

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.



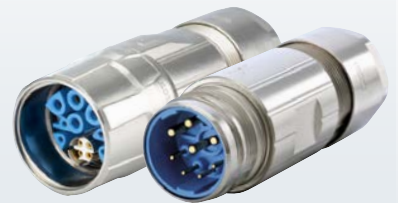
Connectors M 23 Signal

▶ 15



Connectors M 23 Power, M 23 Hybrid

▶ 35



Connectors M 23 RJ 45

▶ 47



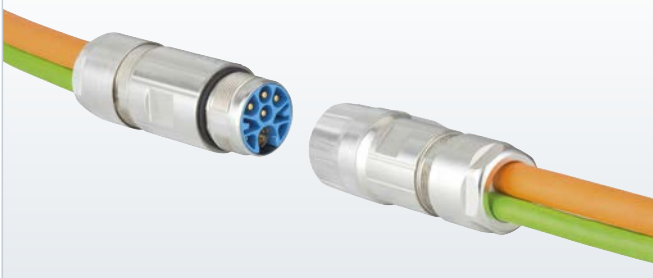
Connectors Stainless Steel (INOX)

▶ 55



Customized – No Limits

▶ 62



HUMMEL Highlights: product features

▶ 6

Technical Information

▶ 14

HUMMEL International

▶ 66



Housing



Inserts / Pinouts



Contacts



Accessories

Further information can be found in our Technical Centre at www.hummel.com

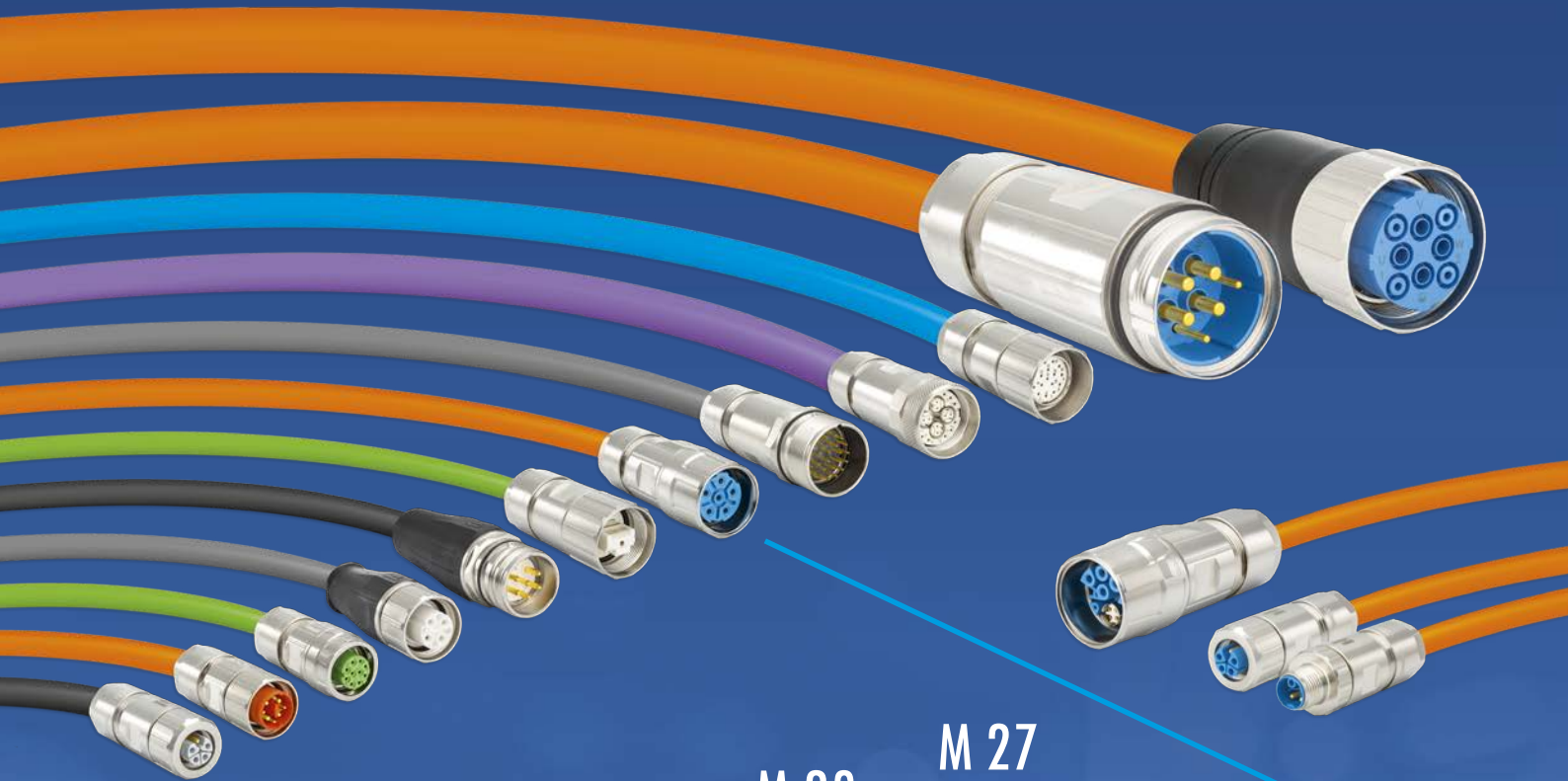


- // Assembly instructions
- // Crimping, assembly, disassembly
- // Crimping tool instructions for use
- // Crimp settings
- // Coding
- // Certificates & approvals
- // Derating curves

<https://www.hummel.com/en/circular-connectors/technical-center>



HUGE RANGE: M 12 – M 40



M 12 Power

M 23

Power Connectors

M 27

Signal Connectors

CIRCULAR CONNECTORS

Industrial Ethernet

M 16

TWILOCK

PROFINET

M 23 RJ 45

M 40

Moulded Cordsets

Customized Solutions

M 23 Hybrid



Germanischer Lloyd



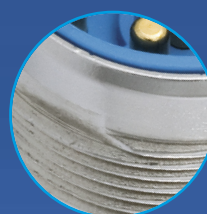
File-No. E 213337

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



TWILOCK



TWILOCK-S



M 23 RJ 45: ROBUST, SIMPLE & SMALL!



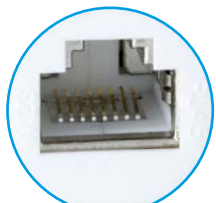
Design allows for terminated patch cable



