HUMMEL

smart & reliable connections

CIRCULAR CONNECTORS

SIGNAL // POWER // HYBRID // 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.

connections

TABLE OF CONTENT

LEGEND

Housing

Inserts / Pinouts

Contacts

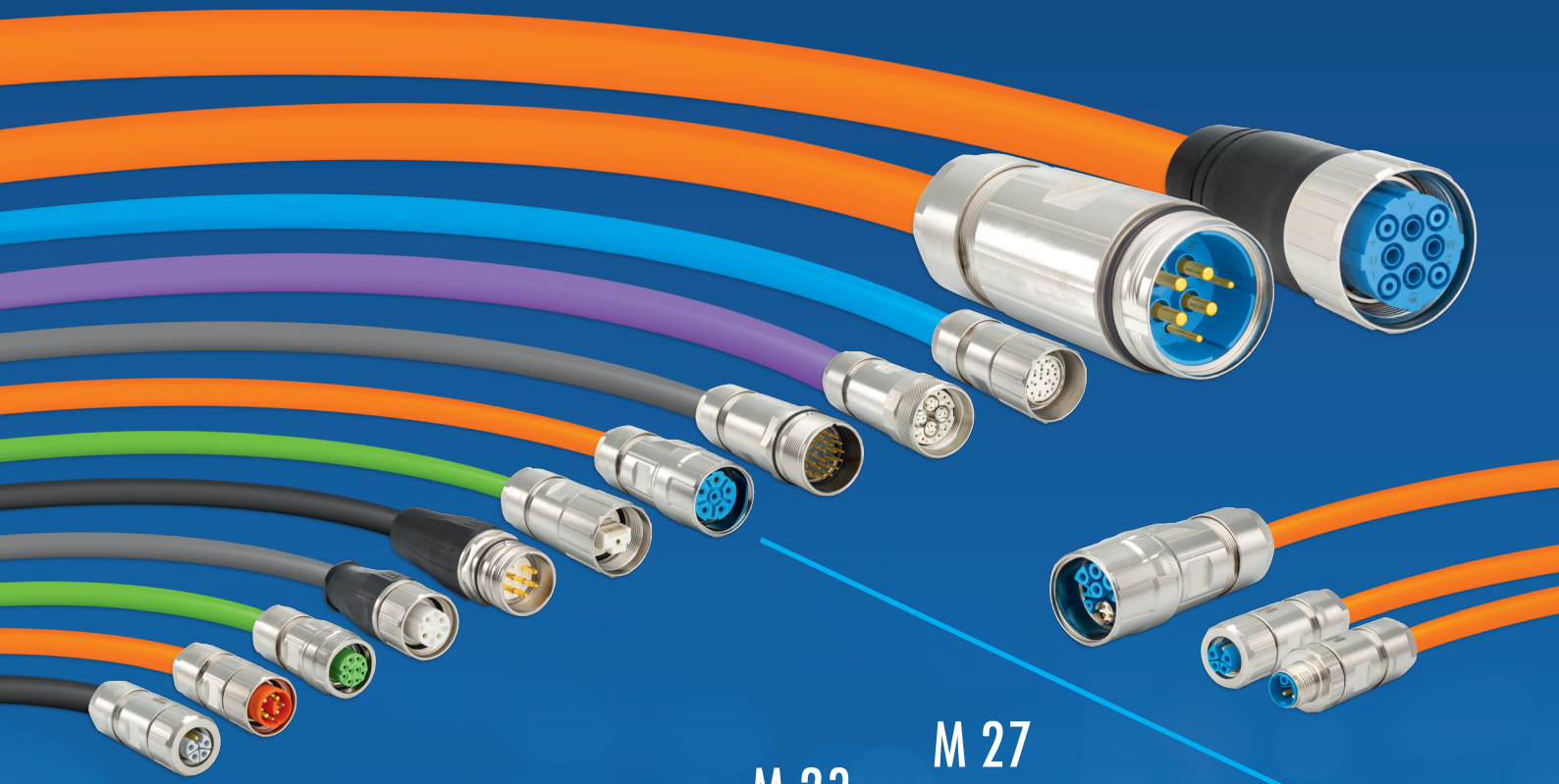
Accessories

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

File-No. E 213337

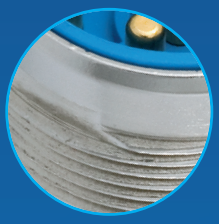
Germanischer Lloyd

RoHS

TWILOCK / TWILOCK-S

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

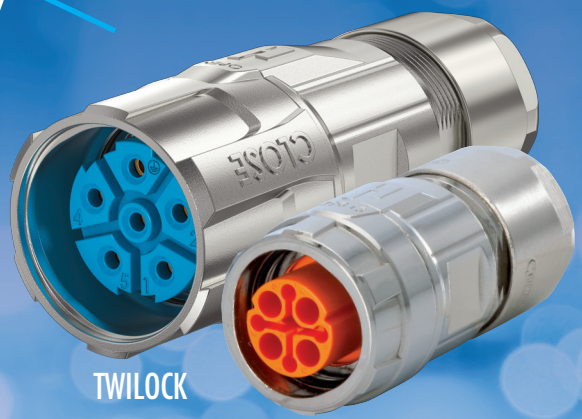
Clearly defined:
OPEN – CLOSE



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

Locking with a slight rotation or release of the connection

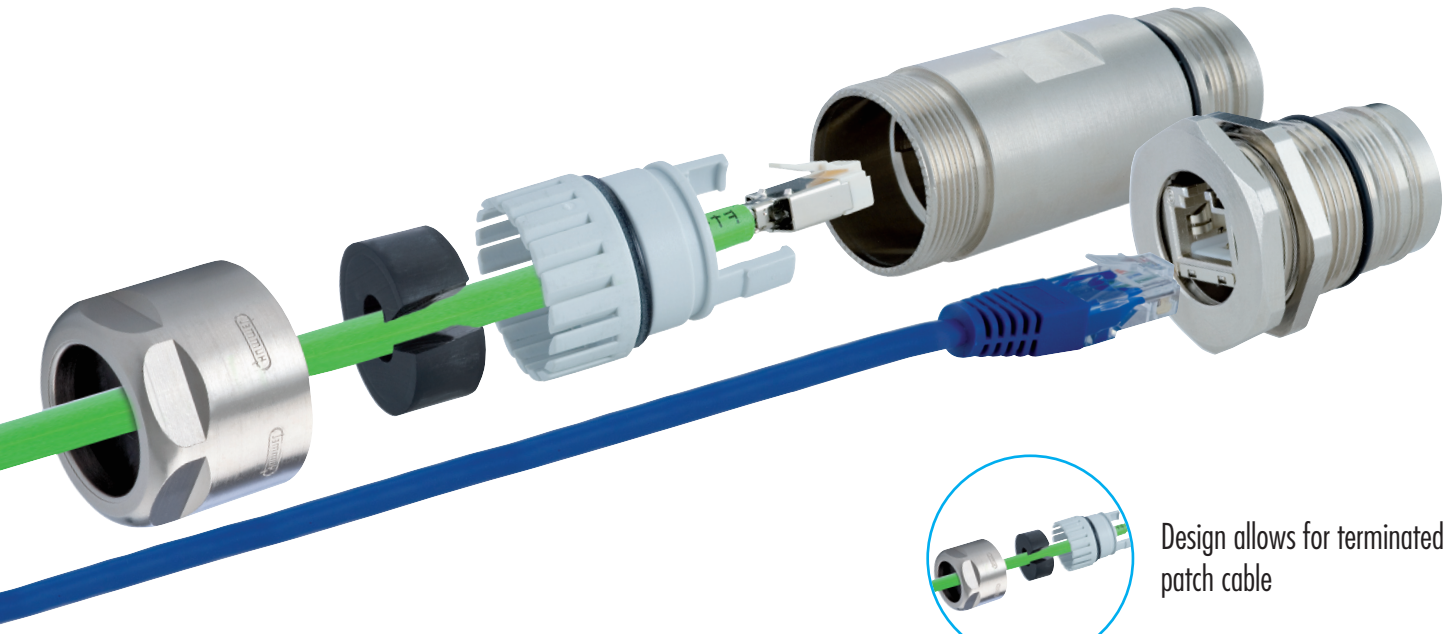
TWILOCK-S-Version intermateable with Speedtec



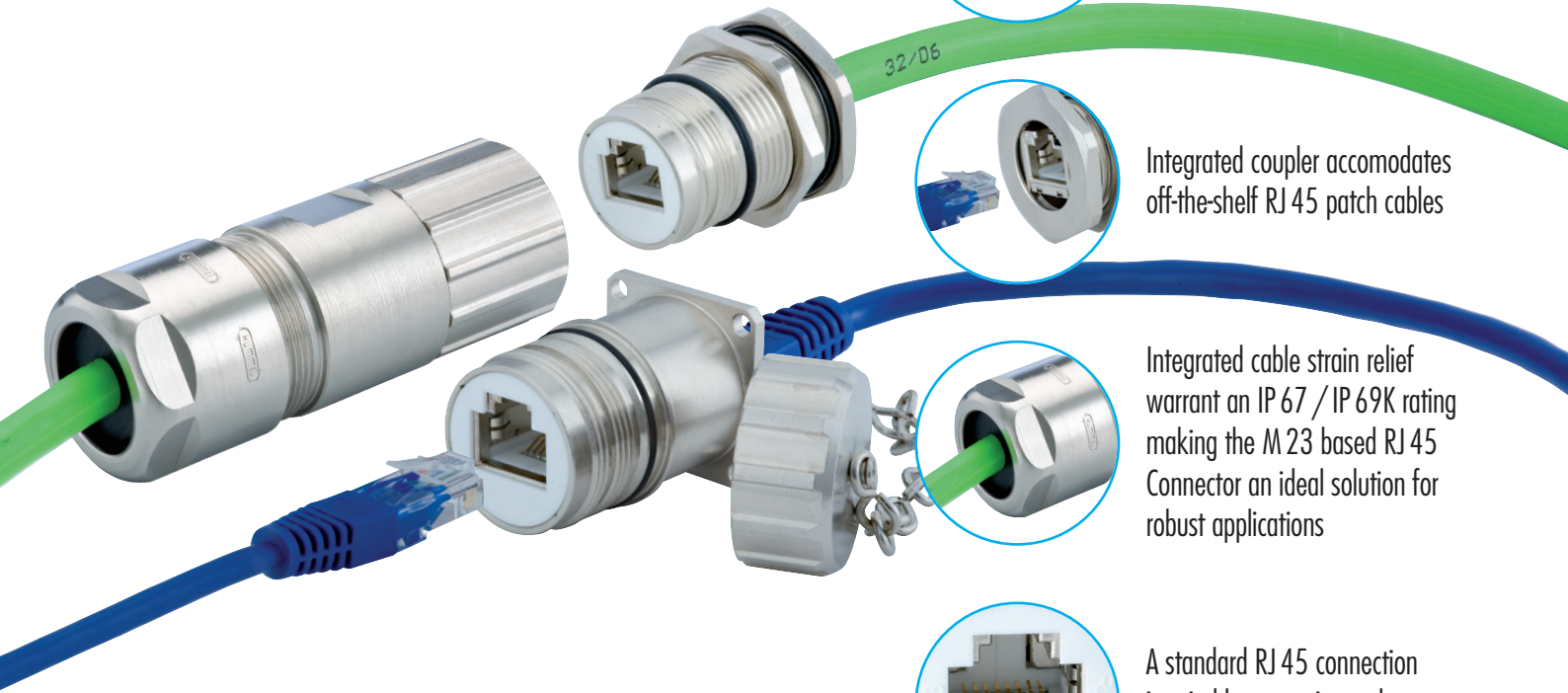
TWILOCK

TWILOCK-S

M 23 RJ 45: ROBUST, SIMPLE & SMALL!

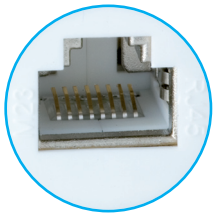


Design allows for terminated patch cable



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

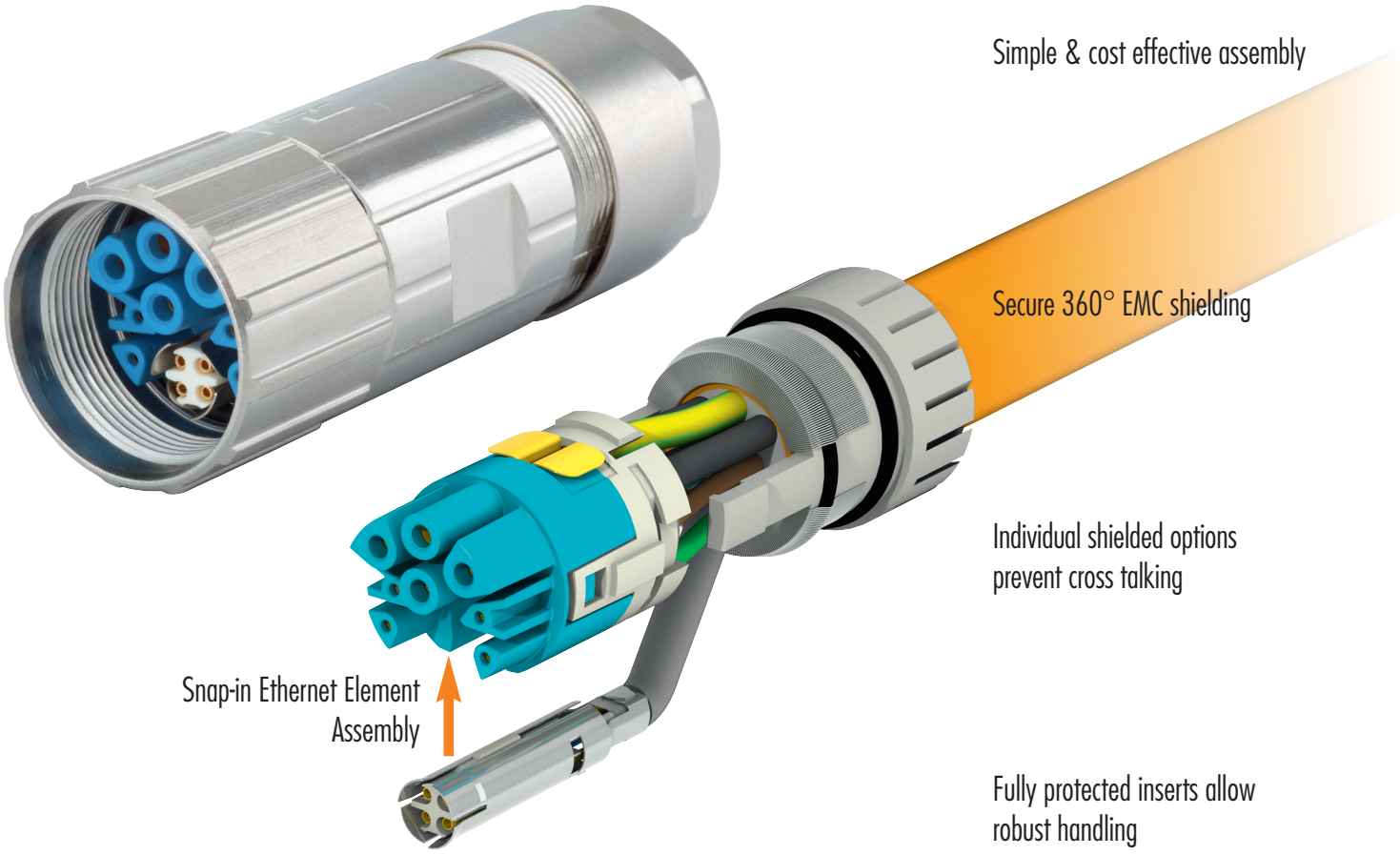
Integrated cable strain relief warrant an IP 67 / IP 69K rating making the M 23 based RJ 45 Connector an ideal solution for robust applications



