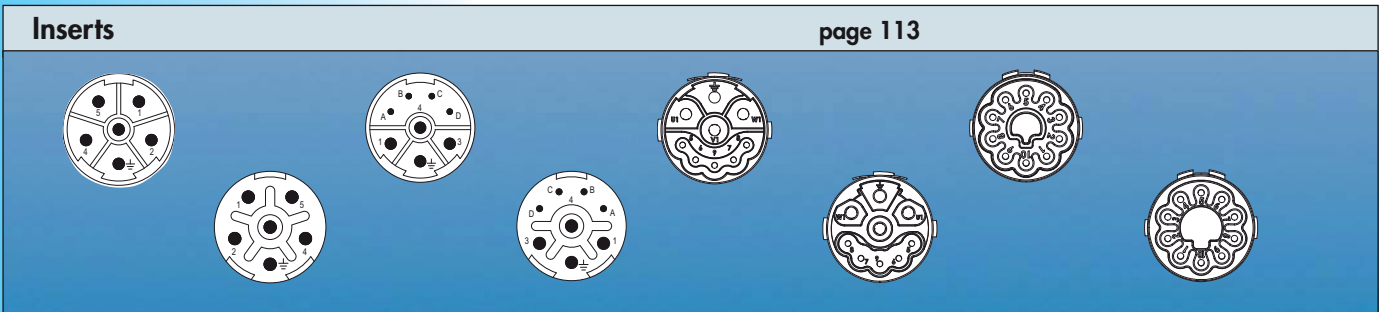


Power Connectors M 23



Product Overview



Power Connectors M23


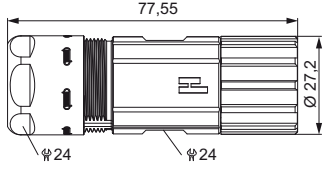
Mechanical Data	Materials and Technical Data
Housing	Copper-Zinc alloy Die Cast
Housing surface	Nickel plated other surface upon request
Inserts (for contacts)	Thermoplastic Polyamid PA 6 (Nylon 6/6), PBT Fire protection class V-0
Contacts	Brass Alloy
Contact surface at point of contact	Nickel and gold plated (0,25 µm 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
Protection	IP 67 / IP 69K per EN 60 529 (connected), NEMA 4x
Cable diameter range	7 – 17 mm (.28 – .67")


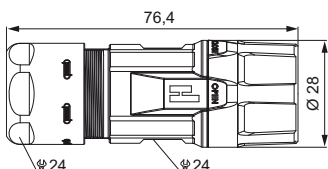
Electrical Data


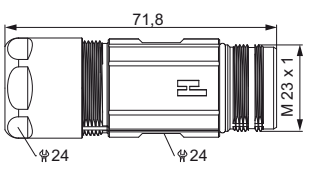
Number of positions	5 + PE	4 + 3 + PE	5 + 3 + PE	10
Number of contacts	6	4 4	5 4	10
ContactØ [mm]	2	1 2	1 2	1
Nominal current ¹⁾ [A]	28	8 28	10 28	10
Nominal voltage ²⁾ [V~] Degree of Protection 3 ³⁾	600	300 600	250 630	160
Test voltage (Breakdown voltage) ⁴⁾ [V~]	4000	2500 4000	2500 4000	2500
Insulation resistance [MΩ]	> 10 ¹³	> 10 ¹³	> 10 ¹³	> 10 ¹³
Max. contact resistance [mΩ]	3	3	3	3


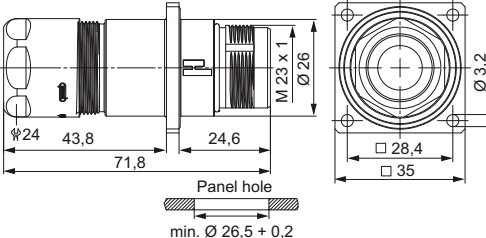
^{1), 2), 3), 4)} See Technical Informations page 14

Power Connectors M 23 / Housing

Straight Connector, Female Thread		Cable-Ø	Part number
		7 – 12 mm (.27 – .47").....7.550.500.000	
		11 – 17 mm (.43 – .67").....7.550.600.000	
		Contacts and inserts page 113 • Assembly instructions page 121	

Straight Connector, Female Thread TWILOCK / TWILOCK-S *		Cable-Ø	Part number
		7 – 12 mm (.24 – .47").....7.556.500.000	
		11 – 17 mm (.43 – .67").....7.556.600.000	
		* Compatible to Speedtec 7 – 12 mm (.24 – .47").....7.556.500.00S 11 – 17 mm (.43 – .67").....7.556.600.00S	
		Contacts and inserts page 113 • Assembly instructions page 121	

Straight Connector, Male Thread		Cable-Ø	Part Number
		7 – 12 mm (.27 – .47").....7.560.500.000	
		11 – 17 mm (.43 – .67").....7.560.600.000	
		Contacts and inserts page 113 • Assembly instructions page 121	

Panel Connector, Male Thread, with Strain Relief		Cable-Ø	Part Number
		4 holes Ø 3,2 mm (.13"), front or rear mounting	
		7 – 12 mm (.27 – .47").....7.683.500.000	
		11 – 17 mm (.43 – .67").....7.683.600.000	
		Contacts and inserts page 113 • Assembly instructions page 121	