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



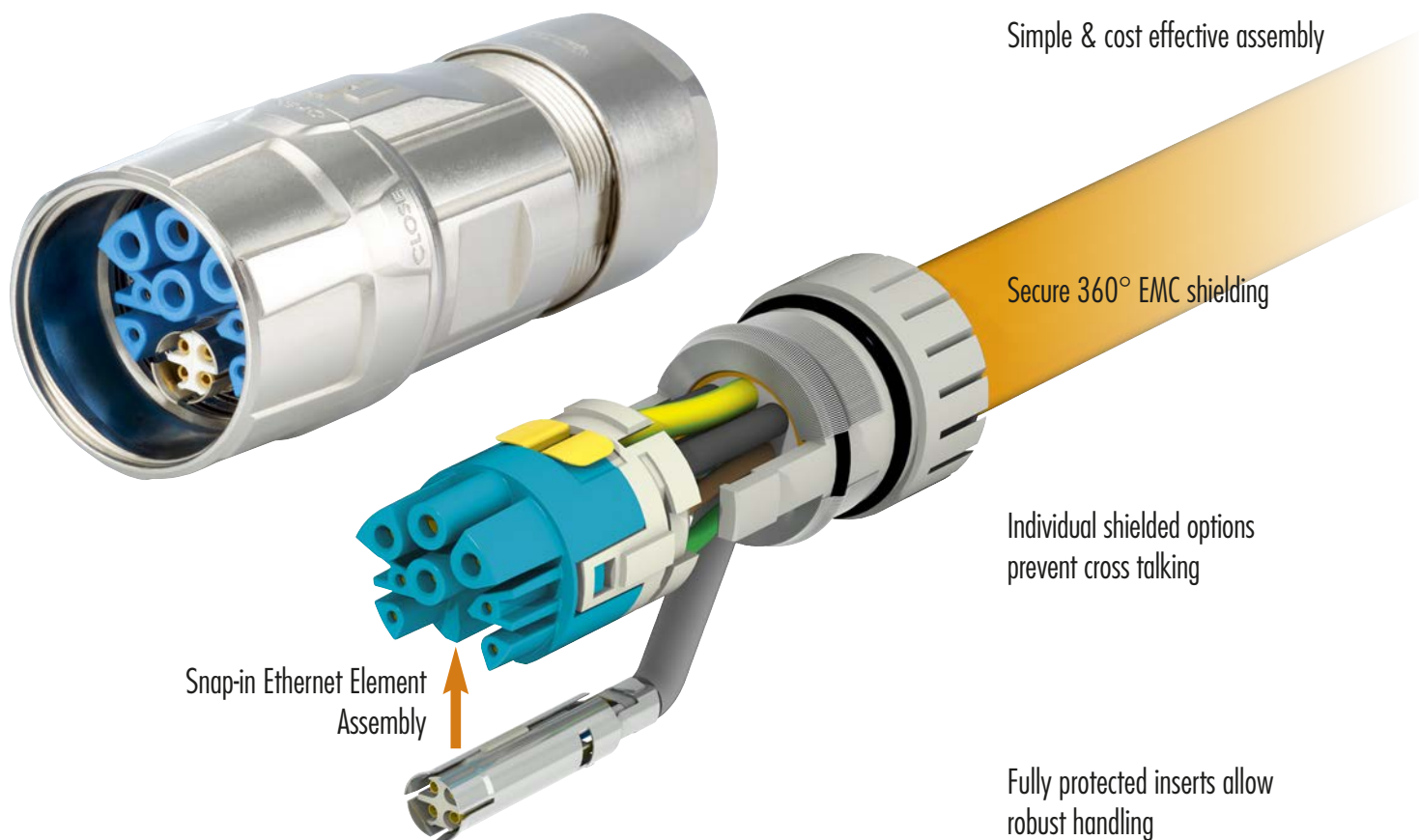
Integrated cable strain relief warrant an IP 67 / IP 69K rating making the M 23 based RJ 45 Connector an ideal solution for robust applications



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

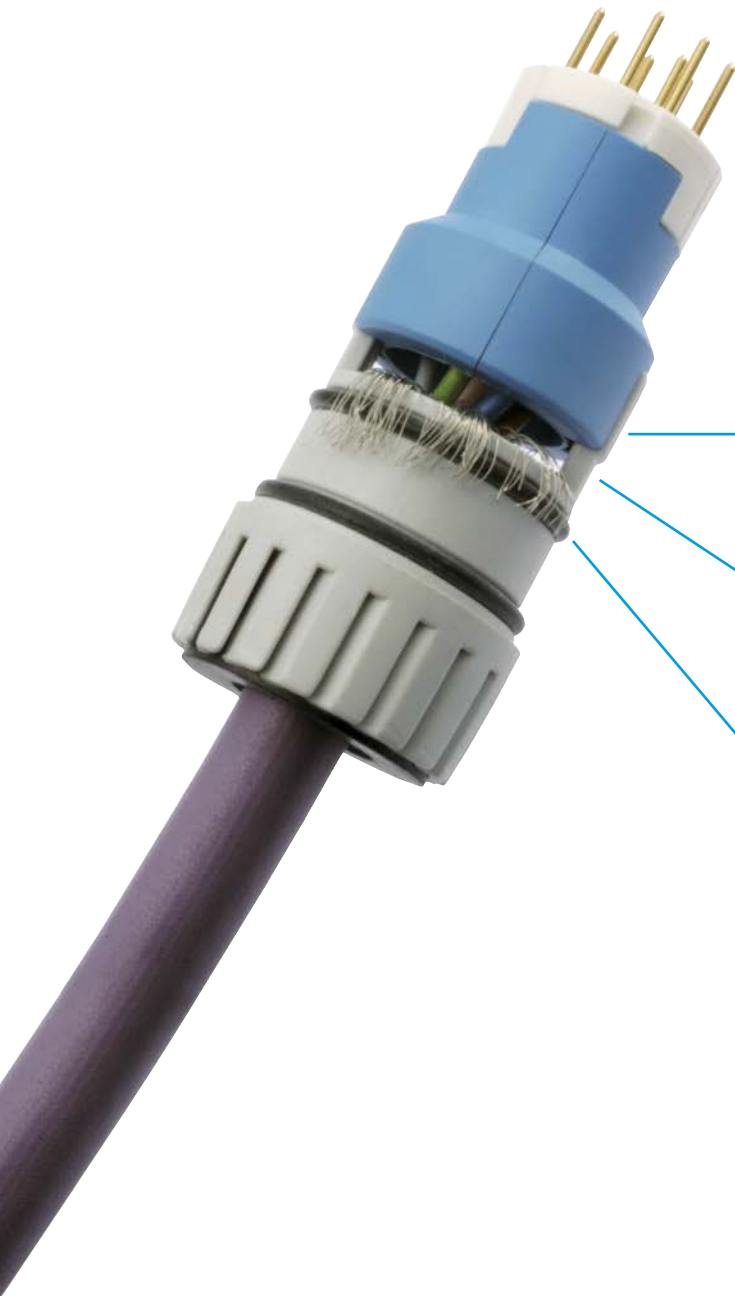
Fully integrated solution for Industrial Ethernet applications

- // 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



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



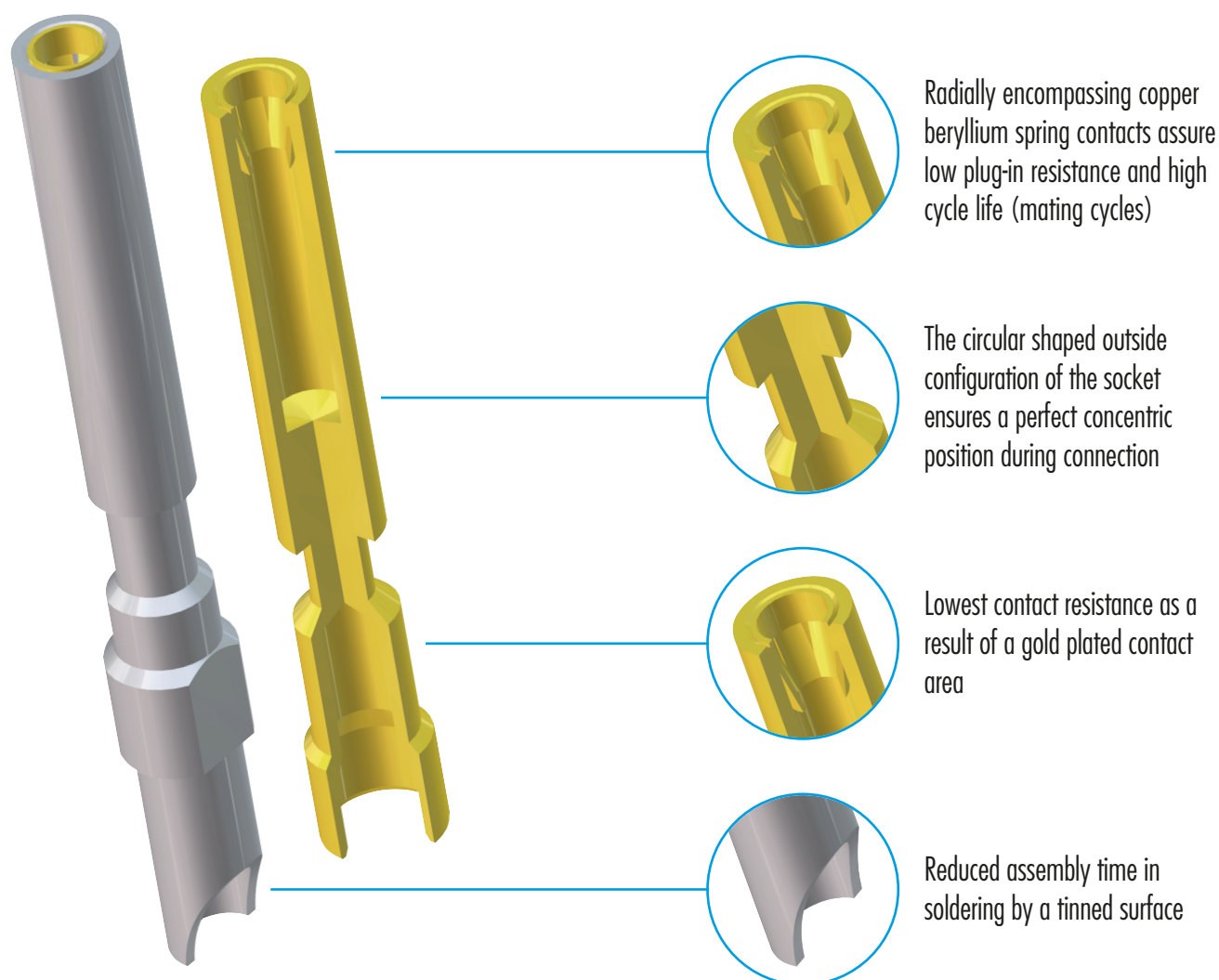
Strain relief insert with four fingers, secured in a recess, prevents cable rotation



