

## CIRCULAR CONNECTORS



SIGNAL // POWER // INDUSTRIAL ETHERNET

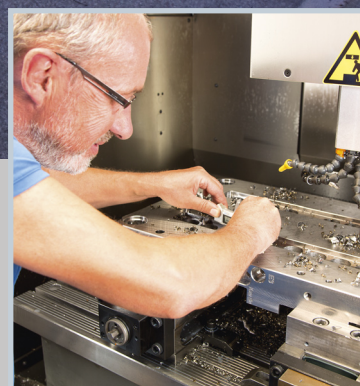








HUMMEL AG is a renowned manufacturer of connection technology and components for electric and heating areas. The medium sized family business stands for quality, precision, reliability and pronounced service consciousness. A wide vertical range of manufacture with in-house development, construction,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





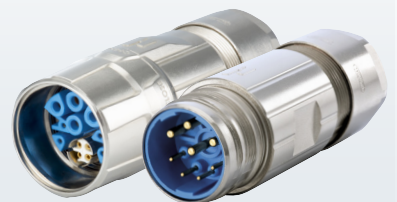
## Connectors M 23 Signal

► 15



## Connectors M 23 Power, M 23 Hybrid

► 35



## Connectors M 23 RJ 45

► 47



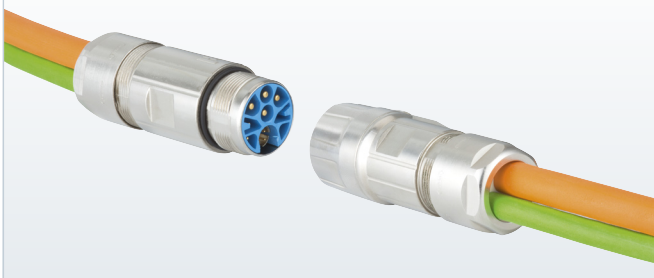
## Connectors Stainless Steel (INOX)

► 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](http://www.hummel.com)



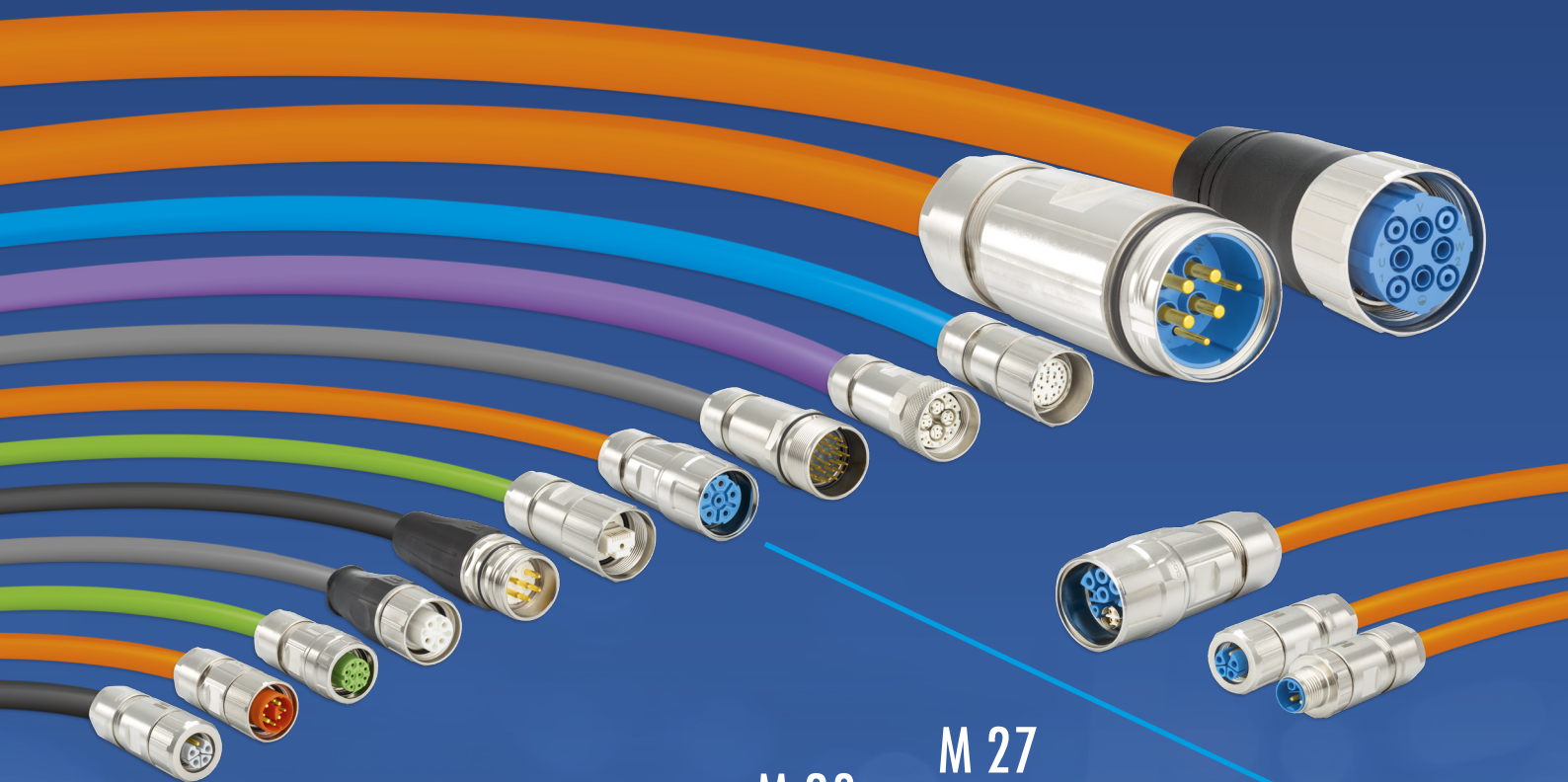
- // Assembly instructions
- // Crimping, assembly, disassembly
- // Crimping tool instructions for use
- // Crimp settings
- // Coding
- // Certificates & approvals
- // Derating curves

<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

PROFINET

Customized Solutions

Industrial Ethernet

M 16

TWILOCK

M 23 RJ 45

M 40

Moulded Cordsets

M 23 Hybrid



Germanischer Lloyd



RoHS

File-No. E 213337

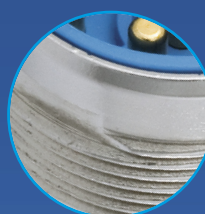


# TWILOCK / TWILOCK-S

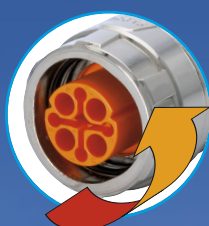
- // Quick Connect with Polygon Lock
- // Multi functional: Ideal with TWILOCK and screw connection
- // Easy handling, exceptional functionality
- // Resistant to vibration



Clearly defined:  
OPEN – CLOSE



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



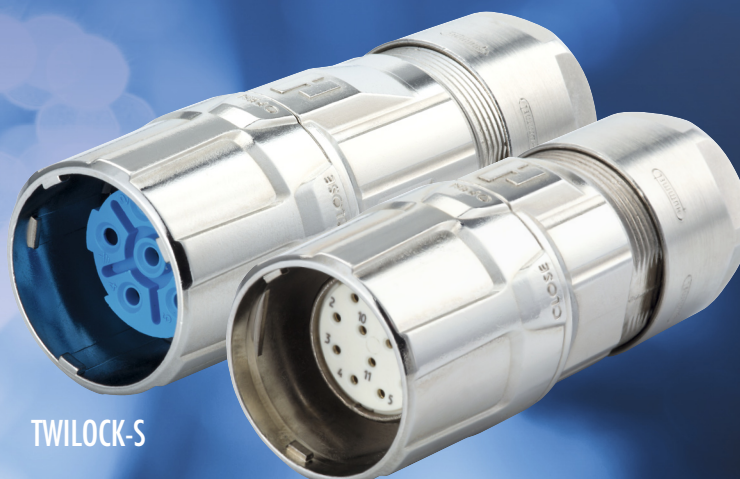
Locking with a slight rotation  
or release of the connection



TWILOCK-S-Version  
intermateable with Speedtec



TWILOCK



TWILOCK-S



## M 23 RJ 45: ROBUST, SIMPLE & SMALL!



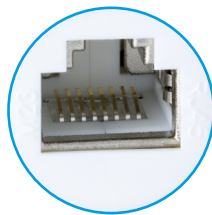
Design allows for terminated patch cable