Power Connectors M 23 / Housing


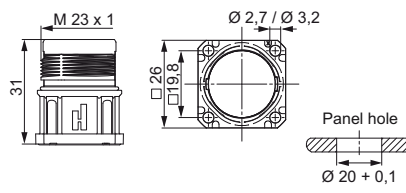
Cable-Ø	Part Number	Panel Connector, Female Thread, with Strain Relief
4 holes Ø 3,2 mm (.13"), front or rear mounting 7 – 12 mm (.27 – .47").....7.681.500.000 11 – 17 mm (.43 – .67").....7.681.600.000		
Contacts and inserts page 113 • Assembly instructions page 121		


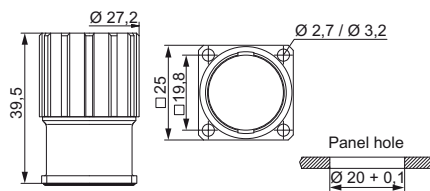
Cable-Ø	Part Number	Panel Connector, Male Thread, with Strain Relief
Single hole mounted, rear mounting, thread M 25 x 1,5 7 – 12 mm (.27 – .47").....7.653.500.000 11 – 17 mm (.43 – .67").....7.653.600.000		
Including jam nut M 25 x 1,5 Contacts and inserts page 113 • Assembly instructions page 121		

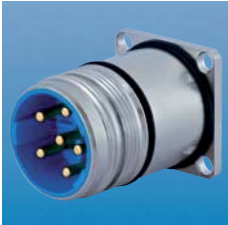
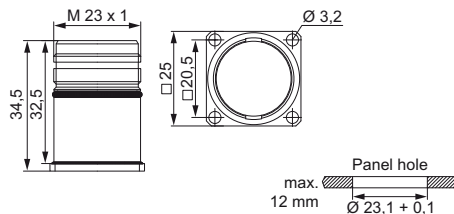
Cable-Ø	Part Number	Right Angle Connector, Female Thread, rotatable
7 – 12 mm (.27 – .47").....7.576.500.000 11 – 17 mm (.43 – .67").....7.576.600.000		
Contacts and inserts page 113 • Assembly instructions page 124		

Cable-Ø	Part Number	Right Angle Connector, Male Thread, rotatable
7 – 12 mm (.27 – .47").....7.580.500.000 10 – 14 mm (.39 – .55").....7.580.600.000		
Contacts and inserts page 113 • Assembly instructions page 124		

Power Connectors M 23 / Housing

Panel Connectors, Male Thread, Front Mounting		Type	Part Number
		4 holes \varnothing 3,2 mm (.13")7.601.000.000	
		4 holes \varnothing 2,7 mm (.11")7.605.000.000	
		Optional: Flat gasket	
		Contacts and inserts page 113 • Assembly instructions page 123	

Panel Connector with knurled Nut, Front Mounting		Type	Part Number
		4 holes \varnothing 3,2 mm (.13")7.641.000.000	
		4 holes \varnothing 2,7 mm (.11")7.645.000.000	
		Optional: Flat gasket	
		Contacts and inserts page 113 • Assembly instructions page 125	

Panel Connector, Male Thread, Rear Mounting		Type	Part Number
		With anti-vibration O-Ring	
		4 holes \varnothing 3,2 mm (.13")7.661.000.000	
		Contacts and inserts page 113 • Assembly instructions page 123	

Power Connectors M 23 / Housing

Type	Part Number	Panel Connector, Male Thread, Single Hole Mounted	
Front mounting Thread M 20 x 1,57.621.000.000			
Options: Flat gasket, jam nut M 20 x 1,5			
Contacts and inserts page 113 • Assembly instructions page 126			



Type	Part Number	Panel Connector, Male Thread, Single Hole Mounted	
Front mounting Thread PG 13,57.623.000.000			
Options: Flat gasket, jam nut PG 13,5			
Contacts and inserts page 113 • Assembly instructions page 126			



Type	Part Number	Panel Connector, Male Thread, Single Hole Mounted	
Front mounting Thread M 25 x 1,57.626.000.000			
Options: Flat gasket, jam nut M 25 x 1,5			
Contacts and inserts page 113 • Assembly instructions page 126			



Type	Part Number	Panel Connector, Male Thread, Single Hole Mounted	
Rear mounting Thread M 25 x 1,57.651.000.000			
Including jam nut M 25 x 1,5			
Contacts and inserts page 113 • Assembly instructions page 126			



Power Connectors M 23 / Housing

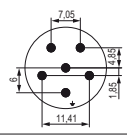
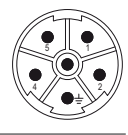
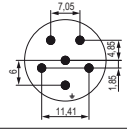

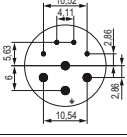
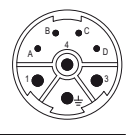
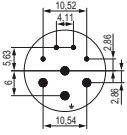
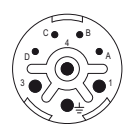
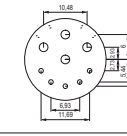

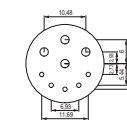

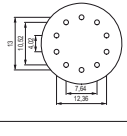

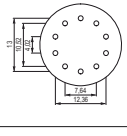
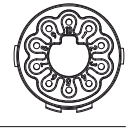
Right Angle Panel Connector, Male Thread		Type	Part Number
		4 holes \varnothing 2,7 mm (.11")7.635.000.000	
		Options: Flat gasket Easy fastening with M2,5 x 10 mm or 4 x .39" long screws Contacts and inserts page 113 • Assembly instructions page 127	

Right Angle Panel Connector, Male Thread, rotatable		Type	Part Number
		335° rotatable, single hole mounted Thread M20 x 1,57.636.000.000	
		Contacts and inserts page 113 • Assembly instructions page 127	