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

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



M 23 CIRCULAR CONNECTORS

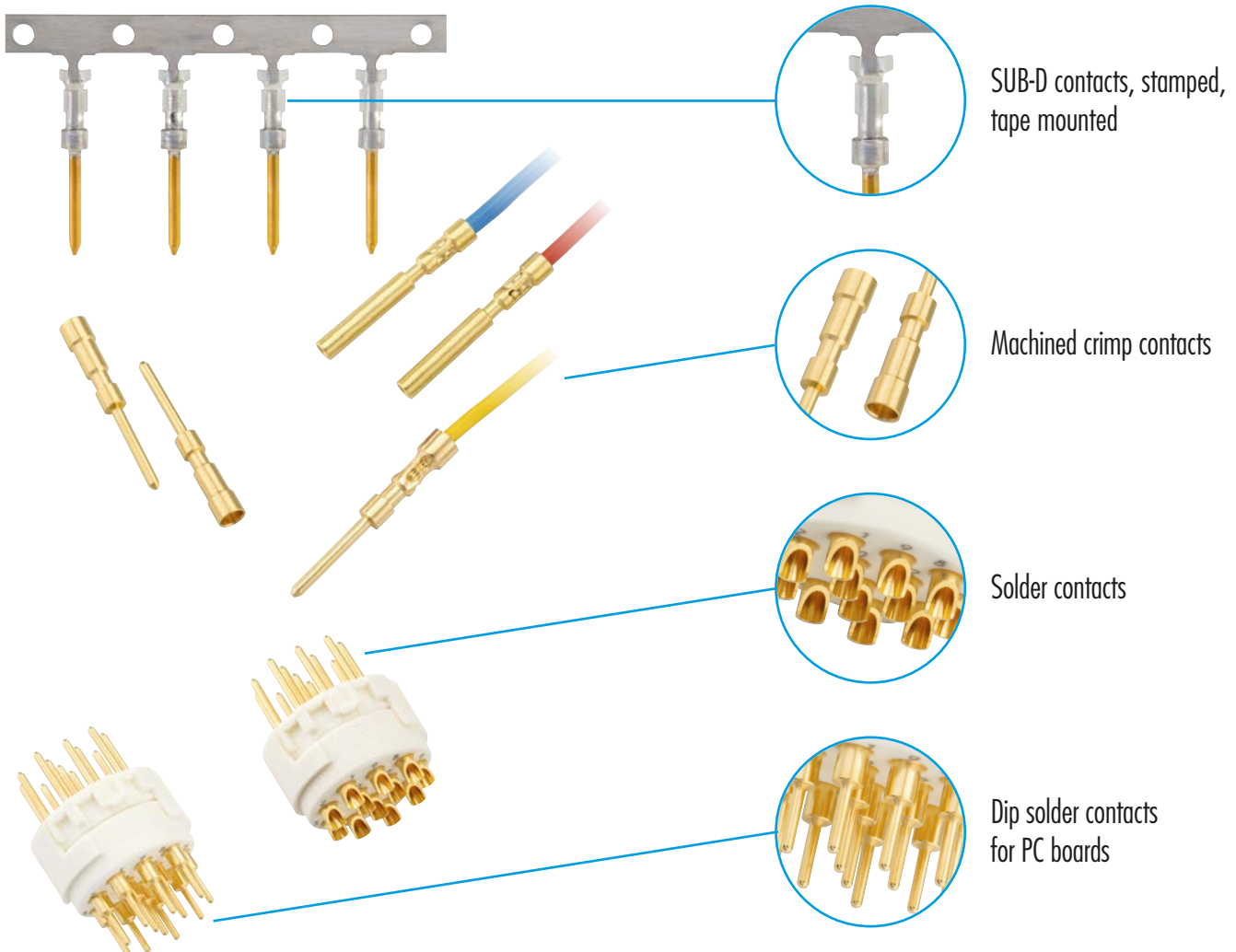
The success serie

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



Rated current

The **rated current** is the current that each contact of a connection can simultaneously transfer continuously.

Rated voltage

The **rated voltage** is the voltage for which a connector is designed. In operation, the rated voltage is the maximum continuously applied voltage.

Functional earth (FE)

Functional earth is an electrical conductor to ensure the functions and thus normal operation of installations and devices.

Functional earthing conductor: Earthing conductor provided for functional earthing.

Functional earthing: Earthing a point or points in a system or in an installation or in equipment, for purposes other than electrical safety.

Protective earth (PE)

Protective earth is an electrical conductor provided for the purposes of safety, for protection against electric shock. It is also called an earth conductor, earthing or "earth" for short. Its task in electric systems is to protect living beings in case of a fault.

PE conductor: Protective earth for the purposes of protective earthing

Protective earthing: Earthing a point or points in a system or in an installation or in equipment for purposes of electrical safety.

Contact overlapping

The **contact overlapping** or wipe length of connectors generally denotes the possible overlap area of the pin and receptacle. The greater this area, the more reliable the connection is due to higher possible tolerance allowance (tolerance compensation).

To ensure the IP degree of protection and the necessary contact overlapping, at HUMMEL the cable and coupling connectors must be fully engaged and locked.

Test voltage

The **test voltage** is the voltage that a connector must withstand under certain specifications without flashover or disruptive discharge via or through the insulation and at least corresponds to the r.m.s. withstand voltage in EN 61984.

The value of the test voltage is higher than the rated withstand voltage and serves to verify the dielectric strength of the connector.

Connectors

Connectors that are designed to be engaged or disengaged in normal use when live or under load. These are also called connectors with breaking capacity (CBC). A classic example in households is the SCHUKO plug (earthed 2-pin plug).

Connectors that are not deemed to be engaged or disengaged in normal use when under load or live are also named COC (connectors without breaking capacity).

HUMMEL connectors are usually classified as COC, i.e. they may not be engaged or disengaged when live!

Mating Cycles

One insertion and withdrawal (engaging and disengaging) of connectors is called a mating cycle (also called a cycle of mechanical operation or engaging cycle). The number of mating cycles is an important characteristic for connectors and plugs. It defines the life of a connector during which there is no loss in its transfer/transmission quality. The number of mating cycles is influenced above all by the quality of the contact surface. Use of high-quality and durable contact coatings reduces surface abrasion on mating.

Pollution degree

The **pollution degree** is a numerical value that indicates the level of pollution expected in the micro-environment and is a parameter used in the design of clearances and creepage distances of electrical equipment. It denotes the potential pollution of an open, unengaged connector in a specific environment. The EN 60664-1 standard differentiates between four categories:

- **Pollution degree 1:** No pollution or only dry, non-conductive pollution occurs. The pollution has no influence.
- **Pollution degree 2:** Only non-conductive pollution occurs. Occasionally, however, a temporary conductivity caused by condensation must be expected. (typical for households, business premises, laboratories or test areas.)
- **Pollution degree 3:** Conductive pollution occurs or dry non-conductive pollution occurs, which becomes conductive due to condensation which is to be expected. (typical for industrial firms or workshops.)
- **Pollution degree 4:** Continuous conductivity occurs due to conductive dust, rain or other wet conditions. If connectors are used under a higher pollution degree, the voltage values must be reduced. Contact our technical specialists to find out more.

Safety note

In case of operating voltages greater than 50 volt, the connectors listed in this catalogue must be used with conducting housing parts in accordance with the safety provisions of DIN VDE 0100-410; IEC 60364-4-41. These safety provisions specify that relevant connectors may not be engaged or disengaged when live. Otherwise, no protection against electric shock is ensured.



