

Signal Connectors



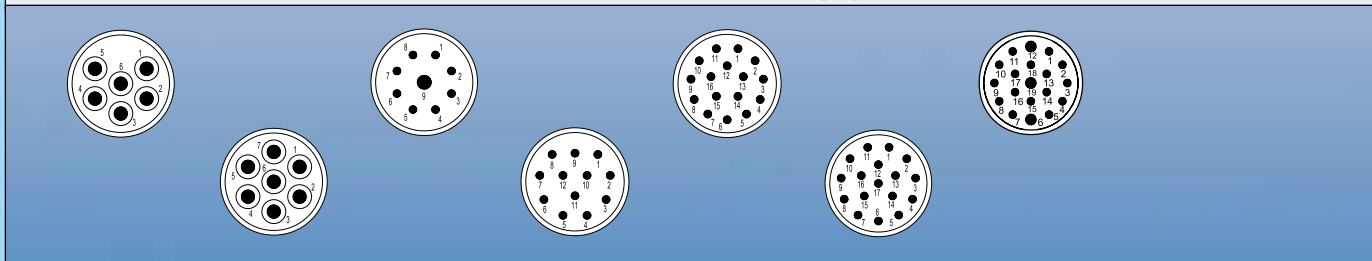
Housings

page 30



Inserts

page 42



Accessories

page 49



M 23 Signal Connectors

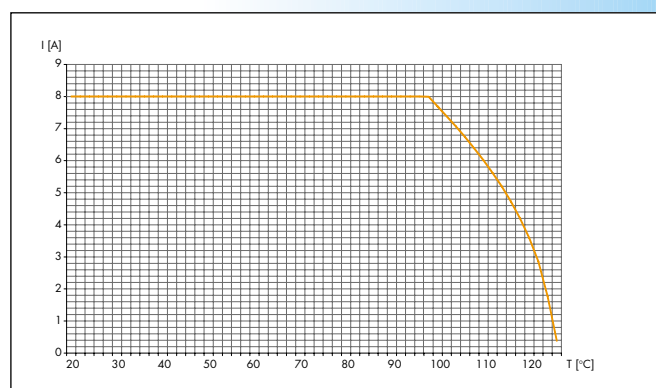
Mechanical Data	Materials and Technical Data	
Housing	Copper-Zinc alloy Ms 58 (Brass) Die Casting	CuZn39Pb3 GDZnAL4Cu1
Housing surface	Nickel plated brass other surface upon request	
Inserts (for contacts)	Thermoplastic Polyamid PA 6 (Nylon 6/6), PBT	Fire protection class V-0
Contacts	Brass Alloy Ms 58 / Ms 60 Pb	CuZn39Pb3 / CuZn38Pb1,5
Contact surface at point of contact	Nickel and gold plated (0,25µm Au)	
Minimum mating cycles	> 1000	
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, dip-solder (PCB)	
Protection	IP 67 per EN 60 625 (connected), NEMA 4x	
Cable diameter range	3 – 14 mm (.12 – .55")	

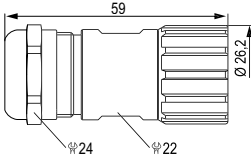
Electrical Data	6	7	9 (8 + 1)	12	16	17	19 (16 + 3)
Number of positions	6	7	9 (8 + 1)	12	16	17	19 (16 + 3)
Number of contacts	6	7	8 1	12	16	17	16 3
Contact-Ø [mm]	2	2	1 2	1	1	1	1 1,5
Nominal current ¹⁾ [A]	20	20	8 20	8	8	8	8 10
Nominal voltage ²⁾ [V~]	300	300	300	300	150	150	150
Test voltage ³⁾ [V~]	2500	2500	2500	2500	1500	1500	1500
Isolation resistance [MΩ]	> 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
Degree of Protection ⁴⁾	3	3	3	3	3	3	3

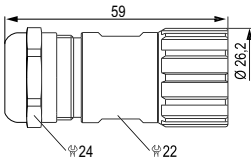
¹⁾, ²⁾, ³⁾, ⁴⁾ See Technical Informations page 12

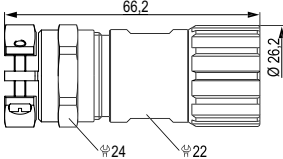
Derating

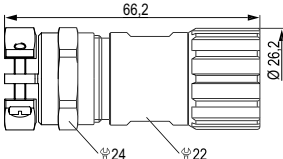
Straight Connectors male + female,
wires 12 x AWG 17



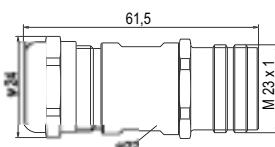
Straight Connector, Female Thread	Cable-Ø	Part Number
 	3 – 7 mm (.12 – .28").....	7100 300 000
	5 – 10 mm (.20 – .39").....	7100 400 000
	7 – 12 mm (.28 – .47").....	7100 500 000
	10 – 14 mm (.39 – .55").....	7100 600 000
	Contacts and inserts page 42 • Assembly instructions page 53	

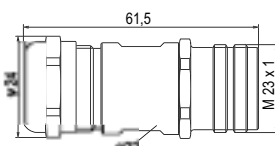
Straight Connector, Female Thread, EMI	Cable-Ø	Part Number
 	3 – 7 mm (.12 – .28").....	7101 300 000
	5 – 10 mm (.20 – .39").....	7101 400 000
	7 – 12 mm (.28 – .47").....	7101 500 000
	10 – 14 mm (.39 – .55").....	7101 600 000
	Contacts and inserts page 42 • Assembly instructions page 53	

Straight Connector, Female Thread, MZ	Cable-Ø	Part Number
 	6 – 10 mm (.24 – .39").....	7190 400 000
	10 – 14 mm (.39 – .55").....	7190 600 000
	Contacts and inserts page 42 • Assembly instructions page 53	

Straight Connector, Female Thread, MZ EMI	Cable-Ø	Part Number
 	6 – 10 mm (.24 – .39").....	7191 400 000
	10 – 14 mm (.39 – .55").....	7191 600 000
	Contacts and inserts page 42 • Assembly instructions page 53	

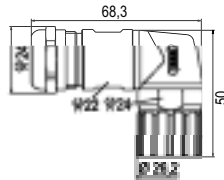
Signal Connectors / Housing

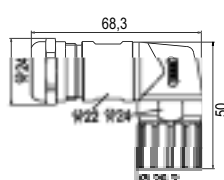
Cable-Ø	Part Number	Straight Connector, Male Thread	
3 – 7 mm (.12 – .28")	7200 300 000		
5 – 10 mm (.20 – .39")	7200 400 000		
7 – 12 mm (.28 – .47")	7200 500 000		
10 – 14 mm (.39 – .55")	7200 600 000		
Contacts and inserts page 42 • Assembly instructions page 54			

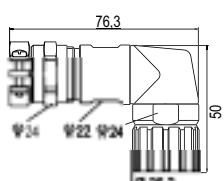
Cable-Ø	Part Number	Straight Connector, Male Thread, EMI	
3 – 7 mm (.12 – .28").....	7201 300 000		
5 – 10 mm (.20 – .39").....	7201 400 000		
7 – 12 mm (.28 – .47").....	7201 500 000		
10 – 14 mm (.39 – .55").....	7201 600 000		
Contacts and inserts page 42 • Assembly instructions page 54			

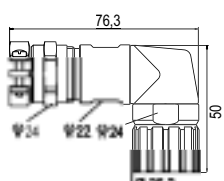
Cable-Ø	Part Number	Straight Connector, Male Thread, MZ	
6 – 10 mm (.24 – .39").....	7290 400 000		
10 – 14 mm (.39 – .55").....	7290 600 000		
Contacts and inserts page 42 • Assembly instructions page 54			