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

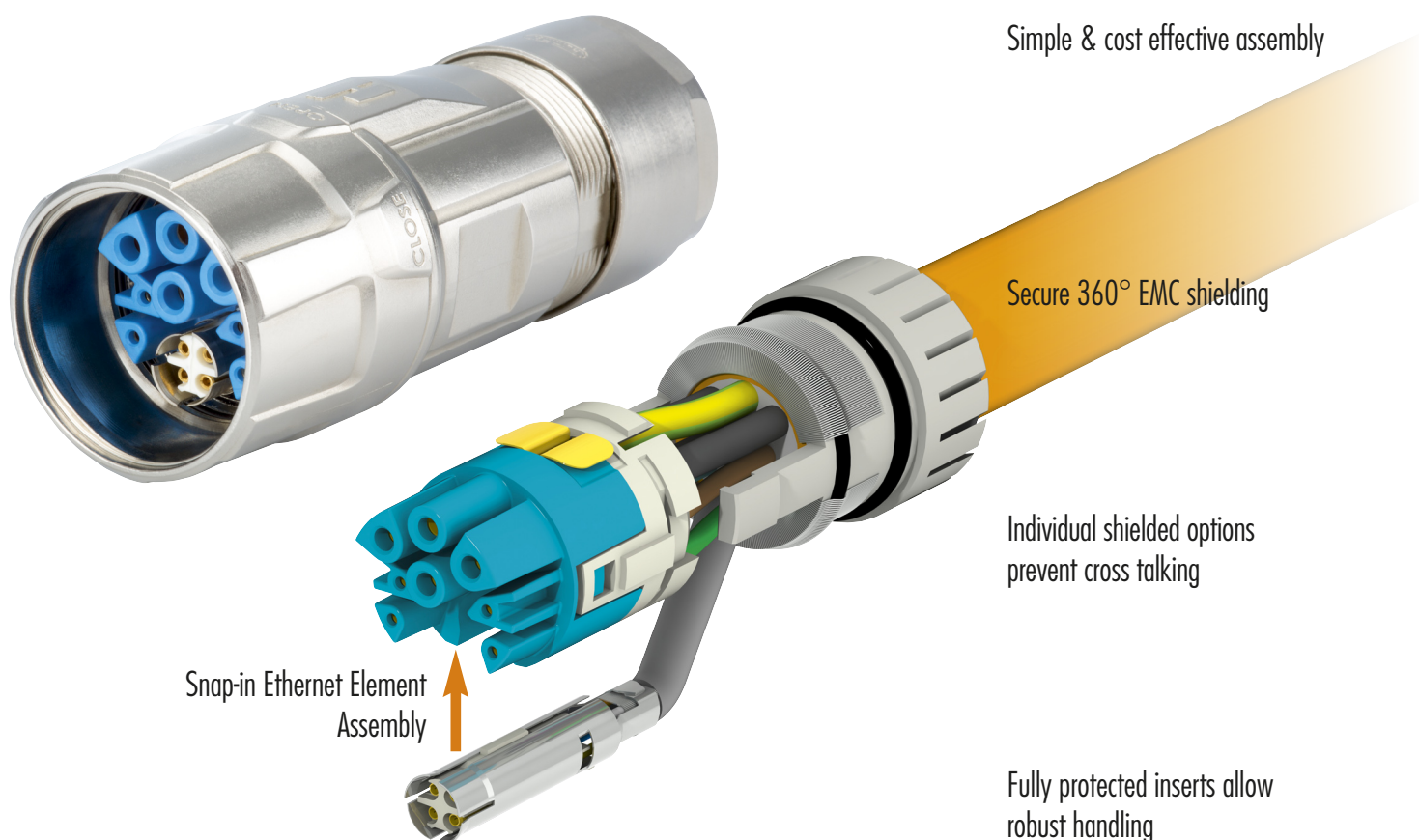


A standard RJ 45 connection is suitable as service and programmable interface



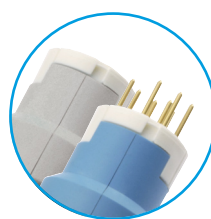
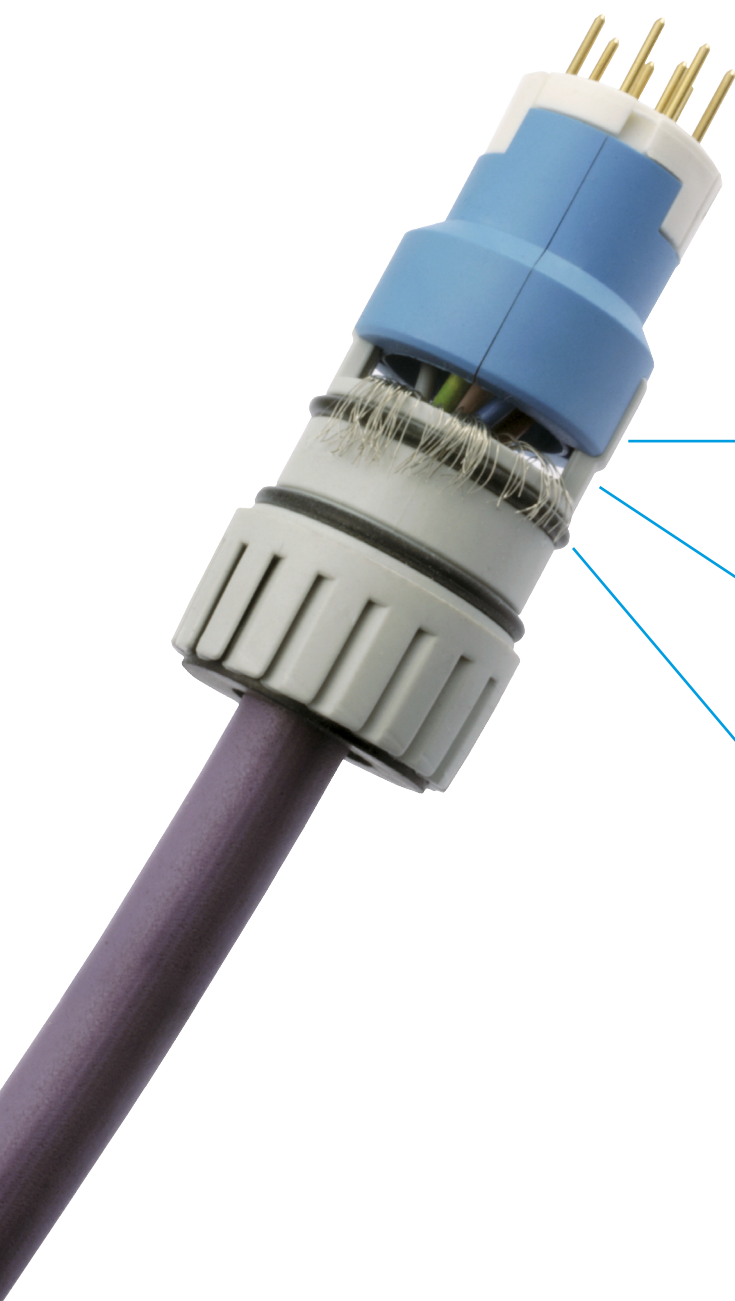
## Fully integrated solution for Industrial Ethernet applications

- // 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

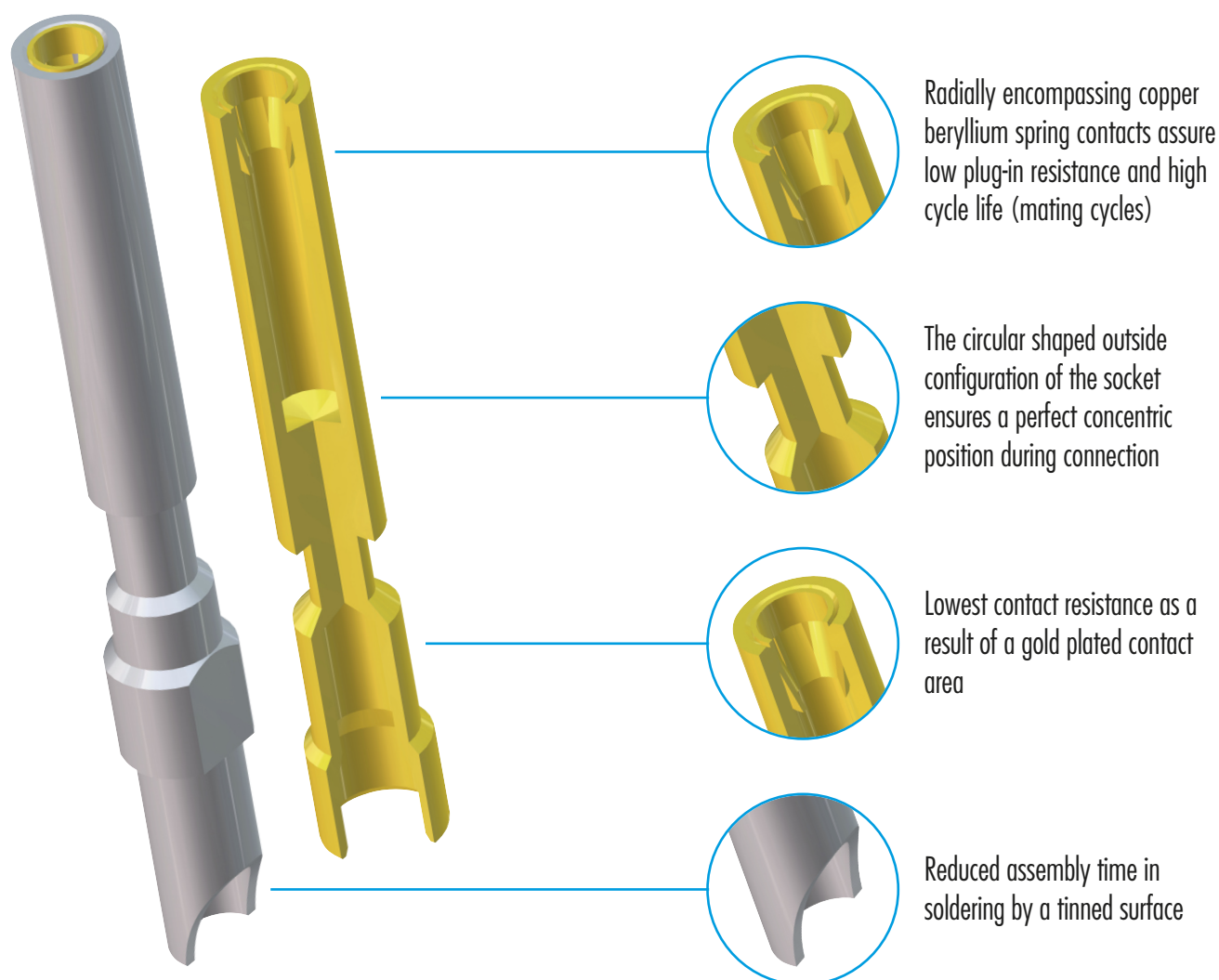


Flexible EMC-O-ring guarantees reliable EMC-protection for light and heavy braided shields.