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

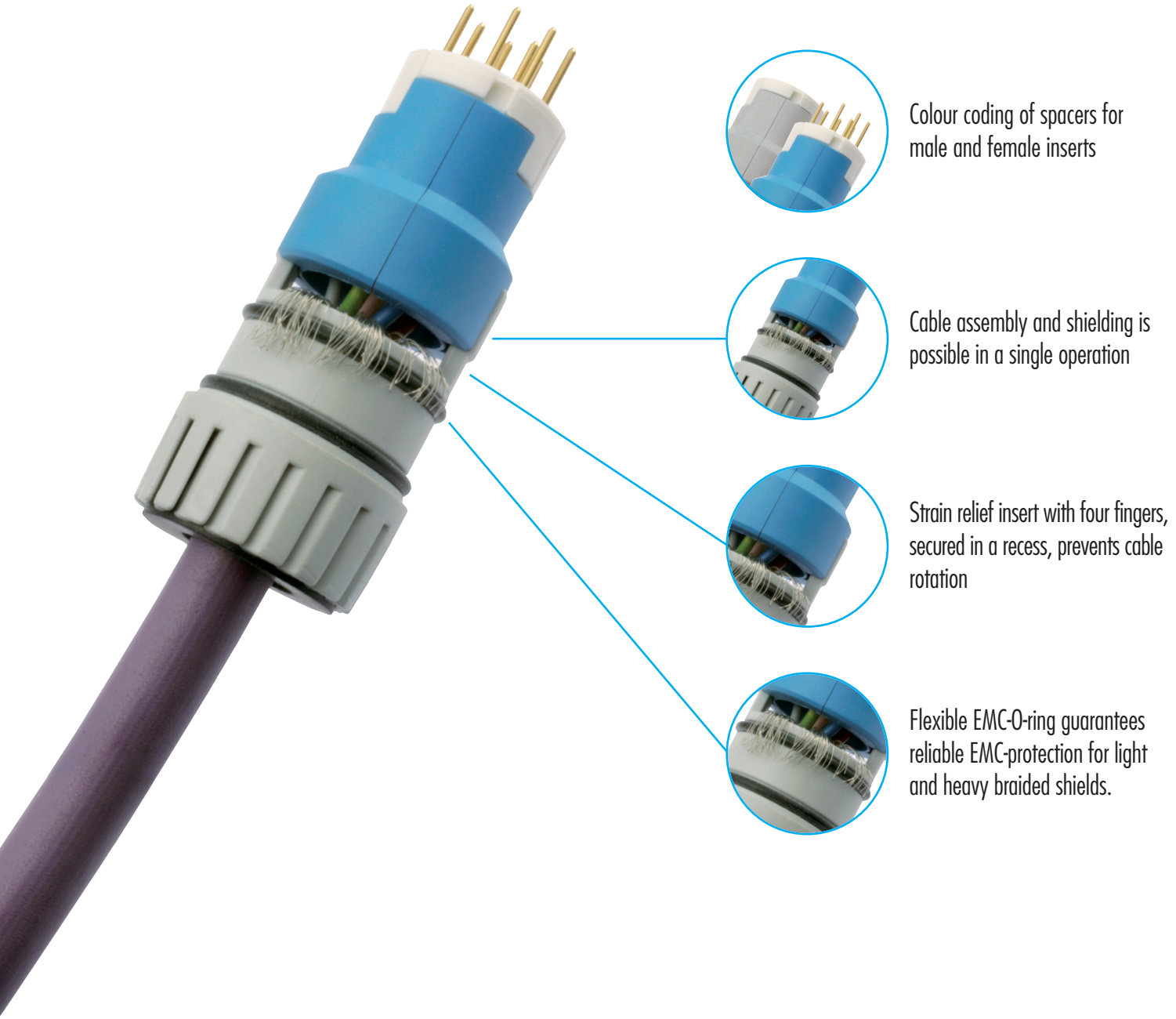
Fully integrated solution for Industrial Ethernet applications

// 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

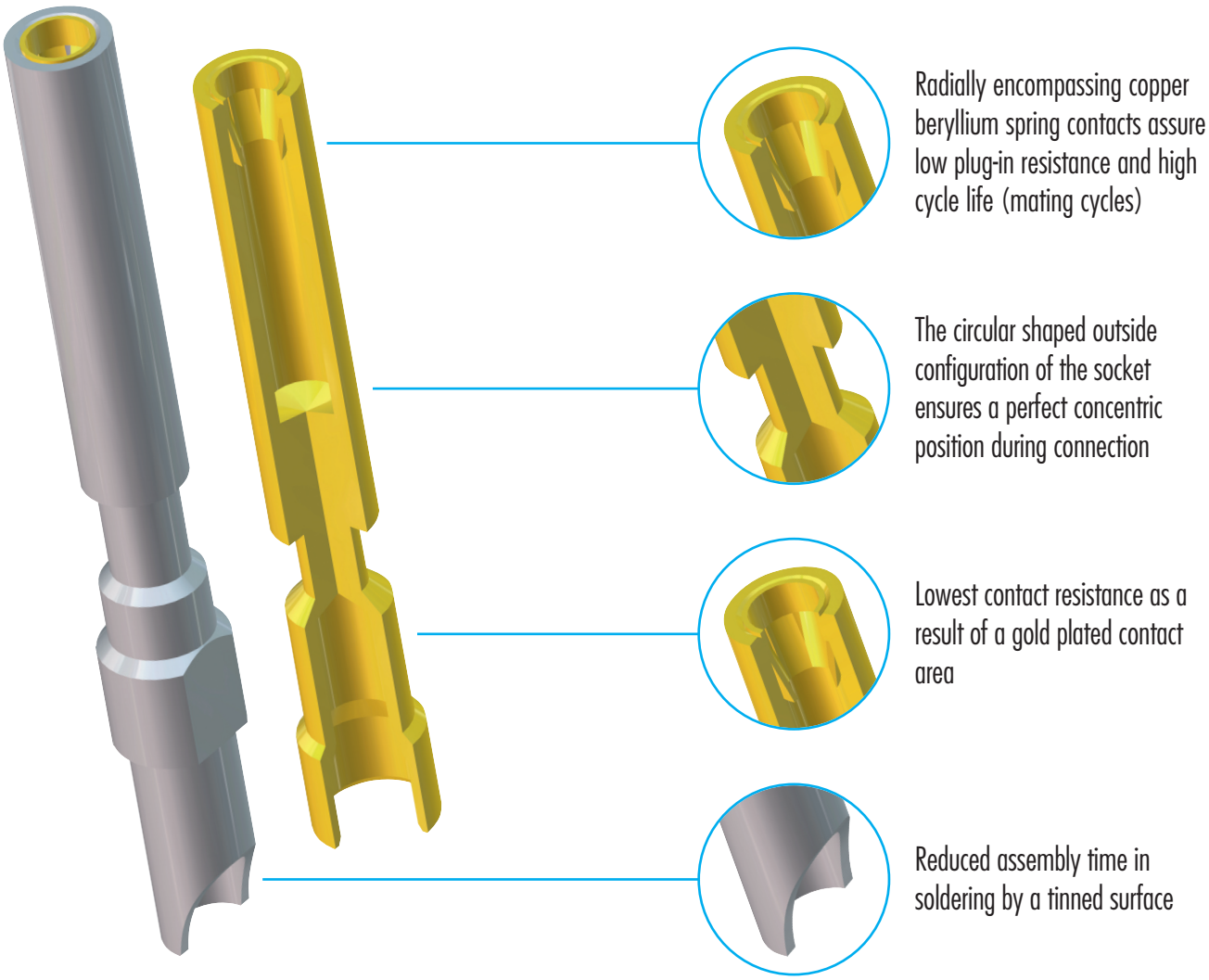
Cable assembly and shielding is possible in a single operation

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

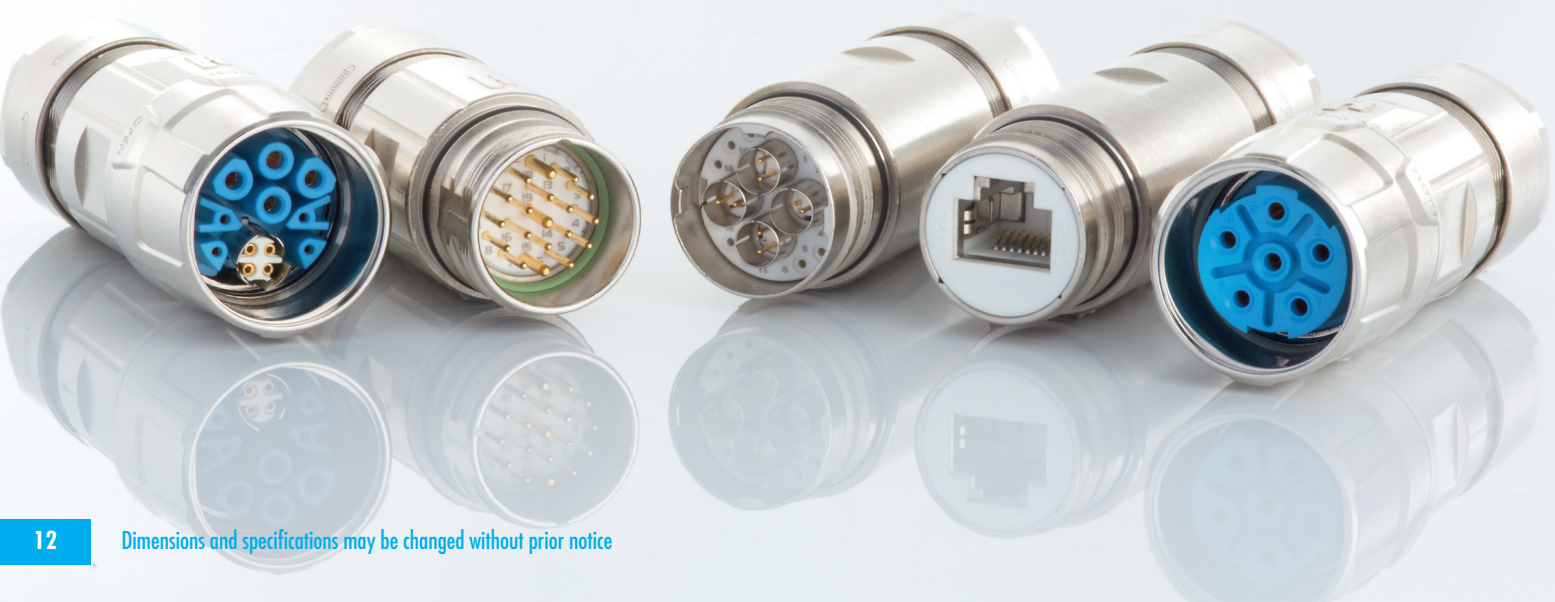


M 23 CIRCULAR CONNECTORS

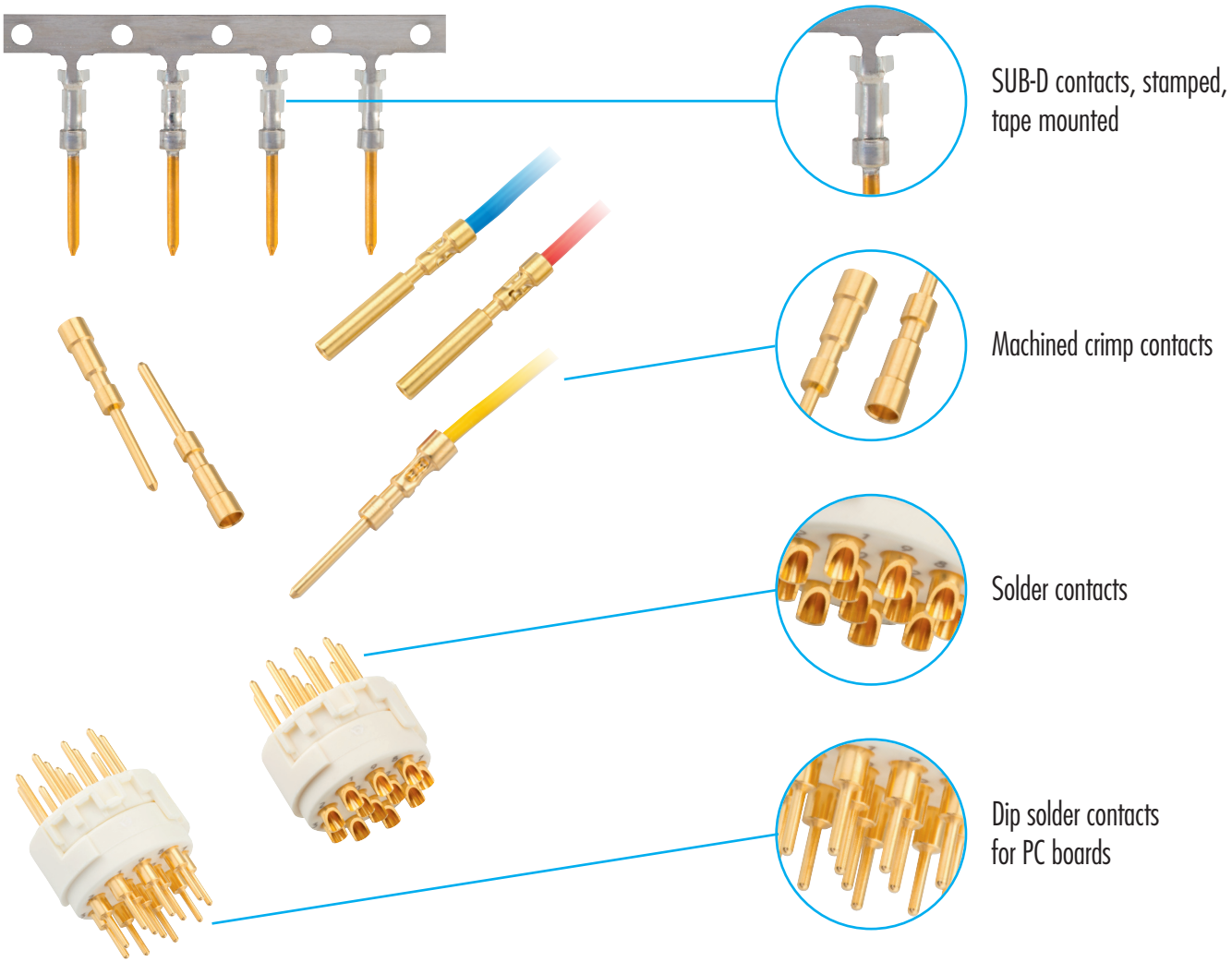
The success serie

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 extremly flexible and suitable for nearly every application. The mechanical and electrical data are also outstanding and prove absolute industrial suitability

// Applications: signal, power, industrial ehternet (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



TECHNICAL INFORMATION

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 in 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

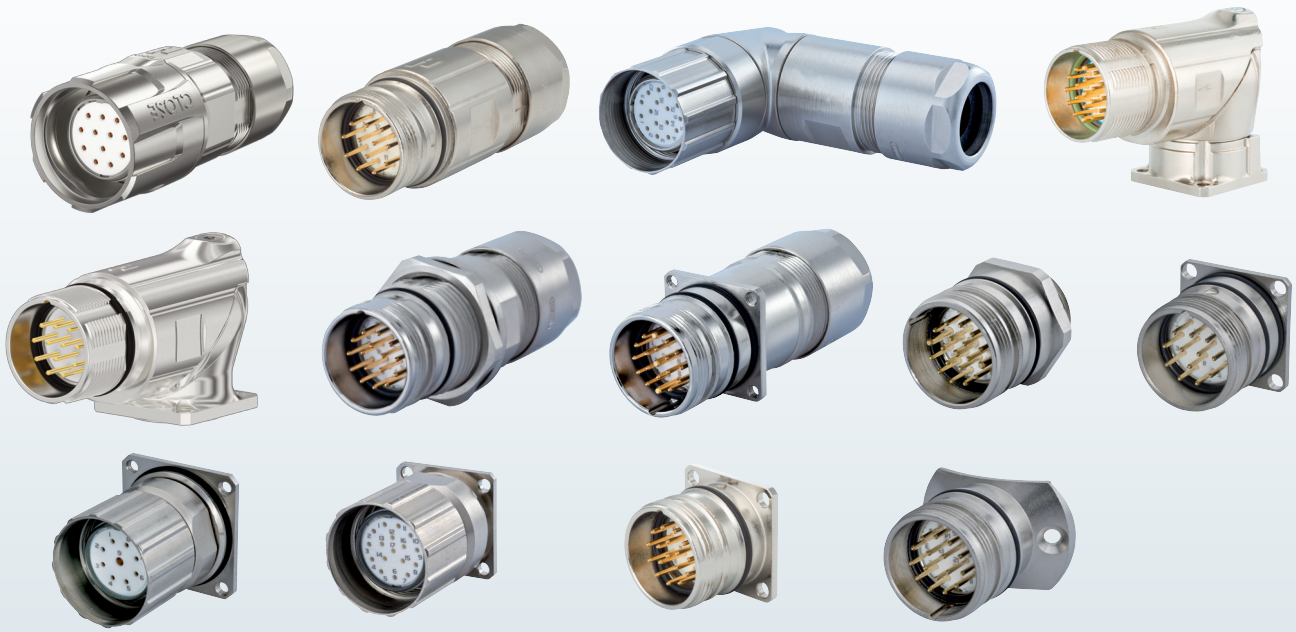
This reliable and universally applicable connector is widespread within industry. The connectors of HUMMEL AG can be customized freely. Moreover, they convice through their robustness and reliability. The range is modularly constructed and offers almost unlimited opportunities to the user.