Cable-Ø	Part Number	Straight Connector, Male Thread, MZ EMI	
6 – 10 mm (.24 – .39").....	7291 400 000		
10 – 14 mm (.39 – .55").....	7291 600 000		
Contacts and inserts page 42 • Assembly instructions page 54			

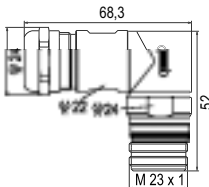
Right Angle Connector, Female Thread	Cable-Ø	Part Number
 	3 – 7 mm (.12 – .28").....	7300 300 000
	5 – 10 mm (.20 – .39").....	7300 400 000
	7 – 12 mm (.28 – .47").....	7300 500 000
	10 – 14 mm (.39 – .55").....	7300 600 000
	Contacts and inserts page 42 • Assembly instructions page 55	

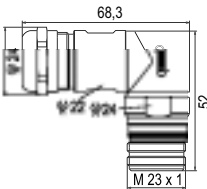
Right Angle Connector, Female Thread, EMI	Cable-Ø	Part Number
 	3 – 7 mm (.12 – .28").....	7301 300 000
	5 – 10 mm (.20 – .39").....	7301 400 000
	7 – 12 mm (.28 – .47").....	7301 500 000
	10 – 14 mm (.39 – .55").....	7301 600 000
	Contacts and inserts page 42 • Assembly instructions page 55	

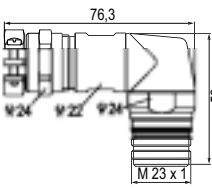
Right Angle Connector, Female Thread, MZ	Cable-Ø	Part Number
 	6 – 10 mm (.24 – .39").....	7390 400 000
	10 – 14 mm (.39 – .55").....	7390 600 000
	Contacts and inserts page 42 • Assembly instructions page 55	

Right Angle Connector, Female Thread, MZ EMI	Cable-Ø	Part Number
 	6 – 10 mm (.24 – .39").....	7391 400 000
	10 – 14 mm (.39 – .55").....	7391 600 000
	Contacts and inserts page 42 • Assembly instructions page 55	

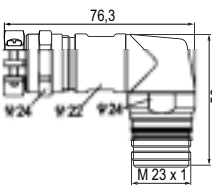
Signal Connectors / Housing

Cable-Ø	Part Number	Right Angle Connector, Male Thread	
3 – 7 mm (.12 – .28").....	7350 300 000		
5 – 10 mm (.20 – .39").....	7350 400 000		
7 – 12 mm (.28 – .47").....	7350 500 000		
10 – 14 mm (.39 – .55").....	7350 600 000		
Contacts and inserts page 42 • Assembly instructions page 55			

Cable-Ø	Part Number	Right Angle Connector, Male Thread, EMI	
3 – 7 mm (.12 – .28").....	7351 300 000		
5 – 10 mm (.20 – .39").....	7351 400 000		
7 – 12 mm (.28 – .47").....	7351 500 000		
10 – 14 mm (.39 – .55").....	7351 600 000		
Contacts and inserts page 42 • Assembly instructions page 55			

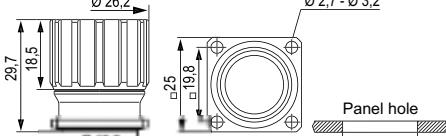
Cable-Ø	Part Number	Right Angle Connector, Male Thread, MZ
6 – 10 mm (.24 – .39").....	7392 400 000	
10 – 14 mm (.39 – .55").....	7392 600 000	
Contacts and inserts page 42 • Assembly instructions page 55		

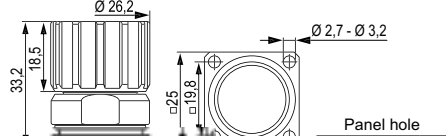
		
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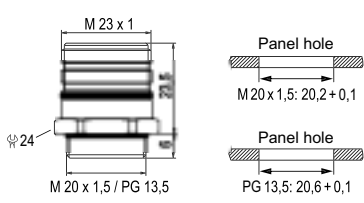
Cable-Ø	Part Number	Right Angle Connector, Male Thread, MZ EMI	
6 – 10 mm (.24 – .39").....	7393 400 000		
10 – 14 mm (.39 – .55").....	7393 600 000		
Contacts and inserts page 42 • Assembly instructions page 55			

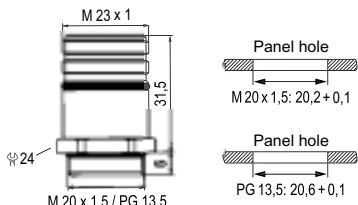
Panel Connector, Male Thread, Front Mounting	Type	Part Number
	4 holes Ø 3,2 mm (.13")	7400 000 000
	4 threads M3	7402 000 000
	4 holes Ø 2,7 mm (.11")	7404 000 000
	4 threads M2,5	7406 000 000
	Optional: Flat gasket	
Contacts and inserts page 42 • Assembly instructions page 56		

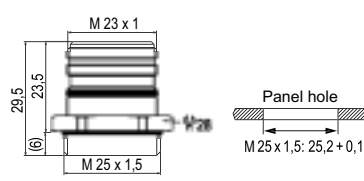
Panel Connector, Male Thread, Front Mounting	Type	Part Number
	With anti-vibration O-Ring	
	4 holes Ø 3,2 mm (.13")	7410 000 000
	4 threads M3	7412 000 000
	4 holes Ø 2,7 mm (.11")	7414 000 000
	4 threads M2,5	7416 000 000
	Optional: Flat gasket	
Contacts and inserts page 42 • Assembly instructions page 56		

Panel Connector, Female Thread, with knurled Nut	Type	Part Number
 	Without coding option	
	4 holes $\varnothing$ 3,2 mm (.13")	7440 000 000
	4 holes $\varnothing$ 2,7 mm (.11")	7444 000 000
	Optional: Flat gasket	
	Contacts and inserts page 42 • Assembly instructions page 56	

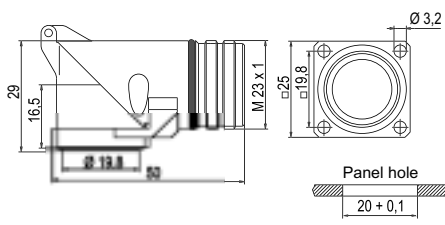
Panel Connector, Female Thread, with knurled Nut	Type	Part Number
 	With coding option (8 x 45°)	
	4 holes $\varnothing$ 3,2 mm (.13")	7448 000 000
	4 holes $\varnothing$ 2,7 mm (.11")	7449 000 000
	Optional: Flat gasket	
	Contacts and inserts page 42 • Assembly instructions page 56	

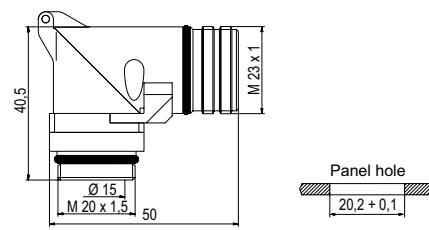
Type	Part Number	Panel Connector, Male Thread, Single Hole Mounted	
For insert with pins			
Thread M 20 x1,5	7420 000 000		
Thread PG 13,5	7422 000 000		
Optional:			
Flat gasket, jam nut M 20 x 1,5 / PG 13,5			
Contacts and inserts page 42 • Assembly instructions page 56		 	