## 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 series. 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

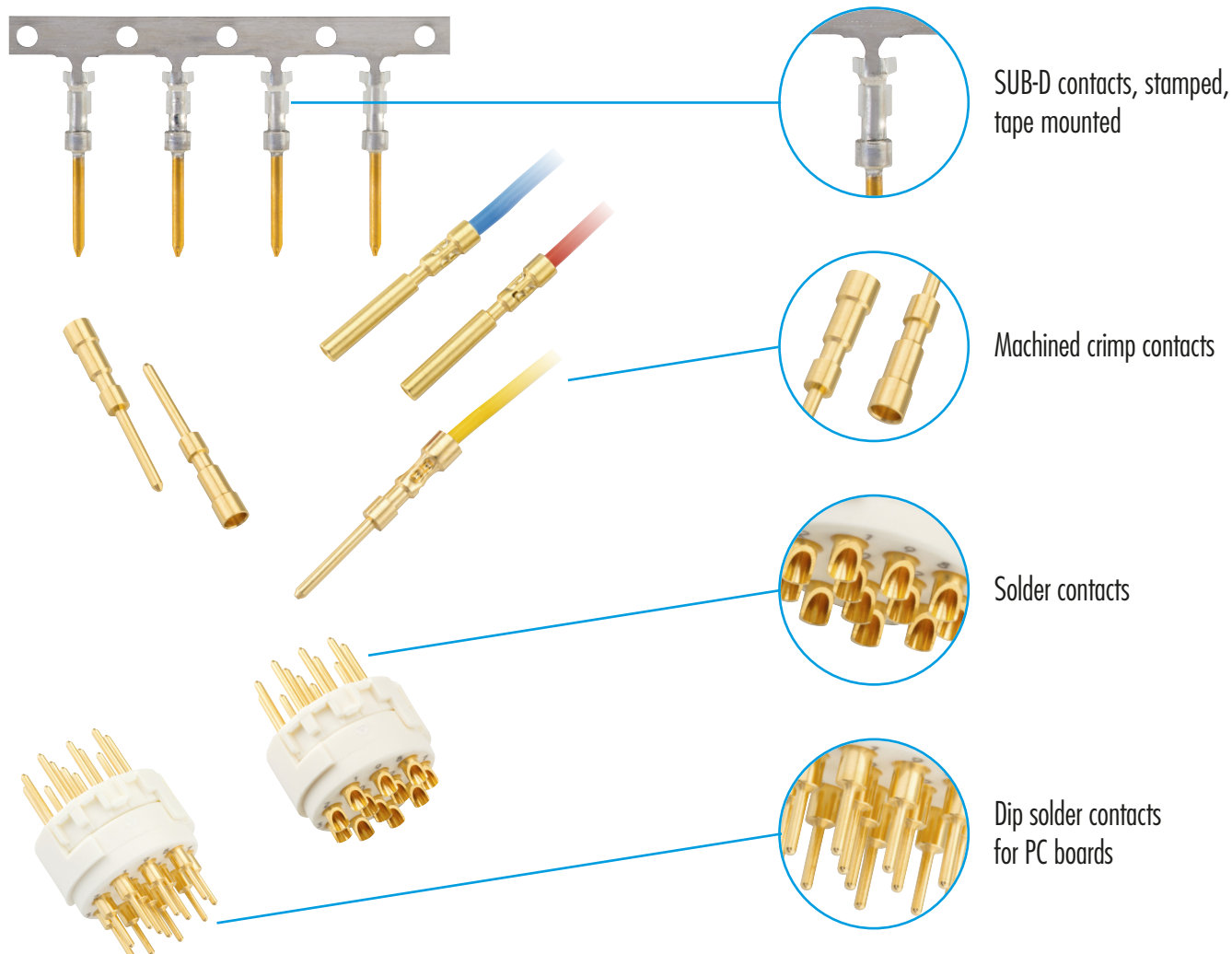
- // Applications: signal, power, industrial ethernet (Hybrid, RJ45, Profinet)
- // screw connection, quick connection TWILOCK and TWILOCK-S (intermateable with Speedtec)
- // compact design for assembling in small spaces
- // Protection IP 67 and IP 69 K (connected)
- // Temperature range -40° C to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





## THE INSERT – ONE FOR ALL

- // 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>



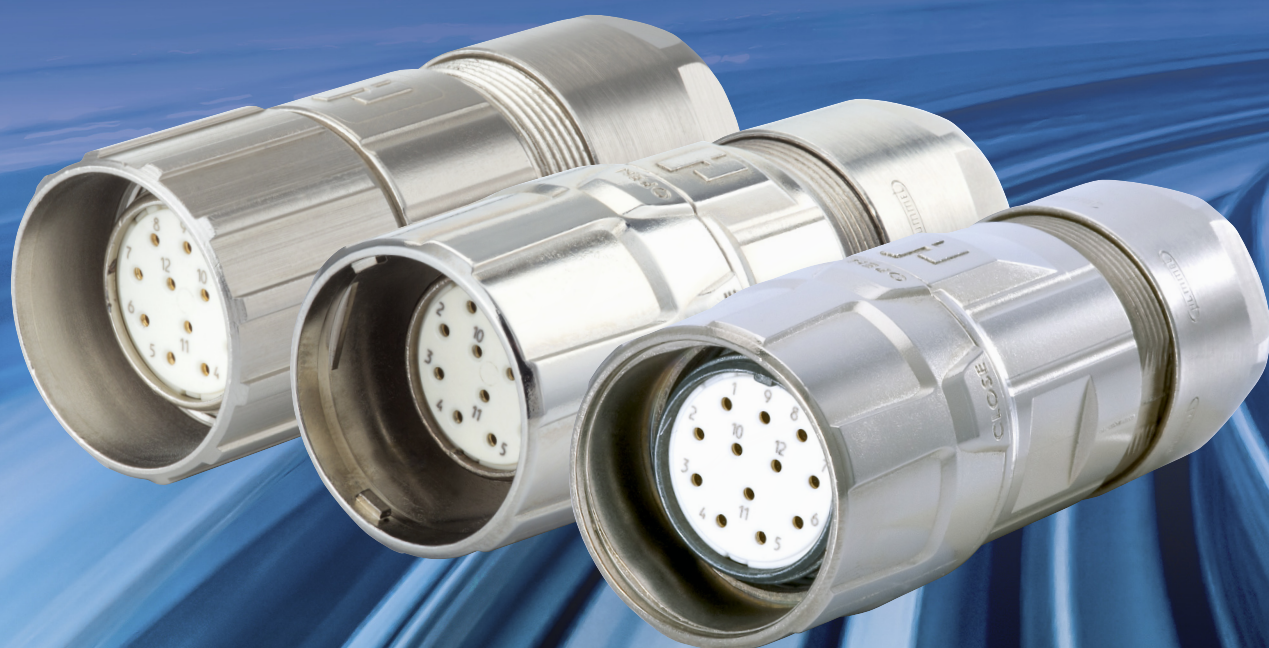
**HUMMEL connectors may not be engaged or disengaged when live. To ensure the IP degree of protection (IP rating) and the necessary contact overlapping, the cable and coupling connectors must be fully engaged and locked.**



# 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



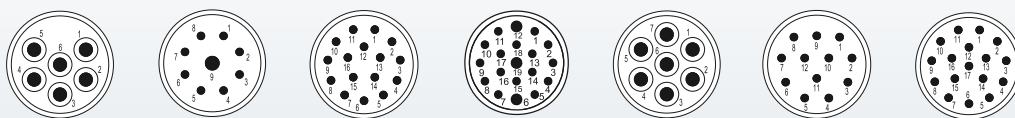
### Housings

► 18



### Inserts

► 25



### Accessories

► 32





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							
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 <sup>1)</sup> [A]	20	20	8 20	8	8	8	8 10
Nominal voltage <sup>2)</sup> [V~] degree of pollution 3 <sup>3)</sup>	160	160	160	160	160	160	100
Test voltage (Breakdown voltage) <sup>4)</sup> [V~]	2500	2500	2500	2500	1500	1500	1500
Insulation resistance [Ω]	> 10 <sup>10</sup>	> 10 <sup>10</sup>	> 10 <sup>10</sup>	> 10 <sup>10</sup>	> 10 <sup>6</sup>	> 10 <sup>6</sup>	> 10 <sup>6</sup>
Max. contact resistance [mΩ]	3	3	3	3	3	3	3

<sup>1), 2), 3), 4)</sup> See Technical Information page 14

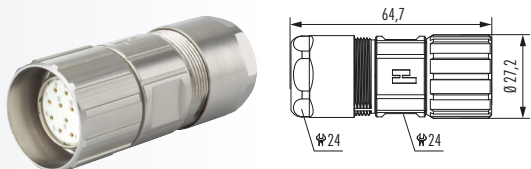
## Housings

### 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



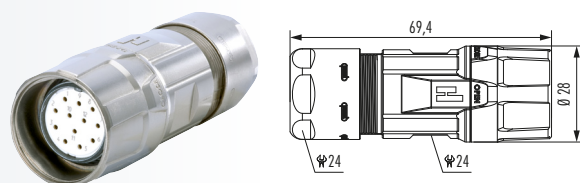
▶ 31

### 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



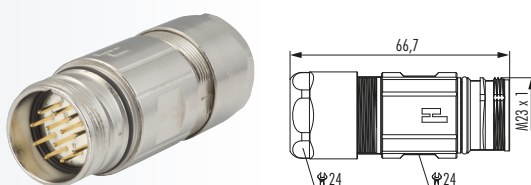
▶ 31

### 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

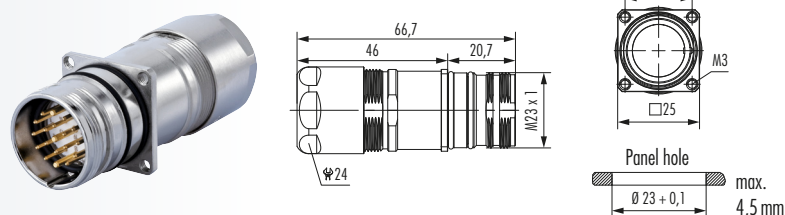
### Panel Connector, Male Thread, with Strain Relief

