HUMMEL

smart & reliable connections

M12 POWER

THE COMPACT AND POWERFUL M 12 CONNECTOR

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

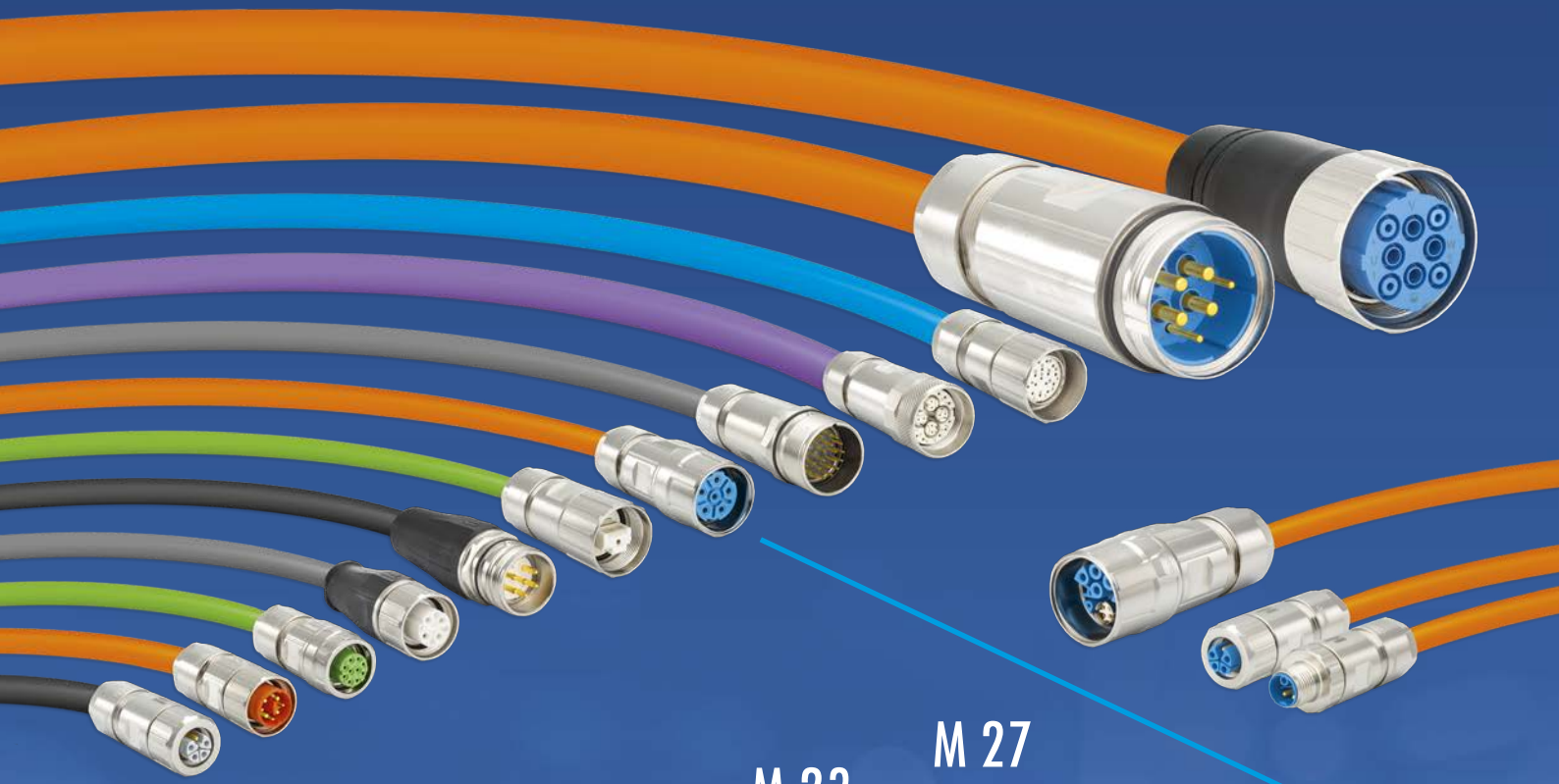
TABLE OF CONTENT

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

PROFINET

Customized Solutions

Industrial Ethernet

M 16
TWILOCK

M 23 RJ 45

M 40
Moulded Cordsets

M 23 Hybrid

File-No. E 213337

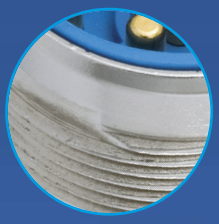
Germanischer Lloyd

RoHS

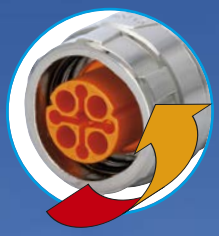
TWILOCK / TWILOCK-S

- // 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

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.

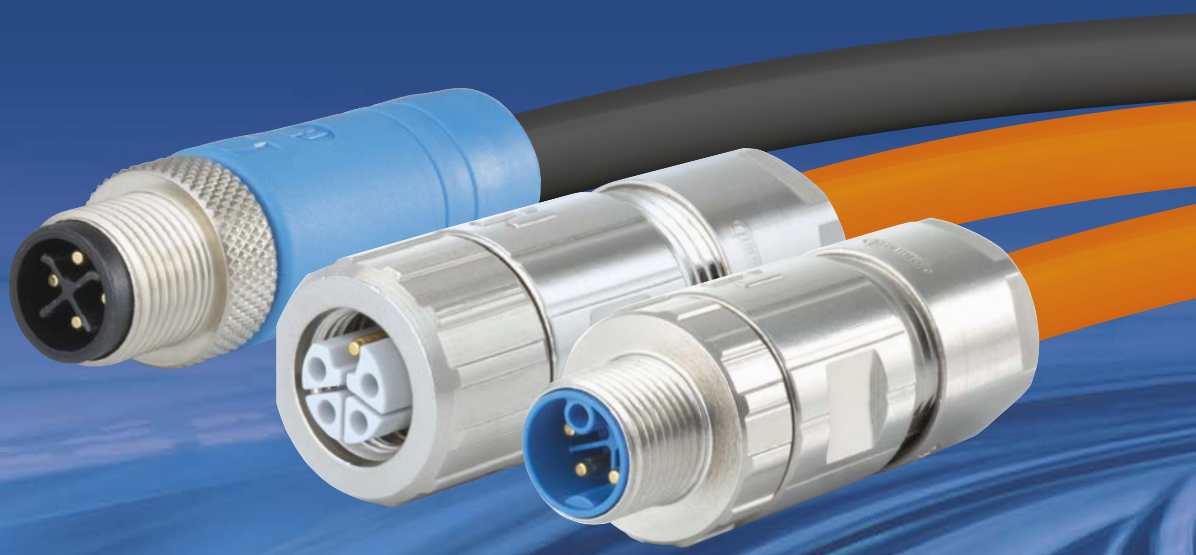
CONNECTORS M 12 POWER

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

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

c UL us File-No. E 213337

VDE REG.-Nr. F394

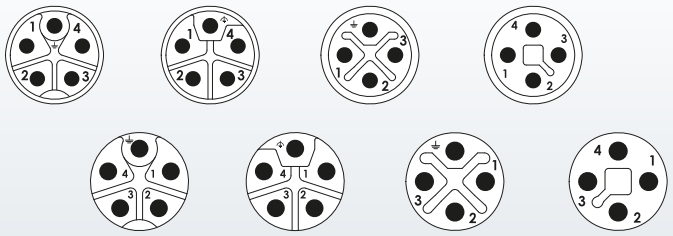


CONNECTORS M 12 POWER

Product overview

Housings ▶ 22

Inserts ▶ 25



Accessories ▶ 30

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

Electrical Data

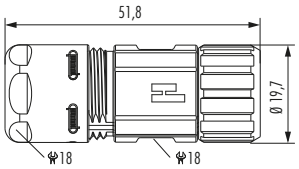
Coding	S	T	K	L
Colours	black	dark grey	blue	grey
Number of positions	4 (3 + PE)	4	5 (4 + PE)	5 (4 + FE)
Terminal Cross Section [mm²] AWG	0,5 – 1,5 AWG 20 – 16	0,5 – 1,5 AWG 20 – 16	0,75 – 2,5 AWG 18 – 14	0,75 – 2,5 AWG 18 – 14
Nominal current [1] [A]	12	12	16	16
Nominal voltage [2] [V~] degree of pollution 3 [4]	630	63	630	63
Test voltage (Breakdown voltage) [3] [V~]	3310	840	3310	840
Insulation resistance [MΩ]	> 10^2	> 10^2	> 10^2	> 10^2
Max. contact resistance [mΩ]	< 3	< 3	< 3	< 3

[1), 2), 3), 4)] See Technical Information page 18

Housings

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

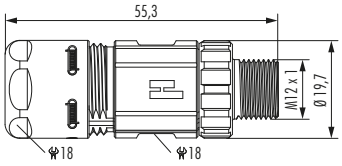
Straight Connector, Female Thread



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

▶ 15 ▶ 20

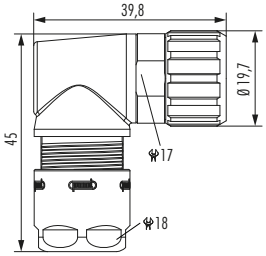
Straight Connector, Male Thread



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

▶ 15 ▶ 20

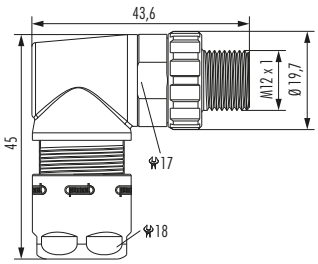
Right Angle Connector, Female Thread



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

▶ 15 ▶ 20

Right Angle Connector, Male Thread



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

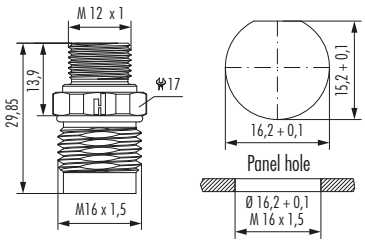
▶ 15 ▶ 20

Housing without inserts and contacts

Housings

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

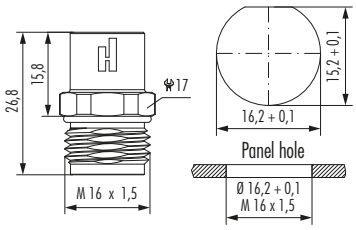
Panel connector male thread, single hole front mounted



Cable-Ø	Coding	Part Number
Thread M 16	K, L	A712-7.K42.000.000
Thread M 16 INOX	K, L	A712-7.K42.000.004
Thread M 20	S, T	A712-7.S42.000.000
with lock nut „rotation protection“		
Thread M 16	K, L	A712-7.K42.000.00G
Thread M 16 INOX	K, L	A712-7.K42.0G0.004
Thread M 20	S, T	A712-7.S42.000.00G

▶ 15 ▶ 20

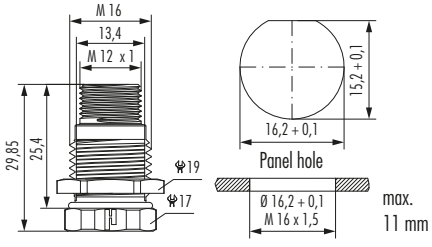
Panel connector female thread, single hole front mounted



Cable-Ø	Coding	Part Number
Thread M 16	K, L	A712-7.K44.000.000
Thread M 16 INOX	K, L	A712-7.K44.000.004
Thread M 20	S, T	A712-7.S44.000.000
with lock nut „rotation protection“		
Thread M 16	K, L	A712-7.K44.000.00G
Thread M 16 INOX	K, L	A712-7.K44.0G0.004
Thread M 20	S, T	A712-7.S44.000.00G

▶ 15 ▶ 20

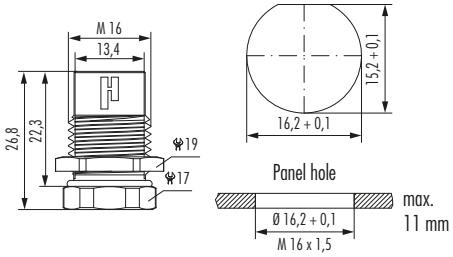
Panel connector male thread, single hole rear mounted



Cable-Ø	Coding	Part Number
Thread M 16	K, L	A712-7.K50.000.000
Thread M 20	S, T	A712-7.S50.000.000

▶ 15 ▶ 20

Panel connector female thread, single hole rear mounted



Cable-Ø	Coding	Part Number
Thread M 16	K, L	A712-7.K51.000.000
Thread M 20	S, T	A712-7.S51.000.000

▶ 15 ▶ 20

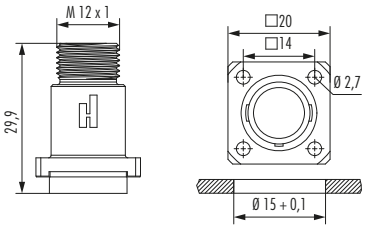
Housing without inserts and contacts

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

Housings

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

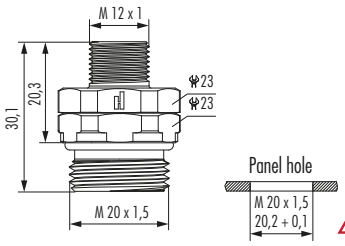
Panel connector male thread, front mounting



Cable-Ø	Coding	Part Number
flange 20 x 20 mm, 4 x 2,7 mm	K, L	A712-7.K40.000.000
flange 25 x 25 mm, 4 x 2,7 mm	S, T	A712-7.S40.000.000
4 x holes 3,2 mm [1]		

▶ 15 ▶ 20

Panel connector male thread, single hole front mounted, orientable

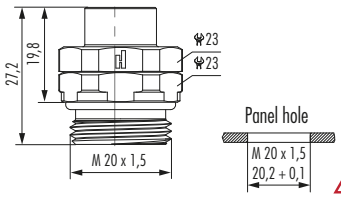


⚠ Drawing shows coding S + T

Cable-Ø	Coding	Part Number
Thread M 20	S, T	A712-7.S42.200.000

▶ 15 ▶ 20

Panel connector female thread, single hole front mounted, orientable



⚠ Drawing shows coding S + T

Cable-Ø	Coding	Part Number
Thread M 20	S, T	A712-7.S44.200.000

▶ 15 ▶ 20

Housing without inserts and contacts

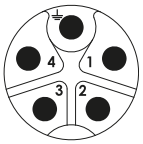
⚠ Drawings apply for coding K and L only. Find measures for coding S and T at www.hummel.com

Inserts

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

Inserts K-coding

Insert pin mating view



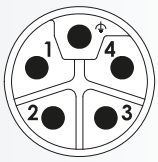
Insert socket mating view

Type	Part Number
Crimp insert, pins, 4 + PE without contacts Required contacts: 4 x pins, 1 x socket PE	A712-7.K03.941.101
Crimp insert, sockets, 4 + PE without contacts Required contacts: 4 x sockets, 1 x pin	A712-7.K03.941.102

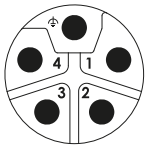
⚠ max. wire insulation Ø 2,9 mm

▶16

Inserts L-coding



Insert pin mating view



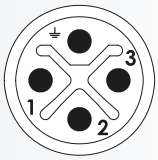
Insert socket mating view

Type	Part Number
Crimp insert, pins, 4 + FE without contacts Required contacts: 4 x pins, 1 x socket PE	A712-7.L03.941.101
Crimp insert, sockets, 4 + FE without contacts Required contacts: 4 x sockets, 1 x pin	A712-7.L03.941.102

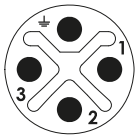
⚠ max. wire insulation Ø 2,9 mm

▶16

Inserts S-coding



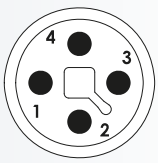
Insert pin mating view



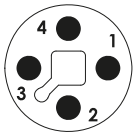
Insert socket mating view

Type	Part Number
Insert with pins 3 + PE contacts with screw termination	A712-7.S05.931.105
Insert with sockets 3 + PE contacts with screw termination	A712-7.S05.931.106

Inserts T-coding



Insert pin mating view



Insert socket mating view

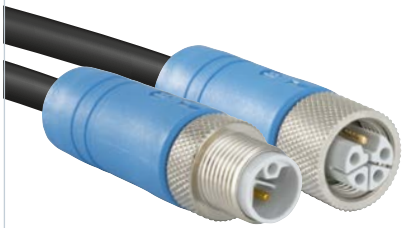
Type	Part Number
Insert with pins 4-pole contacts with screw termination	A712-7.T05.904.105
Insert with sockets 4-pole contacts with screw termination	A712-7.T05.904.106

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

Contacts	Type	Crimp Range	Part Number
	Crimp pin 1,5 mm, machined	0,75 mm²	A712-7.010.901.521
	Crimp pin 1,5 mm, machined	1,5 mm²	A712-7.010.901.531
	Crimp pin 1,5 mm, machined	2,5 mm²	A712-7.010.901.541
	Crimp socket 1,5 mm PE, machined	0,75 mm²	A712-7.010.911.522
	Crimp socket 1,5 mm PE, machined	1,5 mm²	A712-7.010.911.532
	Crimp socket 1,5 mm PE, machined	2,5 mm²	A712-7.010.911.542
	Crimp socket 1,5 mm, machined	0,75 mm²	A712-7.010.901.522
	Crimp socket 1,5 mm, machined	1,5 mm²	A712-7.010.901.532
	Crimp socket 1,5 mm, machined	2,5 mm²	A712-7.010.901.542

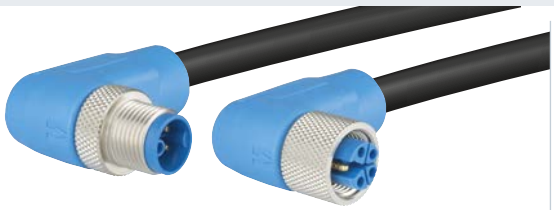
M 12 Power Moulded Cordsets, Open cable end

Straight Connector / Open cable end



		M 12 Coding K	M 12 Coding L	M 12 Coding S	M 12 Coding T
Cable (1,5 mm²) PUR					
unshielded	female	A712-KFS413UPxxx	A712-LFS413UPxxx	A712-SFS313UPxxx	A712-TFS043UPxxx
	male	A712-KMS413UPxxx	A712-LMS413UPxxx	A712-SMS313UPxxx	A712-TMS043UPxxx
shielded	female	A712-KFS413SPxxx	A712-LFS413SPxxx	A712-SFS313SPxxx	A712-TFS043SPxxx
	male	A712-KMS413SPxxx	A712-LMS413SPxxx	A712-SMS313SPxxx	A712-TMS043SPxxx
Cable (2,5 mm²) PUR					
unshielded	female	A712-KFS414UPxxx	A712-LFS414UPxxx		
	male	A712-KMS414UPxxx	A712-LMS414UPxxx		
shielded	female	A712-KFS414SPxxx	A712-LFS414SPxxx		
	male	A712-KMS414SPxxx	A712-LMS414SPxxx		

Right Angle Connector / Open cable end



		M 12 Coding K	M 12 Coding L	M 12 Coding S	M 12 Coding T
Cable (1,5 mm²) PUR					
unshielded	female	A712-KFA413UPxxx	A712-LFA413UPxxx	A712-SFA313UPxxx	A712-TFA043UPxxx
	male	A712-KMA413UPxxx	A712-LMA413UPxxx	A712-SMA313UPxxx	A712-TMA043UPxxx

Please add required cable length to part number:	
1,5 m	xxx replaced by: 015
2 m	xxx replaced by: 020
5 m	xxx replaced by: 050
10 m	xxx replaced by: 100
15 m	xxx replaced by: 150

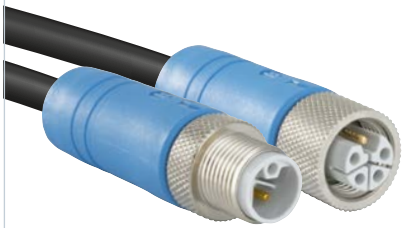
The length can be chosen in decimetre (0,1 m) steps. INOX upon request.

Straight Connector overmoulded / Open cable end

Right Angle Connector overmoulded / Open cable end

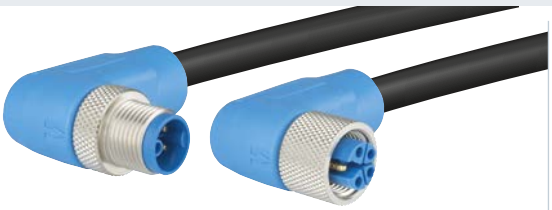
M 12 Power Moulded Cordsets, Extension Cord

Extension cord: Straight Connector / Straight Connector



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

Extension cord: Right Angle Connector / Right Angle Connector



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

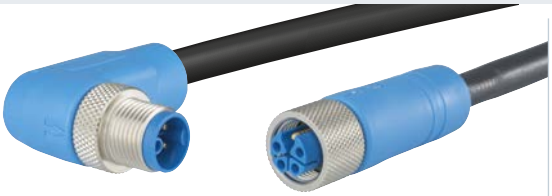
Please add required cable length to part number:	
1,5 m	xxx replaced by: 015
2 m	xxx replaced by: 020
5 m	xxx replaced by: 050
10 m	xxx replaced by: 100
15 m	xxx replaced by: 150

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

Extension cord with overmoulded Straight Connectors

Extension cord with overmoulded Right Angle Connectors

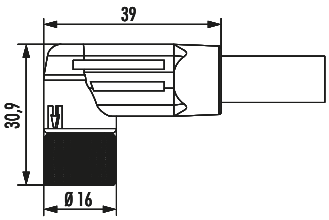
Extension cord: Straight Connector / Right Angle Connector



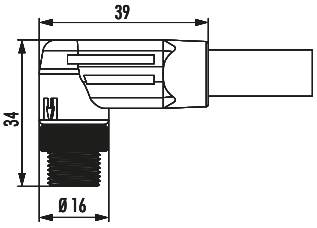
		M 12 Coding K	M 12 Coding L	M 12 Coding S	M 12 Coding T
Female Straight Connector / Male Right Angle Connector, Cable (1,5 mm²) PUR					
unshielded	female / male	A712-KFSMA413UPxxx	A712-LFSMA413UPxxx	A712-SFSMA313UPxxx	A712-TFSMA043UPxxx
Female Right Angle Connector / Male Straight Connector, Cable (1,5 mm²) PUR					
unshielded	female / male	A712-KFAMS413UPxxx	A712-LFAMS413UPxxx	A712-SFAMS313UPxxx	A712-TFAMS043UPxxx

INOX upon request

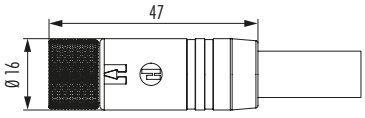
Right Angle Connector, female thread



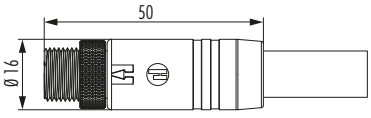
Right Angle Connector, male thread



Straight Connector, female thread



Straight Connector, male thread



Extension cord with overmoulded Straight and Right Angle Connectors

Accessories

Accessories	Type	Part Number
	**Plastic protective cap** for connectors with **male thread** with **female thread**	 A712-7.000.980.161 A712-7.000.980.162
	**Brass protective cap** for connectors with **female thread**	A712-7.010.900.163
	**Brass protective cap** for connectors with **male thread**	A712-7.010.900.162
	**Brass protective cap with chain** for connectors with **female thread** Length 70 mm	 A712-7.010.9S0.705
	**Brass protective cap with chain** for connectors with **male thread** Length 70 mm	 A712-7.010.9S0.704
	**Crimp tool** for manual crimping of machined crimp contacts for signal connectors M 12	 7.000.900.908
	**Tool Adapter** for tightening or loosening knurled nuts for M 12 Power/M 16	 7.010.900.191
	**Screw Tool**, adjustable 0.5 – 1.7 Nm	7.010.900.190

Limited Liability

Products, design, colors and dimensions are subject to change without prior notice. We reserve the right to make technical improvements on all our products, currently ordered or for future orders. It is the users responsibility to verify all dimensions and technical data. HUMMEL AG will assume no liability regarding information provided to the user by published literature or inside technical staff, its distributors and outside sales personnel. Errors in the catalog can occur and shall not create any liability whatsoever for HUMMEL AG. All information provided by HUMMEL AG is without guarantee and must be verified by the user.