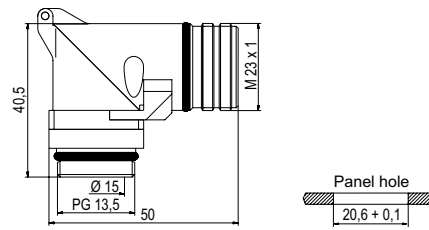
Type	Part Number	Panel Connector, Male Thread, Single Hole Mounted	
For insert with sockets			
Thread M 20 x1,5	7421 000 000		
Thread PG 13,5	7423 000 000		
Optional:			
Flat gasket, jam nut M 20 x 1,5 / PG 13,5			
Contacts and inserts page 42 • Assembly instructions page 56			

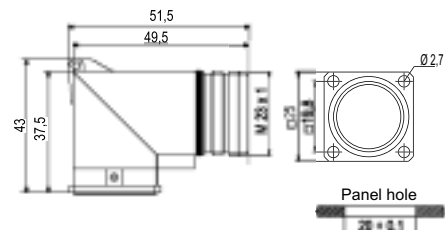
Type	Part Number	Panel Connector, Male Thread, Single Hole Mounted	
For insert with pins / sockets Thread M 25 x 1,5.....7425 000 000			
Optional: Flat gasket, jam nut M 25 x 1,5			
Contacts and inserts page 42 • Assembly instructions page 56			



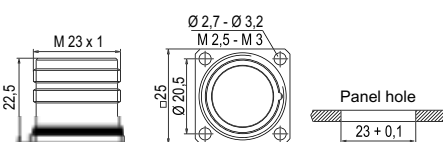
Right Angle Panel Connector, Male Thread	Type	Part Number
 	4 holes 3,2 mm (.13")	7430 000 000
	Optional: Flat gasket Easy Fixation with M2,5 screws	Contacts and inserts page 42 • Assembly instructions page 56

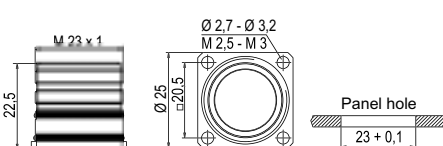
Right Angle Panel Connector, Male Thread	Type	Part Number
 	335° rotatable, hole mounted Thread M 20 x 1,5	7431 000 000
		Contacts and inserts page 42 • Assembly instructions page 56

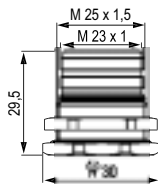
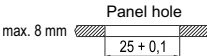
Right Angle Panel Connector, Male Thread	Type	Part Number
 	335° rotatable, hole mounted Thread PG 13,5	7432 000 000
		Contacts and inserts page 42 • Assembly instructions page 56

Right Angle Panel Connector, Male Thread	Type	Part Number
 	300° rotatable 4 holes 2,7 mm (.11")	7433 000 000
	Optional: Flat gasket Easy Fixation with M2,5 screws	Contacts and inserts page 42 • Assembly instructions page 56

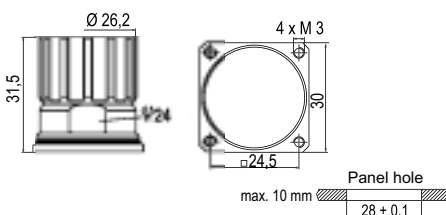
Signal Connectors / Housing

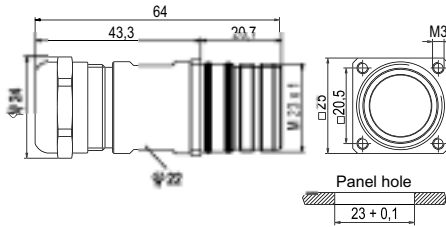
Type	Part Number	Panel Connector, Male Thread, Rear and Front Mounting		
4 holes Ø 3,2 mm (.13").....	7450 000 000			
4 threads M3	7452 000 000			
4 holes Ø 2,7 mm (.11").....	7454 000 000			
4 threads M2,5	7456 000 000			
Optional: Flat gasket				
Contacts and inserts page 42 • Assembly instructions page 56				

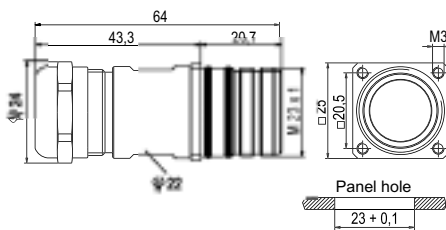
Type	Part Number	Panel Connector, Male Thread, Rear Mounting	
With anti-vibration O-Ring			
4 holes Ø 3,2 mm (.13").....	7460 000 000		
4 threads M3	7462 000 000		
4 holes Ø 2,7 mm (.11").....	7464 000 000		
4 threads M2,5	7466 000 000		
Optional: Flat gasket			
Contacts and inserts page 42 • Assembly instructions page 56			

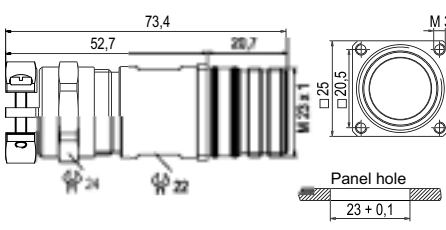
Type	Part Number	Panel Connector, Male Thread, Single Hole Mounted	
Rear mounting			
Thread M 25 x 1,5	7458 000 000		
Including jam nut M 25 x 1,5			
			
Contacts and inserts page 42 • Assembly instructions page 56			

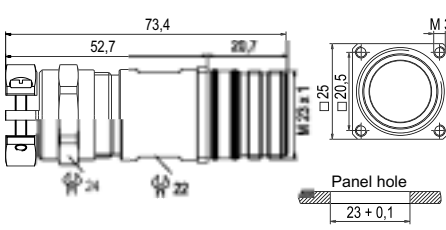


Type	Part Number	Panel Connector, Male Thread, Single Hole Mounted	
With knurled nut, rear mounting			
4 threads M3	7459 000 000		
Contacts and inserts page 42 • Assembly instructions page 56			

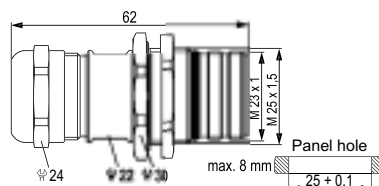
Panel Connector, Male Thread, with Strain Relief	Cable-Ø	Part Number
 	4 threads M3, rear mounting	
	3 – 7 mm (.12 – .28")	7470 300 000
	5 – 10 mm (.20 – .39")	7470 400 000
	7 – 12 mm (.28 – .47")	7470 500 000
	10 – 14 mm (.39 – .55")	7470 600 000
Optional: Flat gasket Contacts and inserts page 42 • Assembly instructions page 57		

Panel Connector, EMI, Male Thread, with Strain Relief	Cable-Ø	Part Number
 	4 threads M3, rear mounting	
	3 – 7 mm (.12 – .28")	7471 300 000
	5 – 10 mm (.20 – .39")	7471 400 000
	7 – 12 mm (.28 – .47")	7471 500 000
	10 – 14 mm (.39 – .55")	7471 600 000
Optional: Flat gasket Contacts and inserts page 42 • Assembly instructions page 57		

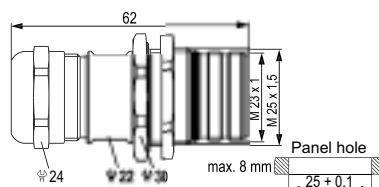
Panel Connector, MZ, Male Thread, with Strain Relief	Cable-Ø	Part Number
 	4 threads M3, rear mounting	
	6 – 10 mm (.24 – .39")	7478 400 000
	10 – 14 mm (.39 – .55")	7478 600 000
	Optional: Flat gasket Contacts and inserts page 42 • Assembly instructions page 57	