#### 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

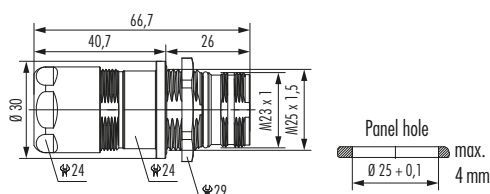


Housing without inserts and contacts

### 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

\* 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



▶ 25



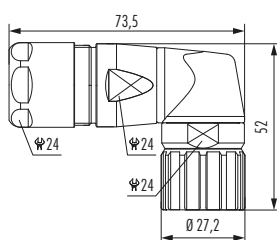
▶ 31

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

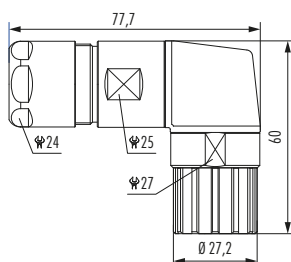


▶ 31

### 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

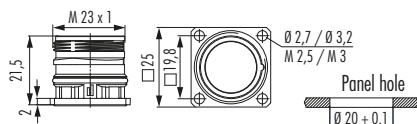


▶ 31



## Housings

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



Type	Part Number
<b>With anti-vibration O-Ring</b>	
4 holes Ø 3,2 mm (.13")	7.410.000.000
4 threads M 3	7.412.000.000 <sup>1</sup>
4 holes Ø 2,7 mm (.11")	7.414.000.000
4 threads M 2,5	7.416.000.000 <sup>1</sup>
<b>* intermateable with Speedtec</b>	
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

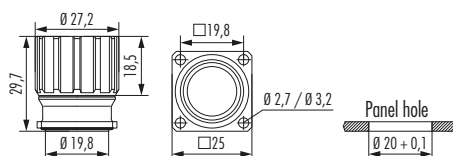


▶ 31



▶ 32

### Panel Connector, Female Thread, with knurled Nut



Type	Part Number
<b>Without coding option</b>	
4 holes Ø 3,2 mm (.13")	7.440.000.000
4 holes Ø 2,7 mm (.11")	7.444.000.000



▶ 25

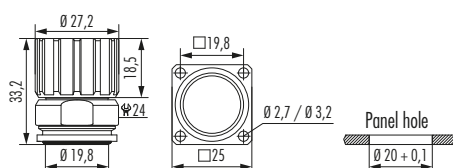


▶ 31



▶ 32

### Panel Connector, Female Thread, with knurled Nut, positionable



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



▶ 25

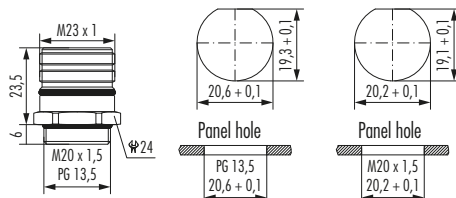


▶ 31



▶ 32

### 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 <sup>1</sup>
Thread PG 13,5	7.422.000.000 <sup>1</sup>

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

**\* FOR MALE \*  
INSERTS ONLY**



▶ 25

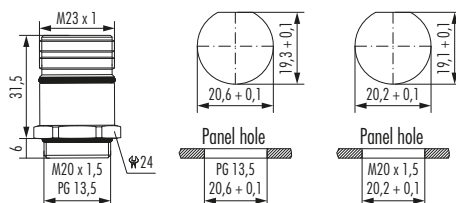


▶ 31



▶ 32

### 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 <sup>1</sup>
Thread PG 13,5	7.423.000.000 <sup>1</sup>

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

**\* FOR FEMALE \*  
INSERTS ONLY**



▶ 25

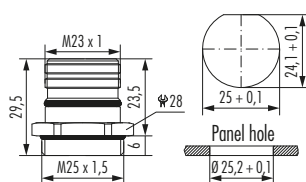


▶ 31



▶ 32

### 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 <sup>1</sup>
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Optional: jam nut M 25 x 1,5



▶ 25



▶ 31



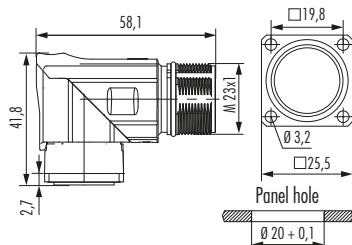
▶ 32

## 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



▶ 25



▶ 31

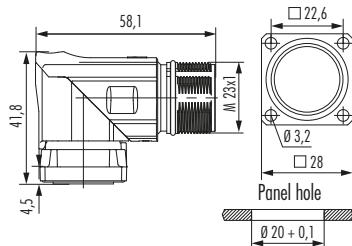


▶ 32

### 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



▶ 25



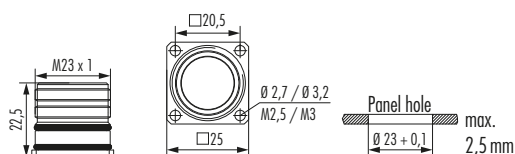
▶ 31



▶ 32



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



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

- |                                      |               |
|--------------------------------------|---------------|
| <b>With anti-vibration O-Ring</b>    |               |
| 4 holes Ø 3,2 mm (.13")              | 7.460.000.000 |
| 4 threads M 3                        | 7.462.000.000 |
| 4 holes Ø 2,7 mm (.11")              | 7.464.000.000 |
| 4 threads M 2,5                      | 7.466.000.000 |
| <b>* intermateable with Speedtec</b> |               |
| 4 x threads M 3                      | 7.462.000.005 |



▶ 25

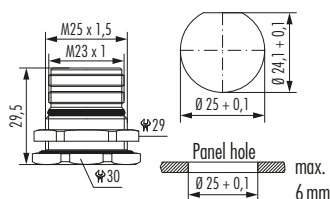


▶ 31



▶ 32

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



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

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



▶ 25

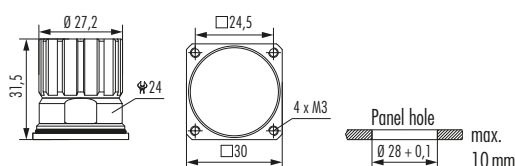
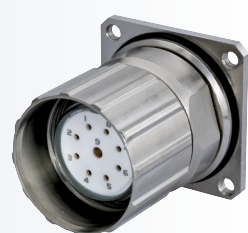


▶ 31



▶ 32

### Panel Connector, Female Thread, Rear Mounting



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

- |  |               |
|--|---------------|
| <b>With knurled nut, rear mounting</b> |               |
| 4 threads M 3                          | 7.459.000.000 |



▶ 25



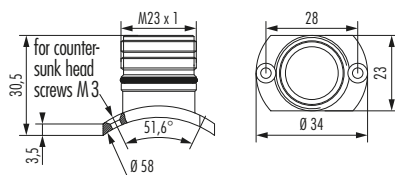
▶ 31



▶ 32

## 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 <sup>1</sup>



▶ 25

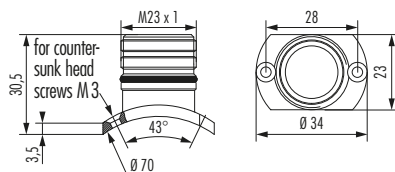


▶ 31



▶ 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 <sup>1</sup>



▶ 25

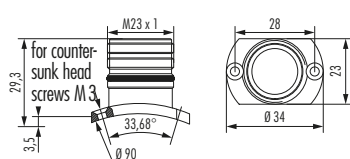


▶ 31



▶ 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 <sup>1</sup>



▶ 25



▶ 31



▶ 32



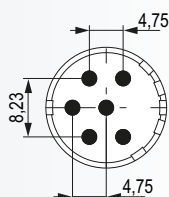
### Inserts 6-pole



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.....	7.001.906.103	7.001.906.104
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
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#### Insert with dip solder contacts

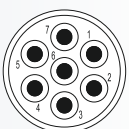
Length 17 mm .....	7.001.906.137	7.001.906.118
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The correct dimension of a connector with dip solder contacts depends on the particular type of housing.

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



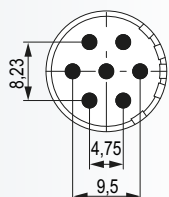
### Inserts 7-pole



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.....	7.001.907.103	7.001.907.104
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
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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)

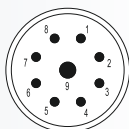




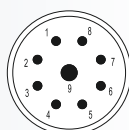


## Inserts / Pinouts

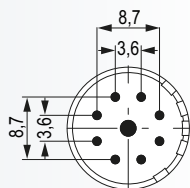
### Inserts 9-pole (8 + 1)



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.....	7.001.981.103	7.001.981.104
Insert without contacts .....	7.003.981.101	7.003.981.102

#### 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

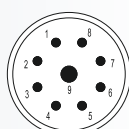
Length 17 mm .....	7.001.981.137	7.001.981.118
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The correct dimension of a connector with dip solder contacts depends on the particular type of housing.

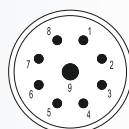
Coding possibilities N, S, H, X and Y (see page 30)

▶ 31

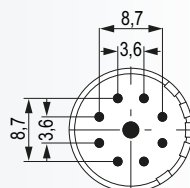
### Inserts 9-pole (8 + 1)



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.....	7.002.981.103	7.002.981.104
Insert without contacts .....	7.004.981.101	7.004.981.102

#### 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
--------------------	---------------	---------------

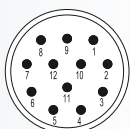
The correct dimension of a connector with dip solder contacts depends on the particular type of housing.

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

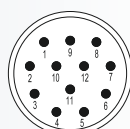
▶ 31



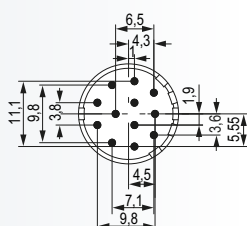
### Inserts 12-pole



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.....7.001.912.103.....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

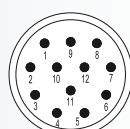
Length 17 mm .....7.001.912.137.....7.001.912.118

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

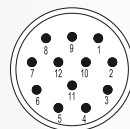
Coding possibilities N, S, H, X, Y and Z (see page 30)



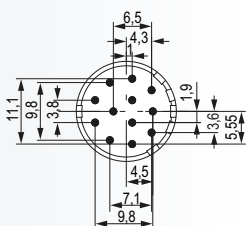
### Inserts 12-pole



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.....7.002.912.103.....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.