Right Angle Panel Connector, Male Thread, rotatable		Type	Part Number
		335° rotatable, single hole mounted Thread PG 13,57.637.000.000	
		Contacts and inserts page 113 • Assembly instructions page 127	









Right Angle Panel Connector, Male Thread, rotatable		Type	Part Number
		300° rotatable, locking screw at flange 4 x holes \varnothing 2,7 mm (.11") ..7.638.000.000 Flange 25 x 25 mm	
		4 x holes \varnothing 3,2 mm (.13") ..7.638.100.000 Flange 28 x 28 mm Contacts and inserts page 113 • Assembly instructions page 127	

Power Connectors M 23 / Inserts / Pinouts

Type of Contact	Part Number	Contact Arrangement, Mating View
6 x crimp pins 2 mm	7.084.951.101	 
6 x crimp sockets 2 mm	7.084.951.102	 
4 x crimp pins 1 mm 4 x crimp pins 2 mm	7.084.943.101	 
4 x crimp sockets 1 mm 4 x crimp sockets 2 mm	7.084.943.102	 
5 x crimp pins 1 mm * 4 x crimp pins 2 mm *	7.084.953.101	 
5 x crimp sockets 1 mm * 4 x crimp sockets 2 mm *	7.084.953.102	 
10 x crimp pins 1 mm	7.084.910.101	 
10 x crimp sockets 1 mm	7.084.910.102	 

* Assembly instructions see page 122

Power Connectors M 23 / Contacts

Contacts	Type	Crimp Range	Part Number
	Crimp pin 1 mm, machined	0,14 – 1 mm ² (AWG 26 – 17)	7.010.941.001
	Crimp pin 1 mm, machined	0,75 – 1,5 mm ² (AWG 18 – 16)	7.010.941.021
	Crimp socket 1 mm, machined	0,14 – 1 mm ² (AWG 26 – 17)	7.010.941.002
	Crimp socket 1 mm, machined	0,75 – 1,5 mm ² (AWG 18 – 16)	7.010.941.022
	Crimp pin 2 mm, machined	0,75 – 2,5 mm ² (AWG 18 – 14)	7.010.942.001
	Crimp pin 2 mm, machined	2,5 – 4 mm ² (AWG 14 – 12)	7.010.942.011
	Crimp socket 2 mm, machined	0,75 – 2,5 mm ² (AWG 18 – 14)	7.010.942.002
	Crimp socket 2 mm, machined	2,5 – 4 mm ² (AWG 14 – 12)	7.010.942.012


See page 128 for crimp tool instructions and proper setting

Power Connectors M 23 / Accessories


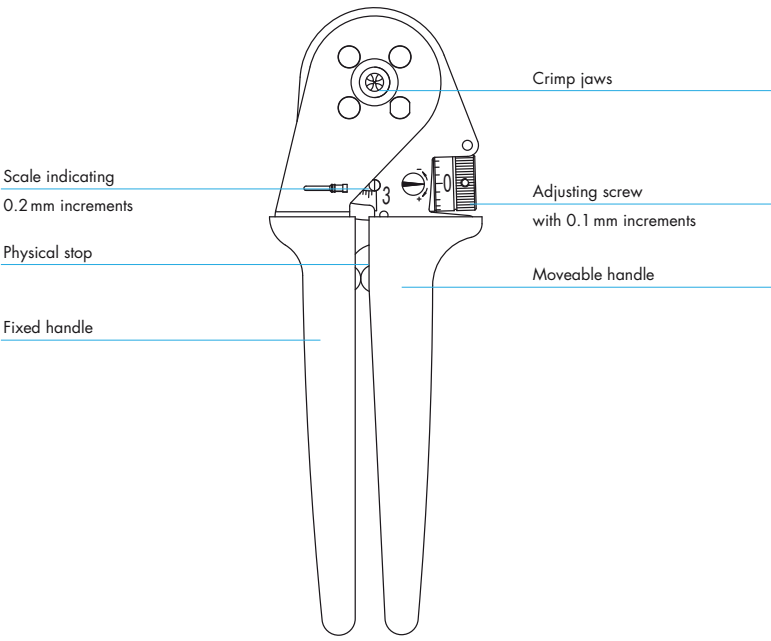
Type	Part Number	Accessories
Plastic protective cap for connectors with male thread	7.000.900.101	
for connectors with female thread.....	7.000.900.102	
Brass protective cap for connectors with female thread.....	7.010.900.183	
Brass protective cap for connectors with male thread	7.010.900.102	
Brass protective cap with chain for connectors with female thread	Length 70 mm7.010.9S0.783 Length 100 mm7.010.9S1.083	
Brass protective cap with chain for connectors with male thread	Length 70 mm7.010.9S0.702 Length 100 mm7.010.9S1.002	

Power Connectors M 23 / Accessories

Accessories	Type	Part Number
	Crimp tool for manual crimping of machined crimp contacts. Works with contacts for power or signal.....	7.000.900.901
	Operating instructions on page 117	
	Adaptor flange for Straight Connectors	7.010.900.128
	Adapter for Conduit Fittings	Snapflex 167.010.900.204 DN 127.010.900.205 Snapflex 207.010.900.206 DN 147.010.900.207 Snapflex 257.010.900.208 DN 177.010.900.209

Locator	Type	Part Number
	Locator for Crimp Tool DMC M22520 with positioner	7.000.9DM.C06
	For HUMMEL Contact: 7.010.941.001, 7.010.942.001, 7.010.942.011	
	Locator for Crimp Tool DMC M22520 with positioner	7.000.9DM.C07
	For HUMMEL Contact: 7.010.941.002, 7.010.942.002, 7.010.942.012	

