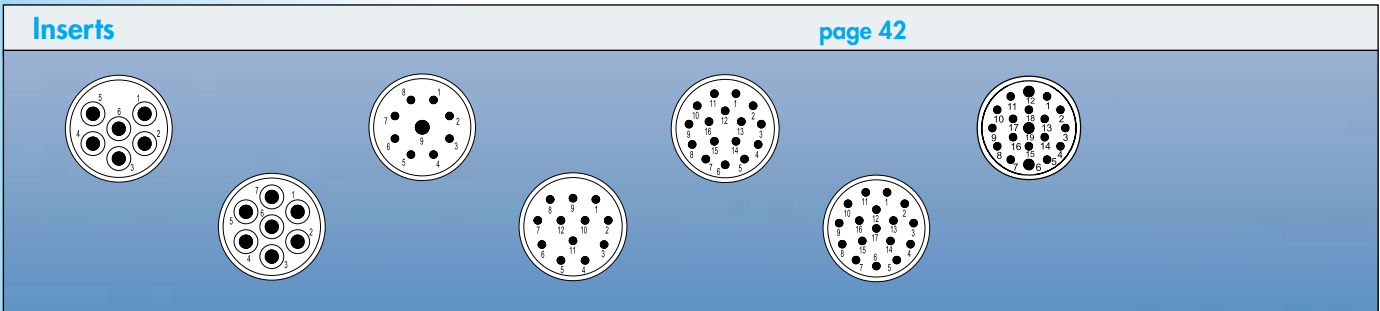


# Signal Connectors





## 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")	

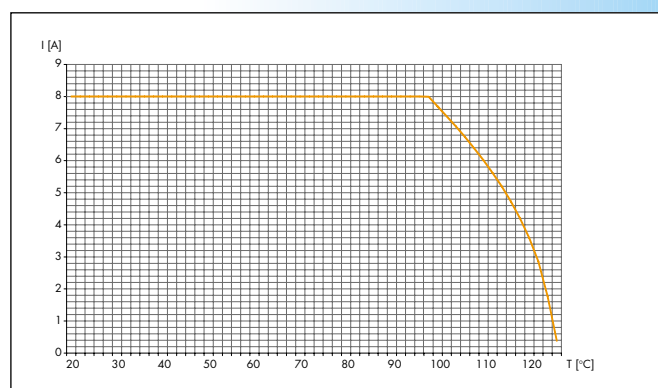
## Electrical Data

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


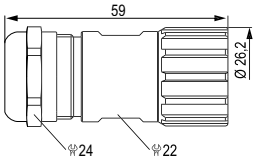
<sup>1), 2), 3), 4)</sup> See Technical Informations page 12


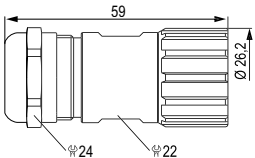
## Derating


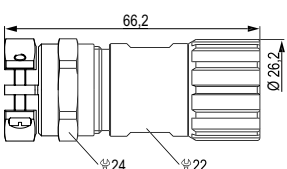
Straight Connectors male + female,  
wires 12 x AWG 17


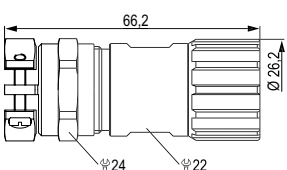


## Signal Connectors / Housing

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	

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


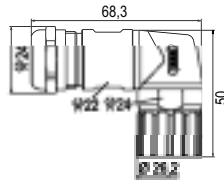
Cable-Ø	Part Number	Straight Connector, Male Thread, MZ
6 – 10 mm (.24 – .39")	.....7290 400 000	
10 – 14 mm (.39 – .55")	.....7290 600 000	


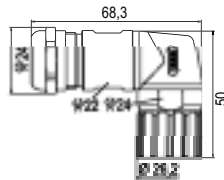
Contacts and inserts page 42 • Assembly instructions page 54


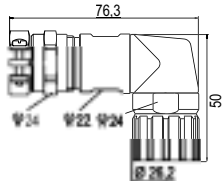
Cable-Ø	Part Number	Straight Connector, Male Thread, MZ EMI
6 – 10 mm (.24 – .39")	.....7291 400 000	
10 – 14 mm (.39 – .55")	.....7291 600 000	