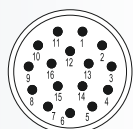
Coding possibilities N, S, H, X, Y and Z (see page 30)



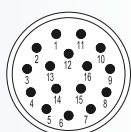


## Inserts / Pinouts

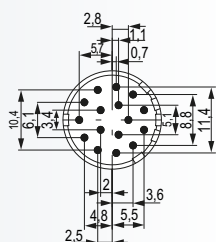
### Inserts 16-pole



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

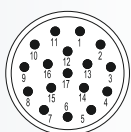
Length 17 mm .....7.001.916.137 .....7.001.916.118

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

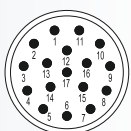
Coding possibilities N, S, H, X, Y and Z (see page 30)



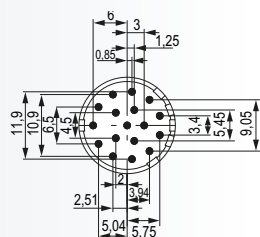
### Inserts 17-pole



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.

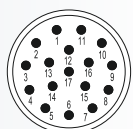
Coding possibilities N, S, H, X, Y and Z (see page 30)



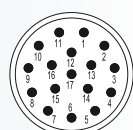




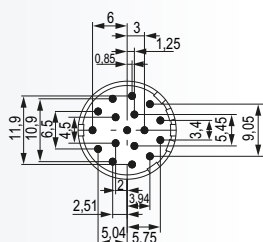
### Inserts 17-pole



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.

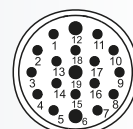
Coding possibilities N, S, H, X, Y and Z (see page 30)



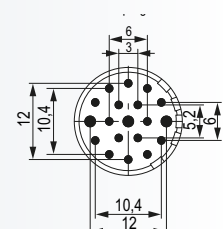
### Inserts 19-pole



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

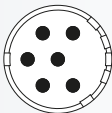
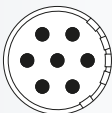
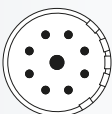
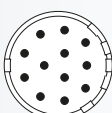
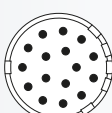
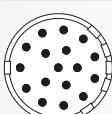
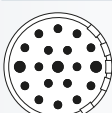

The correct dimension of a connector with dip solder contacts depends on the particular type of housing.

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





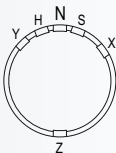
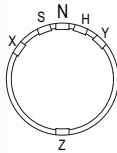
## Inserts / Pinouts

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.



▶ 30

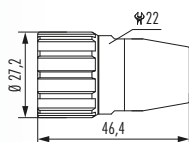
Coding	Number of Poles	Coding Possibilities
	6-pole .....	N, S, H, X, Y and Z
	7-pole .....	N, S, H, X and Y
	9-pole .....	N, S, H, X and Y
	12-pole .....	N, S, H, X, Y and Z
	16-pole .....	N, S, H, X, Y and Z
	17-pole .....	N, S, H, X, Y and Z
	19-pole .....	N, S, H, X and Y

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

Contacts	Type	Crimp Range	Part Number
	Crimp pin 1 mm, machined.....	0,08 – 0,56 mm <sup>2</sup> (AWG 28 – 20) .....	7.010.901.031
	Crimp pin 1 mm, machined .....	0,14 – 1 mm <sup>2</sup> (AWG 26 – 17) .....	7.010.901.001
	Crimp pin 1 mm, machined.....	0,75 – 1,5 mm <sup>2</sup> (AWG 17 – 16) .....	7.010.901.021
	Crimp socket 1 mm, machined.....	0,08 – 0,56 mm <sup>2</sup> (AWG 28 – 20) .....	7.010.901.012
	Crimp socket 1 mm, machined .....	0,34 – 1 mm <sup>2</sup> (AWG 22 – 17) .....	7.010.901.002
	Crimp socket 1 mm, machined.....	0,75 – 1,5 mm <sup>2</sup> (AWG 17 – 16) .....	7.010.901.022
	Crimp pin 1,5 mm, machined .....	0,14 – 1 mm <sup>2</sup> (AWG 26 – 17) .....	7.010.901.501
	Crimp socket 1,5 mm, machined.....	0,14 – 0,56 mm <sup>2</sup> (AWG 26 – 20) .....	7.010.901.512
	Crimp socket 1,5 mm, machined .....	0,56 – 1 mm <sup>2</sup> (AWG 20 – 17) .....	7.010.901.502
	Crimp pin 2 mm, machined.....	0,75 – 2,5 mm <sup>2</sup> (AWG 18 – 14) .....	7.010.902.001
	Crimp socket 2 mm, machined.....	0,75 – 2,5 mm <sup>2</sup> (AWG 18 – 14) .....	7.010.902.002

## 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 <sup>1</sup>	
	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 .....7.010.950.703 <sup>1</sup>	
	Length 100 mm .....7.010.951.003 <sup>1</sup>	
	Brass protective cap with chain for connectors with male thread	
	Length 70 mm .....7.010.950.702	
	Length 100 mm .....7.010.951.002	
	Assembly tool .....7.010.900.101	
	Bus End Connector	
	Close type .....7.105.000.000	
	Used to cap an open male connector in bus-systems	



<sup>1</sup> no compatibility with TWILOCK





Accessories	Type	Part Number
	<b>Adaptor flange</b> for Straight Connectors.....	7.010.900.128 <sup>1</sup>
	<b>Conduit adaptor</b>	
	Poleon DN 12 .....	7.010.900.205
	Poleon DN 14 .....	7.010.900.207
	Poleon DN 17 .....	7.010.900.209
	<b>Positioner for Crimp Tool</b> DMC M22520 .....	7.000.900.DMC
	<b>Locator for Crimp Tool DMC M22520 with positioner</b> .....	7.000.9DM.C03
	For HUMMEL Contact: 7.010.901.001, 7.010.901.501, 7.010.902.001, 7.010.901.031	
	<b>Locator for Crimp Tool DMC M22520 with positioner</b> .....	7.000.9DM.C04
	For HUMMEL Contact: 7.010.901.012, 7.010.901.002, 7.010.901.512, 7.010.901.502, 7.010.902.002	
	<b>Screw Tool</b> , adjustable 0.5 – 1.7 Nm.....	7.010.900.190
	<b>Tool Adapter</b> for tightening or loosening knurled nuts for M 23 .....	7.010.900.192
	<b>Crimping machine</b> pneumatic crimp tool.....	on request
 	<b>Crimp tool</b> for manual crimping of machined crimp contacts incl. locator	
	for signal connectors .....	7.000.900.904
	<b>Locator</b> for M 16 / M 23 Signal Connectors (separate) .....	7.010.900.136

<sup>1</sup> 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



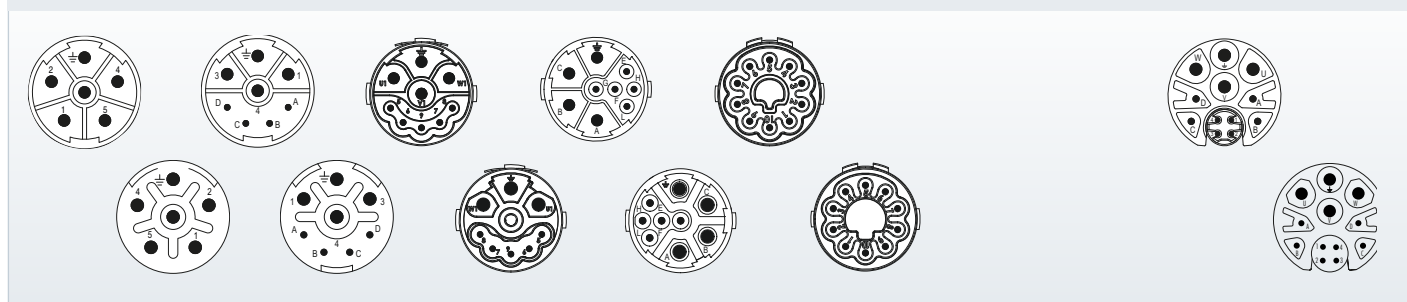
### Housings

► 38



### Inserts

► 43



### Accessories

► 45





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 <sup>1)</sup> [A]	28	8	28	10	28	10
Nominal voltage <sup>2)</sup> [V~] degree of pollution 3 <sup>3)</sup>	600	300	600	250	600	160
Test voltage (Breakdown voltage) <sup>4)</sup> [V~]	4000	2500	4000	2500	4000	2500
Insulation resistance [Ω]	> 10 <sup>13</sup>	> 10 <sup>13</sup>		> 10 <sup>13</sup>		> 10 <sup>13</sup>
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 <sup>2</sup> ]	0,75 – 4	0,14 – 1		0,08 – 0,34		
Nominal current <sup>1)</sup> [A]	28	8		2		
Nominal voltage <sup>2)</sup> [V~] degree of pollution 3 <sup>3)</sup>	600	300		60		
Test voltage (Breakdown voltage) 4) [V~]	4000	2500		500		
Insulation resistance [Ω]	> 10 <sup>13</sup>	> 10 <sup>10</sup>		> 10 <sup>6</sup>		
Max. contact resistance [mΩ]	< 3	< 3		< 3		

<sup>1)</sup>, <sup>2)</sup>, <sup>3)</sup>, <sup>4)</sup> See Technical Information page 14

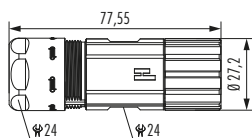
## Housings

### 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\*

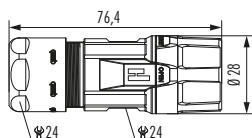
#### Cable-Ø

#### 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\*

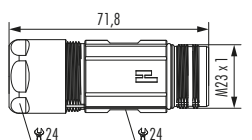
#### Cable-Ø

#### 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



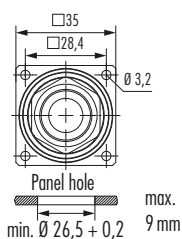
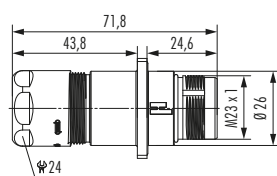
▶ 45