Imprint

Graphic & Layout:
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

Printer:
Druckerei Furtwängler GmbH, 79211 Denzlingen, Germany, Tel. +49 (0) 76 66 / 13 31. Printed on recycled paper in October 2021.

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

HUMMEL Russia

OOO HUMMEL
Ul. Retschnikow 21, Strojenije 1
115142 Moskau / Russia

Tel. +7 (0) 4 99 / 7 82 40 68
Fax +7 (0) 4 99 / 6 14 67 40
E-Mail info.ru@hummel.com
www.hummel-russia.ru

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
#1711, 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

HUMMEL INTERNATIONAL

ELECTRIC COMPONENTS

Cable Glands

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

Circular Connectors

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

Conduit Systems

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

Cable Assembly

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

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 info@hummel.com

HUMMEL-1121

HUMMEL

smart & reliable connections

CIRCULAR CONNECTORS

SIGNAL // POWER // INDUSTRIAL ETHERNET

HUMMEL – smart & reliable

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

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

Signal Connectors

CIRCULAR CONNECTORS

PROFINET

Customized Solutions

Industrial Ethernet

M 16

TWILOCK

M 23 RJ 45

M 40

Moulded Cordsets

M 23 Hybrid

File-No. E 213337

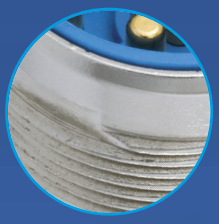
Germanischer Lloyd

RoHS

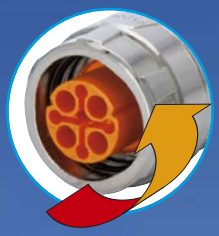
TWILOCK / TWILOCK-S

- // 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

M16 HC: Same performance, less space required

Efficiency, sustainability and miniaturization are present industrial trends. Applications are getting more compact while in decreasing installation spaces the same or even more power has to be accommodated. The high performance-connector M16 HC fully meets these performance requirements. This connector is about one third smaller than the comparable M23 connectors, but at the same time capable of transmitting the same power-currents. The M16-HC-Connectors are available in numerous housing designs such as overmoulded, PCB or stainless steel versions.

// High power transmission up to 25 A
// Less space required
// Cost-optimised assembly directly on the PCB possible
// UL approval
// Higher energy efficiency

M16HC

	Signal	Power DC	Power AC
Number of contacts	4	4	3+PE
Contact-Ø [mm]	0,8	1,6	1,6
AWG [mm²]	0,08 - 0,34	2,5	2,5
Nominal current	5 A	25 A	25 A
Nominal voltage	48 V	48 V	320 V

TWINTUS: Connector 4 small Drives

The TWINTUS connectors combines high power performance with low space requirements in only one housing. Herewith TWINTUS offers an economically attractive solution even to the smallest servomotors. Based on the dimensions of only 22 mm height and with a width of 41mm it can be assembled in tight and limited spaces, fully fullfilling the requirements of the miniaturization trend.

The connector-systems of HUMMEL are offering a modular setup. Housing and inserts can be combined within their particular product line. For TWINTUS this results in plenty of combinations with the available M16 inserts. In addition, M12 sockets are available for signal transmission in 8-pin or 12-pin version.

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

Colour coded inserts
(DESINA colour code)

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

Version M 16 / M 12 available

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 is the SCHUKO plug (earthed 2-pin plug).
Connectors that are not deemed to be engaged or disengaged in normal use when under load or live are also named COC (connectors without breaking capacity).

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

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/en/circular-connectors/technical-center-circular-connectors/general-technical-information

HUMMEL connectors may not be engaged or disengaged when live or under load. 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 16 CONNECTORS

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

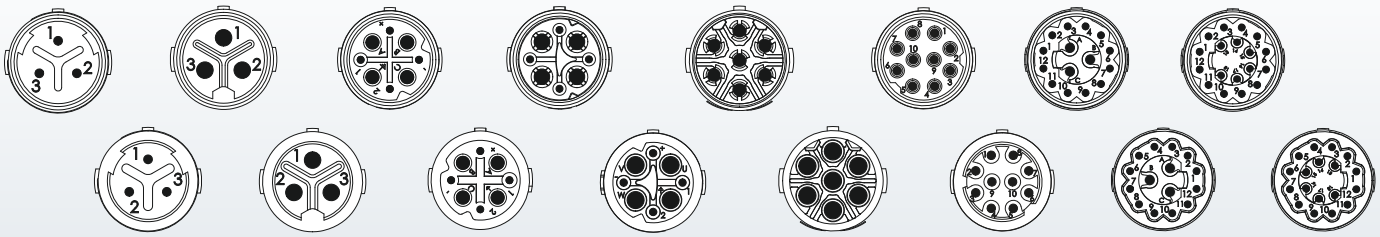
// M 16 power connector
// M 16 signal connector
// TWILOCK, quick release fastener
// TWINTUS – Connector 4 small drives

M 16

Product overview

Housings ▶ 14

Inserts ▶ 19



Accessories ▶ 26

Mechanical Data / Materials and Technical Data

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

Electrical Data

Number of positions	**3 (3 x 1 mm)**	**3 (3 x 2 mm)**	**4 + 3 + PE / 320 V**		**4 + 3 + PE / 600 V**	
Number of contacts	3	3	4	4	4	4
Contact-Ø [mm]	1	2	0,8	1,6	0,8	1,25
AWG [mm²]	0,14 – 1	0,5 – 2,5	0,08 – 0,34	0,34 – 1,5	0,08 – 0,34	0,5 – 1,5
Nominal current [1] [A]	8	20	5	16	5	16
Nominal voltage [2] [V~] *)	250	250	160	320	160	600
Rated Surge Voltage [V~]	2500	2500	2500	2500	2500	4000
Test voltage (Breakdown voltage) [3] [V~]	1500	1500	1500	1500	1500	2500
Insulation resistance [Ω]	$>10^8$	$>10^8$	$>10^8$		$>10^8$	
Max. contact resistance [mΩ]	3	3	3	3	3	3

Number of positions	**6+PE**	**10**	**12 + 3**		**18**
Number of contacts	7	10	12	3	18
Contact-Ø [mm]	1,25	1	0,8	1,25	0,8
AWG [mm²]	0,5 – 1,5	0,14 – 0,75	0,08 – 0,34	0,5 – 1,5	0,08 – 0,34
Nominal current [1] [A]	16	8	3	10	3
Nominal voltage [2] [V~] *)	500	40	24	60	24
Rated Surge Voltage [V~]	2500	800	800	1500	800
Test voltage (Breakdown voltage) [3] [V~]	1500	500	400	840	400
Insulation resistance [Ω]	$>10^8$	$>10^8$	$>10^8$		$>10^8$
Max. contact resistance [mΩ]	3	3	3	3	3

Number of positions M16HC	**4 + 3 + PE / 320 V (HC)**		**4 + 4 (HC)**	
Number of contacts	4	4	4	4
Contact-Ø [mm]	0,8	1,6	0,8	1,6
AWG [mm²]	0,08 – 0,34	2,5	0,08 – 0,34	2,5
Nominal current [1] [A]	5	25	5	25
Nominal voltage [2] [V~] *)	48	320	48	48 (DC)
Rated Surge Voltage [V~]	2500	2500	2500	2500
Test voltage (Breakdown voltage) [3] [V~]	1500	1500	1500	1500
Insulation resistance [Ω]	$>10^8$		$>10^8$	
Max. contact resistance [mΩ]	3	3	3	3

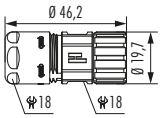
[1], [2], [3], [4] See Technical Information page 10

*) degree of protection 3 [4]

Housings

Straight Connector, Female Thread

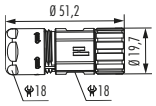
Cable-Ø	Part Number
3 – 6 mm	7.810.300.000
5 – 9 mm	7.810.400.000
8 – 11 mm	7.810.500.000



▶ 19 ▶ 26

Straight Connector, Female Thread / elongated *

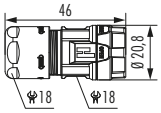
Cable-Ø	Part Number
3 – 6 mm	7.811.300.000
5 – 9 mm	7.811.400.000
8 – 11 mm	7.811.500.000



▶ 19 ▶ 26

Straight Connector, Female Thread TWILOCK

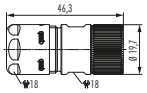
Cable-Ø	Part Number
3 – 6 mm	7.816.300.000
5 – 9 mm	7.816.400.000
8 – 11 mm	7.816.500.000



▶ 19 ▶ 26

Straight Connector, Female Thread INOX

Cable-Ø	Part Number
3 – 6 mm	7.814.300.000
5 – 9 mm	7.814.400.000
8 – 11 mm	7.814.500.000



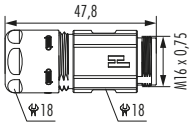
INOX STAINLESS STEEL

▶ 19 ▶ 26

Housing without inserts and contacts

Straight Connector, Male Thread

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

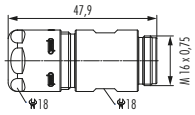


▶ 19 ▶ 26

Straight Connector, Male Thread INOX

Cable-Ø	Part Number
3 – 6 mm	7.824.300.000
5 – 9 mm	7.824.400.000
8 – 11 mm	7.824.500.000

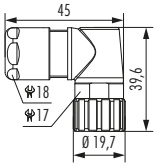
INOX STAINLESS STEEL



▶ 19 ▶ 26

Right Angle Connector with positioning

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

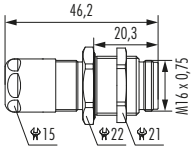


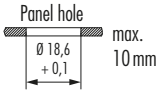
▶ 19 ▶ 26

Panel Connector with built in Cable Strain Relief

Cable-Ø	Part Number
Rear mounting, single hole mounted	
2 – 7 mm	7.852.300.000
5 – 9 mm	7.852.400.000

Including jam nut PG 11

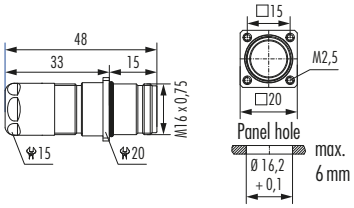




▶ 19 ▶ 26

Housings

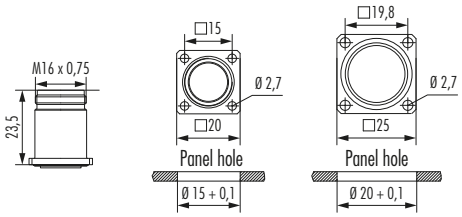
Panel Connector with built in Cable Strain Relief



Cable-Ø	Part Number
Rear mounting, M 2,5 x 4 single hole mounted	
2 – 7 mm	7.847.300.000
5 – 9 mm	7.847.400.000

▶ 19 ▶ 26

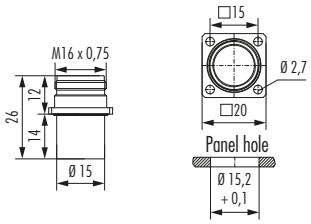
Panel Connector, Male Thread, Front Mounting



Type	Part Number
4 x holes Ø 2,7 mm (.11“) Flange 20 x 20 mm	7.840.000.000
4 x holes Ø 2,7 mm (.11“) Flange 25 x 25 mm	7.840.100.000

▶ 19 ▶ 26

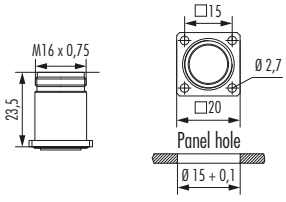
Panel Connector, Male Thread, Front Mounting



Type	Part Number
Short version 4 x holes Ø 2,7 mm (.11“) Flange 20 x 20 mm	7.840.200.000

▶ 19 ▶ 26

Panel Connector, Male Thread INOX



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

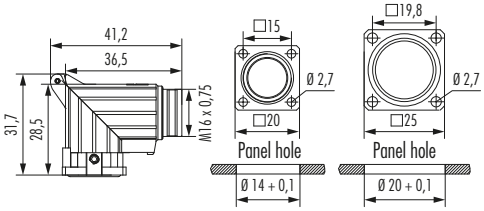
INOX STAINLESS STEEL

▶ 19 ▶ 26

Housing without inserts and contacts

Housings

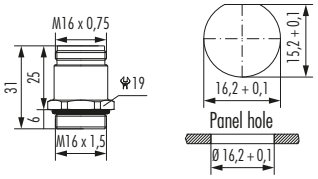
Right Angle Panel Connector, Male Thread, rotatable



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

▶ 19 ▶ 26

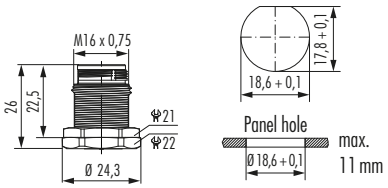
Panel Connector, Male Thread, Front Mounting



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

▶ 19 ▶ 26

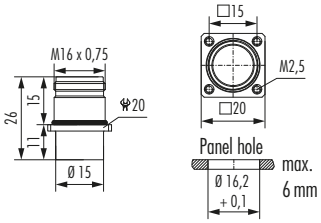
Panel Connector, Male Thread, Rear Mounting



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

▶ 19 ▶ 26

Panel Connector, Male Thread, Rear Mounting



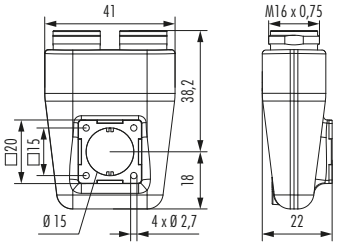
Type	Part Number
Rear mounting, 4 x thread M 2,5	
Flange 20 x 20 mm	7.845.000.000

▶ 19 ▶ 26

Housing without inserts and contacts

Housings M 16

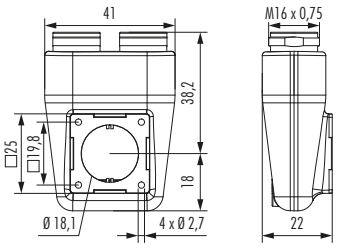
TWINTUS



Type	Part Number
Flange 20 x 20 mm	
Uncoated	7.848.000.000
Surface nickel plated	7.848.000.001
Surface black conductive	7.848.000.00B

▶ 19 ▶ 26

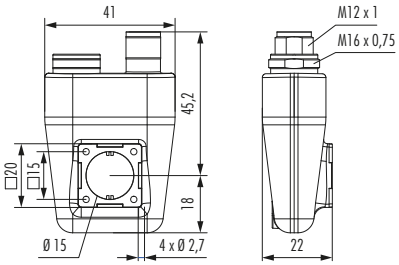
TWINTUS



Type	Part Number
Flange 25 x 25 mm	
Uncoated	7.848.100.000
Surface nickel plated	7.848.100.001
Surface black conductive	7.848.100.00B

▶ 19 ▶ 26

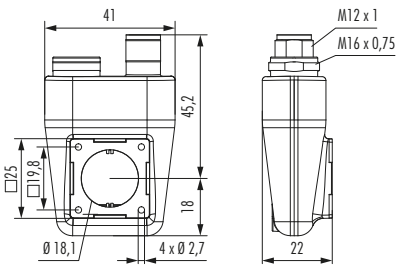
TWINTUS M 16 / M 12



Type	Part Number
Flange 20 x 20 mm	
Uncoated	7.848.200.000
Surface nickel plated	7.848.200.001
Surface black conductive	7.848.200.00B

▶ 19 ▶ 26

TWINTUS M 16 / M 12



Type	Part Number
Flange 25 x 25 mm	
Uncoated	7.848.300.000
Surface nickel plated	7.848.300.001
Surface black conductive	7.848.300.00B

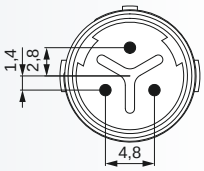
▶ 19 ▶ 26

Housing without inserts and contacts

Inserts 3-pole (3 x 1 mm)

Insert pin mating view

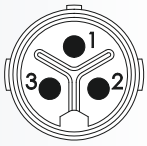
Insert socket mating view



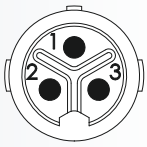
Type	Part Number Pins	Part Number Sockets
Insert without contacts	7.003.903.101	7.003.903.102
Insert with dip solder contacts Length 10 mm	7.001.903.127	7.001.903.108
Insert with dip solder contacts Length 17 mm	7.001.903.137	7.001.903.118
Required Contacts 3 x 1 mm	7.010.901.001	7.010.901.002 / 7.010.901.012

▶ 24

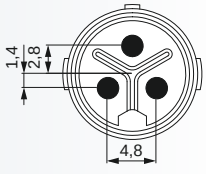
Inserts 3-pole (3 x 2 mm)



Insert pin mating view



Insert socket mating view

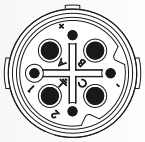


Type	Part Number Pins	Part Number Sockets
Insert without contacts	7.003.983.101	7.003.983.102
Insert with dip solder contacts Length 10 mm	7.001.983.127	7.001.983.108
Insert with dip solder contacts Length 17 mm	7.001.983.137	7.001.983.118
Required Contacts 3 x 2 mm	7.010.982.001	7.010.982.002

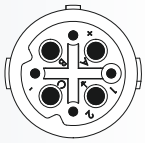
▶ 24

Inserts / Pinouts

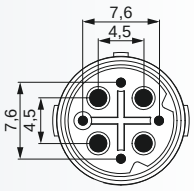
Inserts 4+3+PE, 320 V



Insert pin mating view



Insert socket mating view

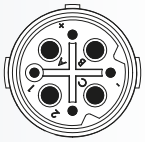


Type	Part Number Pins	Part Number Sockets
Insert without contacts	7.003.943.101	7.003.943.102
Insert RAL 2003 (DESINA orange) without contacts	7.053.943.101	7.053.943.102
Insert with dip solder contacts Length 10 mm	7.001.943.127	7.001.943.108
Insert with dip solder contacts Length 17 mm	7.001.943.137	7.001.943.118
Required Contacts		
4 x 0,8 mm	7.010.980.801	7.010.980.802
4 x 1,6 mm	7.010.981.601	7.010.981.602
Version HC – Required Contacts		
4 x 0,8 mm	7.010.980.801	7.010.980.802
4 x 1,6 mm	7.011.981.601	7.011.981.602

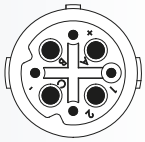
M16HC

▶ 24

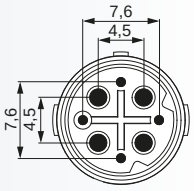
Inserts 4+4 HC



Insert pin mating view



Insert socket mating view

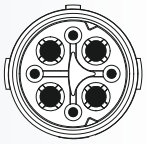


Type	Part Number Pins	Part Number Sockets
Insert without contacts	7.003.944.101	7.003.944.102
Insert with dip solder contacts Length 10 mm	7.011.944.127	
Required Contacts		
4 x 0,8 mm	7.010.980.801	7.010.980.802
4 x 1,6 mm	7.011.981.601	7.011.981.602

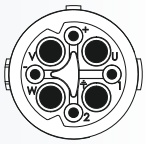
M16HC

▶ 24

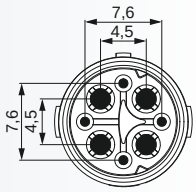
Inserts 4+3+PE, 600 V



Insert pin mating view



Insert socket mating view

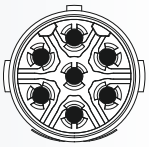


Type	Part Number Pins	Part Number Sockets
Insert without contacts	7.003.908.101	7.003.908.102
Insert RAL 2003 (DESINA orange) without contacts	7.053.908.101	7.053.908.102
Required Contacts		
4 x 0,8 mm	7.010.980.811	7.010.980.814
4 x 1,25 mm	7.010.981.211	7.010.981.212

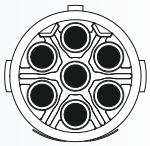
▶ 24

[1] under development

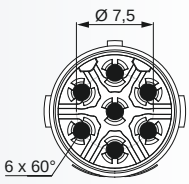
Inserts 6+PE



Insert pin mating view



Insert socket mating view



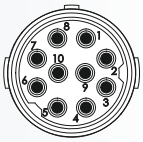
Type	Part Number Pins	Part Number Sockets
Insert without contacts	7.003.961.101	7.003.961.102
Insert RAL 2003 (DESINA orange) without contacts	7.053.961.101	7.053.961.102
Required Contacts		
7 x 1,25 mm	7.010.981.211	7.010.981.212

▶ 24

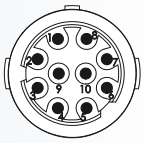
[1] under development

Inserts / Pinouts

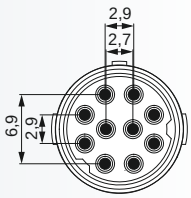
Inserts 10-pole



Insert pin mating view



Insert socket mating view



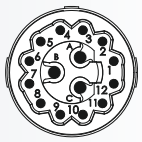
Type	Part Number Pins	Part Number Sockets
Insert without contacts	7.003.910.101	7.003.910.102
Insert RAL 2003 (DESINA green) without contacts	7.053.910.101	7.053.910.102
Insert with dip solder contacts Length 10 mm	7.001.910.127	7.001.910.108
Insert with dip solder contacts Length 17 mm	7.001.910.137	7.001.910.118
Required Contacts		
10 x 1 mm	7.010.981.001	7.010.981.002