Crimp Tool for Power Connectors M 23

Type	Part Number	Crimp Tool
Crimp tool	7.000.900.901	
<p>Application The four indent crimp tool 7.000.900.901 has been developed for optimal crimping of machined contacts with diameters from 0.14 to 6.0 mm² (26 through 10 AWG).</p>		
<p>How to Crimp The reference table indicates the correct locator position to be selected and the crimp depth to be adjusted for the contact to be crimped. The contact is then inserted through the access hole of the tool on the opposite side of the locator. The contact is held in place by closing the handles to the first lock-in position thus preventing the contact from falling out of the tool and facilitating insertion of the wire into the contact. The precision ratchet assures consistently accurate crimping every time by forcing the tool to be closed all the way completing the crimping cycle before the tool can be opened again.</p>		
<p>Exchange of the Locator The locator can be exchanged by removing the socket head cap screw with a socket wrench. It can then be disassembled from the hex head screw by turning it counter-clockwise.</p>		
		

Crimp Tool for Power Connectors M 23

Crimp Tool



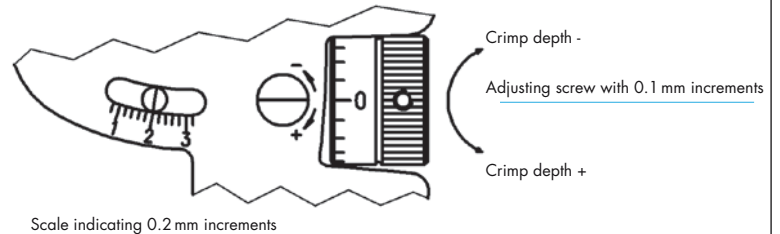
Adjustment of Crimp Depth

Crimp depth can be adjusted as follows:

Turn the adjusting screw clockwise for reducing the crimp depth and counter-clockwise for increasing the crimp depth.

Adjustment Increments:

- 1 space on the adjusting screw $\hat{=}$ adjustment by 0.01 mm
- 1 full rotation of adjusting screw $\hat{=}$ adjustment by 0.2 mm (indication on the screw as well as on the rough scale)
- 5 rotations of the adjusting screw $\hat{=}$ adjustment by 1 mm (indication on the scale)



Control of Crimp Depth

Crimp tool adjustment is done at the factory, but with frequent use, periodic calibration is recommended to insure accuracy. This is easily accomplished with a 2.0 mm \varnothing wire gauge as follows.

A crimp depth of 2.0 mm is set by means of the adjusting screw (scale mark at „2“, screw mark at „0“ as shown in the fig. above) and the tool in the closed position. After insertion of the gauge, there must be just enough space for moving the gauge inside the entry hole. If the opening is too small or too large to exactly match the gauge, the deviation (+/-) can be checked by the precision setting of the screw. Please contact the factory in case the deviation exceeds the tolerances specified by the contract manufacturer.

Maintenance and Repair

Keep the tool clean and properly stored when not in service. All pivot points need to be oiled regularly and the spring clips securing the bolts have to always be in place. For repair please send the tool back to the factory.

Crimp Tool for Power Connectors M 23

Crimp Tool Setting for HUMMEL Crimp Contacts (Crimp Tool 7.000.900.901)					
Part Number	Crimp Contact	Cross Section mm ²	AWG	Crimp Tool Setting mm	Locator Setting
7.010.901.001	Crimp pin (signal) 1 mm	0,14	26	0,75	11
		0,25	24	0,82	11
		0,35	22	0,9	11
		0,50	20	1	11
		0,75	18	1,08	11
		1,0	17	1,2	11
7.010.901.012	Crimp socket (signal) 1 mm	0,14	26	0,75	12
		0,25	24	0,8	12
		0,35	22	0,87	12
		0,50	20	0,97	12
7.010.901.002	Crimp socket (signal) 1 mm	0,50	20	0,95	12
		0,75	18	1	12
		1,0	17	1,05	12
7.010.901.501	Crimp pin (signal) 1,5 mm	0,14	26	0,75	3
		0,25	24	0,82	3
		0,35	22	0,9	3
		0,50	20	0,96	3
		0,75	18	1,03	3
		1,0	17	1	3
7.010.901.512	Crimp socket (signal) 1,5 mm	0,14	26	0,75	4
		0,25	24	0,8	4
		0,35	22	0,87	4
		0,50	20	0,97	4
7.010.901.502	Crimp socket (signal) 1,5 mm	0,50	20	0,95	4
		0,75	18	1	4
		1,0	17	1,05	4
7.010.902.001	Crimp pin (signal) 2 mm	0,75	18	1,3	5
		1,0	17	1,4	5
		1,5	16	1,55	5
		2,5	14	1,75	5
7.010.902.002	Crimp socket (signal) 2 mm	0,75	18	1,3	6
		1,0	17	1,4	6
		1,5	16	1,55	6
		2,5	14	1,75	6
7.010.941.001	Crimp pin (power) 1 mm	0,14	26	0,75	1
		0,25	24	0,8	1
		0,35	22	0,85	1
		0,50	20	1,03	1
		0,75	18	1,08	1
		1,0	17	1,13	1

Crimp Tool for Power Connectors M 23

Crimp Tool Setting for HUMMEL Crimp Contacts (Crimp Tool 7.000.900.901)