### 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



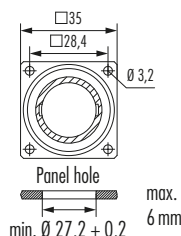
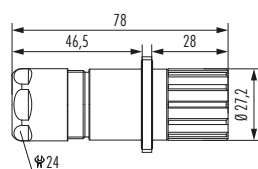
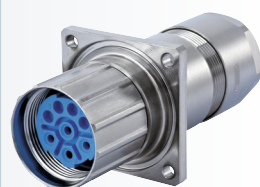
▶ 43



▶ 44



▶ 45



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

#### Cable-Ø

#### Part Number

Single hole mounted, rear mounting, thread M 25 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 M 25 x 1,5



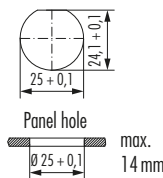
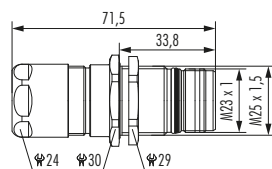
▶ 43



▶ 44



▶ 45



### 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



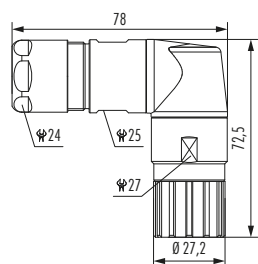
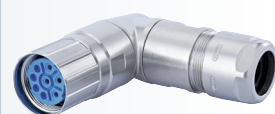
▶ 43



▶ 44

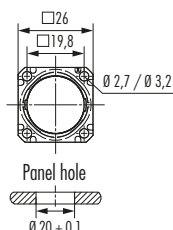
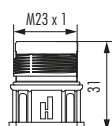


▶ 45



## 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



▶ 43

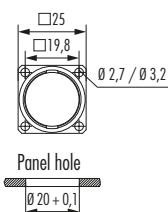
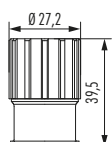


▶ 44



▶ 45

### 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



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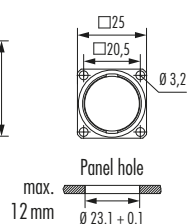
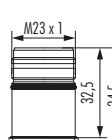


▶ 44



▶ 45

### 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 <sup>1</sup>



▶ 43



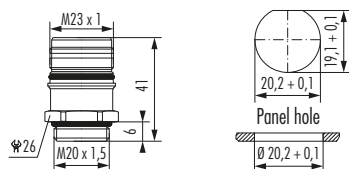
▶ 44



▶ 45



### Panel Connector, Male Thread, Single Hole Mounted



#### Type

#### Part Number

#### Front mounting

Thread M 20 x 1,5 .....7.621.000.000<sup>1</sup>

Option: jam nut M 20 x 1,5



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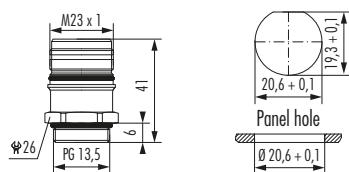
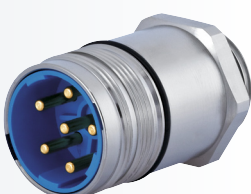


▶ 44



▶ 45

### Panel Connector, Male Thread, Single Hole Mounted



#### Type

#### Part Number

#### Front mounting

Thread PG 13,5 .....7.623.000.000<sup>1</sup>

Option: jam nut PG 13,5



▶ 43

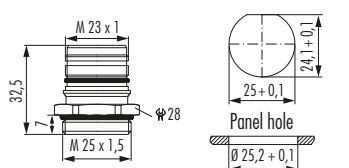


▶ 44



▶ 45

### Panel Connector, Male Thread, Single Hole Mounted



#### Type

#### Part Number

#### Front mounting

Thread M 25 x 1,5 .....7.626.000.000

Option: jam nut M 25 x 1,5



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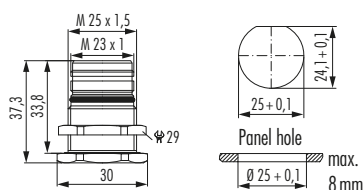
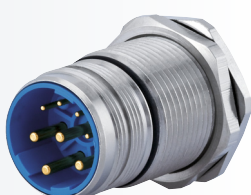


▶ 44



▶ 45

### Panel Connector, Male Thread, Single Hole Mounted



#### Type

#### Part Number

#### Rear mounting

Thread M 25 x 1,5 .....7.651.000.000

Including jam nut M 25 x 1,5



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▶ 44



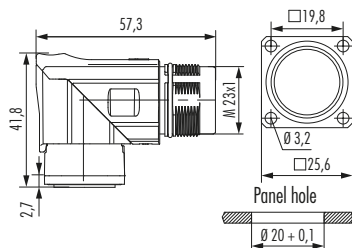
▶ 45

Housing without inserts and contacts

<sup>1</sup> 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<sup>1</sup>
- Flange 25 x 25 mm, blue passivated
- 4 x holes 3,2 mm (.13") .....7.639.000.010<sup>1</sup>
- Flange 25 x 25 mm, nickel plated
- \* intermateable with Speedtec**
- 4 x holes 3,2 mm (.13") .....7.639.000.00S<sup>1</sup>
- Flange 25 x 25 mm, blue passivated



▶ 43

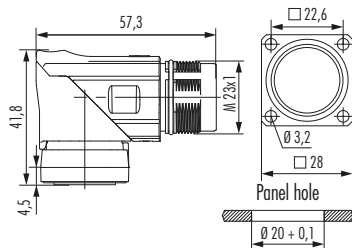


▶ 44



▶ 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<sup>1</sup>
- Flange 28 x 28 mm, blue passivated
- 4 x holes 3,2 mm (.13") .....7.639.100.010<sup>1</sup>
- Flange 28 x 28 mm, nickel plated
- \* intermateable with Speedtec**
- 4 x holes 3,2 mm (.13") .....7.639.100.00S<sup>1</sup>
- Flange 28 x 28 mm, blue passivated



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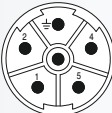

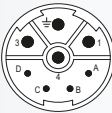
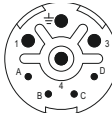


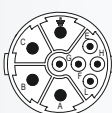
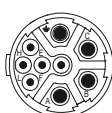

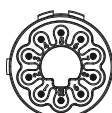




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▶ 45



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
		<b>Hybrid</b>	
		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 <sup>1</sup>	0,08 – 0,34 mm <sup>2</sup> (AWG28 – AWG 22)	7.010.980.643
	Crimp socket 0,6 mm, machined <sup>1</sup>	0,08 – 0,34 mm <sup>2</sup> (AWG28 – AWG 22)	7.010.980.602
	Crimp pin 1 mm, machined <sup>2</sup>	0,08 – 0,56 mm <sup>2</sup> (AWG 28 – 20)	7.010.941.031
	Crimp pin 1 mm, machined <sup>2</sup>	0,14 – 1 mm <sup>2</sup> (AWG 26 – 17)	7.010.941.001
	Crimp pin 1 mm, machined <sup>2</sup>	0,75 – 1,5 mm <sup>2</sup> (AWG 18 – 16)	7.010.941.021
	Crimp socket 1 mm, machined <sup>2</sup>	0,14 – 1 mm <sup>2</sup> (AWG 26 – 17)	7.010.941.002
	Crimp socket 1 mm, machined <sup>2</sup>	0,75 – 1,5 mm <sup>2</sup> (AWG 18 – 16)	7.010.941.022
	Crimp pin 2 mm, machined <sup>2</sup>	0,75 – 2,5 mm <sup>2</sup> (AWG 18 – 14)	7.010.942.001
	Crimp pin 2 mm, machined <sup>2</sup>	2,5 – 4 mm <sup>2</sup> (AWG 14 – 12)	7.010.942.011
	Crimp socket 2 mm, machined <sup>2</sup>	0,75 – 2,5 mm <sup>2</sup> (AWG 18 – 14)	7.010.942.002
	Crimp socket 2 mm, machined <sup>2</sup>	2,5 – 4 mm <sup>2</sup> (AWG 14 – 12)	7.010.942.012

<sup>1</sup> suitable crimp tool 7.000.900.909

<sup>2</sup> suitable crimp tool 7.000.900.901



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 <sup>1</sup>	
	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 <sup>1</sup>	
	Length 100 mm .....7.010.951.083 <sup>1</sup>	
	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	
	for M 23 Power Connectors incl. Locator .....7.000.900.901	
	for M 23 Hybrid- /Power Connectors incl. Locator .....7.000.900.909	
	Locator for M 23 Power Connectors (separate) .....7.010.900.118	
	Locator for M 23 Hybrid- / Power Connectors (separate) .....7.010.900.158	
	Adaptor flange	
	for Straight Connectors .....7.010.900.128 <sup>1</sup>	

<sup>1</sup> No compatibility with TWILOCK

## Accessories

Accessories	Type	Part Number
	<b>Adapter for Conduit Fittings</b>	
	Poleon DN 12 .....	7.010.900.205
	Poleon DN 14 .....	7.010.900.207
	Poleon DN 17 .....	7.010.900.209
	<b>Positioner for Crimp Tool</b>	
	DMC M22520 .....	7.000.900.DMC
	<b>Locator for Crimp Tool DMC M22520 with positioner</b> .....	7.000.9DM.C06
	<b>For HUMMEL Contact:</b>	
	7.010.941.001, 7.010.942.001, 7.010.942.011	
	<b>Locator for Crimp Tool DMC M22520 with positioner</b> .....	7.000.9DM.C07
	<b>Disassembly Tool</b>	
	for crimp contacts .....	7.010.900.198
	<b>Screw Tool, adjustable 0.5 – 1.7 Nm</b> .....	7.010.900.190
	<b>Tool Adapter for tightening or loosening</b>	
	knurled nuts for M 23 .....	7.010.900.192
		