▶ 24

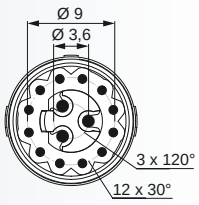
[1] under development

Inserts 12+3-pole

Insert pin mating view



Insert socket mating view



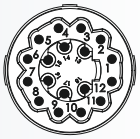
Type	Part Number Pins	Part Number Sockets
Insert without contacts	7.003.985.101	7.003.985.102
Insert with dip solder contacts Length 10 mm	7.001.985.127	7.001.985.108
Insert with dip solder contacts Length 17 mm	7.001.985.137	7.001.985.118
Required Contacts		
12 x 0,8 mm	7.010.980.801	7.010.980.802
3 x 1,25 mm	7.010.981.201	7.010.981.202

▶ 24

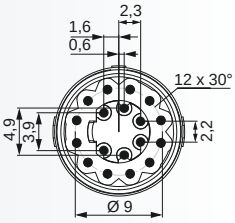
Inserts 18-pole

Type	Part Number Pins	Part Number Sockets
Insert without contacts	7.003.988.101	7.003.988.102
Insert RAL 2003 (DESINA green) without contacts	7.053.988.101	7.053.988.102
Insert with dip solder contacts Length 10 mm	7.001.988.127	7.001.988.108
Insert with dip solder contacts Length 17 mm	7.001.988.137	7.001.988.118
Required Contacts 18 x 0,8 mm	7.010.980.801	7.010.980.802

Insert pin mating view



Insert socket mating view



▶ 24

Inserts M 12 for TWINTUS M 16 / M 12 (8-poles)

Type	Part Number Pins
Insert with solder contacts	A712-7.001.908.103

Insert pin mating view

Inserts M 12 for TWINTUS M 16 / M 12 (12-poles)

Type	Part Number Pins
Insert with solder contacts	A712-7.001.912.103

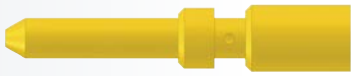
Insert pin mating view

M 16

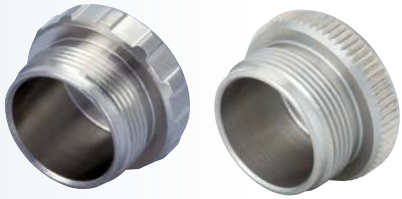
Contacts

Contacts	Type	Crimp Range	Part Number
	Crimp pin 0,8 mm, machined	0,08 – 0,34 mm² (AWG 28 – 22)	7.010.980.801
	Crimp socket 0,8 mm, machined	0,08 – 0,34 mm² (AWG 28 – 22)	7.010.980.802
	Crimp pin 0,8 mm, machined	0,08 – 0,34 mm² (AWG 28 – 22)	7.010.980.811
	Crimp socket 0,8 mm, machined	0,08 – 0,34 mm² (AWG 28 – 22)	7.010.980.814
	Crimp pin 1 mm, machined	0,08 – 0,75 mm² (AWG 28 – 18)	7.010.981.001
	Crimp socket 1 mm, machined	0,08 – 0,75 mm² (AWG 28 – 18)	7.010.981.002
	Crimp pin 1 mm, machined	0,14 – 1 mm² (AWG 26 – 17)	7.010.901.001
	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 pin 1,25 mm, machined	0,5 – 1,5 mm² (AWG 20 – 16)	7.010.981.201
	Crimp socket 1,25 mm, machined	0,5 – 1,5 mm² (AWG 20 – 16)	7.010.981.202

Contacts

Contacts	Type	Crimp Range	Part Number
	Crimp pin 1,25 mm, machined	0,34 – 1,5 mm² (AWG 20 – 16)	7.010.981.211
	Crimp socket 1,25 mm, machined	0,34 – 1,5 mm² (AWG 20 – 16)	7.010.981.212
	Crimp pin 1,6 mm, machined	0,34 – 1,5 mm² (AWG 22 – 16)	7.010.981.601
	Crimp socket 1,6 mm, machined	0,34 – 1,5 mm² (AWG 22 – 16)	7.010.981.602
	Crimp pin 2 mm, machined	1,0 – 2,5 mm² (AWG 17 – 14)	7.010.982.001
	Crimp socket 2 mm, machined	1,0 – 2,5 mm² (AWG 17 – 14)	7.010.982.002
	M16HC		
	Crimp pin HC 1,6 mm, machined	2,5 mm²	7.011.981.601
	Crimp socket HC 1,6 mm, machined	2,5 mm²	7.011.981.602

Accessories

Accessories	Type	Part Number
	Plastic protective cap for connectors with **male thread** with **female thread**	 7.000.980.161 7.000.980.162
	**Brass protective cap** for connectors with **female thread** **INOX protective cap** for connectors with **female thread**	 7.010.900.163 [1] 7.010.904.163 [1]
	**Brass protective cap** for connectors with **male thread** **INOX protective cap** for connectors with **male thread**	 7.010.900.162 7.010.904.162
	**Brass protective cap with chain** for connectors with **female thread** Length 70 mm	 7.010.9S0.705 [1]
	**Brass protective cap with chain** for connectors with **male thread** Length 70 mm	 7.010.9S0.704
	**Crimp tool** for manual crimping of machined crimp contacts for signal connectors M 16 and M 23 **Locator for Crimping tool** for crimp contact Series M16, separate **Locator for Crimping tool** for crimp contact Series M16, B-Positions, separate	 7.000.900.904 7.010.900.136 7.010.900.148

[1] no compatibility with TWILOCK

Accessories

Accessories	Type	Part Number
	**Conduit adaptor** Poleon DN 10 Poleon DN 12	 7.010.900.200 7.010.900.202
	**Plastic protective cap for TWINTUS** TWINTUS M 16 TWINTUS M 16 / M 12	 7.000.848.101 7.000.848.102
	**Disassembly Tool** for crimp contacts 1,25 mm	 7.010.900.151
	**Tool Adapter** for tightening or loosening knurled nuts for M 12 Power/M 16	 7.010.900.191
	**Tool Adapter** for tightening or loosening knurled nuts M12 Power, cross knurl	 7.010.900.193
	**Screw Tool**, adjustable 0.5 – 1.7 Nm	7.010.900.190

[1] upon request

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
#1711, 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

Limited Liability

Imprint

Graphic & Layout:
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

Printer:
Druckerei Furtwängler GmbH, 79211 Denzlingen, Germany, Tel. +49 (0) 76 66 / 13 31. Printed on recycled paper in July 2024.

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

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 10-9420
E-Mail info@hummel.com

KATM16_2024EN-0724

HUMMEL

smart & reliable connections

CIRCULAR CONNECTORS

SIGNAL // POWER // INDUSTRIAL ETHERNET

HUMMEL – smart & reliable

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

connections

TABLE OF CONTENT

LEGEND


Housing


Inserts / Pinouts


Contacts

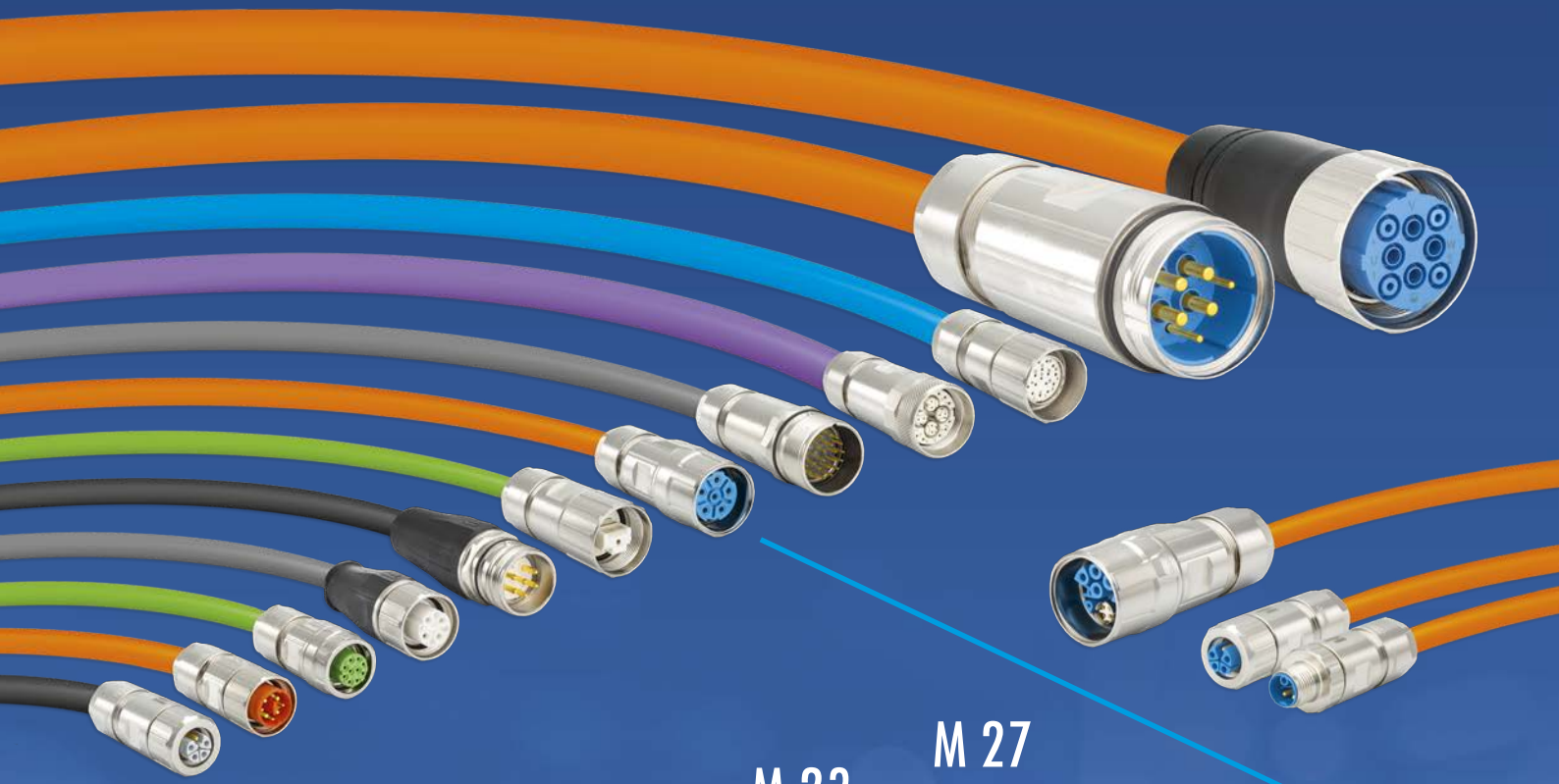

Accessories

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

PROFINET

Customized Solutions

Industrial Ethernet

M 16
TWILOCK

M 23 RJ 45

M 40
Moulded Cordsets

M 23 Hybrid

File-No. E 213337

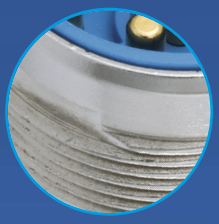
Germanischer Lloyd

RoHS

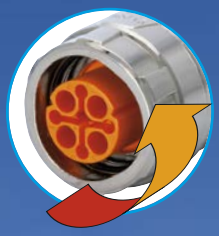
TWILOCK / TWILOCK-S

- // 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



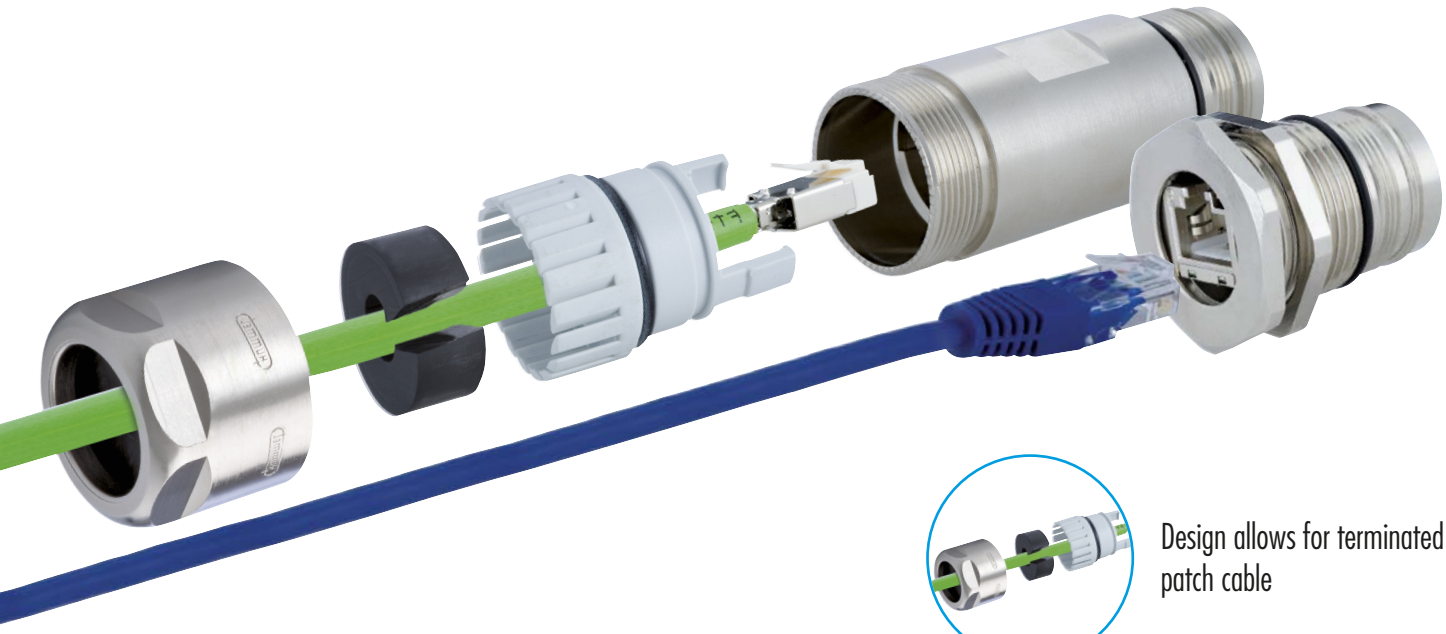
Locking with a slight rotation or release of the connection

TWILOCK-S-Version intermateable with Speedtec

TWILOCK

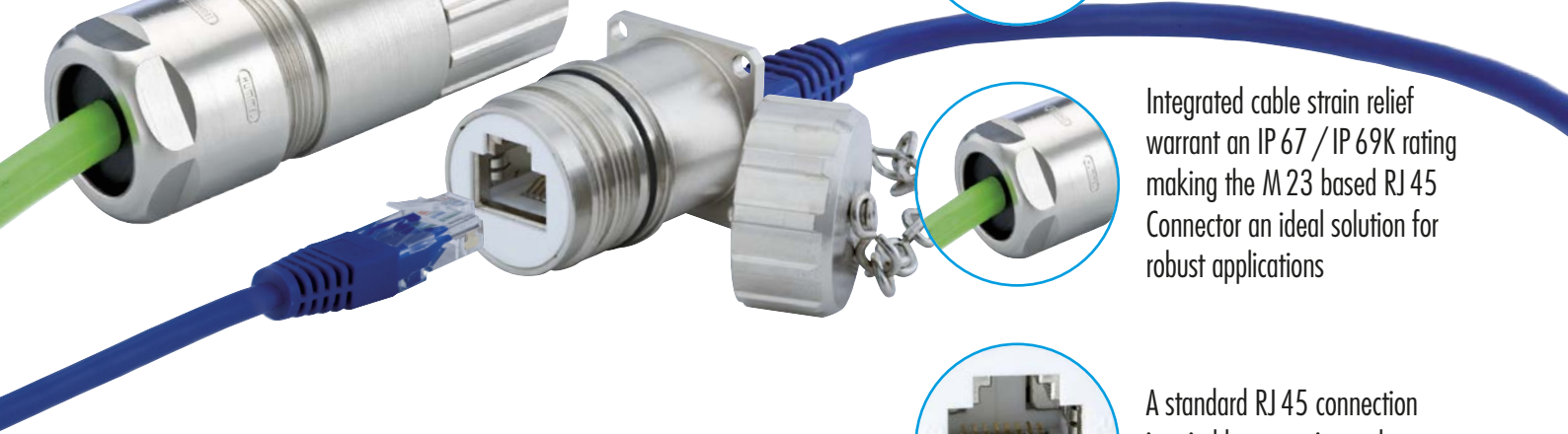
TWILOCK-S

M 23 RJ 45: ROBUST, SIMPLE & SMALL!



Design allows for terminated patch cable

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

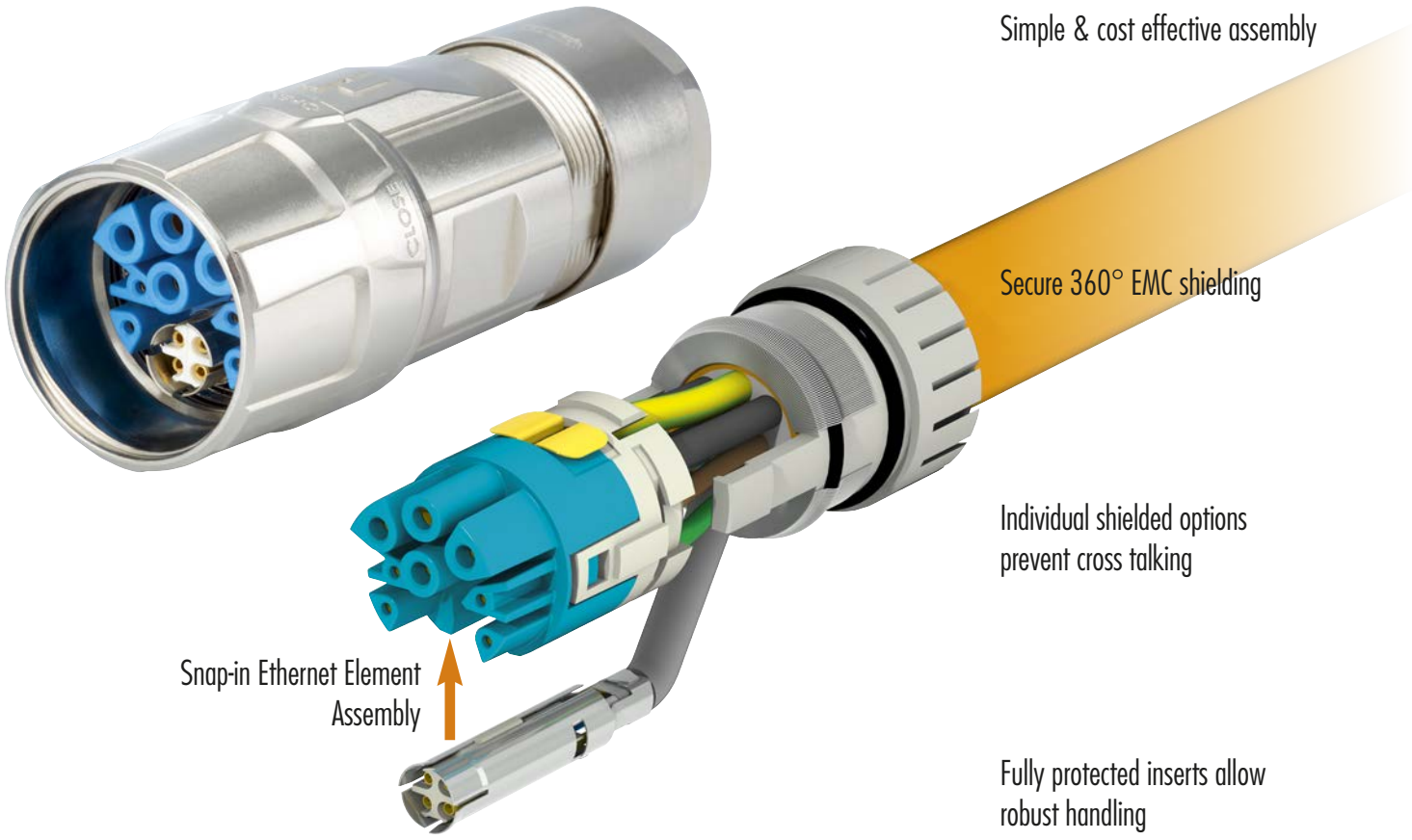


Integrated cable strain relief warrant an IP 67 / IP 69K rating making the M 23 based RJ 45 Connector an ideal solution for robust applications

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

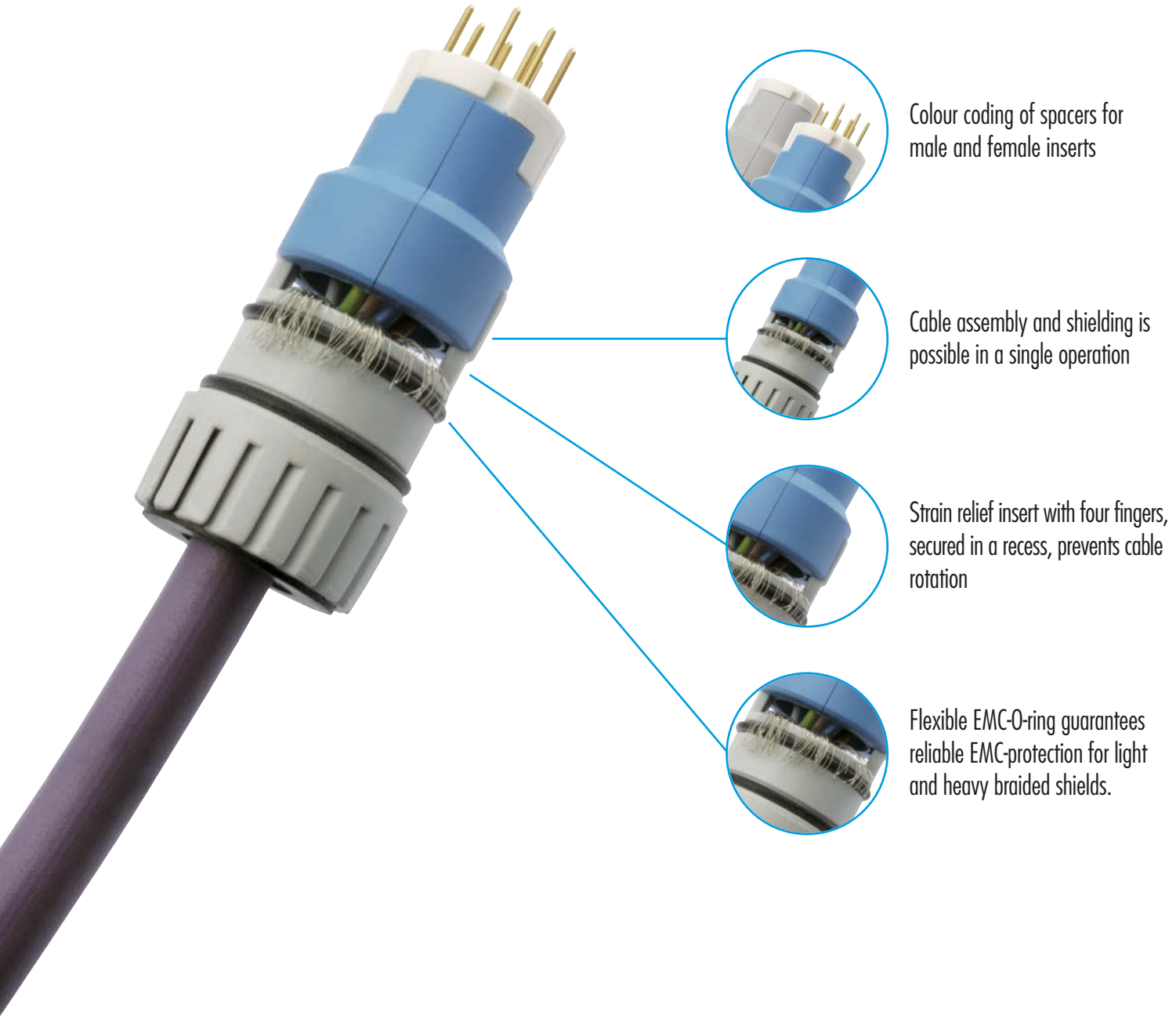
Fully integrated solution for Industrial Ethernet applications