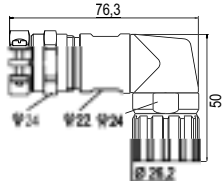
Contacts and inserts page 42 • Assembly instructions page 54

## Signal Connectors / Housing

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	

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

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 $\varnothing$ 3,2 mm (.13")	7400 000 000
		4 threads M 3	7402 000 000
		4 holes $\varnothing$ 2,7 mm (.11")	7404 000 000
		4 threads M 2,5	7406 000 000
		<b>Optional:</b> Flat gasket	
		Contacts and inserts page 42 • Assembly instructions page 56	

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

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

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



Type	Part Number	Panel Connector, Male Thread, Single Hole Mounted
<b>For insert with pins</b> Thread M20 x1,5 .....7420 000 000 Thread PG 13,5 .....7422 000 000		
<b>Optional:</b> Flat gasket, jam nut M20 x 1,5 / PG 13,5		
Contacts and inserts page 42 • Assembly instructions page 56		


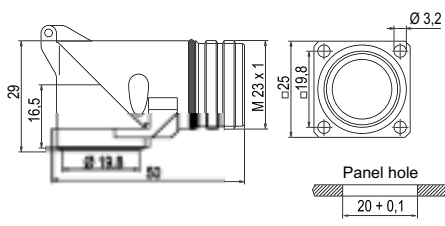



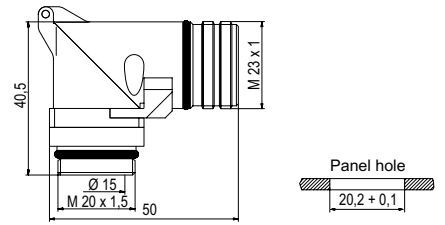
Type	Part Number	Panel Connector, Male Thread, Single Hole Mounted
<b>For insert with sockets</b> Thread M20 x1,5 .....7421 000 000 Thread PG 13,5 .....7423 000 000		
<b>Optional:</b> Flat gasket, jam nut M20 x 1,5 / PG 13,5		
Contacts and inserts page 42 • Assembly instructions page 56		


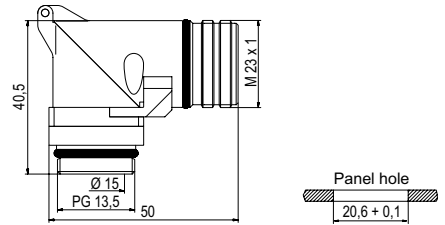



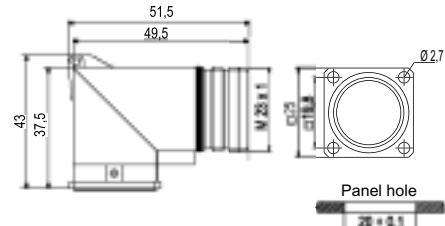
Type	Part Number	Panel Connector, Male Thread, Single Hole Mounted
<b>For insert with pins / sockets</b> Thread M25 x 1,5 .....7425 000 000		
<b>Optional:</b> Flat gasket, jam nut M25 x 1,5		
Contacts and inserts page 42 • Assembly instructions page 56		



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

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

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

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

Type	Part Number	Panel Connector, Male Thread, Rear and Front Mounting
4 holes $\varnothing$ 3,2 mm (.13").....	7450 000 000	
4 threads M 3 .....	7452 000 000	
4 holes $\varnothing$ 2,7 mm (.11").....	7454 000 000	
4 threads M 2,5 .....	7456 000 000	
<b>Optional:</b> Flat gasket		
Contacts and inserts page 42 • Assembly instructions page 56		

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

Type	Part Number	Panel Connector, Male Thread, Single Hole Mounted
<b>Rear mounting</b>		
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
<b>With knurled nut, rear mounting</b>		
4 threads M 3 .....	7459 000 000	
Contacts and inserts page 42 • Assembly instructions page 56		