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

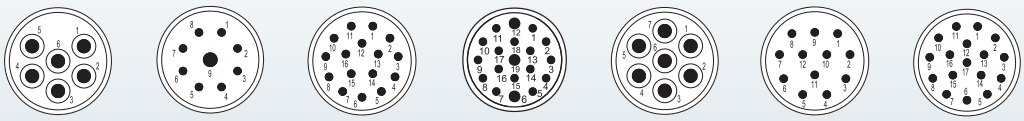
M 23 SIGNAL

Product overview

Housings ▶ 18



Inserts ▶ 24



Accessories ▶ 31

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)
Cable diameter range	3 – 17 mm (.12 – .67")

* HUMMEL to HUMMEL connector

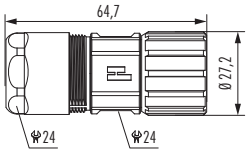
Electrical Data

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 [1] [A]	20	20	8 20	8	8	8	8 10
Nominal voltage [2] [V~] degree of pollution 3 [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

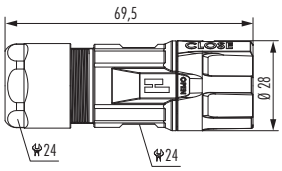
Straight Connector, Female Thread



Cable-Ø	Part Number
Screw Variant	
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

▶ 24 ▶ 30 ▶ 31

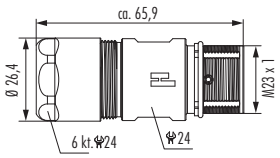
Straight Connector, Female Thread



Cable-Ø	Part Number
TWILOCK	
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
TWILOCK-S (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

▶ 24 ▶ 30 ▶ 31

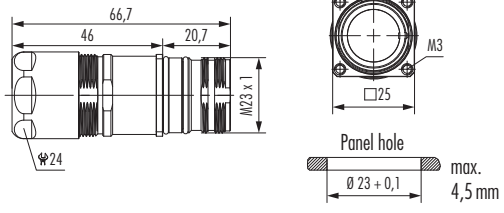
Straight Connector, Male Thread



Cable-Ø	Part Number
TWILOCK and Screw Variant	
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
TWILOCK-S (intermateable with Speedtec) and Screw Variant	
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

▶ 24 ▶ 30 ▶ 31

Panel Connector, Male Thread, with Strain Relief



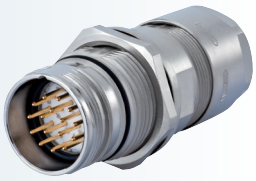
Cable-Ø	Part Number
TWILOCK and Screw Variant	
4 threads M 3, rear mounting	
3 – 7 mm (.12 – .28")	7.476.400.000
7 – 12 mm (.28 – .47")	7.476.500.000
11 – 17 mm (.44 – .67")	7.476.600.000

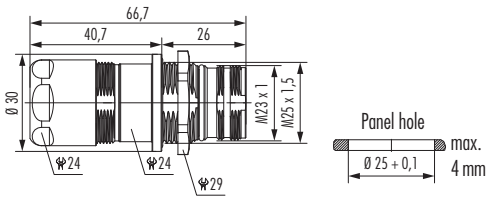
Optional: Flat gasket

▶ 24 ▶ 30 ▶ 31

Housing without inserts and contacts

Panel Connector, Male Thread, with Strain Relief



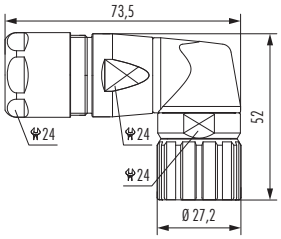


Cable-Ø	Part Number
TWILOCK and Screw Variant	
Rear mounting, M 25 x 1,5 single hole mounted	
3 – 7 mm (.12 – .28")	7.486.400.000
7 – 12 mm (.28 – .47")	7.486.500.000
11 – 17 mm (.44 – .67")	7.486.600.000
TWILOCK-S (intermateable with Speedtec) and Screw Variant	
3 – 7 mm (.12 – .28")	7.486.400.00S
7 – 12 mm (.28 – .47")	7.486.500.00S
11 – 17 mm (.44 – .67")	7.486.600.00S

▶ 24 ▶ 30 ▶ 31

Including jam nut M 25 x 1,5

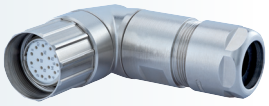
Right Angle Connector, Female Thread, EMC with positioning

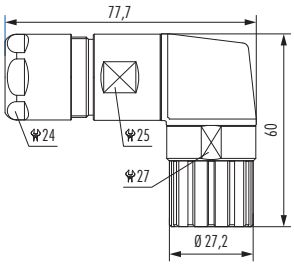


Cable-Ø	Part Number
Screw Variant	
7 – 12 mm (.28 – .47")	7.301.500.000
10 – 14 mm (.39 – .55")	7.301.600.000

▶ 24 ▶ 30 ▶ 31

Right Angle Connector, EMC, rotatable

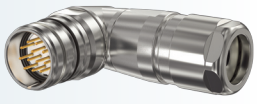


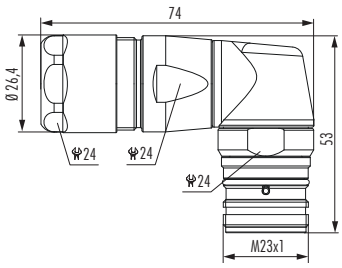


Cable-Ø	Part Number
Screw Variant	
7 – 12 mm (.28 – .47")	7.306.500.000
11 – 17 mm (.43 – .67")	7.306.600.000

▶ 24 ▶ 30 ▶ 31

Right Angle Connector, EMC with positioning





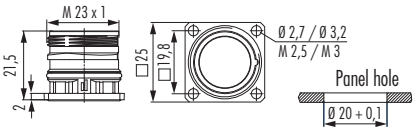
Cable-Ø	Part Number
Screw Variant	
3 – 7 mm (.12 – .28")	7.351.300.000
6 – 12 mm (.24 – .47")	7.351.500.000
11 – 17 mm (.43 – .67")	7.351.600.000

▶ 24 ▶ 30 ▶ 31

Housing without inserts and contacts

Housings

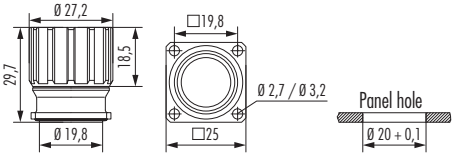
Panel Connector, Male Thread, Front Mounting with anti-vibration O-Ring



Type	Part Number
Screw Variant	
4 threads M 2,5	7.416.000.000
4 threads M 3	7.412.000.000
TWILOCK and Screw Variant	
4 holes Ø 2,7 mm (.11“)	7.414.000.000
4 holes Ø 3,2 mm (.13“)	7.410.000.000
TWILOCK-S (intermateable with Speedtec) and Screw Variant	
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

▶ 24 ▶ 30 ▶ 31

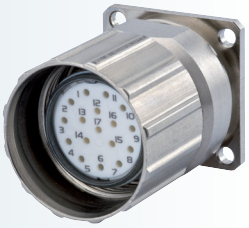
Panel Connector, Female Thread, with knurled Nut

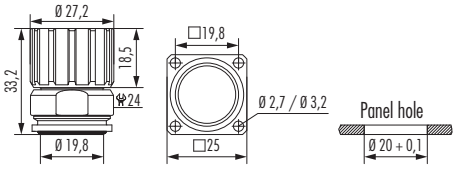


Type	Part Number
Screw Variant, without coding option	
4 holes Ø 3,2 mm (.13“)	7.440.000.000
4 holes Ø 2,7 mm (.11“)	7.444.000.000

▶ 24 ▶ 30 ▶ 31

Panel Connector, Female Thread, with knurled Nut, positionable



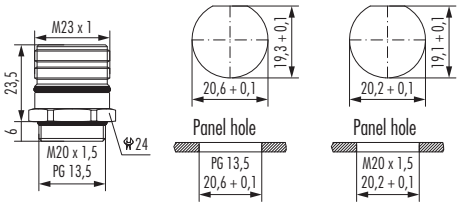


Type	Part Number
Screw Variant, with coding option (8 x 45°)	
4 holes Ø 3,2 mm (.13“)	7.448.000.000
4 holes Ø 2,7 mm (.11“)	7.449.000.000

▶ 24 ▶ 30 ▶ 31

Housing without inserts and contacts

Panel Connector, Male Thread, Single Hole Mounted



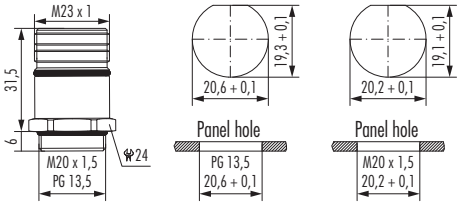
Type	Part Number
Screw Variant, Front mounting for male inserts	
Thread M 20 x1,5	7.420.000.000
Thread PG 13,5	7.422.000.000

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

* FOR MALE * INSERTS ONLY

▶ 24 ▶ 30 ▶ 31

Panel Connector, Male Thread, Single Hole Mounted



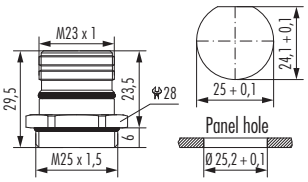
Type	Part Number
Screw Variant, Front mounting for female inserts	
Thread M 20 x1,5	7.421.000.000
Thread PG 13,5	7.423.000.000

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

* FOR FEMALE * INSERTS ONLY

▶ 24 ▶ 30 ▶ 31

Panel Connector, Male Thread, Single Hole Mounted



Type	Part Number
Screw Variant, For insert with pins / sockets	
Thread M 25 x 1,5	7.425.000.000

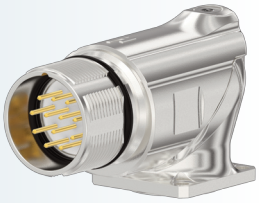
Optional: jam nut M 25 x 1,5

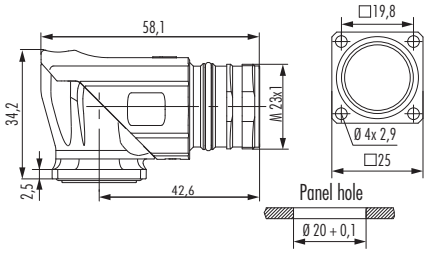
▶ 24 ▶ 30 ▶ 31

Housing without inserts and contacts

Housings

Right Angle Panel Connector, Male Thread

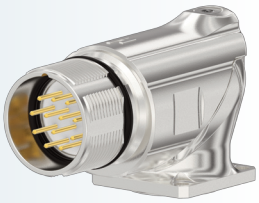


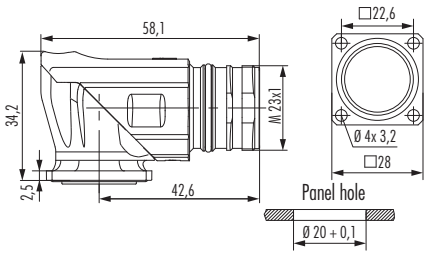


Type	Part Number
TWILOCK and Screw Variant	
4 x holes 2,9 mm, Flange 25 x 25 mm blue passivated	7.430.000.000
4 x holes 2,9 mm, Flange 25 x 25 mm nickel plated	7.430.000.010
TWILOCK-S (intermateable with Speedtec) and Screw Variant	
4 x holes 2,9 mm, Flange 25 x 25 mm blue passivated..	7.430.000.00S
4 x holes 2,9 mm, Flange 25 x 25 mm nickel plated	7.430.000.01S

▶ 24 ▶ 30 ▶ 31

Right Angle Panel Connector, Male Thread

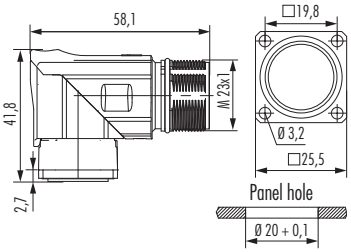




Type	Part Number
TWILOCK and Screw Variant	
4 x holes 3,2 mm, Flange 28 x 28 mm blue passivated	7.430.100.000
4 x holes 3,2 mm, Flange 28 x 28 mm nickel plated	7.430.100.010
TWILOCK-S (intermateable with Speedtec) and Screw Variant	
4 x holes 3,2 mm, Flange 28 x 28 mm blue passivated	7.430.100.00S
4 x holes 3,2 mm, Flange 28 x 28 mm nickel plated	7.430.100.01S

▶ 24 ▶ 30 ▶ 31

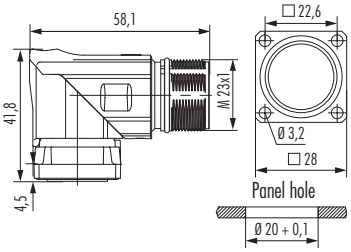
Right Angle Panel Connector, Male Thread, 330° rotatable, hole mounted



Type	Part Number
TWILOCK and Screw Variant	
4 x holes 3,2 mm (.13") Flange 25 x 25 mm blue passivated	7.439.000.000
4 x holes 3,2 mm (.13") Flange 25 x 25 mm nickel plated	7.439.000.010
TWILOCK-S (intermateable with Speedtec) and Screw Variant	
4 x holes 3,2 mm (.13") Flange 25 x 25 mm blue passivated	7.439.000.00S
4 x holes 3,2 mm (.13") Flange 25 x 25 mm nickel plated	7.439.000.01S

▶ 24 ▶ 30 ▶ 31

Right Angle Panel Connector, Male Thread, 330° rotatable, hole mounted



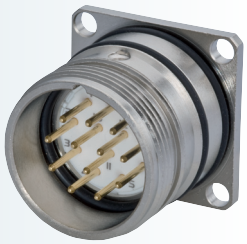
Type	Part Number
TWILOCK and Screw Variant	
4 x holes 3,2 mm (.13") Flange 28 x 28 mm blue passivated	7.439.100.000
4 x holes 3,2 mm (.13") Flange 28 x 28 mm nickel plated	7.439.100.010
TWILOCK-S (intermateable with Speedtec) and Screw Variant	
4 x holes 3,2 mm (.13") Flange 28 x 28 mm blue passivated	7.439.100.00S
4 x holes 3,2 mm (.13") Flange 28 x 28 mm nickel plated	7.439.100.01S

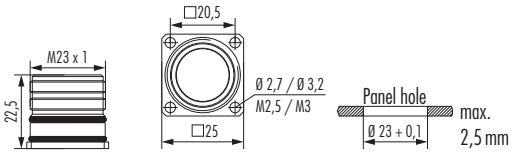
▶ 24 ▶ 30 ▶ 31

Housing without inserts and contacts

Housings

Panel Connector, Male Thread, Rear Mounting with anti-vibration O-Ring

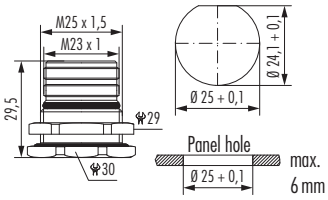




Type	Part Number
TWILOCK and Screw Variant	
4 holes Ø 3,2 mm (.13“)	7.460.000.000
4 threads M 3	7.462.000.000
4 holes Ø 2,7 mm (.11“)	7.464.000.000
4 threads M 2,5	7.466.000.000
TWILOCK-S (intermateable with Speedtec) and Screw Variant	
4 x threads M 3	7.462.000.00S