// 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

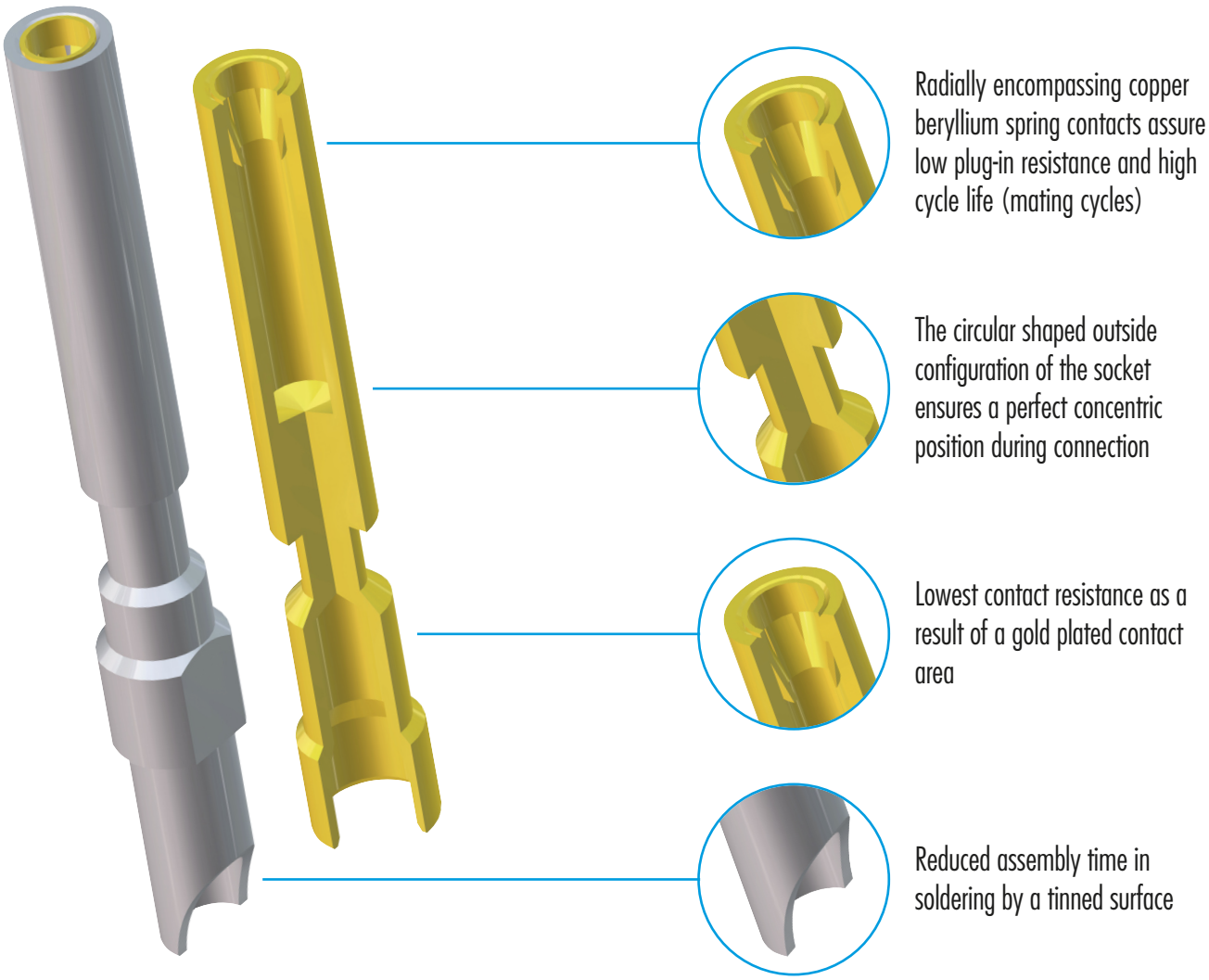
Cable assembly and shielding is possible in a single operation

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



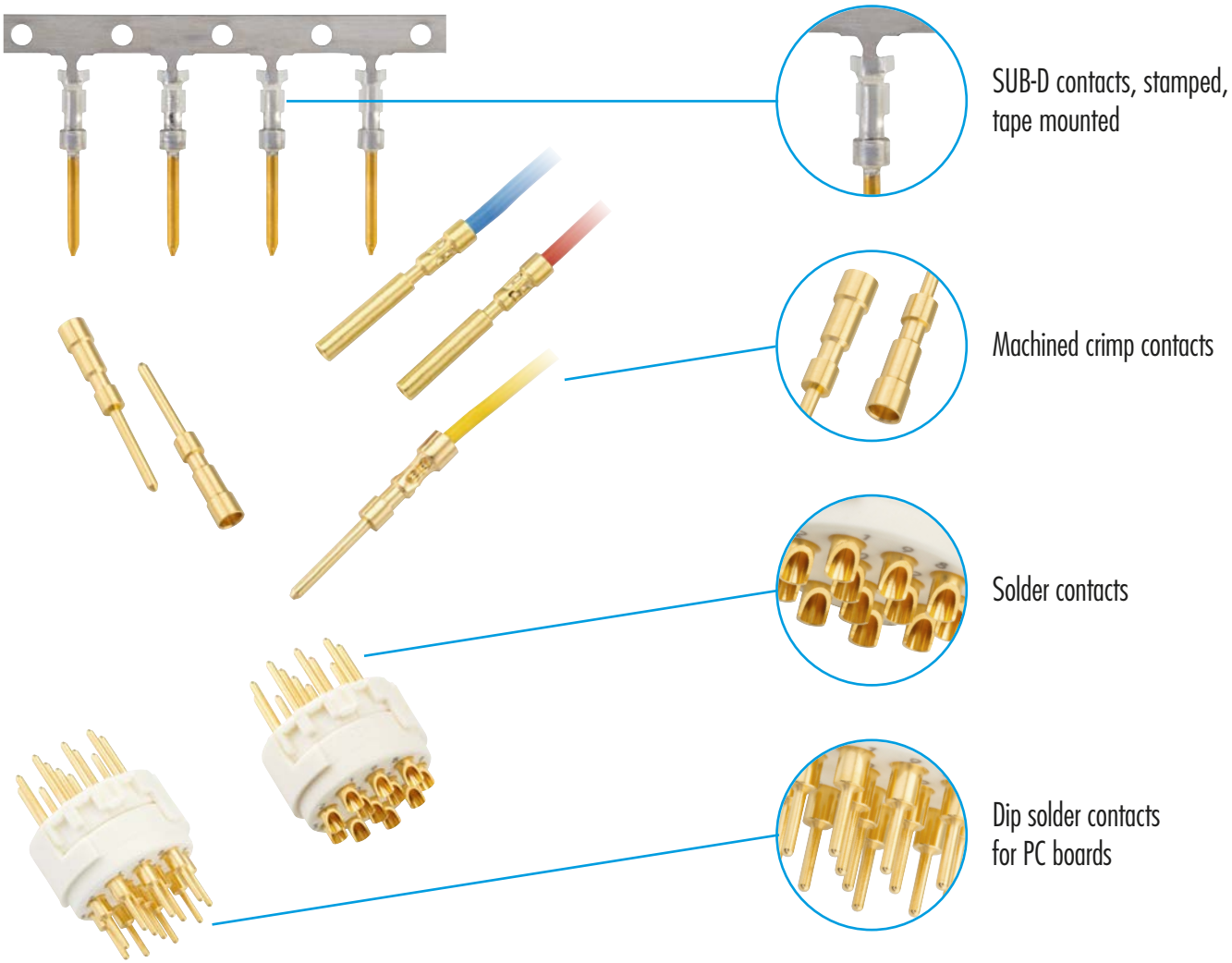
M 23 CIRCULAR CONNECTORS

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.

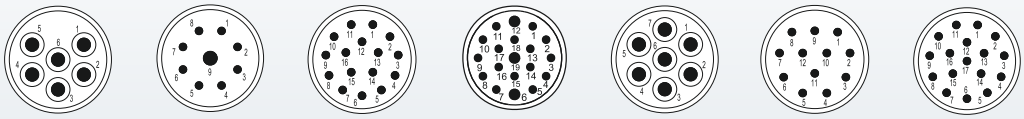
// Numerous housing types
// Large variety
// TWILOCK / TWILOCK-S quick release fastener

M 23 SIGNAL

Product overview

Housings ▶ 18

Inserts ▶ 25



Accessories ▶ 32

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

* HUMMEL to HUMMEL connector

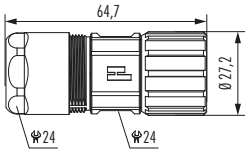
Electrical Data

Number of positions	6	7	9 (8+1)	12	16	17	19 (16+3)
Number of contacts	6	7	8 1	12	16	17	16 3
Contact-Ø [mm]	2	2	1 2	1	1	1	1 1,5
Nominal current [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

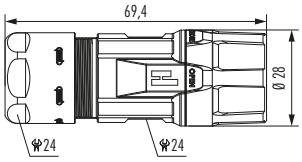
Straight Connector, Female Thread



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

▶ 25 ▶ 31

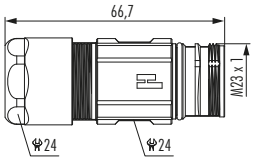
Straight Connector, Female Thread TWILOCK / TWILOCK-S *



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

▶ 25 ▶ 31

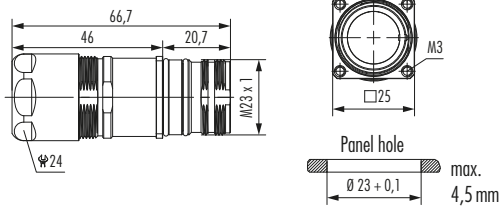
Straight Connector, Male Thread TWILOCK / TWILOCK-S *



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

▶ 25 ▶ 31

Panel Connector, Male Thread, with Strain Relief



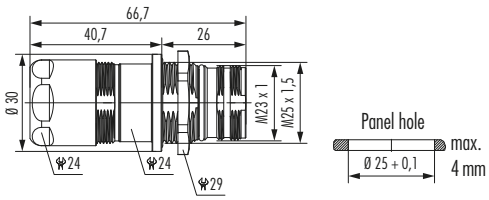
Cable-Ø	Part Number
4 threads M 3, rear mounting	
3 – 7 mm (.12 – .28“)	7.476.400.000
7 – 12 mm (.28 – .47“)	7.476.500.000
11 – 17 mm (.44 – .67“)	7.476.600.000

Optional: Flat gasket

▶ 25 ▶ 31

Housing without inserts and contacts

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

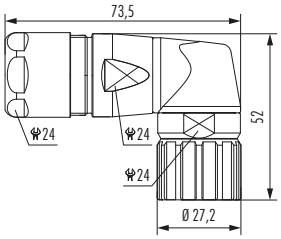


Cable-Ø	Part Number
Rear mounting, M 25 x 1,5 single hole mounted	
3 – 7 mm (.12 – .28")	7.486.400.000
7 – 12 mm (.28 – .47")	7.486.500.000
11 – 17 mm (.44 – .67")	7.486.600.000
*** intermateable with Speedtec**	
3 – 7 mm (.12 – .28")	7.486.400.00S
7 – 12 mm (.28 – .47")	7.486.500.00S
11 – 17 mm (.44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

▶ 25 ▶ 31

Including jam nut M 25 x 1,5

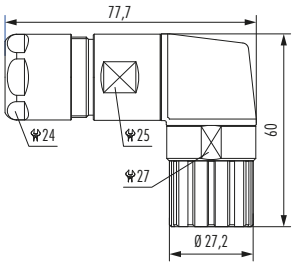
Right Angle Connector, Female Thread, EMC with positioning



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

▶ 25 ▶ 31

Right Angle Connector, EMC, rotatable



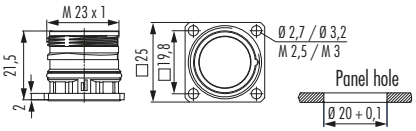
Cable-Ø	Part Number
7 – 12 mm (.28 – .47")	7.306.500.000
11 – 17 mm (.43 – .67")	7.306.600.000

▶ 25 ▶ 31

Housing without inserts and contacts

Housings

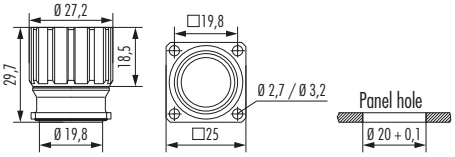
Panel Connector, Male Thread, Front Mounting TWILOCK / TWILOCK-S *



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

▶ 25 ▶ 31 ▶ 32

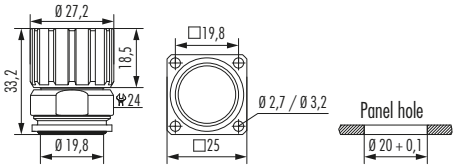
Panel Connector, Female Thread, with knurled Nut



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

▶ 25 ▶ 31 ▶ 32

Panel Connector, Female Thread, with knurled Nut, positionable



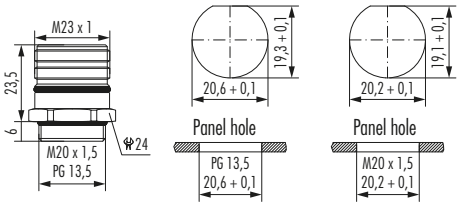
Type	Part Number
With coding option (8 x 45°)	
4 holes Ø 3,2 mm (.13“)	7.448.000.000
4 holes Ø 2,7 mm (.11“)	7.449.000.000

▶ 25 ▶ 31 ▶ 32

Housing without inserts and contacts

[1] no compatibility with TWILOCK

Panel Connector, Male Thread, Single Hole Mounted



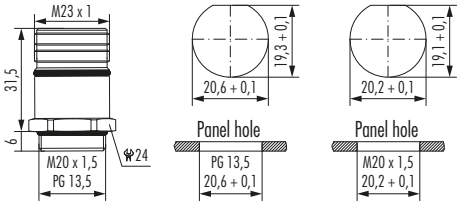
Type	Part Number
Front mounting for male inserts	
Thread M 20 x1,5	7.420.000.000 [1]
Thread PG 13,5	7.422.000.000 [1]

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

* FOR MALE * INSERTS ONLY

▶ 25 ▶ 31 ▶ 32

Panel Connector, Male Thread, Single Hole Mounted



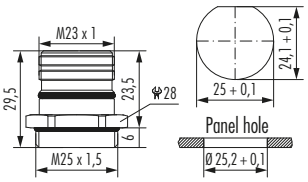
Type	Part Number
Front mounting for female inserts	
Thread M 20 x1,5	7.421.000.000 [1]
Thread PG 13,5	7.423.000.000 [1]

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

* FOR FEMALE * INSERTS ONLY

▶ 25 ▶ 31 ▶ 32

Panel Connector, Male Thread, Single Hole Mounted



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

Optional: jam nut M 25 x 1,5

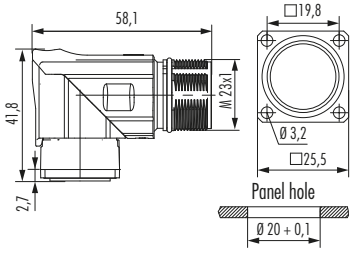
▶ 25 ▶ 31 ▶ 32

Housing without inserts and contacts

[1] no compatibility with TWILOCK

Housings

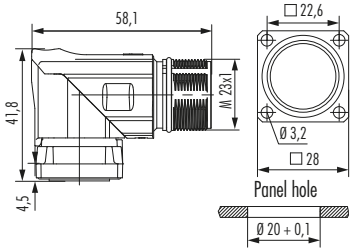
Right Angle Panel Connector, Male Thread, rotatable TWILOCK / TWILOCK-S *



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

▶ 25 ▶ 31 ▶ 32

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

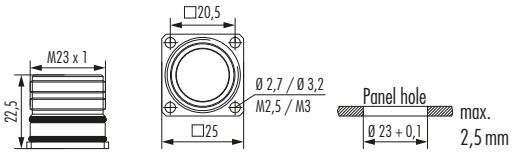


Type	Part Number
330° rotatable, hole mounted	
4 x holes 3,2 mm (.13")	7.439.100.000
Flange 28 x 28 mm blue passivated	
4 x holes 3,2 mm (.13")	7.439.100.010
Flange 28 x 28 mm nickel plated	
* **intermateable with Speedtec**	
4 x holes 3,2 mm (.13")	7.439.100.00S
Flange 28 x 28 mm blue passivated	

▶ 25 ▶ 31 ▶ 32

Housing without inserts and contacts

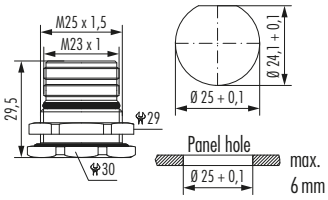
Panel Connector, Male Thread, Rear Mounting TWILOCK / TWILOCK-S *



Type	Part Number
With anti-vibration O-Ring	
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
* **intermateable with Speedtec**	
4 x threads M 3	7.462.000.00S

▶ 25 ▶ 31 ▶ 32

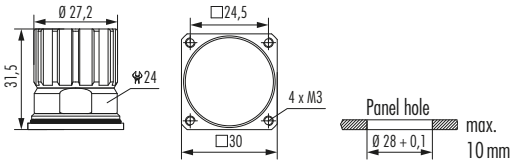
Panel Connector, Male Thread, Single Hole Mounted TWILOCK / TWILOCK-S *



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

▶ 25 ▶ 31 ▶ 32

Panel Connector, Female Thread, Rear Mounting



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

▶ 25 ▶ 31 ▶ 32

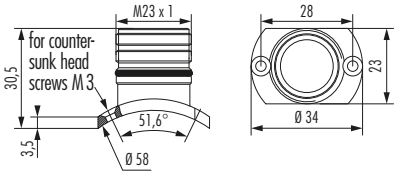
Housing without inserts and contacts

[1] no compatibility with TWILOCK

Housings

Panel Connector with Radius Flange

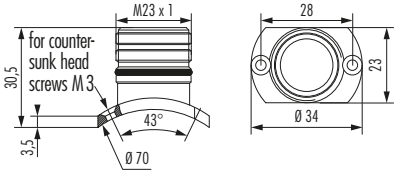
Type	Part Number
With anti-vibration O-Ring and flat body gasket	
Ø 58 mm (2.28")	7.490.000.000 [1]



▶ 25 ▶ 31 ▶ 32

Panel Connector with Radius Flange

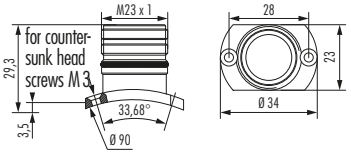
Type	Part Number
With anti-vibration O-Ring and flat body gasket	
Ø 70 mm (2.76")	7.491.000.000 [1]



▶ 25 ▶ 31 ▶ 32

Panel Connector with Radius Flange

Type	Part Number
With anti-vibration O-Ring and flat body gasket	
Ø 90 mm (3.54")	7.492.000.000 [1]



▶ 25 ▶ 31 ▶ 32

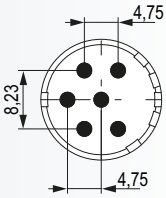
Housing without inserts and contacts

[1] no compatibility with TWILOCK

Inserts 6-pole

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

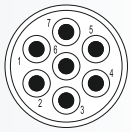
The correct dimension of a connector with dip solder contacts depends on the particular type of housing.

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

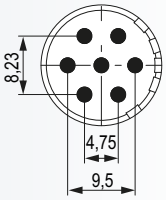
▶ 31

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
Insert with dip solder contacts Length 17 mm	7.001.907.137	7.001.907.118

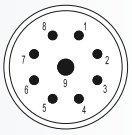
The correct dimension of a connector with dip solder contacts depends on the particular type of housing.