Panel Connector, MZ, EMI, Male Thread, with Strain Relief	Cable-Ø	Part Number
 	4 threads M3, rear mounting	
	6 – 10 mm (.20 – .39")	7479 400 000
	10 – 14 mm (.39 – .55")	7479 600 000
	Optional: Flat gasket Contacts and inserts page 42 • Assembly instructions page 57	

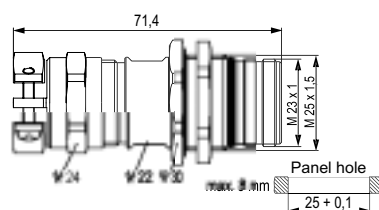
Cable-Ø	Part Number	Panel Connector, Male Thread, with Strain Relief
Rear mounting, M 25 x 1,5 single hole mounted 3 – 7 mm (.12 – .28").....7480 300 000 5 – 10 mm (.20 – .39").....7480 400 000 7 – 12 mm (.28 – .47").....7480 500 000 10 – 14 mm (.39 – .55").....7480 600 000		
Including jam nut M 25 x 1,5		
Contacts and inserts page 42 • Assembly instructions page 54		



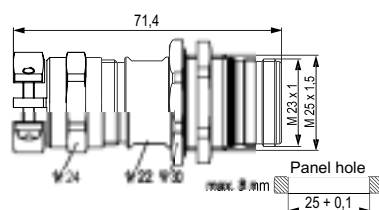
Cable-Ø	Part Number	Panel Connector, EMI, Male Thread, with Strain Relief
Rear mounting, M 25 x 1,5 single hole mounted 3 – 7 mm (.12 – .28").....7481 300 000 5 – 10 mm (.20 – .39").....7481 400 000 7 – 12 mm (.28 – .47").....7481 500 000 10 – 14 mm (.39 – .55").....7481 600 000		
Including jam nut M 25 x 1,5		
Contacts and inserts page 42 • Assembly instructions page 54		

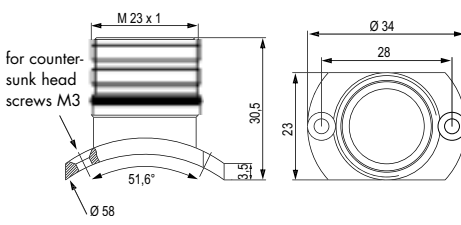


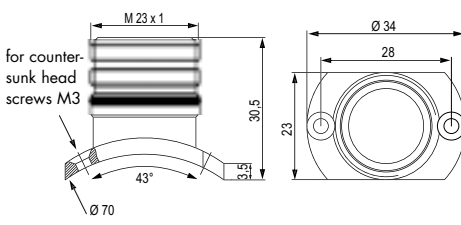
Cable-Ø	Part Number	Panel Connector, MZ, Male Thread, with Strain Relief
Rear mounting, M 25 x 1,5 single hole mounted 6 – 10 mm (.24 – .39").....7482 400 000 10 – 14 mm (.39 – .55").....7482 600 000		
Including jam nut M 25 x 1,5		
Contacts and inserts page 42 • Assembly instructions page 54		

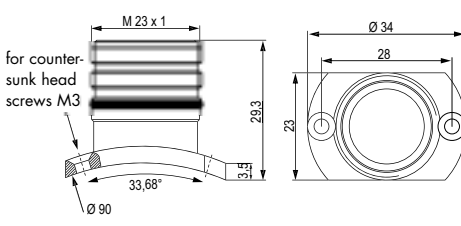


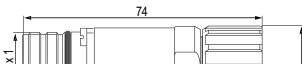
Cable-Ø	Part Number	Panel Connector, MZ, EMI, Male Thread, with Strain Relief
Rear mounting, M 25 x 1,5 single hole mounted 6 – 10 mm (.24 – .39").....7483 400 000 10 – 14 mm (.39 – .55").....7483 600 000		
Including jam nut M 25 x 1,5		
Contacts and inserts page 42 • Assembly instructions page 54		



Panel Connector with Radius Flange	Type	Part Number
 	With anti-vibration O-Ring and flat body gasket Ø 58 mm (2.28")7490 000 000	Contacts and inserts page 42 • Assembly instructions page 56

Panel Connector with Radius Flange	Type	Part Number
 	With anti-vibration O-Ring and flat body gasket Ø 70 mm (2.76")7491 000 000	Contacts and inserts page 42 • Assembly instructions page 56

Panel Connector with Radius Flange	Type	Part Number
 	With anti-vibration O-Ring and flat body gasket Ø 90 mm (3.54")7492 000 000	Contacts and inserts page 42 • Assembly instructions page 56

Type	Part Number	Signal Distribution
T 02	7T02	 

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

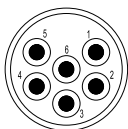
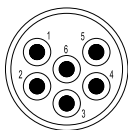
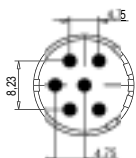
Type	Part Number	Terminating Connector
Closed type	7105 000 000	
Used to cap an open male connector in bus-systems		

Technical drawing of the terminating connector. It shows a side view of the connector with dimensions: a diameter of Ø 26.2 for the main body, a diameter of 22 for the top flange, and a length of 46.4 for the main body.

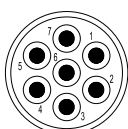
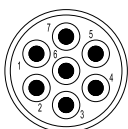
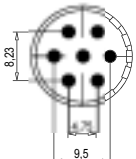
Photograph of the terminating connector, showing its clear plastic housing and the circular base with multiple contact points.

Contacts and inserts page 42

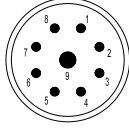
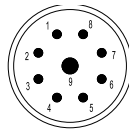
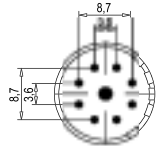
Signal Connectors / Inserts / Pinouts

Inserts 6-pole	Type	Part Number	Part Number
 Insert pin mating view	Pinout clockwise	Pins	Sockets
	Insert with solder contacts	7001 906 103	7001 906 104
	Insert without contacts	7003 906 101	7003 906 102
 Insert socket mating view	Insert with dip solder contacts		
	Length 3,5 mm	7001 906 107	
	Insert with dip solder contacts		
	Length 10 mm	7001 906 127	7001 906 108
	Insert with dip solder contacts		
	Length 17 mm ¹⁾	7001 906 137	7001 906 118
Contacts page 48 • Coding possibilities N, S, H, X and Y (see page 47)			

¹⁾ Under development

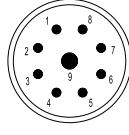
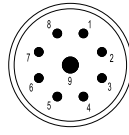
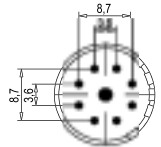
Inserts 7-pole	Type	Part Number	Part Number
 Insert pin mating view	Pinout clockwise	Pins	Sockets
	Insert with solder contacts	7001 907 103	7001 907 104
	Insert without contacts	7003 907 101	7003 907 102
 Insert socket mating view	Insert with dip solder contacts		
	Length 3,5 mm	7001 907 107	
	Insert with dip solder contacts		
	Length 10 mm	7001 907 127	7001 907 108
	Insert with dip solder contacts		
	Length 17 mm ¹⁾	7001 907 137	7001 907 118
Contacts page 48 • Coding possibilities N, S, H, X and Y (see page 47)			

¹⁾ Under development

Type	Part Number	Part Number	Inserts 9-pole (8 + 1)
Pinout clockwise	Pins	Sockets	
Insert with solder contacts	7001 981 103	7001 981 104	 Insert pin mating view
Insert without contacts	7003 981 101	7003 981 102	
Insert with dip solder contacts			 Insert socket mating view
Length 3,5 mm	7001 981 107		
Insert with dip solder contacts			
Length 10 mm	7001 981 127	7001 981 108	
Insert with dip solder contacts			
Length 17 mm ¹⁾	7001 981 137	7001 981 118	

