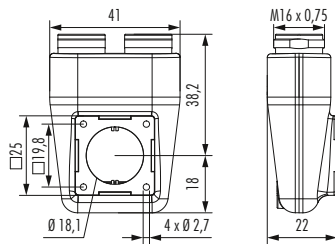
Part Number

Flange 20 x 20 mm

| | |
|-------------------------------|---------------|
| Uncoated..... | 7.848.000.000 |
| Surface nickel plated..... | 7.848.000.001 |
| Surface black conductive..... | 7.848.000.00B |



TWINTUS



Type

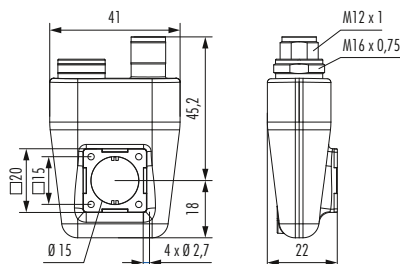
Part Number

Flange 25 x 25 mm

| | |
|-------------------------------|---------------|
| Uncoated..... | 7.848.100.000 |
| Surface nickel plated..... | 7.848.100.001 |
| Surface black conductive..... | 7.848.100.00B |



TWINTUS M 16 / M 12



Type

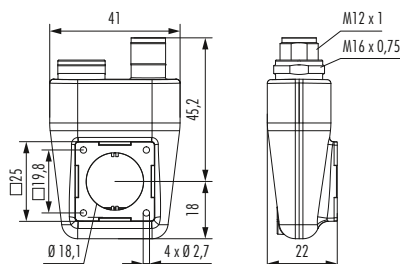
Part Number

Flange 20 x 20 mm

| | |
|-------------------------------|---------------|
| Uncoated..... | 7.848.200.000 |
| Surface nickel plated..... | 7.848.200.001 |
| Surface black conductive..... | 7.848.200.00B |



TWINTUS M 16 / M 12



Type

Part Number

Flange 25 x 25 mm

| | |
|-------------------------------|---------------|
| Uncoated..... | 7.848.300.000 |
| Surface nickel plated..... | 7.848.300.001 |
| Surface black conductive..... | 7.848.300.00B |



Housing without inserts and contacts



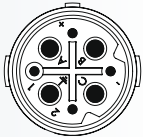
Inserts / Pinouts

| Inserts 3-pole (3 x 1 mm) | | Type | Part Number | Part Number |
|----------------------------------|---|--------------------------|-------------|-------------------------------|
| <p>Insert pin mating view</p> | | | Pins | Sockets |
| | Insert without contacts | 7.003.903.101 | ..... | 7.003.903.102 |
| | Insert with dip solder contacts Length 10 mm | 7.001.903.127 | ..... | 7.001.903.108 |
| | Insert with dip solder contacts Length 17 mm | 7.001.903.137 | ..... | 7.001.903.118 |
| <p>Insert socket mating view</p> | | Required Contacts | | |
| | 3 x 1 mm | 7.010.901.001 | ..... | 7.010.901.002 / 7.010.901.012 |
| | | ▶ 49 / 50 | | |

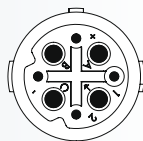
| Inserts 3-pole (3 x 2 mm) | | Type | Part Number | Part Number |
|----------------------------------|---|--------------------------|-------------|----------------|
| <p>Insert pin mating view</p> | | | Pins | Sockets |
| | Insert without contacts | 7.003.983.101 | ..... | 7.003.983.102 |
| | Insert with dip solder contacts Length 10 mm | 7.001.983.127 | ..... | 7.001.983.108 |
| | Insert with dip solder contacts Length 17 mm | 7.001.983.137 | ..... | 7.001.983.118 |
| <p>Insert socket mating view</p> | | Required Contacts | | |
| | 3 x 2 mm | 7.010.982.001 | ..... | 7.010.982.002 |
| | | ▶ 49 / 50 | | |



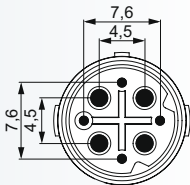
Inserts 4+3+PE, 320 V



Insert pin mating view



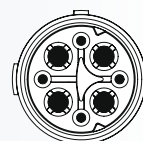
Insert socket mating view



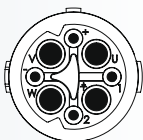
| Type | Part Number | Part Number |
|--|---------------|---------------|
| | Pins | Sockets |
| Insert without contacts | 7.003.943.101 | 7.003.943.102 |
| Insert RAL 2003 (DESINA orange) without contacts | 7.053.943.101 | 7.053.943.102 |
| Insert with dip solder contacts | | |
| Length 10 mm | 7.001.943.127 | 7.001.943.108 |
| Insert with dip solder contacts | | |
| Length 17 mm | 7.001.943.137 | 7.001.943.118 |
| Required Contacts | | |
| 4 x 0,8 mm | 7.010.980.801 | 7.010.980.802 |
| 4 x 1,6 mm | 7.010.981.601 | 7.010.981.602 |



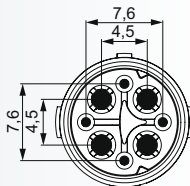
Inserts 4+3+PE, 600 V



Insert pin mating view



Insert socket mating view



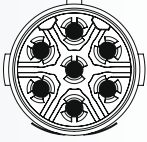
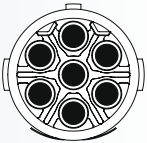
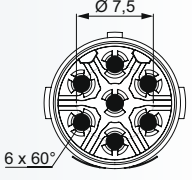
| Type | Part Number | Part Number |
|--|---------------|---------------|
| | Pins | Sockets |
| Insert without contacts | 7.003.908.101 | 7.003.908.102 |
| Insert RAL 2003 (DESINA orange) without contacts | 7.053.908.101 | 7.053.908.102 |
| Insert with dip solder contacts | | |
| Length 10 mm ¹⁾ | 7.001.908.127 | 7.001.908.108 |
| Insert with dip solder contacts | | |
| Length 17 mm ¹⁾ | 7.001.908.137 | 7.001.908.118 |
| Required Contacts | | |
| 4 x 0,8 mm | 7.010.980.811 | 7.010.980.814 |
| 4 x 1,25 mm | 7.010.981.211 | 7.010.981.212 |



¹⁾ under development

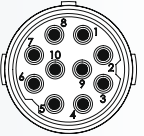
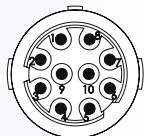
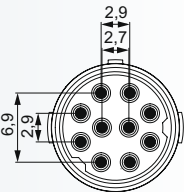


Inserts / Pinouts

| Inserts 6+PE | | Type | Part Number | Part Number |
|--|---|---------------|---------------|-------------|
| | | | Pins | Sockets |
|  <p>Insert pin mating view</p> | Insert without contacts | 7.003.961.101 | 7.003.961.102 | |
| | Insert RAL 2003 (DESINA orange) without contacts | 7.053.961.101 | 7.053.961.102 | |
|  <p>Insert socket mating view</p> | Insert with dip solder contacts Length 10 mm ¹⁾ | 7.001.961.127 | 7.001.961.108 | |
| | Insert with dip solder contacts Length 17 mm ¹⁾ | 7.001.961.137 | 7.001.961.118 | |
| | Required Contacts 7 x 1,25 mm | 7.010.981.211 | 7.010.981.212 | |
|  | | | | |



¹⁾ under development


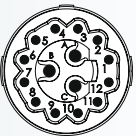
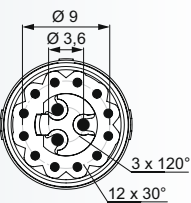
| Inserts 10-pole | | Type | Part Number | Part Number |
|--|---|---------------|---------------|-------------|
| | | | Pins | Sockets |
|  <p>Insert pin mating view</p> | Insert without contacts | 7.003.910.101 | 7.003.910.102 | |
| | Insert RAL 2003 (DESINA green) without contacts | 7.053.910.101 | 7.053.910.102 | |
|  <p>Insert socket mating view</p> | Insert with dip solder contacts Length 10 mm | 7.001.910.127 | 7.001.910.108 | |
| | Insert with dip solder contacts Length 17 mm | 7.001.910.137 | 7.001.910.118 | |
| | Required Contacts 10 x 1 mm | 7.010.981.001 | 7.010.981.002 | |
|  | | | | |




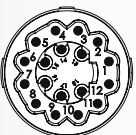
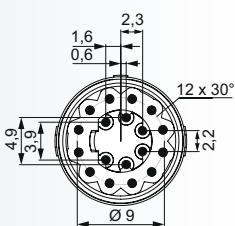
¹⁾ under development



Inserts / Pinouts

| Inserts 12+3-pole | | Type | Part Number | Part Number |
|--|---|---------------|---------------|-------------|
| | | | Pins | Sockets |
|  <p>Insert pin mating view</p> | Insert without contacts | 7.003.985.101 | 7.003.985.102 | |
| | Insert with dip solder contacts Length 10 mm | 7.001.985.127 | 7.001.985.108 | |
| | Insert with dip solder contacts Length 17 mm | 7.001.985.137 | 7.001.985.118 | |
|  <p>Insert socket mating view</p> | Required Contacts | | | |
| | 12 x 0,8 mm | 7.010.980.801 | 7.010.980.802 | |
| | 3 x 1,25 mm | 7.010.981.201 | 7.010.981.202 | |
|  | | | | |




| Inserts 18-pole | | Type | Part Number | Part Number |
|--|---|---------------|---------------|-------------|
| | | | Pins | Sockets |
|  <p>Insert pin mating view</p> | Insert without contacts | 7.003.988.101 | 7.003.988.102 | |
| | Insert RAL 2003 (DESINA green) without contacts | 7.053.988.101 | 7.053.988.102 | |
| | Insert with dip solder contacts Length 10 mm | 7.001.988.127 | 7.001.988.108 | |
|  <p>Insert socket mating view</p> | Insert with dip solder contacts Length 17 mm | 7.001.988.137 | 7.001.988.118 | |
| | Required Contacts | | | |
| | 18 x 0,8 mm | 7.010.980.801 | 7.010.980.802 | |
|  | | | | |












Inserts / Pinouts

| Inserts M 12 for TWINTUS M 16 / M 12 (8-poles) | Type | Part Number |
|---|---|--|
|  <p data-bbox="351 548 510 582">Insert pin mating view</p> | <p data-bbox="941 470 1484 526">Insert with solder contacts .....A712-7.001.908.103</p> | <p data-bbox="1444 470 1484 504">Pins</p> |

| Inserts M 12 for TWINTUS M 16 / M 12 (12-poles) | Type | Part Number |
|---|---|--|
|  <p data-bbox="351 985 510 1019">Insert pin mating view</p> | <p data-bbox="941 929 1484 963">Insert with solder contacts .....A712-7.001.912.103</p> | <p data-bbox="1444 907 1484 940">Pins</p> |


Contacts

| Contacts | Type | Crimp Range | Part Number |
|---|--------------------------------------|---|---------------|
|  | Crimp pin 0,8 mm, machined | 0,08 – 0,34 mm ² (AWG 28 – 22) | 7.010.980.801 |
|  | Crimp socket 0,8 mm, machined | 0,08 – 0,34 mm ² (AWG 28 – 22) | 7.010.980.802 |
|  | Crimp pin 0,8 mm, machined..... | 0,08 – 0,34 mm ² (AWG 28 – 22) | 7.010.980.811 |
|  | Crimp socket 0,8 mm, machined | 0,08 – 0,34 mm ² (AWG 28 – 22) | 7.010.980.814 |
|  | Crimp pin 1 mm, machined..... | 0,08 – 0,75 mm ² (AWG 28 – 18) | 7.010.981.001 |
|  | Crimp socket 1 mm, machined..... | 0,08 – 0,75 mm ² (AWG 28 – 18) | 7.010.981.002 |
|  | Crimp pin 1 mm, machined | 0,14 – 1 mm ² (AWG 26 – 17) | 7.010.901.001 |
|  | Crimp socket 1 mm, machined..... | 0,08 – 0,56 mm ² (AWG 28 – 20) | 7.010.901.012 |
|  | Crimp socket 1 mm, machined | 0,34 – 1 mm ² (AWG 22 – 17) | 7.010.901.002 |
|  | Crimp pin 1,25 mm, machined..... | 0,5 – 1,5 mm ² (AWG 20 – 16) | 7.010.981.201 |
|  | Crimp socket 1,25 mm, machined | 0,5 – 1,5 mm ² (AWG 20 – 16) | 7.010.981.202 |




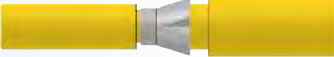




▶ 53 / 54



▶ 62



Contacts

| Contacts | Type | Crimp Range | Part Number |
|---|--------------------------------------|--|---------------|
|  | Crimp pin 1,25 mm, machined..... | 0,34 – 1,5 mm ² (AWG 20 – 16) | 7.010.981.211 |
|  | Crimp socket 1,25 mm, machined | 0,34 – 1,5 mm ² (AWG 20 – 16) | 7.010.981.212 |
|  | Crimp pin 1,6 mm, machined | 0,34 – 1,5 mm ² (AWG 22 – 16) | 7.010.981.601 |
|  | Crimp socket 1,6 mm, machined | 0,34 – 1,5 mm ² (AWG 22 – 16) | 7.010.981.602 |
|  | Crimp pin 2 mm, machined..... | 1,0 – 2,5 mm ² (AWG 17 – 14) | 7.010.982.001 |
|  | Crimp socket 2 mm, machined..... | 1,0 – 2,5 mm ² (AWG 17 – 14) | 7.010.982.002 |



| Accessories | Type | Part Number |
|-------------|---|-------------|
| | Plastic protective cap for connectors with male thread .....7.000.980.161 with female thread .....7.000.980.162 | |
| | Brass protective cap for connectors with female thread .....7.010.900.163 ¹ | |
| | Brass protective cap for connectors with male thread .....7.010.900.162 | |
| | Brass protective cap with chain for connectors with female thread Length 70 mm .....7.010.950.705 ¹ | |
| | Brass protective cap with chain for connectors with male thread Length 70 mm .....7.010.950.704 | |
| | Crimp tool for manual crimping of machined crimp contacts for signal connectors M 16 and M 23 .....7.000.900.904 | |
| | ▶ 53 / 54 ▶ 106 | |
| | Adaptor flange for Straight Connectors .....7.010.900.135 | |

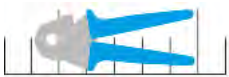
¹ no compatibility with TWILOCK



Accessories

| Accessories | Type | Part Number |
|-------------|--|---------------|
| | Conduit adaptor | |
| | Poleon DN 10 | 7.010.900.200 |
| | Poleon DN 12 | 7.010.900.202 |
| | Plastic protective cap for TWINTUS | |
| | TWINTUS M 16 | 7.000.848.101 |
| | TWINTUS M 16 / M 12 | 7.000.848.102 |
| | Disassembly Tool | |
| | for crimp contacts 1,25 mm | 7.010.900.151 |
| | Tool Adapter for tightening or loosening | |
| | knurled nuts for M 12 Power/M 16 | 7.010.900.191 |
| | Screw Tool, adjustable 0.5 – 1.7 Nm | 7.010.900.190 |

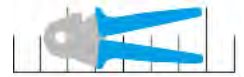
¹ upon request


Crimp Tool Setting for HUMMEL Crimp Contacts (Crimp Tool 7.000.900.904)

| Part Number | Crimp Contact | Cross Section (mm ²) | AWG | Crimp Tool Setting mm | Locator Setting |
|---------------|--|----------------------------------|--------|-----------------------|-----------------|
| 7.010.980.801 | Crimp pin 0,8 mm | 0,08 | AWG 28 | 0,57 | 10 |
| | | 0,14 | AWG 26 | 0,60 | |
| | | 0,25 | AWG 24 | 0,64 | |
| | | 0,34 | AWG 22 | 0,73 | |
| 7.010.980.802 | Crimp socket 0,8 mm | 0,08 | AWG 28 | 0,57 | 10 |
| | | 0,14 | AWG 26 | 0,60 | |
| | | 0,25 | AWG 24 | 0,64 | |
| | | 0,34 | AWG 22 | 0,73 | |
| 7.010.980.811 | Crimp pin 0,8 mm | 0,08 | AWG 28 | 0,57 | B7 |
| | | 0,14 | AWG 26 | 0,60 | |
| | | 0,25 | AWG 24 | 0,64 | |
| | | 0,34 | AWG 22 | 0,73 | |
| 7.010.980.814 | Crimp socket 0,8 mm | 0,08 | AWG 28 | 0,57 | B8 |
| | | 0,14 | AWG 26 | 0,60 | |
| | | 0,25 | AWG 24 | 0,64 | |
| | | 0,34 | AWG 22 | 0,73 | |
| 7.010.981.001 | Crimp pin 1 mm | 0,08 | AWG 28 | 0,60 | 7 |
| | | 0,14 | AWG 26 | 0,65 | |
| | | 0,25 | AWG 24 | 0,67 | |
| | | 0,34 | AWG 22 | 0,71 | |
| | | 0,56 | AWG 20 | 0,75 | |
| | | 0,75 | AWG 18 | 0,82 | |
| 7.010.981.002 | Crimp socket 1 mm | 0,08 | AWG 28 | 0,60 | 8 |
| | | 0,14 | AWG 26 | 0,63 | |
| | | 0,25 | AWG 24 | 0,66 | |
| | | 0,34 | AWG 22 | 0,69 | |
| | | 0,56 | AWG 20 | 0,75 | |
| | | 0,75 | AWG 18 | 0,83 | |
| 7.010.901.001 | Crimp pin 1 mm | 0,14 | AWG 26 | 0,70 | 1 |
| | | 0,25 | AWG 24 | 0,76 | |
| | | 0,34 | AWG 22 | 0,82 | |
| | | 0,50 | AWG 20 | 0,90 | |
| | | 0,75 | AWG 18 | 1,00 | |
| | | 1,0 | AWG 17 | 1,10 | |
| 7.010.901.012 | Crimp socket 1 mm (0,08- - 0,56 mm ²) | 0,08 | AWG 28 | 0,75 | 2 |
| | | 0,14 | AWG 26 | 0,78 | |
| | | 0,25 | AWG 24 | 0,82 | |
| | | 0,34 | AWG 22 | 0,86 | |
| | | 0,56 | AWG 20 | 0,90 | |



These values are only guidelines and actual conductor cross sections depend on manufacturer tolerances.



Crimp Tool Setting for HUMMEL Crimp Contacts (Crimp Tool 7.000.900.904)

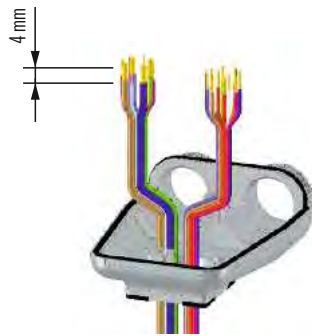
| Part Number | Crimp Contact | Cross Section (mm ²) | AWG | Crimp Tool Setting mm | Locator Setting |
|---------------|--|----------------------------------|--------|-----------------------|-----------------|
| 7.010.901.002 | Crimp socket 1 mm (0,34 – 1 mm ²) | 0,34 | AWG 22 | 0,77 | 2 |
| | | 0,56 | AWG 20 | 0,82 | |
| | | 0,75 | AWG 18 | 0,88 | |
| | | 1,0 | AWG 17 | 0,95 | |
| 7.010.981.201 | Crimp pin 1,25 mm | 0,5 | AWG 20 | 0,70 | 2 |
| | | 0,75 | AWG 18 | 0,73 | |
| | | 1,0 | AWG 17 | 0,79 | |
| | | 1,5 | AWG 16 | 0,88 | |
| 7.010.981.202 | Crimp socket 1,25 mm | 0,5 | AWG 20 | 0,70 | 2 |
| | | 0,75 | AWG 18 | 0,73 | |
| | | 1,0 | AWG 17 | 0,79 | |
| | | 1,5 | AWG 16 | 0,88 | |
| 7.010.981.211 | Crimp pin 1,25 mm | 0,34 | AWG 22 | 0,80 | B9 |
| | | 0,5 | AWG 20 | 0,84 | |
| | | 0,75 | AWG 18 | 0,90 | |
| | | 1,0 | AWG 17 | 1,00 | |
| 7.010.981.212 | Crimp socket 1,25 mm | 0,34 | AWG 22 | 1,00 | B10 |
| | | 0,5 | AWG 20 | 1,04 | |
| | | 0,75 | AWG 18 | 1,10 | |
| | | 1,0 | AWG 17 | 1,20 | |
| 7.010.981.601 | Crimp pin 1,6 mm | 0,34 | AWG 22 | 0,80 | 6 |
| | | 0,56 | AWG 20 | 0,84 | |
| | | 0,75 | AWG 18 | 0,90 | |
| | | 1,0 | AWG 17 | 1,00 | |
| 7.010.981.602 | Crimp socket 1,6 mm | 0,34 | AWG 22 | 0,83 | 9 |
| | | 0,56 | AWG 20 | 0,90 | |
| | | 0,75 | AWG 18 | 0,97 | |
| | | 1,0 | AWG 17 | 1,02 | |
| 7.010.982.001 | Crimp pin 2 mm | 1,0 | AWG 17 | 1,35 | 4 |
| | | 1,5 | AWG 16 | 1,45 | |
| | | 2,5 | AWG 14 | 1,60 | |
| 7.010.982.002 | Crimp socket 2 mm | 1,0 | AWG 17 | 1,35 | 5 |
| | | 1,5 | AWG 16 | 1,45 | |
| | | 2,5 | AWG 14 | 1,60 | |



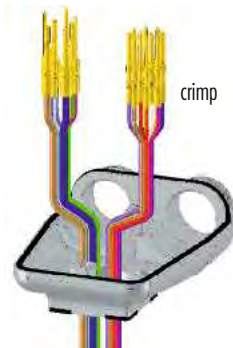
These values are only guidelines and actual conductor cross sections depend on manufacturer tolerances.



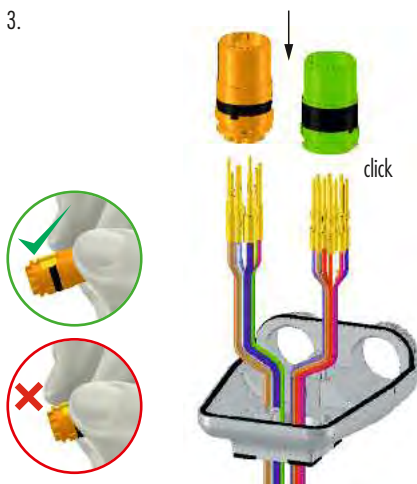
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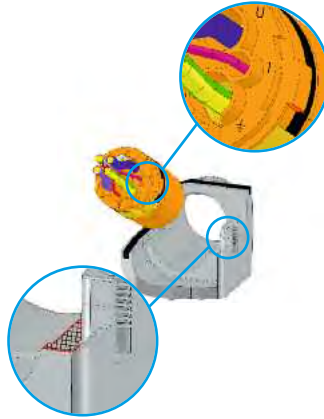
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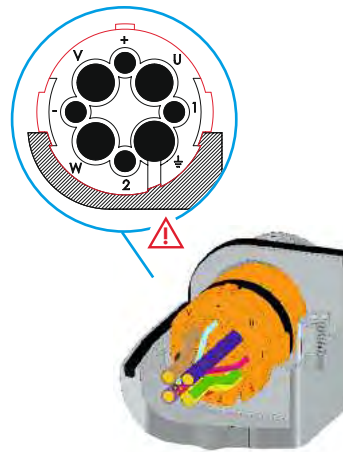
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4.



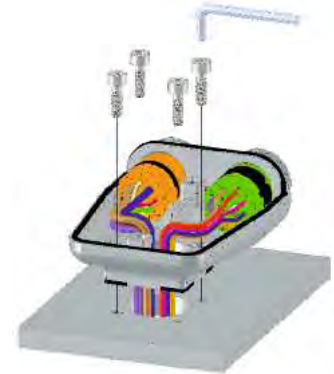
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6.



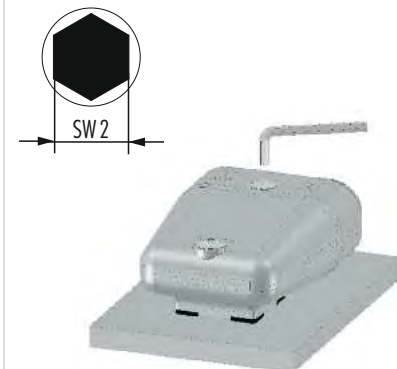
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8.



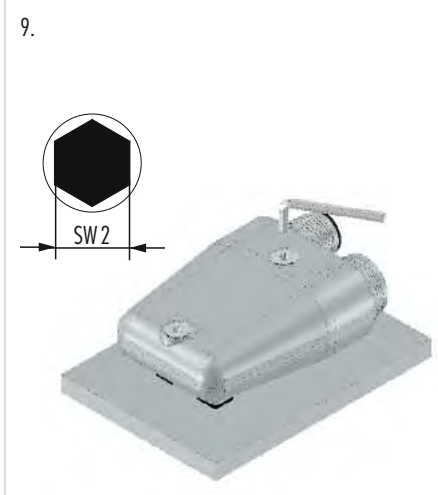
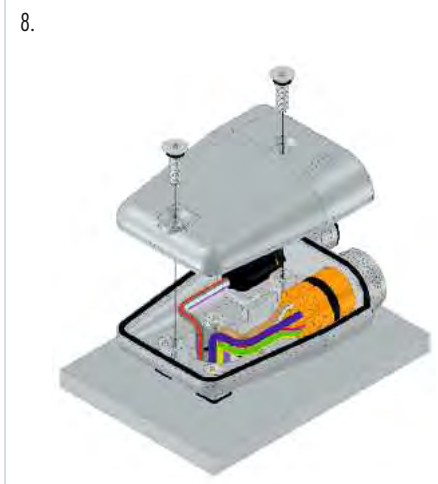
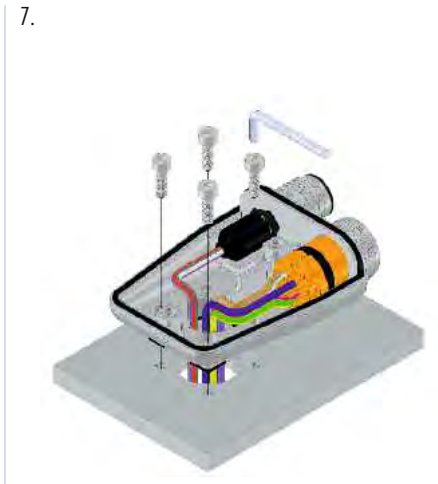
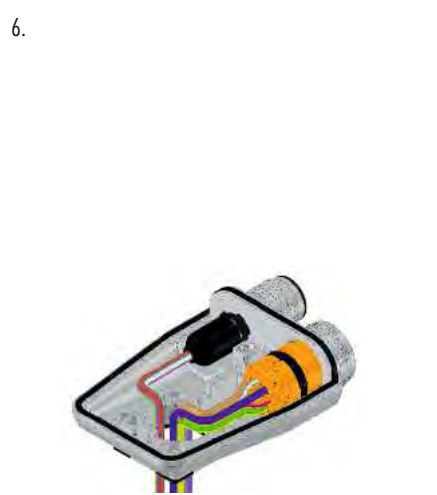
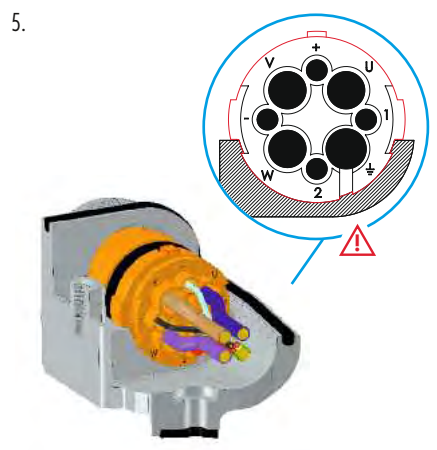
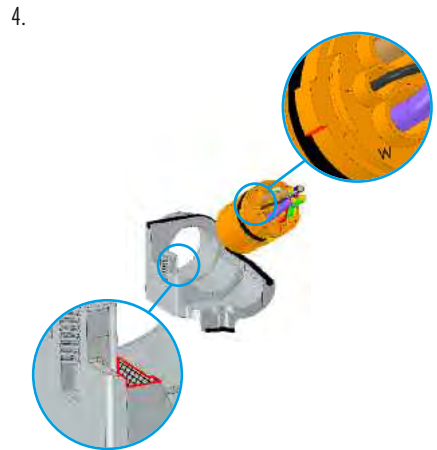
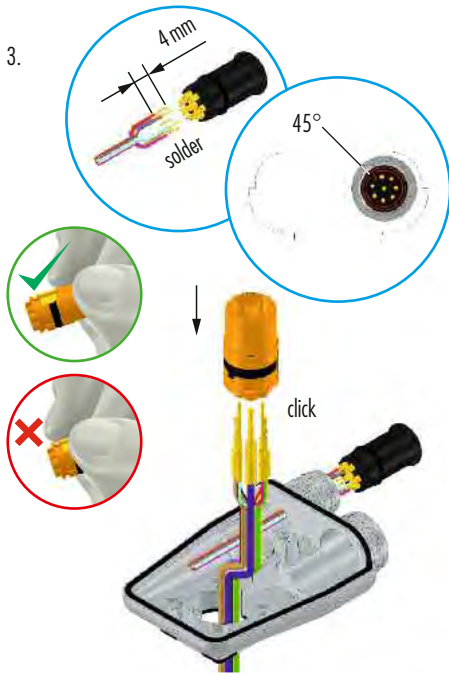
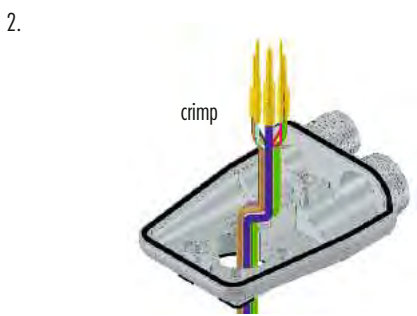
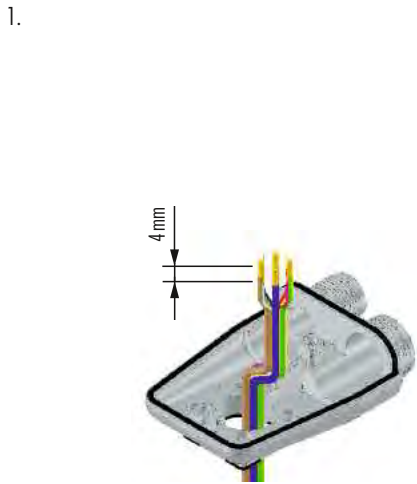
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Assembly Instructions