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

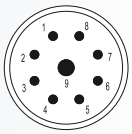
▶ 31

Inserts / Pinouts

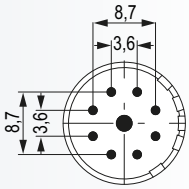
Inserts 9-pole (8 + 1)



Insert pin mating view (Part E)



Insert socket mating view (Part P)



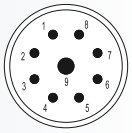
Type	Part Number	Part Number
Pinout clockwise	**Pins**	**Sockets**
Insert with solder contacts	7.001.981.103	7.001.981.104
Insert without contacts	7.003.981.101	7.003.981.102
Insert with dip solder contacts Length 3,5 mm	7.001.981.107	
Insert with dip solder contacts Length 10 mm	7.001.981.127	7.001.981.108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

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

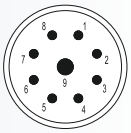
Coding possibilities N, S, H, X and Y (see page 30)

▶ 31

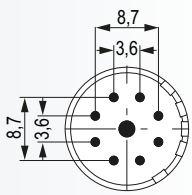
Inserts 9-pole (8 + 1)



Insert pin mating view (Part P)



Insert socket mating view (Part E)



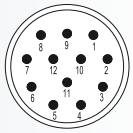
Type	Part Number	Part Number
Pinout counter-clockwise	**Pins**	**Sockets**
Insert with solder contacts	7.002.981.103	7.002.981.104
Insert without contacts	7.004.981.101	7.004.981.102
Insert with dip solder contacts Length 3,5 mm	7.002.981.107	
Insert with dip solder contacts Length 10 mm	7.002.981.127	7.002.981.108
Insert with dip solder contacts Length 17 mm	7.002.981.137	7.002.981.118

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

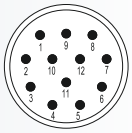
Coding possibilities N, S, H, X and Y (see page 30)

▶ 31

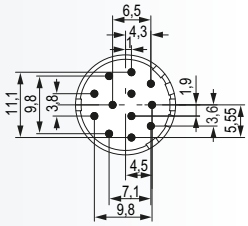
Inserts 12-pole



Insert pin mating view (Part E)



Insert socket mating view (Part P)



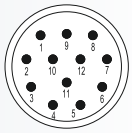
Type	Part Number Pins	Part Number Sockets
Pinout clockwise		
Insert with solder contacts	7.001.912.103	7.001.912.104
Insert with solder contacts +PE (Pos.9)	7.001.912.113	7.001.912.114
Insert without contacts	7.003.912.101	7.003.912.102
Insert without contacts +PE (Pos.9)	7.003.912.111	7.003.912.112
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

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

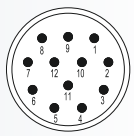
Coding possibilities N, S, H, X, Y and Z (see page 30)

▶ 31

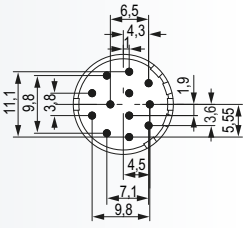
Inserts 12-pole



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	7.002.912.103	7.002.912.104
Insert with solder contacts +PE (Pos.9)	7.002.912.113	7.002.912.114
Insert without contacts	7.004.912.101	7.004.912.102
Insert without contacts +PE (Pos.9)	7.004.912.111	7.004.912.112
Insert with dip solder contacts Length 3,5 mm	7.002.912.107	
Insert with dip solder contacts Length 10 mm	7.002.912.127	7.002.912.108
Insert with dip solder contacts Length 17 mm	7.002.912.137	7.002.912.118

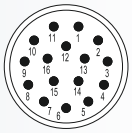
The correct dimension of a connector with dip solder contacts depends on the particular type of housing.

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

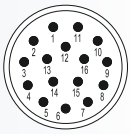
▶ 31

Inserts / Pinouts

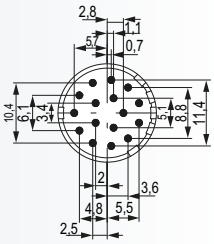
Inserts 16-pole



Insert pin mating view (Part E)



Insert socket mating view (Part P)



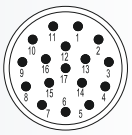
Type	Part Number Pins	Part Number Sockets
Pinout clockwise		
Insert with solder contacts	7.001.916.103	7.001.916.104
Insert without contacts	7.003.916.101	7.003.916.102
Insert with dip solder contacts Length 3,5 mm	7.001.916.107	
Insert with dip solder contacts Length 10 mm	7.001.916.127	7.001.916.108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

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

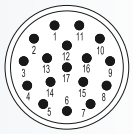
Coding possibilities N, S, H, X, Y and Z (see page 30)

▶ 31

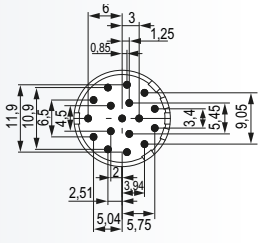
Inserts 17-pole



Insert pin mating view (Part E)



Insert socket mating view (Part P)



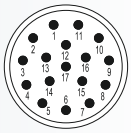
Type	Part Number Pins	Part Number Sockets
Pinout clockwise		
Insert with solder contacts	7.001.917.103	7.001.917.104
Insert without contacts	7.003.917.101	7.003.917.102
Insert with dip solder contacts Length 3,5 mm	7.001.917.107	
Insert with dip solder contacts Length 10 mm	7.001.917.127	7.001.917.108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

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

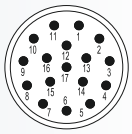
Coding possibilities N, S, H, X, Y and Z (see page 30)

▶ 31

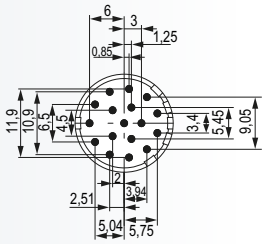
Inserts 17-pole



Insert pin mating view (Part P)



Insert socket mating view (Part E)



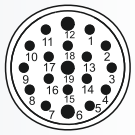
Type	Part Number Pins	Part Number Sockets
Pinout counter-clockwise		
Insert with solder contacts	7.002.917.103	7.002.917.104
Insert without contacts	7.004.917.101	7.004.917.102
Insert with dip solder contacts Length 3,5 mm	7.002.917.107	
Insert with dip solder contacts Length 10 mm	7.002.917.127	7.002.917.108
Insert with dip solder contacts Length 17 mm	7.002.917.137	7.002.917.118

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

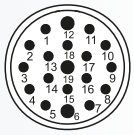
Coding possibilities N, S, H, X, Y and Z (see page 30)

▶ 31

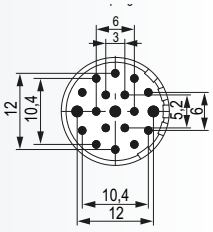
Inserts 19-pole



Insert pin mating view (Part E)



Insert socket mating view (Part P)



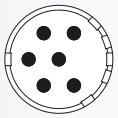
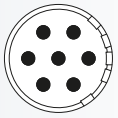
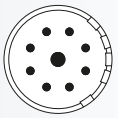
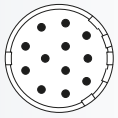
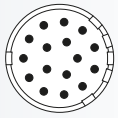
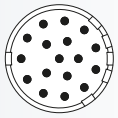
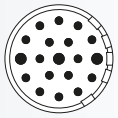
Type	Part Number Pins	Part Number Sockets
Pinout clockwise		
Insert with solder contacts	7.001.919.103	7.001.919.104
Insert with solder contacts +PE (Pos.12)	7.001.919.113	7.001.919.114
Insert with solder contacts + PE (Pos.12) 1,5 mm elongated	7.001.919.123	
Insert without contacts	7.003.919.101	7.003.919.102
Insert without contacts +PE (Pos.12)	7.003.919.111	7.003.919.112
Insert with dip solder contacts Length 3,5 mm	7.001.919.107	
Insert with dip solder contacts Length 10 mm	7.001.919.127	7.001.919.108
Insert with dip solder contacts Length 17 mm	7.001.919.137	7.001.919.118

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

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

▶ 31

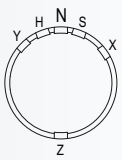
Inserts / Pinouts

Contact Arrangement	Number of Poles	Required Contacts
	6	6 x 2 mm
	7	7 x 2 mm
	9 (8 + 1)	8 x 1 mm 1 x 2 mm
	12	12 x 1 mm
	16	16 x 1 mm
	17	17 x 1 mm
	19	16 x 1 mm 3 x 1,5 mm
	10 Housings and contacts 10-pole, see chapter „M 23 Power, M 23 Hybrid", page 43 – 44	

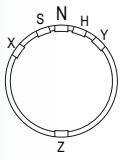
For the M23 crimp insert with 1 mm contacts can be used stamped crimp contact.

▶ 30

Coding



Female Inserts
mating view



Male Inserts
mating view

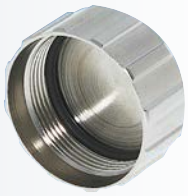
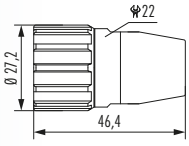
Number of Poles	Coding Possibilities
6-pole	N, S, H, X, Y and Z
7-pole	N, S, H, X and Y
9-pole	N, S, H, X and Y
12-pole	N, S, H, X, Y and Z
16-pole	N, S, H, X, Y and Z
17-pole	N, S, H, X, Y and Z
19-pole	N, S, H, X and Y

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 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 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

Accessories	Type	Part Number
	Plastic protective cap for connectors with **male thread** with **female thread**	 7.000.900.101 7.000.900.102
	**Brass protective cap** for connectors with **female thread**	7.010.900.103 [1]
	**Brass protective cap** for connectors with **male thread**	7.010.900.102
	**Brass protective cap with chain** for connectors with **female thread** Length 70 mm Length 100 mm	 7.010.9S0.703 [1] 7.010.9S1.003 [1]
	**Brass protective cap with chain** for connectors with **male thread** Length 70 mm Length 100 mm	 7.010.9S0.702 7.010.9S1.002
	**Assembly tool**	7.010.900.101
 	**Bus End Connector** Close type Used to cap an open male connector in bus-systems	 7.105.000.000

[1] no compatibility with TWILOCK

Accessories	Type	Part Number
	**Adaptor flange** for Straight Connectors	7.010.900.128 [1]
	**Conduit adaptor** Poleon DN 12 Poleon DN 14 Poleon DN 17	7.010.900.205 7.010.900.207 7.010.900.209
	**Positioner for Crimp Tool** DMC M22520	7.000.900.DMC
	**Locator for Crimp Tool** DMC M22520 with positioner **For HUMMEL Contact:** 7.010.901.001, 7.010.901.501, 7.010.902.001, 7.010.901.031 **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.

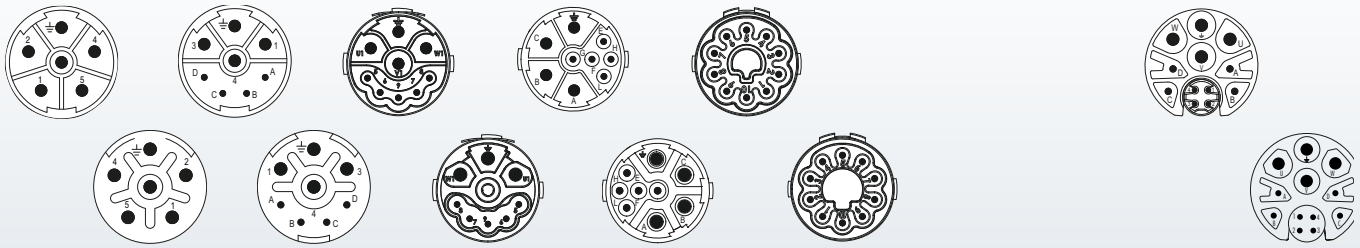
// High power transmission
// Screw lock or TWILOCK / TWILOCK-S quick release fastener
// Numerous housing types

M 23 POWER, M 23 HYBRID

Product overview

Housings ▶ 38

Inserts ▶ 43



Accessories ▶ 45

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

* HUMMEL to HUMMEL connector

Electrical Data

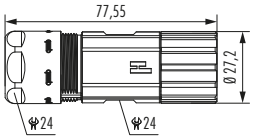
Number of positions	5 + PE	4 + 3 + PE		5 + 3 + PE		10
Number of contacts	6	4	4	5	4	10
Contact-Ø [mm]	2	1	2	1	2	1
Nominal current [1] [A]	28	8	28	10	28	10
Nominal voltage [2] [V~] degree of pollution 3 [3]	600	300	600	250	600	160
Test voltage (Breakdown voltage) [4] [V~]	4000	2500	4000	2500	4000	2500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

Number of positions	4 + 4 + 3 + PE (Hybrid)		
	Ethernet	Signal	Power
Number of contacts	4	4	4
Contact-Ø [mm]	2	1	0,6
AWG [mm²]	0,75 – 4	0,14 – 1	0,08 – 0,34
Nominal current [1] [A]	28	8	2
Nominal voltage [2] [V~] degree of pollution 3 [3]	600	300	60
Test voltage (Breakdown voltage) 4) [V~]	4000	2500	500
Insulation resistance [Ω]	$>10^{13}$	$>10^{10}$	$>10^{6}$
Max. contact resistance [mΩ]	< 3	< 3	< 3

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

Housings

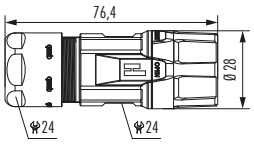
Straight Connector, Female Thread



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

▶ 43 ▶ 44 ▶ 45

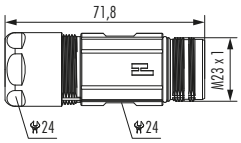
Straight Connector, Female Thread TWILOCK / TWILOCK-S *



Cable-Ø	Part Number
7 – 12 mm (.24 – .47")	7.556.500.000
11 – 17 mm (.43 – .67")	7.556.600.000
* intermateable with Speedtec	
7 – 12 mm (.24 – .47")	7.556.500.00S
11 – 17 mm (.43 – .67")	7.556.600.00S

▶ 43 ▶ 44 ▶ 45

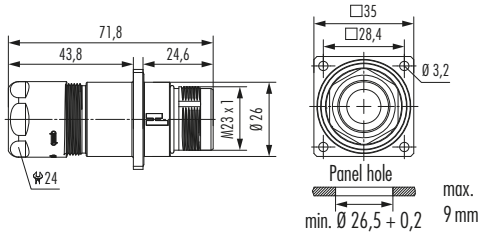
Straight Connector, Male Thread TWILOCK / TWILOCK-S *



Cable-Ø	Part Number
7 – 12 mm (.27 – .47")	7.560.500.000
11 – 17 mm (.43 – .67")	7.560.600.000
* intermateable with Speedtec	
7 – 12 mm (.27 – .47")	7.566.500.00OS
11 – 17 mm (.43 – .67")	7.566.600.00OS

▶ 43 ▶ 44 ▶ 45

Panel Connector, Male Thread, with Strain Relief

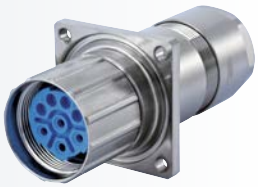


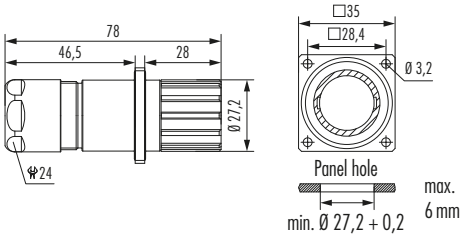
Cable-Ø	Part Number
4 holes Ø 3,2 mm (.13"), front or rear mounting	
7 – 12 mm (.27 – .47")	7.683.500.000
11 – 17 mm (.43 – .67")	7.683.600.000

▶ 43 ▶ 44 ▶ 45

Housing without inserts and contacts

Panel Connector, Female Thread, with Strain Relief

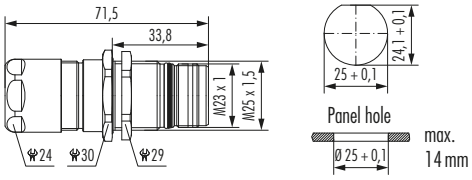




Cable-Ø	Part Number
4 holes Ø 3,2 mm (.13"), front or rear mounting	
7 – 12 mm (.27 – .47")	7.681.500.000
11 – 17 mm (.43 – .67")	7.681.600.000

▶ 43 ▶ 44 ▶ 45

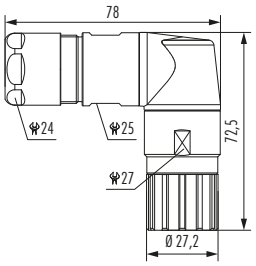
Panel Connector, Male Thread, with Strain Relief TWILOCK / TWILOCK-S *



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

▶ 43 ▶ 44 ▶ 45

Right Angle Connector, Female Thread, rotatable



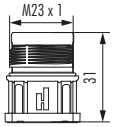
Cable-Ø	Part Number
7 – 12 mm (.27 – .47")	7.576.500.000
11 – 17 mm (.43 – .67")	7.576.600.000

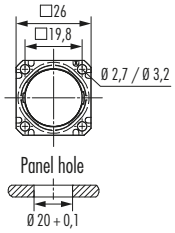
▶ 43 ▶ 44 ▶ 45

Housing without inserts and contacts

Housings

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

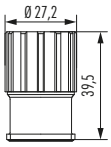


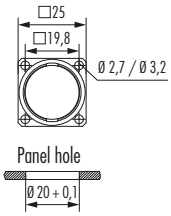


Type	Part Number
4 holes Ø 3,2 mm (.13")	7.601.000.000
4 holes Ø 2,7 mm (.11")	7.605.000.000
* **intermateable with Speedtec**	
4 x holes 3,2 mm, Flange 25x25	7.601.000.00S
4 x holes 3,2 mm, Flange 28x28	7.601.100.00S

▶ 43 ▶ 44 ▶ 45

Panel Connector with knurled Nut, Front Mounting

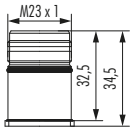


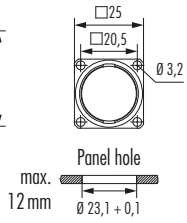


Type	Part Number
4 holes Ø 3,2 mm (.13")	7.641.000.000
4 holes Ø 2,7 mm (.11")	7.645.000.000

▶ 43 ▶ 44 ▶ 45

Panel Connector, Male Thread, Rear Mounting





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

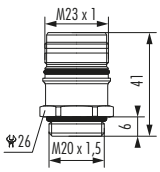
▶ 43 ▶ 44 ▶ 45

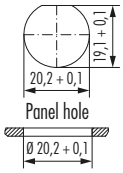
Housing without inserts and contacts

[1] No compatibility with TWILOCK

Housings

Panel Connector, Male Thread, Single Hole Mounted

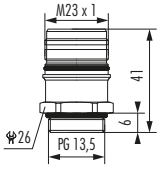


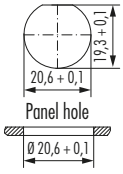


Type	Part Number
Front mounting Thread M 20 x1,5	7.621.000.000 [1]
Option: jam nut M 20 x 1,5	

▶ 43 ▶ 44 ▶ 45

Panel Connector, Male Thread, Single Hole Mounted

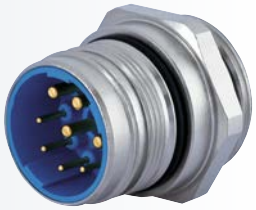


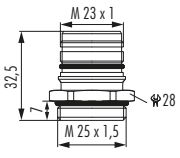


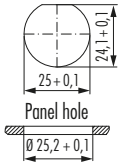
Type	Part Number
Front mounting Thread PG 13,5	7.623.000.000 [1]
Option: jam nut PG 13,5	

▶ 43 ▶ 44 ▶ 45

Panel Connector, Male Thread, Single Hole Mounted



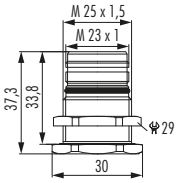


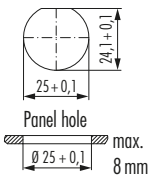


Type	Part Number
Front mounting Thread M 25x1,5	7.626.000.000
Option: jam nut M 25 x 1,5	

▶ 43 ▶ 44 ▶ 45

Panel Connector, Male Thread, Single Hole Mounted





Type	Part Number
Rear mounting Thread M 25 x 1,5	7.651.000.000
Including jam nut M 25 x 1,5	

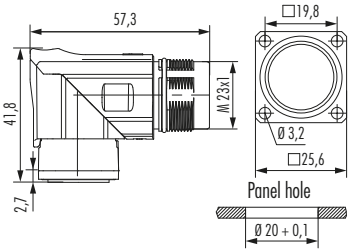
▶ 43 ▶ 44 ▶ 45

Housing without inserts and contacts

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

Housings

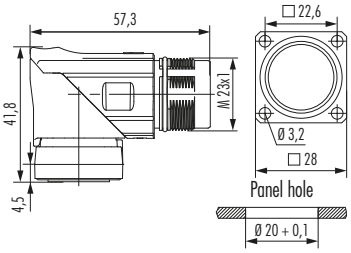
Right Angle Panel Connector, Male Thread, rotatable TWILOCK / TWILOCK-S *



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

▶ 43 ▶ 44 ▶ 45

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

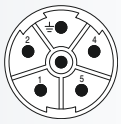
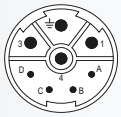
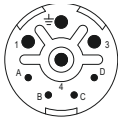
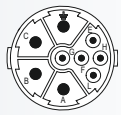
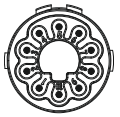


Type	Part Number
330° rotatable, single hole mounted	
4 x holes 3,2 mm (.13“)	7.639.100.000 [1]
Flange 28 x 28 mm, blue passivated	
4 x holes 3,2 mm (.13“)	7.639.100.010 [1]
Flange 28 x 28 mm, nickel plated	
* **intermateable with Speedtec**	
4 x holes 3,2 mm (.13“)	7.639.100.00S [1]
Flange 28 x 28 mm,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

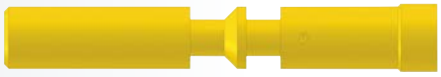
▶ 43 ▶ 44 ▶ 45

Housing without inserts and contacts

Required Contacts

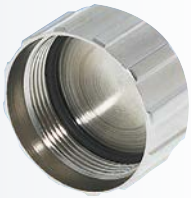
Contact Arrangement, Mating View	Number of Poles	Required Contacts
 crimp pin  crimp socket	6 x crimp pins 2 mm	7.084.951.121
	6 x crimp sockets 2 mm	7.084.951.122
 crimp pin  crimp socket	4 x crimp pins 1 mm, 4 x crimp pins 2 mm	7.084.943.121
	4 x crimp sockets 1 mm, 4 x crimp sockets 2 mm	7.084.943.122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

Contacts

Contacts	Type	Crimp Range	Part Number
	Crimp pin 0,6 mm, machined [1]	0,08 – 0,34 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

Accessories	Type	Part Number
	Plastic protective cap for connectors with **male thread** with **female thread**	 7.000.900.101 7.000.900.102
	**Brass protective cap** for connectors with **female thread**	 7.010.900.183 [1]
	**Brass protective cap** for connectors with **male thread**	 7.010.900.102
	**Brass protective cap with chain** for connectors with **female thread** Length 70 mm Length 100 mm	 7.010.9S0.783 [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 **Locator** for M 23 Power Connectors (separate) **Locator** for M 23 Hybrid-/Power Connectors (separate)	 7.000.900.901 7.000.900.909 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
// Screw lock
// Suitable as maintenance interface

M 23 RJ 45

Product overview

Housings

▶ 50

Accessories

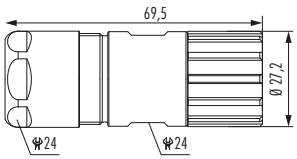
▶ 53

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

[1), 2)] see Technical Information page 14

Housings

Straight Connector Female Thread



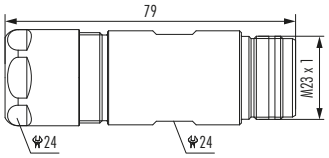
Cable-Ø — Part Number

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

Suitable patch cable and plugs can be recommended.