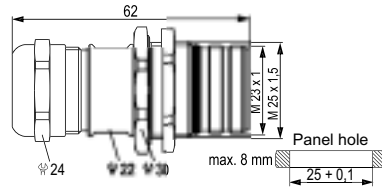
Panel Connector, Male Thread, with Strain Relief		Cable-Ø	Part Number
		<b>4 threads M3, rear mounting</b> 3 – 7 mm (.12 – .28").....7470 300 000 5 – 10 mm (.20 – .39").....7470 400 000 7 – 12 mm (.28 – .47").....7470 500 000 10 – 14 mm (.39 – .55").....7470 600 000	
		<b>Optional:</b> Flat gasket Contacts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

Panel Connector, EMI, Male Thread, with Strain Relief		Cable-Ø	Part Number
		<b>4 threads M3, rear mounting</b> 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	
		<b>Optional:</b> Flat gasket Contacts and inserts page 42 • Assembly instructions page 57	

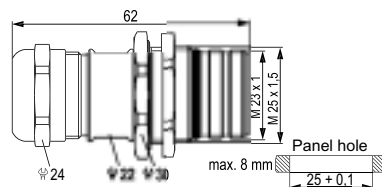
Panel Connector, MZ, Male Thread, with Strain Relief		Cable-Ø	Part Number
		<b>4 threads M3, rear mounting</b> 6 – 10 mm (.24 – .39").....7478 400 000 10 – 14 mm (.39 – .55").....7478 600 000	
		<b>Optional:</b> Flat gasket Contacts and inserts page 42 • Assembly instructions page 57	

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

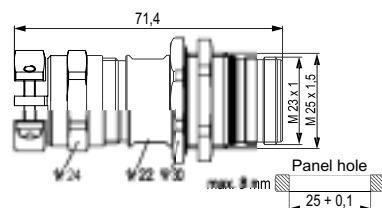
Cable-Ø	Part Number	Panel Connector, Male Thread, with Strain Relief
<b>Rear mounting, M25 x 1,5 single hole mounted</b> 3 – 7 mm (.12 – .28").....7480 300 000 5 – 10 mm (.20 – .39").....7480 400 000 7 – 12 mm (.28 – .47").....7480 500 000 10 – 14 mm (.39 – .55").....7480 600 000		
Including jam nut M25 x 1,5		
Contacts and inserts page 42 • Assembly instructions page 54		



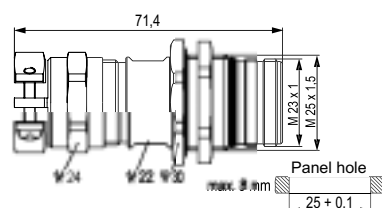
Cable-Ø	Part Number	Panel Connector, EMI, Male Thread, with Strain Relief
<b>Rear mounting, M25 x 1,5 single hole mounted</b> 3 – 7 mm (.12 – .28").....7481 300 000 5 – 10 mm (.20 – .39").....7481 400 000 7 – 12 mm (.28 – .47").....7481 500 000 10 – 14 mm (.39 – .55").....7481 600 000		
Including jam nut M25 x 1,5		
Contacts and inserts page 42 • Assembly instructions page 54		


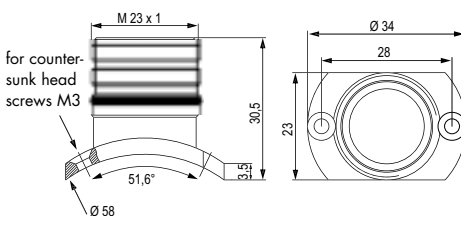



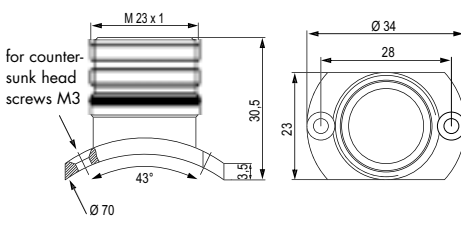
Cable-Ø	Part Number	Panel Connector, MZ, Male Thread, with Strain Relief
<b>Rear mounting, M25 x 1,5 single hole mounted</b> 6 – 10 mm (.24 – .39").....7482 400 000 10 – 14 mm (.39 – .55").....7482 600 000		
Including jam nut M25 x 1,5		
Contacts and inserts page 42 • Assembly instructions page 54		