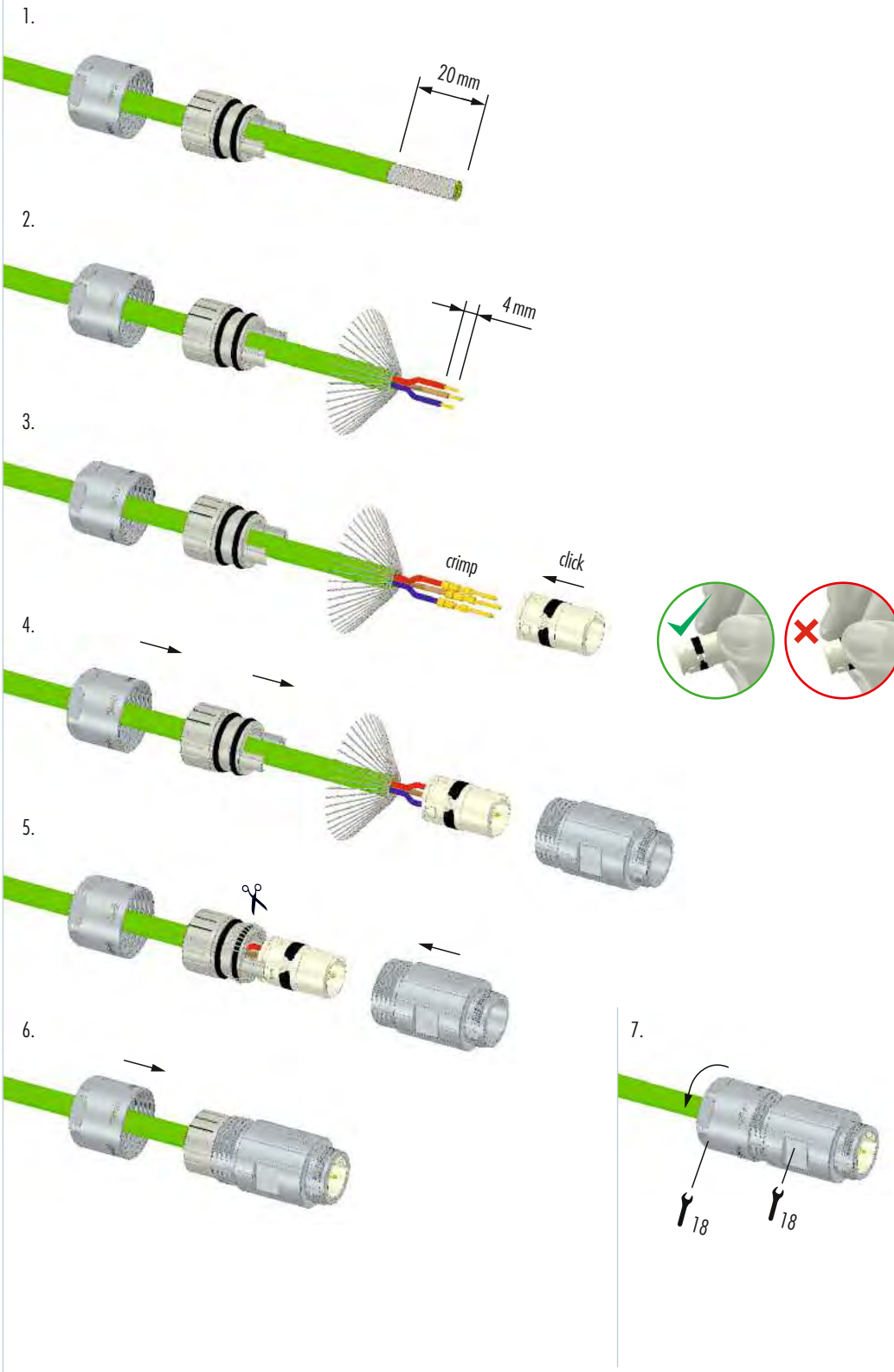
TWINTUS M 16 / M 12





Assembly Instructions

Female Threaded Connector / Male Threaded Connector





Assembly Instructions

Female Threaded Connector / Male Threaded Connector 12 + 3

1. 25 mm
2. 4 mm
3. crimp
4. click
5. click
- 6.
- 7.
8. 15/18 15/18

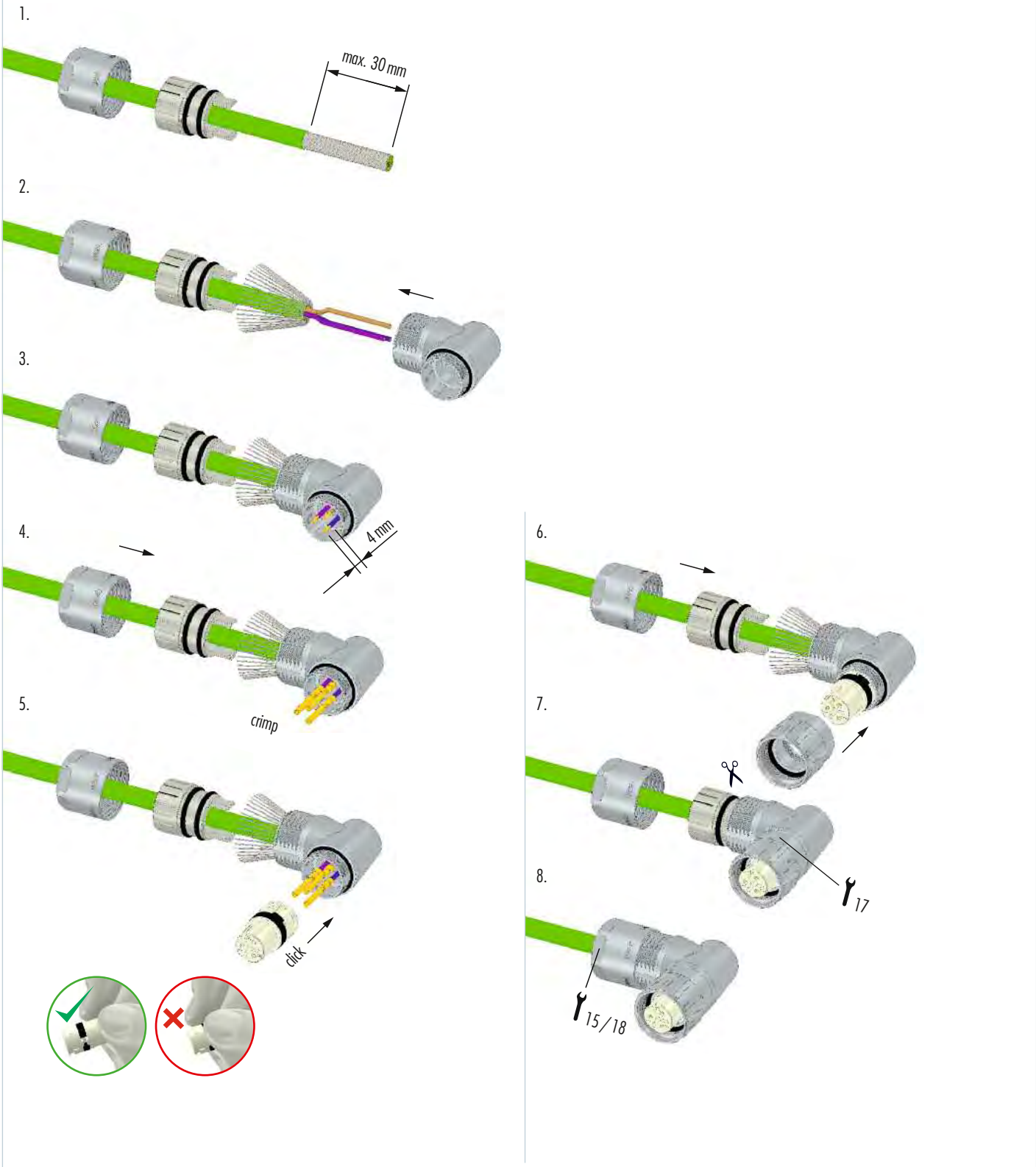
The inner conductors (bigger cross section for middle insert) shorten appr. 2–3 mm

click



Assembly Instructions

Right angle connector with positioning





Assembly Instructions

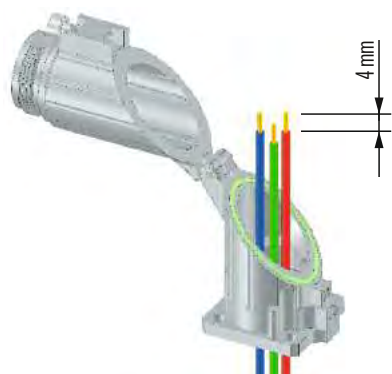
Panel Connector

-
-
-
-

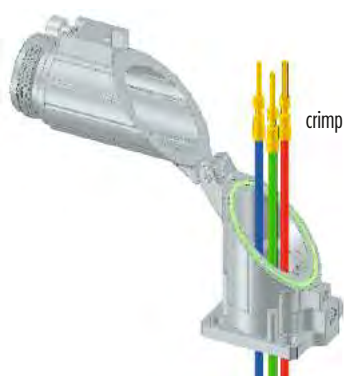


Right Angle Panel Connector

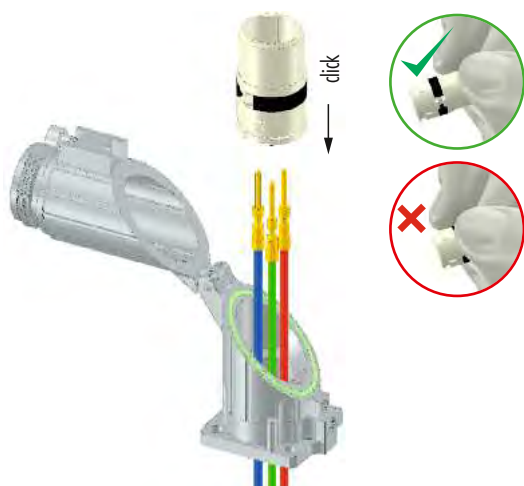
1.



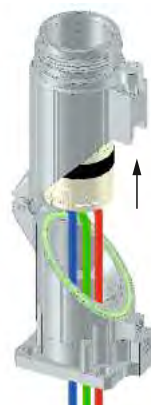
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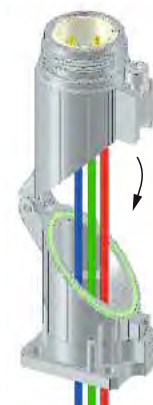
3.



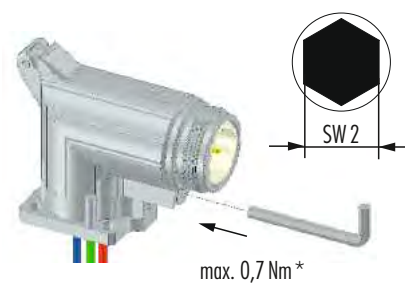
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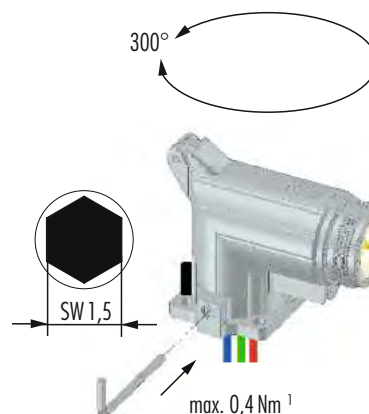
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6.



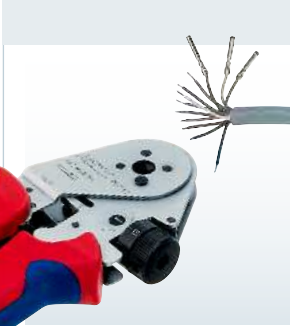
7.



¹ max. torque



Crimping, Assembly and Disassembly of Contacts



Crimping

- Remove conductor insulation 4 mm (.16") max.
- // Select appropriate Crimp tool setting
- // Push crimp contact into opening of crimping tool
- // Insert stripped wire into the funnel shaped end of the crimp contact
- // Squeeze handles of crimping tool together connect contact to wire



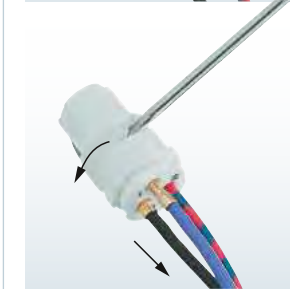
Assembly

- Remove crimped assembly and pull on wire to test connection
- // Push into desired position of insert

Disassembly of Contacts from Insert

A small screwdriver is needed to remove the contacts from the insert.

- // Release the white ring by a screwdriver out of the insert
- // Move the misplaced contacts out of the insert
- // Enter the ring back into the insert
- // Push the contacts back into insert



Shielding

- Assemble strain relief insert with insert
- // Fold stranding of the shield back over the first O-Ring of the strain relief insert
- // Cut back the overextending braid



Warning: The shield assembly is not allowed to touch the second O-Ring.



M 23 FAST ETHERNET PoE

This connector is able to transfer data up to Gigabit range. The M 23 Fast Ethernet PoE is robust, safe and compact. It is designed for use in rough industrial environments.

- // Hybrid connectors for single cable solution
- // Four Twinax-Inserts for data transfer
- // Five separate shieldings prevent cross talk
- // Highest density within M 23 housing



Product overview




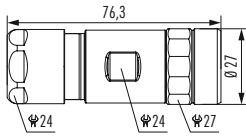

| Mechanical Data | Materials and Technical Data |
|-------------------------------------|--|
| Housing | Copper-Zinc alloy Die Cast |
| Housing surface | Nickel plated |
| Inserts (for contacts) | PBT UL-94 V0, PA6 |
| Contacts | Brass Alloy |
| Contact surface at point of contact | Nickel and gold plated (0,25 µm) |
| Minimum mating cycles | > 1000 |
| Seals / O-Rings | Perbunan NBR (Standard) |
| Temperature range | -40 °C – 125 °C (-40 °F – 257 °F) |
| Type of contacts | Crimp, dip-solder (PCB) |
| Protection | IP 67 per EN 60 529 (connected), NEMA 4x |
| Cable diameter range | 11 – 17 mm (.43" – .67") |


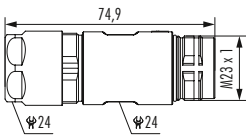

| Electrical Data | | |
|---|-------------------|-------------------|
| Number of positions | 20 (4 x 2 + 12) | |
| Number of contacts | 4 x 2 | 12 |
| Contact-Ø [mm] | 0,6 | 1 |
| AWG [mm ²] | 0,08 – 0,34 | 0,14 – 1 / 1,5 |
| Nominal current ¹⁾ [A] | 2 | 8* |
| Nominal voltage ²⁾ [V~] degree of protection 3 ⁴⁾ | 60 | 160 |
| Test voltage (Breakdown voltage) ³⁾ [V~] | 500 | 1500 |
| Insulation resistance [Ω] | > 10 ⁶ | > 10 ⁶ |
| Max. contact resistance [mΩ] | 3 | 3 |
| Impedance [Ω] (at 100MHz) | 100 | – |


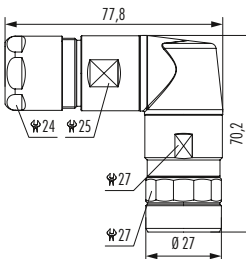

^{1), 2), 3), 4)} See Technical Information page 18 // * for single contacts even 10A possible


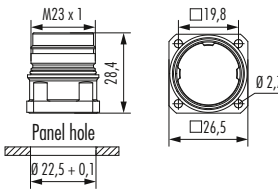




Housings

| Straight Female Connector | Cable-Ø | Part Number |
|---|--|---------------|
|   | 11-17 mm | 7.108.600.000 |
| |  | |

| Straight Connector, Male Thread | Cable-Ø | Part Number |
|---|--|---------------|
|   | 11-17 mm | 7.208.600.000 |
| |  | |

| Right Angle Connector, Female Thread, rotatable | Cable-Ø | Part Number |
|---|--|---------------|
|   | 11-17 mm | 7.308.600.000 |
| |  | |

| Panel Connector, Male Thread, Front Mounting | Type | Part Number |
|---|---------------------------------|---------------|
|   | 4 x holes Ø 2,7 mm (.11") | 7.408.000.000 |
| | Flange 26 x 26 mm | |
|  | | |

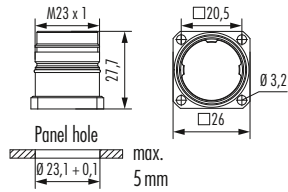
 Housing without inserts and contacts

Panel Connector, Rear Mounting

Type

Part Number

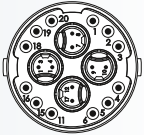
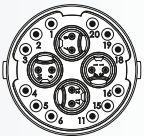
4 x holes $\varnothing 3,2$ mm (.13")7.468.000.000
 Flange 26 x 26 mm







Housing without inserts and contacts



Inserts / Pinouts / Contacts

| Inserts (4 x 2) + 12 | | Type | Part Number | Part Number |
|--|--------------------------------------|------|---------------|----------------|
|  Insert pin mating view | | | Pins | Sockets |
| | Insert without contacts | | 7.003.920.101 | 7.003.920.102 |
| | Insert with dip solder contacts..... | | 7.001.920.107 | 7.001.920.108 |
|  Insert socket mating view | Required Contacts | | | |
| | 8 x 0,6..... | | 7.010.980.641 | 7.010.980.602 |
| | 12 x 1..... | | 7.010.901.045 | 7.010.901.002 |
| | | | 7.010.901.049 | 7.010.901.012 |
| | | | | 7.010.901.022 |
| | | | | 7.010.901.046 |

| Contacts | Type | Crimp Range | Part Number | |
|---|------------------------------------|-----------------------------------|----------------------------------|---------------|
|  | Crimp pin 0,6 mm, machined | 0,08 – 0,34 mm ² | 7.010.980.641 | |
|  | Crimp socket 0,6 mm, machined..... | 0,08 – 0,34 mm ² | 7.010.980.602 | |
|  | Crimp pin 1 mm, machined | 0,14 – 1 mm ² | 7.010.901.049 | |
| | | | 0,75 – 1,5 mm ² | 7.010.901.045 |
|  | Crimp socket 1 mm, machined..... | 0,08 – 0,56 mm ² | 7.010.901.012 | |
| | | | 0,34 – 1 mm ² | 7.010.901.002 |
| | | | 0,75 – 1,5 mm ² | 7.010.901.022 |
| | | | 1 – 1,75 mm ² | 7.010.901.046 |



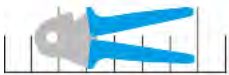
Accessories

| Accessories | Type | Part Number |
|---|---|---------------|
|  | Plastic protective cap for connectors with male thread | 7.000.900.101 |
| | with female thread | 7.000.900.102 |
|  | Brass protective cap for connectors with female thread | 7.010.900.183 |
| | Brass protective cap with chain for connectors with female thread Length 70 mm | 7.010.950.783 |
| | Length 100 mm | 7.010.951.083 |
|  | Brass protective cap for connectors with male thread | 7.010.908.102 |
|  | Conduit adaptor Poleon DN 12 | 7.010.900.205 |
| | Poleon DN 14 | 7.010.900.207 |
| | Poleon DN 17 | 7.010.900.209 |
|  | Adaptor flange for Straight Connectors | 7.010.900.128 |
|  | Adaptor flange for moulded connectors | 7.010.900.139 |
|  | Multi-Bus adapter wired through I:I (excentric) Multi-Bus I, Female Thread, Sockets 17pole Multi-Bus II, Male Thread, Pins | 7.010.900.143 |
| | Multi-Bus I, Female Thread, Pins, 17pole Multi-Bus II, Male Thread, Sockets | 7.010.900.144 |
| | | |
| | | |



Accessories

| Accessories | Type | Part Number |
|-------------|--|---------------|
| | Control Cabinet adapter for Multibus II – AIDA Rear Mounting, central locking | 7.010.900.145 |
| | I/O adapter module to scan or feed signals Rear Mounting, central locking | 7.010.900.146 |
| | Manual Crimp tool for EMC sleeves M 23 Fast Ethernet | 7.000.900.906 |
| | Manual Crimp tool for turned contacts M 23 Fast Ethernet | 7.000.900.907 |
| | ▶108 | |



Crimp Tool Settings for HUMMEL Crimp Contacts (Crimp Tool 7.000.900.907)

| Part Number | Crimp Contact | Cross Section (mm ²) | AWG | Crimp Tool Setting mm | Locator Setting |
|---------------|---|----------------------------------|--------|-----------------------|-----------------|
| 7.010.980.641 | Crimp pin 0,6 mm (0,08 – 0,34 mm ²) | 0,08 | AWG 28 | 0,57 | B 1 |
| | | 0,14 | AWG 26 | 0,60 | |
| | | 0,25 | AWG 24 | 0,64 | |
| | | 0,34 | AWG 22 | 0,73 | |
| 7.010.980.602 | Crimp socket 0,6 mm (0,08 – 0,34 mm ²) | 0,08 | AWG 28 | 0,57 | B 2 |
| | | 0,14 | AWG 26 | 0,60 | |
| | | 0,25 | AWG 24 | 0,64 | |
| | | 0,34 | AWG 22 | 0,73 | |
| 7.010.901.049 | Crimp pin 1 mm (0,14 – 1,0 mm ²) | 0,14 | AWG 26 | 0,70 | B 3 |
| | | 0,25 | AWG 24 | 0,76 | |
| | | 0,34 | AWG 22 | 0,82 | |
| | | 0,56 | AWG 20 | 0,90 | |
| | | 0,75 | AWG 18 | 1,00 | |
| 7.010.901.045 | Crimp pin 1 mm (0,75 – 1,5 mm ²) | 0,75 | AWG 18 | 0,80 | B 5 |
| | | 1,00 | AWG 17 | 0,85 | |
| | | 1,50 | AWG 16 | 0,95 | |
| 7.010.901.012 | Crimp socket 1 mm (0,08 – 0,56 mm ²) | 0,08 | AWG 28 | 0,75 | B 4 |
| | | 0,14 | AWG 26 | 0,78 | |
| | | 0,25 | AWG 24 | 0,82 | |
| | | 0,34 | AWG 22 | 0,88 | |
| | | 0,56 | AWG 20 | 0,90 | |
| 7.010.901.002 | Crimp socket 1 mm (0,34 – 1,0 mm ²) | 0,34 | AWG 22 | 0,77 | B 4 |
| | | 0,56 | AWG 20 | 0,82 | |
| | | 0,75 | AWG 18 | 0,88 | |
| | | 1,00 | AWG 17 | 0,95 | |
| 7.010.901.022 | Crimp socket 1 mm (0,75 – 1,5 mm ²) | 0,75 | AWG 18 | 0,80 | B 4 |
| | | 1,00 | AWG 17 | 0,86 | |
| | | 1,50 | AWG 16 | 0,95 | |
| 7.010.901.046 | Crimp socket 1 mm (1 – 1,75 mm ²) | 1,00 | AWG 17 | 0,85 | B 6 |
| | | 1,50 | AWG 16 | 0,95 | |
| | | 1,75 | AWG 15 | 1,00 | |

These values are only guidelines and actual conductor cross sections depend on manufacturer tolerances.



Assembly Instructions

Straight Connector Male / Female Thread

1. x 17 mm

2. y

3. z max. 4,5 mm

4. max. 4 mm

5. crimp

6. crimp

7. click

8. click code

9. crimp

7.000.900.906

| | |
|-----|---------------------------------|
| x | Pins = 41 mm Sockets = 37 mm |
| y | Pins = 7 mm Sockets = 0 mm |
| z | Pins = 10 mm Sockets = 7 mm |

10. code + position

11.

12. click code

13. click

14.

15. code

16. 24 24



Panel Connector

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.

⚠ x Pins = 10 mm
Sockets = 7 mm

7.000.900.906

- 8.
- 9.
- 10.
- 11.
- 12.

| |
|------------------|
| M12 |
| M16 |
| M23 PoE |
| M23 RJ45 |
| M23 Signal |
| M27 Signal |
| M23 Power |
| M40 Power |
| INOX |
| Moulded Cordsets |
| Customized |



Assembly Instructions

Right Angle Connector

1. Strip the cable jacket to 80 mm, then the braided shield to 55 mm.
2. Prepare the shield and conductors.
3. Strip the conductors to a maximum length of 4.5 mm (labeled 'y').
4. Strip the conductors to a maximum length of 4 mm (labeled 'x').
5. Crimp the conductors (labeled 'crimp').
6. Crimp the shield (labeled 'crimp').
7. Click the shield cap onto the shield (labeled 'click').
8. Click the conductors into the connector housing (labeled 'click').
9. Crimp the conductors with a crimping tool (labeled 'crimp'). Part number: 7.000.900.906.
10. Prepare the second cable with the same specifications.
11. Identify the 'code' and 'position' of the pins on the connector housing.
12. Align the second cable with the first.
13. Click the second cable into the housing (labeled 'click').
14. Click the shield cap onto the second shield (labeled 'click').
15. Tighten the housing with a 27mm wrench (labeled '27').
16. Trim the excess conductors with scissors (labeled 'scissors').
17. Tighten the housing with a 24mm wrench (labeled '24') and a 25mm wrench (labeled '25').

⚠ x Pins = 7 mm
Sockets = 0 mm

⚠ y Pins = 10 mm
Sockets = 7 mm

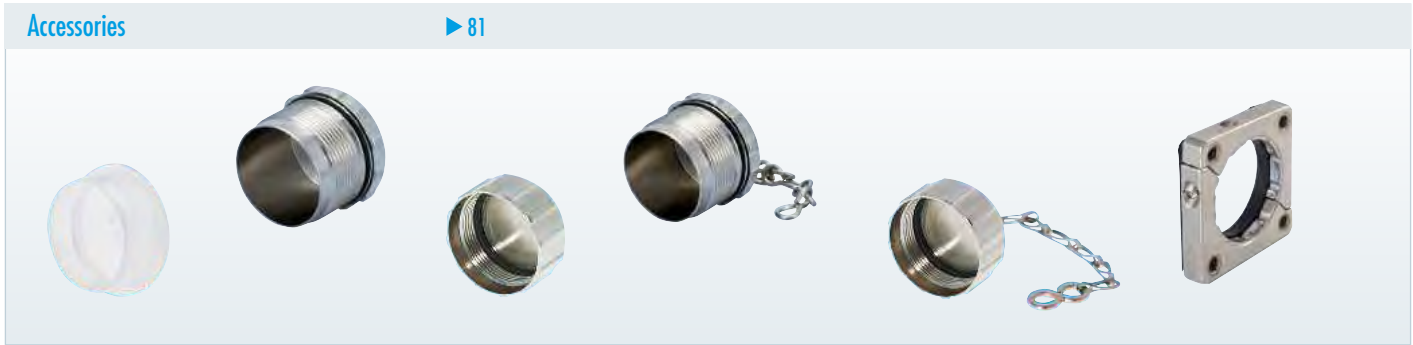
M 23 RJ 45 CONNECTORS

The connector series M 23 RJ 45 stands for safe data transfers with smallest space requirement in rough industrial environments. Here industrial patch cable can be used that the M 23 RJ 45 integrates in the body of an adaptor. The system achieves an excellent strain relief and complies with the protection class IP 67.

- // Industry suited system for safe data transfer
- // Integration of industrial patch cable
- // Screw lock
- // Suitable as maintenance interface



Product overview



| Mechanical Data | Materials and Technical Data |
|-------------------------------------|---|
| Housing | Brass Alloy, Die Cast |
| Housing Surface | Nickel Plated |
| Inserts (for contacts) | PBT UL-94 V0, PA 6 |
| Contacts | Brass Alloy |
| Contact Surface at point of contact | Depends on RJ 45 type used |
| Seals / O-Rings | NBR Viton® (FKM / FPM) |
| Temperature Range | Depends on RJ 45 type used |
| Degree of Protection | IP 67 per EN 60529 (mated) |
| Cable diameter range | 3 – 7 / 7 – 12 / 11 – 17mm |
| Number of Positions | 4 / 6 / 8 poles, optional 4 + 2 / 6 + 2 / 8 + 2 |
| Nominal Current ¹⁾ [A] | Depends on RJ 45 type used |
| Nominal Voltage ²⁾ [V~] | Depends on RJ 45 type used |
| Test Voltage [V~] | Depends on RJ 45 type used |
| Insulation Resistance [Ω] | Depends on RJ 45 type used |
| Max. Crossover Resistance [mΩ] | Depends on RJ 45 type used |
| Max. Data Rate | Depends on RJ 45 type used, IAW Cat 5/5e/6a |

^{1), 2)} see Technical Information page 18



Housings

Straight Connector Female Thread

| Cable-Ø | Part Number |
|-----------------------|---------------|
| 3 – 7 mm (.12 - .28") | 7.R10.400.000 |

Connector with insert for patch cable

Suitable patch cable and plugs can be recommended.

▶ 83 ▶ 81

Straight Connector Male Thread

| Cable-Ø | Part Number |
|-----------------------|---------------|
| 3 – 7 mm (.12 - .28") | 7.R20.408.000 |

Incl. 8 poles coupler, fully occupied

▶ 84 ▶ 81

Panel Connector Front Mount, dip solder insert

| Type | Part Number |
|---|---------------|
| 4 holes 2.7 mm, Flange Incl. 8 poles dip solder insert | 7.R40.008.000 |
| 4 holes 2.7 mm, Flange Incl. 8 + 2 poles dip solder insert | 7.R40.082.000 |

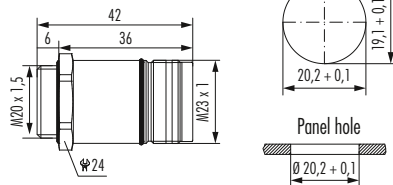
▶ 81

Panel Connector, Front Mount

| Type | Part Number |
|--|---------------|
| with vibration protection 4 holes 2.7 mm, Flange Incl. 8 poles coupler, fully occupied | 7.R41.008.000 |

▶ 81

Single Hole Panel Connector



Type

Front Mount

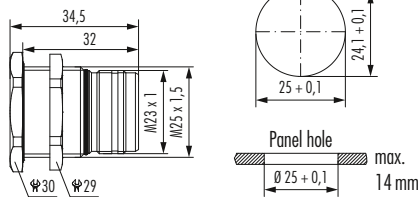
M 20 x 1,5 thread7.R42.008.000
Incl. 8 poles coupler, fully occupied

Optional: Gasket M 20 x 1,5, Locking Nut

Part Number



Single Hole Panel Connector



Type

Rear Mount

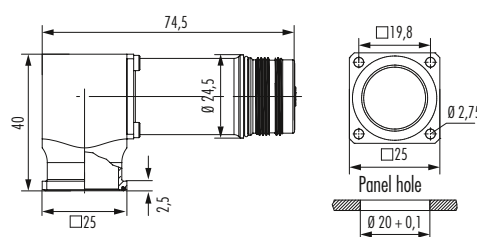
M 25 x 1,5 thread7.R50.008.000
Incl. 8 poles coupler, fully occupied

M 25 x 1,5 Locking Nut included.

Part Number



Right Angle Panel Connector, Male Thread



Type

300° rotatable, locking screw at flange

4 holes 2.7 mm, Flange7.R43.108.000
Incl. 8 poles coupler, fully occupied

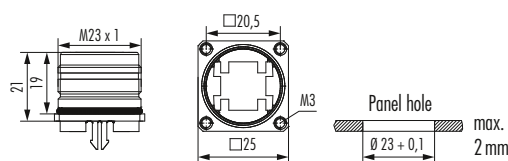
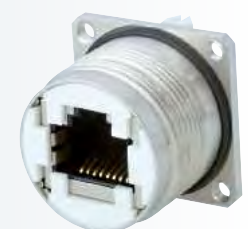
Optional: Gasket

Simple installation with M 2.5 screws

Part Number



Panel Connector Rear Mount, dip solder insert



Type

4x M 3 thread, Flange7.R45.008.000
Incl. 8 poles dip solder insert

4x M 3 thread, Flange7.R45.082.000
Incl. 8 + 2 poles dip solder insert


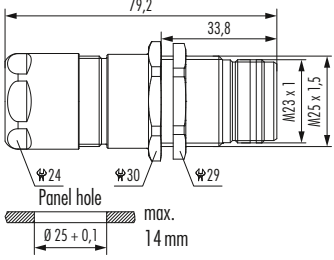
Part Number


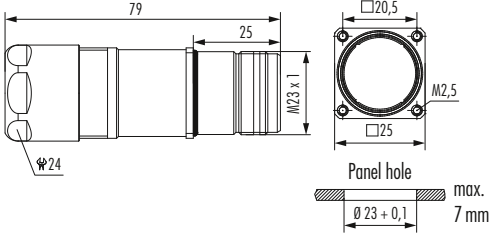


¹ upon request



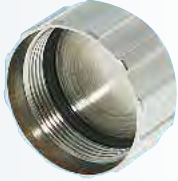






Housings

| Single Hole Panel Connector with strain relief | Cable-Ø | Part Number |
|---|--|-------------|
|   <p>Technical drawing details: Total length: 79,2 mm Strain relief length: 33,8 mm Cable diameter: M23 x 1 Panel hole diameter: $\phi 25 + 0,1$ mm Max. panel hole depth: 14 mm Mounting hole diameters: $\phi 24$, $\phi 30$, $\phi 29$</p> | <p>Single Hole, Rear Mount, M 25 x 1,5 thread 3 – 7 mm (.12 - .28") .....7.R52.408.000 Incl. 8 poles coupler, fully occupied</p> <p>M 25 x 1,5 Locking Nut included</p> | <p>▶ 81</p> |

| Panel Connector with strain relief | Cable-Ø | Part Number |
|---|--|-------------|
|   <p>Technical drawing details: Total length: 79 mm Strain relief length: 25 mm Cable diameter: M23 x 1 Panel hole diameter: $\phi 23 + 0,1$ mm Max. panel hole depth: 7 mm Mounting hole diameters: $\phi 24$ Flange dimensions: 20,5 mm x 25 mm Flange thread: M2,5</p> | <p>4x M 2,5 thread, Flange, Rear Mount 3 – 7 mm (.12 - .28") .....7.R47.408.000 Incl. 8 poles coupler, fully occupied</p> | <p>▶ 81</p> |



| Accessories | Type | Part Number |
|---|--|-------------|
|  | Plastic protective cap for connectors with male thread .....7.000.900.101 with female thread .....7.000.900.102 | |
|  | Brass protective cap for connectors with female thread .....7.010.900.183 | |
|  | Brass protective cap for connectors with male thread .....7.010.900.102 | |
|  | Brass protective cap with chain for connectors with female thread Length 70 mm .....7.010.950.783 Length 100 mm .....7.010.951.083 | |
|  | Brass protective cap with chain for connectors with male thread Length 70 mm .....7.010.950.702 Length 100 mm .....7.010.951.002 | |
|  | Adaptor flange for Straight Connectors .....7.010.900.128 | |
|  | Conduit adaptor Poleon DN 12 .....7.010.900.205 Poleon DN 14 .....7.010.900.207 Poleon DN 17 .....7.010.900.209 | |