▶ 53

Straight Connector Male Thread

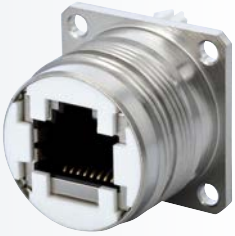


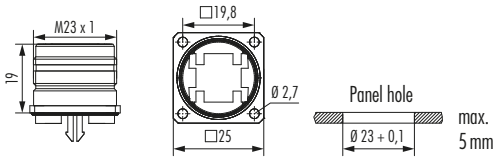
Cable-Ø — Part Number

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

▶ 53

Panel Connector Front Mount, dip solder insert





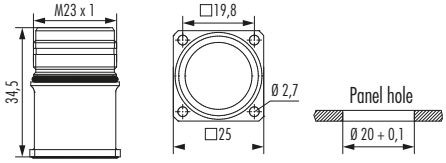
Type — Part Number

4 holes 2.7 mm, Flange 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

▶ 53

Panel Connector, Front Mount



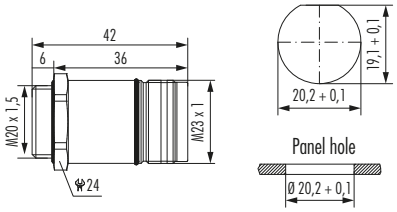
Type — Part Number

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

▶ 53

Housings

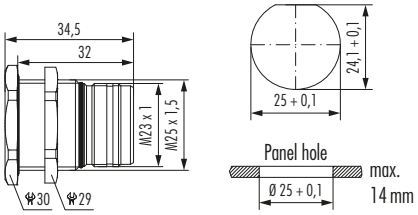
Single Hole Panel Connector



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

▶ 53

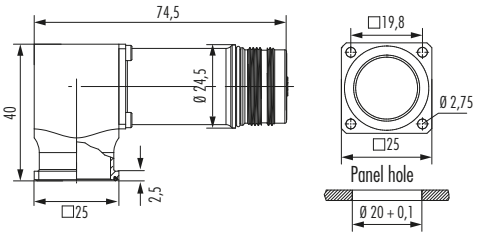
Single Hole Panel Connector



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

▶ 53

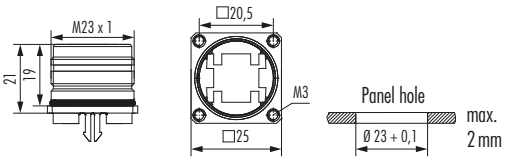
Right Angle Panel Connector, Male Thread



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

▶ 53

Panel Connector Rear Mount, dip solder insert



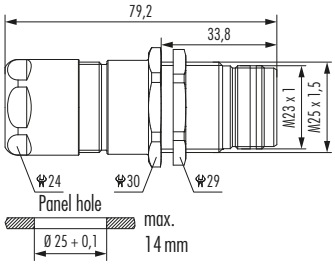
Type	Part Number
4x M 3 thread, Flange	7.R45.008.000
Incl. 8 poles dip solder insert	
4x M 3 thread, Flange	7.R45.082.000
Incl. 8 + 2 poles dip solder insert	

▶ 53

[1] upon request

Housings

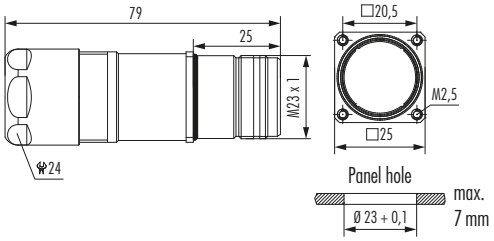
Single Hole Panel Connector with strain relief



Cable-Ø	Part Number
Single Hole, Rear Mount, M 25 x 1,5 thread	
3 – 7 mm (.12 - .28")	7.R52.408.000
Incl. 8 poles coupler, fully occupied	
M 25 x 1,5 Locking Nut included	

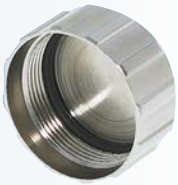
▶ 53

Panel Connector with strain relief



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

▶ 53

Accessories	Type	Part Number
	Plastic protective cap for connectors with **male thread** with **female thread**	 7.000.900.101 7.000.900.102
	**Brass protective cap** for connectors with **female thread**	 7.010.900.183
	**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.

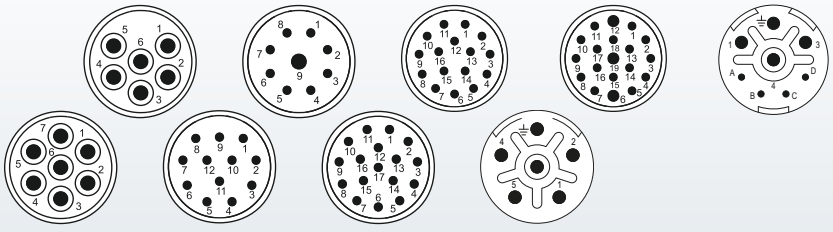
// Signal connectors M 23 INOX
// Power connectors M 23 INOX

STAINLESS STEEL (INOX)

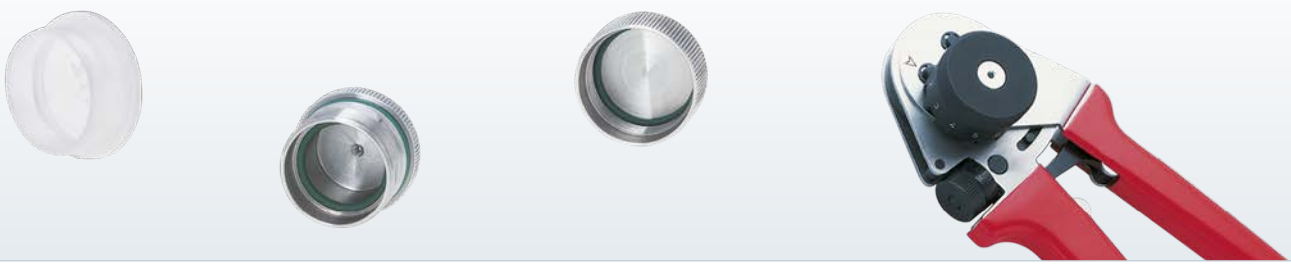
Product overview

Housings ▶ 61

Inserts ▶ 25, 43



Accessories ▶ 61



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), NEMA 4x

Materials and Technical Data

Additional Information

Electrical data see standard program

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

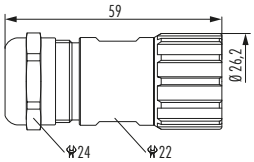
Inserts and contacts see standard program

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

Typical Applications

Housings M 23 Signal

Straight Connector, Female Thread

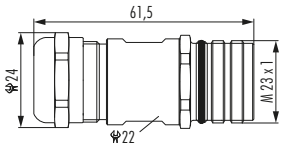


Cable-Ø	Part Number
3 – 7 mm (.12 – .28")	7.141.300.000
5 – 10 mm (.20 – .39")	7.141.400.000
7 – 12 mm (.27 – .47")	7.141.500.000
10 – 14 mm (.39 – .55")	7.141.600.000

Assembly tool 7.010.900.127 is required

▶ 25 ▶ 31 ▶ 32

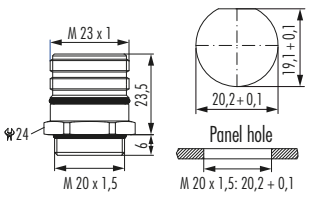
Straight Connector, Male Thread



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

▶ 25 ▶ 31 ▶ 32

Panel Connector, Male Thread, Single Hole Mounted

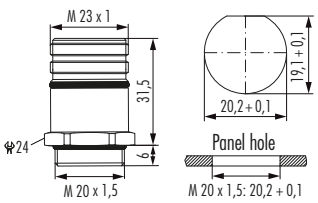


Type	Part Number
Front mounting for male inserts Thread M 20 x1,5	7.420.400.000

* FOR MALE * INSERTS ONLY

▶ 25 ▶ 31 ▶ 32

Panel Connector, Male Thread, Single Hole Mounted



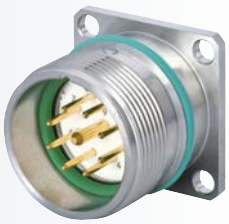
Type	Part Number
Front mounting for female inserts Thread M 20 x1,5	7.421.400.000

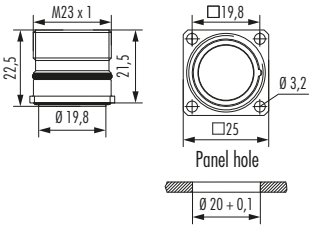
* FOR FEMALE * INSERTS ONLY

▶ 25 ▶ 31 ▶ 32

Housing without inserts and contacts

Panel Connector, Male Thread

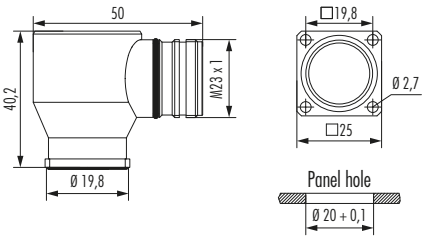




Type	Part Number
With anti-vibration O-Ring	
4 holes Ø 3,2 mm (.13")	7.410.400.000

▶ 25 ▶ 31 ▶ 32

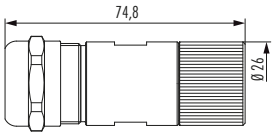
Right Angle Panel Connector, Male Thread



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

▶ 25 ▶ 31 ▶ 32

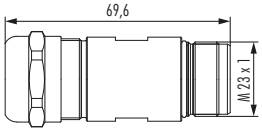
Straight Connector, Female Thread



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

▶ 43 ▶ 44 ▶ 45

Straight Connector, Male Thread



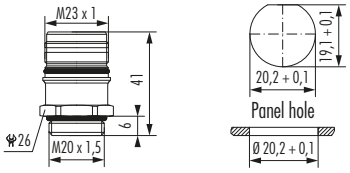
Type	Part Number
7 – 12 mm (.27 – .47")	7.564.500.000
11 – 17 mm (.43 – .67")	7.564.600.000

▶ 43 ▶ 44 ▶ 45

Housing without inserts and contacts

Housings M 23 Power

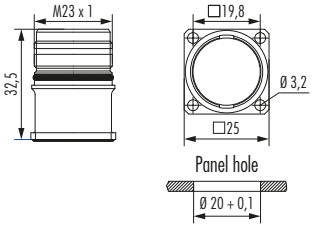
Panel Connector, Male Thread, Single Hole Mounted



Type	Part Number
Front mounting	
Thread M 20 x 1,5	7.621.400.000 [1]
Thread M 25 x 1,5	7.626.400.000

▶ 43 ▶ 44 ▶ 45

Panel Connector, Male Thread

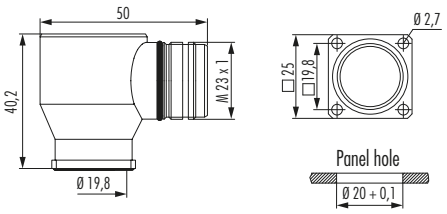


Type	Part Number
For front mounting	
4 holes Ø 3,2 mm (.13“)	7.601.400.000

Optional: Flat gasket

▶ 43 ▶ 44 ▶ 45

Right Angle Panel Connector, Male Thread

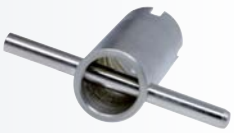
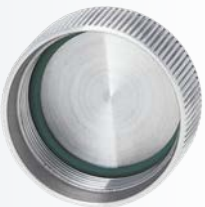


Type	Part Number
4 holes Ø 2,7 mm (.11“)	7.630.400.000

▶ 43 ▶ 44 ▶ 45

Housing without inserts and contacts

[1] No compatibility with TWILOCK

Accessories	Type	Part Number
	**Assembly tool**	7.010.900.127
	**Plastic protective cap** for connectors **M 23 with male thread** for connectors **M 23 with female thread**	 7.000.900.101 7.000.900.102
	**Stainless steel protective cap for M 23 Signal** for connectors with **female thread** **with rope** for connectors with **female thread**, Length 100 mm **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.

Limited Liability

Products, design, colors and dimensions are subject to change without prior notice. We reserve the right to make technical improvements on all our products, currently ordered or for future orders. It is the users responsibility to verify all dimensions and technical data. HUMMEL AG will assume no liability regarding information provided to the user by published literature or inside technical staff, its distributors and outside sales personnel. Errors in the catalog can occur and shall not create any liability whatsoever for HUMMEL AG. All information provided by HUMMEL AG is without guarantee and must be verified by the user.

Imprint

Graphic & Layout:
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

Printer:
Druckerei Furtwängler GmbH, 79211 Denzlingen, Germany, Tel. +49 (0) 76 66 / 13 31. Printed on recycled paper in October 2021.

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

HUMMEL Russia

OOO HUMMEL
Ul. Retschnikow 21, Strojenije 1
115142 Moskau / Russia

Tel. +7 (0) 4 99 / 7 82 40 68
Fax +7 (0) 4 99 / 6 14 67 40
E-Mail info.ru@hummel.com
www.hummel-russia.ru

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
#1711, 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

HUMMEL INTERNATIONAL

ELECTRIC COMPONENTS

Cable Glands

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

Circular Connectors

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

Conduit Systems

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

Cable Assembly

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

www.hummel.com

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

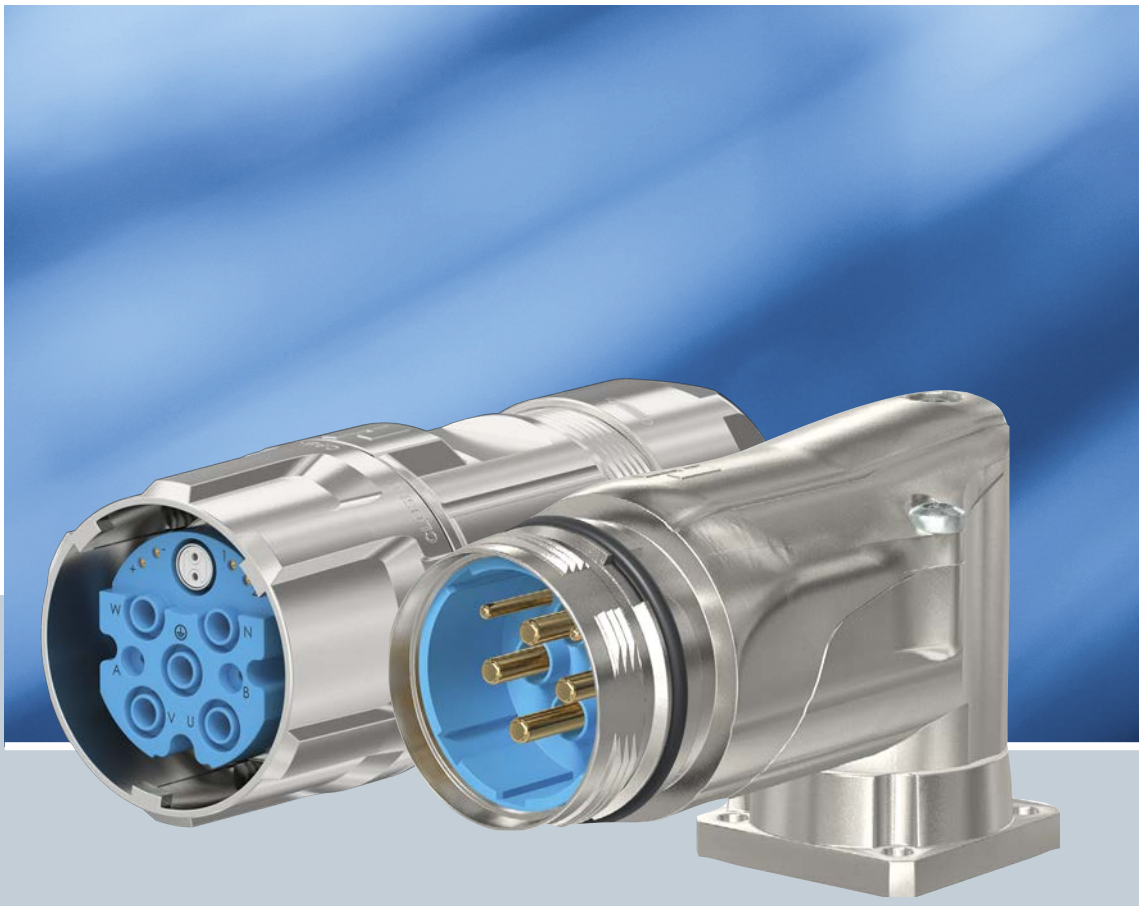
Tel. +49 (0) 76 66 / 9 11 10-0
Fax +49 (0) 76 66 / 9 11 10-20
E-Mail info@hummel.com

KATSV2018GB-1118

HUMMEL

smart & reliable connections

CIRCULAR CONNECTORS M40



POWER // HYBRID

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

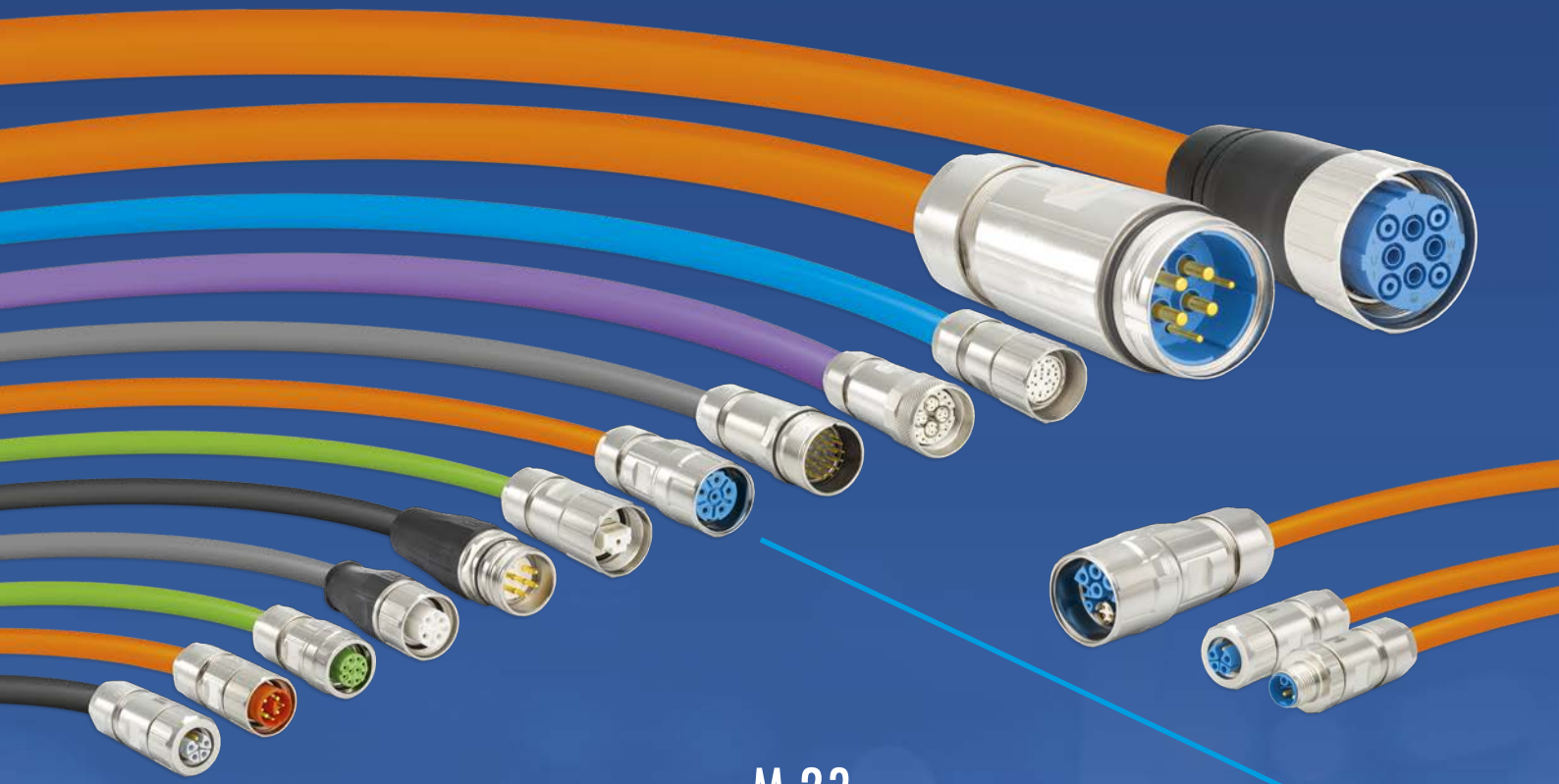

Accessories

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

Signal Connectors

CIRCULAR CONNECTORS

PROFINET

Customized Solutions

Industrial Ethernet

M 16

TWILOCK

M 23 RJ 45

M 40

Moulded Cordsets

M 23 Hybrid

File-No. E 213337

Germanischer Lloyd

RoHS

TWILOCK-S

- // Quick Connect
- // 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-S and screw connection

Locking with a slight rotation or release of the connection

intermateable with SpeedTec

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.