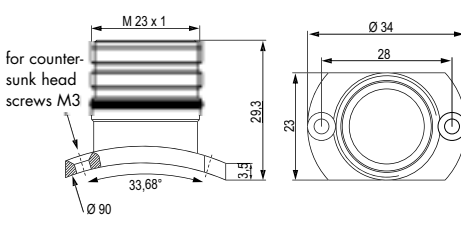



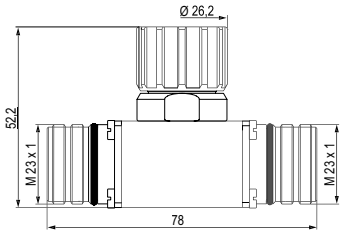
Cable-Ø	Part Number	Panel Connector, MZ, EMI, Male Thread, with Strain Relief
<b>Rear mounting, M25 x 1,5 single hole mounted</b> 6 – 10 mm (.24 – .39").....7483 400 000 10 – 14 mm (.39 – .55").....7483 600 000		
Including jam nut M25 x 1,5		
Contacts and inserts page 42 • Assembly instructions page 54		


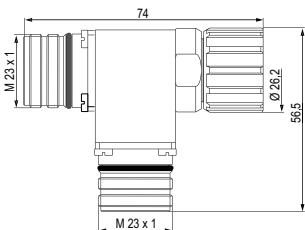



Panel Connector with Radius Flange		Type	Part Number
		<b>With anti-vibration O-Ring and flat body gasket</b> Ø 58 mm (2.28") .....7490 000 000	
		Contacts and inserts page 42 • Assembly instructions page 56	


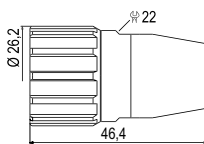
Panel Connector with Radius Flange		Type	Part Number
		<b>With anti-vibration O-Ring and flat body gasket</b> Ø 70 mm (2.76") .....7491 000 000	
		Contacts and inserts page 42 • Assembly instructions page 56	

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

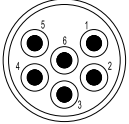
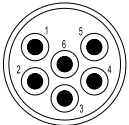
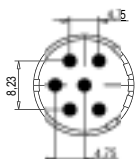
Type	Part Number	Signal Distribution
T 01	.....7T01	
<p>Contacts and inserts page 42</p> 		

Type	Part Number	Signal Distribution
T 02	.....7T02	
<p>Contacts and inserts page 42</p> 		

Signal Distribution
<p>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.</p> 


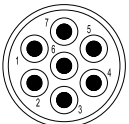
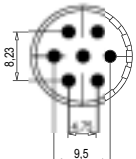
Type	Part Number	Terminating Connector
Closed type	.....7105 000 000	
<p>Used to cap an open male connector in bus-systems</p> 		
<p>Contacts and inserts page 42</p>		



Inserts 6-pole	Type	Part Number	Part Number
 <p>Insert pin mating view</p>	<b>Pinout clockwise</b>	<b>Pins</b>	<b>Sockets</b>
	Insert with solder contacts .....	7001 906 103 .....	7001 906 104
 <p>Insert socket mating view</p>	Insert without contacts .....	7003 906 101 .....	7003 906 102
	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 <sup>1)</sup> .....	7001 906 137 .....	7001 906 118

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

<sup>1)</sup> Under development

Inserts 7-pole	Type	Part Number	Part Number
 <p>Insert pin mating view</p>	<b>Pinout clockwise</b>	<b>Pins</b>	<b>Sockets</b>
	Insert with solder contacts .....	7001 907 103 .....	7001 907 104
 <p>Insert socket mating view</p>	Insert without contacts .....	7003 907 101 .....	7003 907 102
	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 <sup>1)</sup> .....	7001 907 137 .....	7001 907 118