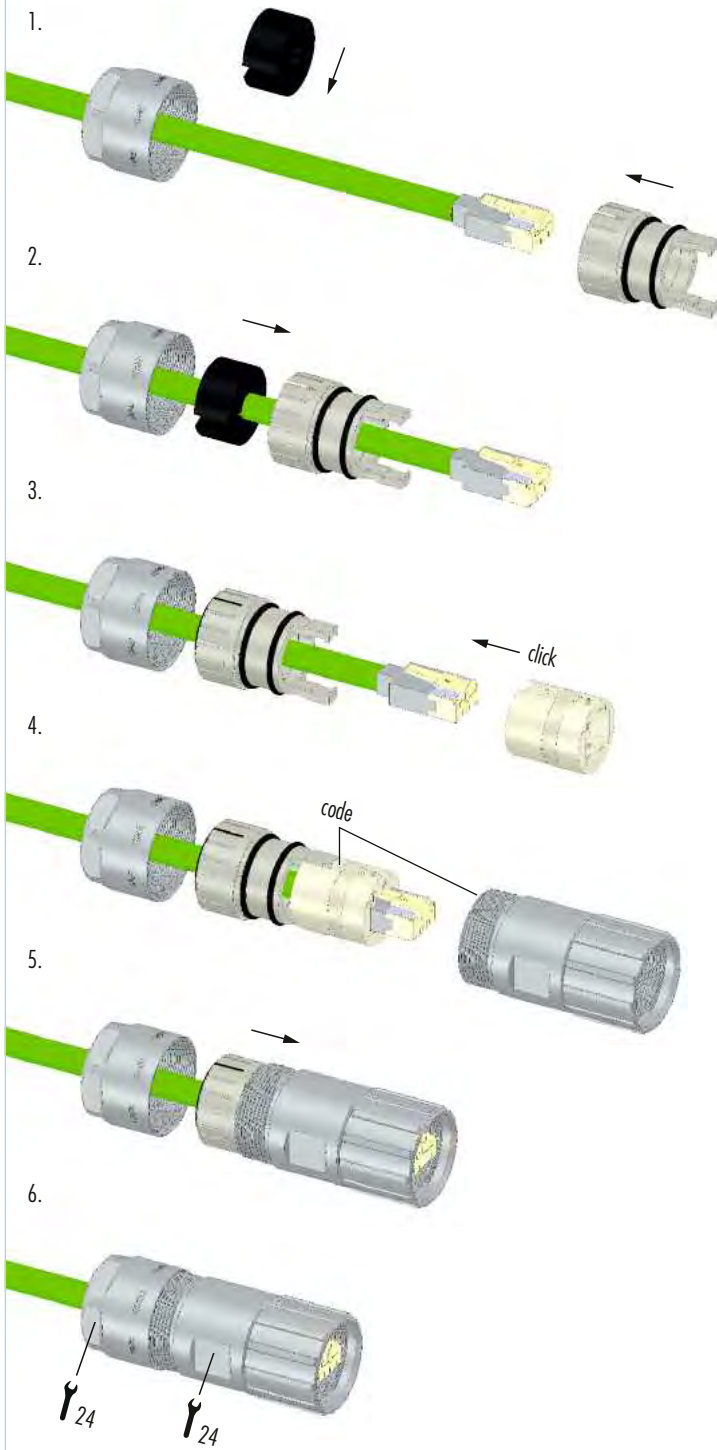


Accessories

| Accessories | Type | Part Number |
|---|---|----------------------------|
|  | Suitable patch cable | on request |
|  | Field attachable RJ45 connector 8-pole 8+2-pole | A7RJ-081M41 A7RJ-821M51 |
|  | Screw Tool, adjustable 0.5 – 1.7 Nm | 7.010.900.190 |
|  | Tool Adapter for tightening or loosening knurled nuts for M23 | 7.010.900.192 |



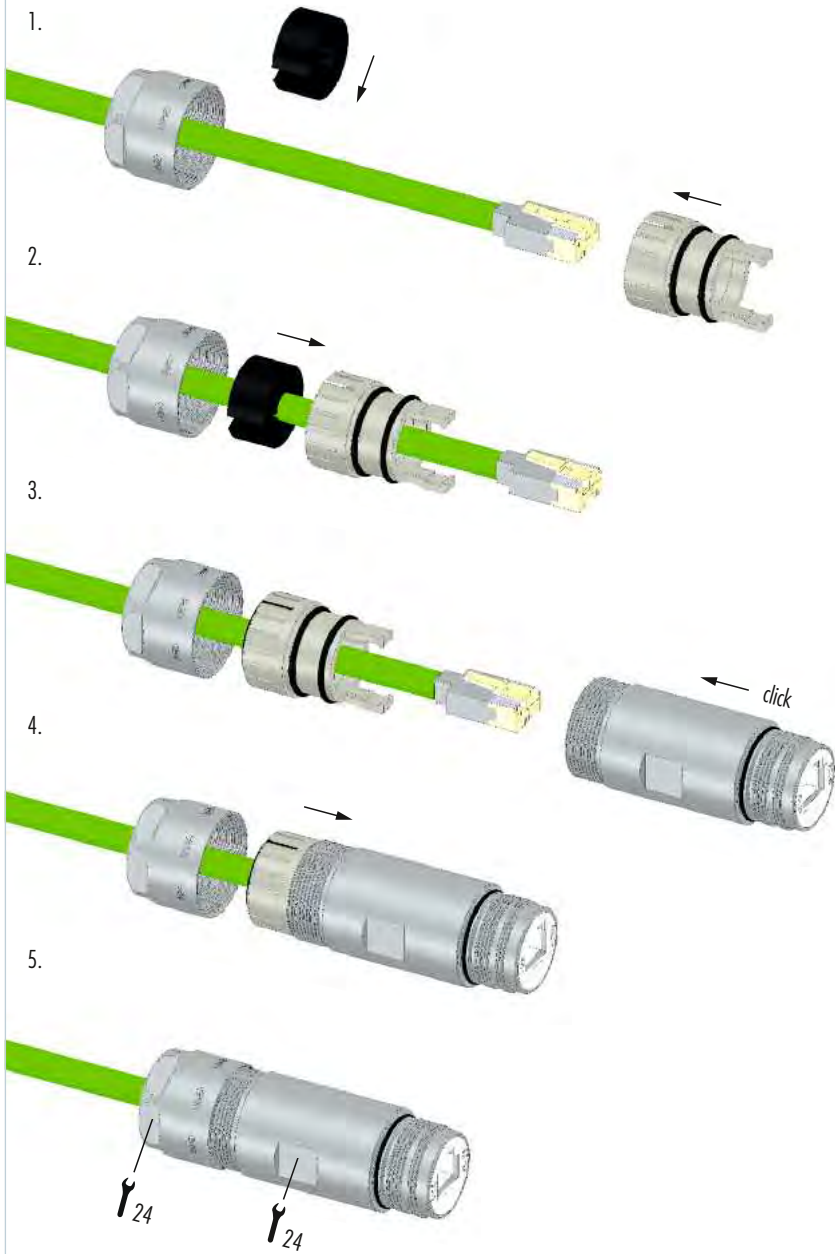
Straight Connector, Female Thread





Assembly Instructions

Male Threaded Connector



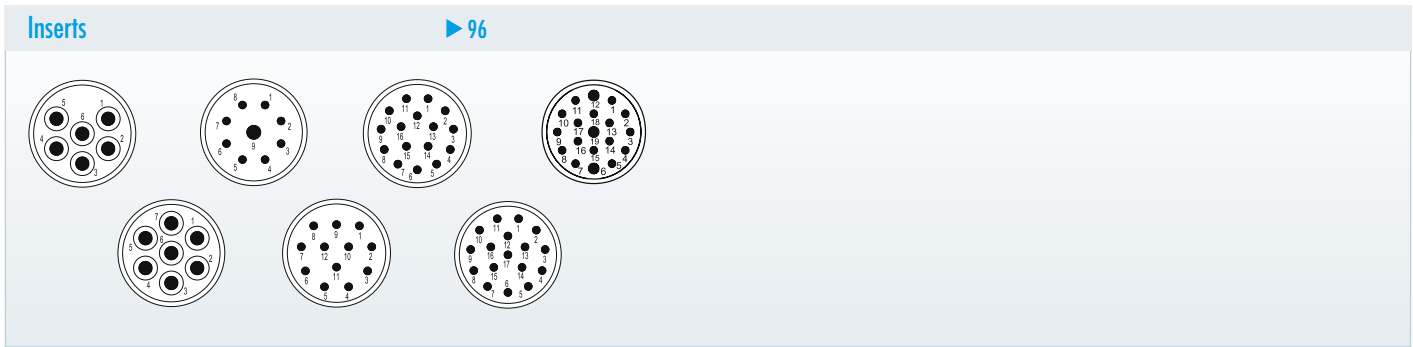
M 23 SIGNAL CONNECTORS

This reliable and universally applicable connector is widespread within industry. The connectors of HUMMEL AG can be customized freely. Moreover, they convince through their robustness and reliability. The range is modularly constructed and offers almost unlimited opportunities to the user.

- // Numerous housing types
- // Large variety
- // TWILOCK/TWILOCK-S quick release fastener



Product overview



| Mechanical Data | Materials and Technical Data |
|-------------------------------------|--|
| Housing | Copper-Zinc alloy Die Cast |
| Housing surface | Nickel plated other surface upon request |
| Inserts (for contacts) | Thermoplastic Polyamid PA 6 (Nylon 6/6), PBT Fire protection class V-0 |
| Contacts | Brass Alloy |
| Contact surface at point of contact | Nickel and gold plated (0,25 µm) |
| Minimum mating cycles | > 1000* |
| Seals / O-Rings | Buna-N standard optional Viton® (FPM / FKM) (Viton is a registered trademark of DuPont) |
| Temperature range | -40 °C – 125 °C (-40 °F – 257 °F) |
| Type of contacts | Crimp, solder, dip-solder (PCB) |
| Protection | IP 67 / IP 69K per EN 60 529 (connected), NEMA 4x |
| Cable diameter range | 3 – 17 mm (.12 – .67") |

* HUMMEL to HUMMEL connector

| Electrical Data | 6 | 7 | 9 (8+1) | 12 | 16 | 17 | 19 (16+3) |
|---|--------------------|--------------------|--------------------|--------------------|-------------------|-------------------|-------------------|
| Number of positions | 6 | 7 | 9 (8+1) | 12 | 16 | 17 | 19 (16+3) |
| Number of contacts | 6 | 7 | 8 1 | 12 | 16 | 17 | 16 3 |
| Contact-Ø [mm] | 2 | 2 | 1 2 | 1 | 1 | 1 | 1 1,5 |
| Nominal current ¹⁾ [A] | 20 | 20 | 8 20 | 8 | 8 | 8 | 8 10 |
| Nominal voltage ²⁾ [V~] Degree of Protection 3 ³⁾ | 300 | 300 | 200 | 200 | 160 | 160 | 100 |
| Test voltage (Breakdown voltage) ⁴⁾ [V~] | 2500 | 2500 | 2500 | 2500 | 1500 | 1500 | 1500 |
| Insulation resistance [Ω] | > 10 ¹⁰ | > 10 ¹⁰ | > 10 ¹⁰ | > 10 ¹⁰ | > 10 ⁶ | > 10 ⁶ | > 10 ⁶ |
| Max. contact resistance [mΩ] | 3 | 3 | 3 | 3 | 3 | 3 | 3 |

^{1), 2), 3), 4)} See Technical Information page 18



Housings

Straight Connector, Female Thread

| Cable-Ø | Part Number |
|-------------------------|---------------|
| 3 – 7 mm (.12 – .28") | 7.106.400.000 |
| 7 – 12 mm (.28 – .47") | 7.106.500.000 |
| 11 – 17 mm (.44 – .67") | 7.106.600.000 |

Straight Connector, Female Thread TWILOCK / TWILOCK-S*

| Cable-Ø | Part Number |
|--------------------------------------|---------------|
| 3 – 7 mm (.12 – .28") | 7.166.400.000 |
| 7 – 12 mm (.24 – .47") | 7.166.500.000 |
| 11 – 17 mm (.43 – .67") | 7.166.600.000 |
| * intermateable with Speedtec | |
| 3 – 7 mm (.12 – .28") | 7.166.400.00S |
| 7 – 12 mm (.24 – .47") | 7.166.500.00S |
| 11 – 17 mm (.43 – .67") | 7.166.600.00S |

Straight Connector, Male Thread TWILOCK / TWILOCK-S*

| Cable-Ø | Part Number |
|--------------------------------------|---------------|
| 3 – 7 mm (.12 – .28") | 7.206.400.000 |
| 7 – 12 mm (.28 – .47") | 7.206.500.000 |
| 11 – 17 mm (.44 – .67") | 7.206.600.000 |
| * intermateable with Speedtec | |
| 3 – 7 mm (.12 – .28") | 7.266.400.00S |
| 7 – 12 mm (.24 – .47") | 7.266.500.00S |
| 11 – 17 mm (.43 – .67") | 7.266.600.00S |

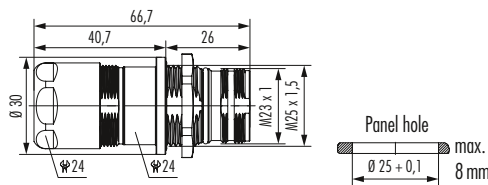
Panel Connector, Male Thread, with Strain Relief

| Cable-Ø | Part Number |
|-------------------------------------|---------------|
| 4 threads M 3, rear mounting | |
| 3 – 7 mm (.12 – .28") | 7.476.400.000 |
| 7 – 12 mm (.28 – .47") | 7.476.500.000 |
| 11 – 17 mm (.44 – .67") | 7.476.600.000 |
| Optional: Flat gasket | |

Housing without inserts and contacts



Panel Connector, Male Thread, with Strain Relief TWILOCK/TWILOCK-S*



Cable-Ø

Part Number

Rear mounting, M 25 x 1,5 single hole mounted

| | |
|-------------------------|---------------|
| 3 – 7 mm (.12 – .28") | 7.486.400.000 |
| 7 – 12 mm (.28 – .47") | 7.486.500.000 |
| 11 – 17 mm (.44 – .67") | 7.486.600.000 |

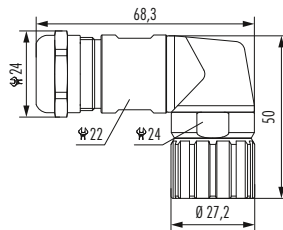
* intermateable with Speedtec

| | |
|-------------------------|---------------|
| 3 – 7 mm (.12 – .28") | 7.486.400.00S |
| 7 – 12 mm (.28 – .47") | 7.486.500.00S |
| 11 – 17 mm (.44 – .67") | 7.486.600.00S |



Including jam nut M 25 x 1,5

Right Angle Connector, Female Thread with positioning



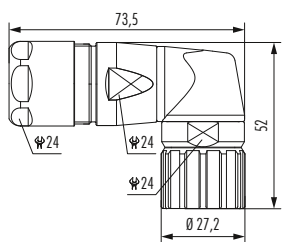
Cable-Ø

Part Number

| | |
|-------------------------|---------------|
| 3 – 7 mm (.12 – .28") | 7.300.300.000 |
| 5 – 10 mm (.20 – .39") | 7.300.400.000 |
| 7 – 12 mm (.28 – .47") | 7.300.500.000 |
| 10 – 14 mm (.39 – .55") | 7.300.600.000 |



Right Angle Connector, Female Thread, EMC with positioning



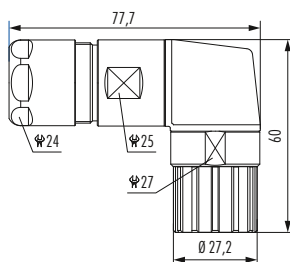
Cable-Ø

Part Number

| | |
|-------------------------|---------------|
| 7 – 12 mm (.28 – .47") | 7.301.500.000 |
| 10 – 14 mm (.39 – .55") | 7.301.600.000 |



Right Angle Connector, EMC, rotatable



Cable-Ø

Part Number

| | |
|-------------------------|---------------|
| 7 – 12 mm (.28 – .47") | 7.306.500.000 |
| 11 – 17 mm (.43 – .67") | 7.306.600.000 |



Housing without inserts and contacts



Housings

Panel Connector, Male Thread, Front Mounting

| Type | Part Number |
|-------------------------|----------------------------|
| 4 holes Ø 3,2 mm (.13") | 7.400.000.000 ¹ |
| 4 threads M 3 | 7.402.000.000 ¹ |
| 4 holes Ø 2,7 mm (.11") | 7.404.000.000 ¹ |
| 4 threads M 2,5 | 7.406.000.000 ¹ |

▶ 96 |
 ▶ 104 |
 ▶ 113/114

Panel Connector, Male Thread, Front Mounting TWILOCK/TWILOCK-S*

| Type | Part Number |
|--------------------------------------|----------------------------|
| With anti-vibration O-Ring | |
| 4 holes Ø 3,2 mm (.13") | 7.410.000.000 |
| 4 threads M 3 | 7.412.000.000 ¹ |
| 4 holes Ø 2,7 mm (.11") | 7.414.000.000 |
| 4 threads M 2,5 | 7.416.000.000 ¹ |
| * intermateable with Speedtec | |
| 4 x Bholes 3,2 mm, Flange 25 x 25 | 7.410.000.00S |
| 4 x Bohr. 3,2 mm, Flange 28 x 28 | 7.410.100.00S |

▶ 96 |
 ▶ 104 |
 ▶ 113/114

Panel Connector, Female Thread, with knurled Nut

| Type | Part Number |
|------------------------------|---------------|
| Without coding option | |
| 4 holes Ø 3,2 mm (.13") | 7.440.000.000 |
| 4 holes Ø 2,7 mm (.11") | 7.444.000.000 |

▶ 96 |
 ▶ 104 |
 ▶ 113/114

Panel Connector, Female Thread, with knurled Nut, positionable

| Type | Part Number |
|-------------------------------------|---------------|
| With coding option (8 x 45°) | |
| 4 holes Ø 3,2 mm (.13") | 7.448.000.000 |
| 4 holes Ø 2,7 mm (.11") | 7.449.000.000 |

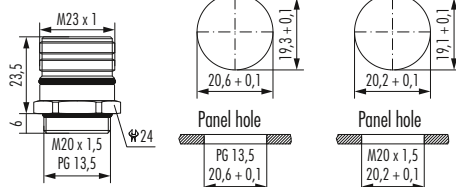
▶ 96 |
 ▶ 104 |
 ▶ 113/114

Housing without inserts and contacts

¹ no compatibility with TWILOCK



Panel Connector, Male Thread, Single Hole Mounted



Type Part Number

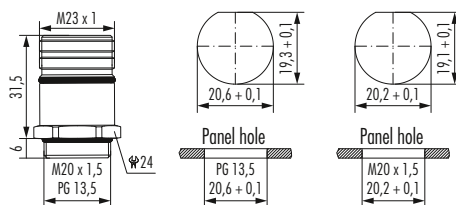
| | |
|--|----------------------------|
| Front mounting for male inserts | |
| Thread M 20 x 1,5 | 7.420.000.000 ¹ |
| Thread PG 13,5 | 7.422.000.000 ¹ |

Optional: jam nut M 20 x 1,5 / PG 13,5

*** FOR MALE *
INSERTS ONLY**



Panel Connector, Male Thread, Single Hole Mounted



Type Part Number

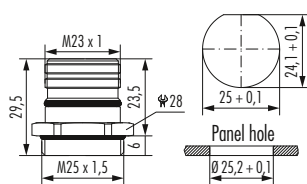
| | |
|--|----------------------------|
| Front mounting for female inserts | |
| Thread M 20 x 1,5 | 7.421.000.000 ¹ |
| Thread PG 13,5 | 7.423.000.000 ¹ |

Optional: jam nut M 20 x 1,5 / PG 13,5

*** FOR FEMALE *
INSERTS ONLY**



Panel Connector, Male Thread, Single Hole Mounted



Type Part Number

| | |
|---------------------------------------|----------------------------|
| For insert with pins / sockets | |
| Thread M 25 x 1,5 | 7.425.000.000 ¹ |

Optional: jam nut M 25 x 1,5



Housing without inserts and contacts

¹ no compatibility with TWILOCK



Housings

Right Angle Panel Connector, Male Thread

| Type | Part Number |
|-----------------------|---------------|
| 4 holes 2,7 mm (.11") | 7.435.000.000 |

Easy fixation with M2,5 screws

Right Angle Panel Connector, Male Thread, rotatable

| Type | Part Number |
|------------------------------|---------------|
| 335° rotatable, hole mounted | |
| Thread M20 x 1,5 | 7.431.000.000 |

Right Angle Panel Connector, Male Thread, rotatable TWILOCK/TWILOCK-S*

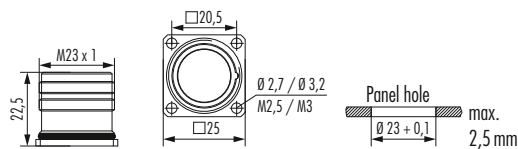
| Type | Part Number |
|-------------------------------|---------------|
| 330° rotatable, hole mounted | |
| 4 x holes 3,2 mm (.13") | 7.439.000.000 |
| Flange 25 x 25 mm | |
| * intermateable with Speedtec | |
| 4 x holes 3,2 mm (.13") | 7.439.000.00S |
| Flange 25 x 25 mm | |

Right Angle Panel Connector, Male Thread, rotatable TWILOCK/TWILOCK-S*

| Type | Part Number |
|-------------------------------|---------------|
| 330° rotatable, hole mounted | |
| 4 x holes 3,2 mm (.13") | 7.439.100.000 |
| Flange 28 x 28 mm | |
| * intermateable with Speedtec | |
| 4 x holes 3,2 mm (.13") | 7.439.100.00S |
| Flange 28 x 28 mm | |

Housing without inserts and contacts

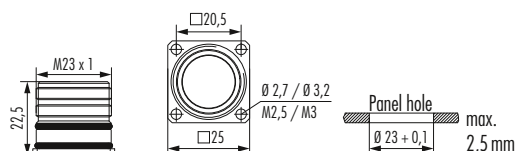
Panel Connector, Male Thread, Rear Mounting



| Type | Part Number |
|-------------------------------------|----------------------------|
| 4 holes \varnothing 3,2 mm (.13") | 7.450.000.000 ¹ |
| 4 threads M 3 | 7.452.000.000 ¹ |
| 4 holes \varnothing 2,7 mm (.11") | 7.454.000.000 ¹ |
| 4 threads M 2,5 | 7.456.000.000 ¹ |



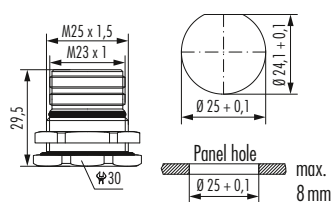
Panel Connector, Male Thread, Rear Mounting TWILOCK/TWILOCK-S*



| Type | Part Number |
|--------------------------------------|---------------|
| With anti-vibration O-Ring | |
| 4 holes \varnothing 3,2 mm (.13") | 7.460.000.000 |
| 4 threads M 3 | 7.462.000.000 |
| 4 holes \varnothing 2,7 mm (.11") | 7.464.000.000 |
| 4 threads M 2,5 | 7.466.000.000 |
| * intermateable with Speedtec | |
| 4 x threads M 3 | 7.462.000.00S |



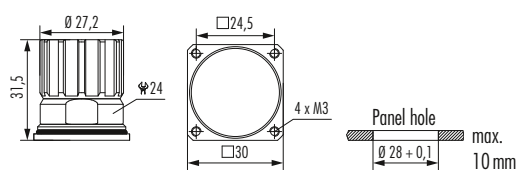
Panel Connector, Male Thread, Single Hole Mounted TWILOCK/TWILOCK-S*



| Type | Part Number |
|--------------------------------------|----------------------------|
| Rear mounting | |
| Thread M 25 x 1,5 | 7.458.000.000 ¹ |
| * intermateable with Speedtec | |
| Thread M 25 x 1,5 | 7.458.000.00S |
| Including jam nut M 25 x 1,5 | |



Panel Connector, Female Thread, Rear Mounting



| Type | Part Number |
|--|---------------|
| With knurled nut, rear mounting | |
| 4 threads M 3 | 7.459.000.000 |


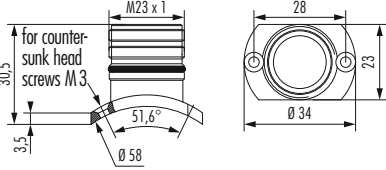




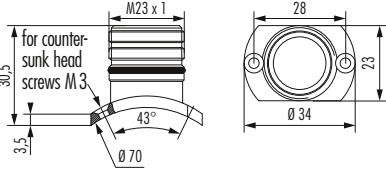

Housing without inserts and contacts


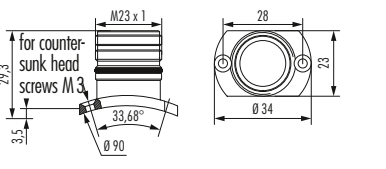

¹ no compatibility with TWILOCK



Housings

| Panel Connector with Radius Flange | | Type | Part Number |
|---|---|--|----------------------------|
|  |  | With anti-vibration O-Ring and flat body gasket Ø 58 mm (2.28") | 7.490.000.000 ¹ |
| | |  | |

| Panel Connector with Radius Flange | | Type | Part Number |
|--|--|--|----------------------------|
|  |  | With anti-vibration O-Ring and flat body gasket Ø 70 mm (2.76") | 7.491.000.000 ¹ |
| | |  | |

| Panel Connector with Radius Flange | | Type | Part Number |
|---|---|--|----------------------------|
|  |  | With anti-vibration O-Ring and flat body gasket Ø 90 mm (3.54") | 7.492.000.000 ¹ |
| | |  | |



Housing without inserts and contacts

¹ no compatibility with TWILOCK



| Signal Distribution | Type | Part Number |
|---------------------|------|--------------|
| | | ▶ 96 \| ▶ 104 |

| Signal Distribution | Type | Part Number |
|---------------------|------|--------------|
| | | ▶ 96 \| ▶ 104 |

| Signal Distribution |
|--|
| <p>In case of so called Flying Connections it is often required to distribute, cross or combine signals. Depending on the requirements of the application, the connections can be supplied either as male or female connector, or they can be configured with strain relief fittings. There are many possible combinations, including the internal wiring, independent of their style, as T-, Y-, H-, or other special configurations.</p> |

| Bus End Connector | Type | Part Number |
|-------------------|---|---------------|
| | Closed type..... | 7.105.000.000 |
| | Used to cap an open male connector in bus-systems | |
| | | ▶ 96 \| ▶ 104 |



Housing without inserts and contacts

¹ no compatibility with TWILOCK



Inserts / Pinouts

| Inserts 6-pole | | Type | Part Number | Part Number |
|--|------------------------------------|----------------------------------|---------------|----------------|
| | Insert pin mating view (Part E) | Pinout clockwise | Pins | Sockets |
| | | Insert with solder contacts..... | 7.001.906.103 | 7.001.906.104 |
| | Insert socket mating view (Part P) | Insert without contacts | 7.003.906.101 | 7.003.906.102 |
| | | Insert with dip solder contacts | | |
| | | Length 3,5 mm | 7.001.906.107 | |
| | | Insert with dip solder contacts | | |
| | | Length 10 mm | 7.001.906.127 | 7.001.906.108 |
| | | Insert with dip solder contacts | | |
| | | Length 17 mm | 7.001.906.137 | 7.001.906.118 |
| <p>The correct dimension of a connector with dip solder contacts depends on the particular type of housing.</p> <p>Coding possibilities N, S, H, X, Y and Z (see page 101)</p> | | | | |

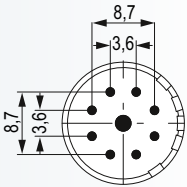


| Inserts 7-pole | | Type | Part Number | Part Number |
|---|------------------------------------|----------------------------------|---------------|----------------|
| | Insert pin mating view (Part E) | Pinout clockwise | Pins | Sockets |
| | | Insert with solder contacts..... | 7.001.907.103 | 7.001.907.104 |
| | Insert socket mating view (Part P) | Insert without contacts | 7.003.907.101 | 7.003.907.102 |
| | | Insert with dip solder contacts | | |
| | | Length 3,5 mm | 7.001.907.107 | |
| | | Insert with dip solder contacts | | |
| | | Length 10 mm | 7.001.907.127 | 7.001.907.108 |
| | | Insert with dip solder contacts | | |
| | | Length 17 mm | 7.001.907.137 | 7.001.907.118 |
| <p>The correct dimension of a connector with dip solder contacts depends on the particular type of housing.</p> <p>Coding possibilities N, S, H, X and Y (see page 101)</p> | | | | |

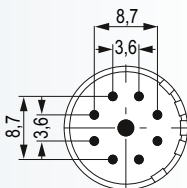




| Inserts 9-pole (8 + 1) | | Type | Part Number | Part Number |
|---|----------------------------------|---------------|----------------|-------------|
| <p>Insert pin mating view (Part E)</p> | Pinout clockwise | Pins | Sockets | |
| | Insert with solder contacts..... | 7.001.981.103 | 7.001.981.104 | |
| | Insert without contacts | 7.003.981.101 | 7.003.981.102 | |
| <p>Insert socket mating view (Part P)</p> | Insert with dip solder contacts | | | |
| | Length 3,5 mm | 7.001.981.107 | | |
| | Insert with dip solder contacts | | | |
| | Length 10 mm | 7.001.981.127 | 7.001.981.108 | |
| | Insert with dip solder contacts | | | |
| | Length 17 mm | 7.001.981.137 | 7.001.981.118 | |
| <p>The correct dimension of a connector with dip solder contacts depends on the particular type of housing.</p> <p>Coding possibilities N, S, H, X and Y (see page 101)</p> | | | | |



| Inserts 9-pole (8 + 1) | | Type | Part Number | Part Number |
|---|----------------------------------|---------------|----------------|-------------|
| <p>Insert pin mating view (Part P)</p> | Pinout counter-clockwise | Pins | Sockets | |
| | Insert with solder contacts..... | 7.002.981.103 | 7.002.981.104 | |
| | Insert without contacts | 7.004.981.101 | 7.004.981.102 | |
| <p>Insert socket mating view (Part E)</p> | Insert with dip solder contacts | | | |
| | Length 3,5 mm | 7.002.981.107 | | |
| | Insert with dip solder contacts | | | |
| | Length 10 mm | 7.002.981.127 | 7.002.981.108 | |
| | Insert with dip solder contacts | | | |
| | Length 17 mm | 7.002.981.137 | 7.002.981.118 | |
| <p>The correct dimension of a connector with dip solder contacts depends on the particular type of housing.</p> <p>Coding possibilities N, S, H, X and Y (see page 101)</p> | | | | |





Inserts / Pinouts

| Inserts 12-pole | | Type | Part Number | Part Number |
|---|--|---------------|----------------|---------------|
| <p>Insert pin mating view (Part E)</p> <p>Insert socket mating view (Part P)</p> | Pinout clockwise | Pins | Sockets | |
| | Insert with solder contacts..... | 7.001.912.103 | ..... | 7.001.912.104 |
| | Insert with solder contacts +PE (Pos.9)..... | 7.001.912.113 | ..... | 7.001.912.114 |
| | Insert without contacts | 7.003.912.101 | ..... | 7.003.912.102 |
| | Insert without contacts +PE (Pos.9) | 7.003.912.111 | ..... | 7.003.912.112 |
| | Insert with dip solder contacts | | | |
| | Length 3,5 mm | 7.001.912.107 | ..... |  |
| | Insert with dip solder contacts | | | |
| | Length 10 mm | 7.001.912.127 | ..... | 7.001.912.108 |
| | Insert with dip solder contacts | | | |
| | Length 17 mm | 7.001.912.137 | ..... | 7.001.912.118 |
| | <p>The correct dimension of a connector with dip solder contacts depends on the particular type of housing.</p> <p>Coding possibilities N, S, H, X, Y and Z (see page 101)</p> | | | |

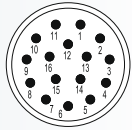


| Inserts 12-pole | | Type | Part Number | Part Number |
|---|--|---------------|----------------|---------------|
| <p>Insert pin mating view (Part P)</p> <p>Insert socket mating view (Part E)</p> | Pinout counter-clockwise | Pins | Sockets | |
| | Insert with solder contacts..... | 7.002.912.103 | ..... | 7.002.912.104 |
| | Insert with solder contacts +PE (Pos.9)..... | 7.002.912.113 | ..... | 7.002.912.114 |
| | Insert without contacts | 7.004.912.101 | ..... | 7.004.912.102 |
| | Insert without contacts +PE (Pos.9) | 7.004.912.111 | ..... | 7.004.912.112 |
| | Insert with dip solder contacts | | | |
| | Length 3,5 mm | 7.002.912.107 | ..... |  |
| | Insert with dip solder contacts | | | |
| | Length 10 mm | 7.002.912.127 | ..... | 7.002.912.108 |
| | Insert with dip solder contacts | | | |
| | Length 17 mm | 7.002.912.137 | ..... | 7.002.912.118 |
| | <p>The correct dimension of a connector with dip solder contacts depends on the particular type of housing.</p> <p>Coding possibilities N, S, H, X, Y and Z (see page 101)</p> | | | |

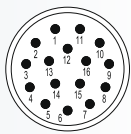




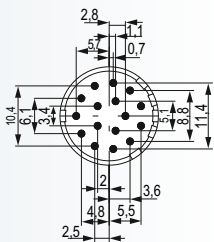
Inserts 16-pole



Insert pin mating view (Part E)



Insert socket mating view (Part P)



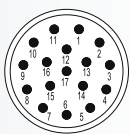
| Type | Part Number | Part Number |
|----------------------------------|---------------|----------------|
| Pinout clockwise | Pins | Sockets |
| Insert with solder contacts..... | 7.001.916.103 | 7.001.916.104 |
| Insert without contacts | 7.003.916.101 | 7.003.916.102 |
| Insert with dip solder contacts | | |
| Length 3,5 mm | 7.001.916.107 | |
| Insert with dip solder contacts | | |
| Length 10 mm | 7.001.916.127 | 7.001.916.108 |
| Insert with dip solder contacts | | |
| Length 17 mm | 7.001.916.137 | 7.001.916.118 |

The correct dimension of a connector with dip solder contacts depends on the particular type of housing.

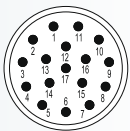
Coding possibilities N, S, H, X, Y and Z (see page 101)



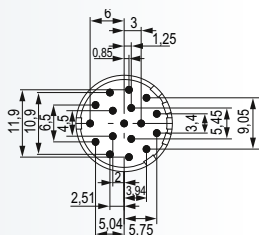
Inserts 17-pole



Insert pin mating view (Part E)



Insert socket mating view (Part P)



| Type | Part Number | Part Number |
|----------------------------------|---------------|----------------|
| Pinout clockwise | Pins | Sockets |
| Insert with solder contacts..... | 7.001.917.103 | 7.001.917.104 |
| Insert without contacts | 7.003.917.101 | 7.003.917.102 |
| Insert with dip solder contacts | | |
| Length 3,5 mm | 7.001.917.107 | |
| Insert with dip solder contacts | | |
| Length 10 mm | 7.001.917.127 | 7.001.917.108 |
| Insert with dip solder contacts | | |
| Length 17 mm | 7.001.917.137 | 7.001.917.118 |

The correct dimension of a connector with dip solder contacts depends on the particular type of housing.