Further information is available on our website:

<https://www.hummel.com/de/rundsteckverbinder/technik-center/allgemeine-technische-hinweise>



HUMMEL connectors may not be engaged or disengaged when live. To ensure the IP degree of protection (IP rating) and the necessary contact overlapping, the cable and coupling connectors must be fully engaged and locked.

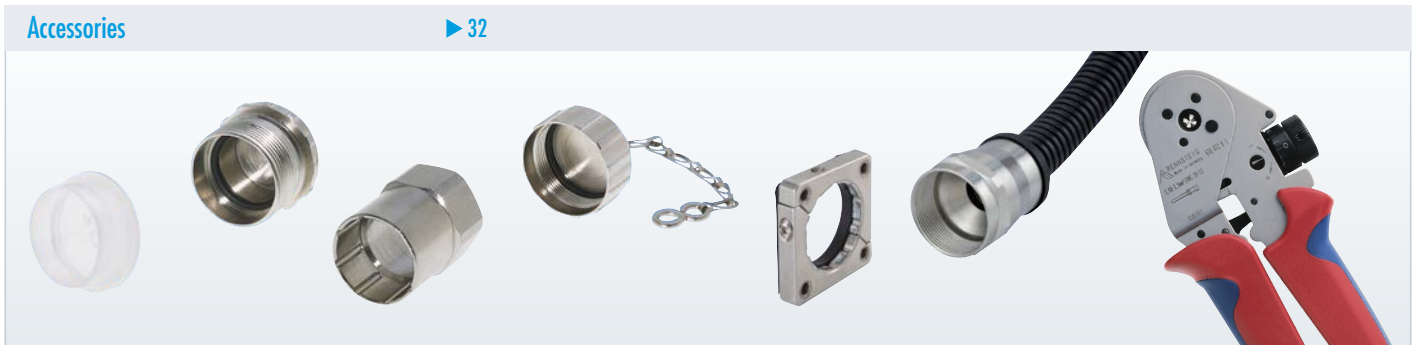
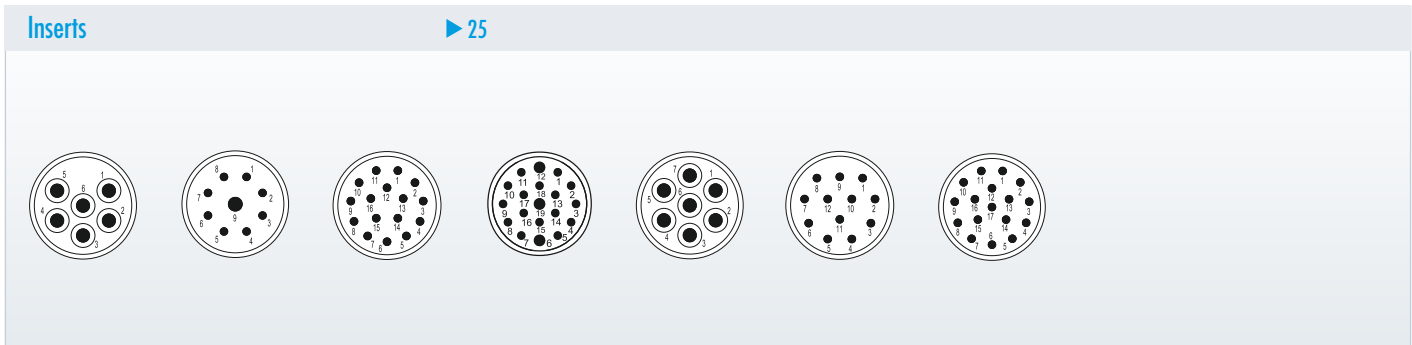
M 23 SIGNAL CONNECTORS

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 blue passivated 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 pollution ³⁾ | 160 | 160 | 160 | 160 | 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 14



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 |

▶ 25 | ▶ 31

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 |

▶ 25 | ▶ 31

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 |

▶ 25 | ▶ 31

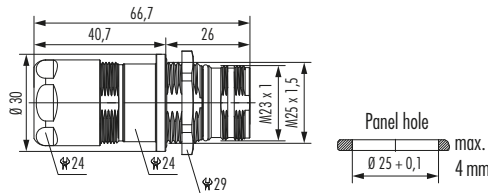
Panel Connector, Male Thread, with Strain Relief

| 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 | |

▶ 25 | ▶ 31

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 |

* interchangeable 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 |



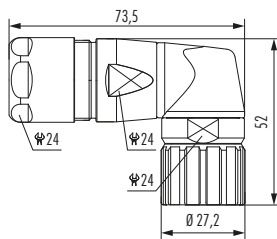
▶ 25



▶ 31

Including jam nut M 25 x 1,5

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 |

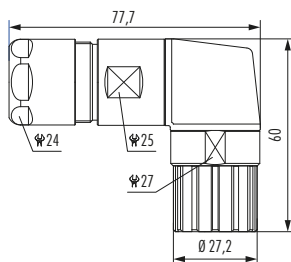


▶ 25



▶ 31

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 |



▶ 25



▶ 31



Housings

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 |

▶ 25 | ▶ 31 | ▶ 32

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 |

▶ 25 | ▶ 31 | ▶ 32

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 |

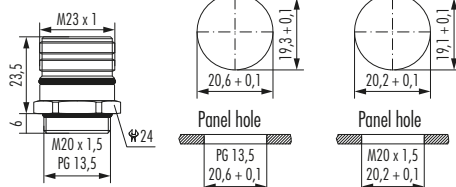
▶ 25 | ▶ 31 | ▶ 32



Housing without inserts and contacts

¹ no compatibility with TWILOCK

Panel Connector, Male Thread, Single Hole Mounted



Type Part Number

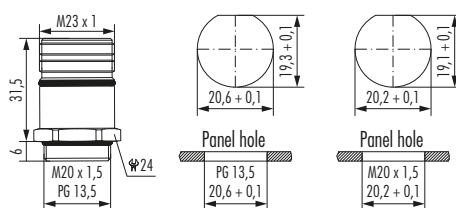
| | |
|----------------------------------------|----------------------------|
| Front mounting for male inserts | |
| Thread M 20 x 1,5 | 7.420.000.000 ¹ |
| Thread PG 13,5 | 7.422.000.000 ¹ |

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

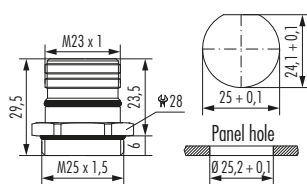
| | |
|------------------------------------------|----------------------------|
| Front mounting for female inserts | |
| Thread M 20 x 1,5 | 7.421.000.000 ¹ |
| Thread PG 13,5 | 7.423.000.000 ¹ |

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





Housings

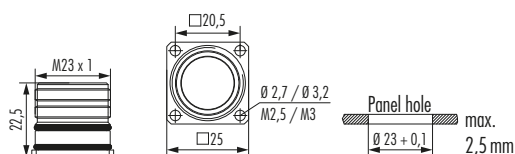
Right Angle Panel Connector, Male Thread, rotatable TWILOCK/TWILOCK-S*

| Type | Part Number |
|-------------------------------------|---------------|
| 330° rotatable, hole mounted | |
| 4 x holes 3,2 mm (.13") | 7.439.000.000 |
| Flange 25 x 25 mm blue passivated | |
| 4 x holes 3,2 mm (.13") | 7.439.000.010 |
| Flange 25 x 25 mm nickel plated | |
| * intermateable with Speedtec | |
| 4 x holes 3,2 mm (.13") | 7.439.000.00S |
| Flange 25 x 25 mm blue passivated | |

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 blue passivated | |
| 4 x holes 3,2 mm (.13") | 7.439.100.010 |
| Flange 28 x 28 mm nickel plated | |
| * intermateable with Speedtec | |
| 4 x holes 3,2 mm (.13") | 7.439.100.00S |
| Flange 28 x 28 mm blue passivated | |

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

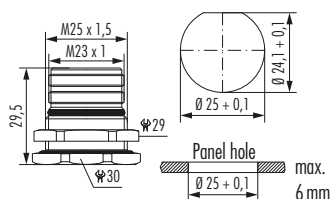


| Type | Part Number |
|------|-------------|
|------|-------------|

| | |
|-------------------------------------|---------------|
| 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 | 7.462.000.005 |