▶ 24 ▶ 30 ▶ 31

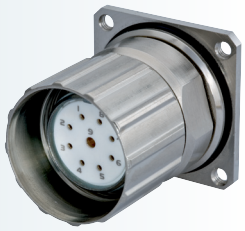
Panel Connector, Male Thread, Single Hole Mounted, Rear Mounting

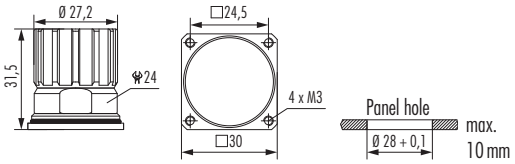


Type	Part Number
Screw Variant	
Thread M 25 x 1,5	7.458.000.000
TWILOCK-S (intermateable with Speedtec) and Screw Variant	
Thread M 25 x 1,5	7.458.000.00S
Including jam nut M 25 x 1,5	

▶ 24 ▶ 30 ▶ 31

Panel Connector, Female Thread, Rear Mounting

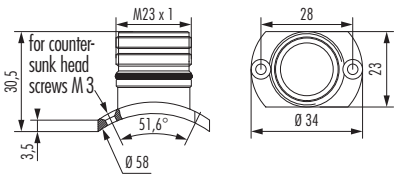




Type	Part Number
Screw Variant with knurled nut, rear mounting	
4 threads M 3	7.459.000.000

▶ 24 ▶ 30 ▶ 31

Panel Connector with Radius Flange and anti-vibration O-Ring



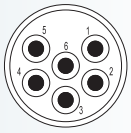
Type	Part Number
Screw Variant with flat body gasket	
Ø 58 mm (2.28“)	7.490.000.000

▶ 24 ▶ 30 ▶ 31

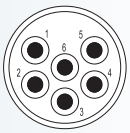
Housing without inserts and contacts

Inserts / Pinouts

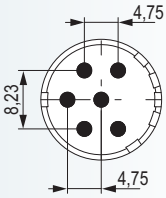
Inserts 6-pole



Insert pin mating view (Part E)



Insert socket mating view (Part P)



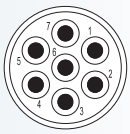
Type	Part Number Pins	Part Number Sockets
Pinout clockwise		
Insert with solder contacts	7.001.906.103	7.001.906.104
Insert without contacts	7.003.906.101	7.003.906.102
Insert with dip solder contacts Length 3,5 mm	7.001.906.107	
Insert with dip solder contacts Length 10 mm	7.001.906.127	7.001.906.108
Insert with dip solder contacts Length 17 mm	7.001.906.137	7.001.906.118

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

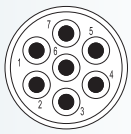
Coding possibilities N, S, H, X, Y and Z (see page 29)

▶ 30

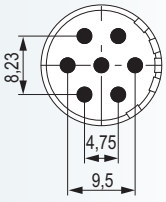
Inserts 7-pole



Insert pin mating view (Part E)



Insert socket mating view (Part P)



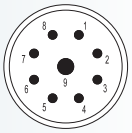
Type	Part Number Pins	Part Number Sockets
Pinout clockwise		
Insert with solder contacts	7.001.907.103	7.001.907.104
Insert without contacts	7.003.907.101	7.003.907.102
Insert with dip solder contacts Length 3,5 mm	7.001.907.107	
Insert with dip solder contacts Length 10 mm	7.001.907.127	7.001.907.108

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

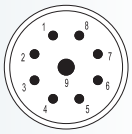
Coding possibilities N, S, H, X and Y (see page 29)

▶ 30

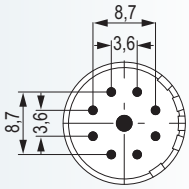
Inserts 9-pole (8 + 1)



Insert pin mating view (Part E)



Insert socket mating view (Part P)



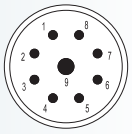
Type	Part Number Pins	Part Number Sockets
Pinout clockwise		
Insert with solder contacts	7.001.981.103	7.001.981.104
Insert without contacts	7.003.981.101	7.003.981.102
Insert with dip solder contacts Length 3,5 mm	7.001.981.107	
Insert with dip solder contacts Length 10 mm	7.001.981.127	7.001.981.108
Insert with dip solder contacts Length 17 mm	7.001.981.137	7.001.981.118

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

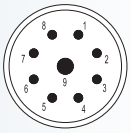
Coding possibilities N, S, H, X and Y (see page 29)

▶ 30

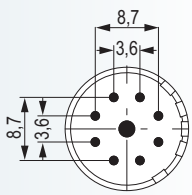
Inserts 9-pole (8 + 1)



Insert pin mating view (Part P)



Insert socket mating view (Part E)



Type	Part Number Pins	Part Number Sockets
Pinout counter-clockwise		
Insert with solder contacts	7.002.981.103	7.002.981.104
Insert without contacts	7.004.981.101	7.004.981.102

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 29)

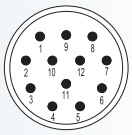
▶ 30

Inserts / Pinouts

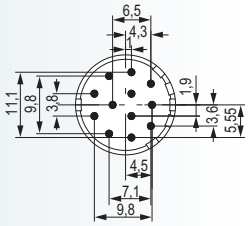
Inserts 12-pole

Type	Part Number Pins	Part Number Sockets
Pinout clockwise		
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

Insert pin mating view (Part E)



Insert socket mating view (Part P)



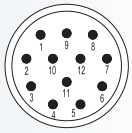
The correct dimension of a connector with dip solder contacts depends on the particular type of housing.

Coding possibilities N, S, H, X, Y and Z (see page 29)

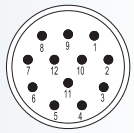
▶ 30

Inserts 12-pole

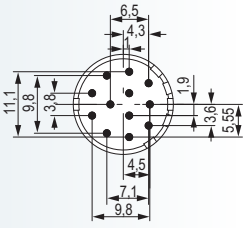
Type	Part Number Pins	Part Number Sockets
Pinout counter-clockwise		
Insert with solder contacts	7.002.912.103	7.002.912.104
Insert with solder contacts +PE (Pos.9)	7.002.912.113	7.002.912.114
Insert without contacts	7.004.912.101	7.004.912.102
Insert without contacts +PE (Pos.9)	7.004.912.111	7.004.912.112
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 pin mating view (Part P)



Insert socket mating view (Part E)



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

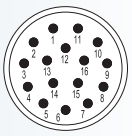
Coding possibilities N, S, H, X, Y and Z (see page 29)

▶ 30

Inserts 16-pole

Type	Part Number Pins	Part Number Sockets
Pinout clockwise		
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

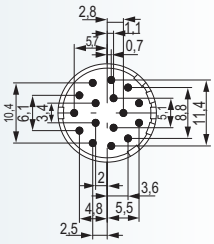
Insert pin mating view (Part E)



Insert socket mating view (Part P)

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

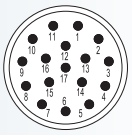
Coding possibilities N, S, H, X, Y and Z (see page 29)



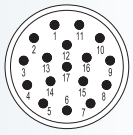
▶ 30

Inserts 17-pole

Type	Part Number Pins	Part Number Sockets
Pinout clockwise		
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



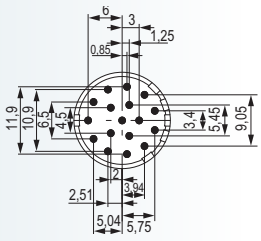
Insert pin mating view (Part E)



Insert socket mating view (Part P)

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 29)

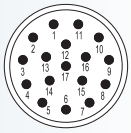


▶ 30

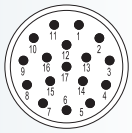
Inserts / Pinouts

Inserts 17-pole

Type	Part Number Pins	Part Number Sockets
Pinout counter-clockwise		
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 17 mm	7.002.917.137	7.002.917.118



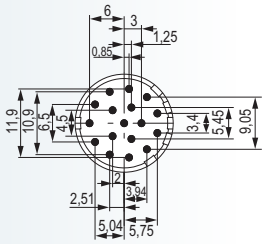
Insert pin mating view (Part P)



Insert socket mating view (Part E)

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

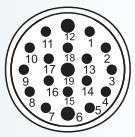
Coding possibilities N, S, H, X, Y and Z (see page 29)



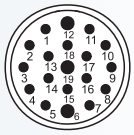
▶ 30

Inserts 19-pole

Type	Part Number Pins	Part Number Sockets
Pinout clockwise		
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



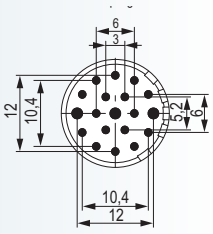
Insert pin mating view (Part E)



Insert socket mating view (Part P)

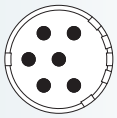
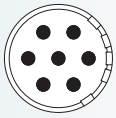
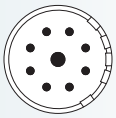
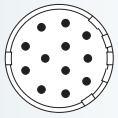
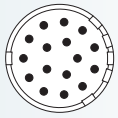
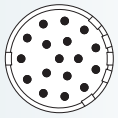
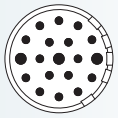
The correct dimension of a connector with dip solder contacts depends on the particular type of housing.

Coding possibilities N, S, H, X and Y (see page 29)



▶ 30

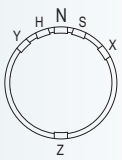
Contact Arrangement

	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 44 – 46	

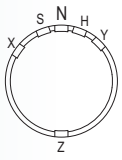
For the M23 crimp insert with 1 mm contacts can be used stamped crimp contact.

▶ 30

Coding



Female Inserts
mating view

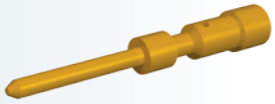
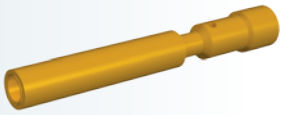
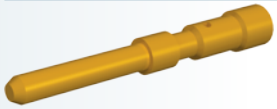
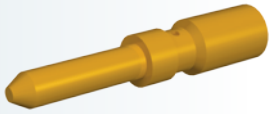
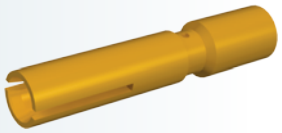


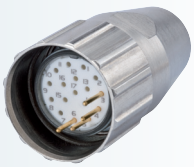
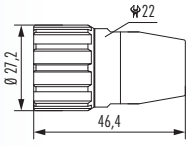
Male Inserts
mating view

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

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

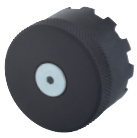
Contacts

Contacts	Type	Crimp Range	Part Number
	Crimp pin 1 mm, machined	0,08 – 0,56 mm² (AWG 28 – 20)	7.010.901.031
	Crimp pin 1 mm, machined	0,14 – 1 mm² (AWG 26 – 17)	7.010.901.001
	Crimp pin 1 mm, machined	0,75 – 1,5 mm² (AWG 17 – 16)	7.010.901.021
	Crimp socket 1 mm, machined	0,08 – 0,56 mm² (AWG 28 – 20)	7.010.901.012
	Crimp socket 1 mm, machined	0,34 – 1 mm² (AWG 22 – 17)	7.010.901.002
	Crimp socket 1 mm, machined	0,75 – 1,5 mm² (AWG 17 – 16)	7.010.901.022
	Crimp pin 1,5 mm, machined	0,14 – 1 mm² (AWG 26 – 17)	7.010.901.501
	Crimp pin 1,5 mm, machined	0,75 – 1,5 mm² (AWG 17 – 16)	7.010.901.521
	Crimp socket 1,5 mm, machined	0,14 – 0,56 mm² (AWG 26 – 20)	7.010.901.512
	Crimp socket 1,5 mm, machined	0,56 – 1 mm² (AWG 20 – 17)	7.010.901.502
	Crimp socket 1,5 mm, machined	0,75 – 1,5 mm² (AWG 17 – 16)	7.010.901.522
	Crimp pin 2 mm, machined	0,75 – 2,5 mm² (AWG 18 – 14)	7.010.902.001
	Crimp socket 2 mm, machined	0,75 – 2,5 mm² (AWG 18 – 14)	7.010.902.002

Accessories	Type	Part Number
	**Plastic protective cap** for connectors with **male thread blue** with **female thread transparent**	 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

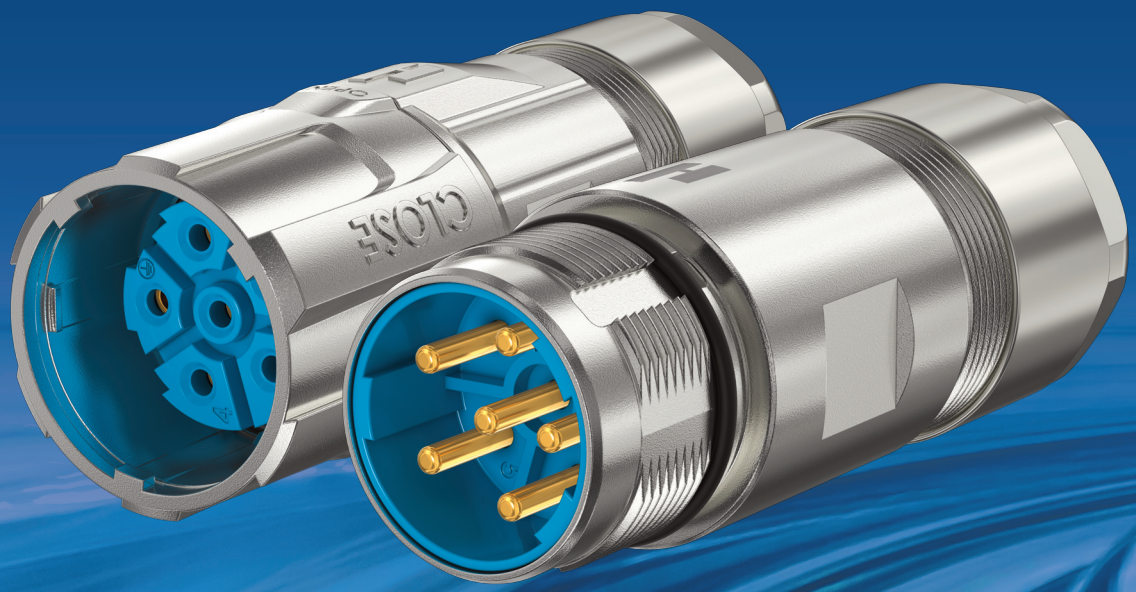
Accessories	Type	Part Number
	**Adaptor flange** for Straight Connectors	7.010.900.128 [1]
	**Conduit adaptor** Poleon DN 12 Poleon DN 17	7.010.900.205 7.010.900.209
	**Positioner for Crimp Tool** DMC M22520	7.000.900.DMC
	**Locator for Crimp Tool** DMC M22520 with positioner **For HUMMEL Contact:** 7.010.901.001, 7.010.901.501, 7.010.902.001, 7.010.901.031 **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.C03 7.000.9DM.C04
	**Screw Tool**, adjustable 0.5 – 1.7 Nm **Tool Adapter** for tightening or loosening knurled nuts for M 23	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 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