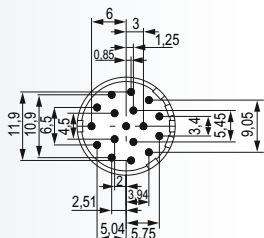
Coding possibilities N, S, H, X, Y and Z (see page 101)



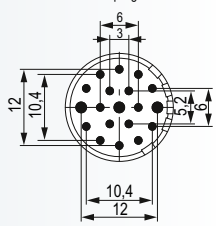


Inserts / Pinouts

| Inserts 17-pole | | Type | Part Number | Part Number |
|--|--|----------------------------------|---------------|----------------|
| <p>Insert pin mating view (Part P)</p> | <p>Pinout counter-clockwise</p> | Pins | | Sockets |
| | | Insert with solder contacts..... | 7.002.917.103 | 7.002.917.104 |
| <p>Insert socket mating view (Part E)</p> | <p>Pinout counter-clockwise</p> | Insert without contacts | 7.004.917.101 | 7.004.917.102 |
| | | Insert with dip solder contacts | | |
| | | Length 3,5 mm | 7.002.917.107 | |
| | | Insert with dip solder contacts | | |
| | | Length 10 mm | 7.002.917.127 | 7.002.917.108 |
| | | Insert with dip solder contacts | | |
| | | Length 17 mm | 7.002.917.137 | 7.002.917.118 |
| <p>The correct dimension of a connector with dip solder contacts depends on the particular type of housing.</p> <p>Coding possibilities N, S, H, X, Y and Z (see page 101)</p> | | | | |



| Inserts 19-pole | | Type | Part Number | Part Number |
|---|--------------------------------|--|---------------|----------------|
| <p>Insert pin mating view (Part E)</p> | <p>Pinout clockwise</p> | Pins | | Sockets |
| | | Insert with solder contacts..... | 7.001.919.103 | 7.001.919.104 |
| <p>Insert socket mating view (Part P)</p> | <p>Pinout clockwise</p> | Insert with solder contacts +PE (Pos.12)..... | 7.001.919.113 | 7.001.919.114 |
| | | Insert with solder contacts + PE (Pos.12) 1,5 mm elongated ... | 7.001.919.123 | |
| | | Insert without contacts | 7.003.919.101 | 7.003.919.102 |
| | | Insert without contacts +PE (Pos.12) | 7.003.919.111 | 7.003.919.112 |
| | | Insert with dip solder contacts | | |
| | | Length 3,5 mm | 7.001.919.107 | |
| | | Insert with dip solder contacts | | |
| | | Length 10 mm | 7.001.919.127 | 7.001.919.108 |
| | | Insert with dip solder contacts | | |
| | | Length 17 mm | 7.001.919.137 | 7.001.919.118 |
| <p>The correct dimension of a connector with dip solder contacts depends on the particular type of housing.</p> <p>Coding possibilities N, S, H, X and Y (see page 101)</p> | | | | |





| Contact Arrangement | Number of Poles | Required Contacts |
|---------------------|-----------------|--|
| | 6 | 6 x 2 mm |
| | 7 | 7 x 2 mm |
| | 9 (8+1) | 8 x 1 mm 1 x 2 mm |
| | 12 | 12 x 1 mm |
| | 16 | 16 x 1 mm |
| | 17 | 17 x 1 mm |
| | 19 | 16 x 1 mm 3 x 1,5 mm |
| | 10 | Housings and contacts 10-pole, see chapter „M 23 Power, M 23 Hybrid“, page 130 – 136 |

For the M23 crimp insert with 1 mm contacts can be used stamped crimp contact.



▶ 102/103

| Coding | Number of Poles | Coding Possibilities |
|--------|-----------------|----------------------|
| | 6-pole | N, S, H, X, Y and Z |
| | 7-pole | N, S, H, X and Y |
| | 9-pole | N, S, H, X and Y |
| | 12-pole | N, S, H, X, Y and Z |
| | 16-pole | N, S, H, X, Y and Z |
| | 17-pole | N, S, H, X, Y and Z |
| | 19-pole | N, S, H, X and Y |

As standard, coding groove N is opened. To use other codings, please remove the coding barrier.





Contacts

| Contacts | Type | Crimp Range | Part Number |
|----------|-------------------------------------|---|---------------|
| | Crimp pin 1 mm, machined..... | 0,08 – 0,56 mm ² (AWG 28 – 20) | 7.010.901.031 |
| | Crimp pin 1 mm, machined | 0,14 – 1 mm ² (AWG 26 – 17) | 7.010.901.001 |
| | Crimp pin 1 mm, machined..... | 0,75 – 1,5 mm ² (AWG 17 – 16) | 7.010.901.021 |
| | Crimp socket 1 mm, machined | 0,08 – 0,56 mm ² (AWG 28 – 20) | 7.010.901.012 |
| | Crimp socket 1 mm, machined | 0,34 – 1 mm ² (AWG 22 – 17) | 7.010.901.002 |
| | Crimp socket 1 mm, machined | 0,75 – 1,5 mm ² (AWG 17 – 16) | 7.010.901.022 |
| | Crimp pin 1 mm, stamped | 0,14 – 0,56 mm ² (AWG 26 – 20) | upon request |
| | Crimp socket 1 mm, stamped | 0,14 – 0,56 mm ² (AWG 26 – 20) | upon request |
| | Crimp pin 1,5 mm, machined | 0,14 – 1 mm ² (AWG 26 – 17) | 7.010.901.501 |
| | Crimp socket 1,5 mm, machined | 0,14 – 0,56 mm ² (AWG 26 – 20) | 7.010.901.512 |
| | Crimp socket 1,5 mm, machined | 0,56 – 1 mm ² (AWG 20 – 17) | 7.010.901.502 |



Contacts

| Contacts | Type | Crimp Range | Part Number |
|---|----------------------------------|--|---------------|
|  | Crimp pin 2 mm, machined..... | 0,75 – 2,5 mm ² (AWG 18 – 14) | 7.010.902.001 |
|  | Crimp socket 2 mm, machined..... | 0,75 – 2,5 mm ² (AWG 18 – 14) | 7.010.902.002 |

M12

M16

M23 PoE

M23 RJ45

M23 Signal

M27 Signal

M23 Power

M40 Power

INOX

Moulded Cordsets

Customized



Accessories

| Accessories | Type | Part Number |
|-------------|--|-------------|
| | Plastic protective cap for connectors with male thread .....7.000.900.101 with female thread .....7.000.900.102 | |
| | Brass protective cap for connectors with female thread .....7.010.900.103 ¹ | |
| | Brass protective cap for connectors with male thread .....7.010.900.102 | |
| | Brass protective cap with chain for connectors with female thread Length 70 mm .....7.010.9S0.703 ¹ Length 100 mm .....7.010.9S1.003 ¹ | |
| | Brass protective cap with chain for connectors with male thread Length 70 mm .....7.010.9S0.702 Length 100 mm .....7.010.9S1.002 | |
| | Assembly tool .....7.010.900.101 | |
| | Crimp tool for manual crimping of machined crimp contacts for signal connectors .....7.000.900.904 | |



¹ no compatibility with TWILOCK

| Accessories | Type | Part Number |
|---|--|---|
|  | Adaptor flange for Straight Connectors..... | 7.010.900.128 ¹ |
|  | Conduit adaptor Poleon DN 12 Poleon DN 14 Poleon DN 17 | 7.010.900.205 7.010.900.207 7.010.900.209 |
|  | Positioner for Crimp Tool DMC M22520 | 7.000.900.DMC |
|  | Locator for Crimp Tool DMC M22520 with positioner For HUMMEL Contact: 7.010.901.001, 7.010.901.501, 7.010.902.001, 7.010.901.031 | 7.000.9DM.C03 |
|  | Locator for Crimp Tool DMC M22520 with positioner For HUMMEL Contact: 7.010.901.012, 7.010.901.002, 7.010.901.512, 7.010.901.502, 7.010.902.002 | 7.000.9DM.C04 |
|  | Screw Tool, adjustable 0.5 – 1.7 Nm | 7.010.900.190 |
|  | Tool Adapter for tightening or loosening knurled nuts for M 23 | 7.010.900.192 |
|  | Crimping tool pneumatic crimping tool.....on request Crimping machine crimping machine to process turned contacts.....on request | on request on request |

¹ no compatibility with TWILOCK



Crimp Tool Setting for HUMMEL Crimp Contacts (Crimp Tool 7.000.900.904)

| Part Number | Crimp Contact | Cross Section (mm ²) | AWG | Crimp Tool Setting mm | Locator Setting |
|---------------|---|----------------------------------|--------|-----------------------|-----------------|
| 7.010.901.001 | Crimp pin 1 mm | 0,14 | AWG 26 | 0,70 | 1 |
| | | 0,25 | AWG 24 | 0,76 | |
| | | 0,34 | AWG 22 | 0,82 | |
| | | 0,50 | AWG 20 | 0,90 | |
| | | 0,75 | AWG 18 | 1,00 | |
| | | 1,00 | AWG 17 | 1,10 | |
| 7.010.901.012 | Crimp socket 1 mm (0,08 – 0,56 mm ²) | 0,08 | AWG 28 | 0,75 | 2 |
| | | 0,14 | AWG 26 | 0,78 | |
| | | 0,25 | AWG 24 | 0,82 | |
| | | 0,34 | AWG 22 | 0,86 | |
| | | 0,56 | AWG 20 | 0,90 | |
| 7.010.901.002 | Crimp socket 1 mm (0,34 – 1 mm ²) | 0,34 | AWG 22 | 0,77 | 2 |
| | | 0,56 | AWG 20 | 0,82 | |
| | | 0,75 | AWG 18 | 0,88 | |
| | | 1,00 | AWG 17 | 0,95 | |
| 7.010.901.501 | Crimp pin 1,5 mm | 0,14 | AWG 26 | 0,65 | 3 |
| | | 0,25 | AWG 24 | 0,68 | |
| | | 0,34 | AWG 22 | 0,72 | |
| | | 0,56 | AWG 20 | 0,81 | |
| | | 0,75 | AWG 18 | 0,95 | |
| | | 1,00 | AWG 17 | 1,07 | |
| 7.010.901.512 | Crimp socket 1,5 mm (0,14 – 0,56 mm ²) | 0,14 | AWG 26 | 0,70 | 2 |
| | | 0,25 | AWG 24 | 0,73 | |
| | | 0,34 | AWG 22 | 0,77 | |
| | | 0,56 | AWG 20 | 0,85 | |
| 7.010.901.502 | Crimp socket 1,5 mm (0,34 – 1 mm ²) | 0,34 | AWG 22 | 0,88 | 2 |
| | | 0,56 | AWG 20 | 0,95 | |
| | | 0,75 | AWG 18 | 1,05 | |
| | | 1,0 | AWG 17 | 1,13 | |
| 7.010.902.001 | Crimp pin 2 mm | 0,75 | AWG 18 | 1,25 | 4 |
| | | 1,0 | AWG 17 | 1,35 | |
| | | 1,5 | AWG 16 | 1,45 | |
| | | 2,5 | AWG 14 | 1,60 | |
| 7.010.902.002 | Crimp socket 2 mm | 0,75 | AWG 18 | 1,25 | 5 |
| | | 1,0 | AWG 17 | 1,35 | |
| | | 1,5 | AWG 16 | 1,45 | |
| | | 2,5 | AWG 14 | 1,60 | |



Crimp Tool Setting for HUMMEL Crimp Contacts (Crimp Tool 7.000.900.904)

| Part Number | Crimp Contact | Cross Section (mm ²) | AWG | Crimp Tool Setting mm | Locator Setting |
|---------------|-------------------|----------------------------------|-----|-----------------------|-----------------|
| 7.010.901.031 | Crimp pin 1 mm | 0,08 | 28 | 0,72 | 1 |
| | | 0,14 | 26 | 0,78 | |
| | | 0,25 | 24 | 0,82 | |
| | | 0,34 | 22 | 0,86 | |
| | | 0,56 | 20 | 0,90 | |
| 7.010.901.021 | Crimp pin 1 mm | 0,75 | 18 | 0,80 | 1 |
| | | 1,00 | 17 | 0,86 | |
| | | 1,50 | 16 | 0,95 | |
| 7.010.901.022 | Crimp socket 1 mm | 0,75 | 18 | 0,80 | 2 |
| | | 1,00 | 17 | 0,86 | |
| | | 1,50 | 16 | 0,95 | |



These values are only guidelines and actual conductor cross sections depend on manufacturer tolerances.



Crimp Tool for Signal Connectors M 23 / M 16

| Crimp Tool | Type | Part Number |
|------------|--|-------------|
| | Crimp Tool .....7.000.900.904 / 7.000.900.907 | |
| | Application The four indent crimp tool 7.000.900.904 / 7.000.900.907 has been developed for optimal crimping of machined contacts with diameters from 0.08 to 2.5 mm ² (28 through 14 AWG). | |
| | How to Crimp The reference table (S. 71 / 106) indicates the correct locator position to be selected and the crimp depth to be adjusted for the contact to be crimped. The contact is then inserted through the access hole of the tool on the opposite side of the locator. The contact is held in place by closing the handles to the first lock-in position thus preventing the contact from falling out of the tool and facilitating insertion of the wire into the contact. The precision ratchet assures consistently accurate crimping every time by forcing the tool to be closed all the way completing the crimping cycle before the tool can be opened again. | |
| | Exchange of the Locator The locator can be exchanged by removing the socket head cap screw with a socket wrench. It can then be disassembled from the hex head screw by turning it counter-clockwise. | |
| | | |



Crimp Tool



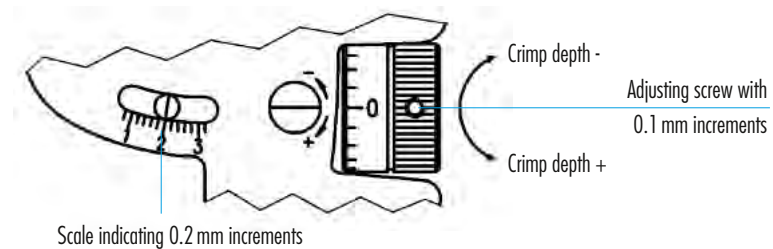
Adjustment of Crimp Depth

Crimp depth can be adjusted as follows:

Turn the adjusting screw clockwise for reducing the crimp depth and counter-clockwise for increasing the crimp depth.

Adjustment Increments:

- // 1 space on the adjusting screw $\hat{=}$ adjustment 1/100 mm
- // 1 full rotation of adjusting screw $\hat{=}$ adjustment by 0.2 mm (indication on the screw as well as on the rough scale)
- // 5 rotations of the adjusting screw $\hat{=}$ adjustment by 1 mm (indication on the scale)



Control of Crimp Depth

Crimp tool adjustment is done at the factory, but with frequent use, periodic calibration is recommended to insure accuracy. This is easily accomplished with a 1.0 mm \varnothing wire gauge as follows. A crimp depth of 1.0 mm is set by means of the adjusting screw (scale mark at „1“, screw mark at „0“ as shown in the fig. above) and the tool in the closed position.

After insertion of the gauge, there must be just enough space for moving the gauge inside the entry hole. If the opening is too small or too large to exactly match the gauge, the deviation (+/-) can be checked by the precision setting of the screw. Please contact the factory in case the deviation exceeds the tolerances specified by the contract manufacturer.

Maintenance and Repair

Keep the tool clean and properly stored when not in service. All pivot points need to be oiled regularly and the spring clips securing the bolts have to always be in place. For repair please send the tool back to the factory.



Assembly Instructions

Straight Connector, Male / Female Thread

1.

max. 25 mm
2.

4 mm
3.

crimp
4.

click
5.

click
6.

click
7.

code
8.

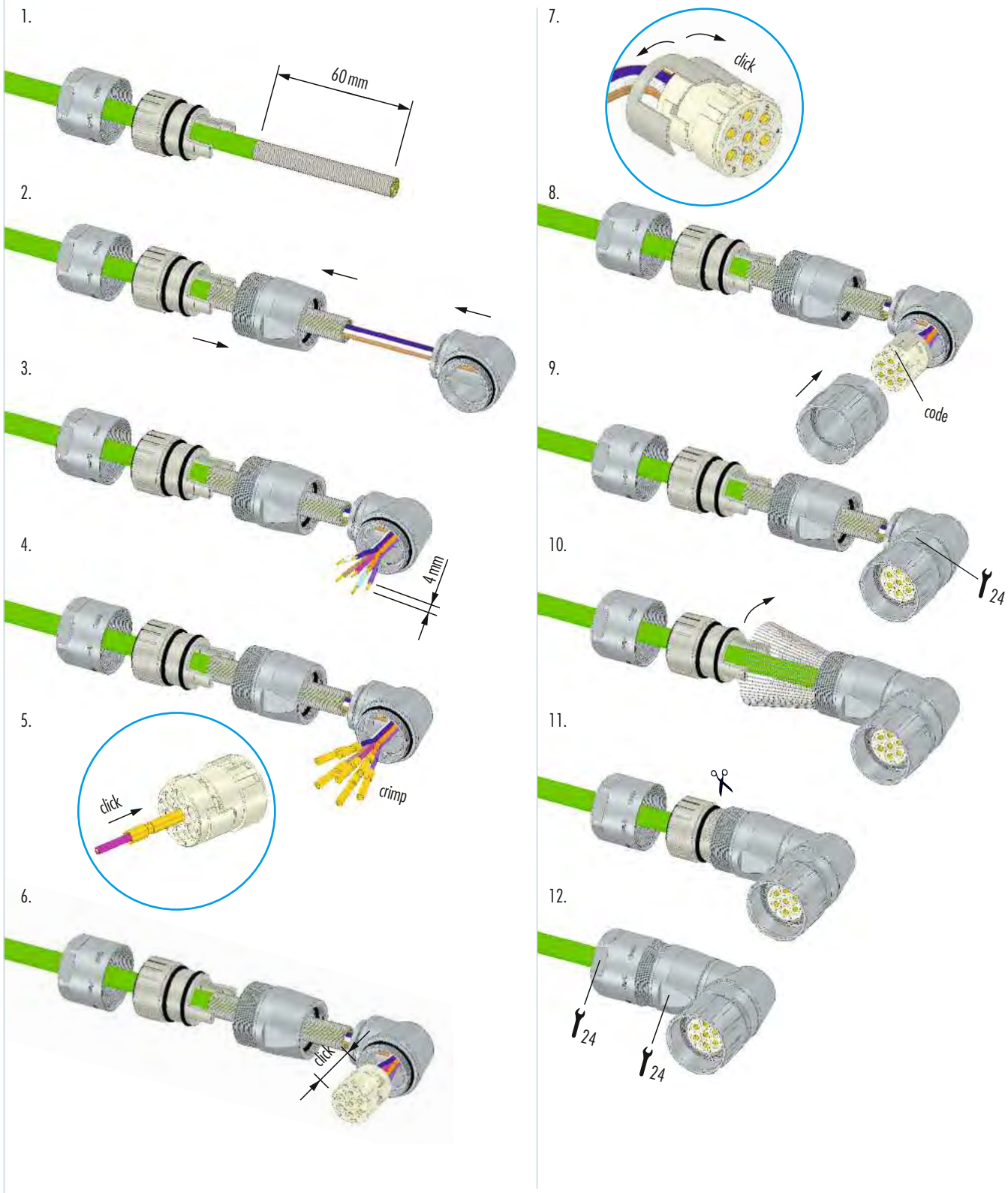
24 24

♀

♂



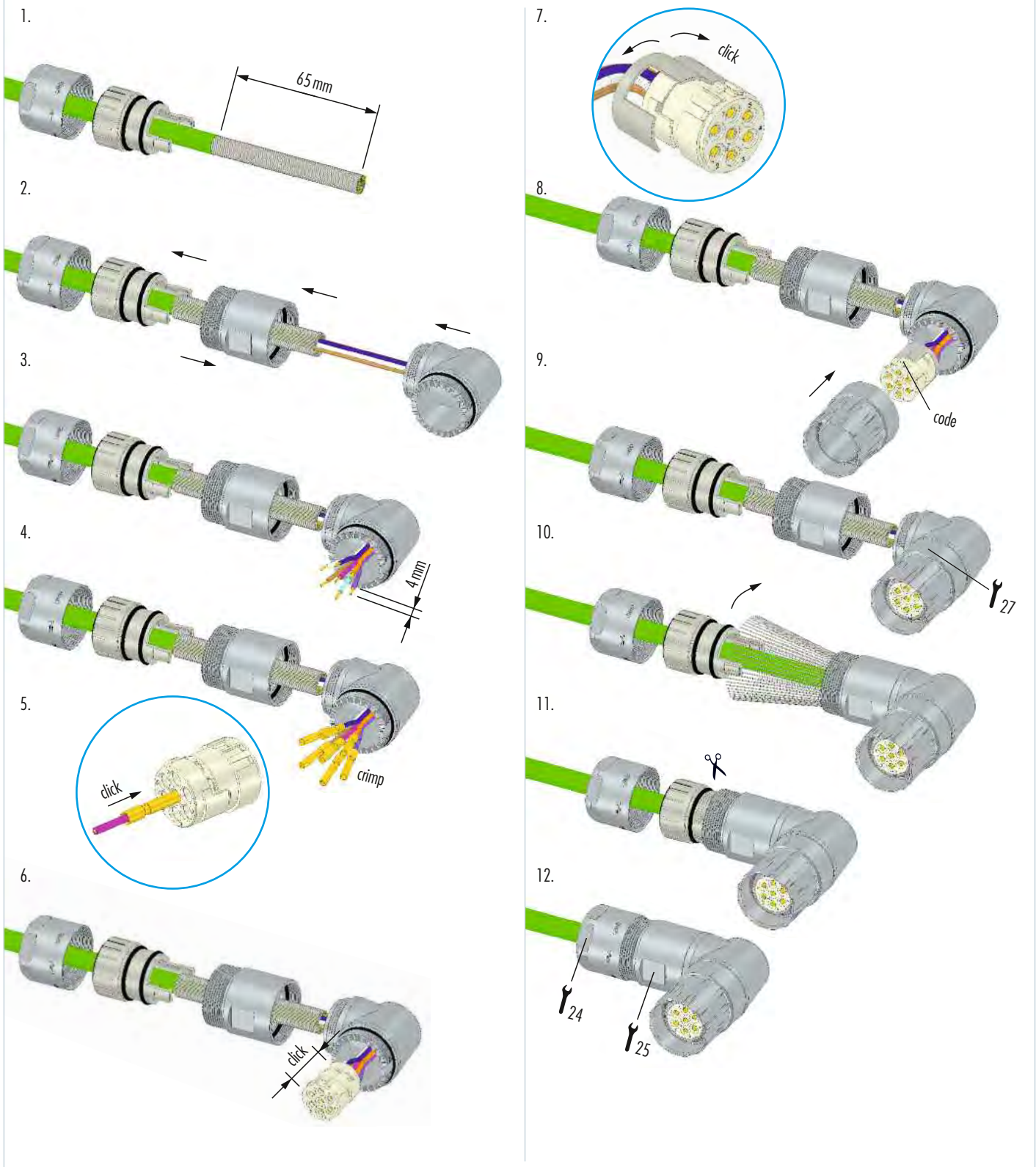
Right Angle Connectors, EMC





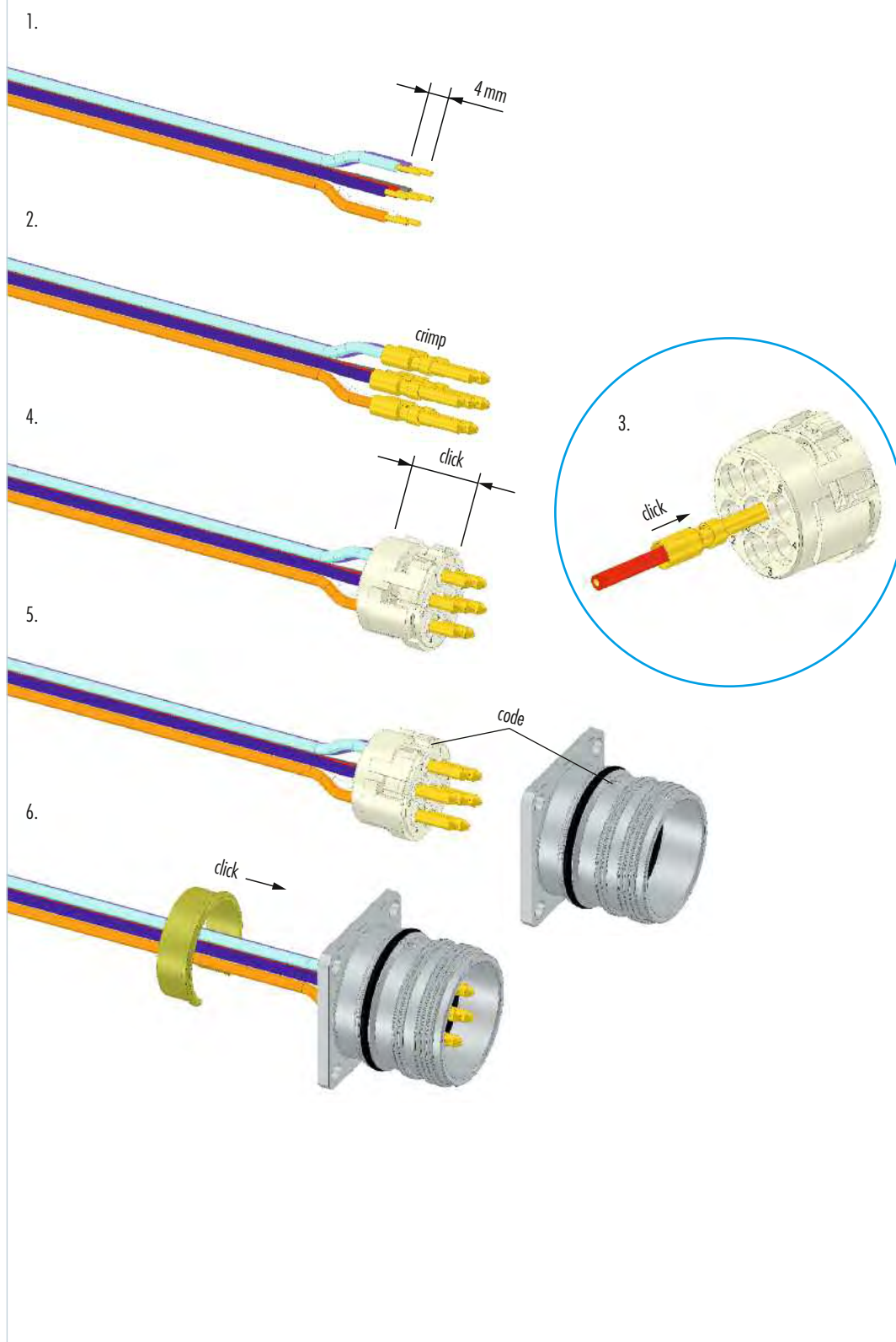
Assembly Instructions

Right Angle Connector, rotatable, EMC





Panel Connectors, Male Inserts

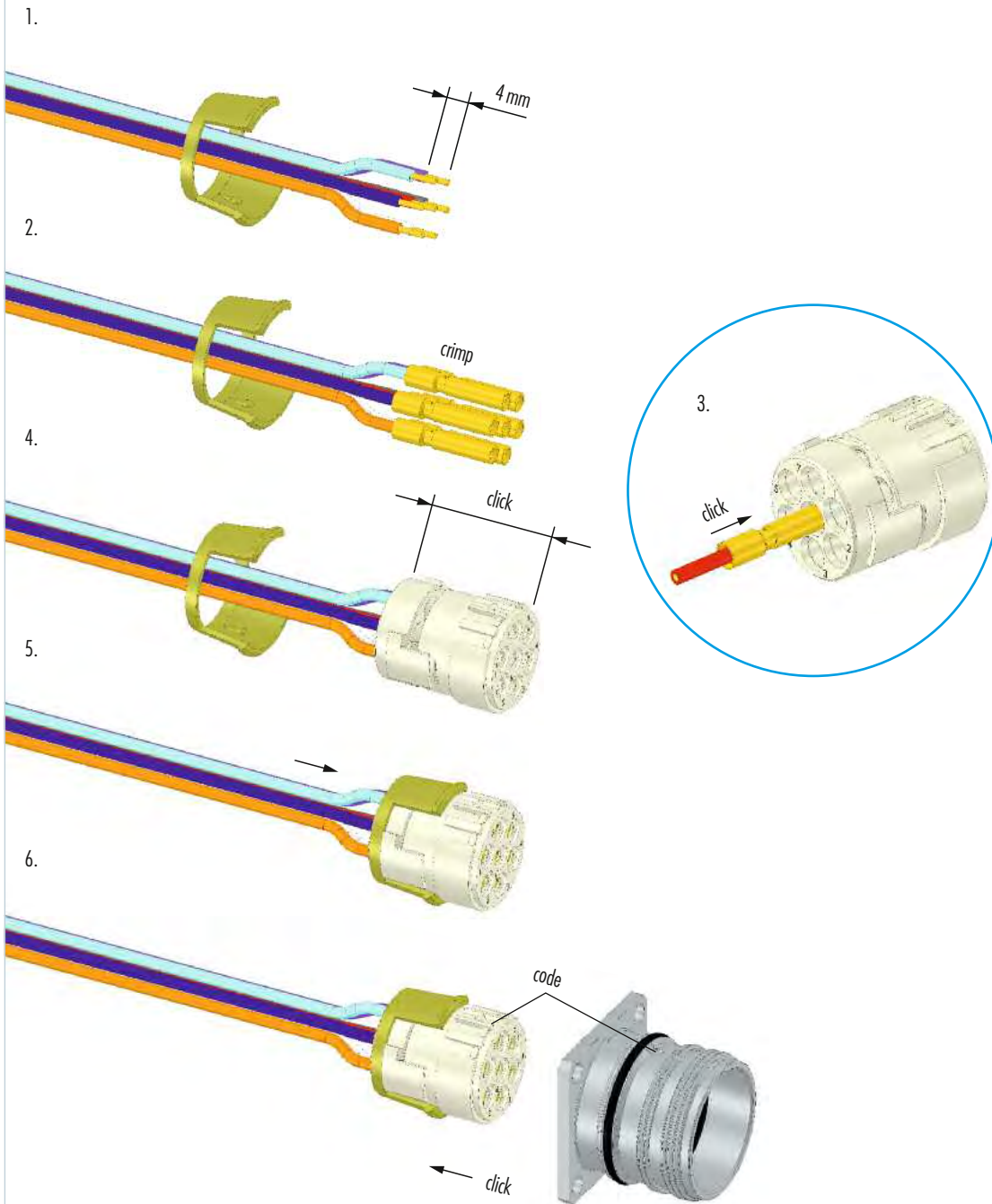


| |
|------------------|
| M 12 |
| M 16 |
| M 23 PoE |
| M 23 RJ 45 |
| M 23 Signal |
| M 27 Signal |
| M 23 Power |
| M 40 Power |
| INOX |
| Moulded Cordsets |
| Customized |



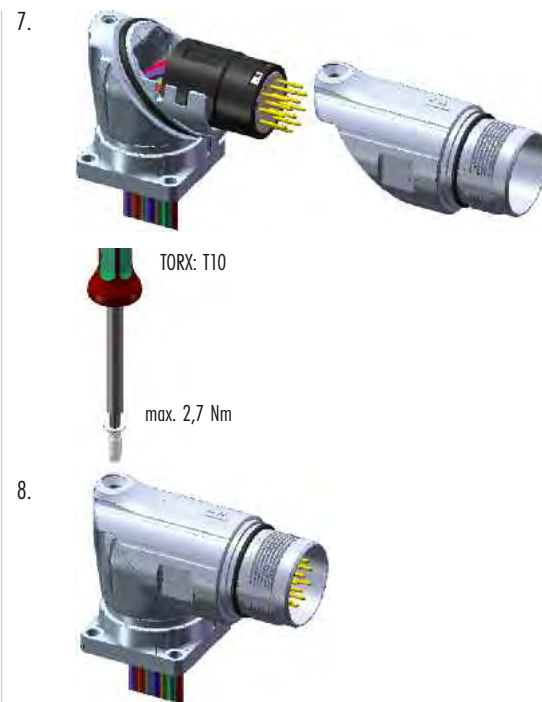
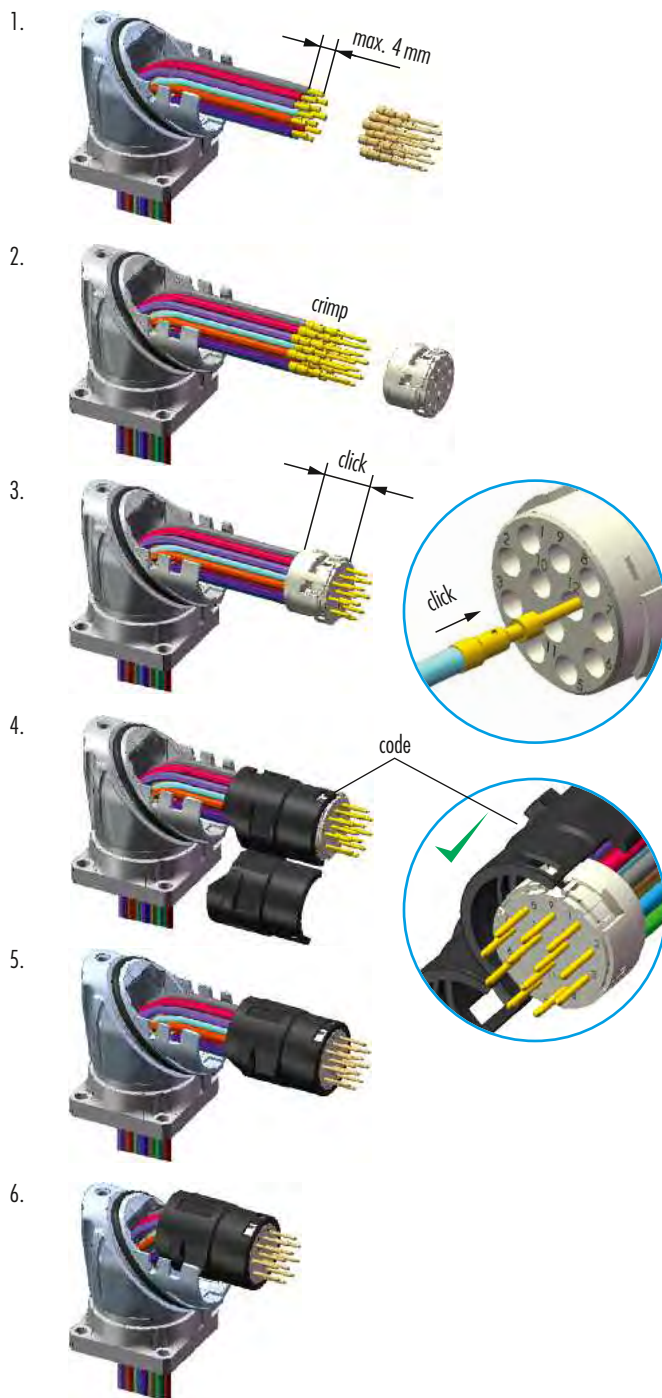
Assembly Instructions

Panel Connectors, Female Inserts





Right Angle Panel Connector

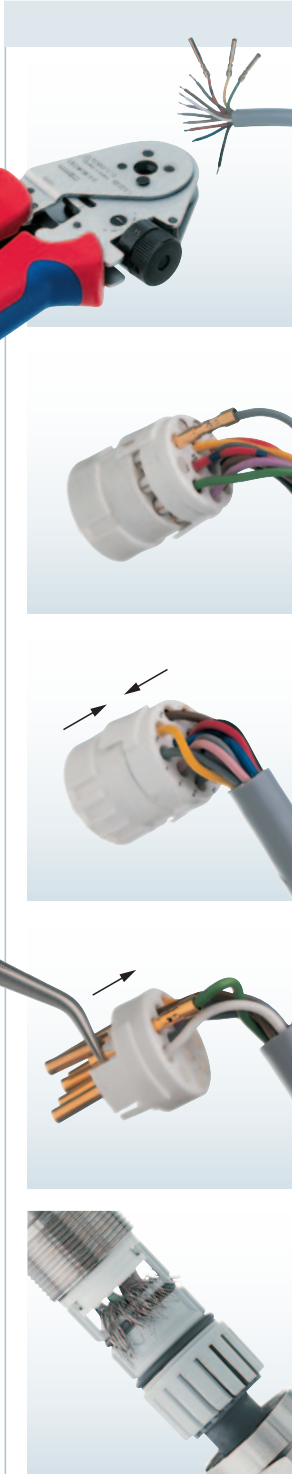


Bei Verwendung von TWILOCK-S oder Speedtec Stecker bitte O-Ring demontieren.