	<b>Crimping machine</b>	
	pneumatic crimping tool .....	on request

# M 23 RJ 45 CONNECTORS

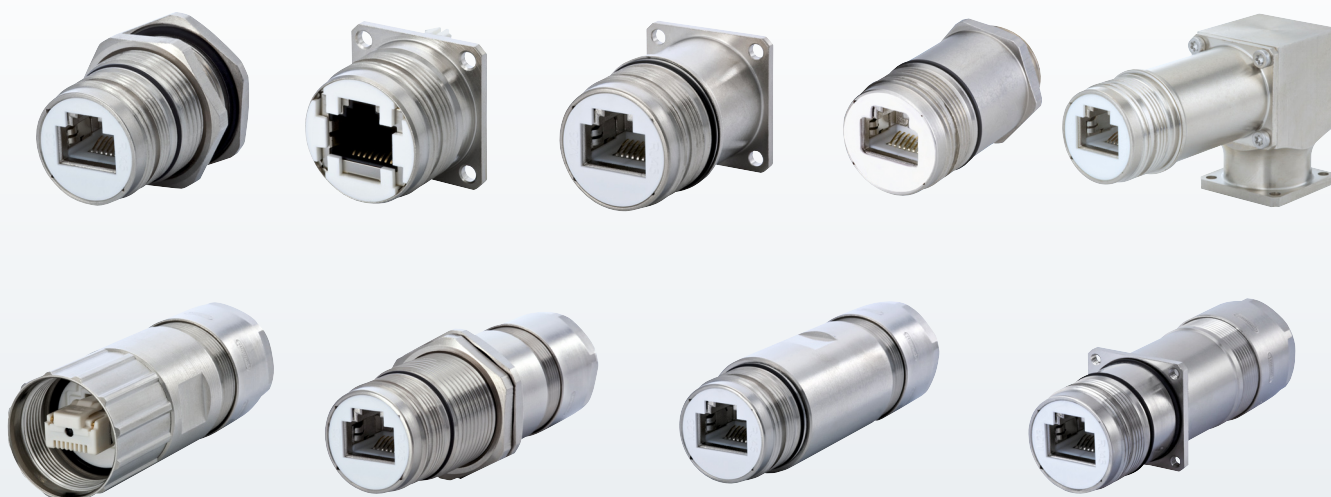
The connector series M 23 RJ 45 stands for safe data transfers with smallest space requirement in rough industrial environments. Here industrial patch cable can be used that the M 23 RJ 45 integrates in the body of an adaptor. The system achieves an excellent strain relief and complies with the protection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

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



### Housings

► 50



### Accessories

► 53





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 – 17 mm
Number of Positions	4 / 6 / 8 poles, optional 4 + 2 / 6 + 2 / 8 + 2
Nominal Current <sup>1)</sup> [A]	Depends on RJ 45 type used
Nominal Voltage <sup>2)</sup> [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

<sup>1), 2)</sup> see Technical Information page 14

## Housings

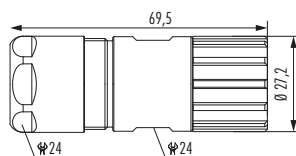
### Straight Connector Female Thread

#### 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.

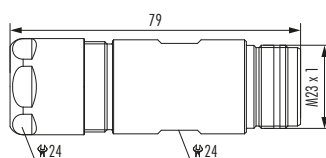


### Straight Connector Male Thread

#### Cable-Ø

#### Part Number

3 – 7 mm (.12 – .28") .....7.R20.408.000  
Incl. 8 poles coupler, fully occupied



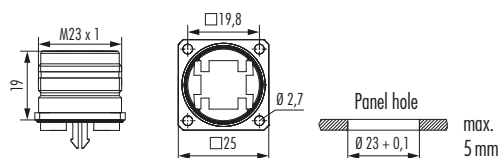
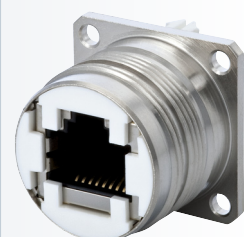
### Panel Connector Front Mount, dip solder insert

#### Type

#### Part Number

4 holes 2.7 mm, Flange .....7.R40.008.000  
Incl. 8 poles dip solder insert

4 holes 2.7 mm, Flange .....7.R40.082.000  
Incl. 8 + 2 poles dip solder insert

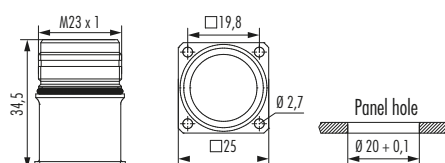
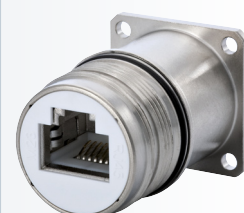


### Panel Connector, Front Mount

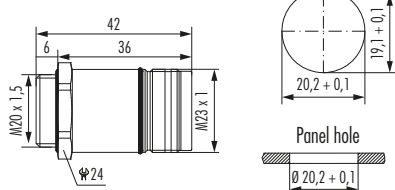
#### Type

#### Part Number

with vibration protection  
4 holes 2.7 mm, Flange .....7.R41.008.000  
Incl. 8 poles coupler, fully occupied



### Single Hole Panel Connector



#### Type

#### Part Number

##### Front Mount

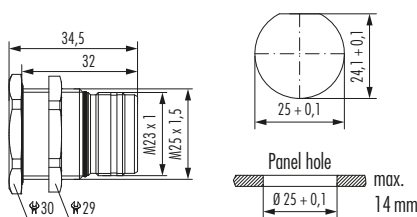
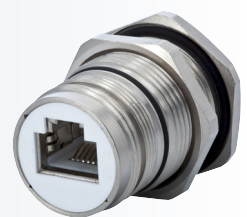
M 20 x 1,5 thread .....7.R42.008.000

Incl. 8 poles coupler, fully occupied

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



### Single Hole Panel Connector



#### Type

#### Part Number

##### Rear Mount

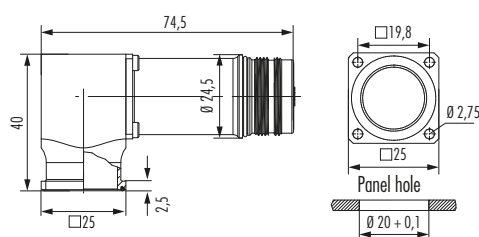
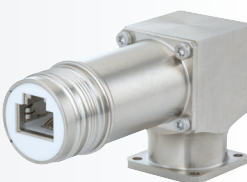
M 25 x 1,5 thread .....7.R50.008.000

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, Flange .....7.R43.108.000

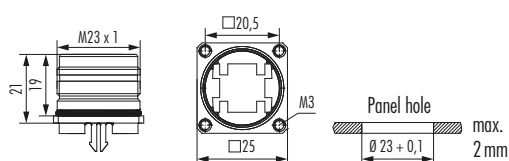
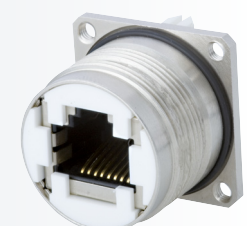
Incl. 8 poles coupler, fully occupied

Optional: Gasket

Simple installation with M 2.5 screws



### Panel Connector Rear Mount, dip solder insert



#### Type

#### Part Number

4x M 3 thread, Flange .....7.R45.008.000

Incl. 8 poles dip solder insert

4x M 3 thread, Flange .....7.R45.082.000

Incl. 8 + 2 poles dip solder insert



<sup>1</sup> upon request

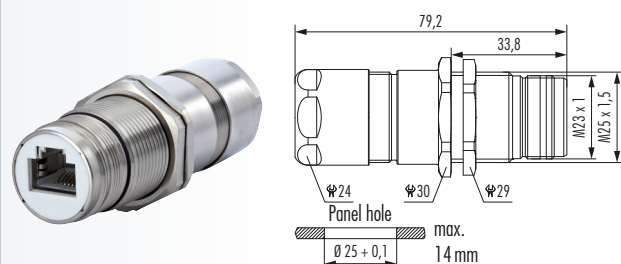
## Housings

### Single Hole Panel Connector with strain relief

#### Cable-Ø

#### Part Number

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

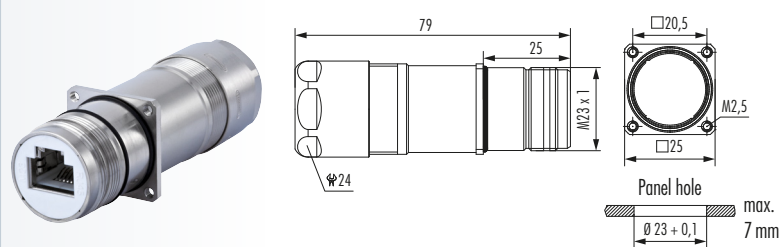


### Panel Connector with strain relief

#### Cable-Ø

#### Part Number

4x M 2,5 thread, Flange, Rear Mount  
 3 – 7 mm (.12 - .28") .....7.R47.408.000  
 Incl. 8 poles coupler, fully occupied



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

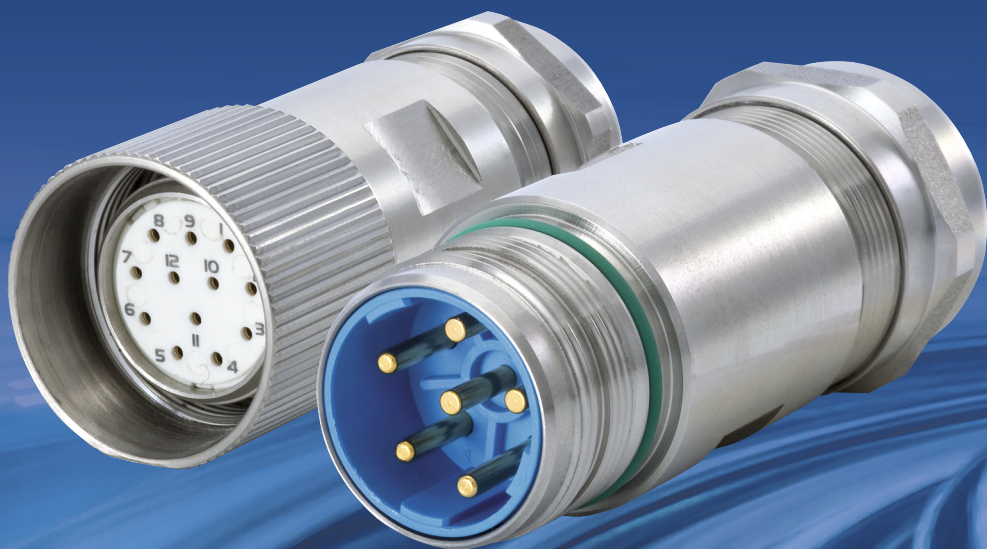
Accessories	Type	Part Number
	Suitable patch cable .....	on request
	Field attachable RJ45 connector Cat 5/SE	
	8-pole .....	A7RJ-081M41
	8+2-pole .....	A7RJ-821M51
	Field attachable RJ45 connecto Cat 6A	
	8-pole .....	A7RJ-081M6A
	Screw Tool, adjustable 0.5 – 1.7 Nm .....	7.010.900.190
	Tool Adapter 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