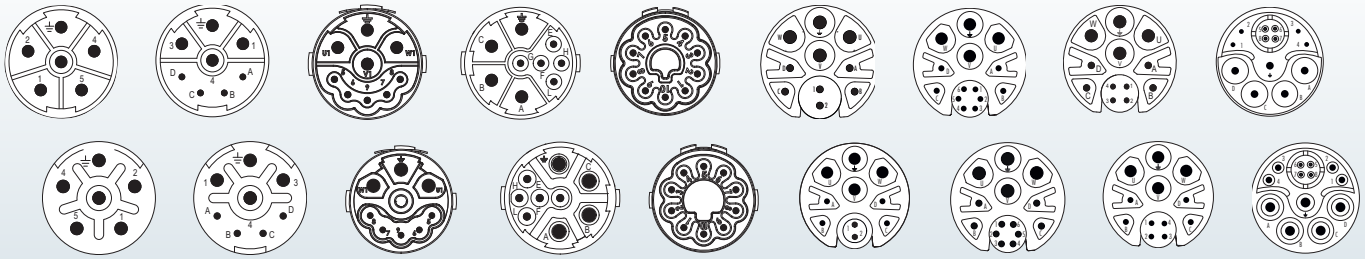


M 23 POWER, M 23 HYBRID

Product overview

Housings ▶ 36

Inserts ▶ 44



Accessories ▶ 47

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	> 500*
Seals / O-Rings	Buna-N standard optional Viton® (FKM / FPM) (Viton is a registered trademark of DuPont)
Temperature range	-40 °C – 125 °C (-40 °F – 257 °F)
Type of contacts	Crimp
Protection	IP 67 / IP 69K per EN 60 529 (connected)
Cable diameter range	7 – 17 mm (.28 – .67")

* HUMMEL to HUMMEL connector

Electrical Data

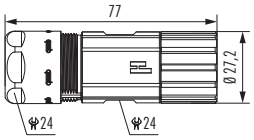
Number of positions	5 + PE	4 + 3 + PE		5 + 3 + PE		10
	Power	Signal	Power	Signal	Power	Signal
Number of contacts	6	4	4	5	4	10
Contact-Ø [mm]	2	1	2	1	2	1
Nominal current [1] [A]	28	8	28	10	28	10
Nominal voltage [2] [V~] degree of pollution 3 [3]	600	300	600	250	600	160
Test voltage (Breakdown voltage) [4] [V~]	4000	2500	4000	2500	4000	2500
Insulation resistance [Ω]	$>10^{13}$	$>10^{13}$	$>10^{13}$	$>10^{13}$	$>10^{13}$	$>10^{13}$
Max. contact resistance [mΩ]	3	3	3	3	3	3

Number of positions	Hybrid Typ1 (2/4/6 + 4 + 3 + PE)			Hybrid Typ 2 (2+ 4 + 4 + PE)		
	Ethernet	Signal	Power	Ethernet	Signal	Power
Number of contacts	2/4/6	4	4	4	4	5
Contact-Ø [mm]	0,6	1	2	0,8	1	2
Nominal current [1] [A]	2	8	28	2	8	28
Nominal voltage [2] [V~] degree of pollution 3 [3]	60	300	600	60	300	600
Test voltage (Breakdown voltage) 4) [V~]	500	2500	4000	500	2500	4000
Insulation resistance [Ω]	$>10^{6}$	$>10^{10}$	$>10^{13}$	$>10^{6}$	$>10^{10}$	$>10^{13}$
Max. contact resistance [mΩ]	< 3	< 3	< 3	< 3	< 3	< 3

[1], [2], [3], [4] See Technical Information page 14

Straight Connector, Female Thread

suitable for Power / Hybrid Type 1

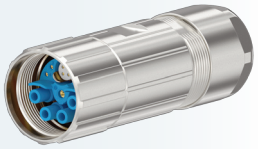


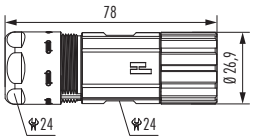
Cable-Ø	Part Number
Screw Variant	
7 – 12 mm (.27 – .47")	7.550.500.000
9 – 14,5 mm (.35 – .57")	7.550.800.000
11 – 17 mm (.43 – .67")	7.550.600.000

▶ 44 ▶ 45 ▶ 47

Straight Connector, Female Thread

suitable for Hybrid Type 2



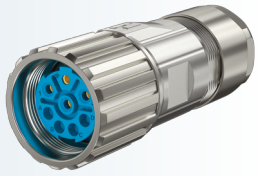


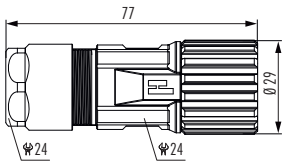
Cable-Ø	Part Number
Screw Variant	
7 – 12 mm (.27 – .47")	7.550.200.000
9 – 14,5 mm (.35 – .57")	7.550.900.000
11 – 17 mm (.43 – .67")	7.550.300.000

▶ 44 ▶ 45 ▶ 47

Straight Connector, Female Thread

suitable for Power / Hybrid Type 1



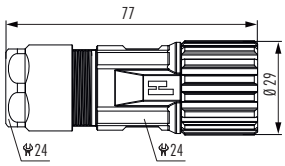


Cable-Ø	Part Number
Screw Variant	
7 – 12 mm (.27 – .47")	7.551.500.000
9 – 14,5 mm (.35 – .57")	7.551.800.000
11 – 17 mm (.43 – .67")	7.551.600.000

▶ 44 ▶ 45 ▶ 47

Straight Connector, Female Thread

suitable for Hybrid Type 2



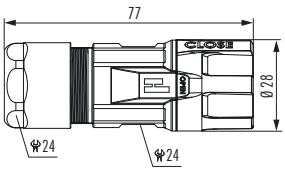
Cable-Ø	Part Number
Screw Variant	
7 – 12 mm (.27 – .47")	7.551.200.00S
9 – 14,5 mm (.35 – .57")	7.551.900.00S
11 – 17 mm (.43 – .67")	7.551.300.00S

▶ 44 ▶ 45 ▶ 47

Housing without inserts and contacts

Straight Connector, Female Thread TWILOCK / TWILOCK-S

suitable for Power / Hybrid Type 1

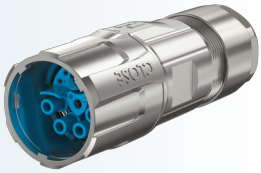


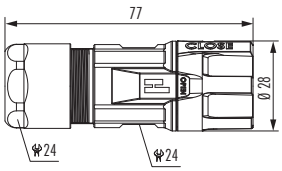
Cable-Ø	Part Number
TWILOCK	
7 – 12 mm (.24 – .47")	7.556.500.000
11 – 17 mm (.43 – .67")	7.556.600.000
TWILOCK-S (intermateable with Speedtec)	
7 – 12 mm (.24 – .47")	7.556.500.00S
9 – 14,5 mm (.35 – .57")	7.550.800.00S
11 – 17 mm (.43 – .67")	7.556.600.00S

▶ 44 ▶ 45 ▶ 47

Straight Connector, Female Thread

suitable for Power / Hybrid Type 2



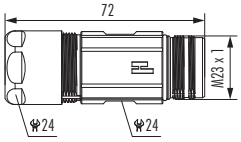


Cable-Ø	Part Number
TWILOCK-S (intermateable with Speedtec)	
7 – 12 mm (.27 – .47")	7.556.200.00S
9 – 14,5 mm (.35 – .57")	7.550.900.00S
11 – 17 mm (.43 – .67")	7.556.300.00S

▶ 44 ▶ 45 ▶ 47

Straight Connector, Male Thread

suitable for Power / Hybrid Type 1

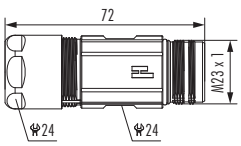


Cable-Ø	Part Number
TWILOCK and Screw Variant	
7 – 12 mm (.27 – .47")	7.560.500.000
11 – 17 mm (.43 – .67")	7.560.600.000
TWILOCK-S (intermateable with Speedtec) and Screw Variant	
7 – 12 mm (.27 – .47")	7.566.500.00S
9 – 14,5 mm (.35 – .57")	7.566.800.00S
11 – 17 mm (.43 – .67"	7.566.600.00S

▶ 44 ▶ 45 ▶ 47

Straight Connector, Male Thread

suitable for Hybrid Type 2



Cable-Ø	Part Number
TWILOCK-S (intermateable with Speedtec) and Screw Variant	
7 – 12 mm (.27 – .47")	7.566.200.00S
9 – 14,5 mm (.35 – .57")	7.566.900.00S
11 – 17 mm (.43 – .67"	7.566.300.00S

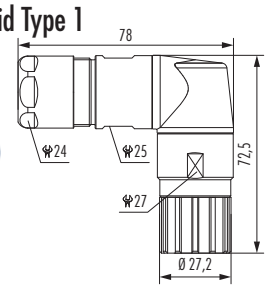
▶ 44 ▶ 45 ▶ 47

Housing without inserts and contacts

Housings

Right Angle Connector, Female Thread, rotatable

suitable for Power / Hybrid Type 1

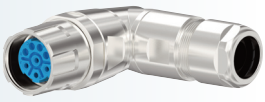


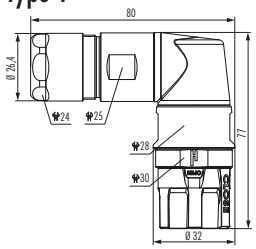
Cable-Ø	Part Number
Screw Variant	
7 – 12 mm (.27 – .47“)	7.576.500.000
11 – 17 mm (.43 – .67“)	7.576.600.000

▶ 44 ▶ 45 ▶ 47

Right Angle Connector, Female Thread, rotatable

suitable for Power / Hybrid Type 1



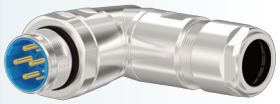


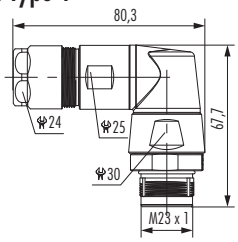
Cable-Ø	Part Number
TWILOCK	
7 – 12 mm (.27 – .47“)	7.536.500.000
11 – 17 mm (.43 – .67“)	7.536.600.000
TWILOCK-S (intermateable with Speedtec) and Screw Variant	
7 – 12 mm (.27 – .47“)	7.536.500.00S
9 – 14,5 mm (.35 – .57“)	7.536.800.00S
11 – 17 mm (.43 – .67“)	7.536.600.00S

▶ 44 ▶ 45 ▶ 47

Right Angle Connector, Male Thread, rotatable

suitable for Power / Hybrid Type 1



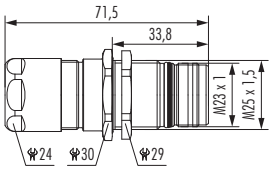


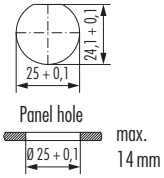
Cable-Ø	Part Number
TWILOCK and Screw Variant	
7 – 12 mm (.27 – .47“)	7.546.500.000
11 – 17 mm (.43 – .67“)	7.546.600.000

▶ 44 ▶ 45 ▶ 47

Panel Connector, Male Thread, with Strain Relief

suitable for Power / Hybrid Type 1



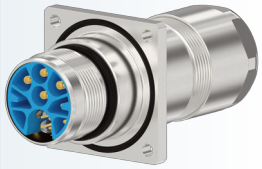


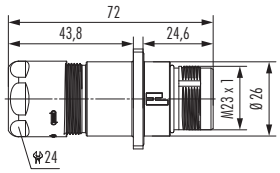
Cable-Ø	Part Number
Single hole mounted, rear mounting, thread M 25 x 1,5	
TWILOCK and Screw Variant	
7 – 12 mm (.27 – .47")	7.653.500.000
11 – 17 mm (.43 – .67")	7.653.600.000
TWILOCK-S (intermateable with Speedtec) and Screw Variant	
7 – 12 mm (.27 – .47")	7.653.500.00S
9 – 14,5 mm (.35 – .57")	7.653.800.00S
11 – 17 mm (.43 – .67")	7.653.600.00S
Including jam nut M 25 x 1,5	

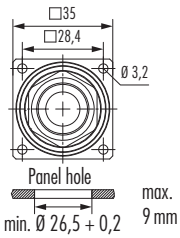
▶ 44 ▶ 45 ▶ 47

Panel Connector, Male Thread, with Strain Relief

suitable for Power / Hybrid Type 1





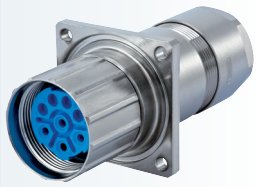


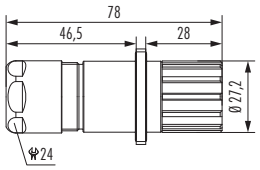
Cable-Ø	Part Number
TWILOCK and Screw Variant	
4 holes Ø 3,2 mm (.13"), front or rear mounting	
7 – 12 mm (.27 – .47")	7.683.500.000
11 – 17 mm (.43 – .67")	7.683.600.000

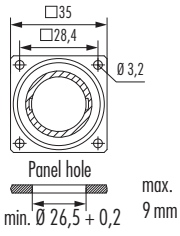
▶ 44 ▶ 45 ▶ 47

Panel Connector, Female Thread, with Strain Relie

suitable for Power / Hybrid Type 1





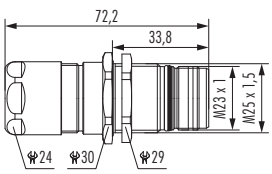


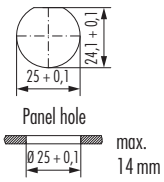
Cable-Ø	Part Number
TWILOCK and Screw Variant	
4 holes Ø 3,2 mm (.13"), front or rear mounting	
TWILOCK und Schraubvariante	
4 x Bohr. 3,2 mm, Vorder- oder Hinterwandmontage	
7 – 12 mm (.24 – .47")	7.681.500.000
9 – 14,5 mm (.35 – .57")	7.681.800.000
11 – 17 mm (.43 – .67")	7.681.600.000

▶ 44 ▶ 45 ▶ 47

Straight Connector, Female Thread

suitable for Hybrid Type 2





Cable-Ø	Part Number
4 holes Ø 3,2 mm (.13"), front or rear mounting	
TWILOCK-S (intermateable with Speedtec) and Screw Variant	
7 – 12 mm (.24 – .47")	7.653.200.00S
9 – 14,5 mm (.35 – .57")	7.653.900.00S
11 – 17 mm (.43 – .67")	7.653.300.00S

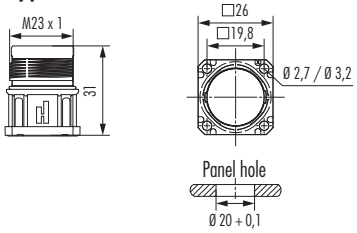
▶ 44 ▶ 45 ▶ 47

Housing without inserts and contacts

Housings

Panel Connectors, Male Thread, Front Mounting

suitable for Power / Hybrid Type 1

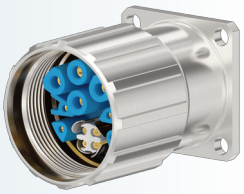


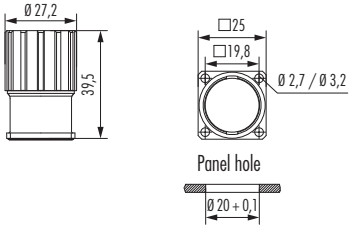
Type	Part Number
TWILOCK and Screw Variant	
4 holes Ø 3,2 mm (.13“)	7.601.000.000
4 holes Ø 2,7 mm (.11“)	7.605.000.000
TWILOCK-S (intermateable with Speedtec) and Screw Variant	
4 x holes 3,2 mm, Flange 25x25	7.601.000.00S
4 x holes 3,2 mm, Flange 28x28	7.601.100.00S

▶ 44 ▶ 45 ▶ 47

Panel Connector with knurled Nut, Front Mounting

suitable for Power / Hybrid Type 1



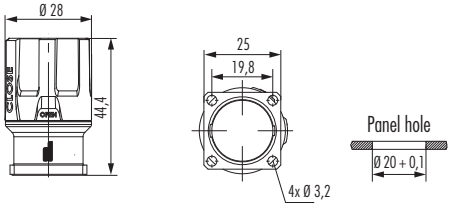


Type	Part Number
Screw Variant	
4 holes Ø 3,2 mm (.13“)	7.641.000.000
4 holes Ø 2,7 mm (.11“)	7.645.000.000