✦

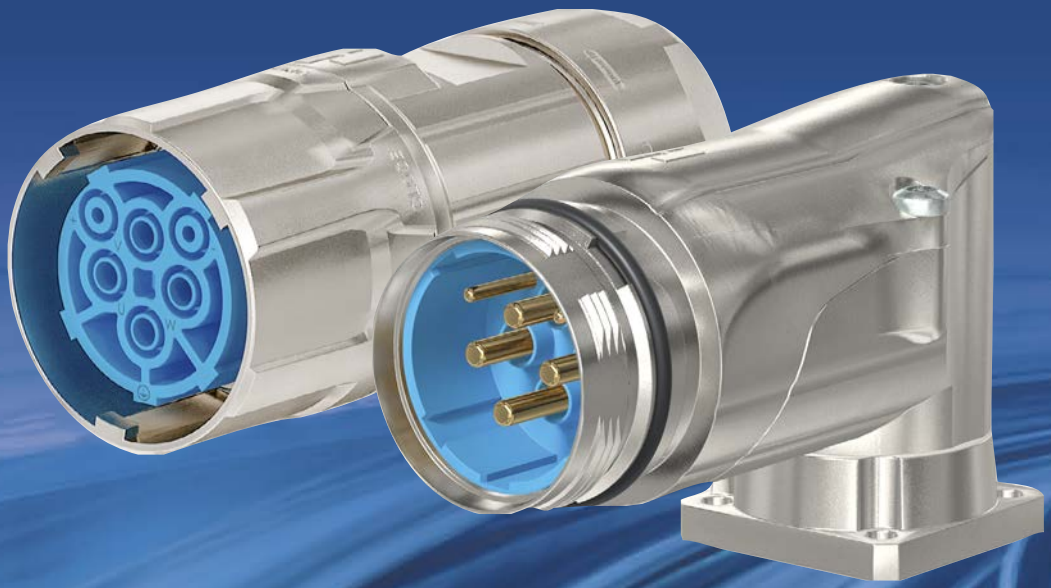
Further information is available on our website:
https://www.hummel.com/de/rundsteckverbinder/technik-center/allgemeine-technische-hinweise

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 40 POWER CONNECTORS (SIZE 1,5)

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

// suitable for requirements with high current
// safe EMC protection
// Screw lock or quick release fastener
// TWILOCK-S: intermateable with SpeedTec

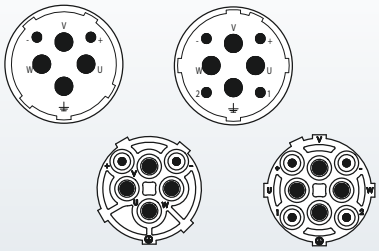


M 40 POWER (SIZE 1,5)

Product overview

Housings with inserts ▶ 12

Inserts ▶ 16



Accessories ▶ 17

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

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

Electrical Data

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

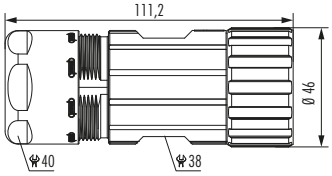
[1), 2), 3), 4)] See Technical Information page 18

M 40 POWER (SIZE 1,5)

Housings with inserts

Straight Connector, Female Thread

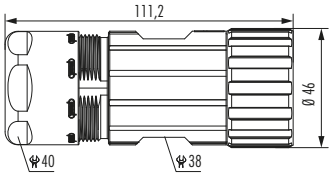
Cable-Ø	Part Number
2 + 3 + PE, insert for sockets	
13 – 18 mm (.51 – .71“)	7.710.623.000
17 – 24 mm (.67 – .97“)	7.710.723.000
21 – 28 mm (.83 – 1.10“)	7.710.823.000

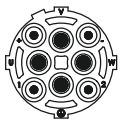


▶ 17 ▸ 18

Straight Connector, Female Thread

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

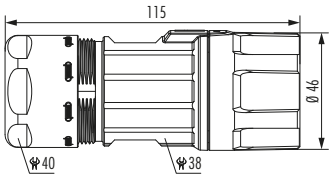




▶ 17 ▸ 18

Straight Connector, Female Thread TWILOCK-S*

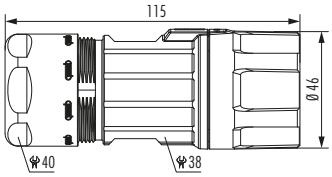
Cable-Ø	Part Number
2 + 3 + PE, insert for sockets	
13 – 18 mm (.51 – .71“)	7.716.623.00S
17 – 24 mm (.67 – .97“)[1]	7.716.723.00S
21 – 28 mm (.83 – 1.10“)	7.716.823.00S

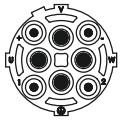


▶ 17 ▸ 18

Straight Connector, Female Thread TWILOCK-S*

Cable-Ø	Part Number
4 + 3 + PE, insert for sockets	
13 – 18 mm (.51 – .71“)	7.716.643.00S
17 – 24 mm (.67 – .97“)	7.716.743.00S
21 – 28 mm (.83 – 1.10“	7.716.843.00S





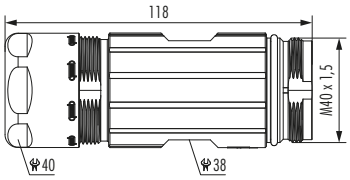
▶ 17 ▸ 18

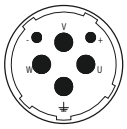
* intermateable with SpeedTec

[1] No compatibility with TWILOCK

Housings with inserts

Straight Connector, Male Thread TWILOCK-S *





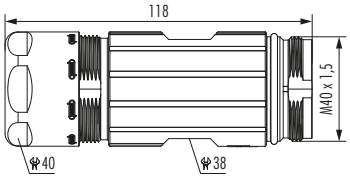
Cable-Ø / Part Number

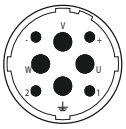
2 + 3 + PE, insert for pins

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

▶ 17 ▸ 18

Straight Connector, Male Thread TWILOCK-S *





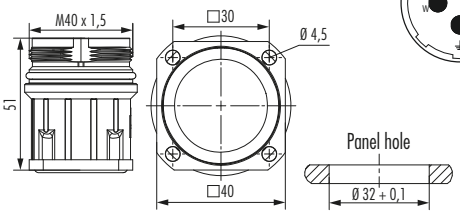
Cable-Ø / Part Number

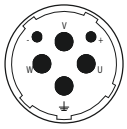
4 + 3 + PE, insert for pins

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

▶ 17 ▸ 18

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





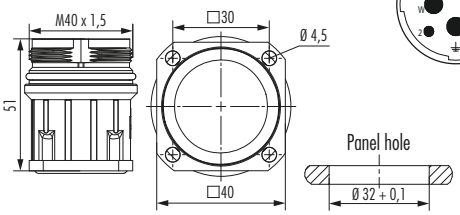
Type / Part Number

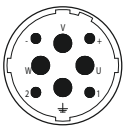
2 + 3 + PE, insert for pins

4 x Bohr. 4,5 mm 7.740.023.00S

▶ 17 ▸ 18

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





Type / Part Number

4 + 3 + PE, insert for pins

4 x Bohr. 4,5 mm 7.740.043.00S

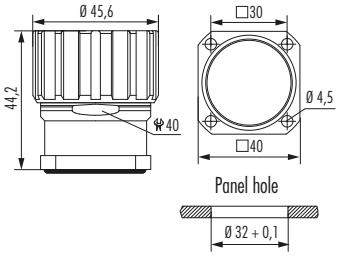
▶ 17 ▸ 18

* intermateable with SpeedTec

Housings with Inserts

Panel Connector with knurled Nut, Front Mounting

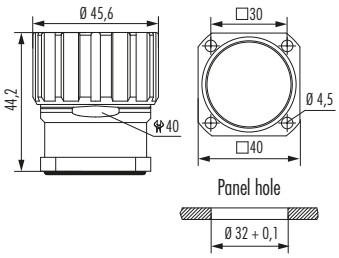
Type	Part Number
2 + 3 + PE, insert for sockets 4 holes Ø 4,5 mm (.18“)	7.744.023.000

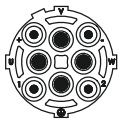


▶ 17 ▸ 18

Panel Connector with knurled Nut, Front Mounting

Type	Part Number
4 + 3 + PE, insert for sockets 4 holes Ø 4,5 mm (.18“)	7.744.043.000

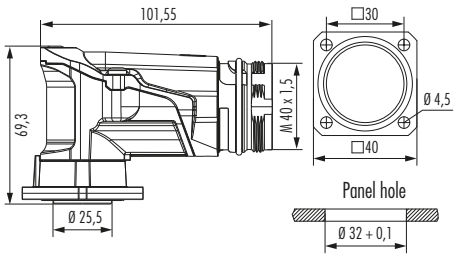


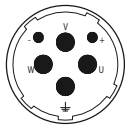


▶ 17 ▸ 18

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

Type	Part Number
2 + 3 + PE, insert for pins 4 holes Ø 4,5 mm (.18“)	7.749.023.00S

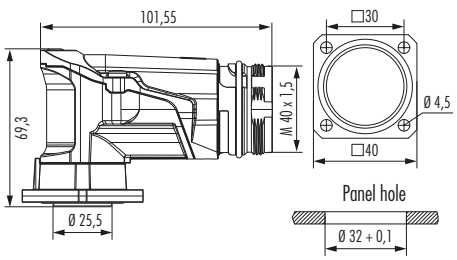


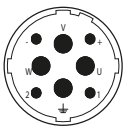


▶ 17 ▸ 18

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

Type	Part Number
4 + 3 + PE, insert for pins 4 holes Ø 4,5 mm (.18“)	7.749.043.00S



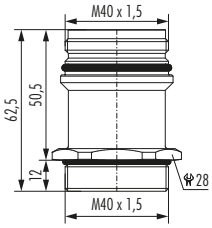


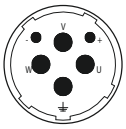
▶ 17 ▸ 18

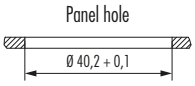
* intermateable with SpeedTec

Panel Connector, Male Thread, Single Hole Mounting

Type	Part Number
Front mounting, 2 + 3 + PE, insert for pins Thread M 40 x 1,5	7.742.023.000



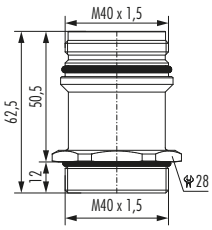


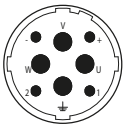


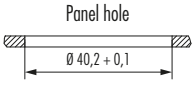
▶ 17 ▸ 18

Panel Connector, Male Thread, Single Hole Mounting

Type	Part Number
Front mounting, 4 + 3 + PE, insert for pins Thread M 40 x 1,5	7.742.043.000



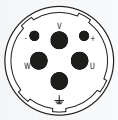
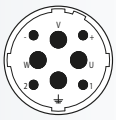
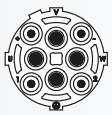




▶ 17 ▸ 18

M 40 POWER (SIZE 1,5)

Inserts

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

Standard delivery of M 40 Hybrid Power Connector include Contact insert.

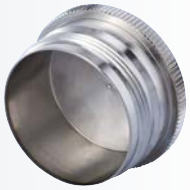
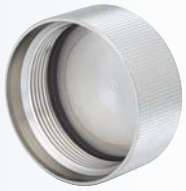
M 40 POWER (SIZE 1,5)

Contacts

Contacts	Type	Crimp Range	Part Number
	Crimp pin 2 mm, machined	0,25 – 1 mm² (AWG 24 – 17)	7.015.952.003
	Crimp pin 2 mm, machined	1 – 4 mm² (AWG 17 – 12)	7.015.952.001
	Crimp socket 2 mm, machined	0,25 – 1 mm² (AWG 24 – 17)	7.015.952.004
	Crimp socket 2 mm, machined	1 – 4 mm² (AWG 17 – 12)	7.015.952.002
	Crimp pin 3,6 mm, machined	1,5 – 4 mm² (AWG 16 – 12)	7.015.953.601
	Crimp socket 3,6 mm, machined	1,5 – 4 mm² (AWG 16 – 12)	7.015.953.602
	Crimp pin 3,6 mm, machined	6 mm² (AWG 10)	7.015.953.611
	Crimp socket 3,6 mm, machined	6 mm² (AWG 10)	7.015.953.612
	Crimp pin 3,6 mm, machined	AWG 8	7.015.953.621
	Crimp pin 3,6 mm, machined	10 mm²	7.015.953.623
	Crimp socket 3,6 mm, machined	AWG 8	7.015.953.622
	Crimp socket 3,6 mm, machined	10 mm²	7.015.953.624
	Crimp pin 3,6 mm, machined	16 mm² (AWG 6)	7.015.953.631
	Crimp socket 3,6 mm, machined	16 mm² (AWG 6)	7.015.953.632

M 40 POWER (SIZE 1,5)

Contacts

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

[1] No compatibility with TWILOCK

Accessories	Type	Part Number
	**Adapter for Conduit Fittings** Poleon DN 23	7.010.900.215
	Poleon DN 29	7.010.900.217
	**Manual crimp tool** machined crimp contacts until 10 mm² (AWG 8) for power connectors battery pack crimp tool for connectors M 40 (European market only)	7.000.900.920
	crimping unit for crimp tool	7.000.900.919
	locator for 3,6 mm contacts at crimp tool	7.010.900.153
	assembly instructions online: www.hummel.com	
	**Crimp tool** for manual crimping of machined crimp contacts 16 mm² (AWG 6)	7.000.900.903

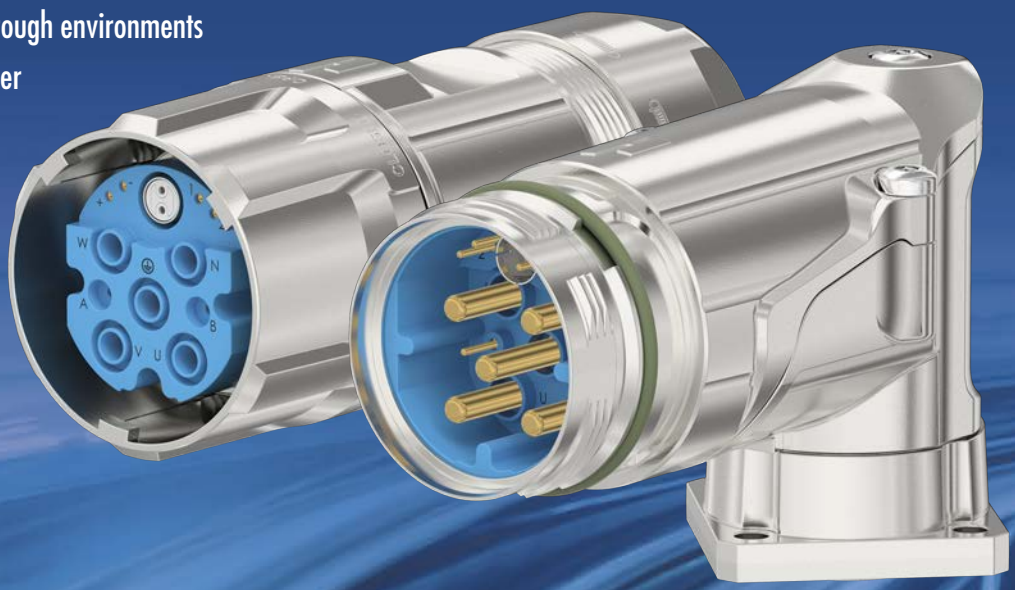
M 40 POWER (SIZE 1,5)

M 40 POWER CONNECTORS (SIZE 1,5) HYBRID

The M 40 Hybrid combines the power of the standard series with the versatility of a hybrid connector. This circular connector transmits power up to 55 A and parallel data rates up to 100 Mbit/s.

A special feature are the high electrical characteristics of the signal contacts A/B. They enable users in servo technology to achieve transmission rates of up to 300 V/7 A for brakes.

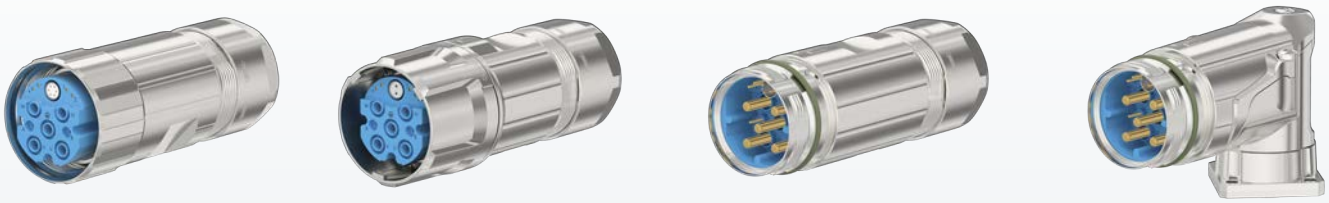
// compact and robust design
// absolute industrial suitability for rough environments
// Screw lock or quick release fastener



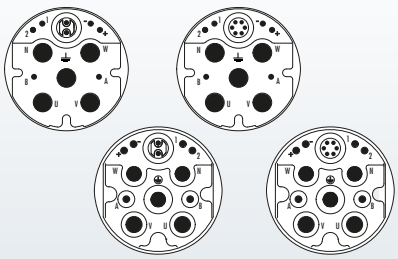
M 40 HYBRID (SIZE 1,5)

Product overview

Housings with inserts ▶ 24



Inserts ▶ 25



Accessories ▶ 27

Mechanical Data

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

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

Electrical Data M 40 HYBRID

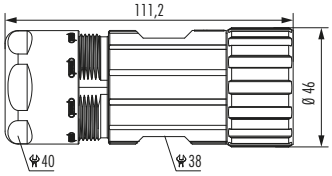
Number of positions	Power	Signal	Ethernet
Number of contacts	4 + PE	4 + **2**	2 / 6
Contact-Ø [mm]	3,6 mm	1 mm	1 / 0,6 mm
AWG [mm2]	1,5 – 10 mm^2	0,14 – 1,5 mm^2	0,14 – 1,5 / 0,05 – 0,34 mm^2
Nominal current [1] [A]	55	7	2 / 1,2
Nominal voltage [2] [V~] degree of pollution 3 [3]	630 AC, 850 DC	150 / **300**	30
Test voltage (Breakdown voltage) [4] [V~]	4000	500 / **1500**	500
Data transfer	–	–	Cat5e / Cat5
Insulation resistance [Ω]	> 10^{13}	> 10^{13}	> 10^{13}
Max. contact resistance [mΩ]	3 1	3 1	3 1

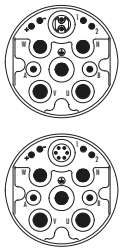
[1), 2), 3), 4)] See Technical Information page 8

M 40 HYBRID (SIZE 1,5)

Housings with inserts

Straight Connector, Female Thread

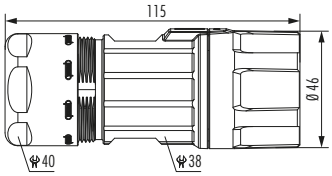


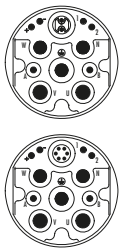


Cable-Ø	Part Number
2 + 6 + 4 + PE, insert for sockets	
13 – 18 mm (.51 – .71")	7.710.662.000
17 – 24 mm (.67 – .97")	7.710.666.000
21 – 28 mm (.83 – 1.10")	7.710.862.000
6 + 6 + 4 + PE, insert for sockets	
13 – 18 mm (.51 – .71")	7.710.762.000
17 – 24 mm (.67 – .97")	7.710.766.000
21 – 28 mm (.83 – 1.10")	7.710.866.000

▶ 26 ▸ 27

Straight Connector, Female Thread TWILOCK-S*

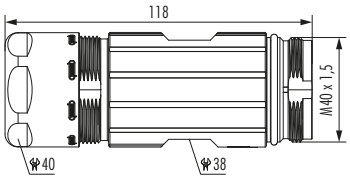


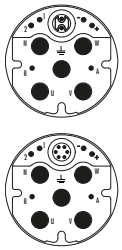


Cable-Ø	Part Number
2 + 6 + 4 + PE, insert for sockets	
13 – 18 mm (.51 – .71")	7.716.662.00S
17 – 24 mm (.67 – .97")	7.716.762.00S
21 – 28 mm (.83 – 1.10")	7.716.862.00S
6 + 6 + 4 + PE, insert for sockets	
13 – 18 mm (.51 – .71")	7.716.666.00S
17 – 24 mm (.67 – .97")	7.716.766.00S
21 – 28 mm (.83 – 1.10")	7.716.866.00S

▶ 26 ▸ 27

Straight Connector, Male Thread TWILOCK-S**

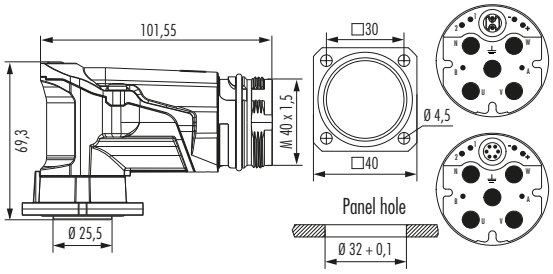




Cable-Ø	Part Number
2 + 6 + 4 + PE, insert for pins	
13 – 18 mm (.51 – .71")	7.720.662.00S
17 – 24 mm (.67 – .97")	7.720.762.00S
21 – 28 mm	7.720.862.00S
6 + 6 + 4 + PE, insert for pins	
13 – 18 mm (.51 – .71")	7.720.666.00S
17 – 24 mm (.67 – .97")	7.720.766.00S
21 – 28 mm (.83 – 1.10")	7.720.866.00S

▶ 26 ▸ 27

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



Type	Part Number
2 + 6 + 4 + PE, insert for pins	
13 – 18 mm (.51 – .71")	7.749.062.00S
6 + 6 + 4 + PE, insert for pins	
13 – 18 mm (.51 – .71")	7.749.066.00S

▶ 26 ▸ 27

* intermateable with SpeedTec

** intermateable with HUMMEL, through 2 additional and powerful signal pins in HUMMEL specific contact arrangement

Contact Arrangement, Mating View	Number of Poles	Required Contacts
	Insert for pins 2 + 6 + 4 + PE	8 x crimp pins 1 mm 5 x crimp pins 3,6 mm
	Insert for sockets 2 + 6 + 4 + PE	8 x crimp sockets 1 mm 5 x crimp sockets 3,6 mm
	Insert for pins 6 + 6 + 4 + PE	6 x crimp pins 0,6 mm 6 x crimp pins 1 mm 5 x crimp pins 3,6 mm
	Insert for sockets 6 + 6 + 4 + PE	6 x crimp sockets 0,6 mm 6 x crimp sockets 1 mm 5 x crimp sockets 3,6 mm

Standard delivery of M 40 Hybrid Power Connector include Contact insert.

M 40 HYBRID (SIZE 1,5)

Contacts

Contacts	Type	Crimp Range	Part Number
	Crimp pin 0,6 mm, machined	0,05 – 0,34 mm² (AWG 30 – 22	7.010.960.611
	Crimp socket 0,6 mm, machined	0,05 – 0,34 mm² (AWG 30 – 22)	7.010.960.612
	Crimp pin 1 mm, machined Crimp pin 1 mm, machined	0,14 – 1 mm² (AWG 26 – 18) 0,75 – 1,5 mm² (AWG 20 – 16)	7.015.961.001 7.015.961.011
	Crimp socket 1 mm, machined Crimp socket 1 mm, machined	0,14 – 1 mm² (AWG 26 – 18) 0,75 – 1,5 mm² (AWG 20 – 16)	7.015.961.002 7.015.961.012
	Crimp pin 3,6 mm, machined Crimp pin 3,6 mm, machined Crimp pin 3,6 mm, machined Crimp pin 3,6 mm, machined	1,5 – 4 mm² (AWG 16 – 12) 6 – 6 mm² (AWG 10) 10 – 10 mm² (AWG 8) 16 – 16 mm² (AWG 6)	7.015.963.601 7.015.963.611 7.015.963.621 7.015.963.631
	Crimp socket 3,6 mm, machined Crimp socket 3,6 mm, machined Crimp socket 3,6 mm, machined Crimp socket 3,6 mm, machined	1,5 – 4 mm² (AWG 16 – 12) 6 – 6 mm² (AWG 10) 10 – 10 mm² (AWG 8) 16 – 16 mm² (AWG 6)	7.015.963.602 7.015.963.612 7.015.963.622 7.015.963.632

Accessories

Accessories	Type	Crimp Range	Part Number
	**Adapter for Conduit Fittings**		
	Poleon DN 23		7.010.900.215
	Poleon DN 29		7.010.900.217
	**Crimp tool** for manual crimping machined crimp contacts until 10 mm² (AWG 8) for power connectors		
	battery pack crimp tool for connectors M 40 (European market only)		7.000.900.920
	crimping unit for 2mm contacts battery pack crimp tool (7.015.952.003/7.015.952.004)		7.000.900.918
	locator for 2 mm contacts battery pack crimp tool		7.010.900.156
	assembly instructions online: www.hummel.com		
	**Crimp tool** for manual crimping of machined crimp contacts 16 mm² (AWG 6)		7.000.900.903
	**Crimp tool** for 0,6mm contacts and 1mm contacts Hybrid²		7.000.900.909
	locator for this crimp tool		7.010.900.158

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
#1711, 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

Limited Liability

Imprint

Graphic & Layout:
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

Printer:
Druckerei Furtwängler GmbH, 79211 Denzlingen, Germany, Tel. +49 (0) 76 66 / 13 31. Printed on recycled paper in July 2024.