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

<sup>1)</sup> Under development

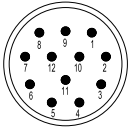
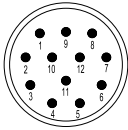
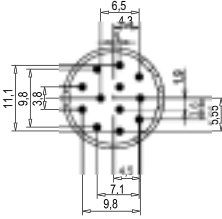
Type	Part Number	Part Number	Inserts 9-pole (8 + 1)
<b>Pinout clockwise</b>	<b>Pins</b>	<b>Sockets</b>	
Insert with solder contacts .....	7001 981 103 .....	7001 981 104	<p>Insert pin mating view</p>
Insert without contacts .....	7003 981 101 .....	7003 981 102	
Insert with dip solder contacts Length 3,5 mm .....	7001 981 107		<p>Insert socket mating view</p>
Insert with dip solder contacts Length 10 mm .....	7001 981 127 .....	7001 981 108	
Insert with dip solder contacts Length 17 mm <sup>1)</sup> .....	7001 981 137 .....	7001 981 118	
<p>Contacts page 48 • Coding possibilities N, S, H, X and Y (see page 47)</p>			

<sup>1)</sup> Under development

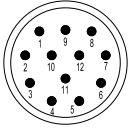
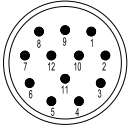
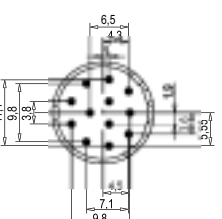
Type	Part Number	Part Number	Inserts 9-pole (8 + 1)
<b>Pinout counter-clockwise</b>	<b>Pins</b>	<b>Sockets</b>	
Insert with solder contacts .....	7002 981 103 .....	7002 981 104	<p>Insert pin mating view</p>
Insert without contacts .....	7004 981 101 .....	7004 981 102	
Insert with dip solder contacts Length 3,5 mm .....	7002 981 107		<p>Insert socket mating view</p>
Insert with dip solder contacts Length 10 mm .....	7002 981 127 .....	7002 981 108	
Insert with dip solder contacts Length 17 mm <sup>1)</sup> .....	7002 981 137 .....	7002 981 118	
<p>Contacts page 48 • Coding possibilities N, S, H, X and Y (see page 47)</p>			

<sup>1)</sup> Under development

## Signal Connectors / Inserts / Pinouts

Inserts 12-pole	Type	Part Number	Part Number	
 <p>Insert pin mating view</p>  <p>Insert socket mating view</p> 	<b>Pinout clockwise</b>	<b>Pins</b>	<b>Sockets</b>	
	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 <sup>1)</sup>	.....7001 912 137	.....7001 912 118	
	Contacts page 48 • Coding possibilities N, S, H, X, Y and Z (see page 47)			

<sup>1)</sup> Under development

Inserts 12-pole	Type	Part Number	Part Number	
 <p>Insert pin mating view</p>  <p>Insert socket mating view</p> 	<b>Pinout counter-clockwise</b>	<b>Pins</b>	<b>Sockets</b>	
	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 <sup>1)</sup>	.....7002 912 137	.....7002 912 118	
	Contacts page 48 • Coding possibilities N, S, H, X, Y and Z (see page 47)			

<sup>1)</sup> Under development

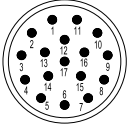
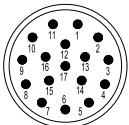
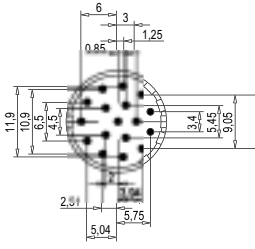
Type	Part Number	Part Number	Inserts 16-pole
<b>Pinout clockwise</b>	<b>Pins</b>	<b>Sockets</b>	
Insert with solder contacts .....	7001 916 103 .....	7001 916 104 .....	<p>Insert pin mating view</p>
Insert without contacts .....	7003 916 101 .....	7003 916 102 .....	
Insert with dip solder contacts Length 3,5 mm .....	7001 916 107 .....		<p>Insert socket mating view</p>
Insert with dip solder contacts Length 10 mm .....	7001 916 127 .....	7001 916 108 .....	
Insert with dip solder contacts Length 17 mm <sup>1)</sup> .....	7001 916 137 .....	7001 916 118 .....	
<p>Contacts page 48 • Coding possibilities N, S, H, X, Y and Z (see page 47)</p>			