Contacts page 48 • Coding possibilities N, S, H, X and Y (see page 47)

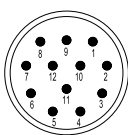
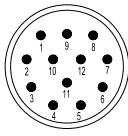
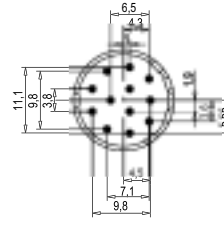
¹⁾ Under development

Type	Part Number	Part Number	Inserts 9-pole (8 + 1)
Pinout counter-clockwise	Pins	Sockets	
Insert with solder contacts	7002 981 103	7002 981 104	 Insert pin mating view
Insert without contacts	7004 981 101	7004 981 102	
Insert with dip solder contacts			 Insert socket mating view
Length 3,5 mm	7002 981 107		
Insert with dip solder contacts			
Length 10 mm	7002 981 127	7002 981 108	
Insert with dip solder contacts			
Length 17 mm ¹⁾	7002 981 137	7002 981 118	

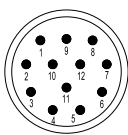
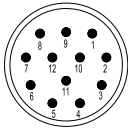
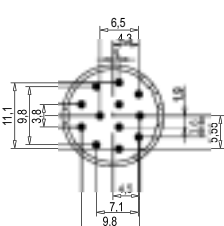
Contacts page 48 • Coding possibilities N, S, H, X and Y (see page 47)

¹⁾ Under development

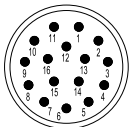
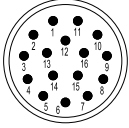
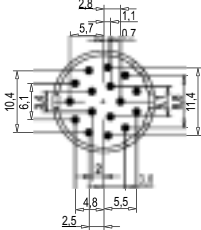
Signal Connectors / Inserts / Pinouts

Inserts 12-pole	Type	Part Number	Part Number
 Insert pin mating view  Insert socket mating view 	Pinout clockwise	Pins	Sockets
	Insert with solder contacts	7001 912 103	7001 912 104
	Insert with solder contacts		
	+PE (Pos.9)	7001 912 113	7001 912 114
	Insert without contacts	7003 912 101	7003 912 102
	Insert without contacts		
	+PE (Pos.9)	7003 912 111	7003 912 112
	Insert with dip solder contacts		
	Length 3,5 mm	7001 912 107	
	Insert with dip solder contacts		
	Length 10 mm	7001 912 127	7001 912 108
	Insert with dip solder contacts		
	Length 17 mm ¹⁾	7001 912 137	7001 912 118
Contacts page 48 • Coding possibilities N, S, H, X, Y and Z (see page 47)			

¹⁾ Under development

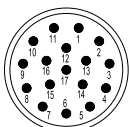
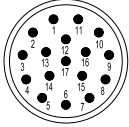
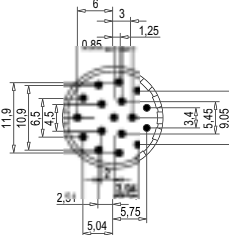
Inserts 12-pole	Type	Part Number	Part Number
 Insert pin mating view  Insert socket mating view 	Pinout counter-clockwise	Pins	Sockets
	Insert with solder contacts	7002 912 103	7002 912 104
	Insert with solder contacts		
	+PE (Pos.9)	7002 912 113	7002 912 114
	Insert without contacts	7004 912 101	7004 912 102
	Insert without contacts		
	+PE (Pos.9)	7004 912 111	7004 912 112
	Insert with dip solder contacts		
	Length 3,5 mm	7002 912 107	
	Insert with dip solder contacts		
	Length 10 mm	7002 912 127	7002 912 108
	Insert with dip solder contacts		
	Length 17 mm ¹⁾	7002 912 137	7002 912 118
Contacts page 48 • Coding possibilities N, S, H, X, Y and Z (see page 47)			

¹⁾ Under development

Type	Part Number	Part Number	Inserts 16-pole
Pinout clockwise	Pins	Sockets	
Insert with solder contacts	7001 916 103	7001 916 104	 Insert pin mating view
Insert without contacts	7003 916 101	7003 916 102	
Insert with dip solder contacts			 Insert socket mating view
Length 3,5 mm	7001 916 107		
Insert with dip solder contacts			
Length 10 mm	7001 916 127	7001 916 108	
Insert with dip solder contacts			
Length 17 mm ¹⁾	7001 916 137	7001 916 118	

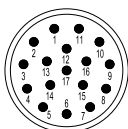
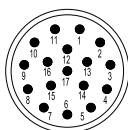
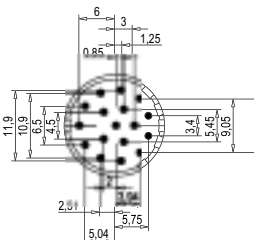
Contacts page 48 • Coding possibilities N, S, H, X, Y and Z (see page 47)

¹⁾ Under development

Type	Part Number	Part Number	Inserts 17-pole
Pinout clockwise	Pins	Sockets	
Insert with solder contacts	7001 917 103	7001 917 104	 Insert pin mating view
Insert without contacts	7003 917 101	7003 917 102	
Insert with dip solder contacts			 Insert socket mating view
Length 3,5 mm	7001 917 107		
Insert with dip solder contacts			
Length 10 mm	7001 917 127	7001 917 108	
Insert with dip solder contacts			
Length 17 mm ¹⁾	7001 917 137	7001 917 118	

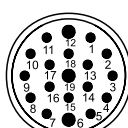
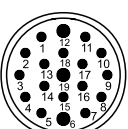
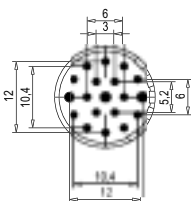
Contacts page 48 • Coding possibilities N, S, H, X, Y and Z (see page 47)

¹⁾ Under development

Inserts 17-pole	Type	Part Number	Part Number
 Insert pin mating view	Pinout counter-clockwise	Pins	Sockets
	Insert with solder contacts	7002 917 103	7002 917 104
	Insert without contacts	7004 917 101	7004 917 102
 Insert socket mating view	Insert with dip solder contacts		
	Length 3,5 mm	7002 917 107	
	Insert with dip solder contacts		
	Length 10 mm	7002 917 127	7002 917 108
	Insert with dip solder contacts		
	Length 17 mm ¹⁾	7002 917 137	7002 917 118

Contacts page 48 • Coding possibilities N, S, H, X, Y and Z (see page 47)

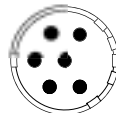
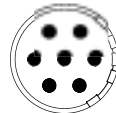
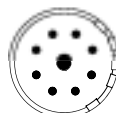
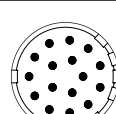
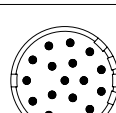
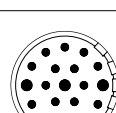
¹⁾ Under development

Inserts 19-pole	Type	Part Number	Part Number
 Insert pin mating view	Pinout clockwise	Pins	Sockets
	Insert with solder contacts	7001 919 103	7001 919 104
	Insert with solder contacts		
 Insert socket mating view	+PE (Pos.12)	7001 919 113	7001 919 114
	Insert with solder contacts		
	+ PE (Pos.12)		
	1,5 mm elongated	7001 919 123	
	Insert without contacts	7003 919 101	7003 919 102
	Insert without contacts		
	+PE (Pos.12)	7003 919 111	7003 919 112
	Insert with dip solder contacts		
	Length 3,5 mm	7001 919 107	
	Insert with dip solder contacts		
	Length 10 mm	7001 919 127	7001 919 108
	Insert with dip solder contacts		
	Length 17 mm ¹⁾	7001 919 137	7001 919 118