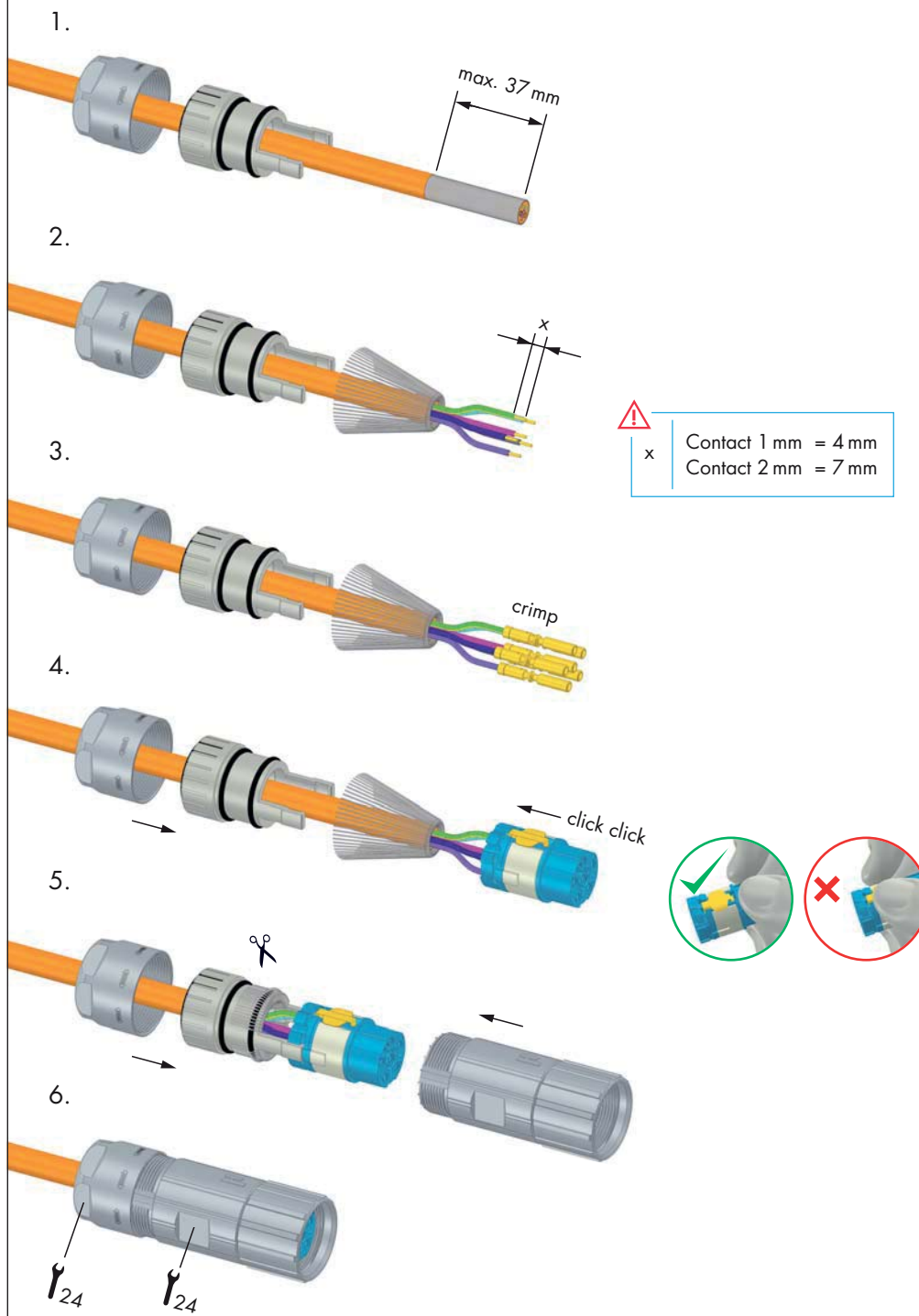
Part Number	Crimp Contact	Cross Section mm ²	AWG	Crimp Tool Setting mm	Locator Setting
7.010.941.021	Crimp socket (power) 1 mm	0,75	18	0,79	1
		1	17	0,86	1
		1,5	16	0,99	1
7.010.941.002	Crimp socket (power) 1 mm	0,14	26	0,75	2
		0,25	24	0,8	2
		0,35	22	0,85	2
		0,50	20	0,89	2
		0,75	18	0,95	2
		1	17	1,02	2
7.010.941.022	Crimp socket (power) 1 mm	0,75	18	0,79	2
		1	17	0,86	2
		1,5	16	0,99	2
7.010.942.001	Crimp pin (power) 2 mm	0,75	18	1,3	7
		1	17	1,4	7
		1,5	16	1,55	7
		2,5	14	1,7	7
7.010.942.011	Crimp pin (power) 2 mm	2,5	14	1,47	7
		4	12	1,6	7
7.010.942.002	Crimp socket (power) 2 mm	0,75	18	1,3	8
		1	17	1,4	8
		1,5	16	1,55	8
		2,5	14	1,7	8
7.010.942.012	Crimp socket (power) 2 mm	2,5	14	1,47	8
		4	12	1,6	8

These values are only guidelines and actual conductor cross sections depend on manufacturer tolerances.