▶ 44 ▶ 45 ▶ 47

Panel Connector, Female Thread, Front Mounting

suitable for Power / Hybrid Type 1

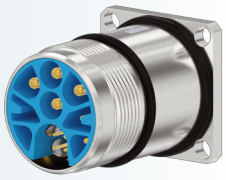


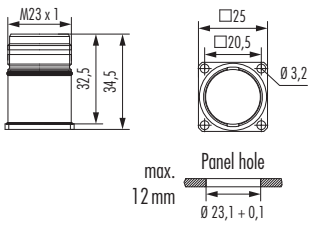
Type	Part Number
TWILOCK	
4 holes Ø 3,2 mm (.13“)	7.646.000.000
TWILOCK-S	
4 holes Ø 3,2 mm (.13“)	7.646.000.00S

▶ 44 ▶ 45 ▶ 47

Panel Connector, Male Thread, Rear Mounting with anti-vibration O-Ring

suitable for Power / Hybrid Type 1





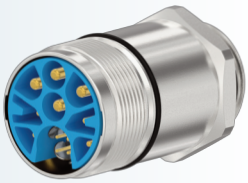
Type	Part Number
TWILOCK and Screw Variant	
4 holes Ø 3,2 mm (.13“)	7.661.000.000

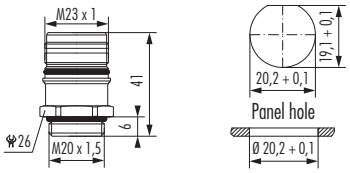
▶ 44 ▶ 45 ▶ 47

Housings

Panel Connector, Male Thread, Single Hole Mounted, Front Mounting

suitable for Power



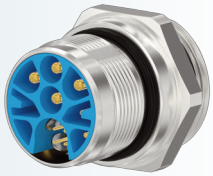


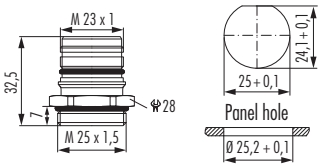
Type	Part Number
TWILOCK and Screw Variant	
Thread M 20 x1,5	7.621.000.000
Option: jam nut M 20 x 1,5	

▶ 44 ▶ 45 ▶ 47

Panel Connector, Male Thread, Single Hole Mounted, Front Mounting

suitable for Power / Hybrid Type 1





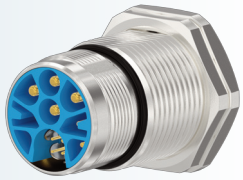
Type	Part Number
TWILOCK and Screw Variant	
Thread M 25x1,5	7.626.000.000
TWILOCK-S (intermateable with Speedtec) and Screw Variant	
Thread M 25 x 1,5	7.626.000.00S
Option: jam nut M 25 x 1,5	

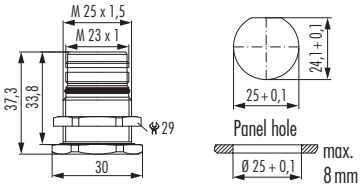
▶ 44 ▶ 45 ▶ 47

Housing without inserts and contacts

Panel Connector, Male Thread, Single Hole Mounted, Rear Mounting

suitable for Power / Hybrid Type 1



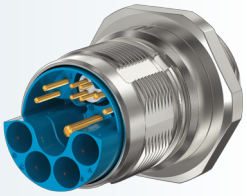


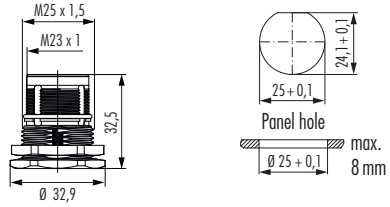
Type	Part Number
TWILOCK and Screw Variant	
Thread M 25 x 1,5	7.651.000.000
Including jam nut M 25 x 1,5	

▶ 44 ▶ 45 ▶ 47

Panel Connector, Male Thread, Single Hole Mounted, Rear Mounting

suitable for Hybrid Type 2





Type	Part Number
TWILOCK-S (intermateable with Speedtec) and Screw Variant	
Thread M 25 x 1,5	7.651.000.00S
Including jam nut M 25 x 1,5	

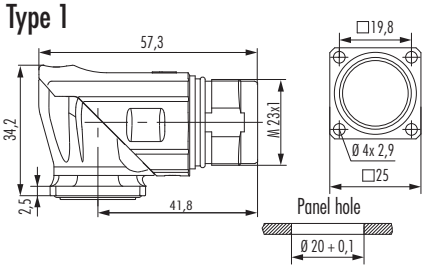
▶ 44 ▶ 45 ▶ 47

Housing without inserts and contacts

Housings

Right Angle Panel Connector, Male Thread, Flange 25 x 25 mm

suitable for Power / Hybrid Type 1

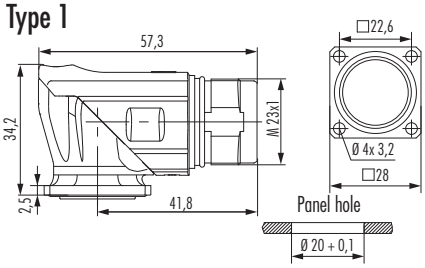


Type	Part Number
TWILOCK and Screw Variant	
4 x holes 2,9 mm (0.11"), blue passivated	7.630.000.000 [1]
4 x holes 2,9 mm (0.11"), nickel plated	7.630.000.010 [1]
TWILOCK-S (intermateable with Speedtec) and Screw Variant	
4 x holes 2,9 mm (0.11"), blue passivated	7.630.000.00S [1]
4 x holes 2,9 mm (0.11"), nickel plated	7.630.000.01S [1]

▶ 44 ▶ 45 ▶ 47

Right Angle Panel Connector, Male Thread, Flange 28 x 28 mm

suitable for Power / Hybrid Type 1



Type	Part Number
TWILOCK and Screw Variant	
4 x holes 3,2 mm (.13"), blue passivated	7.630.100.000 [1]
4 x holes 3,2 mm (.13"), nickel plated	7.630.100.010 [1]
TWILOCK-S (intermateable with Speedtec) and Screw Variant	
4 x holes 3,2 mm (.13"), blue passivated	7.630.100.00S [1]
4 x holes 3,2 mm (.13"), nickel plated	7.630.100.01S [1]

▶ 44 ▶ 45 ▶ 47

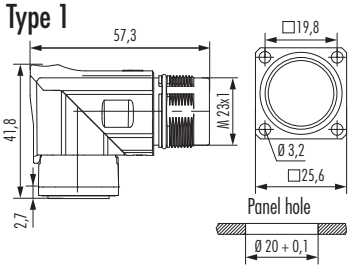
Housing without inserts and contacts

[1] only for pin inserts

Dimensions and specifications may be changed without prior notice

Right Angle Panel Connector, Male Thread, rotatable, Flange 25 x 25 mm

suitable for Power / Hybrid Type 1

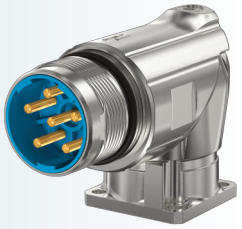


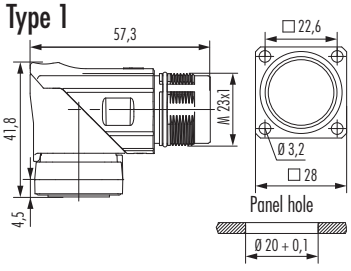
Type	Part Number
TWILOCK and Screw Variant, 330° rotatable, single hole mounted	
4 x holes 3,2 mm (.13"), blue passivated	7.639.000.000 [1]
4 x holes 3,2 mm (.13"), nickel plated	7.639.000.010 [1]
TWILOCK-S (intermateable with Speedtec) and Screw Variant	
4 x holes 3,2 mm (.13"), blue passivated	7.639.000.00S [1]
4 x holes 3,2 mm (.13"), nickel plated	7.639.000.01S [1]

▶ 44 ▶ 45 ▶ 47

Right Angle Panel Connector, Male Thread, rotatable, Flange 28 x 28 mm

suitable for Power / Hybrid Type 1



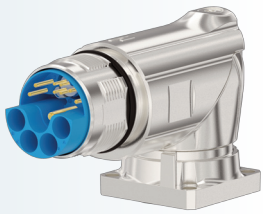


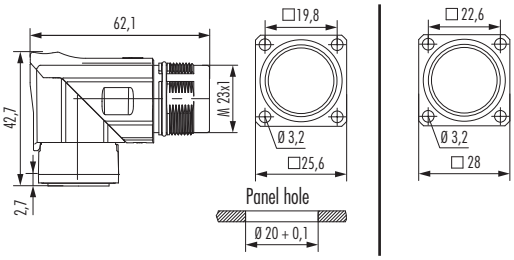
Type	Part Number
TWILOCK and Screw Variant, 330° rotatable, single hole mounted	
4 x holes 3,2 mm (.13"), blue passivated	7.639.100.000 [1]
4 x holes 3,2 mm (.13"), nickel plated	7.639.100.010 [1]
TWILOCK-S (intermateable with Speedtec) and Screw Variant	
4 x holes 3,2 mm (.13"), blue passivated	7.639.100.00S [1]
4 x holes 3,2 mm (.13"), nickel plated	7.639.100.01S [1]

▶ 44 ▶ 45 ▶ 47

Right Angle Panel Connector, Male Thread, rotatable

suitable for Hybrid Type 2





Flange 25 x 25 mm

TWILOCK-S (intermateable with Speedtec) and Screw Variant	
4 x holes 3,2 mm (.13"), nickel plated	7.639.200.00S

Flange 28 x 28 mm

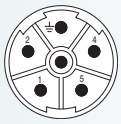
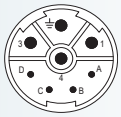
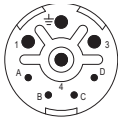
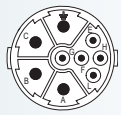
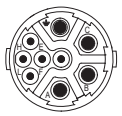
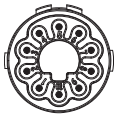
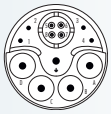
TWILOCK-S (intermateable with Speedtec) and Screw Variant	
4 x holes 3,2 mm (.13"), nickel plated	7.639.300.00S

▶ 44 ▶ 45 ▶ 47

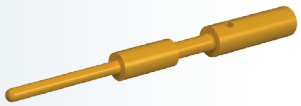
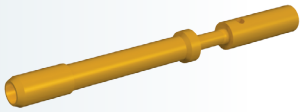
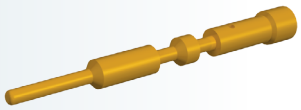
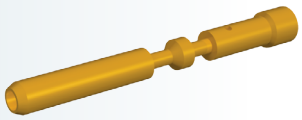
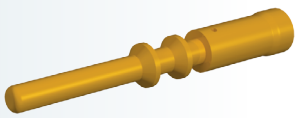
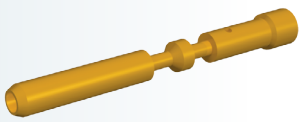
Housing without inserts and contacts

[1] only for pin inserts

Inserts

Contact Arrangement, Mating View		Number of Poles	Required Contacts
 crimp pin	 crimp socket	**Power 5+PE**	
		6 x crimp pins 2 mm	7.084.951.121
		6 x crimp pins 2 mm *	7.084.951.S21
		6 x crimp sockets 2 mm	7.084.951.122
 crimp pin	 crimp socket	**Power 4+3+PE**	
		4 x crimp pins 1 mm, 4 x crimp pins 2 mm	7.084.943.121
		4 x crimp pins 1 mm, 4 x crimp pins 2 mm *	7.084.943.S21
		4 x crimp sockets 1 mm, 4 x crimp sockets 2 mm	7.084.943.122
 crimp pin	 crimp socket	**Power 5+3+PE**	
		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	**Power 5+3+PE**	
		5 x crimp pins 1 mm, 4 x crimp pins 2 mm	7.084.909.101
		5 x crimp pins 1 mm, 4 x crimp pins 2 mm *	7.084.909.S01
		5 x crimp sockets 1 mm, 4 x crimp sockets 2 mm	7.084.909.102
 crimp pin	 crimp socket	**Signal 10-pole**	
		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 Typ 1 (2+4+3+PE)**	
		2 x crimp pins, 0,6 mm 4 x crimp pins 1 mm, 4 x crimp pin 2 mm	7.084.942.101
		2 x crimp sockets, 0,6 mm 4 x crimp sockets 1 mm, 4 x crimp sockets 2 mm	7.084.942.102
 crimp pin	 crimp socket	**Hybrid Typ 1 (4+4+3+PE)**	
		4 x crimp pins 0,6 mm, 4 x crimp pins 1 mm, 4 x crimp pins 2 mm	7.084.944.101
		4 x crimp sockets 0,6 mm, 4 x crimp sockets 1 mm, 4 x crimp sockets 2 mm	7.084.944.102
 crimp pin	 crimp socket	**Hybrid Typ 1 (6+4+3+PE)**	
		6 x crimp pins, 0,6 mm 4 x crimp pins 1 mm, 4 x crimp pins 2 mm	7.084.946.101
		6 x crimp sockets, 0,6 mm 4 x crimp sockets 1 mm, 4 x crimp sockets 2 mm	7.084.946.102
 crimp pin	 crimp socket	**Hybrid Typ 2 (4+4+4+PE)**	
		4 x crimp pins, 0,8 mm 4 x crimp pins 1 mm, 5 x crimp pins 2 mm	7.084.954.101
		4 x crimp sockets, 0,8 mm 4 x crimp sockets 1 mm, 5 x crimp sockets 2 mm	7.084.954.102

* specifically designed for use with TWILOCK-S connectors

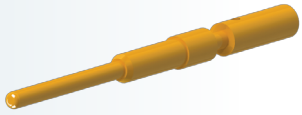
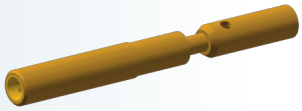
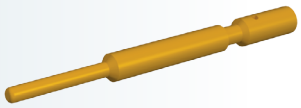
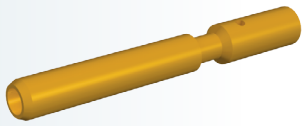
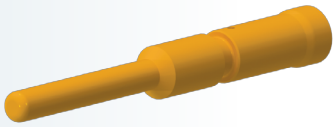
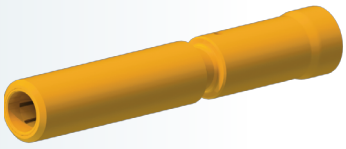
Contacts	Type	Crimp Range	Part Number
	Crimp pin 0,6 mm, machined [1]	0,08 – 0,34 mm² (AWG28 – AWG 22)	7.010.980.643
	Crimp socket 0,6 mm, machined [1]	0,08 – 0,34 mm² (AWG28 – AWG 22)	7.010.980.602
	Crimp pin 1 mm, machined [2]	0,08 – 0,56 mm² (AWG 28 – 20)	7.010.941.031
	Crimp pin 1 mm, machined [2]	0,14 – 1 mm² (AWG 26 – 17)	7.010.941.001
	Crimp pin 1 mm, machined [2]	0,75 – 1,5 mm² (AWG 18 – 16)	7.010.941.021
	Crimp socket 1 mm, machined [2]	0,14 – 1 mm² (AWG 26 – 17)	7.010.941.002
	Crimp socket 1 mm, machined [2]	0,75 – 1,5 mm² (AWG 18 – 16)	7.010.941.022
	Crimp pin 2 mm, machined [2]	0,75 – 2,5 mm² (AWG 18 – 14)	7.010.942.001
	Crimp pin 2 mm, machined [2]	2,5 – 4 mm² (AWG 14 – 12)	7.010.942.011
	Crimp socket 2 mm, machined [2]	0,75 – 2,5 mm² (AWG 18 – 14)	7.010.942.002
	Crimp socket 2 mm, machined [2]	2,5 – 4 mm² (AWG 14 – 12)	7.010.942.012