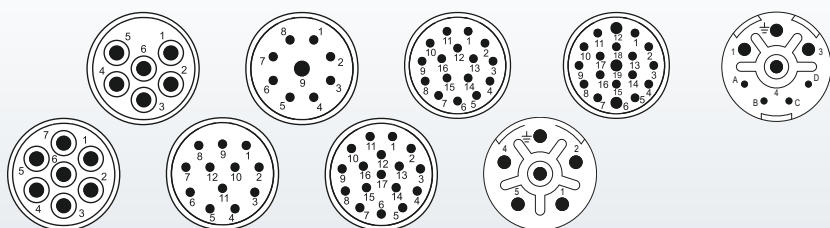
### Housings

► 61



### Inserts

► 25, 43



### Accessories

► 61



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

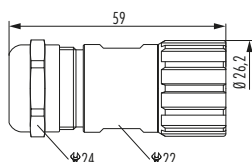
### Typical Applications





## 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



▶ 25

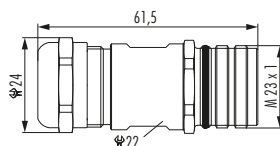


▶ 31



▶ 32

### 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



▶ 25

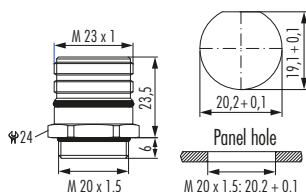
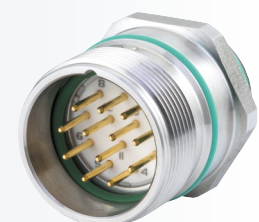


▶ 31



▶ 32

### 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**



▶ 25

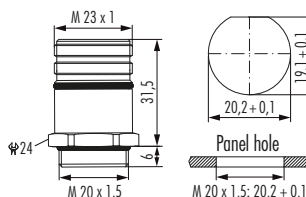


▶ 31



▶ 32

### 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**



▶ 25



▶ 31



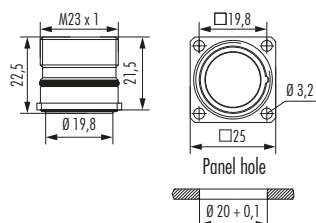
▶ 32



Housing without inserts and contacts



### Panel Connector, Male Thread



#### Type

#### Part Number

With anti-vibration O-Ring

4 holes Ø 3,2 mm (.13").....7.410.400.000



▶ 25

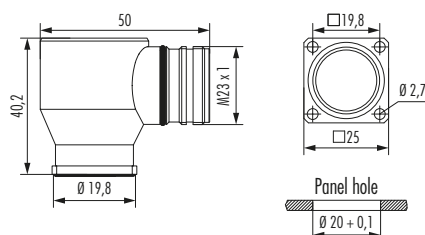


▶ 31



▶ 32

### Right Angle Panel Connector, Male Thread



#### Type

#### Part Number

4 holes Ø 2,7 mm (.11").....7.430.400.000



▶ 25

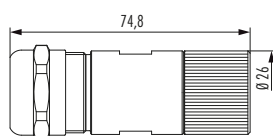


▶ 31



▶ 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

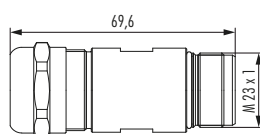


▶ 44



▶ 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



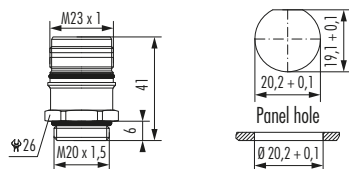
▶ 45



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 <sup>1</sup>
Thread M 25 x 1,5	7.626.400.000



▶ 43

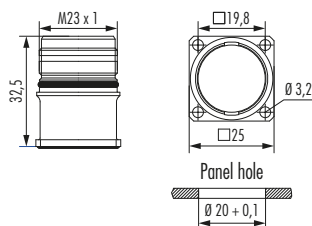


▶ 44



▶ 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

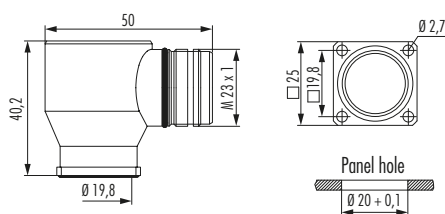


▶ 44



▶ 45

### Right Angle Panel Connector, Male Thread



#### Type

#### Part Number

4 holes Ø 2,7 mm (.11")	7.630.400.000
-------------------------	---------------



▶ 43



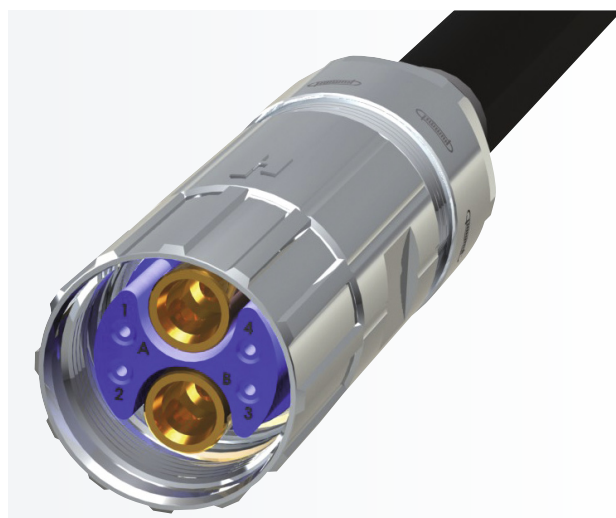
▶ 44



▶ 45

Accessories	Type	Part Number
	Assembly tool .....	7.010.900.127
	Plastic protective cap for connectors M 23 with male thread .....	7.000.900.101
	for connectors M 23 with female thread .....	7.000.900.102
	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

### 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



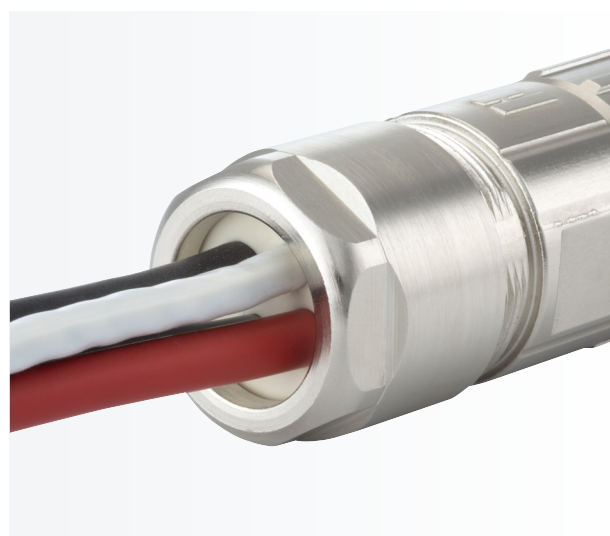
Bulkhead connectors accept plugs on both sides. They are rugged, liquid tight and available in all number of poles.

### 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



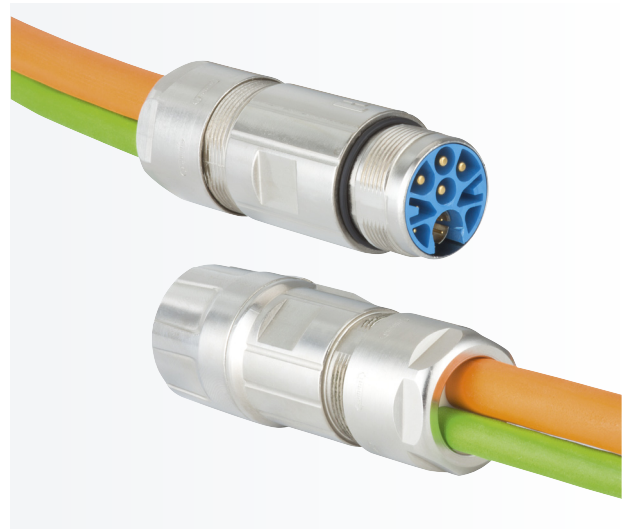
A large selection of standard MULTI seal inserts allow strain relief of several individual conductors on one single connector.

### 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.



### 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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# ELECTRIC COMPONENTS

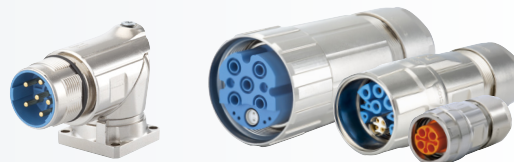
## Cable Glands

Polyamide-, Brass- and Stainless steel,  
EMC-connections, Protection Ex e, Ex d, Ex ta



## Circular Connectors

M 12 Power to M 40, INOX, TWILOCK, Industrial Ethernet,  
Power, Signal, Hybrid-Connector, Moulded Cordsets



## Conduit Systems

Corrugated Conduit Systems, Conduit Cable Glands, Angled Systems,  
combined Cable Glands, Accessories



## Cable Assembly

Moulded Signal- and Power Circular Connectors,  
Servo Cables, Cable Sets



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