Please see assembly instructions on page 128

Power Connectors M23 / Assembly Instructions

Straight Connector, Female Thread



Power Connectors M 23 / Assembly Instructions

Straight Connector, Female Thread 5+3+PE

1. max. 37 mm

2. x

3. crimp

4. click click

5. click

6. click

7. scissors

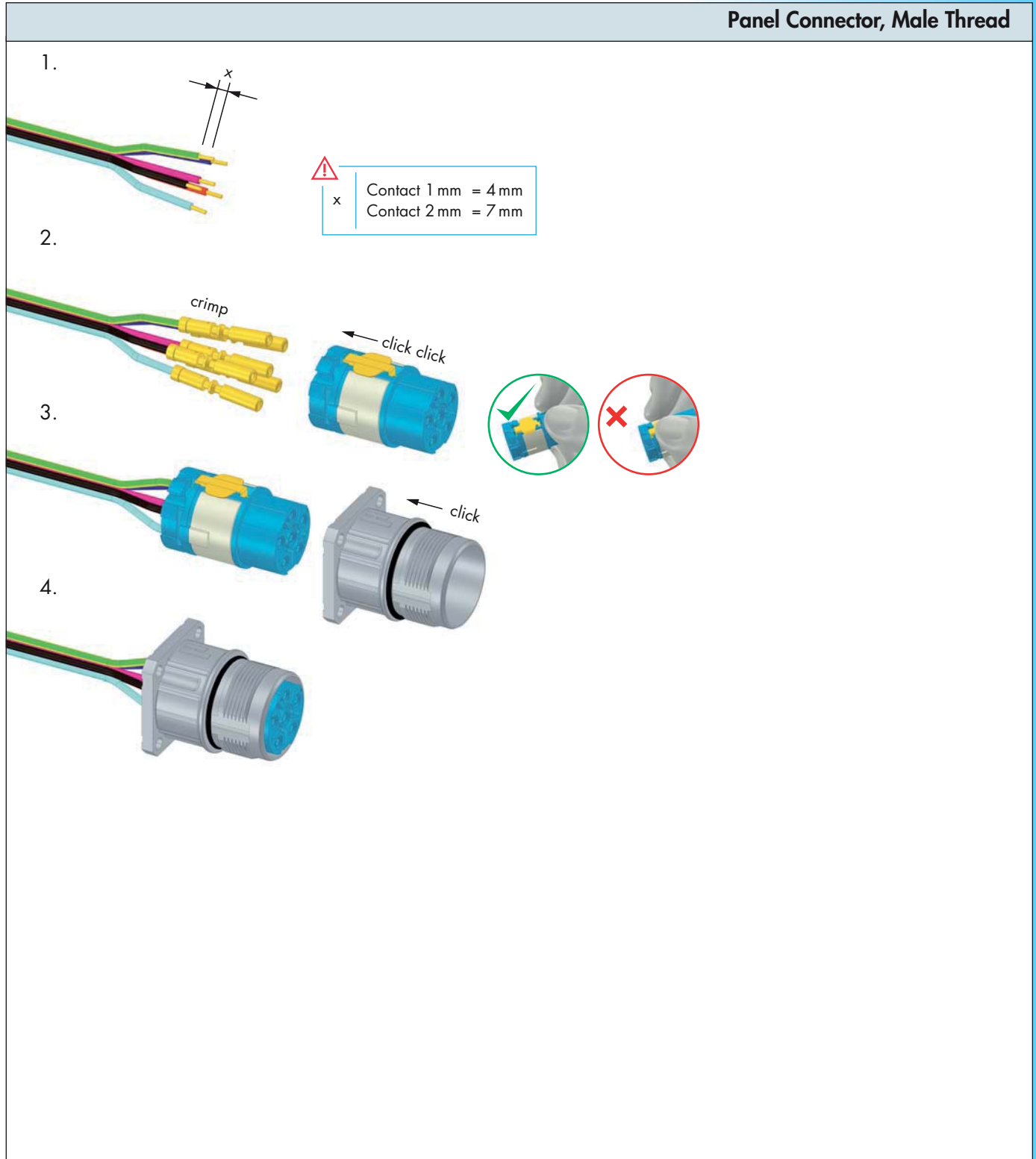
8. 24 24

x

Contact 1 mm = 4 mm
Contact 2 mm = 7 mm