<sup>1)</sup> Under development

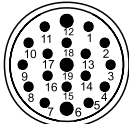
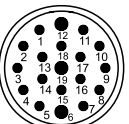
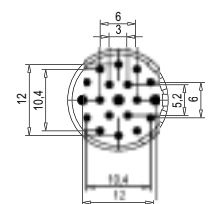
Type	Part Number	Part Number	Inserts 17-pole
<b>Pinout clockwise</b>	<b>Pins</b>	<b>Sockets</b>	
Insert with solder contacts .....	7001 917 103 .....	7001 917 104 .....	<p>Insert pin mating view</p>
Insert without contacts .....	7003 917 101 .....	7003 917 102 .....	
Insert with dip solder contacts Length 3,5 mm .....	7001 917 107 .....		<p>Insert socket mating view</p>
Insert with dip solder contacts Length 10 mm .....	7001 917 127 .....	7001 917 108 .....	
Insert with dip solder contacts Length 17 mm <sup>1)</sup> .....	7001 917 137 .....	7001 917 118 .....	
<p>Contacts page 48 • Coding possibilities N, S, H, X, Y and Z (see page 47)</p>			

<sup>1)</sup> Under development

## Signal Connectors / Inserts / Pinouts

Inserts 17-pole	Type	Part Number	Part Number
 <p>Insert pin mating view</p>	<b>Pinout counter-clockwise</b>	<b>Pins</b>	<b>Sockets</b>
	Insert with solder contacts .....	7002 917 103 .....	7002 917 104
 <p>Insert socket mating view</p>	Insert without contacts.....	7004 917 101 .....	7004 917 102
	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 <sup>1)</sup> .....	7002 917 137 .....	7002 917 118
	Contacts page 48 • Coding possibilities N, S, H, X, Y and Z (see page 47)		

<sup>1)</sup> Under development

Inserts 19-pole	Type	Part Number	Part Number
 <p>Insert pin mating view</p>	<b>Pinout clockwise</b>	<b>Pins</b>	<b>Sockets</b>
	Insert with solder contacts .....	7001 919 103 .....	7001 919 104
 <p>Insert socket mating view</p>	Insert with solder contacts +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 <sup>1)</sup> .....	7001 919 137 .....	7001 919 118
Contacts page 48 • Coding possibilities N, S, H, X and Y (see page 47)			

<sup>1)</sup> Under development

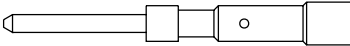


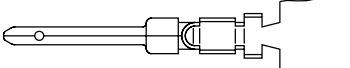
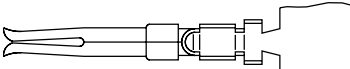
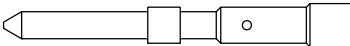




## Signal Connectors / Required Contacts

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 <sup>2</sup> (AWG 26 – 17)	.....7010 901 001
	Crimp socket 1 mm, machined	...0,08 – 0,56 mm <sup>2</sup> (AWG 28 – 20)	..7010 901 012
	Crimp socket 1 mm, machined	...0,34 – 1 mm <sup>2</sup> (AWG 22 – 17)	.....7010 901 002
	Crimp pin 1 mm, stamped	.....0,14 – 0,56 mm <sup>2</sup> (AWG 26 – 20)	..7010 901 005
	Crimp socket 1 mm, stamped	.....0,14 – 0,56 mm <sup>2</sup> (AWG 26 – 20)	..7010 901 006
	Crimp pin 1,5 mm, machined	....0,14 – 1 mm <sup>2</sup> (AWG 26 – 17)	.....7010 901 501
	Crimp socket 1,5 mm, machined	..0,14 – 0,56 mm <sup>2</sup> (AWG 26 – 20)	..7010 901 512
	Crimp socket 1,5 mm, machined	..0,56 – 1 mm <sup>2</sup> (AWG 20 – 17)	.....7010 901 502
	Crimp pin 2 mm, machined	.....0,5 – 2,5 mm <sup>2</sup> (AWG 20 – 13)	....7010 902 001
	Crimp socket 2 mm, machined	...0,5 – 2,5 mm <sup>2</sup> (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 mm .....7010 9S0 703 Length 100 mm .....7010 9S1 003	
Brass protective cap with chain for connectors with male thread .....	Length 70 mm .....7010 9S0 702 Length 100 mm .....7010 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
	<p>Crimp tool .....7000 900 900</p> <p><b>Application</b> 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 mm<sup>2</sup>. 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.</p> <p><b>Operation</b></p> <ul style="list-style-type: none"> <li>- The reference sheet enclosed with each tool designates which contacts the positioner accommodates by wire size and locator setting</li> <li>- Position is dialed by raising the locator knob and rotating it to the proper position (1-12)</li> <li>- Crimp depth setting is selected by raising and rotating the dial to the requested position (A/B/C/D)</li> <li>- Insert the contact to be crimped through the hole and push against the stop</li> <li>- Close the handles to the first lock-in position of the tool</li> <li>- Insert the properly stripped cable into the contact as far as possible</li> <li>- Press the handles together until the tool automatically releases</li> <li>- Remove the crimped contact</li> </ul>	