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

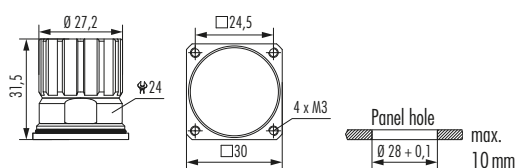


| Type | Part Number |
|------|-------------|
|------|-------------|

| | |
|-------------------------------|----------------------------|
| Rear mounting | |
| Thread M 25 x 1,5 | 7.458.000.000 ¹ |
| * intermateable with Speedtec | |
| Thread M 25 x 1,5 | 7.458.000.005 |
| Including jam nut M 25 x 1,5 | |



Panel Connector, Female Thread, Rear Mounting




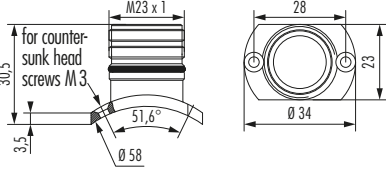



| Type | Part Number |
|------|-------------|
|------|-------------|


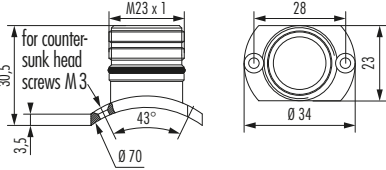



| | |
|----------------------------------------|---------------|
| With knurled nut, rear mounting | |
| 4 threads M 3 | 7.459.000.000 |


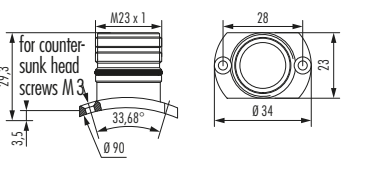







Housings

| 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 |
| | |  ▶ 25 \| ▶ 31 \| ▶ 32 \| |  |

| 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 |
| | |  ▶ 25 \| ▶ 31 \| ▶ 32 \| |  |

| 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 |
| | |  ▶ 25 \| ▶ 31 \| ▶ 32 \| |  |



Housing without inserts and contacts

¹ no compatibility with TWILOCK



| 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 30)</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 30)</p> | | | | |





Inserts / Pinouts

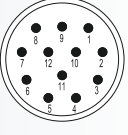
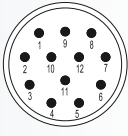
| Inserts 9-pole (8 + 1) | | Type | Part Number | Part Number |
|-------------------------------------------|----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|----------------|
| <p>Insert pin mating view (Part E)</p> | <p>Pinout clockwise</p> | Pins | | Sockets |
| | | Insert with solder contacts .....7.001.981.103 .....7.001.981.104 Insert without contacts .....7.003.981.101 .....7.003.981.102 | | |
| <p>Insert socket mating view (Part P)</p> | <p>Pinout counter-clockwise</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 30)</p> | | |

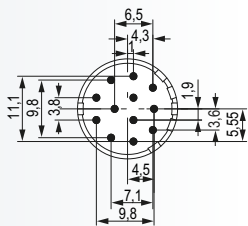


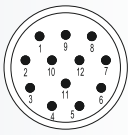
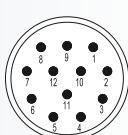
| Inserts 9-pole (8 + 1) | | Type | Part Number | Part Number |
|-------------------------------------------|----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|----------------|
| <p>Insert pin mating view (Part P)</p> | <p>Pinout counter-clockwise</p> | Pins | | Sockets |
| | | Insert with solder contacts .....7.002.981.103 .....7.002.981.104 Insert without contacts .....7.004.981.101 .....7.004.981.102 | | |
| <p>Insert socket mating view (Part E)</p> | <p>Pinout clockwise</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 30)</p> | | |

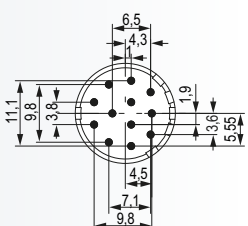




| Inserts 12-pole | | Type | Part Number | Part Number | |
|----------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|---------------|----------------|---------------|
|  Insert pin mating view (Part E) |  Insert socket mating view (Part 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 |
| | | 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 30) | | | |

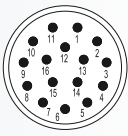
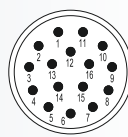
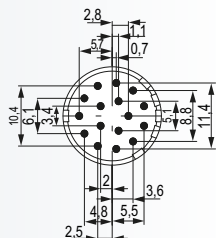


| Inserts 12-pole | | Type | Part Number | Part Number | |
|------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|---------------|----------------|---------------|
|  Insert pin mating view (Part P) |  Insert socket mating view (Part E) | 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 |
| | | 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 30) | | | |

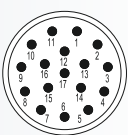
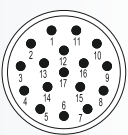
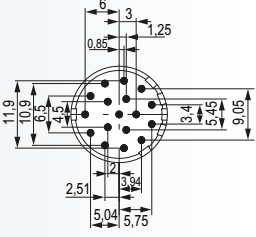




Inserts / Pinouts

| Inserts 16-pole | Type | Part Number | Part Number |
|-----------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------------|
|  <p>Insert pin mating view (Part E)</p> | Pinout clockwise | Pins | Sockets |
| | Insert with solder contacts..... | 7.001.916.103 | 7.001.916.104 |
|  <p>Insert socket mating view (Part P)</p> | 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 |
|  | <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 30)</p> | | |

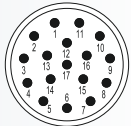


| Inserts 17-pole | Type | Part Number | Part Number |
|-------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------------|
|  <p>Insert pin mating view (Part E)</p> | Pinout clockwise | Pins | Sockets |
| | Insert with solder contacts..... | 7.001.917.103 | 7.001.917.104 |
|  <p>Insert socket mating view (Part P)</p> | 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 |
|  | <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 30)</p> | | |

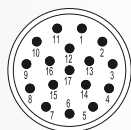




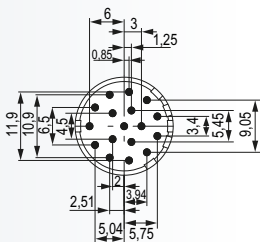
Inserts 17-pole



Insert pin mating view (Part P)



Insert socket mating view (Part E)



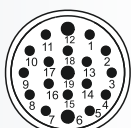
| Type | Part Number | Part Number |
|----------------------------------|---------------|----------------|
| Pinout counter-clockwise | Pins | Sockets |
| Insert with solder contacts..... | 7.002.917.103 | 7.002.917.104 |
| Insert without contacts | 7.004.917.101 | 7.004.917.102 |
| Insert with dip solder 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 |

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

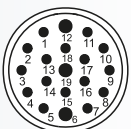
Coding possibilities N, S, H, X, Y and Z (see page 30)



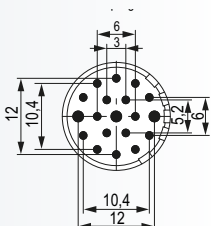
Inserts 19-pole



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..... | 7.001.919.103 | 7.001.919.104 |
| 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 |

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

Coding possibilities N, S, H, X and Y (see page 30)





Inserts / Pinouts

| 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 43–44 |





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



| Coding | Number of Poles | Coding Possibilities |
|-----------------------------------|-----------------|----------------------|
| <p>Female Inserts mating view</p> | 6-pole | N, S, H, X, Y and Z |
| | 7-pole | N, S, H, X and Y |
| <p>Male Inserts mating view</p> | 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 | 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 1,5 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 |
|  | 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 |



Accessories

| Accessories | Type | Part Number |
|-------------|--------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|
| | Plastic protective cap for connectors with male thread with female thread | 7.000.900.101 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 Length 100 mm | 7.010.9S0.703 ¹ 7.010.9S1.003 ¹ |
| | Brass protective cap with chain for connectors with male thread Length 70 mm Length 100 mm | 7.010.9S0.702 7.010.9S1.002 |
| | Assembly tool | 7.010.900.101 |
| | Bus End Connector Close type Used to cap an open male connector in bus-systems | 7.105.000.000 |