Power Connectors M23 / Assembly Instructions

Panel Connector, Male Thread



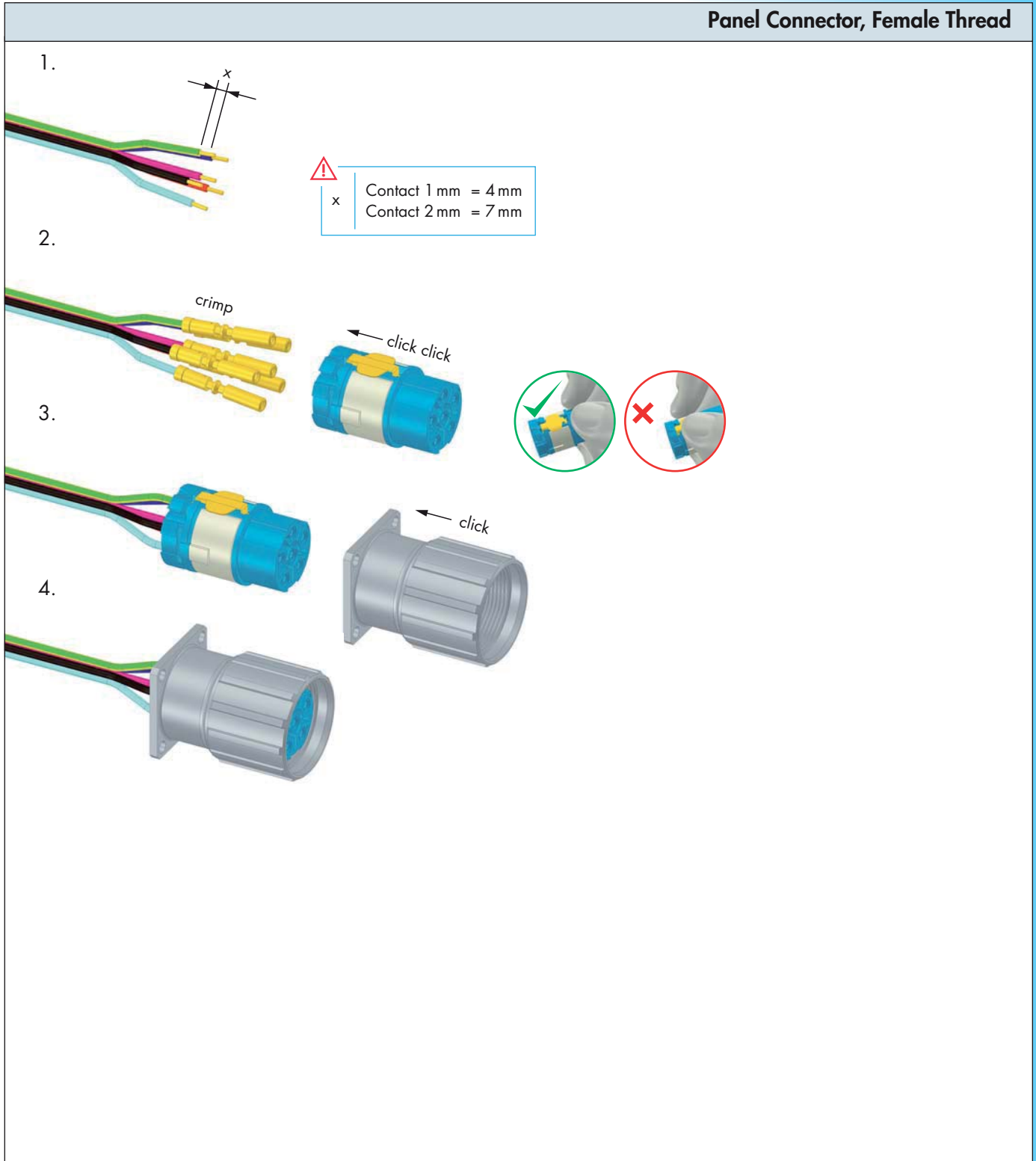
Power Connectors M 23 / Assembly Instructions

Right Angle Connector, rotatable

1. 65 mm
- 2.
- 3.
4. **⚠**
x Contact 1 mm = 4 mm
Contact 2 mm = 7 mm
5. crimp
- 6.
7. click click
- 8.
- 9.
10. 24, 25

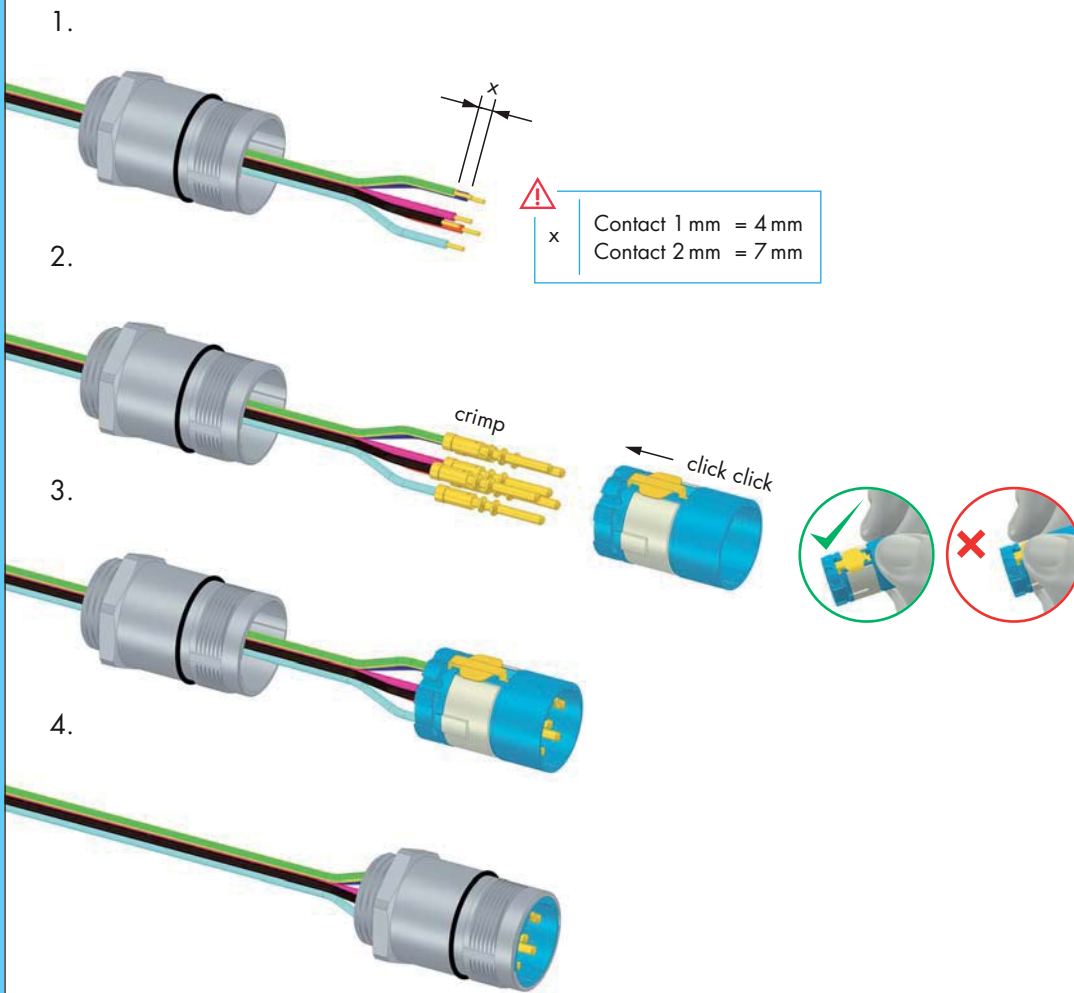
Power Connectors M23 / Assembly Instructions