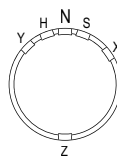
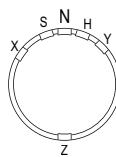
Contacts page 48 • Coding possibilities N, S, H, X and Y (see page 47)

¹⁾ Under development

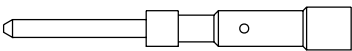
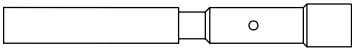
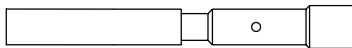
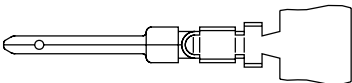
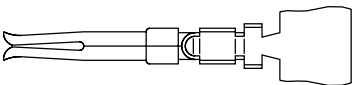
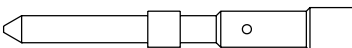
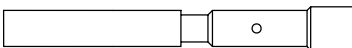
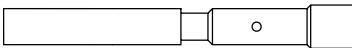
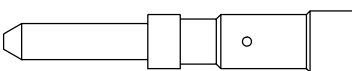
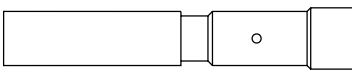
Signal Connectors / Required Contacts

Number of Poles	Required Contacts	Contact Arrangement
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	

Stamped Sub-D crimp contacts for automated crimping can be used instead of the crimp contacts for 1 mm only.

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

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

Contacts	Type	Crimp Range	Part Number
	Crimp pin 1 mm, machined	0,14 – 1 mm ² (AWG 26 – 17)	7010 901 001
	Crimp socket 1 mm, machined	...0,08 – 0,56 mm ² (AWG 28 – 20)	..7010 901 012
	Crimp socket 1 mm, machined	...0,34 – 1 mm ² (AWG 22 – 17)	7010 901 002
	Crimp pin 1 mm, stamped	0,14 – 0,56 mm ² (AWG 26 – 20)	..7010 901 005
	Crimp socket 1 mm, stamped	0,14 – 0,56 mm ² (AWG 26 – 20)	..7010 901 006
	Crimp pin 1,5 mm, machined	0,14 – 1 mm ² (AWG 26 – 17)	7010 901 501
	Crimp socket 1,5 mm, machined	..0,14 – 0,56 mm ² (AWG 26 – 20)	..7010 901 512
	Crimp socket 1,5 mm, machined	..0,56 – 1 mm ² (AWG 20 – 17)	7010 901 502
	Crimp pin 2 mm, machined	0,5 – 2,5 mm ² (AWG 20 – 13)	7010 902 001
	Crimp socket 2 mm, machined	...0,5 – 2,5 mm ² (AWG 20 – 13)	7010 902 002

Please see assembly instructions on page 58

Type	Part Number	Accessories
Assembly tool for connectors with female thread	7010 900 101	
Plastic protective cap for connectors for connectors with male thread	7000 900 101	
with female thread.....	7000 900 102	
Brass protective cap for connectors with female thread.....	7010 900 103	
Brass protective cap for connectors with male thread	7010 900 102	
Brass protective cap with chain for connectors with female thread	Length 70 mm7010 9S0 703 Length 100 mm7010 9S1 003	
Brass protective cap with chain for connectors with male thread.....	Length 70 mm7010 9S0 702 Length 100 mm7010 9S1 002	
Crimp tool for manual crimping of machined crimp contacts for signal connectors	7000 900 900	
Operating instructions on page 50		
Crimp machine for semi-automatic assembly of machined crimp contacts.	upon request	

Type	Part Number	for HUMMEL Contact	Locator
Locator for Crimp Tool DMC M22520 with positioner	7000 9DM C03	7010 901 001, 7010 901 501, 7010 902 001	
Locator for Crimp Tool DMC M22520 with positioner	7000 9DM C04	7010 901 012, 7010 901 002, 7010 901 512, 7010 901 502, 7010 902 002	

Crimp Tool for Signal Connectors

Crimp Tool	Type	Part Number
	Crimp tool	7000 900 900
	Application The 4-jaw crimp tool 7000 900 900 has been developed for optimal crimping of machined pin and socket contacts with wire ranges from 0.8 to 2.5 mm². The tool should only be used for the application described below. The manufacturer cannot be held liable for damages caused by improper use or unauthorized modifications of the tool. Operation - The reference sheet enclosed with each tool designates which contacts the positioner accommodates by wire size and locator setting - Position is dialed by raising the locator knob and rotating it to the proper position (1-12) - Crimp depth setting is selected by raising and rotating the dial to the requested position (A/B/C/D) - Insert the contact to be crimped through the hole and push against the stop - Close the handles to the first lock-in position of the tool - Insert the properly stripped cable into the contact as far as possible - Press the handles together until the tool automatically releases - Remove the crimped contact	

Crimp Tool
 12 position locator Eccentric dial (A/B/C/D) Crimp jaws Adjusting screw Emergency release

Crimp Tool

Inspection of Crimp Depth Accuracy

Adjustment of crimp tool is done at the factory. The ratio of crimp depth to crimp pressure is specified for each contact. After extensive operation of the tool, crimp jaw setting should be checked by the quality assurance personnel as described below:

- Dial position „D“ on the eccentric
- Insert wire gauge $\varnothing 1 \pm 0,02$ mm through the hole
- Close handles completely
- Accurate crimp depth is guaranteed if the wire gauge can be moved in and out without noticeable clearance

Calibration of Crimp Tool

If the inspection shows an inaccurate result, proceed as follows:

- Dial position „D“ on the eccentric dial
- Remove E-clip on the adjustment wheel with a small screw driver
- Raise the adjustment disc above the set screw
- Insert wire gauge $1 \pm 0,02$ mm through the hole
- Close handles
- Turn the adjustment disc until there is no noticeable clearance between jaws and wire gauge. It should be possible to slide the wire gauge back and forth.
- To lock it into place, push the disc down with minimal pressure
- Snap E-clip in position

Maintenance

Keep the tool clean and properly stored when not in service. The joints need to be oiled regularly and the spring clips securing the bolts have to be in place all times.



Crimp Tool Setting for HUMMEL Crimp Contacts (Crimp Tool 7000 900 900)

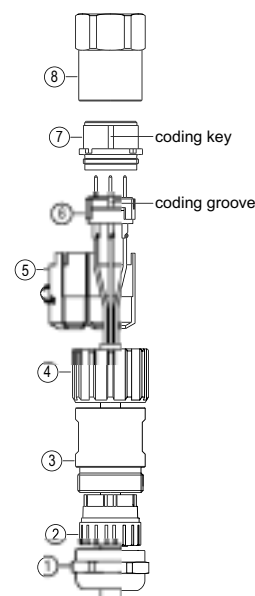
Part Number	Contact	Conductor Cross Section	Locator	Excenter
7010 901 001	Crimp pin 1 mm	0,14 – 0,56 mm ² (AWG 26 – 20) 0,56 – 1 mm ² (AWG 20 – 18)	1 7	B C
7010 901 012	Crimp socket 1 mm	0,08 – 0,56 mm ² (AWG 28 – 20)	4	B
7010 901 002	Crimp socket 1 mm	0,56 – 1 mm ² (AWG 20 – 18)	4	B
7010 901 501	Crimp pin 1,5 mm	0,14 – 1 mm ² (AWG 26 – 18)	7	B
7010 901 512	Crimp socket 1,5 mm	0,14 – 0,56 mm ² (AWG 26 – 20)	4	B
7010 901 502	Crimp socket 1,5 mm	0,56 – 1 mm ² (AWG 20 – 18)	4	B
7010 902 001	Crimp pin 2 mm	0,5 – 2,5 mm ² (AWG 20 – 13)	10	B
7010 902 002	Crimp socket 2 mm	0,5 – 2,5 mm ² (AWG 20 – 13)	12	B