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 Tool Adapter for tightening or loosening knurled nuts for M23 | 7.010.900.190 7.010.900.192 |
|  | Crimping machine pneumatic crimp tool | on request |
|  | Crimp tool for manual crimping of machined crimp contacts incl. locator for signal connectors Locator for M 16 / M 23 Signal Connectors (separate) | 7.000.900.904 7.010.900.136 |

¹ no compatibility with TWILOCK



M 23 SIGNAL



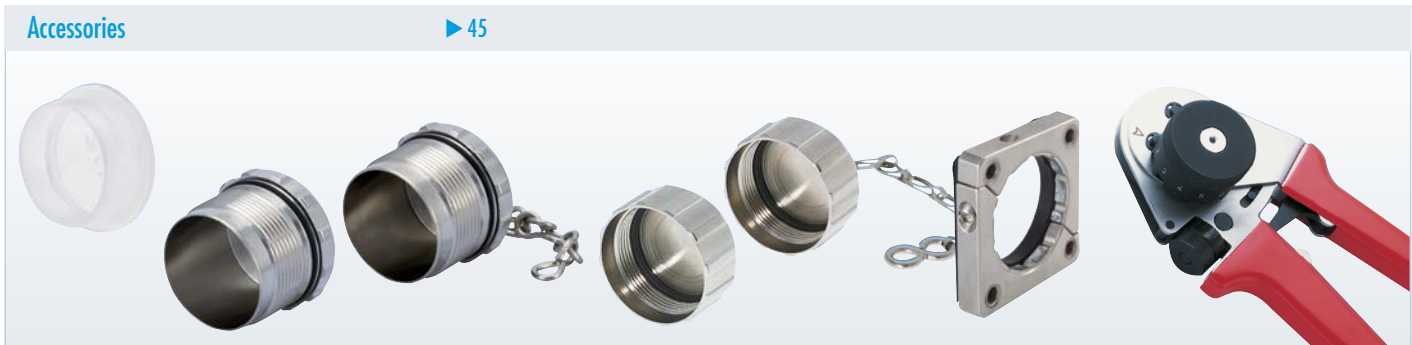
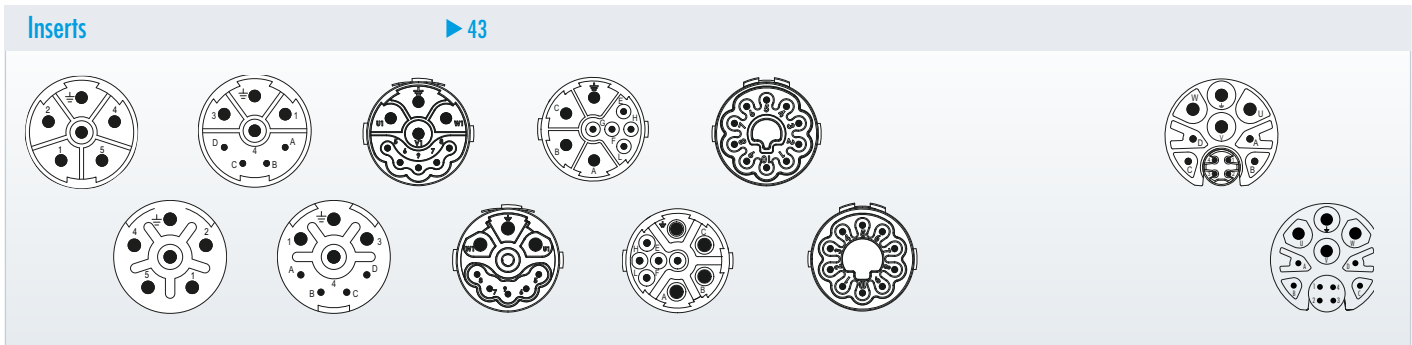
M 23 POWER, M 23 HYBRID

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 or hybrid 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 blue passivated 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 pollution 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 (Hybrid) | | | | | |
| | Ethernet | Signal | | Power | | |
| 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 pollution 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 14



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 |

▶ 43 |
 ▶ 44 |
 ▶ 45

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 |

▶ 43 |
 ▶ 44 |
 ▶ 45

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 |

▶ 43 |
 ▶ 44 |
 ▶ 45

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 |

▶ 43 |
 ▶ 44 |
 ▶ 45

Housing without inserts and contacts

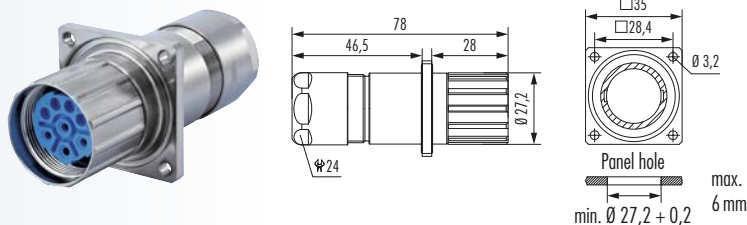
Panel Connector, Female Thread, with Strain Relief

Cable-Ø

Part Number

4 holes Ø 3,2 mm (.13"), front or rear mounting

| | |
|-------------------------|---------------|
| 7 – 12 mm (.27 – .47") | 7.681.500.000 |
| 11 – 17 mm (.43 – .67") | 7.681.600.000 |



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

Cable-Ø

Part Number

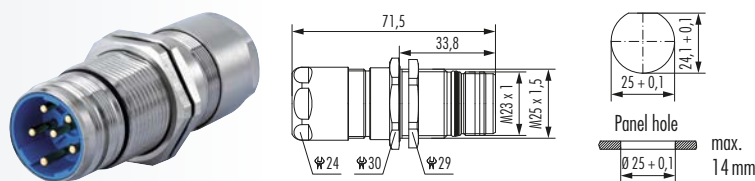
Single hole mounted, rear mounting, thread M25 x 1,5

| | |
|-------------------------|---------------|
| 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

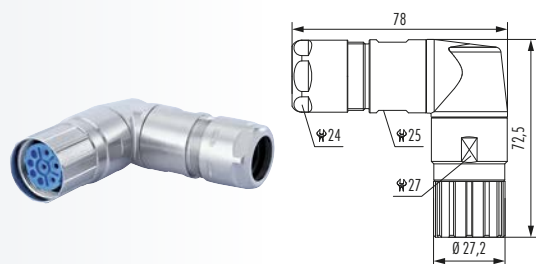


Right Angle Connector, Female Thread, rotatable

Cable-Ø

Part Number


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

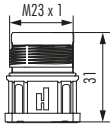
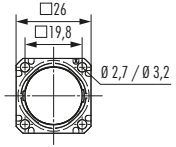




Housings

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







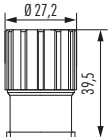
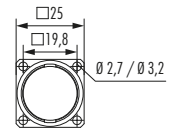
Panel hole
Ø 20 + 0,1

| 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 |

▶ 43
 ▶ 44
 ▶ 45

Panel Connector with knurled Nut, Front Mounting







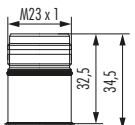
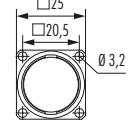
Panel hole
Ø 20 + 0,1

| 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 |

▶ 43
 ▶ 44
 ▶ 45

Panel Connector, Male Thread, Rear Mounting



Panel hole
max. 12 mm
Ø 23,1 + 0,1

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

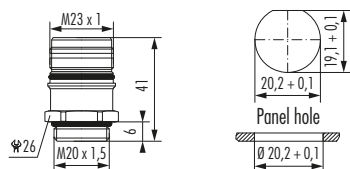
▶ 43
 ▶ 44
 ▶ 45



Housing without inserts and contacts

¹ No compatibility with TWILOCK

Panel Connector, Male Thread, Single Hole Mounted



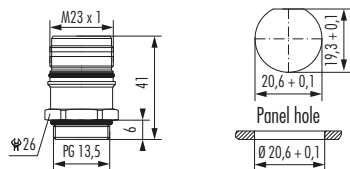
Type Part Number

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



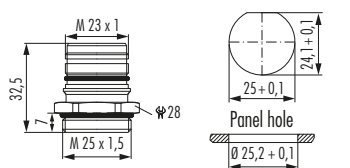
Type Part Number

Front mounting
Thread PG 13,57.623.000.000¹

Option: jam nut PG 13,5



Panel Connector, Male Thread, Single Hole Mounted



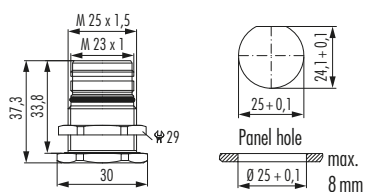
Type Part Number

Front mounting
Thread M 25x1,57.626.000.000

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

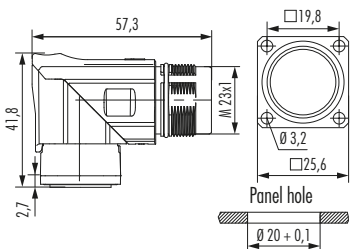
¹ No compatibility with TWILOCK, not for inserts 7.084.944.xxx / 7.084.909.xxx