Panel Connector, Female Thread



Power Connectors M 23 / Assembly Instructions

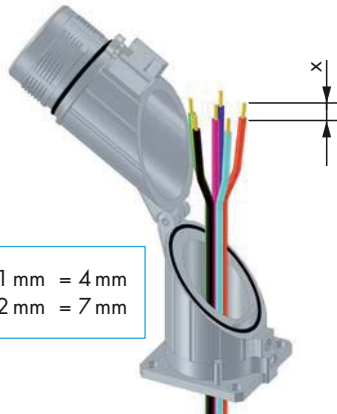
Panel Connector, Male Thread, Single Hole Mounted



Power Connectors M23 / Assembly Instructions

Right Angle Panel Connector

1.



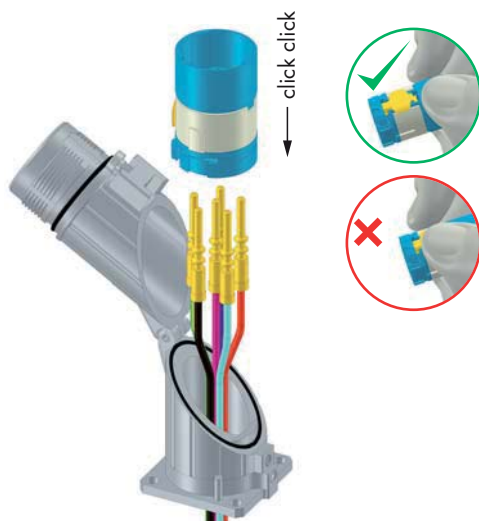
x

Contact 1 mm = 4 mm
Contact 2 mm = 7 mm

2.



3.



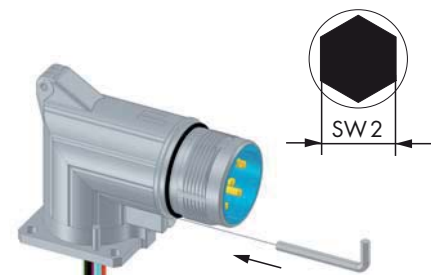
4.



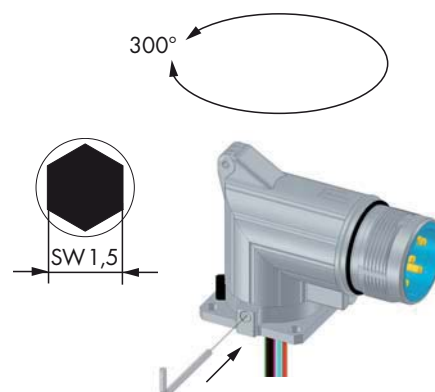
5.



6.

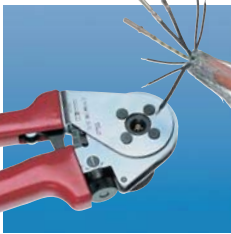


7.



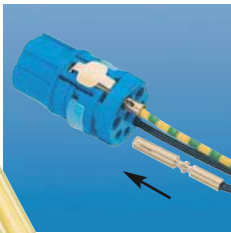
Crimping, Assembly and Disassembly

Crimping, Assembly and Disassembly



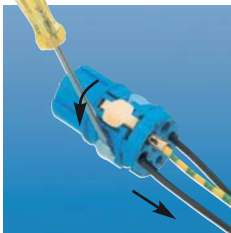
Crimping

- For 1 mm contacts strip wire ends 4 mm (.16") max., for 2 mm contacts strip wire ends 7 mm (.28") max.
- Dial appropriate setting of crimping tool (page 119/120)
- Push crimp contact into opening of crimping tool
- Insert stripped wire into the funnel shaped end of the crimp contact
- Squeeze handles of crimping tool together, connecting contact to wire



Assembly

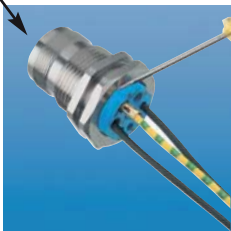
- Remove crimped assembly and pull on wire to test connection
- Push into desired position of insert
Note: For 8-pole inserts (4 + 3 + PE) it is recommended to assemble the large contacts first.



Disassembly of Contacts from Insert

A small screw driver is required.

- Using the screw driver, push the white clip ring out of the insert
- Pull the contacts out of the insert
- Replace the white clip ring
- Reinsert the contacts




Disassembly of Insert from Housing

A small screw driver is required. Push locking tongue, located above the PE-contact, down. By simultaneously pushing on the front side of the insert, it can be disassembled from the housing.



Shielding

- Assemble strain relief insert with insert
- Fold stranding of the shield back over the first O-Ring of the strain relief insert
- Cut back the overextending braid

 The stranding of the shield is not allowed to touch the second O-Ring. Otherwise the assembly may not be proof.