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

### 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 for Signal Connectors

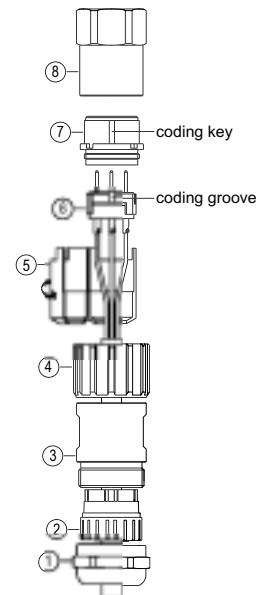
### Crimp Tool Setting for HUMMEL Crimp Contacts (Crimp Tool 7000 900 900)

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

Assembly information see page 58

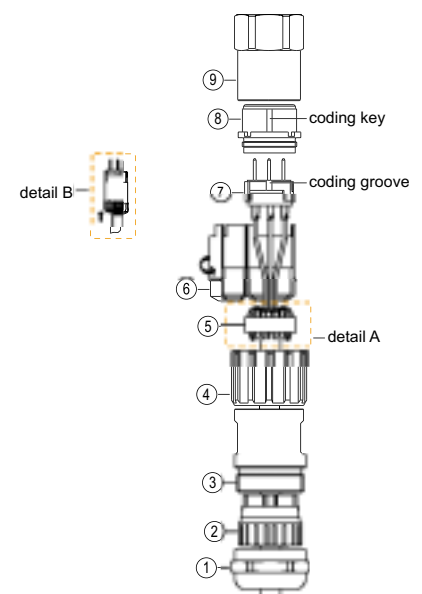
### Straight Connector, Female Thread

- 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



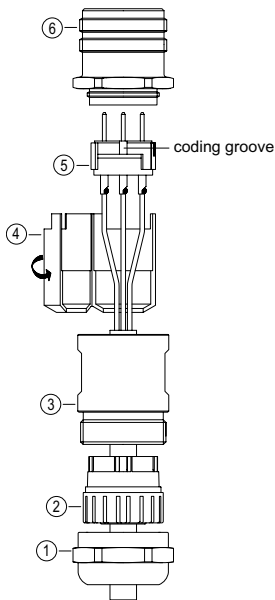
### Straight Connector, EMI, Female Thread

- 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



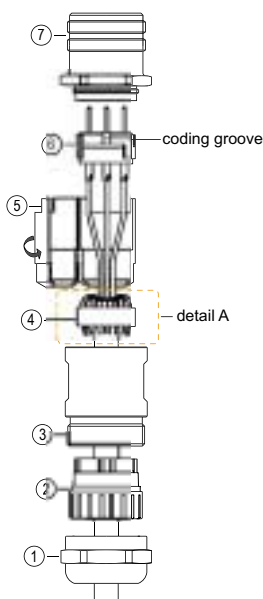
## Signal Connectors / Assembly Instructions