Housings

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




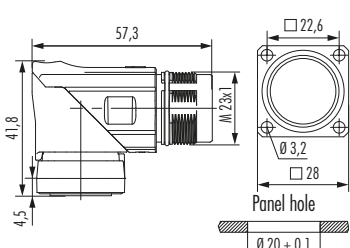


| Type | Part Number |
|--------------------------------------------|----------------------------|
| 330° rotatable, single hole mounted | |
| 4 x holes 3,2 mm (.13") | 7.639.000.000 ¹ |
| Flange 25 x 25 mm, blue passivated | |
| 4 x holes 3,2 mm (.13") | 7.639.000.010 ¹ |
| Flange 25 x 25 mm, nickel plated | |
| * intermateable with Speedtec | |
| 4 x holes 3,2 mm (.13") | 7.639.000.00S ¹ |
| Flange 25 x 25 mm, blue passivated | |




 ▶ 43 |
  ▶ 44 |
  ▶ 45 |

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





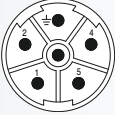

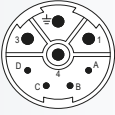
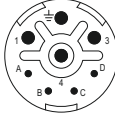


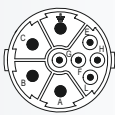
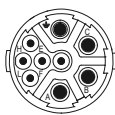

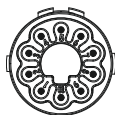


| Type | Part Number |
|--------------------------------------------|----------------------------|
| 330° rotatable, single hole mounted | |
| 4 x holes 3,2 mm (.13") | 7.639.100.000 ¹ |
| Flange 28 x 28 mm, blue passivated | |
| 4 x holes 3,2 mm (.13") | 7.639.100.010 ¹ |
| Flange 28 x 28 mm, nickel plated | |
| * intermateable with Speedtec | |
| 4 x holes 3,2 mm (.13") | 7.639.100.00S ¹ |
| Flange 28 x 28 mm, blue passivated | |

 ▶ 43 |
  ▶ 44 |
  ▶ 45 |









Housing without inserts and contacts



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



Contacts

| Contacts | Type | Crimp Range | Part Number |
|-------------------------------------------------------------------------------------|--------------------------------------------|----------------------------------------------|---------------|
|  | Crimp pin 0,6 mm, machined ¹ | 0,08 – 0,34 mm ² (AWG28 – AWG 22) | 7.010.980.643 |
|  | 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 | 0,08 – 0,56 mm ² (AWG 28 – 20) | 7.010.941.031 |
| | 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 suitable crimp tool 7.000.900.909

² suitable crimp tool 7.000.900.901



Accessories

| Accessories | Type | Part Number |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|
| | Plastic protective cap for connectors with male thread with female thread |7.000.900.101 .....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 Length 100 mm |7.010.950.783 ¹ .....7.010.951.083 ¹ |
| | Brass protective cap with chain for connectors with male thread Length 70 mm Length 100 mm |7.010.950.702 .....7.010.951.002 |
| | Crimp tool for manual crimping of machined crimp contacts for M 23 Power Connectors incl. Locator for M 23 Hybrid-/Power Connectors incl. Locator |7.000.900.901 .....7.000.900.909 |
| | Locator for M 23 Power Connectors (separate) Locator for M 23 Hybrid-/Power Connectors (separate) |7.010.900.118 .....7.010.900.158 |
| | 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 | 7.010.900.198 |
| | 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 machine | |
| | pneumatic crimping tool.....on request | |

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 pollution | 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 14



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.

53

Straight Connector Male Thread

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

Incl. 8 poles coupler, fully occupied

53

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 |

max. 5 mm

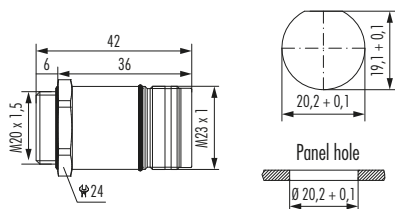
53

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 |

53

Single Hole Panel Connector



Type

Part Number

Front Mount

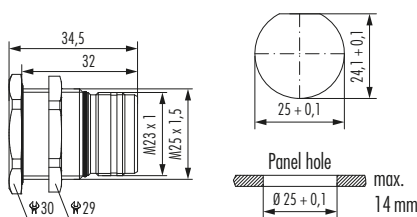
M 20 x 1,5 thread7.R42.008.000

Incl. 8 poles coupler, fully occupied

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



Single Hole Panel Connector



Type

Part Number

Rear Mount

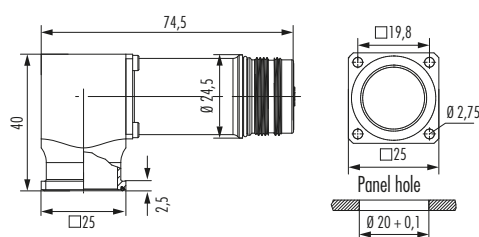
M 25 x 1,5 thread7.R50.008.000

Incl. 8 poles coupler, fully occupied

M 25 x 1,5 Locking Nut included.



Right Angle Panel Connector, Male Thread



Type

Part Number

300° rotatable, locking screw at flange

4 holes 2.7 mm, Flange7.R43.108.000

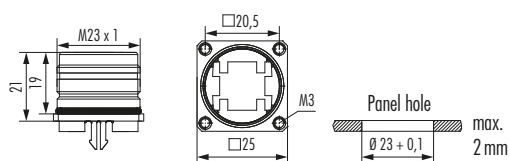
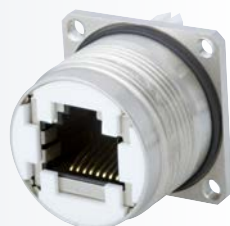
Incl. 8 poles coupler, fully occupied

Optional: Gasket

Simple installation with M 2.5 screws



Panel Connector Rear Mount, dip solder insert



Type

Part Number

4x M 3 thread, Flange7.R45.008.000

Incl. 8 poles dip solder insert

4x M 3 thread, Flange7.R45.082.000


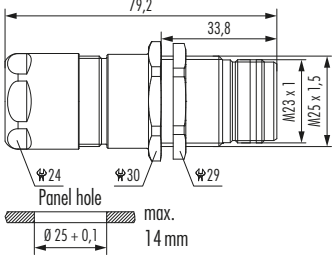
Incl. 8 + 2 poles dip solder insert


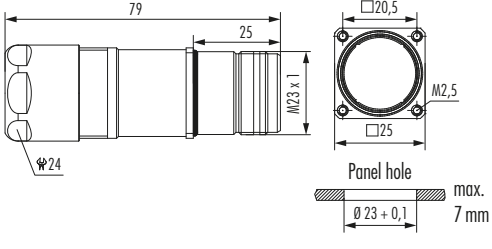


¹ upon request



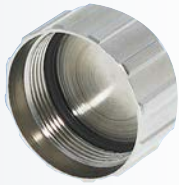






Housings

| 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 Other diameters: $\phi 24$, $\phi 30$, $\phi 29$</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 M 25 x 1,5 Locking Nut included | |
| | ▶ 53 | |

| 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 Flange dimensions: $\square 20,5$, $\square 25$, M2,5</p> | 4x M 2,5 thread, Flange, Rear Mount 3 – 7 mm (.12 - .28") .....7.R47.408.000 Incl. 8 poles coupler, fully occupied | |
| | ▶ 53 | |