Crimping, Assembly and Disassembly of Contacts



Crimping

- // Remove conductor insulation 4 mm (.16") max.
- // Select appropriate Crimp tool setting
- // Insert Crimp contact into the positioner of the tool
- // Insert stripped end of conductor into the crimp opening of the contact
- // Squeeze handles of crimp tool together

Assembly

- // Open crimping jaws and remove contact
- // Pry open upper and lower insert approx. 3 mm (1/8") apart as shown
- // Insert the contact and conductor assembly into the desired location
- // Press upper and lower insert parts together

Interlock Contacts

- // press the upper and lower part of the insulator together

Disassembly

No special tools are needed to remove the crimp contacts from the insert.

- // Remove upper part of insert
- // With a pair of needle nose pliers, wiggle the contact and push it back through the lower part of insert
- // Insert contacts into new location and push until it snaps in position
- // Align the nose and groove of the upper and lower part of insert and press together

Shielding

- // Assemble strain relief insert with insert
- // Fold stranding of the shield back over the first O-Ring of the strain relief insert
- // Cut back the overextending braid



The stranding of the shield is not allowed to touch the second O-Ring. Otherwise the assembly may not be proof.

M 27 SIGNAL CONNECTORS

M 27 signal connectors of HUMMEL AG are available in 26- or 28 pole type. It can be seen at the high protection class (IP 67) and the large temperature range (up to + 125 °C) of these connectors.

- // M 27 connectors, male and female thread
- // Panel connectors
- // Large selection of accessories



Product overview

Housings ▶ 120



Inserts ▶ 121



Accessories ▶ 123



| Mechanical Data | Materials and Technical Data |
|-------------------------------------|--|
| Housing | Copper-Zinc alloy Die Cast |
| Housing surface | Nickel plated other surface upon request |
| Inserts (for contacts) | Thermoplastic Polyamid PA 6 (Nylon 6/6), PBT Fire protection class V-0 |
| Contacts | Brass Alloy |
| Contact surface at point of contact | Nickel and gold plated (0,25 µm) |
| Minimum mating cycles | 50 |
| Seals / O-Rings | Buna-N standard optional Viton® (FPM / FKM) (Viton is a registered trademark of DuPont) |
| Temperature range | -40 °C – 125 °C (-40 °F – 257 °F) |
| Type of contacts | Crimp, solder, dip-solder (PCB) |
| Protection | IP 67 per EN 60 529 (connected), NEMA 4x |
| Cable diameter range | 7 – 17 mm (.28 – .67") |

| Electrical Data | | |
|---|--------------------|--------------------|
| Number of positions | 26 | 28 |
| Number of contacts | 26 | 28 |
| Contact-Ø [mm] | 1 | 1 |
| Nominal current ¹⁾ [A] | 8 | 8 |
| Nominal voltage ²⁾ [V~] | 150 | 150 |
| Test voltage (Breakdown voltage) ³⁾ [V~] | 1500 | 1500 |
| Insulation resistance [Ω] | > 10 ¹² | > 10 ¹² |
| Max. contact resistance [mΩ] | 3 | 3 |
| Degree of Protection ⁴⁾ | 3 | 3 |

^{1), 2), 3), 4)} See Technical Information page 18



Housings

Straight Connector, Female Thread

| Cable-Ø | Part Number |
|-------------------------|---------------|
| 7 – 12 mm (.28 – .47") | 7.110.500.000 |
| 11 – 17 mm (.43 – .67") | 7.110.600.000 |

Straight Connector, Male Thread

| Cable-Ø | Part Number |
|-------------------------|---------------|
| 7 – 12 mm (.28 – .47") | 7.210.500.000 |
| 11 – 17 mm (.43 – .67") | 7.210.600.000 |

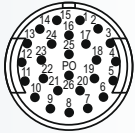
Panel Connector, Male Thread, front mounting

| Type | Part Number |
|------------------|---------------|
| 4 x holes 3,2 mm | 7.410.700.000 |

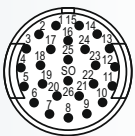
Housing without inserts and contacts



Inserts 26-pole



Insert pin mating view



Insert socket mating view

| Type | Part Number | Part Number |
|----------------------------------|--------------------|--------------------|
| Pinout clockwise | Pins | Sockets |
| Insert with solder contacts..... | 7.001.926.103..... | 7.001.926.104..... |
| Insert without contacts..... | 7.003.926.101..... | 7.003.926.102..... |

Insert with dip solder contacts
 Length 10 mm7.001.926.127

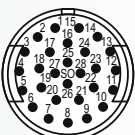
The correct dimension of a connector with dip solder contacts depends on the particular type of housing.



Inserts 28-pole



Insert pin mating view



Insert socket mating view

| Type | Part Number | Part Number |
|----------------------------------|--------------------|--------------------|
| Pinout clockwise | Pins | Sockets |
| Insert with solder contacts..... | 7.001.928.103..... | 7.001.928.104..... |







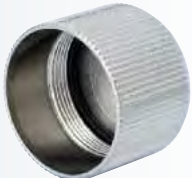


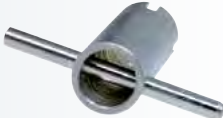
Required Contacts / Contacts

| Contact Arrangement | Number of Poles | Required Contacts |
|---------------------|-----------------|-------------------|
| | 26 | 26 x 1 mm |

| Contacts | Type | Crimp Range | Part Number |
|----------|----------------------------------|---|---------------|
| | Crimp pin 1 mm, machined..... | 0,14 – 0,56 mm ² (AWG 26 – 17) | 7.010.971.001 |
| | Crimp socket 1 mm, machined..... | 0,14 – 0,56 mm ² (AWG 26 – 17) | 7.010.971.002 |



Accessories

| Accessories | Type | Part Number |
|---|--|---------------------|
|  | Plastic protective cap for connectors with male thread | 7.000.980.167 |
| | with female thread | 7.000.980.168 |
|  | Brass protective cap for connectors with female thread | 7.010.900.169 |
| | Brass protective cap with chain for connectors with female thread Length 70 mm | 7.010.950.707 |
|  | Brass protective cap for connectors with male thread | 7.010.900.170 |
| | Brass protective cap with chain for connectors with male thread Length 70 mm | 7.010.950.708 |
|  | Crimp tool for manual crimping of machined crimp contacts Works with contacts for power or signal | 7.000.900.901 / 904 |
| |  | |
|  | Assembly tool | 7.010.900.110 |



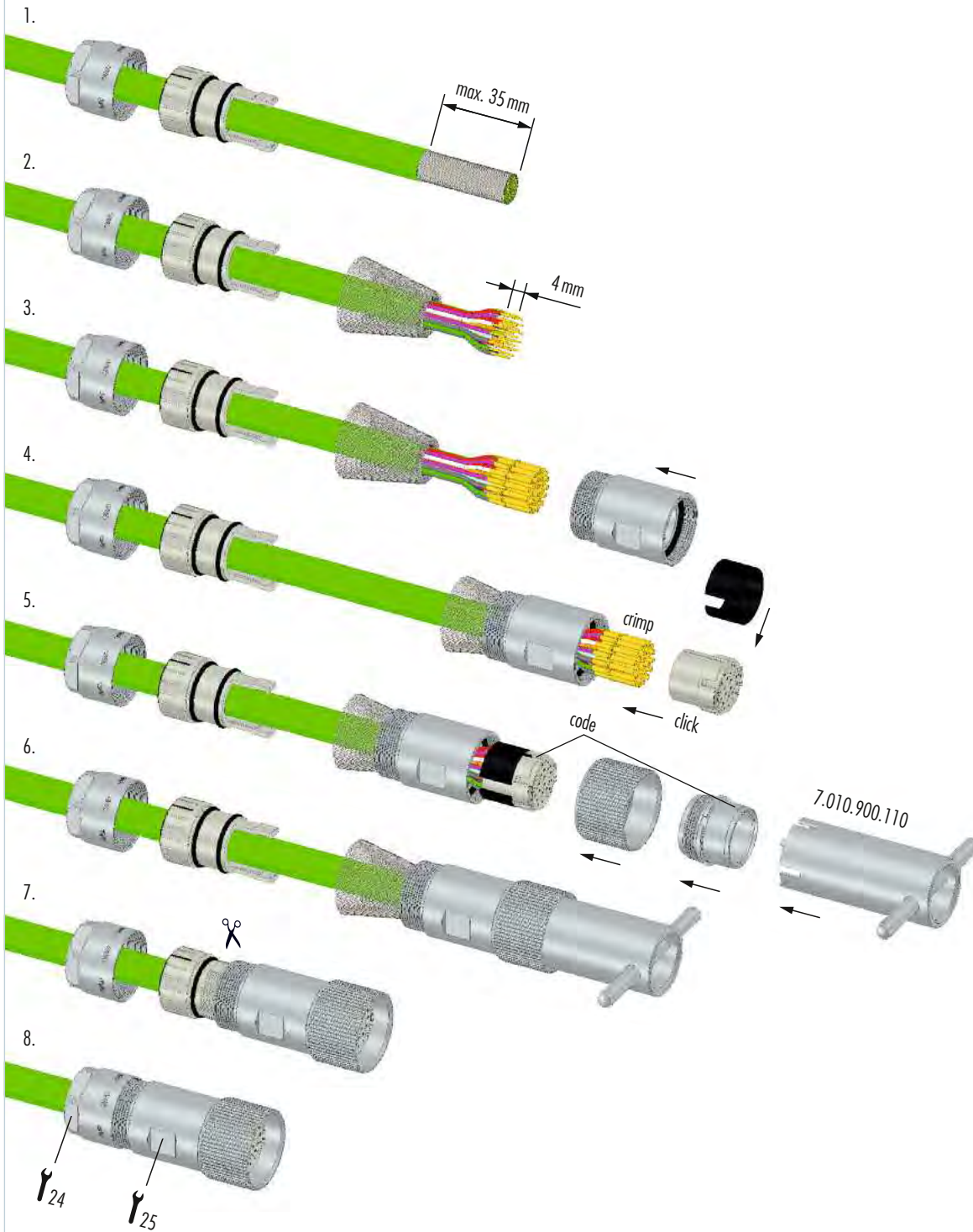
Crimp Tool Setting for HUMMEL Crimp Contacts (Crimp Tool 7.000.900.901)

| Part Number | Crimp Contact | Cross Section (mm ²) | AWG | Crimp Tool Setting mm | Locator Setting |
|---------------|------------------------|----------------------------------|-----|-----------------------|-----------------|
| 7.010.971.001 | Crimp pin 1 mm, M27 | 0,14 | 26 | 0,68 | 11 |
| | | 0,22 | 24 | 0,70 | 11 |
| | | 0,38 | 22 | 0,72 | 11 |
| | | 0,56 | 20 | 0,74 | 11 |
| 7.010.971.002 | Crimp socket 1 mm, M27 | 0,14 | 26 | 0,68 | 12 |
| | | 0,22 | 24 | 0,70 | 12 |
| | | 0,38 | 22 | 0,72 | 12 |
| | | 0,56 | 20 | 0,74 | 12 |

These values are only guidelines and actual conductor cross sections depend on manufacturer tolerances.



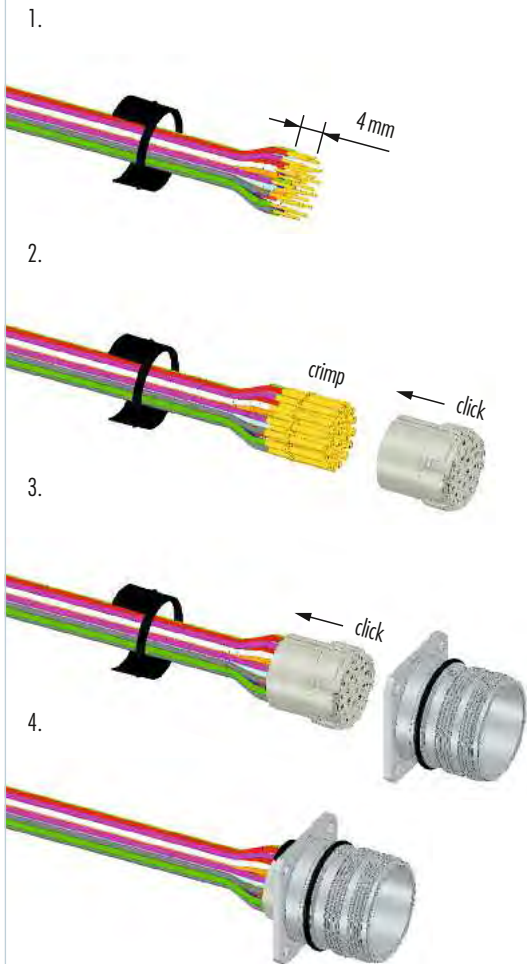
Straight Connector, Female Thread





Assembly Instructions

Panel Connector



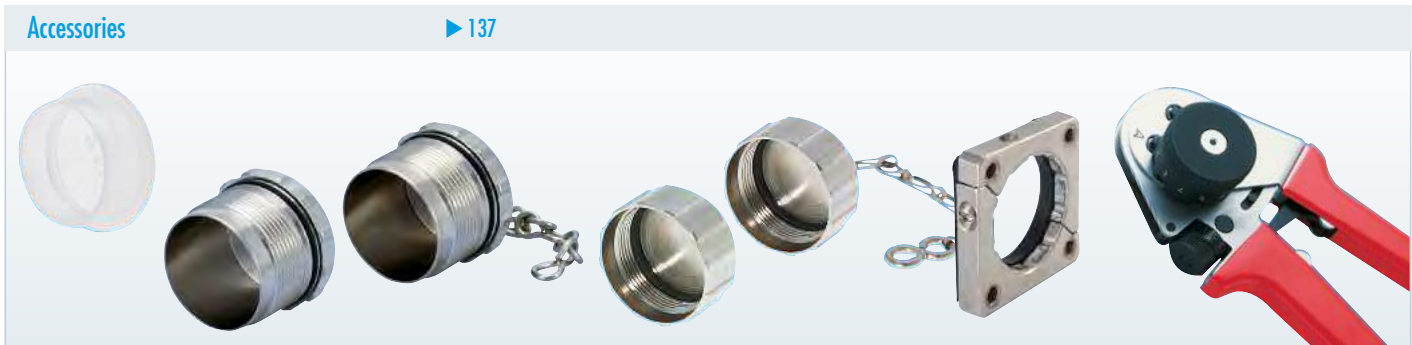
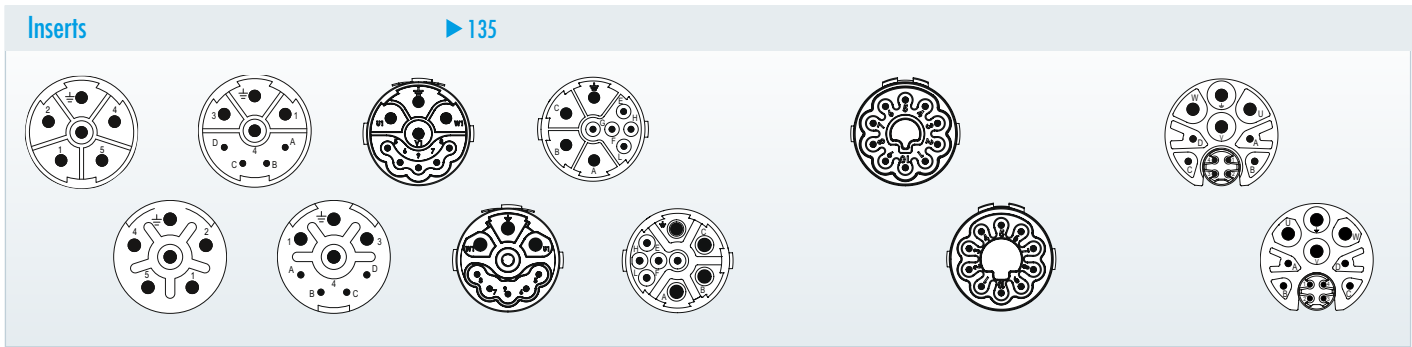
M 23 POWER, M 23 HYBRID

The classical M 23 Power connector is able to cover a large range of applications. This connector meets almost every challenge, because it can be used with 6-, 8- or 9-pole inserts and the power data goes up to 28 A / 600 V.

- // High power transmission
- // Screw lock or TWILOCK/TWILOCK-S quick release fastener
- // Numerous housing types



Product overview



| Mechanical Data | Materials and Technical Data |
|-------------------------------------|--|
| Housing | Copper-Zinc alloy Die Cast |
| Housing surface | Nickel plated other surface upon request |
| Inserts (for contacts) | Thermoplastic Polyamid PA 6 (Nylon 6/6), PBT Fire protection class V-0 |
| Contacts | Brass Alloy |
| Contact surface at point of contact | Nickel and gold plated (0,25 µm) |
| Minimum mating cycles | > 1000* |
| Seals / O-Rings | Buna-N standard optional Viton® (FKM / FPM) (Viton is a registered trademark of DuPont) |
| Temperature range | -40 °C – 125 °C (-40 °F – 257 °F) |
| Type of contacts | Crimp |
| Protection | IP 67 / IP 69K per EN 60 529 (connected), NEMA 4x |
| Cable diameter range | 7 – 17 mm (.28 – .67") |

* HUMMEL to HUMMEL connector

| Electrical Data | | | | | | |
|---|--------------------|--------------------|------|--------------------|------|--------------------|
| Number of positions | 5 + PE | 4 + 3 + PE | | 5 + 3 + PE | 10 | |
| Number of contacts | 6 | 4 | 4 | 5 | 4 | 10 |
| Contact-Ø [mm] | 2 | 1 | 2 | 1 | 2 | 1 |
| Nominal current ¹⁾ [A] | 28 | 8 | 28 | 10 | 28 | 10 |
| Nominal voltage ²⁾ [V~] Degree of Protection 3 ³⁾ | 600 | 300 | 600 | 250 | 600 | 160 |
| Test voltage (Breakdown voltage) ⁴⁾ [V~] | 4000 | 2500 | 4000 | 2500 | 4000 | 2500 |
| Insulation resistance [Ω] | > 10 ¹³ | > 10 ¹³ | | > 10 ¹³ | | > 10 ¹³ |
| Max. contact resistance [mΩ] | 3 | 3 | | 3 | | 3 |
| Number of positions | 4 + 4 + 3 + PE | | | | | |
| | Power | Signal | | Ethernet | | |
| Number of contacts | 4 | 4 | | 4 | | |
| Contact-Ø [mm] | 2 | 1 | | 0,6 | | |
| AWG [mm ²] | 0,75 – 4 | 0,14 – 1 | | 0,08 – 0,34 | | |
| Nominal current ¹⁾ [A] | 28 | 8 | | 2 | | |
| Nominal voltage ²⁾ [V~] Degree of Protection 3 ³⁾ | 600 | 300 | | 60 | | |
| Test voltage (Breakdown voltage) ⁴⁾ [V~] | 4000 | 2500 | | 500 | | |
| Insulation resistance [Ω] | > 10 ¹³ | > 10 ¹⁰ | | > 10 ⁶ | | |
| Max. contact resistance [mΩ] | < 3 | < 3 | | < 3 | | |

^{1), 2), 3), 4)} See Technical Information page 18



Housings

Straight Connector, Female Thread

| Cable-Ø | Part Number |
|-------------------------|---------------|
| 7 – 12 mm (.27 – .47") | 7.550.500.000 |
| 11 – 17 mm (.43 – .67") | 7.550.600.000 |

Straight Connector, Female Thread TWILOCK / TWILOCK-S*

| Cable-Ø | Part Number |
|-------------------------|---------------|
| 7 – 12 mm (.24 – .47") | 7.556.500.000 |
| 11 – 17 mm (.43 – .67") | 7.556.600.000 |

* intermateable with Speedtec

| | |
|-------------------------|---------------|
| 7 – 12 mm (.24 – .47") | 7.556.500.00S |
| 11 – 17 mm (.43 – .67") | 7.556.600.00S |

Straight Connector, Male Thread TWILOCK / TWILOCK-S*

| Cable-Ø | Part Number |
|-------------------------|---------------|
| 7 – 12 mm (.27 – .47") | 7.560.500.000 |
| 11 – 17 mm (.43 – .67") | 7.560.600.000 |

* intermateable with Speedtec

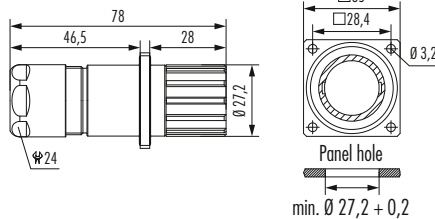
| | |
|-------------------------|----------------|
| 7 – 12 mm (.27 – .47") | 7.566.500.000S |
| 11 – 17 mm (.43 – .67") | 7.566.600.000S |

Panel Connector, Male Thread, with Strain Relief

| Cable-Ø | Part Number |
|---|---------------|
| 4 holes Ø 3,2 mm (.13"), front or rear mounting | |
| 7 – 12 mm (.27 – .47") | 7.683.500.000 |
| 11 – 17 mm (.43 – .67") | 7.683.600.000 |

Housing without inserts and contacts

Panel Connector, Female Thread, with Strain Relief



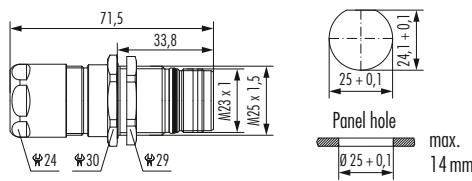
Cable-Ø

Part Number

| | |
|---|---------------|
| 4 holes $\varnothing 3,2$ mm (.13"), front or rear mounting | |
| 7 – 12 mm (.27 – .47") | 7.681.500.000 |
| 11 – 17 mm (.43 – .67") | 7.681.600.000 |



Panel Connector, Male Thread, with Strain Relief TWILOCK / TWILOCK-S*



Cable-Ø

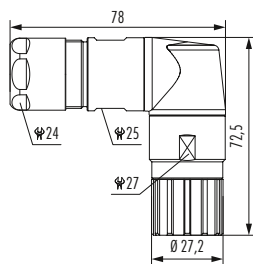
Part Number

| | |
|--|---------------|
| Single hole mounted, rear mounting, thread M25 x 1,5 | |
| 7 – 12 mm (.27 – .47") | 7.653.500.000 |
| 11 – 17 mm (.43 – .67") | 7.653.600.000 |
| * intermateable with Speedtec | |
| 7 – 12 mm (.27 – .47") | 7.653.500.00S |
| 11 – 17 mm (.43 – .67") | 7.653.600.00S |

Including jam nut M25 x 1,5



Right Angle Connector, Female Thread, rotatable



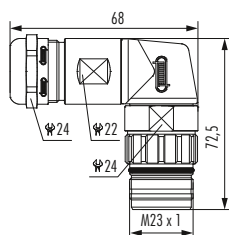
Cable-Ø

Part Number

| | |
|-------------------------|---------------|
| 7 – 12 mm (.27 – .47") | 7.576.500.000 |
| 11 – 17 mm (.43 – .67") | 7.576.600.000 |



Right Angle Connector, Male Thread, rotatable



Cable-Ø

Part Number

| | |
|-------------------------|----------------------------|
| 7 – 12 mm (.27 – .47") | 7.580.500.000 ¹ |
| 10 – 14 mm (.39 – .55") | 7.580.600.000 ¹ |




Housing without inserts and contacts

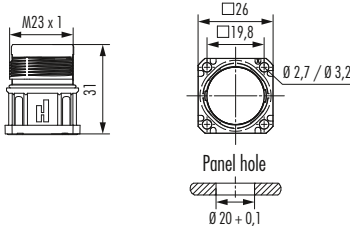
¹ no compatibility with TWILOCK




Housings

Panel Connectors, Male Thread, Front Mounting TWILOCK/TWILOCK-S*




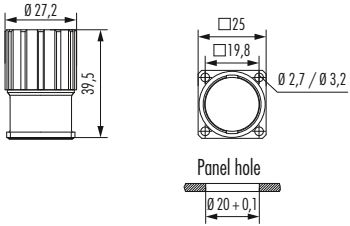


| Type | Part Number |
|--------------------------------------|---------------|
| 4 holes Ø 3,2 mm (.13") | 7.601.000.000 |
| 4 holes Ø 2,7 mm (.11") | 7.605.000.000 |
| * intermateable with Speedtec | |
| 4 x holes 3,2 mm, Flange 25x25 | 7.601.000.005 |
| 4 x holes 3,2 mm, Flange 28x28 | 7.601.100.005 |




Panel Connector with knurled Nut, Front Mounting




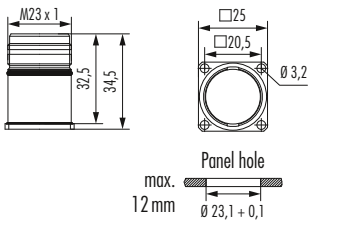


| Type | Part Number |
|-------------------------|---------------|
| 4 holes Ø 3,2 mm (.13") | 7.641.000.000 |
| 4 holes Ø 2,7 mm (.11") | 7.645.000.000 |




Panel Connector, Male Thread, Rear Mounting





| Type | Part Number |
|-----------------------------------|----------------------------|
| With anti-vibration O-Ring | |
| 4 holes Ø 3,2 mm (.13") | 7.661.000.000 ¹ |

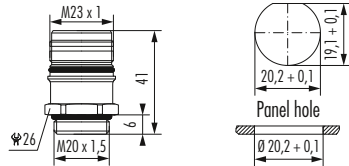




Housing without inserts and contacts

¹ No compatibility with TWILOCK

Panel Connector, Male Thread, Single Hole Mounted



Type

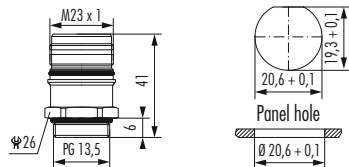
Part Number

Front mounting
Thread M 20 x 1,57.621.000.000¹

Option: jam nut M 20 x 1,5



Panel Connector, Male Thread, Single Hole Mounted



Type

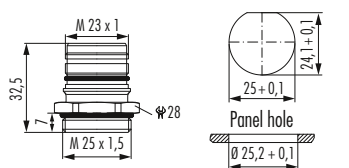
Part Number

Front mounting
Thread PG 13,57.623.000.000¹

Option: jam nut PG 13,5



Panel Connector, Male Thread, Single Hole Mounted



Type

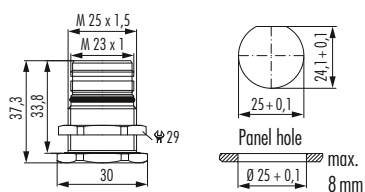
Part Number

Front mounting
Thread M 25 x 1,57.626.000.000

Option: jam nut M 25 x 1,5



Panel Connector, Male Thread, Single Hole Mounted



Type

Part Number

Rear mounting
Thread M 25 x 1,57.651.000.000

Including jam nut M 25 x 1,5



Housing without inserts and contacts

¹ No compatibility with TWILOCK



Housings

Right Angle Panel Connector, Male Thread

| Type | Part Number |
|-------------------------------------|---------------|
| 4 holes \varnothing 2,7 mm (.11") | 7.635.000.000 |

Optional: Flat gasket

Easy fastening with M2,5 x 10 mm or 4 x .39" long screws

Right Angle Panel Connector, Male Thread, rotatable

| Type | Part Number |
|-------------------------------------|---------------|
| 335° rotatable, single hole mounted | |
| Thread M20 x 1,5 | 7.636.000.000 |

Right Angle Panel Connector, Male Thread, rotatable TWILOCK/TWILOCK-S*

| Type | Part Number |
|-------------------------------------|---------------|
| 330° rotatable, single hole mounted | |
| 4 x holes 3,2 mm (.13") | 7.639.000.000 |
| Flange 25 x 25 mm | |
| * intermateable with Speedtec | |
| 4 x holes 3,2 mm (.13") | 7.639.000.00S |
| Flange 25 x 25 mm | |

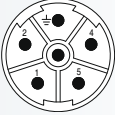
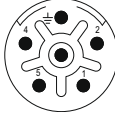
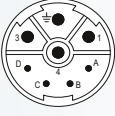
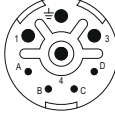


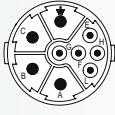
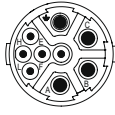

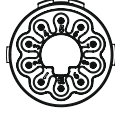


Right Angle Panel Connector, Male Thread, rotatable TWILOCK/TWILOCK-S*

| Type | Part Number |
|-------------------------------------|---------------|
| 330° rotatable, single hole mounted | |
| 4 x holes 3,2 mm (.13") | 7.639.100.000 |
| Flange 28 x 28 mm | |
| * intermateable with Speedtec | |
| 4 x holes 3,2 mm (.13") | 7.639.100.00S |
| Flange 28 x 28 mm | |

Housing without inserts and contacts



Required Contacts

| Contact Arrangement, Mating View | | Number of Poles | Required Contacts |
|---|--|---|--|
|  crimp pin |  crimp socket | 6 x crimp pins 2 mm 6 x crimp sockets 2 mm..... |7.084.951.121 ¹⁾7.084.951.122 ¹⁾ |
|  crimp pin |  crimp socket | 4 x crimp pins 1 mm, 4 x crimp pins 2 mm 4 x crimp sockets 1 mm, 4 x crimp sockets 2 mm..... |7.084.943.121.....7.084.943.122 |
|  crimp pin |  crimp socket | 5 x crimp pins 1 mm, 4 x crimp pins 2 mm 5 x crimp sockets 1 mm, 4 x crimp sockets 2 mm..... |7.084.953.101.....7.084.953.102 |
|  crimp pin |  crimp socket | 5 x crimp pins 1 mm, 4 x crimp pins 2 mm 5 x crimp sockets 1 mm, 4 x crimp sockets 2 mm..... |7.084.909.101.....7.084.909.102 |
|  crimp pin |  crimp socket | 10 x crimp pins 1 mm..... 10 x crimp sockets 1 mm..... |7.084.910.101.....7.084.910.102 |
|  crimp pin |  crimp socket | 4 x crimp pins 1 mm, 4 x crimp pins 2 mm, 4 x crimp pins 0,6 mm..... 4 x crimp sockets 1 mm, 4 x crimp sockets 2 mm, 4 x crimp sockets 0,6 mm..... |7.084.944.101.....7.084.944.102 |