[1] suitable crimp tool 7.000.900.909

[2] suitable crimp tool 7.000.900.901

M 23 HYBRID TYPE 2

Contacts

Contacts	Type	Crimp Range	Part Number
	Crimp pin 0,8 mm, machined [1]	0,08 – 0,34 mm² (AWG28 – AWG 22)	7.010.940.801
	Crimp socket 0,8 mm, machined [1]	0,08 – 0,34 mm² (AWG28 – AWG 22)	7.010.980.812
	Crimp pin 1 mm, machined [2]	0,14 – 1 mm² (AWG 26 – 17)	7.015.961.001
	Crimp pin 1 mm, machined [2]	0,75 – 1,5 mm² (AWG 18 – 16)	7.015.961.011
	Crimp socket 1 mm, machined [2]	0,14 – 1 mm² (AWG 26 – 17)	7.015.961.002
	Crimp socket 1 mm, machined [2]	0,75 – 1,5 mm² (AWG 18 – 16)	7.015.961.012
	Crimp pin 2 mm, machined [1]	0,75 – 2,5 mm² (AWG 18 – 14)	7.010.942.021
	Crimp pin 2 mm, machined [3]	2,5 – 4 mm² (AWG 14 – 12)	7.010.942.023
	Crimp socket 2 mm, machined [1]	0,75 – 2,5 mm² (AWG 18 – 14)	7.010.942.022
	Crimp socket 2 mm, machined [3]	2,5 – 4 mm² (AWG 14 – 12)	7.010.942.024

[1] suitable crimp tool 7.000.900.909

[2] suitable crimp tool 7.000.900.901

Accessories	Type	Part Number
	**Plastic protective cap** for connectors with **male thread, blue** with **female thread, transparent**	 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 (Hybrid-/Power Connectors Typ 1) with **male thread** for connectors (Hybrid Typ 2) with **male thread**	 7.010.900.102 7.010.901.102
	**Brass protective cap with chain** for connectors with **female thread** Length 70 mm Length 100 mm	 7.010.9S0.783 [1] 7.010.9S1.083 [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
	**Crimp tool** for manual crimping of machined crimp contacts for M 23 Power Connectors incl. Locator for M 23 Hybrid-/Power Connectors incl. Locator for M23 Hybrid-/Power Connectors (Typ 2) incl. Locator for M23 Hybrid-/Power Connectors (Typ 2) incl. Locator **Locator** for M 23 Power Connectors (separate) **Locator** for M 23 Hybrid-/Power Connectors (separate)	 7.000.900.901 7.000.900.909 7.000.900.904 7.000.900.904 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 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:** 7.010.941.001, 7.010.942.001, 7.010.942.011 **Locator for Crimp Tool** DMC M22520 with positioner **For HUMMEL Contact:** 7.010.941.002, 7.010.942.002, 7.010.942.012	7.000.9DM.C06 7.000.9DM.C07
	**Disassembly Tool** for crimp contacts	 7.010.900.198
	**Screw Tool**, adjustable 0.5 – 1.7 Nm **Tool Adapter** for tightening or loosening knurled nuts for M 23	7.010.900.190 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.

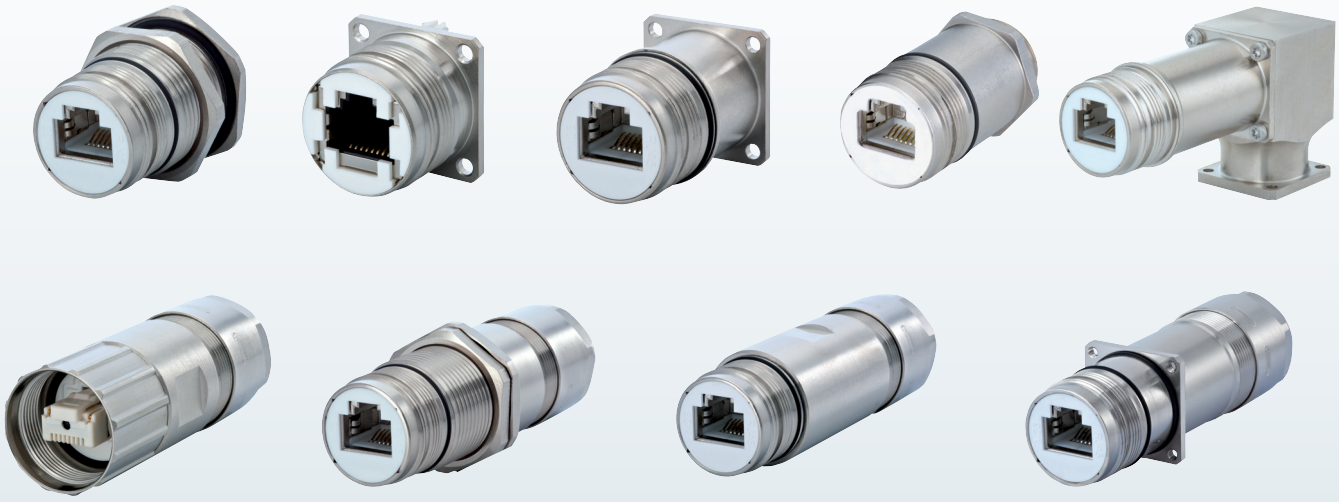
// Industry suited system for safe data transfer
// Integration of industrial patch cable
// Suitable as maintenance interface

M 23 RJ 45

Product overview

Housings

▶ 52



Accessories

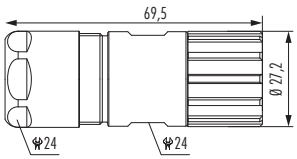
▶ 55

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



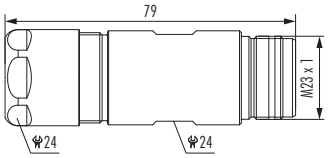
Cable-Ø | Part Number

Screw Variant
3 – 7 mm (.12 - .28") 7.R10.400.000
Connector with insert for patch cable

Suitable patch cable and plugs can be recommended.

▶ 55

Straight Connector Male Thread

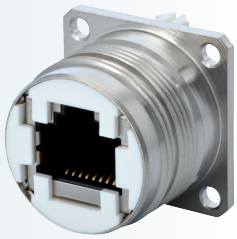


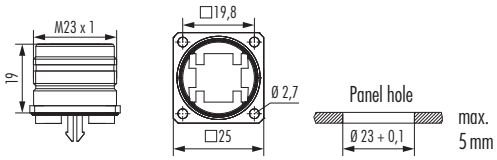
Cable-Ø | Part Number

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

▶ 55

Panel Connector Front Mount, dip solder insert





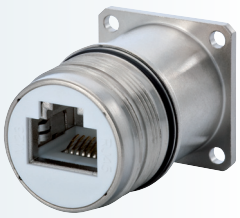
Type | Part Number

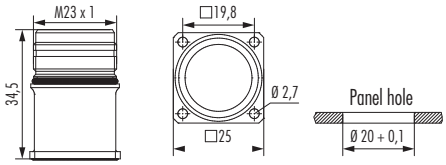
Screw Variant
4 holes 2.7 mm, Flange 7.R40.008.000
Incl. 8 poles dip solder insert

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

▶ 55

Panel Connector, Front Mount with anti vibration protection





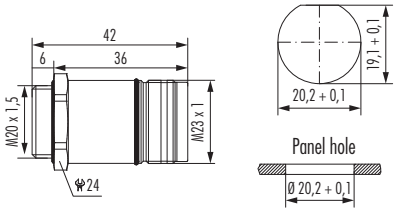
Type | Part Number

Screw Variant
4 holes 2.7 mm, Flange 7.R41.008.000
Incl. 8 poles coupler, fully occupied

▶ 55

Housings

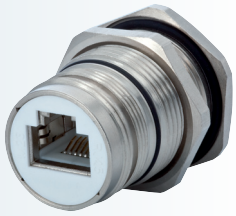
Single Hole Panel Connector, Front Mount

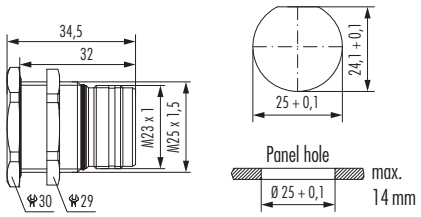


Type	Part Number
Screw Variant	
M 20 x1,5 thread	7.R42.008.000
Incl. 8 poles coupler, fully occupied	
Optional: Gasket M 20 x 1,5, Locking Nut	

▶ 55

Single Hole Panel Connector, Rear Mount

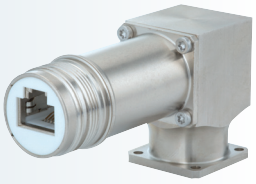


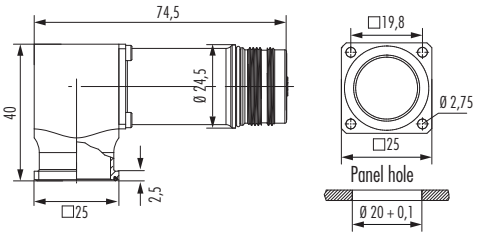


Type	Part Number
Screw Variant	
M 25 x 1,5 thread	7.R50.008.000
Incl. 8 poles coupler, fully occupied	
M 25 x 1,5 Locking Nut included.	

▶ 55

Right Angle Panel Connector, Male Thread

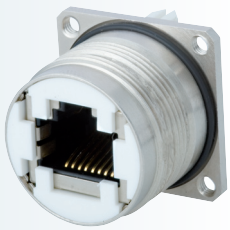


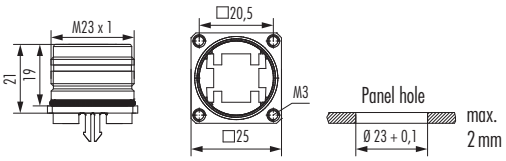


Type	Part Number
Screw Variant	
300 ° rotatable, locking screw at flange	
4 holes 2.7 mm, Flange	7.R43.108.000
Incl. 8 poles coupler, fully occupied	
Optional: Gasket	
Simple installation with M 2.5 screws	

▶ 55

Panel Connector Rear Mount, dip solder insert



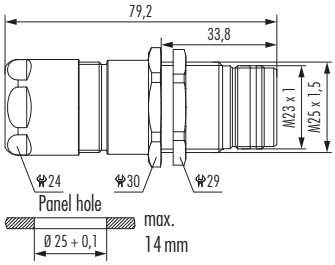


Type	Part Number
Screw Variant	
4x M 3 thread, Flange	7.R45.008.000
Incl. 8 poles dip solder insert	
4x M 3 thread, Flange	7.R45.082.000
Incl. 8 + 2 poles dip solder insert	

▶ 55

Housings

Single Hole Panel Connector with strain relief



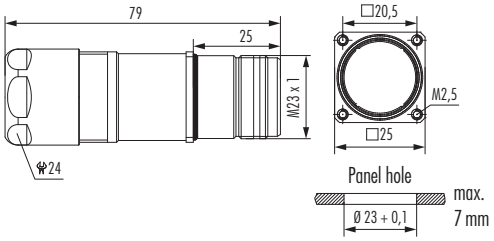
Cable-Ø | Part Number

Single Hole, Rear Mount, M 25 x 1,5 thread
Screw Variant
3 – 7 mm (.12 - .28") 7.R52.408.000
Incl. 8 poles coupler, fully occupied

M 25 x 1,5 Locking Nut included

▶ 55

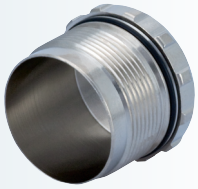
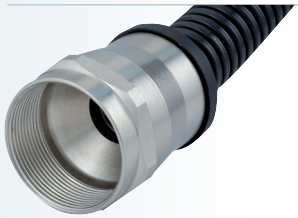
Panel Connector with strain relief



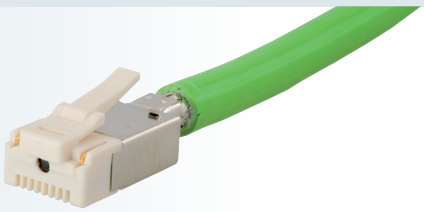
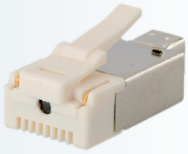
Cable-Ø | Part Number

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

▶ 55

Accessories	Type	Part Number
	**Plastic protective cap** for connectors with **male thread, blue** with **female thread, transparent**	 7.000.900.101 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 Length 100 mm	 7.010.9S0.783 7.010.9S1.083
	**Brass protective cap with chain** for connectors with **male thread** Length 70 mm Length 100 mm	 7.010.9S0.702 7.010.9S1.002
	**Adaptor flange** for Straight Connectors	 7.010.900.128
	**Conduit adaptor** Poleon DN 12 Poleon DN 14 Poleon DN 17	 7.010.900.205 7.010.900.207 7.010.900.209

Accessories

Accessories	Type	Part Number
	Suitable **patch cable**	on request
	**Field attachable RJ45 connector Cat 5/SE** 8-pole 8+2-pole	A7RJ-081M41 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.

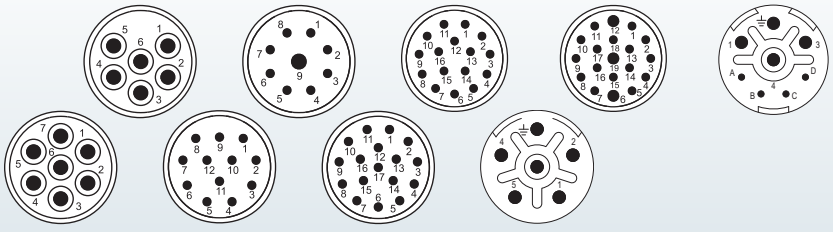
// Signal connectors M 23 INOX
// Power connectors M 23 INOX

STAINLESS STEEL (INOX)

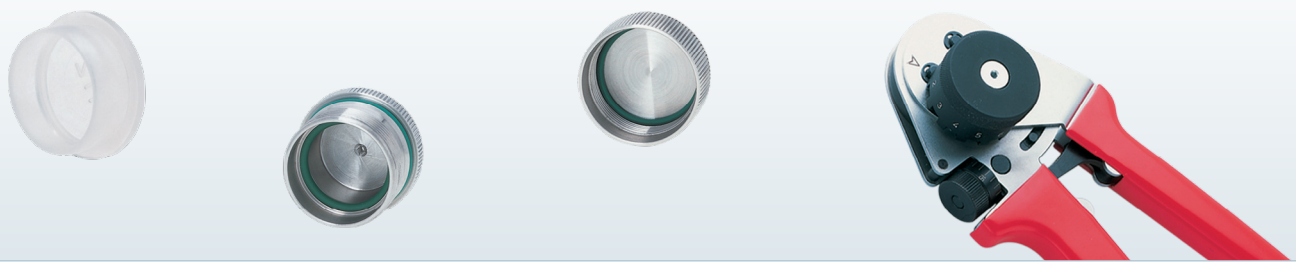
Product overview

Housings ▶ 60

Inserts ▶ 24, 44



Accessories ▶ 63



Mechanical 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)

Materials and Technical Data

Additional Information

Electrical data see standard program

Signal Connectors M 23	page 17
Power Connectors M 23	page 35

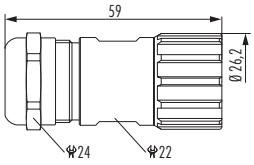
Inserts and contacts see standard program

Signal Connectors M 23	page 24
Power Connectors M 23	page 44

Typical Applications

Housings M 23 Signal

Straight Connector, Female Thread

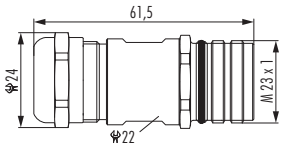


Cable-Ø	Part Number
Screw Variant	
3 – 7 mm (.12 – .28“)	7.141.300.000
5 – 10 mm (.20 – .39“)	7.141.400.000
7 – 12 mm (.27 – .47“)	7.141.500.000
10 – 14 mm (.39 – .55“)	7.141.600.000

Assembly tool 7.010.900.127 is required

▶ 24 ▶ 30 ▶ 63

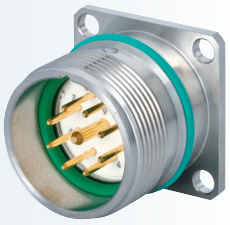
Straight Connector, Male Thread

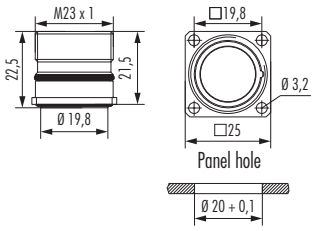


Cable-Ø	Part Number
Screw Variant	
3 – 7 mm (.12 – .28“)	7.241.300.000
5 – 10 mm (.20 – .39“)	7.241.400.000
7 – 12 mm (.27 – .47“)	7.241.500.000
10 – 14 mm (.39 – .55“)	7.241.600.000