### 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

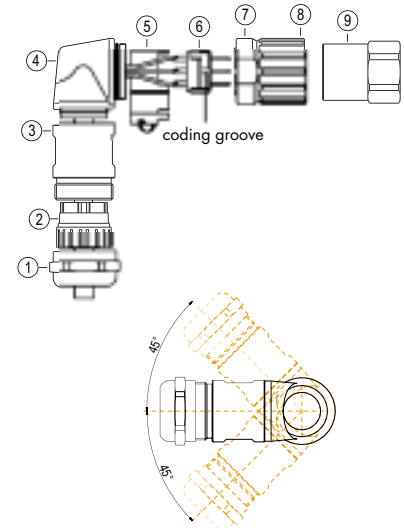


- Slide dome nut (1), clamping insert (2) and adapter (3) over the cable
- Strip the cable jacket back 20 mm (3/4")
- Shorten the braided shield to 10 mm (3/8")
- Fold the braided shield over the cable
- Push the EMI ring (4) over the wires onto the braided shield.
- Caution: Don't push the EMI ring 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

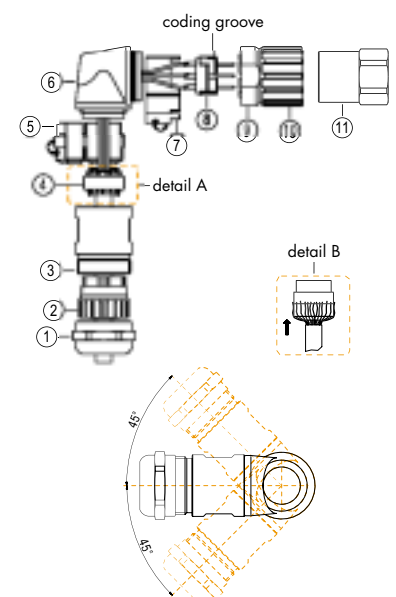
### Right Angle Connectors

- 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

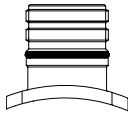
### Panel Connector Front-, Rear- and Single Hole Mounted



- 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

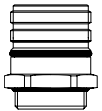
#### Male inserts:

- 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

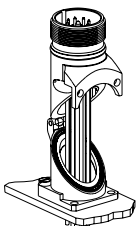


### Panel Connector with knurled Nut



- 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

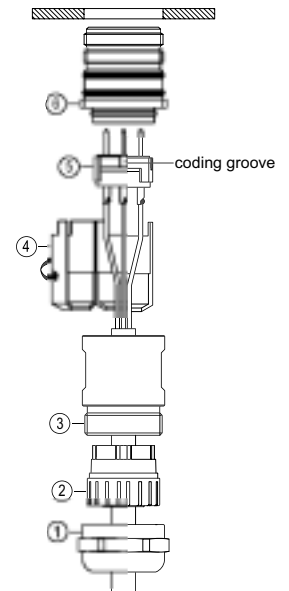
### Right Angle Panel Connector



- 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

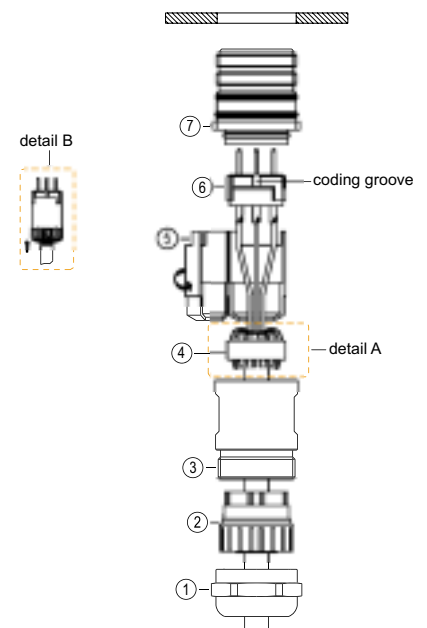
### Panel Connector with Strain Relief

- 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



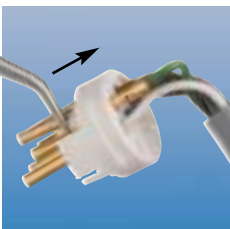
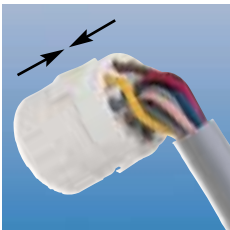
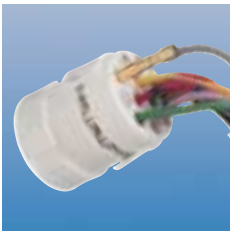
### Panel Connector with Strain Relief

- 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 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