¹⁾ under development









Contacts

| Contacts | Type | Crimp Range | Part Number |
|----------|--|--|---------------|
| | Crimp pin 0,6 mm, machined ¹ | 0,08 – 0,34 mm ² (AWG28 – AWG 22) | 7.010.980.641 |
| | Crimp socket 0,6 mm, machined ¹ | 0,08 – 0,34 mm ² (AWG28 – AWG 22) | 7.010.980.602 |
| | Crimp pin 1 mm, machined ² | 0,14 – 1 mm ² (AWG 26 – 17) | 7.010.941.001 |
| | Crimp pin 1 mm, machined ² | 0,75 – 1,5 mm ² (AWG 18 – 16) | 7.010.941.021 |
| | Crimp socket 1 mm, machined ² | 0,14 – 1 mm ² (AWG 26 – 17) | 7.010.941.002 |
| | Crimp socket 1 mm, machined ² | 0,75 – 1,5 mm ² (AWG 18 – 16) | 7.010.941.022 |
| | Crimp pin 2 mm, machined ² | 0,75 – 2,5 mm ² (AWG 18 – 14) | 7.010.942.001 |
| | Crimp pin 2 mm, machined ² | 2,5 – 4 mm ² (AWG 14 – 12) | 7.010.942.011 |
| | Crimp socket 2 mm, machined ² | 0,75 – 2,5 mm ² (AWG 18 – 14) | 7.010.942.002 |
| | Crimp socket 2 mm, machined ² | 2,5 – 4 mm ² (AWG 14 – 12) | 7.010.942.012 |



¹ passende Crimpzange 7.000.900.907, Crimpzangeneinstellung siehe Seite 71

² passende Crimpzange 7.000.900.901, Crimpzangeneinstellung siehe Seite 139

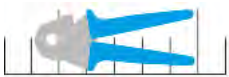
| Accessories | Type | Part Number |
|---|--|-------------|
|  | Plastic protective cap for connectors with male thread .....7.000.900.101 with female thread .....7.000.900.102 | |
|  | Brass protective cap for connectors with female thread .....7.010.900.183 ¹ | |
|  | Brass protective cap for connectors with male thread .....7.010.900.102 | |
|  | Brass protective cap with chain for connectors with female thread Length 70 mm .....7.010.950.783 ¹ Length 100 mm .....7.010.951.083 ¹ | |
|  | Brass protective cap with chain for connectors with male thread Length 70 mm .....7.010.950.702 Length 100 mm .....7.010.951.002 | |
|  | Crimp tool for manual crimping of machined crimp contacts Works with contacts for power or signal .....7.000.900.901 | |
|  | Adaptor flange for Straight Connectors .....7.010.900.128 ¹ | |

¹ No compatibility with TWILOCK



Accessories

| Accessories | Type | Part Number |
|-------------|---|---------------|
| | Adapter for Conduit Fittings | |
| | Poleon DN 12 | 7.010.900.205 |
| | Poleon DN 14 | 7.010.900.207 |
| | Poleon DN 17 | 7.010.900.209 |
| | Positioner for Crimp Tool | |
| | DMC M22520 | 7.000.900.DMC |
| | Locator for Crimp Tool DMC M22520 with positioner | 7.000.9DM.C06 |
| | For HUMMEL Contact: 7.010.941.001, 7.010.942.001, 7.010.942.011 | |
| | Locator for Crimp Tool DMC M22520 with positioner | 7.000.9DM.C07 |
| | For HUMMEL Contact: 7.010.941.002, 7.010.942.002, 7.010.942.012 | |
| | Disassembly Tool | |
| | for crimp contacts | 7.010.900.531 |
| | Screw Tool, adjustable 0.5 – 1.7 Nm | 7.010.900.190 |
| | Tool Adapter for tightening or loosening | |
| | knurled nuts for M23 | 7.010.900.192 |
| | Crimping tool | |
| | pneumatic crimping tool | on request |
| | Crimping machine | |
| | crimping machine to process turned contacts | on request |



Crimp Tool Setting for HUMMEL Crimp Contacts (Crimp Tool 7.000.900.901)

| Part Number | Crimp Contact | Cross Section (mm ²) | AWG | Crimp Tool Setting mm | Locator Setting |
|---------------|---------------------------|----------------------------------|-----|-----------------------|-----------------|
| 7.010.941.001 | Crimp pin (power) 1 mm | 0,14 | 26 | 0,75 | 1 |
| | | 0,25 | 24 | 0,8 | 1 |
| | | 0,35 | 22 | 0,85 | 1 |
| | | 0,50 | 20 | 1,03 | 1 |
| | | 0,75 | 18 | 1,08 | 1 |
| | | 1,0 | 17 | 1,13 | 1 |
| 7.010.941.021 | Crimp pin (power) 1 mm | 0,75 | 18 | 0,79 | 1 |
| | | 1 | 17 | 0,86 | 1 |
| | | 1,5 | 16 | 0,99 | 1 |
| 7.010.941.002 | Crimp socket (power) 1 mm | 0,14 | 26 | 0,75 | 2 |
| | | 0,25 | 24 | 0,8 | 2 |
| | | 0,35 | 22 | 0,85 | 2 |
| | | 0,50 | 20 | 0,89 | 2 |
| | | 0,75 | 18 | 0,95 | 2 |
| | | 1 | 17 | 1,02 | 2 |
| 7.010.941.022 | Crimp socket (power) 1 mm | 0,75 | 18 | 0,79 | 2 |
| | | 1 | 17 | 0,86 | 2 |
| | | 1,5 | 16 | 0,99 | 2 |
| 7.010.942.001 | Crimp pin (power) 2 mm | 0,75 | 18 | 1,3 | 7 |
| | | 1 | 17 | 1,4 | 7 |
| | | 1,5 | 16 | 1,55 | 7 |
| | | 2,5 | 14 | 1,7 | 7 |
| 7.010.942.011 | Crimp pin (power) 2 mm | 2,5 | 14 | 1,47 | 7 |
| | | 4 | 12 | 1,6 | 7 |
| 7.010.942.002 | Crimp socket (power) 2 mm | 0,75 | 18 | 1,3 | 8 |
| | | 1 | 17 | 1,4 | 8 |
| | | 1,5 | 16 | 1,55 | 8 |
| | | 2,5 | 14 | 1,7 | 8 |
| 7.010.942.012 | Crimp socket (power) 2 mm | 2,5 | 14 | 1,47 | 8 |
| | | 4 | 12 | 1,6 | 8 |



These values are only guidelines and actual conductor cross sections depend on manufacturer tolerances.



Crimp Tool for Power Connectors M 23

| Crimp Tool | Type | Part Number |
|------------|---|-------------|
| | Crimp Tool.....7.000.900.901 | |
| | Application The four indent crimp tool 7.000.900.901 has been developed for optimal crimping of machined contacts with diameters from 0.14 to 6.0 mm ² (26 through 10 AWG). | |
| | How to Crimp The reference table (S. 139) indicates the correct locator position to be selected and the crimp depth to be adjusted for the contact to be crimped. The contact is then inserted through the access hole of the tool on the opposite side of the locator. The contact is held in place by closing the handles to the first lock-in position thus preventing the contact from falling out of the tool and facilitating insertion of the wire into the contact. The precision ratchet assures consistently accurate crimping every time by forcing the tool to be closed all the way completing the crimping cycle before the tool can be opened again. | |
| | Exchange of the Locator The locator can be exchanged by removing the socket head cap screw with a socket wrench. It can then be disassembled from the hex head screw by turning it counter-clockwise. | |
| | | |

These values are only guidelines and actual conductor cross sections depend on manufacturer tolerances.



Crimp Tool



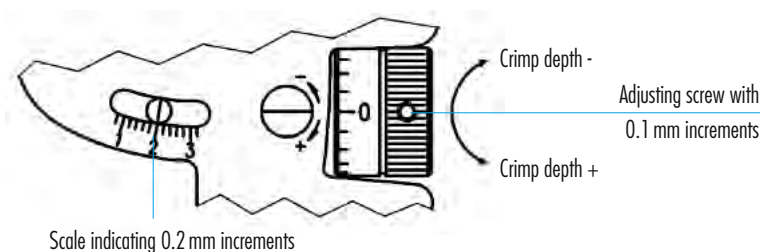
Adjustment of Crimp Depth

Crimp depth can be adjusted as follows:

Turn the adjusting screw clockwise for reducing the crimp depth and counter-clockwise for increasing the crimp depth.

Adjustment Increments

- // 1 space on the adjusting screw $\hat{=}$ adjustment by 0.01 mm
- // 1 full rotation of adjusting screw $\hat{=}$ adjustment by 0.2 mm (indication on the screw as well as on the rough scale)
- // 5 rotations of the adjusting screw $\hat{=}$ adjustment by 1 mm (indication on the scale)



Control of Crimp Depth

Crimp tool adjustment is done at the factory, but with frequent use, periodic calibration is recommended to insure accuracy. This is easily accomplished with a 2.0 mm \emptyset wire gauge as follows. A crimp depth of 2.0 mm is set by means of the adjusting screw (scale mark at „2“, screw mark at „0“ as shown in the fig. above) and the tool in the closed position.

After insertion of the gauge, there must be just enough space for moving the gauge inside the entry hole. If the opening is too small or too large to exactly match the gauge, the deviation (+/-) can be checked by the precision setting of the screw. Please contact the factory in case the deviation exceeds the tolerances specified by the contract manufacturer.

Maintenance and Repair

Keep the tool clean and properly stored when not in service. All pivot points need to be oiled regularly and the spring clips securing the bolts have to always be in place. For repair please send the tool back to the factory.



Assembly Instructions

Straight Connector, Female Thread

1. max. 37 mm

2. **⚠**
 x Contact \varnothing 1 mm = max. 4 mm stripping length
 Contact \varnothing 2 mm = max. 7 mm stripping length

3. crimp

4.

5. click

6. 1x PE click

7. **⚠** Shield is not allowed to touch second O-ring

8. 24 24



Straight Connector, Female Thread 4+3+PE/5+3+PE

1. max. 37 mm
2. x
3. crimp
4. click click
5. click
6. click
7. scissors
8. 24 25

! x Contact \varnothing 1 mm = max. 4 mm stripping length
 Contact \varnothing 2 mm = max. 7 mm stripping length

! Shield is not allowed to touch second O-ring

- M 12
- M 16
- M 23 PoE
- M 23 RJ45
- M 23 Signal
- M 27 Signal
- M 23 Power**
- M 40 Power
- INOX
- Moulded Cordsets
- Customized



Assembly Instructions

Hybrid Connector

- max. 40 mm
- max. 5 mm
- max. 7 mm
4x Power

max. 5 mm
4x Signal
- crimp (4x Power)

crimp (4x Signal)
- max. 30 mm
- max. 16 mm

max. 4 mm
4x Ethernet

⚠ For socket insert strip the shield to max. 12 mm instead of 16 mm
- crimp
4x Ethernet contacts
- crimp
4x Ethernet contacts
- TIP: Put metal ring over conductors between step 5 & 6
- Wrap copper tape to reach 5 mm outer diameter

Shielding braid and copper tape must at least 0,5 mm protrude over crimp area

7.000.900.912

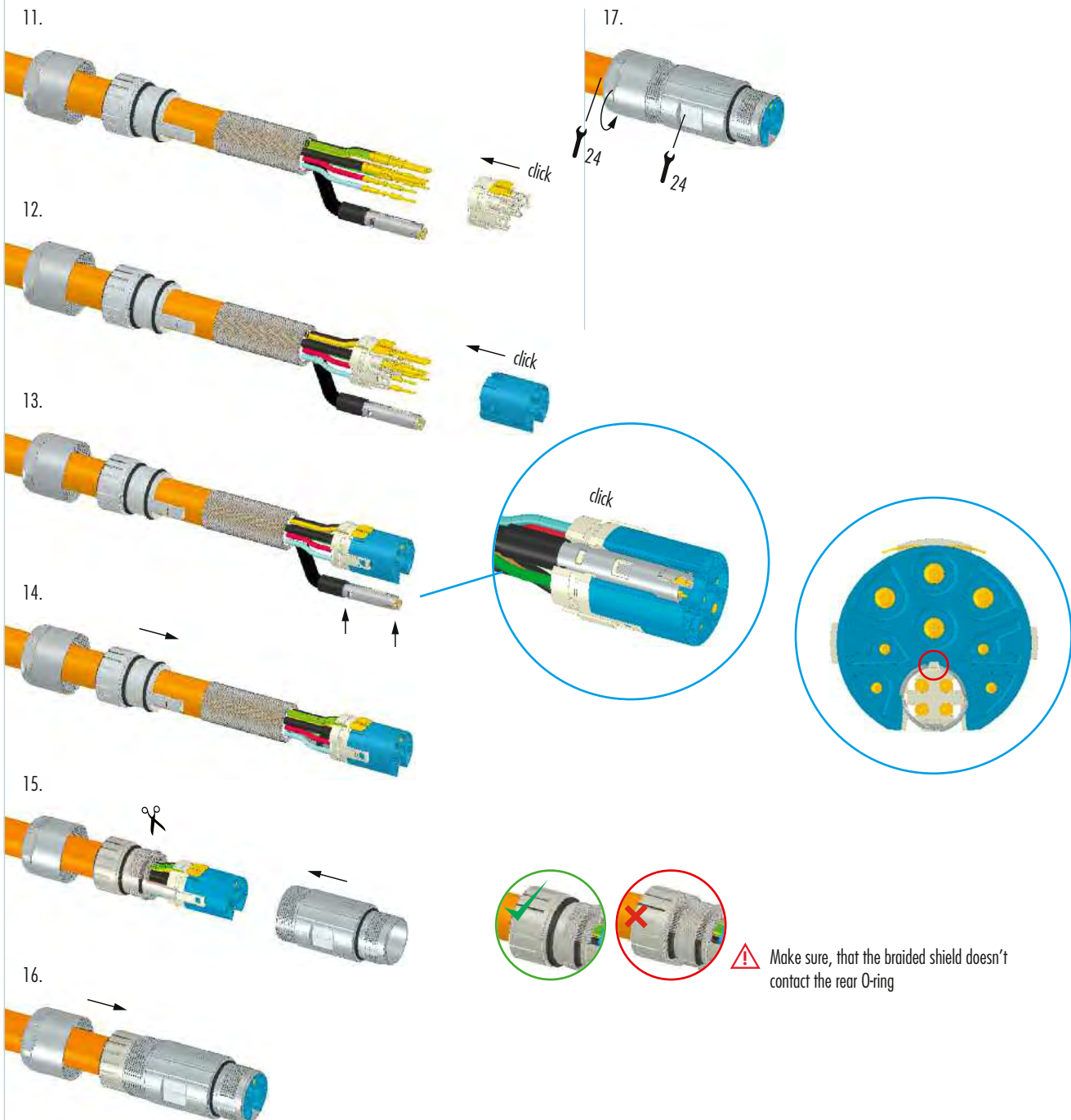
click

crimp

crimp metal ring over crimped area

put shrinking tube over crimped area

Hybrid Connector






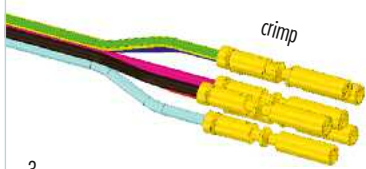
Assembly Instructions

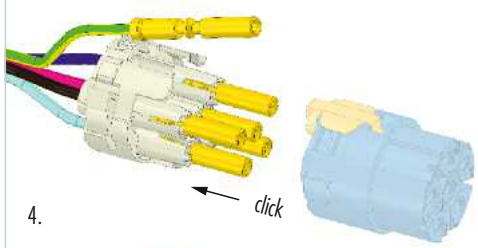
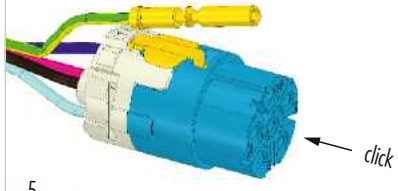
Right Angle Connector, rotatable

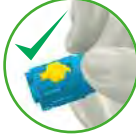
1. 65 mm
- 2.
- 3.
4. **!** x Contact \varnothing 1 mm = max. 4 mm stripping length
Contact \varnothing 2 mm = max. 7 mm stripping length
5. crimp
- 6.
- 7.
8. click
9. 1 x PE click
10. click
11. scissors
12. 24, 25, 27




! Make sure, that the braided shield doesn't contact the rear O-ring



1. 
2. 

⚠ x Contact ø 1 mm = max. 4 mm stripping length
 Contact ø 2 mm = max. 7 mm stripping length
3. 
4. 




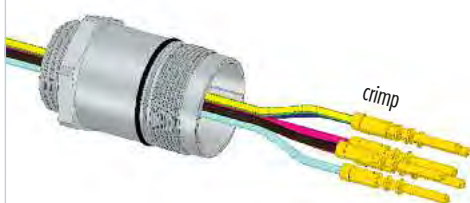

5. 
6. 


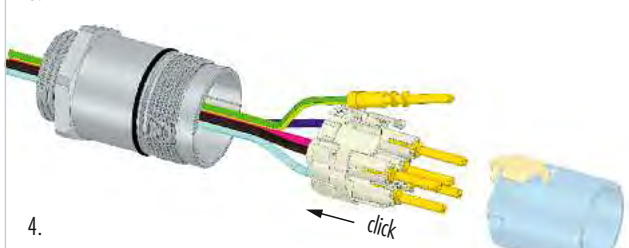
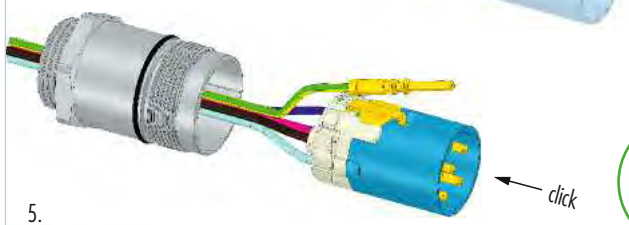


| |
|-------------------|
| M 12 |
| M 16 |
| M 23 PoE |
| M 23 RJ45 |
| M 23 Signal |
| M 27 Signal |
| M 23 Power |
| M 40 Power |
| INOX |
| Moulded Cordsets |
| Customized |



Assembly Instructions

Panel Connector, Male Thread, Single Hole Mounted

1. 
2. 

 **x** Contact \varnothing 1 mm = max. 4 mm stripping length
 Contact \varnothing 2 mm = max. 7 mm stripping length
3. 
4. 
5. 
6. 



Panel Connector, Male Thread

- 1.
2.

! x Contact \varnothing 1 mm = max. 4 mm stripping length
 Contact \varnothing 2 mm = max. 7 mm stripping length
- 3.
4.
- 5.
- 6.

| |
|-------------------|
| M 12 |
| M 16 |
| M 23 PoE |
| M 23 RJ45 |
| M 23 Signal |
| M 27 Signal |
| M 23 Power |
| M 40 Power |
| INOX |
| Moulded Cordsets |
| Customized |



Assembly Instructions

Right Angle Panel Connector TWILOCK-S

1.
 x Contact \varnothing 1 mm = max. 4 mm stripping length
 Contact \varnothing 2 mm = max. 7 mm stripping length

2.
 crimp

3.
 click

4.
 click click

5.
 click

6.

7.
 PE
 click

8.
 TORX: T10
 max. 2,7 Nm

9.

 If using TWILOCK-S or Speedtec plug you have to remove O-Ring.



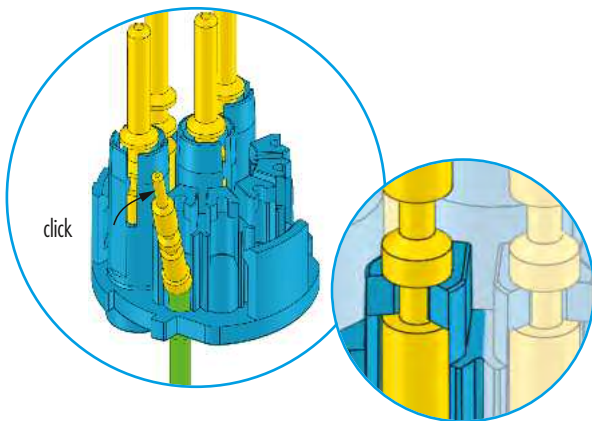
Right Angle Panel Connector TWILOCK

1.

2.
 x
 Contact \varnothing 1 mm = max. 4 mm stripping length
 Contact \varnothing 2 mm = max. 7 mm stripping length

crimp

click click



4.

click

5.

click

PE

6.

7.

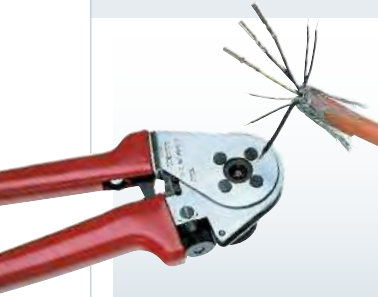
T10

max. 2,7 Nm

max. 2,7 Nm

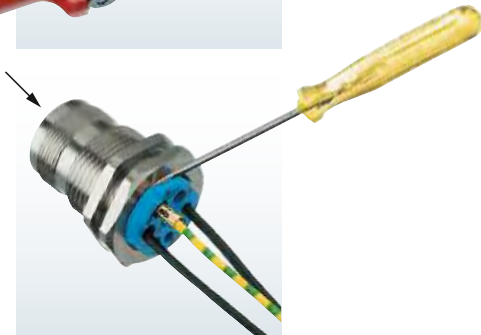


Crimping, Assembly and Disassembly of Contacts



Crimping

- For 1 mm contacts strip wire ends 4 mm (.16") max., for 2 mm contacts strip wire ends 7 mm (.28") max.
- // Dial appropriate setting of crimping tool
- // Push crimp contact into opening of crimping tool
- // Insert stripped wire into the funnel shaped end of the crimp contact
- // Squeeze handles of crimping tool together, connecting contact to wire



Disassembly of Insert from Housing

By using the screwdriver push the insert into the housing, start to pull the insert out of the housing.

Shielding

- Assemble strain relief insert with insert
- // Fold stranding of the shield back over the first O-Ring of the strain relief insert
- // Cut back the overextending braid



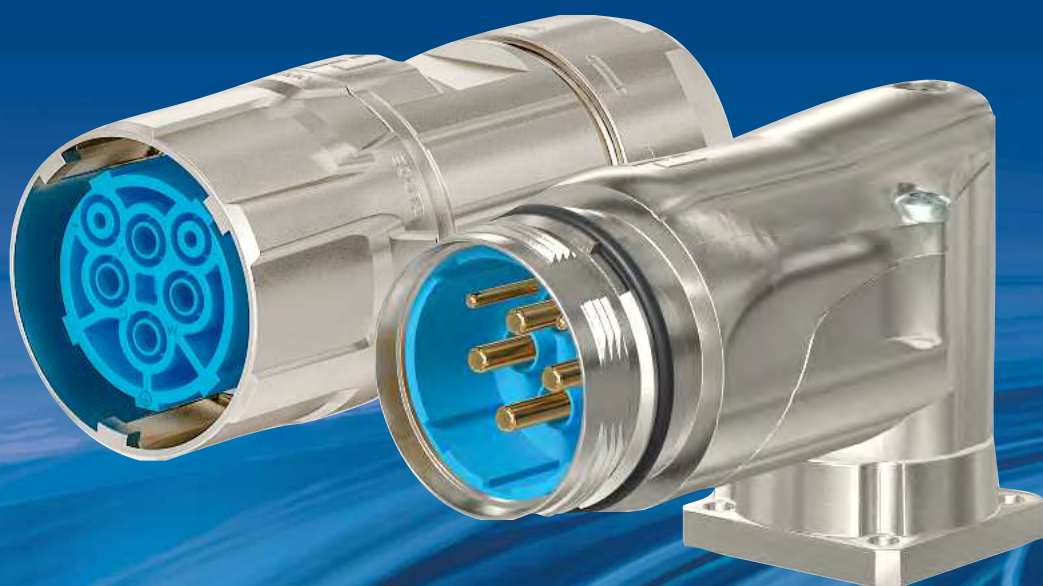
The wire ends of the shield may not be allowed to touch the second O-Ring.



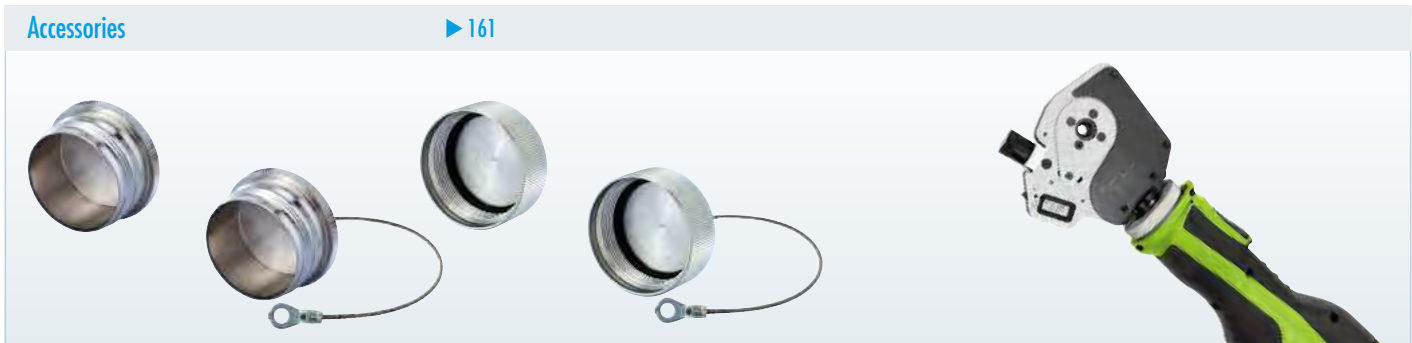
M 40 POWER CONNECTORS (SIZE 1,5)

Connector series M 40 is suitable for high current and is preferably used for heavy drive application. The high-quality housing out of metal fulfills all requirements, that are present in a rough industrial environment. Furthermore, it convinces through a long operational lifetime.

- // suitable for requirements with high current
- // safe EMC protection



Product overview



| Mechanical Data | Materials and Technical Data |
|-------------------------------------|--|
| Housing | Copper-Zinc alloy Die Cast |
| Housing surface | Nickel plated, other surface upon request |
| Inserts (for contacts) | Thermoplastic Polyamid PA 6 (Nylon 6/6), PBT Fire protection class V-0 |
| Contacts | Brass Alloy |
| Contact surface at point of contact | Nickel and gold plated (0,25 µm) |
| Minimum mating cycles | > 500 |
| Seals / O-Rings | Buna-N standard optional Viton® (FKM / FPM) (Viton is a registered trademark of DuPont) |
| Temperature range | -40 °C – 125 °C (-40 °F – 257 °F) |
| Type of contacts | Crimp |
| Protection | IP 67 / IP 69K per EN 60 529 (connected), NEMA 4x |
| Cable diameter range | 13 – 28 mm (.51" – 1.10") |

| Electrical Data | 2 + 3 + PE | | 4 + 3 + PE | |
|---|--------------------|------|--------------------|------|
| Number of positions | 2 | 4 | 4 | 4 |
| Number of contacts | 2 | 4 | 4 | 4 |
| Contact-Ø [mm] | 2 | 3,6 | 2 | 3,6 |
| Nominal current ¹⁾ [A] | 28 | 55 | 28 | 55 |
| Nominal voltage ²⁾ [V~] Degree of Protection 3 ³⁾ | 300 | 600 | 300 | 600 |
| Test voltage (Breakdown voltage) ⁴⁾ [V~] | 2500 | 4000 | 2500 | 4000 |
| Insulation resistance [Ω] | > 10 ¹³ | | > 10 ¹³ | |
| Max. contact resistance [mΩ] | 3 | 1 | 3 | 1 |




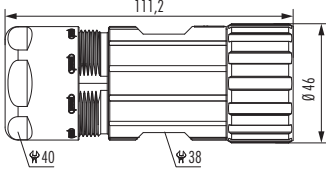

Standard delivery of M 40 (size 1,5) Power Connector include Contact Insert.

^{1), 2), 3), 4)} See Technical Information page 18




Housings


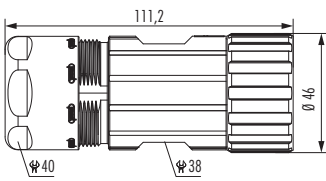

Straight Connector, Female Thread


| Cable-Ø | Part Number |
|---------------------------------------|---------------|
| 2 + 3 + PE, insert for sockets | |
| 13 – 18 mm (.51 – .71") | 7.710.623.000 |
| 17 – 24 mm (.67 – .97") | 7.710.723.000 |
| 21 – 28 mm (.83 – 1.10") | 7.710.823.000 |




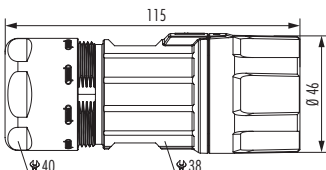

Straight Connector, Female Thread


| Cable-Ø | Part Number |
|---------------------------------------|---------------|
| 4 + 3 + PE, insert for sockets | |
| 13 – 18 mm (.51 – .71") | 7.710.643.000 |
| 17 – 24 mm (.67 – .97") | 7.710.743.000 |
| 21 – 28 mm (.83 – 1.10") | 7.710.843.000 |




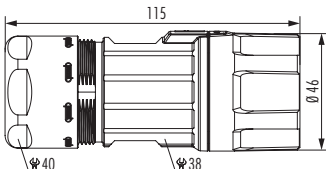
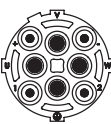
Straight Connector, Female Thread TWILOCK-S


| Cable-Ø | Part Number |
|---------------------------------------|---------------|
| 2 + 3 + PE, insert for sockets | |
| <i>* intermateable with Speedtec</i> | |
| 13 – 18 mm (.51 – .71") | 7.716.623.00S |
| 17 – 24 mm (.67 – .97") | 7.716.723.00S |
| 21 – 28 mm (.83 – 1.10") | 7.716.823.00S |



Straight Connector, Female Thread TWILOCK-S

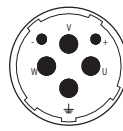
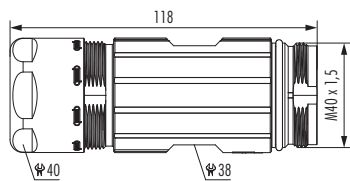
| Cable-Ø | Part Number |
|---------------------------------------|---------------|
| 4 + 3 + PE, insert for sockets | |
| <i>* intermateable with Speedtec</i> | |
| 13 – 18 mm (.51 – .71") | 7.716.643.00S |
| 17 – 24 mm (.67 – .97") | 7.716.743.00S |
| 21 – 28 mm (.83 – 1.10") | 7.716.843.00S |



Straight Connector, Male Thread TWILOCK-S*

Cable-Ø

Part Number



2 + 3 + PE, insert for pins

| | |
|--------------------------|---------------|
| 13 – 18 mm (.51 – .71") | 7.720.623.000 |
| 17 – 24 mm (.67 – .97") | 7.720.723.000 |
| 21 – 28 mm (.83 – 1.10") | 7.720.823.000 |

* intermateable with Speedtec

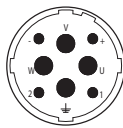
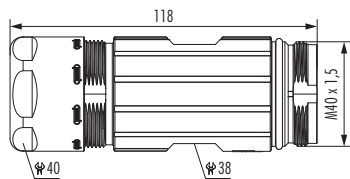
| | |
|------------|---------------|
| 13 – 18 mm | 7.720.623.00S |
| 17 – 24 mm | 7.720.723.00S |
| 21 – 28 mm | 7.720.823.00S |



Straight Connector, Male Thread TWILOCK-S*

Cable-Ø

Part Number



4 + 3 + PE, insert for pins

| | |
|--------------------------|---------------|
| 13 – 18 mm (.51 – .71") | 7.720.643.000 |
| 17 – 24 mm (.67 – .97") | 7.720.743.000 |
| 21 – 28 mm (.83 – 1.10") | 7.720.843.000 |

* intermateable with Speedtec

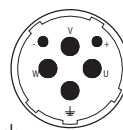
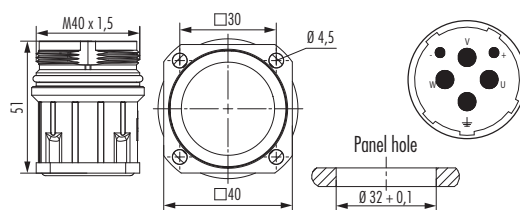
| | |
|------------|---------------|
| 13 – 18 mm | 7.720.643.00S |
| 17 – 24 mm | 7.720.743.00S |
| 21 – 28 mm | 7.720.843.00S |



Panel Connector, Male Thread, Front Mounting TWILOCK-S*

Type

Part Number



2 + 3 + PE, insert for pins

| | |
|-------------------------|---------------|
| 4 holes Ø 4,5 mm (.18") | 7.740.023.000 |
|-------------------------|---------------|

* intermateable with Speedtec

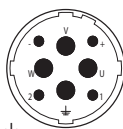
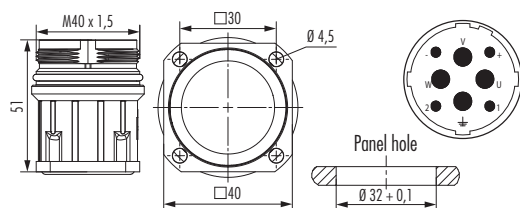
| | |
|------------------|---------------|
| 4 x Bohr. 4,5 mm | 7.740.023.00S |
|------------------|---------------|



Panel Connector, Male Thread, Front Mounting TWILOCK-S*

Type

Part Number



4 + 3 + PE, insert for pins

| | |
|-------------------------|---------------|
| 4 holes Ø 4,5 mm (.18") | 7.740.043.000 |
|-------------------------|---------------|

* intermateable with Speedtec


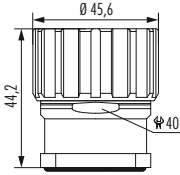
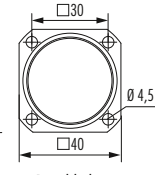

| | |
|------------------|---------------|
| 4 x Bohr. 4,5 mm | 7.740.043.00S |
|------------------|---------------|






Housings

Panel Connector with knurled Nut, Front Mounting


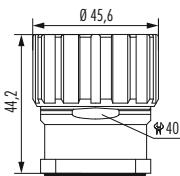
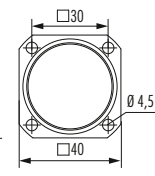
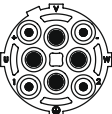





Panel hole
 $\square 30 \times 40$
 $\varnothing 4,5$
 $\varnothing 40$
 $\varnothing 45,6$
44,2

Type: 2 + 3 + PE, insert for sockets
4 holes $\varnothing 4,5$ mm (.18")7.744.023.000




Panel Connector with knurled Nut, Front Mounting


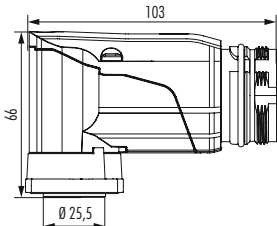
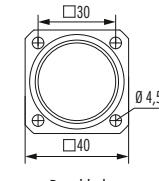
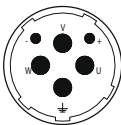





Panel hole
 $\square 30 \times 40$
 $\varnothing 4,5$
 $\varnothing 40$
 $\varnothing 45,6$
44,2

Type: 4 + 3 + PE, insert for sockets
4 holes $\varnothing 4,5$ mm (.18")7.744.043.000




Right Angle Panel Connector, Male Thread, rotatable TWILOCK-S*


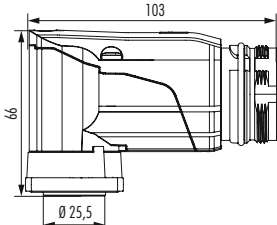
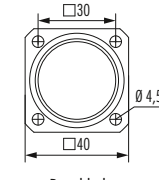
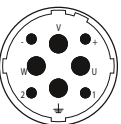





Panel hole
 $\square 30 \times 40$
 $\varnothing 4,5$
 $\varnothing 40$
103
66
 $\varnothing 25,5$

Type: 2 + 3 + PE, insert for pins
* intermateable with Speedtec
4 holes $\varnothing 4,5$ mm (.18")7.749.023.005




Right Angle Panel Connector, Male Thread, rotatable TWILOCK-S*

Panel hole
 $\square 30 \times 40$
 $\varnothing 4,5$
 $\varnothing 40$
103
66
 $\varnothing 25,5$

Type: 4 + 3 + PE, insert for pins
* intermateable with Speedtec
4 holes $\varnothing 4,5$ mm (.18")7.749.043.005



¹ under development



| Panel Connector, Male Thread, Single Hole Mounting | | Type | Part Number |
|--|--|---|---------------|
| | | Front mounting, 2 + 3 + PE, insert for pins | |
| | | Thread M 40 x 1,5 | 7.742.023.000 |
| | | | |
| | | ▶ 160 \| ▶ 161 \| ▶ 168 | |

| Panel Connector, Male Thread, Single Hole Mounting | | Type | Part Number |
|--|--|---|---------------|
| | | Front mounting, 4 + 3 + PE, insert for pins | |
| | | Thread M 40 x 1,5 | 7.742.043.000 |
| | | | |
| | | ▶ 160 \| ▶ 161 \| ▶ 168 | |

| Contact Arrangement, Mating View | Number of Poles | Required Contacts |
|----------------------------------|-------------------------------------|--|
| | Insert for pins 2 + 3 + PE | 2 x crimp pins 2 mm 4 x crimp pins 3,6 mm |
| | Insert for sockets 2 + 3 + PE | 2 x crimp sockets 2 mm 4 x crimp sockets 3,6 mm |
| | Insert for pins 4 + 3 + PE | 4 x crimp pins 2 mm 4 x crimp pins 3,6 mm |
| | Insert for sockets 4 + 3 + PE | 4 x crimp sockets 2 mm 4 x crimp sockets 3,6 mm |

Standard delivery of M 40 (size 1,5) Power Connector include Contact Insert.