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

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 info@hummel.com

KATM40_2024GB-0724

smart & reliable connections

HYBRID SOLUTIONS

ALL-IN-ONE: POWER, SIGNAL AND ETHERNET

Hybrid solutions save time, space and money

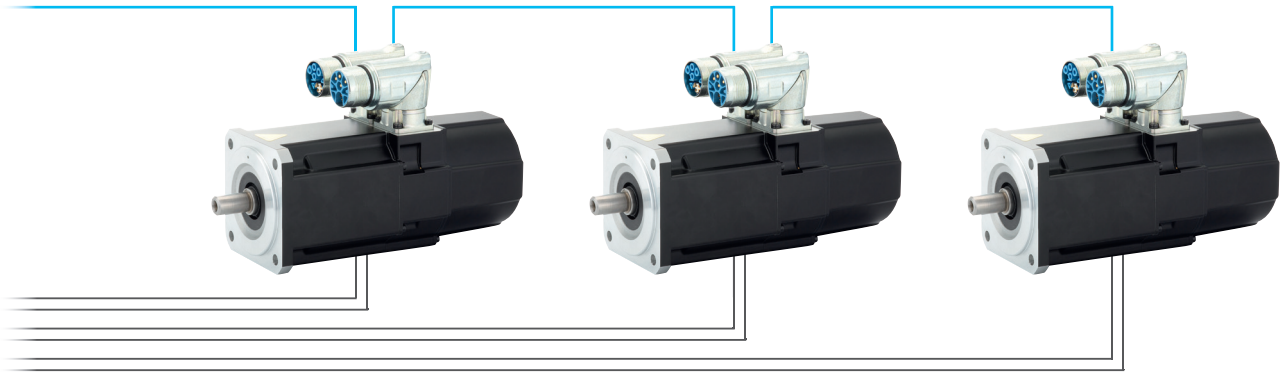
Single-cable solutions with hybrid connectors (OCT – One Cable Technology) are becoming increasingly important in automation and robotics. They transmit power, signals and Ethernet in a single connection. This saves assembly time, space and money. HUMMEL's connectors are characterized by their absolute suitability for industrial applications. Metal housings protect the impact-sensitive contact inserts safely and reliably. The various housings, inserts and contacts can be combined and thus offer a large number of variants.

Hybrid solutions

// Reduced number of connectors
// Reduced assembly effort
// UL and VDE approvals
// Mechanical protection of the contact inserts
// Additional option: Combining different cables into one connector (multi-use)

One Cable Technology (Daisy Chain)

// Reduced number of cables
// Reduced cabling complexity
// Less weight, less space
// Shorter assembly time

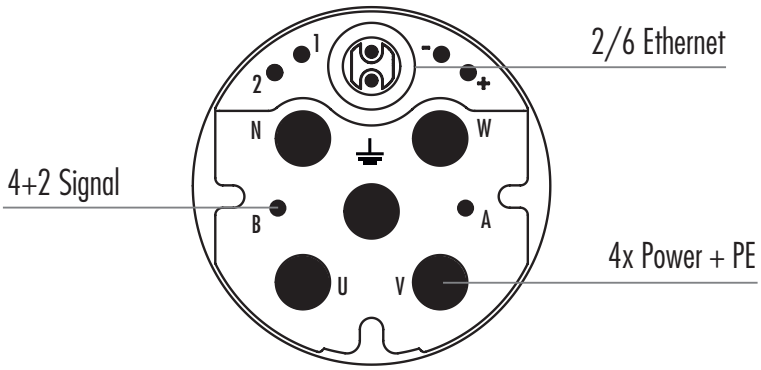


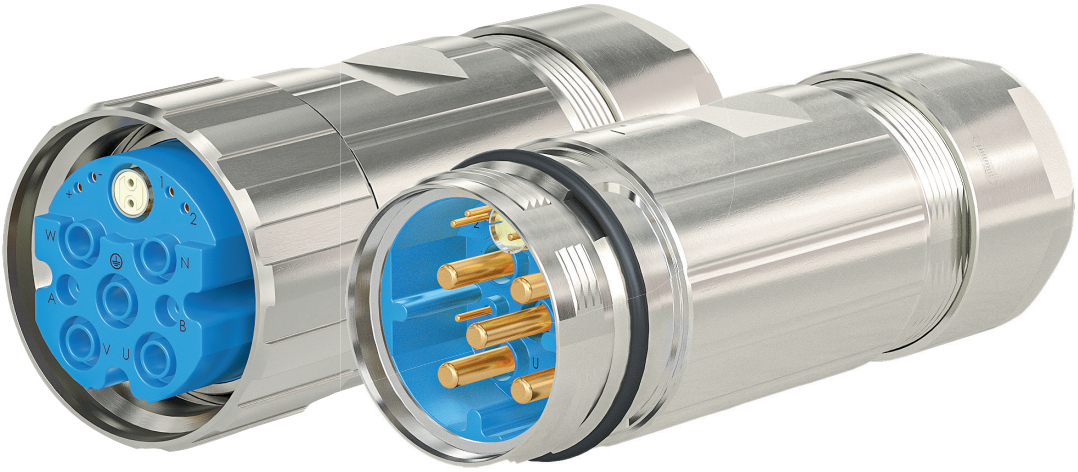
Conventional cabling

The robust power pack

The M 40 Hybrid combines the power of the standard series with the versatility of a hybrid connector. This circular connector transmits power up to 55 A and data rates up to 100 Mbit/s in parallel. A special feature is the high electrical characteristics of the signal contacts. They enable servo technology users to realize transmission rates of up to 300 V/8 A for brakes.

// Compact and robust design
// Absolute industrial suitability for harsh environments
// Screw or quick-lock fastener
// TWILOCK-S: Female side intermateable with Speedtec





Electrical Data

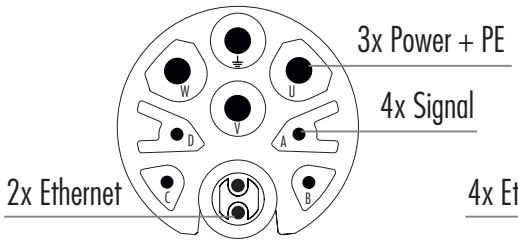
	Power	Signal	Ethernet
Number of contacts	4+PE	4+2	2 / 6
Contact diameter	3.6 mm	1 mm	1/0.6 mm
AWG	8-16	16-26	16-26 / 22-30
Nominal current	55 A	7 A	2/1.2 A
Nominal voltage	630 AC 850 DC	150/300 V~	30 V~
Test voltage	4000 V~	500/1500 V~	500 V~
Data transfer	–	–	Cat5e

The powerful all-in-one solution

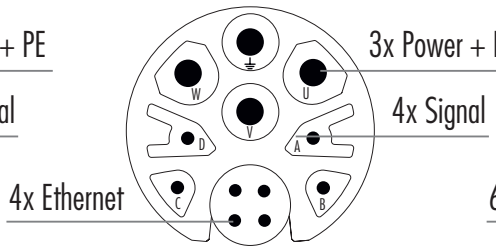
The M 23 Hybrid is the compact all-in-one solution for power, Fast Ethernet and signal transmission. The connector transmits data > 500 Mbit/s with high power density. This makes the M 23 Hybrid the ideal solution for single cable applications in automation and robotics.

// Numerous housing types
// Screw or quick-lock fastener
// Modular design offers many variants
// TWILOCK
// PVVA / PVVA7: E494488

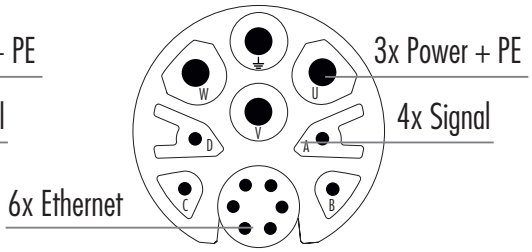
Type 1 (2+4+3+PE)



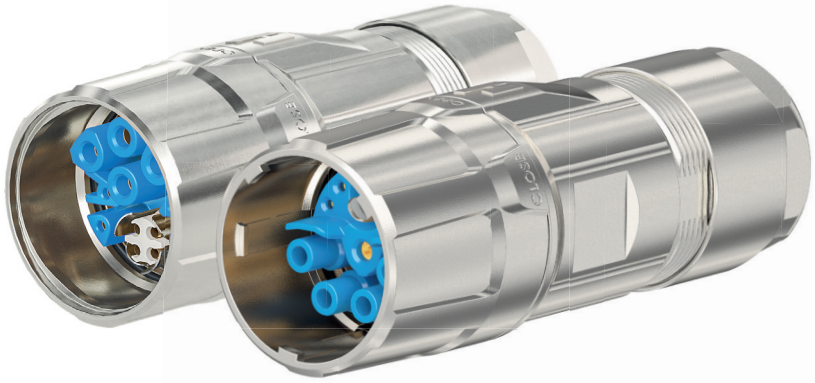
Type 1 (4+4+3+PE)



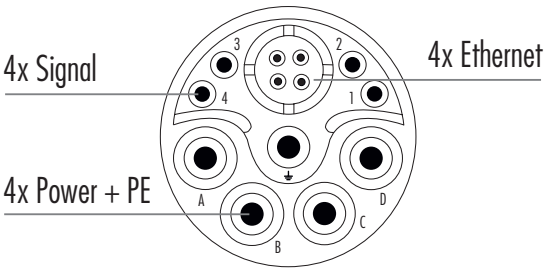
Type 1 (6+4+3+PE)



Type 1 Type 2



Type 2 (4+4+4+PE)



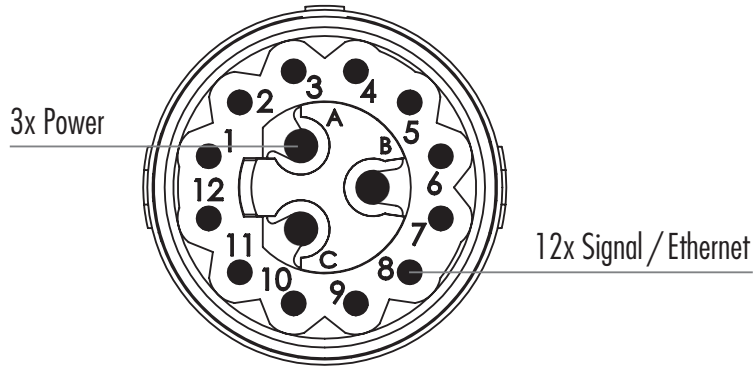
Electrical Data

	Type 1			Type 2		
	Power	Signal	Ethernet	Power	Signal	Ethernet
Number of contacts	3+PE	4	2 / 4 / 6	4+PE	4	4
Contact diameter	2 mm	1 mm	1 / 0,6 / 0,6 mm	2 mm	1 mm	0,8 mm
AWG	12-20	16-26	16-26 / 22-30 / 22-30	12-20	16-26	22-30
Nominal current	28 A	8 A	2 / 1,2 / 1,2 A	28 A	8 A	2 A
Nominal voltage	600 AC 850 DC	300 V~	60 / 60 / 30 V~	600 AC 850 DC	50 V~	50 V~
Test voltage	4000 V~	2500 V~	500 V~	3310 V~	500 V~	500 V~
Data transfer	–	–	Cat5e	–	–	Cat5e

The proven and compact connection

The M 16 connector (12+3) offers a proven solution with power processing up to 12 A and a data transfer rate of up to 100 Mbit/s. The user receives a compact connection solution with attractive performance.

// Proven and compact solution
// Power processing up to 12 A
// Low space requirement, low weight
// Perfect for narrow installation space and small devices



Electrical Data

	Power	Signal / Ethernet
Number of contacts	3	12
Contact diameter	1.25 mm	0.8 mm
AWG	16-20	22-30
Nominal current	12 A	3 A
Nominal voltage	60 V~	24 V~
Test voltage	2500 V~	1500 V~
Data transfer	–	Cat5e

The Industrial Ethernet solutions

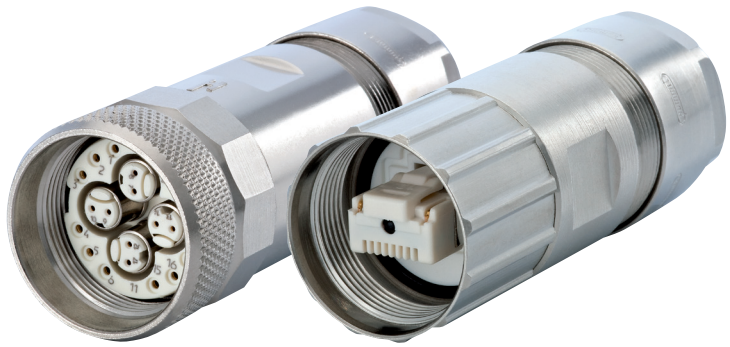
The M23 RJ45 and M23 Profinet connector series ideally complement the HUMMEL Industrial Ethernet range. These two connection solutions are proven variants suitable for industrial applications for transmitting high data rates in automation and robotics. They are available in numerous housing designs. The robust metal housing provides reliable mechanical protection for the impact-sensitive contact inserts even in harsh environments.

M 23 Profinet

// Data transmission up to the gigabit range
// Five separate shield potentials
// Secure data transfer without crosstalk
// Four shielded Twinax inserts
// Twelve additional positions for signal or power

M 23 RJ 45

// Robust metal housing for RJ 45 patch cable
// Industrial use of common network cables
// Protection class IP 67 (connected)
// Suitable for continuous operation or maintenance interface
// Different designs for a wide range of applications



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

Tel. +49 (0) 76 66 / 9 11 10-300
Fax +49 (0) 76 66 / 9 11 10-9420
E-Mail info@hummel.com

FLYHYBRID2024GB-0624

HUMMEL

smart & reliable connections

COMPACT AND POWERFUL

TWINTUS

smart & reliable connections

TWINTUS

Connector for small drives

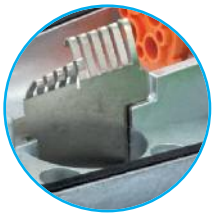
Effective solutions for automation and drives

HUMMEL TWINTUS is the cost effective connector for energy effizient servo drives.
TWINTUS is the answer to the miniaturization in the automation and driver sector.

// Minimized Size
// Designs M 16 + M 16 & M 16 + M 12
// Free choice of Signal and Power Inserts
// Colour coded inserts
// Flange 25 x 25 & 20 x 20
// Protection Class IP 67, IP 69K

Colour coded inserts
(DESINA colour code)

IP 67 self sealing, even for
threaded holes



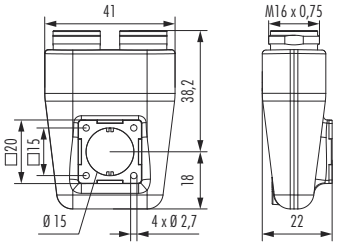
Optional EMC-sheet for separating
signal and power areas

Version M 16 / M 12 available

Housings

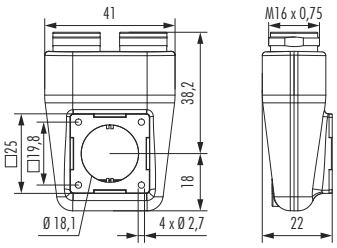
TWINTUS

Type	Part Number
Flange 20 x 20 mm	
Uncoated	7.848.000.000
Surface nickel plated	7.848.000.001
Surface black conductive	7.848.000.00B



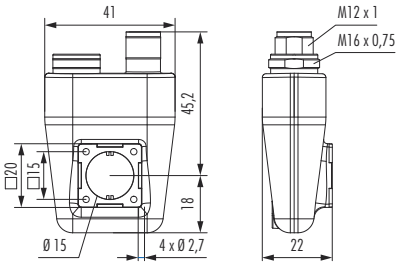
TWINTUS

Type	Part Number
Flange 25 x 25 mm	
Uncoated	7.848.100.000
Surface nickel plated	7.848.100.001
Surface black conductive	7.848.100.00B



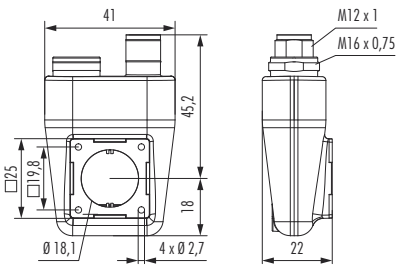
TWINTUS M 16 / M 12

Type	Part Number
Flange 20 x 20 mm	
Uncoated	7.848.200.000
Surface nickel plated	7.848.200.001
Surface black conductive	7.848.200.00B



TWINTUS M 16 / M 12

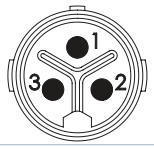
Type	Part Number
Flange 25 x 25 mm	
Uncoated	7.848.300.000
Surface nickel plated	7.848.300.001
Surface black conductive	7.848.300.00B



Housing without inserts and contacts

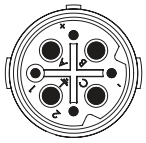
Inserts

3 (without contacts)



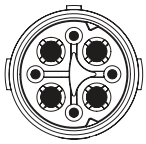
Type	Part Number
Male (3 x 1 mm)	7.003.903.101
Female (3 x 1 mm)	7.003.903.102
Male (3 x 2 mm)	7.003.983.101
Female (3 x 2 mm)	7.003.983.102

4 + 3 + PE (without contacts)



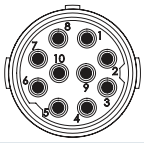
Type	Part Number
Male	7.003.943.101
Female	7.003.943.102
Male, RAL 2003 (DESINA orange)	7.053.943.101
Femalw, RAL 2003 (DESINA orange)	7.053.943.102

4 + 3 + PE 630 V (without contacts)



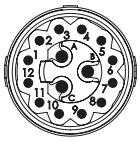
Type	Part Number
Male	7.003.908.101
Female	7.003.908.102
Male, RAL 2003 (DESINA orange)	7.053.908.101
Female, RAL 2003 (DESINA orange)	7.053.908.102

10 (without contacts)



Type	Part Number
Male	7.003.910.101
Female	7.003.910.102
Male, RAL 6018 (DESINA green)	7.053.910.101
Female, RAL 6018 (DESINA green)	7.053.910.102

12 + 3 (without contacts)



Type	Part Number
Male	7.003.985.101
Female	7.003.985.102
Male, RAL 6018 (DESINA green)	7.053.985.101 *
Female, RAL 6018 (DESINA green)	7.053.985.102 *

18 (without contacts)

Type	Part Number
Male	7.003.988.101
Female	7.003.988.102
Male, RAL 6018 (DESINA green)	7.053.988.101 *
Female, RAL 6018 (DESINA green)	7.053.988.102 *

8-pole insert pin for Twintus M16/M12

Type	Part Number
Male, solder contacts	A712-7001908103

12-pole insert pin for Twintus M16/M12

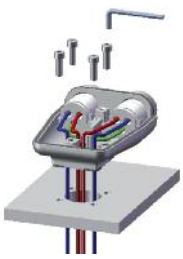
Type	Part Number
Male, solder contacts	A712-7001912103

* upon request

Technical Data

Mechanical Data	Materials and Technical Data
Housing	Die Cast
Housing surface	Nickel plated other surface upon request
Inserts (for contacts)	Thermoplastic Polyamid PA 6 (Nylon 6/6), PBT Fire protection class V-0
Contacts	Brass Alloy
Contact surface at point of contact	Nickel and gold plated (0,25 µm)
Minimum mating cycles	> 1000 (HUMMEL to HUMMEL connector)
Seals / O-Rings	Buna-N standard, optional Viton® (Viton is a registered trademark of DuPont)
Temperature range	-40 °C – 125 °C (-40 °F – 257 °F)
Type of contacts	Crimp, Solder
Protection	IP 67 / IP 69K per EN 60 529 (connected)
Cable diameter range	3 – 11 mm (.08 – .43")






Electrical Data

Number of positions	3 (3 x 1 mm)	3 (3 x 2 mm)	4 + 3 + PE / 320 V		4 + 3 + PE / 630 V	
Number of contacts	3	3	4	4	4	4
Contact-Ø [mm]	1	2	0,8	1,6	0,8	1,25
AWG [mm²]	0,14 – 1	0,5 – 2,5	0,08 – 0,34	0,34 – 1,5	0,08 – 0,34	0,5 – 1,5
Nominal current [A]	8	20	5	16	5	16
Nominal voltage [V~] degree of protection 3	400	400	160	320	300	630
Test voltage (Breakdown voltage) [V~]	2500	2500	1500	2500	1500	2500
Insulation resistance [Ω]	$>10^{10}$	$>10^{10}$	$>10^{10}$		$>10^{10}$	
Max. contact resistance [mΩ]	3	3	3		3	3

Number of positions	6+PE	10	12 + 3		18
Number of contacts	7	10	12	3	18
Contact-Ø [mm]	1,25	1	0,8	1,25	0,8
AWG [mm²]	0,5 – 1,5	0,14 – 0,75	0,08 – 0,34	0,5 – 1,5	0,08 – 0,34
Nominal current [A]	16	8	3	10	3
Nominal voltage [V~] degree of protection 3	630	160	24	60	24
Test voltage (Breakdown voltage) [V~]	2500	1500	1500	2500	1500
Insulation resistance [Ω]	$>10^{10}$	$>10^{6}$	$>10^{10}$		$>10^{10}$
Max. contact resistance [mΩ]	3	3	3	3	3

ELECTRIC COMPONENTS

Cable Glands

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

Circular Connectors

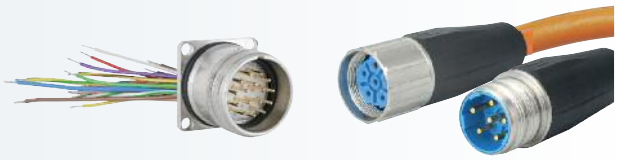
M 8 to M 40, INOX, TWILOCK, Industrial Ethernet,
Power, Signal, Hybrid-Connector, Moulded Cordsets

Cable Protection

Corrugated Conduit Systems, Conduit Cable Glands, Angled Systems,
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 info@hummel.com

HUMMEL 0318