Assembly information see page 58

Signal Connectors / Assembly Instructions

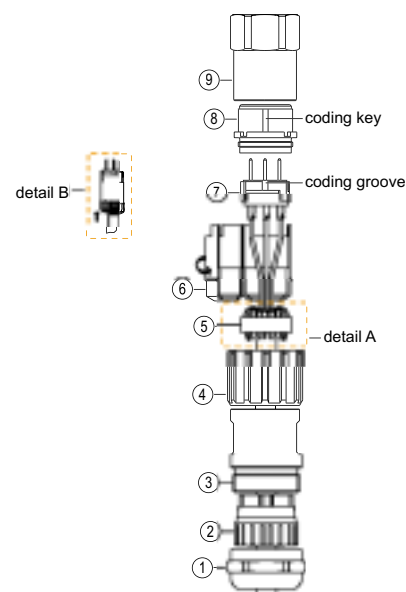
Straight Connector, Female Thread

- Slide dome nut (1), clamping insert (2), adapter (3) and swivel nut (4) over the cable
- Strip the cable jacket back 37 mm (3/4")
- Strip the wire ends 4 mm (5/32") max.
- Solder or crimp the contacts
- Push the contacts into the insert (6)
- Fold the spacer (5) around the wires and push it onto the insert (6)
- Push insert (6) and spacer (5) assembly into bushing (7).
- Pay attention to the desired coding (coding groove, coding key)!
- Slide assembly tool (8) over bushing (7), push it through the swivel nut (4) into the adapter (3) and screw it together
- Screw adapter (3) down to the stop
- Push clamping insert (2) into the adapter (3), tighten the dome nut (1) to grip and seal the cable



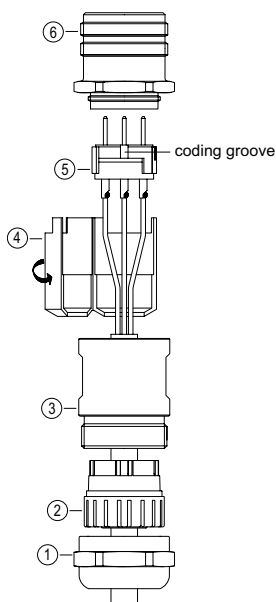
Straight Connector, EMI, Female Thread

- Slide dome nut (1), clamping insert (2), adapter (3) and swivel nut (4) over the cable
- Strip the cable jacket back 20 mm (3/4"). Shorten the braided shield to 10 mm (3/8")
- Fold the braided shield over the cable
- Push the EMI ring (5) over the wires onto the braided shield.
- Caution: Don't push the EMI ring behind the braided shield (Detail A)!
- Strip the wire ends 4 mm (5/32") max.
- Solder or crimp the contacts
- Push the contacts into the insert (7)
- Fold spacer (6) around the wires and push it onto the insert (7)
- Push the EMI ring (5) on the spacer (6) and fold the braided shield over the EMI ring (Detail B)
- Push insert (7) and spacer (6) assembly into bushing (8).
- Pay attention to the desired coding (coding groove, coding key)!
- Slide assembly tool (9) over bushing (8), push it through swivel nut (4) into the adapter (3) and screw it together
- Screw adapter (3) down to the stop
- Push clamping insert (2) into the adapter (3), tighten the dome nut (1) to grip and seal the cable



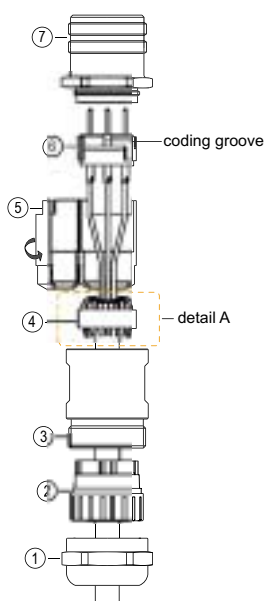
Signal Connectors / Assembly Instructions

Straight Connector, Male Thread



- Slide dome nut (1), clamping insert (2) and adapter (3) over the cable
- Strip the cable jacket back 20 mm (3/4")
- Strip the wire ends 4 mm (5/32") max.
- Solder or crimp the contacts
- Push the contacts into the insert (5)
- Fold the spacer around the wires and push it onto the insert (5)
- Push insert (5) and spacer assembly (4) into the bushing (6).
- Pay attention to the desired coding (coding groove, coding key)!
- Push adapter (3) onto the coupling body (6) and screw together
- Screw adapter (3) down to the stop
- Push clamping insert (2) into the adapter (3), tighten the dome nut (1) to grip and seal the cable

Straight Connector, EMI, Male Thread

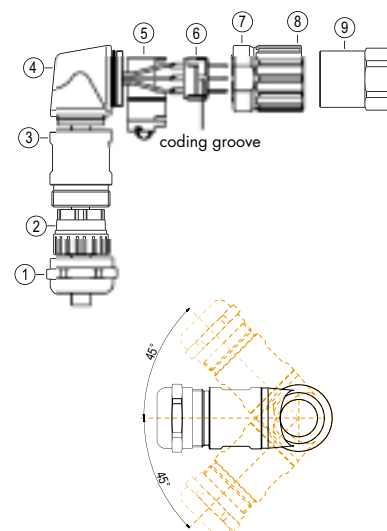


- Slide dome nut (1), clamping insert (2) and adapter (3) over the cable
- Strip the cable jacket back 20 mm (3/4")
- Shorten the braided shield to 10 mm (3/8")
- Fold the braided shield over the cable
- Push the EMI ring (4) over the wires onto the braided shield.
- Caution: Don't push the EMI ring behind the braided shield (Detail A)!
- Strip the wire ends 4 mm (5/32") max.
- Solder or crimp the contacts
- Push the contact into the insert (6)
- Fold spacer (5) around the wires and push it on the insert (6)
- Push the EMI ring (4) onto the spacer (5)
- Fold the braided shield over the EMI ring (4)
- Push insert (6) and spacer (5) assembly into the coupling body (7).
- Pay attention to the desired coding (coding groove, coding key)!
- Push adapter (3) onto the coupling body (7) and screw it together
- Push clamping insert (2) into the adapter (3) and tighten the dome nut (1)

Signal Connectors / Assembly Instructions

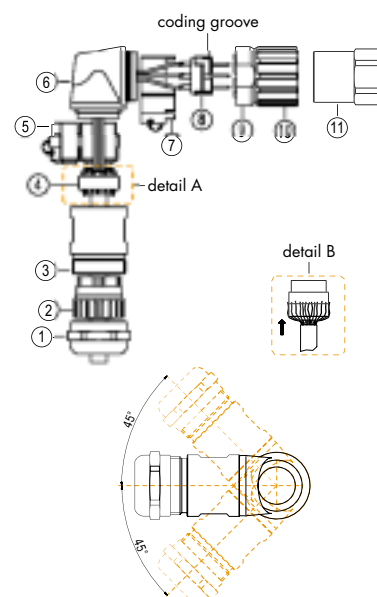
Right Angle Connectors

- Push dome nut (1), clamping insert (2), adapter (3) and angled body (4) over the cable
- Strip the cable jacket back 20 mm (3/4")
- Strip the wire ends 4 mm (5/32") max.
- Solder or crimp the contacts
- Push the contacts into the insert (6)
- Fold the spacer (5) around the wires and push it on the insert (6)
- Push the insert (6) with the spacer (5) into the housing (7, 8).
- Pay attention to the desired coding (coding groove, coding key)!
- Slide assembly tool (9) into the swivel nut and push it onto the angled body (4).
- Pay attention to the desired position (8 possibilities)!
- Screw the nut (7) and the angled body together
- Screw the adapter (3) and the angled body together
- Push the clamping insert (2) into the adapter (3) and tighten the dome nut (1)