▶ 24 ▶ 30 ▶ 63

Panel Connector, Male Thread

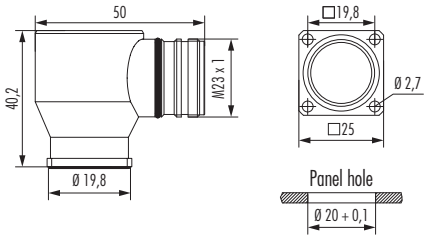




Type	Part Number
Screw Variant with anti-vibration O-Ring	
4 holes Ø 3,2 mm (.13“)	7.410.400.000

▶ 24 ▶ 30 ▶ 63

Right Angle Panel Connector, Male Thread

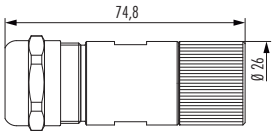


Type	Part Number
Screw Variant	
4 holes Ø 2,7 mm (.11“)	7.430.400.000

▶ 24 ▶ 30 ▶ 63

Housing without inserts and contacts

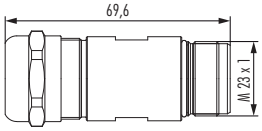
Straight Connector, Female Thread



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

▶ 44 ▶ 45 ▶ 63

Straight Connector, Male Thread



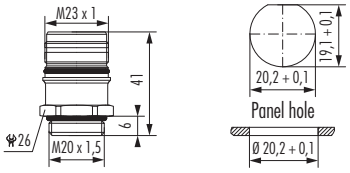
Type	Part Number
Screw Variant	
7 – 12 mm (.27 – .47")	7.564.500.000
11 – 17 mm (.43 – .67")	7.564.600.000

▶ 44 ▶ 45 ▶ 63

Housing without inserts and contacts

Housings M 23 Power

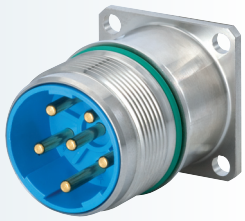
Panel Connector, Male Thread, Single Hole Mounted

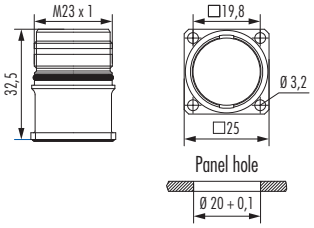


Type	Part Number
Screw Variant for front mounting	
Thread M 20 x 1,5	7.621.400.000
Thread M 25 x 1,5	7.626.400.000

▶ 44 ▶ 45 ▶ 63

Panel Connector, Male Thread

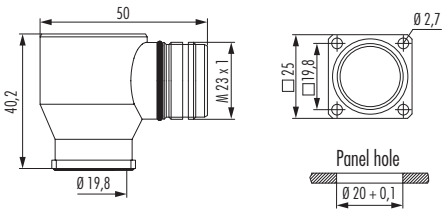




Type	Part Number
Screw Variant for front mounting	
4 holes Ø 3,2 mm (.13“)	7.601.400.000
Optional: Flat gasket	

▶ 44 ▶ 45 ▶ 63

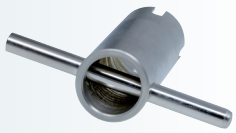
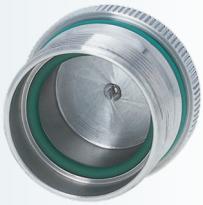
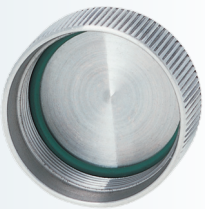
Right Angle Panel Connector, Male Thread



Type	Part Number
Screw Variant	
4 holes Ø 2,7 mm (.11“)	7.630.400.000

▶ 44 ▶ 45 ▶ 63

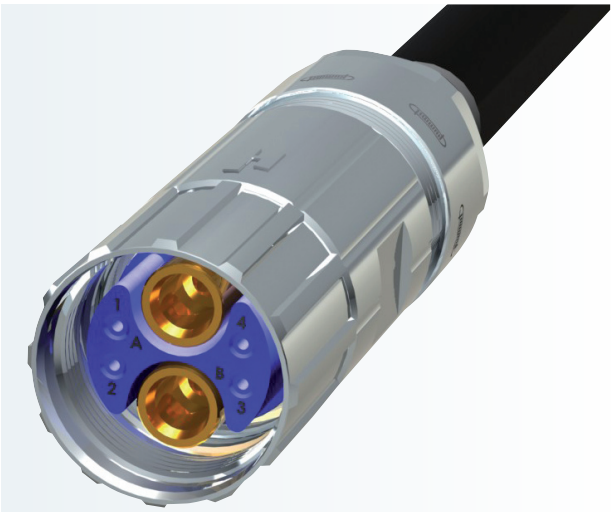
Housing without inserts and contacts

Accessories	Type	Part Number
	**Assembly tool**	7.010.900.127
	**Plastic protective cap** for connectors **M 23 with male thread, blau** for connectors **M 23 with female thread, transparent**	 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 **Stainless steel protective cap for M 23 Power** for connectors with **female thread** **with rope** for connectors with **female thread**, Length 100 mm	 7.010.904.103 7.010.9S4.103 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

Housing without inserts and contacts

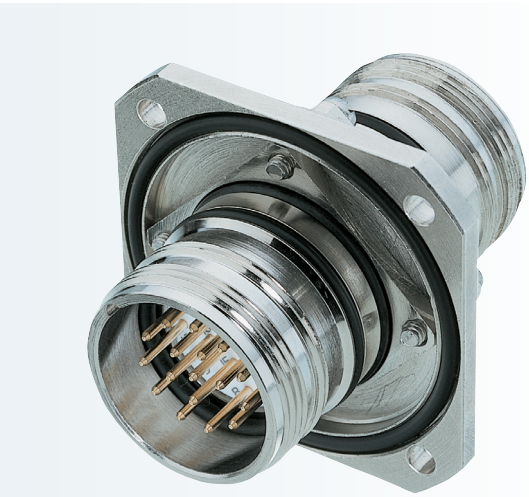
Customized

Hybrid Connector for Compressed Air



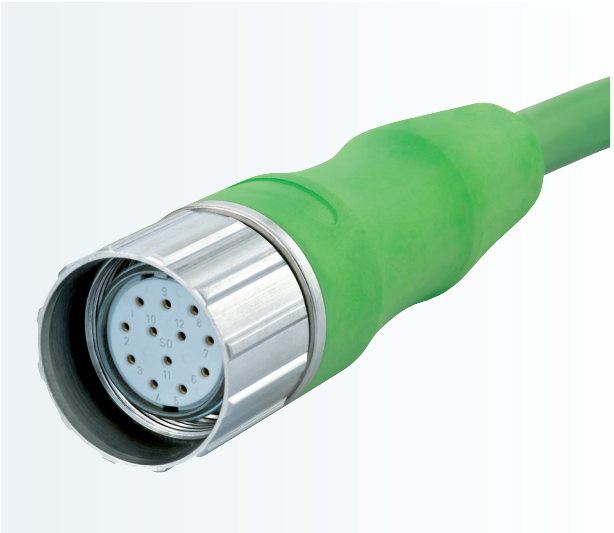
To place lines for compressed air and electrical signals in one single connection, a hybrid connector M 23 combines different types of contacts in one insert.

Bulkhead Connector



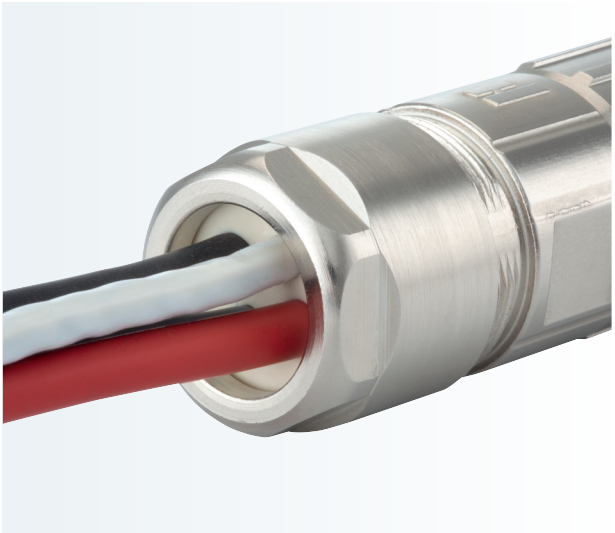
Bulkhead connectors accept plugs on both sides. They are rugged, liquid tight and available in all number of poles.

Coloured Overmould



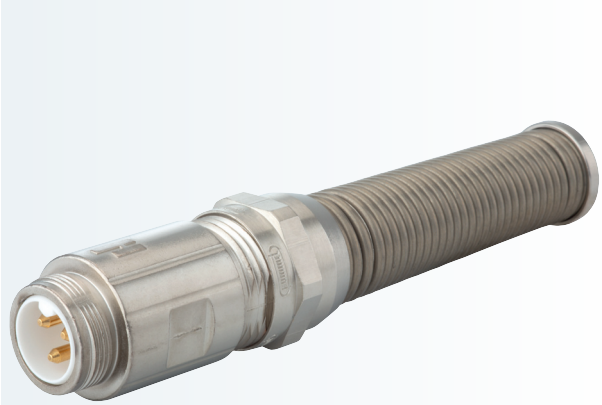
Completing a design or showing technical functions, overmould could be made in different colours too (e.g. DESINA green RAL 6018).

MULTI Seal Connector



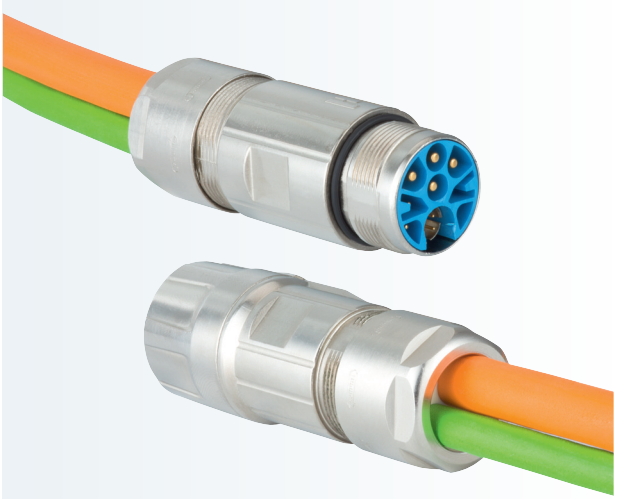
A large selection of standard MULTI seal inserts allow strain relief of several individual conductors on one single connector.

Flexible Cable Protection



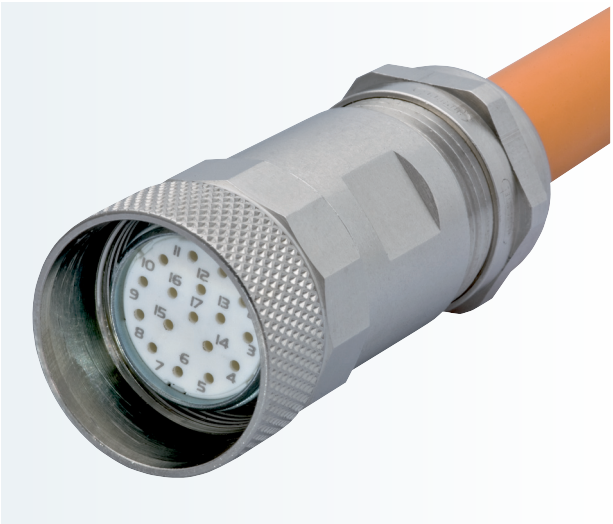
In addition to the integrated strain relief, the flex nut adds kink protection to a cable — available for all connector sizes.

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 eighter 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.

HUMMEL INTERNATIONAL

Europe

HUMMEL France

HUMMEL CONNECTEURS SAS
ZI – Rue de l'Acqueline
51800 Sainte Ménéhould / France

Tel. +33 (0) 3 89 / 55 37 20
Fax +33 (0) 3 89 / 53 80 27
E-Mail info.fr@hummel.com
www.hummel.com

HUMMEL UK

HUMMEL UK Limited
Office 3, Momentum House
Enterprise Way, Lowton St Marys,
Warrington, Cheshire, WA3 2BP
United Kingdom

Tel. +44 (0) 19 42 / 60 56 95
Fax +44 (0) 19 42 / 26 93 24
E-Mail info.uk@hummel.com
www.hummel.com

HUMMEL Italy

HUMMEL S.r.l.
Via Enrico Fermi 61
10091 Alpignano (Torino) / Italy

Tel. +39 (0) 11 / 9 68 26 38
Fax +39 (0) 11 / 9 78 55 50
E-Mail info.it@hummel.com
www.hummel.com

HUMMEL Poland

HUMMEL Sales Office Poland
Al. 23 Stycznia 26 lok. 20
86-300 Grudziadz / Poland

Tel. +48 (0) 6 62 / 38 27 99
Fax +48 (0) 56 / 6 43 00 11
E-Mail info.pl@hummel.com
www.hummel.com

Asia

HUMMEL China

HUMMEL Connector Systems (Shanghai) Co., Ltd.
Room 1701 Central Plaza
No.227 Huang Pi (N) Road
200003 Shanghai / P.R. China

Tel. +86 (0) 21 / 63 75 85 51
Fax +86 (0) 21 / 63 75 85 53
E-Mail info.hcs.cn@hummel.com
www.hummel.com

HUMMEL India

HUMMEL Connector Systems Pvt. Ltd.
1211, Surya Kiran Building, 19,
Kasturba Gandhi Marg
110001 New Delhi/India

Tel. +91 (0) 11 / 43 00 75-21 / -23
Fax +91 (0) 11 / 43 00 75-22
E-Mail info.in@hummel.com
www.hummel.com

HUMMEL South Korea

HUMMEL AG KOREA
#1114-5, the First Tower 2, 614, Dongtan
Giheung-ro, Hwaseong-si, Gyenggi-do
18469 Korea

Tel. +82 (0) 2 / 4 70 27 62
Fax +82 (0) 2 / 4 70 27 63
E-Mail info.kr@hummel.com
www.hummelkorea.com

South America

HUMMEL Brazil

HUMMEL Connector Systems Ltda.
Rua Derville Gabriel Pereira, 280
Barro Preto – Centro Empresarial Tatuí I
CEP 18280-614 – Tatuí / SP / Brazil

Tel. +55 (0) 15 / 33 22 70 00
Fax +55 (0) 15 / 33 22 70 26
E-Mail vendas@hummel.com.br
www.hummel.com.b

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HUMMEL AG, Marketing & Communications, Lise-Meitner-Str. 2, 79211 Denzlingen, Germany, Tel. +49 (0) 76 66 9 11 10-0, Fax +49 (0) 76 66 9 11 10-20, info@hummel.com

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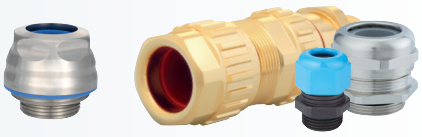
ELECTRIC COMPONENTS

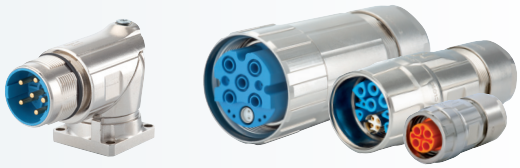
Cable Glands

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

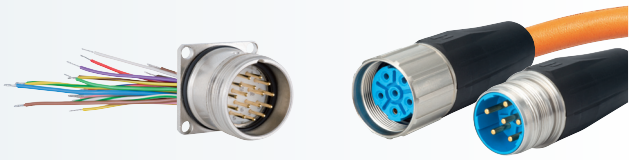


Conduit Systems

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

Cable Assembly

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



www.hummel.com

HUMMEL AG
Lise-Meitner-Straße 2
79211 Denzlingen
Germany
www.hummel.com

Tel. +49 (0) 76 66 / 9 11 10-0
Fax +49 (0) 76 66 / 9 11 10-20
E-Mail sales@hummel.com

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