Contacts

| Contacts | Type | Crimp Range | Part Number |
|----------|-------------------------------------|--|----------------------------|
| | Crimp pin 2 mm, machined | 0,25 – 1 mm ² (AWG 24 – 17) | 7.015.952.003 ¹ |
| | Crimp pin 2 mm, machined | 1 – 4 mm ² (AWG 17 – 12) | 7.015.952.001 |
| | Crimp socket 2 mm, machined | 0,25 – 1 mm ² (AWG 24 – 17) | 7.015.952.004 ¹ |
| | Crimp socket 2 mm, machined | 1 – 4 mm ² (AWG 17 – 12) | 7.015.952.002 |
| | Crimp pin 3,6 mm, machined | 1,5 – 4 mm ² (AWG 16 – 12) | 7.015.953.601 |
| | Crimp socket 3,6 mm, machined | 1,5 – 4 mm ² (AWG 16 – 12) | 7.015.953.602 |
| | Crimp pin 3,6 mm, machined | 6 mm ² (AWG 10) | 7.015.953.611 |
| | Crimp socket 3,6 mm, machined | 6 mm ² (AWG 10) | 7.015.953.612 |
| | Crimp pin 3,6 mm, machined | AWG 8 | 7.015.953.621 |
| | Crimp pin 3,6 mm, machined | 10 mm ² | 7.015.953.623 |
| | Crimp socket 3,6 mm, machined | AWG 8 | 7.015.953.622 |
| | Crimp socket 3,6 mm, machined | 10 mm ² | 7.015.953.624 |
| | Crimp pin 3,6 mm, machined | 16 mm ² (AWG 6) | 7.015.953.631 |
| | Crimp socket 3,6 mm, machined | 16 mm ² (AWG 6) | 7.015.953.632 |



¹ under development

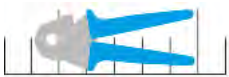
| Accessories | Type | Part Number |
|---|---|----------------------------|
|  | Plastic protective cap for connectors with female thread | 7.000.900.152 |
|  | Plastic protective cap for connectors with male thread | 7.000.900.151 |
|  | Brass protective cap for connectors with female thread | 7.015.900.103 ¹ |
|  | Brass protective cap for connectors with male thread | 7.015.900.102 |
|  | Brass protective cap with rope for connectors with female thread | 7.015.9S1.003 ¹ |
|  | Brass protective cap with rope for connectors with male thread | 7.015.9S1.002 |
|  | Adaptor flange for Straight Connectors | 7.010.900.129 ¹ |

¹ No compatibility with TWILOCK



Accessories

| Accessories | Type | Part Number |
|--|--|---------------|
|  | Adapter for Conduit Fittings | |
| | Poleon DN 23 | 7.010.900.215 |
| | Poleon DN 29 | 7.010.900.217 |
|  | Manual crimp tool | |
| | machined crimp contacts until 10 mm ² (AWG 8) for power connectors | |
| | battery pack crimp tool for connectors M 40 (European market only) | 7.000.900.920 |
| | crimping unit for crimp tool | 7.000.900.919 |
| | locator for 3,6 mm contacts at crimp tool | 7.010.900.153 |
| | assembly instructions online: www.hummel.com | |
|  | Crimp tool for manual crimping | |
| | of machined crimp contacts 16 mm ² (AWG 6) | 7.000.900.903 |

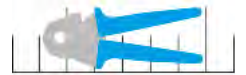


Crimp Tool Setting for HUMMEL Crimp Contacts (Crimp Tool 7.000.900.920)

| Part Number | Crimp Contact | Cross Section (mm ²) | AWG | Crimp Tool Setting mm | Locator Setting |
|---------------|---------------------|----------------------------------|-----|-----------------------|-----------------|
| 7.015.952.001 | Crimp pin 2 mm | 0,75 | 18 | 1,31 mm | 3 |
| | | 1 | 17 | 1,38 mm | 3 |
| | | 1,5 | 16 | 1,45 mm | 3 |
| | | 2,5 | 14 | 1,50 mm | 3 |
| | | 4 | 12 | 1,60 mm | 3 |
| 7.015.952.002 | Crimp socket 2 mm | 0,75 | 18 | 1,31 mm | 4 |
| | | 1 | 17 | 1,38 mm | 4 |
| | | 1,5 | 16 | 1,45 mm | 4 |
| | | 2,5 | 14 | 1,50 mm | 4 |
| | | 4 | 12 | 1,60 mm | 4 |
| 7.015.953.601 | Crimp pin 3,6 mm | 2,5 | 14 | 1,4 | 1 |
| | | 4 | 12 | 1,6 | 1 |
| 7.015.953.602 | Crimp socket 3,6 mm | 2,5 | 14 | 1,4 | 2 |
| | | 4 | 12 | 1,6 | 2 |
| 7.015.953.611 | Crimp pin 3,6 mm | 6 | 10 | 1,8 | 1 |
| 7.015.953.612 | Crimp socket 3,6 mm | 6 | 10 | 1,8 | 2 |
| 7.015.953.621 | Crimp pin 3,6 mm | | 8 | 2,6 | 1 |
| 7.015.953.622 | Crimp socket 3,6 mm | | 8 | 2,6 | 2 |
| 7.015.953.623 | Crimp pin 3,6 mm | 10 | | 2,7 | 1 |
| 7.015.953.624 | Crimp socket 3,6 mm | 10 | | 2,7 | 2 |



These values are only guidelines and actual conductor cross sections depend on manufacturer tolerances.



Crimp Tool Setting for HUMMEL Crimp Contacts (Crimp Tool 7.000.900.903)

| Part Number | Crimp Contact | Cross Section (mm ²) | AWG | Crimp Tool Setting |
|---------------|---------------------|----------------------------------|-----|--------------------|
| 7.015.953.631 | Crimp pin 3,6 mm | 16 | 6 | die 16 |
| 7.015.953.632 | Crimp socket 3,6 mm | 16 | 6 | die 16 |

These values are only guidelines and actual conductor cross sections depend on manufacturer tolerances.



Crimp Tool for M 40 Power Connectors (Size 1,5)

Crimp Tool

Type

Part Number

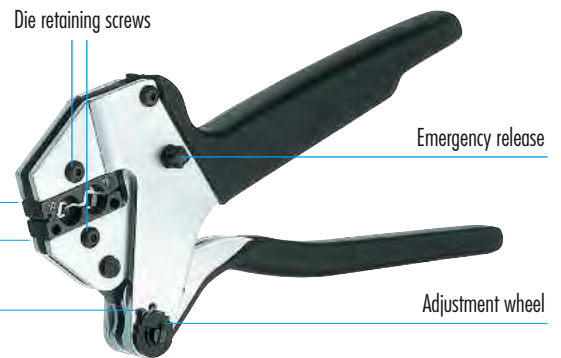
Crimp Tool for contacts 16 mm² (AWG 6)7.000.900.903

Application

The hand crimp tool 7.000.900.903 has been developed for optimal crimping of a large variety of connectors and terminals by using different interchangeable crimping dies.

Operation

- // Select crimp insert and install in tool
- // Insert and align crimp contact in tool
- // Compress tool until contact is held in place
- // Insert conductor into contact
- // Fully compress tool (tool will reopen automatically)
- // Remove crimped conductor from tool



Stationary jaw with upper die

Movable jaw with lower die

Set screw

Die retaining screws

Emergency release

Adjustment wheel



Crimp Tool for M 40 Power Connectors (Size 1,5)

Crimp Tool



Adjustment of crimp force and height

Crimp force adjustment is done in the factory (120 – 180 N when unloaded). Tool frame and jaws are connected that way, an optimal crimping result will be obtained based on the hand force indicated above. In case the result (e.g. crimp height, pull-out force, etc.) does not meet the requirements of the plug manufacturer, the following reasons can be considered:

a) Normal wear of tool

Readjustment possible

b) Worn dies

Dies have to be replaced

The quality personnel is authorized to control and readjust these parameters as described below:

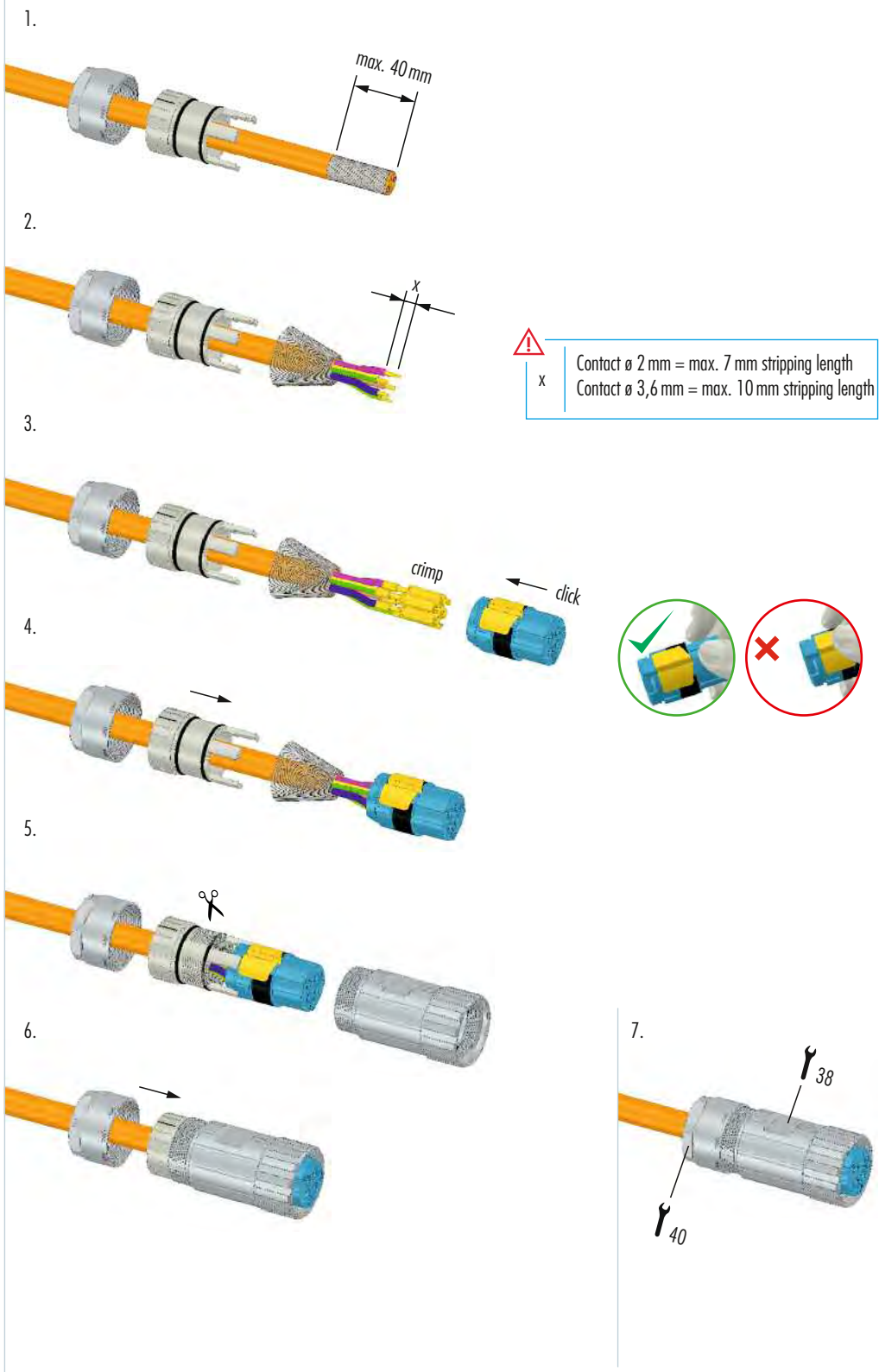
Unscrew the set screw by means of a screw driver

- // Rotatable the adjustment wheel anticlockwise, the crimp force increases and the crimp height decreases (+)
- // Rotatable the adjustment wheel lockwise, the crimp force decreases and the crimp height increases (-)
- // When readjusting the hand force shall not exceed 180 N
- // Before using the tool, the operator has to check the adjustment wheel being firmly secured by the set screw

Maintenance

Keep the tool clean and properly stored when not in service. The joints need to be regularly oiled and the circlips securing the bolts have to be always in place. Never use abrasives or hard material to clean the jaws. Please contact the manufacturer when the tool needs to be repaired or in case of readjustment problems.


Straight Connector, Female Thread / Male Threaded Connector

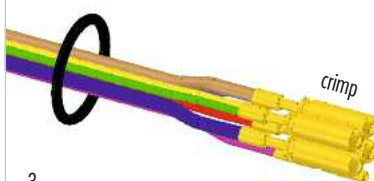


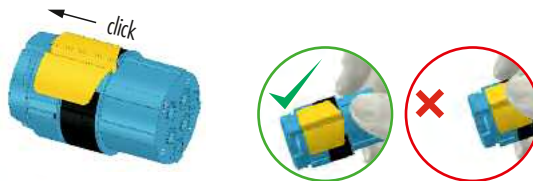


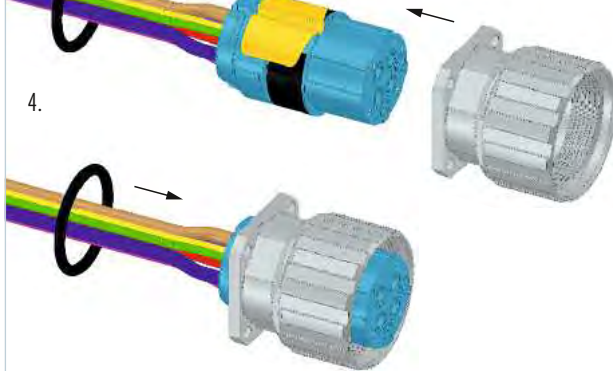
Assembly Instructions

Panel Connector

1. 

2. 

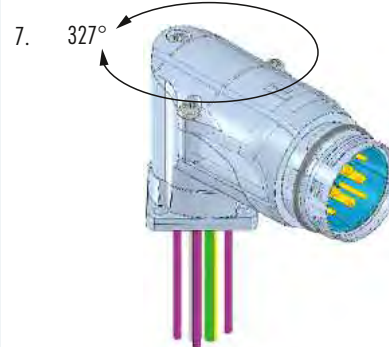
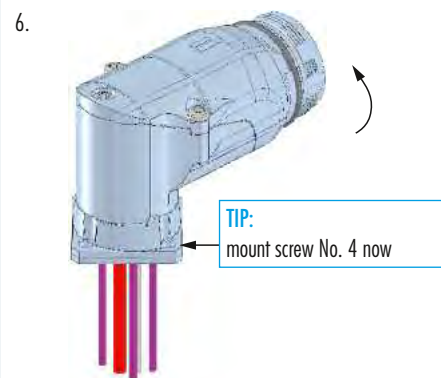
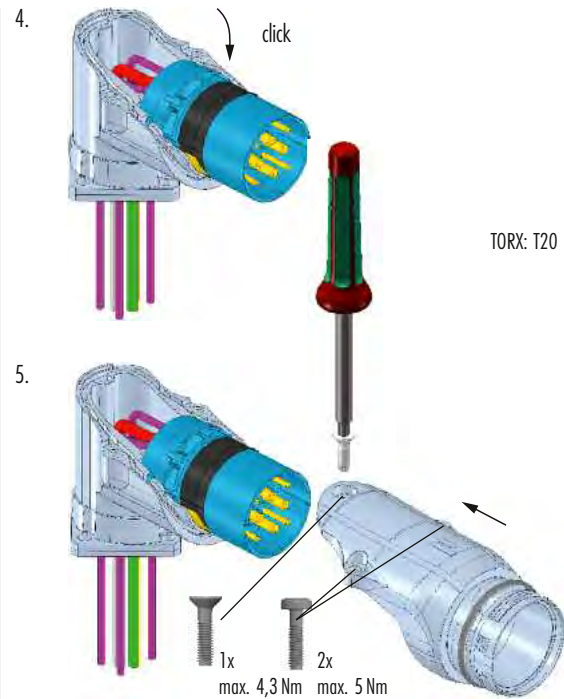
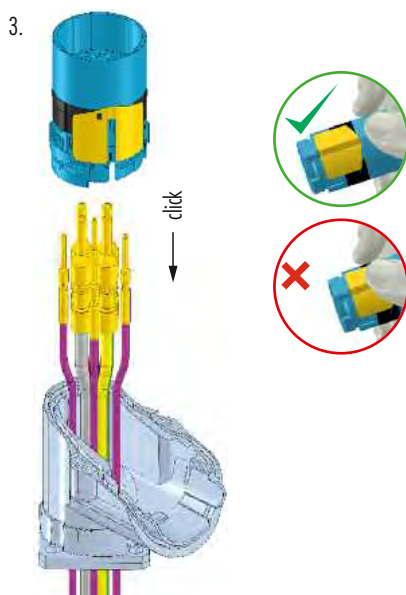
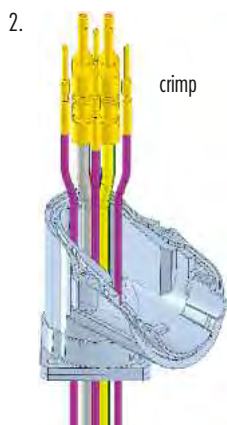
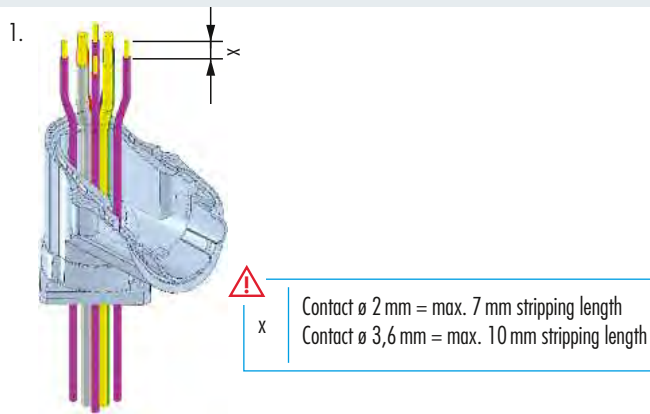
3. 

4. 

⚠
x
Contact ø 2 mm = max. 7 mm stripping length
Contact ø 3,6 mm = max. 10 mm stripping length



Right Angle Panel Connector





Crimping, Assembly and Disassembly of Contacts



Crimping

- For 2 mm contacts strip wire ends 7 mm (.28"), for 3,6 mm contacts strip wire ends 10 mm (.39")
- // Dial appropriate setting of crimp tool
- // Push crimp contact into opening of crimping tool
- // Insert stripped wire into the funnel shaped end of the crimp contact
- // Squeeze handles of crimping tool together connect contact to wire

Assembly

Remove crimped contact to contact the ring to the contact position. Push into desired position of insert.

Disassembly of Contacts from Insert

A small screwdriver is needed to remove the contacts from the insert.

- // Release the white ring by a screwdriver out of the insert
- // Move the misplaced contacts out of the insert
- // Enter the ring back into the insert
- // Push the contacts back into insert

Shielding

- Assemble strain relief insert with insert
- // Fold stranding of the shield back over the first O-Ring of the strain relief insert
- // Cut back the overextending braid



Observe the shielding of the shield, it is not allowed to touch the second O-Ring.

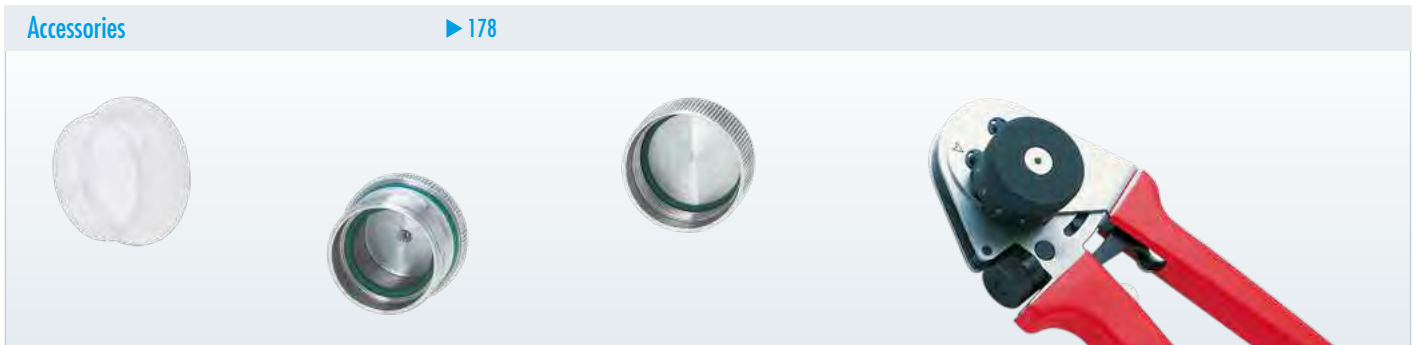
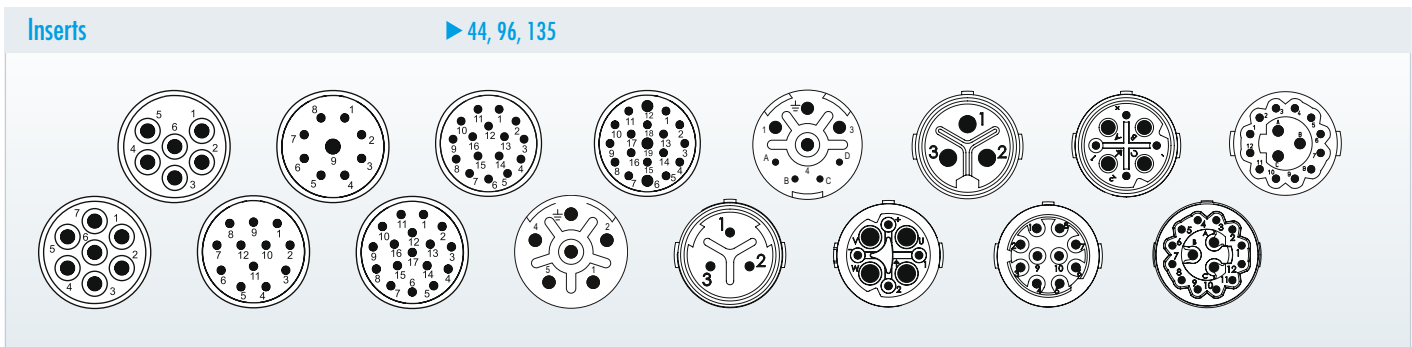
STAINLESS STEEL CONNECTORS (INOX)

Special applications require special solutions. This is important for connectors made of stainless steel, too. They are being used where the conditions of the environment are extremely rough or hygienic requirements particularly high.

- // Signal connectors M 16 INOX
- // Signal connectors M 23 INOX
- // Power connectors M 23 INOX



Product overview



| Mechanical Data | Materials and Technical Data | |
|-------------------------------------|---|---------------------------|
| Housing | Stainless Steel V4A | 1.4404 (AISI 316 L) |
| Housing surface | Clear | |
| Inserts (for contacts) | Thermoplastic Polyamid PA 6 (Nylon 6/6), PBT | Fire protection class V-0 |
| Contacts | Brass Alloy | |
| Contact surface at point of contact | Nickel and gold plated (0,25 µm) | |
| Minimum mating cycles | > 1000 | |
| Seals / O-Rings | Viton® (FPM / FKM), alternativ EPDM | |
| Temperature range | -40 °C – 125 °C | |
| Type of contacts signal M 23 | Crimp, solder, dip-solder (PCB) | |
| Type of contacts power M 23 | Crimp | |
| Type of contacts M 16 | Crimp, dip-solder (PCB) | |
| Protection | IP 67 / IP 69K per EN 60 529 (connected), NEMA 4x | |

| Additional Information | | | |
|---|----------|--|----------|
| Electrical data see standard program | | Inserts and contacts see standard program | |
| Connectors M 12 Power | page 21 | Connectors M 12 Power | page 25 |
| Connectors M 16 | page 39 | Connectors M 16 | page 44 |
| Signal Connectors M 23 | page 87 | Signal Connectors M 23 | page 96 |
| Power Connectors M 23 | page 129 | Power Connectors M 23 | page 135 |





Housings M 16

Straight Connector, Female Thread

| Cable-Ø | Part Number |
|-------------------------|---------------|
| 3 – 6 mm (.12" – .24") | 7.814.300.000 |
| 5 – 9 mm (.20" – .35") | 7.814.400.000 |
| 8 – 11 mm (.31" – .43") | 7.814.500.000 |

▶ 44 |
 ▶ 178 |
 ▶ 57/58

Straight Connector, Male Thread

| Cable-Ø | Part Number |
|-------------------------|---------------|
| 3 – 6 mm (.12" – .24") | 7.824.300.000 |
| 5 – 9 mm (.20" – .35") | 7.824.400.000 |
| 8 – 11 mm (.31" – .43") | 7.824.500.000 |

▶ 44 |
 ▶ 178 |
 ▶ 57/58

Panel Connector, Male Thread

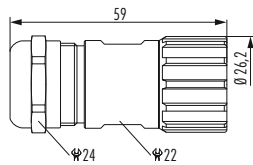
| Type | Part Number |
|---------------------------|---------------|
| 4 x holes Ø 2,7 mm (.11") | 7.840.400.000 |
| Flange 20 x 20 mm | |

▶ 44 |
 ▶ 178 |
 ▶ 60



Housing without inserts and contacts

Straight Connector, Female Thread

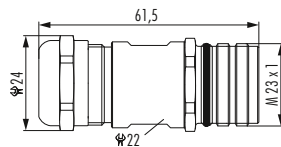


| Cable-Ø | Part Number | Part Number EMC |
|-------------------------|---------------|-----------------|
| 3 – 7 mm (.12 – .28") | 7.140.300.000 | 7.141.300.000 |
| 5 – 10 mm (.20 – .39") | 7.140.400.000 | 7.141.400.000 |
| 7 – 12 mm (.27 – .47") | 7.140.500.000 | 7.141.500.000 |
| 10 – 14 mm (.39 – .55") | 7.140.600.000 | 7.141.600.000 |

Assembly tool 7.010.900.127 is required



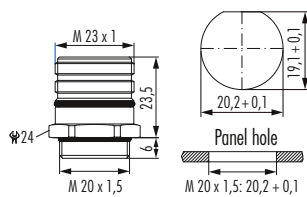
Straight Connector, Male Thread



| Cable-Ø | Part Number | Part Number EMC |
|-------------------------|---------------|-----------------|
| 3 – 7 mm (.12 – .28") | 7.240.300.000 | 7.241.300.000 |
| 5 – 10 mm (.20 – .39") | 7.240.400.000 | 7.241.400.000 |
| 7 – 12 mm (.27 – .47") | 7.240.500.000 | 7.241.500.000 |
| 10 – 14 mm (.39 – .55") | 7.240.600.000 | 7.241.600.000 |



Panel Connector, Male Thread, Single Hole Mounted

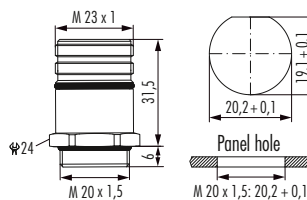


| Type | Part Number |
|--|---------------|
| Front mounting for male inserts Thread M 20 x 1,5 | 7.420.400.000 |

*** FOR MALE *
INSERTS ONLY**



Panel Connector, Male Thread, Single Hole Mounted



| Type | Part Number |
|--|---------------|
| Front mounting for female inserts Thread M 20 x 1,5 | 7.421.400.000 |


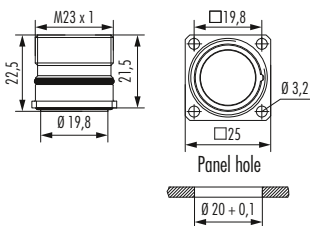

*** FOR FEMALE *
INSERTS ONLY**


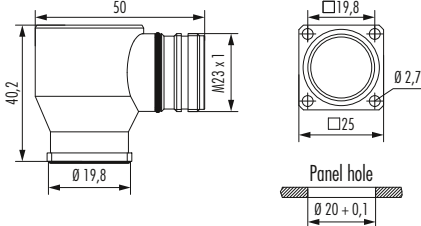




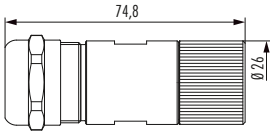

Housing without inserts and contacts


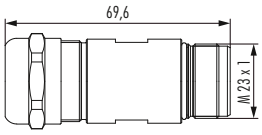




Housings M 23 Signal / Power

| Panel Connector, Male Thread | Type | Part Number |
|---|--|---------------|
|   | With anti-vibration O-Ring 4 holes Ø 3,2 mm (.13")..... | 7.410.400.000 |
| |  | |

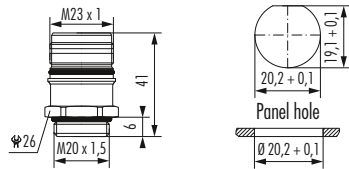
| Right Angle Panel Connector, Male Thread | Type | Part Number |
|---|--|---------------|
|   | 4 holes Ø 2,7 mm (.11")..... | 7.430.400.000 |
| |  | |

| Straight Connector, Female Thread | Type | Part Number |
|---|--|--------------------------------|
|   | 7 – 12 mm (.27 – .47")..... 11 – 17 mm (.43 – .67")..... | 7.554.500.000 7.554.600.000 |
| |  | |

| Straight Connector, Male Thread | Type | Part Number |
|---|--|--------------------------------|
|   | 7 – 12 mm (.27 – .47")..... 11 – 17 mm (.43 – .67")..... | 7.564.500.000 7.564.600.000 |
| |  | |