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



Accessories

| Accessories | Type | Part Number |
|------------------------------------------------------------------------------------|-------------------------------------------------------------------------|-----------------|
|  | Suitable patch cable |on request |
|  | Field attachable RJ45 connector Cat 5/SE | |
| | 8-pole | A7RJ-081M41 |
| | 8+2-pole | A7RJ-821M51 |
|  | Field attachable RJ45 connector Cat 6A | |
| | 8-pole | A7RJ-081M6A |
|  | 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 |

STAINLESS STEEL CONNECTORS (INOX)

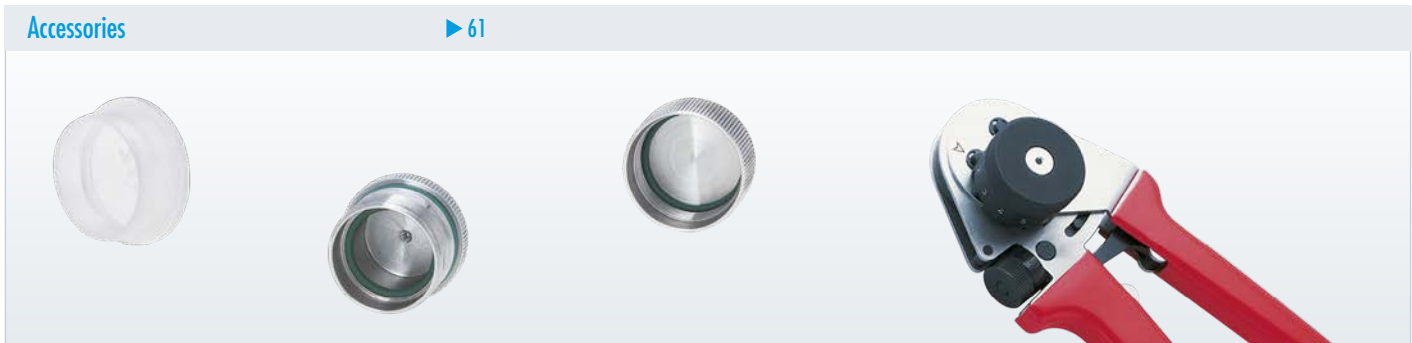
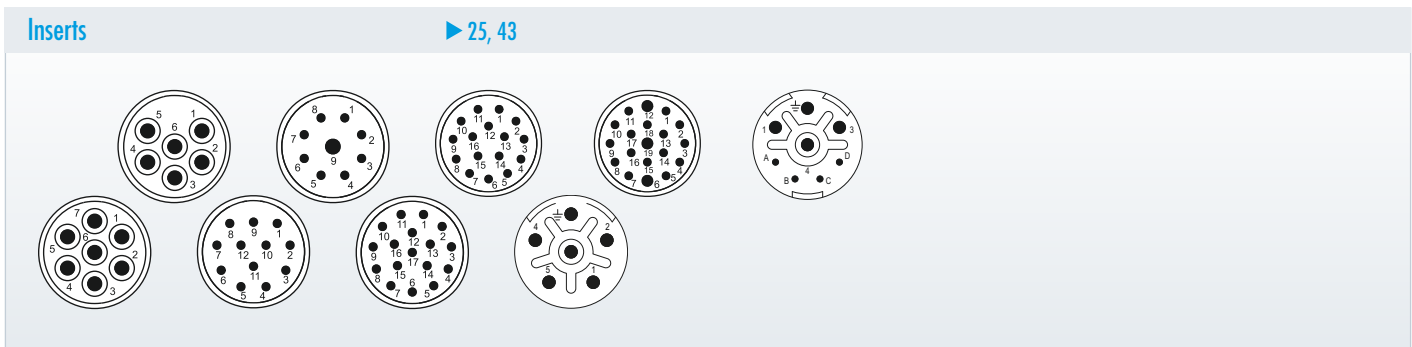
Special applications require special solutions. This is important for connectors made of stainless steel, too. They are being used where the conditions of the environment are extremely rough or hygienic requirements particularly high.

// Signal connectors M 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 | |
| Protection | IP 67 / IP 69K per EN 60 529 (connected), NEMA 4x | |

Additional Information

Electrical data see standard program

| | |
|------------------------|---------|
| Signal Connectors M 23 | page 17 |
| Power Connectors M 23 | page 37 |

Inserts and contacts see standard program

| | |
|------------------------|---------|
| Signal Connectors M 23 | page 25 |
| Power Connectors M 23 | page 43 |

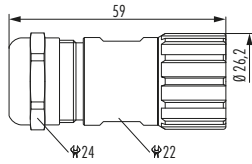
Typical Applications





Housings M 23 Signal

Straight Connector, Female Thread



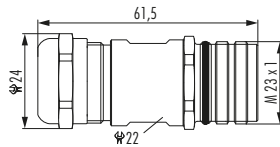
| Cable-Ø | Part Number |
|---------|-------------|
|---------|-------------|

| | |
|-------------------------|---------------|
| 3 – 7 mm (.12 – .28") | 7.141.300.000 |
| 5 – 10 mm (.20 – .39") | 7.141.400.000 |
| 7 – 12 mm (.27 – .47") | 7.141.500.000 |
| 10 – 14 mm (.39 – .55") | 7.141.600.000 |

Assembly tool 7.010.900.127 is required



Straight Connector, Male Thread

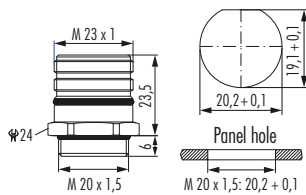


| Cable-Ø | Part Number |
|---------|-------------|
|---------|-------------|

| | |
|-------------------------|---------------|
| 3 – 7 mm (.12 – .28") | 7.241.300.000 |
| 5 – 10 mm (.20 – .39") | 7.241.400.000 |
| 7 – 12 mm (.27 – .47") | 7.241.500.000 |
| 10 – 14 mm (.39 – .55") | 7.241.600.000 |



Panel Connector, Male Thread, Single Hole Mounted



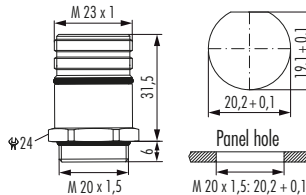
| Type | Part Number |
|------|-------------|
|------|-------------|

| | |
|------------------------------------------------------|---------------|
| 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 |

▶ 25 | ▶ 31 | ▶ 32

Right Angle Panel Connector, Male Thread

| Type | Part Number |
|------------------------------|---------------|
| 4 holes Ø 2,7 mm (.11")..... | 7.430.400.000 |

▶ 25 | ▶ 31 | ▶ 32

Straight Connector, Female Thread

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

▶ 43 | ▶ 44 | ▶ 45

Straight Connector, Male Thread

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

▶ 43 | ▶ 44 | ▶ 45



Housing without inserts and contacts



Housings M 23 Power

Panel Connector, Male Thread, Single Hole Mounted

| Type | Part Number |
|-------------------------|----------------------------|
| Front mounting | |
| Thread M 20 x 1,5 | 7.621.400.000 ¹ |
| Thread M 25 x 1,5 | 7.626.400.000 |

▶ 43 | ▶ 44 | ▶ 45

Panel Connector, Male Thread

| Type | Part Number |
|-------------------------------|---------------|
| For front mounting | |
| 4 holes Ø 3,2 mm (.13") | 7.601.400.000 |
| Optional: Flat gasket | |

▶ 43 | ▶ 44 | ▶ 45

Right Angle Panel Connector, Male Thread

| Type | Part Number |
|-------------------------------|---------------|
| 4 holes Ø 2,7 mm (.11") | 7.630.400.000 |

▶ 43 | ▶ 44 | ▶ 45

| Accessories | Type | Part Number |
|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
|  | Assembly tool | 7.010.900.127 |
|  | Plastic protective cap for connectors M 23 with male thread..... for connectors M 23 with female thread..... | 7.000.900.101 7.000.900.102 |
|  | Stainless steel protective cap for M 23 Signal for connectors with female thread..... with rope for connectors with female thread, Length 100 mm | 7.010.904.103 7.010.9S4.103 |
|  | Stainless steel protective cap for M 23 Power for connectors with female thread..... with rope for connectors with female thread, Length 100 mm | 7.010.904.183 7.010.9S4.183 |
|  | Stainless steel protective cap for connectors with male thread..... with rope for connectors with male thread Length 100 mm | 7.010.904.102 7.010.9S4.102 |

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.

ANACONDA Conduit Adapter



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

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