Right Angle Connectors, EMI

- Slide dome nut (1), clamping insert (2), adapter (3), EMI ring (4) and angled body (6) over the cable
- Strip the cable jacket 37 mm (1-1/2"). Shorten the braided shield to 10 mm (3/8")
- Fold the braided shield over the cable
- Push the EMI ring (4) over the wires onto the braided shield.
- Caution: Don't push the EMI ring behind the braided shield (detail A)!
- Solder or crimp the contacts
- Push the contacts into the insert (8)
- Fold the spacer (7) around the wires and push it on the insert (8)
- Push the insert (8) with the spacer (7) into the housing (9, 10).
- Pay attention to the desired coding (coding groove, coding key)!
- Slide assembly tool (11) on to the housing (9, 10) and push it onto the angled body (6).
- Pay attention to the desired position of the angled body (8 possibilities)!
- Screw the nut (9) and the angled body together
- Screw the adapter (3) and angled body (6) together
- Push clamping insert (2) into the adapter (3) and tighten the dome nut (1) to grip and seal the cable



Signal Connectors / Assembly Instructions

Panel Connector Front-, Rear- and Single Hole Mounted



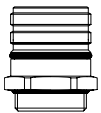
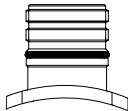
- Attach the housing to the panel. Slip snap ring over the cable
- Strip the cable jacket 20 mm (3/4"). Strip the wire ends 4 mm (.5/32") max. Solder or crimp the contacts

Male inserts:

- Push the insert into the housing. Pay attention to the desired coding (coding groove, coding key). Press the snap ring together slightly and push it into the housing until it snaps in position.
- Verify proper assembly by pushing on the insert from the opposite side

Female inserts:

- Push the snap ring onto the insert
- Press the snap ring together slightly and push it into the housing until it snaps in position. Pay attention to the desired coding (coding groove, coding key)!
- Verify proper assembly by pushing on the insert from the opposite side



Panel Connector with knurled Nut



- Strip wire ends 4 mm (5/32") max.
- Crimp or solder the contacts
- Push the contacts into the inserts
- Fold the spacer around the wires and push it onto the insert
- Push insert and spacer assembly into the housing. Pay attention to the desired coding (coding groove, coding key)!
- Slide assembly tool onto the housing, through the knurled nut and into the panel mounted connector
- Tighten the knurled nut and screw the base of the connector to the panel

Right Angle Panel Connector

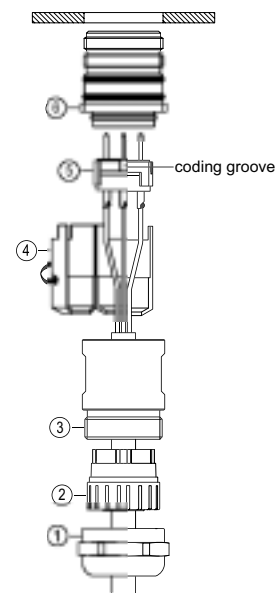


- Straighten the right angle panel connector and screw the base with two panel mounting screws to the panel
- Strip wire ends max. 4 mm (5/32")
- Solder or crimp the contacts
- Push inserts to the stop in the panel connector. Pay attention to the desired coding (coding groove, coding key)!
- Fold the spacer around the wires and push it onto the insert
- Close panel connector by folding it 90° and screw the two inner bolts to the panel

Signal Connectors / Assembly Instructions

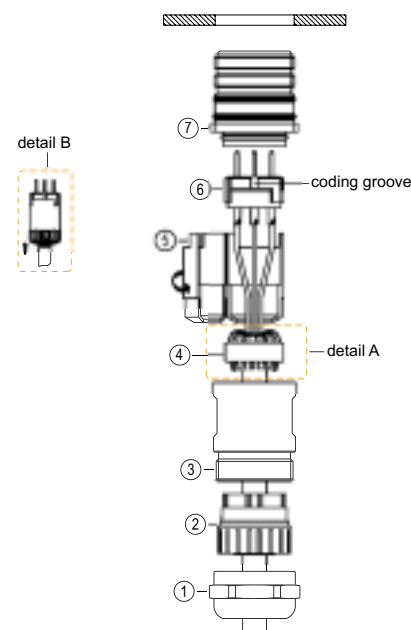
Panel Connector with Strain Relief

- Push dome nut (1), clamping insert (2) and adapter (3) over the cable
- Strip the cable jacket back 20 mm (3/4")
- Strip the wire ends 4 mm (5/32") max.
- Solder or crimp the contacts
- Push the contacts into the insert (5)
- Fold the spacer (4) around the wires and push it onto the insert (5)
- Push the insert (5) with the spacer (4) into the housing.
- Pay attention to the desired coding (coding groove, coding key)!
- Push adapter (3) onto the panel connector (6) and screw together
- Push the clamping insert (2) into the adapter (3) and tighten the dome nut (1)
- Mount panel connector to panel



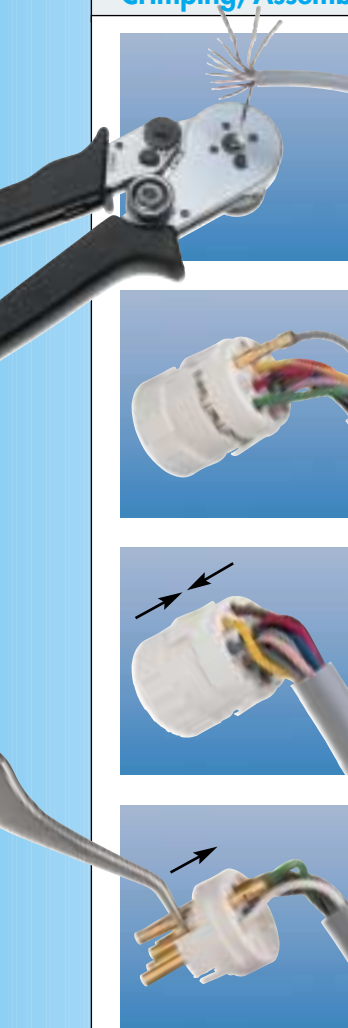
Panel Connector with Strain Relief

- Slide dome nut (1), clamping insert (2), adaptor (3) and EMI ring (4) over the cable
- Strip the cable jacket back 20 mm (3/4"). Shorten the braided shield to 10 mm (3/8")
- Fold the braided shield over the cable
- Push the EMI ring (4) over the wires onto the braided shield.
- Caution: Don't push the EMI ring behind the braided shield (detail A)!
- Strip the wire ends 4 mm (5/32") max.
- Solder or crimp the contacts
- Push the contacts into the insert (6)
- Fold spacer (5) around the wires and push it on the insert (6)
- Push the EMI ring (4) on to the spacer (5)
- Fold the braided shield over the EMI ring (detail B)
- Push insert (6) and spacer (5) assembly into the coupling body (7).
- Pay attention to the desired coding (coding groove, coding key)!
- Push adapter (3) on to the coupling body (7) and screw it together
- Push the clamping insert (2) into adapter (3), tighten the dome nut (1) to grip and seal the cable



Crimping, Assembly and Disassembly of Contacts

Crimping, Assembly and Disassembly of Contacts



Crimping

- Remove conductor insulation 4 mm (.16") max.
- Select appropriate Crimp tool setting (see page 52)
- Insert Crimp contact into the positioner of the tool
- Insert stripped end of conductor into the crimp opening of the contact
- Squeeze handles of crimp tool together

Assembly

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

Disassembly

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

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