 Housing without inserts and contacts

Panel Connector, Male Thread, Single Hole Mounted



Type

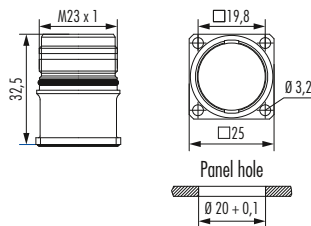
Part Number

Front mounting

Thread M 20 x 1,57.621.400.000



Panel Connector, Male Thread



Type

Part Number

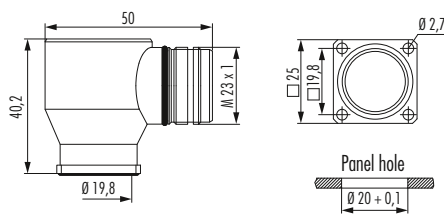
For front mounting

4 holes Ø 3,2 mm (.13")7.601.400.000

Optional: Flat gasket



Right Angle Panel Connector, Male Thread



Type

Part Number

4 holes Ø 2,7 mm (.11")7.630.400.000





Accessories

| Accessories | Type | Part Number |
|-------------|--|---------------|
| | Assembly tool | 7.010.900.127 |
| | Plastic protective cap | |
| | for connectors M 16 with male thread | 7.000.980.161 |
| | for connectors M 16 with female thread | 7.000.980.162 |
| | for connectors M 23 with male thread | 7.000.900.101 |
| | for connectors M 23 with female thread | 7.000.900.102 |
| | Stainless steel protective cap for M 16 Signal | |
| | for connectors with female thread | 7.010.904.163 |
| | for connectors with male thread | 7.010.904.162 |
| | with rope for connectors with female thread, Length 70 mm | 7.010.9S4.163 |
| | with rope for connectors with male thread, Length 70 mm | 7.010.9S4.162 |
| | Stainless steel protective cap for M 23 Signal | |
| | for connectors with female thread | 7.010.904.103 |
| | with rope for connectors with female thread, Length 100 mm | 7.010.9S4.103 |
| | Stainless steel protective cap for M 23 Power | |
| | for connectors with female thread | 7.010.904.183 |
| | with rope for connectors with female thread, Length 100 mm | 7.010.9S4.183 |
| | Stainless steel protective cap | |
| | for connectors with male thread | 7.010.904.102 |
| | with rope for connectors with male thread | |
| | Length 100 mm | 7.010.9S4.102 |
| | Crimp tool for manual crimping | |
| | of machined crimp contacts | |
| | for signal and power connectors | 7.000.900.901 |
| | Crimp tool for manual crimping | |
| | of machined crimp contacts | |
| | for signal connectors M 16 and M 23 | 7.000.900.904 |



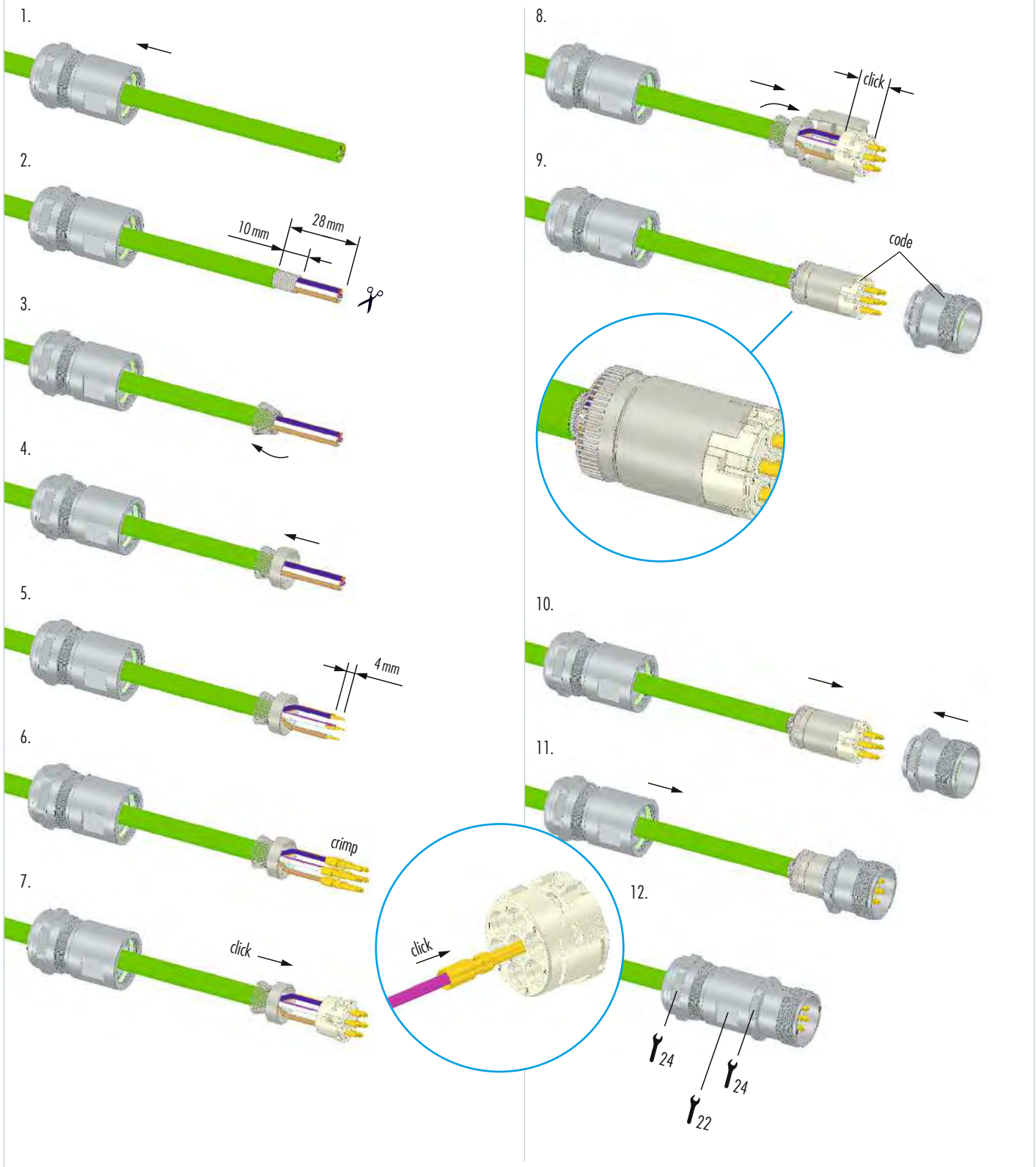
Straight Signal Connector, Female Thread

1. Insert the cable into the connector housing.
2. Strip the outer jacket by 10mm and the insulation by 20mm.
3. Strip the individual conductors.
4. Twist the conductors.
5. Insert the twisted conductors into the crimp sleeve.
6. Crimp the conductors with a 4mm crimp.
7. Push the crimp sleeve into the connector housing until it clicks.
8. Insert the RJ45 plug into the housing until it clicks.
9. Attach the RJ45 plug to the cable.
10. Attach the RJ45 plug to the cable.
11. Tighten the connector housing with a torque wrench (7.010.900.127).
12. Tighten the housing with a 24mm and 22mm wrench.



Assembly Instructions

Straight Connector, Male Thread



MOULDED CORDSETS

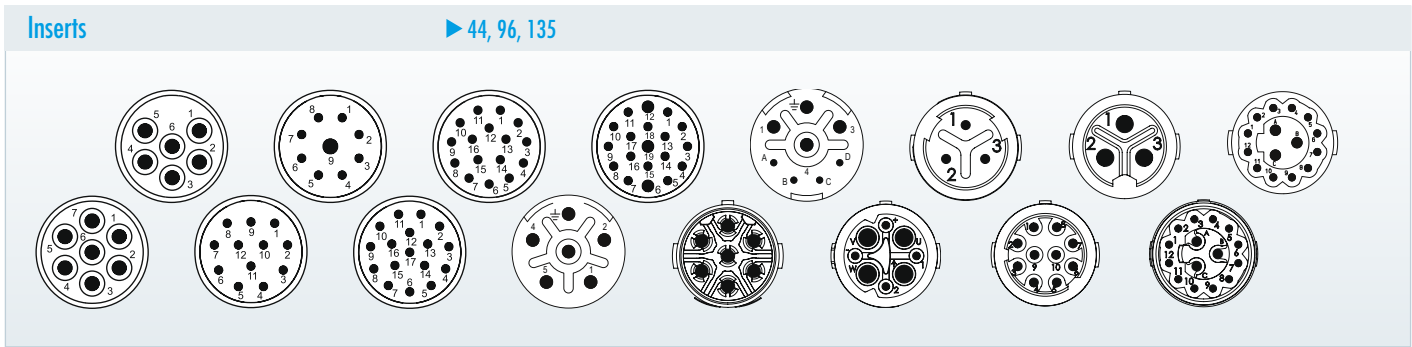
Every connector of the standard series can be sold in a moulded cordset as well. Hereby there is no difference, whether it is one with a male or female thread. Moreover, customized projects are being realised. Cable type and cable length are specified in common technical consultations.

- // Moulded cordset M 16
- // Moulded signal cordset M 23
- // Moulded power cordset M 23



MOULDED CORDSETS

Product overview



| Mechanical Data | Materials and Technical Data |
|-------------------------------------|--|
| Housing | Copper-Zinc alloy Die Casting |
| Moulded strain relief | Polyurethan PUR |
| Housing surface | Nickel plated brass, black strain relief |
| Inserts (for contacts) | Thermoplastic Polyamid PA 6 (Nylon 6/6), PBT Fire protection class V-0 |
| Contacts | Brass Alloy |
| Contact surface at point of contact | Nickel and gold plated (0,25 µm) |
| Seals / O-Rings | Buna-N standard optional Viton® (FPM / FKM) (Viton is a registered trademark of DuPont) |
| Temperature range | -40 °C – 125 °C (-40 °F – 257 °F) |
| Type of contacts | Crimp |
| Protection | depending on the cable |
| Cable style | Cable specifications available upon request |
| Labelling | HUMMEL logo as standard, other options available upon request |

| Additional Information | | | |
|---|----------|--|----------|
| Electrical data see standard program | | Inserts and contacts see standard program | |
| Connectors M 12 Power | page 21 | Connectors M 12 Power | page 25 |
| Connectors M 16 | page 39 | Connectors M 16 | page 44 |
| Signal Connectors M 23 | page 87 | Signal Connectors M 23 | page 96 |
| Power Connectors M 23 | page 129 | Power Connectors M 23 | page 135 |

Other versions

Moulded connector cordsets are also available as Stainless-Steel (Inox)-Versions.

MOULDED CORDSETS

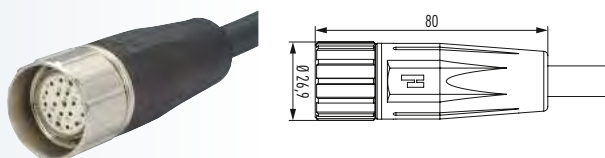
Moulded Connector Cordsets M 16

| Straight Connector, Female Thread | Type | Inserts |
|-----------------------------------|----------------------|-----------------|
| | Standard / EMC | Pins or sockets |

| Right Angle Connector, Female Thread | Type | Inserts |
|--------------------------------------|----------------------|-----------------|
| | Standard / EMC | Pins or sockets |

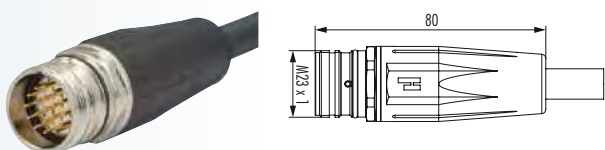
Straight Connector, Female Thread

| Type | Inserts |
|----------------------|-----------------|
| Standard / EMC | Pins or sockets |



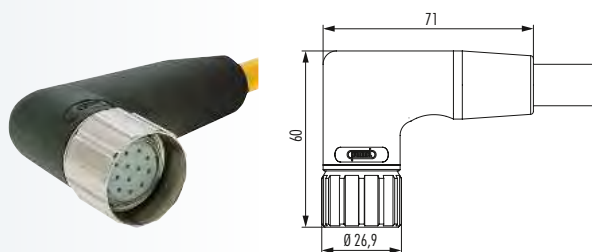
Straight Connector, Male Thread

| Type | Inserts |
|----------------------|-----------------|
| Standard / EMC | Pins or sockets |



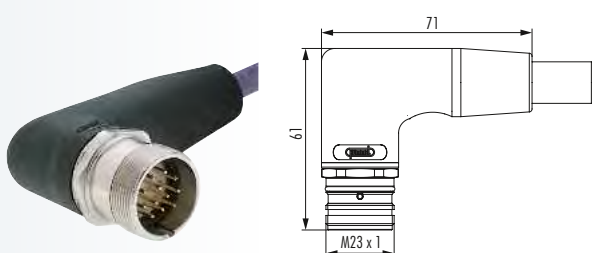
Right Angle Connector, Female Thread

| Type | Inserts |
|----------------------|-----------------|
| Standard / EMC | Pins or sockets |



Right Angle Connector, Male Thread

| Type | Inserts |
|----------------------|-----------------|
| Standard / EMC | Pins or sockets |



MOULDED CORDSETS

Moulded Power Connector Cordsets M 23

| Straight Connector, Female Thread | Type | Inserts |
|-----------------------------------|----------------------|-----------------|
| | Standard / EMC | Pins or sockets |

| Straight Connector, Male Thread | Type | Inserts |
|---------------------------------|----------------------|-----------------|
| | Standard / EMC | Pins or sockets |

| Right Angle Connector, Female Thread | Type | Inserts |
|--------------------------------------|----------------------|-----------------|
| | Standard / EMC | Pins or sockets |

| Right Angle Connector, Male Thread | Type | Inserts |
|------------------------------------|----------------------|-----------------|
| | Standard / EMC | Pins or sockets |



| Accessories | Type | Part Number |
|---|--|----------------------------|
|  | Plastic protective cap | |
| | for connectors M 16 with male thread..... | 7.000.980.161 |
| | for connectors M 16 with female thread..... | 7.000.980.162 |
| | for connectors M 23 with male thread..... | 7.000.900.101 |
| | for connectors M 23 with female thread..... | 7.000.900.102 |
|  | Brass protective cap | |
| | for connectors M 16 with female thread..... | 7.010.900.163 ¹ |
| | for signal connectors M 23 with female thread..... | 7.010.900.103 ¹ |
| | for power connectors M 23 with female thread..... | 7.010.900.183 ¹ |
|  | Brass protective cap | |
| | for connectors M 16 with male thread..... | 7.010.900.162 |
| | for connectors M 23 with male thread..... | 7.010.900.102 |
|  | Brass protective cap with chain | |
| | for connectors M 16 with female thread | |
| | Length 70 mm..... | 7.010.950.705 ¹ |
| | for signal connectors M 23 with female thread | |
| | Length 70 mm..... | 7.010.950.703 ¹ |
| | Length 100 mm..... | 7.010.951.003 ¹ |
| for power connectors M 23 with female thread | | |
| Length 70 mm..... | 7.010.950.783 ¹ | |
| Length 100 mm..... | 7.010.951.083 ¹ | |
|  | Brass protective cap with chain | |
| | for connectors M 16 with male thread | |
| | Length 70 mm..... | 7.010.950.704 |
| | for connectors M 23 with male thread | |
| Length 70 mm..... | 7.010.950.702 | |
| Length 100 mm..... | 7.010.951.002 | |

¹ no compatibility with TWILOCK

Customized

Hybrid Connector for Compressed Air



To place lines for compressed air and electrical signals in one single connection, a hybrid connector M 23 combines different types of contacts in one insert.

Bulkhead Connector



Bulkhead connectors accept plugs on both sides. They are rugged, liquid tight and available in all number of poles.

Coloured Overmould



Completing a design or showing technical functions, overmould could be made in different colours too (e.g. DESINA green RAL 6018).

MULTI Seal Connector



A large selection of standard MULTI seal inserts allow strain relief of several individual conductors on one single connector.

Flexible Cable Protection



In addition to the integrated strain relief, the flex nut adds kink protection to a cable — available for all connector sizes.

Hybrid connector with multi insert



With the multi insert it is possible to set a ethernet and a power cable into one connector. The connection achieves the protection class IP 67.

12-point hex and knurled nut



This special nut makes connection simple by either tightening the connector manually (knurled nut) or with a wrench (12-point hex).

Conduit Attachment



Flexible corrugated conduit can be attached to a connector with an adapter offering strain relief and cable protection as well.

Customized

Connector with specific pull-out resistance



After reaching a certain pull-out force the connection releases preventing damage to the device (apparatus).

Bulkhead Fitting



This fitting with oversized flange is commonly used in the ship building industry where Signal Connections have to be maintained under extreme conditions.

Distribution-box



Distribution-boxes are known as important components for applications in automation. Robust and fully wired they are done according to customers specification.

ANACONDA Conduit Adapter



HUMMEL offers custom adapters for ANACONDA conduit systems in hazardous locations.

Limited Liability

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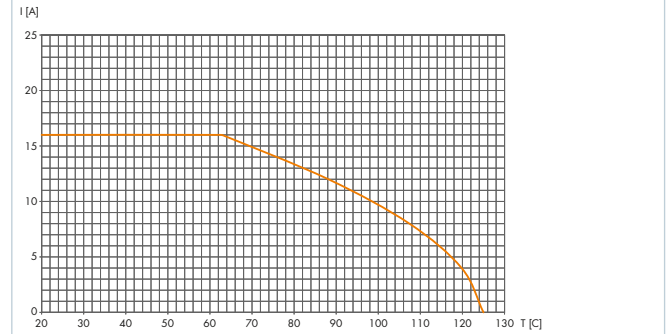
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Derating M 12 Power

AWG 16 Straight connectors male + female M 12 Power

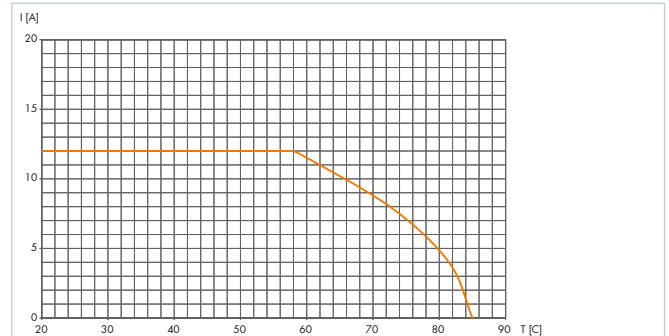
K-/L-Coding, wires 4 x AWG 16



Derating M 12 Power

Straight connectors male + female M 12 Power

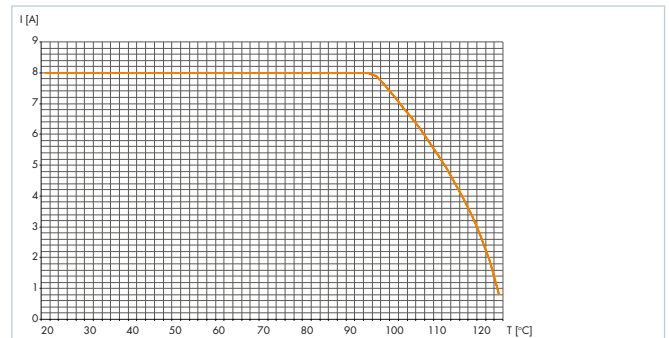
S-/T-Coding, wires 4 x AWG 16



Derating M 16

Straight connectors male + female M 16

10 pole, wires 10 x AWG 18

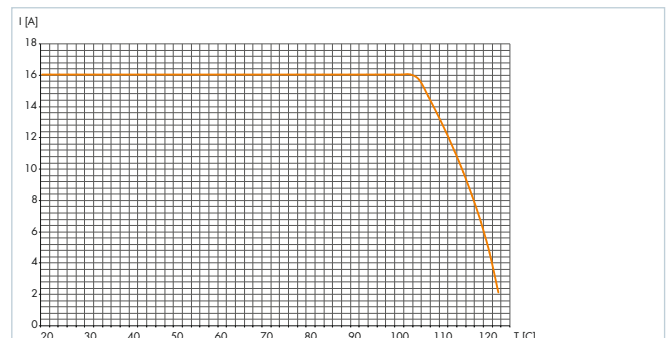


Derating TWINTUS

TWINTUS and straight connector female M 16

4+3+PE, wires AWG 14 (Power)

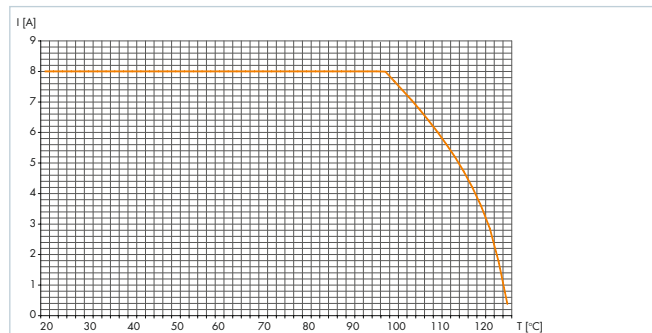
10 pole, wires AWG 26



Derating M 23 Signal

Straight Connectors male + female M 23

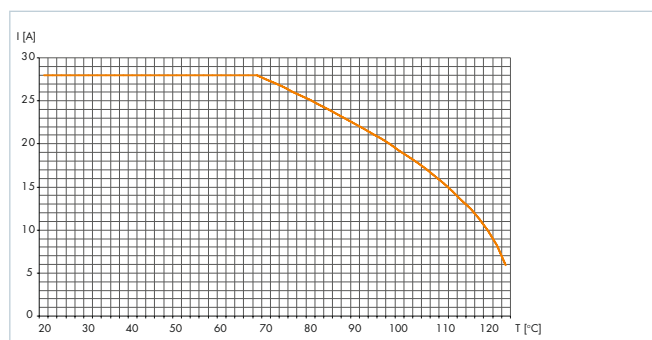
wires 12 x AWG 17



Derating M 23 Power

Straight connectors male + female M 23

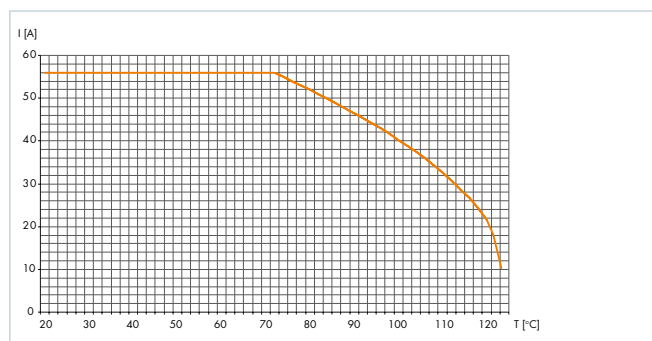
3 + PE, wires 3 x AWG 12



Derating M 40 (Size 1,5)

Straight connectors male + female M 40

wires 3 x AWG 6









INDEX

Index

| Part Number | Page | Part Number | Page | Part Number | Page | Part Number | Page | Part Number | Page |
|--------------------|--------------------|--------------------|--------------------|--------------------|------------------|--------------|------|---------------------|------|
| 7.000.848.101..... | 52 | 7.003.920..... | 68 | 7.010.982..... | 44, 50 | 7.423..... | 91 | 7.740.0..... | 157 |
| 7.000.848.102..... | 52 | 7.003.926..... | 121 | 7.010.9S0.702..... | 81, 104, | 7.425..... | 91 | 7.742..... | 159 |
| 7.000.900.101..... | 69, 81, | 7.003.943..... | 45 | ..... | 137, 187 | 7.430.4..... | 176 | 7.744..... | 158 |
| ..... | 104, 137, 178, 187 | 7.003.961..... | 46 | 7.010.9S0.703..... | 104, 187 | 7.431..... | 92 | 7.749..... | 158 |
| 7.000.900.102..... | 69, 81, | 7.003.981..... | 97 | 7.010.9S0.704..... | 51, 187 | 7.435..... | 92 | 7.810..... | 40 |
| ..... | 104, 137, 178, 187 | 7.003.983..... | 44 | 7.010.9S0.705..... | 51, 187 | 7.439..... | 92 | 7.811..... | 40 |
| 7.000.900.151..... | 161 | 7.003.985..... | 47 | 7.010.9S0.707..... | 123 | 7.440..... | 90 | 7.814..... | 174 |
| 7.000.900.152..... | 161 | 7.003.988..... | 47 | 7.010.9S0.708..... | 123 | 7.444..... | 90 | 7.816..... | 40 |
| 7.000.900.901..... | 123, | 7.004.912..... | 98 | 7.010.9S0.783..... | 69, 81, 137, 187 | 7.448..... | 90 | 7.820..... | 40 |
| ..... | 137, 140, 178 | 7.004.917..... | 100 | 7.010.9S1.002..... | 69, 81, 137, 187 | 7.449..... | 90 | 7.824..... | 174 |
| 7.000.900.903..... | 162, 165 | 7.004.981..... | 97 | 7.010.9S1.003..... | 104, 187 | 7.450..... | 93 | 7.831..... | 40 |
| 7.000.900.904..... | 51, 104, 108, 178 | 7.010.900.101..... | 104 | 7.010.9S1.083..... | 69, 81, 137, 187 | 7.452..... | 93 | 7.840.0..... | 41 |
| 7.000.900.906..... | 70 | 7.010.900.102..... | 81, 104, | 7.010.9S4.102..... | 178 | 7.454..... | 93 | 7.840.1..... | 41 |
| ..... | 70, 108 | ..... | 137, 187 | 7.010.9S4.103..... | 178 | 7.456..... | 93 | 7.840.2..... | 41 |
| 7.000.900.907..... | 70, 108 | 7.010.900.103..... | 104, 187 | 7.015.900.102..... | 161 | 7.458..... | 93 | 7.840.4..... | 174 |
| 7.000.900.908..... | 30 | 7.010.900.110..... | 123 | 7.015.900.103..... | 161 | 7.459..... | 93 | 7.842..... | 42 |
| 7.000.980.161..... | 51, | 7.010.900.127..... | 178 | 7.015.9S1.002..... | 161 | 7.460..... | 93 | 7.843..... | 42 |
| ..... | 178, 187 | 7.010.900.128..... | 69, 81, 105, 137 | 7.015.9S1.003..... | 161 | 7.462..... | 93 | 7.845..... | 42 |
| 7.000.980.162..... | 51, | 7.010.900.129..... | 161 | 7.015.95..... | 160 | 7.464..... | 93 | 7.847..... | 41 |
| ..... | 178, 187 | 7.010.900.135..... | 51 | 7.040.8..... | 52 | 7.466..... | 93 | 7.848..... | 43 |
| 7.000.980.167..... | 123 | 7.010.900.139..... | 69 | 7.053.9..... | 45, 46, 47 | 7.468..... | 67 | 7.850..... | 42 |
| 7.000.980.168..... | 123 | 7.010.900.14..... | 69 | 7.084.944..... | 135 | 7.476..... | 88 | 7.852..... | 41 |
| 7.000.9DM.C03..... | 105 | 7.010.900.151..... | 52 | 7.084.951..... | 135 | 7.486..... | 89 | 7.810.4..... | 78 |
| 7.000.9DM.C04..... | 105 | 7.010.900.162..... | 51, 187 | 7.105..... | 95 | 7.490..... | 94 | 7.820.4..... | 78 |
| 7.000.9DM.C06..... | 138 | 7.010.900.163..... | 51, 187 | 7.106..... | 88 | 7.491..... | 94 | 7.840.0..... | 78 |
| 7.000.9DM.C07..... | 138 | 7.010.900.170..... | 123 | 7.108..... | 66, 96, 99, 100 | 7.492..... | 94 | 7.841.0..... | 78 |
| 7.001.903..... | 44 | 7.010.900.183..... | 69, 81, 137, 187 | 7.110..... | 120 | 7.492..... | 94 | 7.842.0..... | 79 |
| 7.001.906..... | 96 | 7.010.900.190..... | 30, 52, | 7.140..... | 175 | 7.550..... | 130 | 7.842.0..... | 79 |
| 7.001.907..... | 96 | ..... | 82, 105, 138 | 7.141..... | 175 | 7.554..... | 176 | 7.843.0..... | 79 |
| 7.001.908..... | 45 | 7.010.900.191..... | 30, 52 | 7.166..... | 88 | 7.556..... | 130 | 7.845.0..... | 79 |
| 7.001.910..... | 46 | 7.010.900.192..... | 82, 105 | 7.206..... | 88 | 7.560..... | 130 | 7.847.4..... | 80 |
| 7.001.912..... | 98 | 7.010.900.200..... | 52 | 7.208..... | 66 | 7.564..... | 176 | 7.850.0..... | 79 |
| 7.001.916..... | 99 | 7.010.900.202..... | 52 | 7.210..... | 120 | 7.566..... | 130 | 7.852.4..... | 80 |
| 7.001.917..... | 99 | 7.010.900.205..... | 69, 81, 105, 138 | 7.240..... | 175 | 7.576..... | 131 | 7.701..... | 95 |
| 7.001.919..... | 100 | 7.010.900.207..... | 69, 81, 105, 138 | 7.241..... | 175 | 7.580..... | 131 | 7.702..... | 95 |
| 7.001.920..... | 68 | 7.010.900.209..... | 69, 81, 105, 138 | 7.300..... | 89 | 7.601.0..... | 132 | A712-7.000..... | 30 |
| 7.001.926..... | 121 | 7.010.900.215..... | 162 | 7.301..... | 89 | 7.601.4..... | 177 | A712-7.001.908..... | 48 |
| 7.001.928..... | 121 | 7.010.900.217..... | 162 | 7.306..... | 89 | 7.605..... | 132 | A712-7.001.912..... | 48 |
| 7.001.943..... | 45 | 7.010.901.001..... | 44, 49, 102 | 7.308..... | 66 | 7.621.0..... | 133 | A712-7.010.900..... | 30 |
| 7.001.961..... | 46 | 7.010.901.002..... | 44, 49, 68, 102 | 7.400..... | 90 | 7.621.4..... | 177 | A712-7.010.901..... | 26 |
| 7.001.981..... | 97 | 7.010.901.012..... | 44, 49, 68, 102 | 7.402..... | 90 | 7.623..... | 133 | A712-7.010.911..... | 26 |
| 7.001.983..... | 44 | 7.010.901.021..... | 102 | 7.404..... | 90 | 7.626..... | 133 | A712-7.010.9S0..... | 30 |
| 7.001.985..... | 47 | 7.010.901.022..... | 68, 102 | 7.406..... | 90 | 7.630.4..... | 177 | A712-7.K03..... | 25 |
| 7.001.988..... | 47 | 7.010.901.031..... | 102 | 7.408..... | 66 | 7.635..... | 134 | A712-7.K10..... | 22 |
| 7.002.912..... | 98 | 7.010.901.5..... | 104 | 7.410.0..... | 90 | 7.636..... | 134 | A712-7.K20..... | 22 |
| 7.002.917..... | 100 | 7.010.902.001..... | 103 | 7.410.4..... | 176 | 7.639..... | 134 | A712-7.K30..... | 22 |
| 7.002.981..... | 97 | 7.010.902.002..... | 103 | 7.410.7..... | 120 | 7.641..... | 132 | A712-7.K31..... | 22 |
| 7.003.903..... | 44 | 7.010.904.102..... | 178 | 7.412..... | 90 | 7.645..... | 132 | A712-7.K40..... | 24 |
| 7.003.906..... | 96 | 7.010.904.103..... | 178 | 7.414..... | 90 | 7.651..... | 133 | A712-7.K42.0..... | 23 |
| 7.003.907..... | 96 | 7.010.908.102..... | 69 | 7.416..... | 90 | 7.653..... | 131 | A712-7.K42.1..... | 23 |
| 7.003.908..... | 45 | 7.010.94..... | 136 | 7.420.0..... | 91 | 7.661..... | 132 | A712-7.K42.2..... | 24 |
| 7.003.910..... | 46 | 7.010.971..... | 122 | 7.420.4..... | 175 | 7.681..... | 131 | A712-7.K44.0..... | 23 |
| 7.003.912..... | 98 | 7.010.980.6..... | 68, 136 | 7.421.0..... | 91 | 7.683..... | 130 | A712-7.K44.1..... | 23 |
| 7.003.916..... | 99 | 7.010.980.8..... | 45, 47, 49 | 7.421.4..... | 175 | 7.710..... | 156 | A712-7.K44.2..... | 24 |
| 7.003.917..... | 99 | 7.010.981..... | 45, 46, 47, 49, 50 | 7.422..... | 91 | 7.716..... | 156 | A712-7.K50..... | 23 |
| 7.003.919..... | 100 | | | | | 7.720..... | 157 | A712-7.K51..... | 23 |

| Part Number | Page |
|--------------------|------------|
| A712-7.L03 | 25 |
| A712-7.S10 | 22 |
| A712-7.S20 | 22 |
| A712-7.S30 | 22 |
| A712-7.S31 | 22 |
| A712-7.S40 | 24 |
| A712-7.S42.0 | 23 |
| A712-7.S42.2 | 24 |
| A712-7.S44.0 | 23 |
| A712-7.S44.2 | 24 |
| A712-7.S50 | 23 |
| A712-7.S51 | 23 |
| A712-7.S05 | 25 |
| A712-7.T05 | 25 |
| A712-K | 27, 28, 29 |
| A712-L | 27, 28, 29 |
| A712-S | 27, 28, 29 |
| A712-T | 27, 28, 29 |
| A7RJ-081M41 | 82 |
| A7RJ-821M51 | 82 |

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