Catalogue Nr.: 1005-1-d-e

ODU MINI-SNAP

Miniature Cylindrical Connectors with Push-Pull-Locking Series L, K and B

HVS
PRECONISATEUR DE SOLUTIONS DEPUIS 1985

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The latest version of this catalogue is posted on our websites:

www.odu.de
www.odu-usa.com
www.odu-china.com

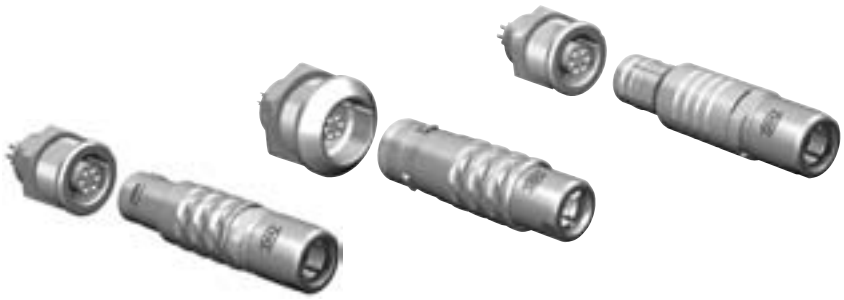
More Push-Pull series see page 137

ODU MINI-SNAP is UL-listed under File E110586 00RT03566
MIL-Specification: Tests carried out (See page 132).

All data and specifications subject to change without notice.
All dimensions in mm.
All pictures are illustrations.

See next page

Product Description



The ODU MINI-SNAP family of Miniature Cylindrical Connectors features Push-Pull-Locking

Cylindrical Connectors are generally available with several locking mechanisms.

The most frequently used are:
- Threaded-Locking Sleeve
- Bayonet-Locking
- Push-Pull-Locking

Push-Pull-Connectors have a very simple locking mechanism:

- As the plug is pushed into the receptacle, locking fingers on the plug snap into the receptacle creating a reliable connection between plug and receptacle.

- Pulling on the cable or the rear of plug causes the locking fingers to grab harder and a separation of plug and receptacle is almost impossible. Pulling on the outer plug housing causes the locking fingers to retract and the plug and receptacle separate easily.

The Advantages of Push-Pull-Connectors:

- Quick and easy mating and demating
- Quick and easy seperating
- Easy blind mating in difficult-to-reach places
- Less panel space required
- Definite and secure locking condition
- Less mating required
- Robotic mating and demating possible
- Easy cleaning of housing possible

Important Applications for Push-Pull Connectors:

- Medical Electronics
- Test and Laboratory
- Measurement Instrumentation
- Data and Telecom Systems
- Audio and Video Applications
- Military and Aerospace
- Industrial Controls
- Nuclear Technology

Applications

Medical

Consumer electronics

Test and Measurement

Telecommunication

Industrial and Automation

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Important Issues At A Glance:

- The series is certified acc. cULus and VDE.

- **Connector with metal shells available in 8 sizes**
  Outside diameter between 6.5 mm and 42 mm
  Number of contact positions: 1 to 40 position, mixed insert arrangements.

- **Plugs and inline receptacles** are offered with solder and crimp termination.
  Receptacles are available for solder, crimp, and PCB termination.

- **Applications**

	Insulation Body Material PBT	PEEK	Contact Material Ms
General Application requirments (-40 °C +120 °C)	●	●	●
Connectors which, are autoclavable (+134 °C, see page 130)		●	●

- **Termination Style**

– Crimp Termination		●
– Solder Termination	●	●
– Printed Circuit Board (PCB) Termination	●	●

- **Environmental Protection Classification**
  IP 50 and IP 68 are available

➡ What we don't have yet, we can build for you!

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Turned contact

Turned contacts are available in the diameters 0.5 to 4.0 mm.

The contacts are available with following terminations:

- **Solder**
- **Crimp**
- **Print**

Standard Pin Contacts

Solder Termination

Crimp Clip Termination

Print Termination

Mating cycles:	> 5,000
Material:	Brass
Treatment processing:	At least. 1.25 µm Ni; at least. 0.75 µm Au on the mating area

For information regarding diameter, termination style and current load please see the Contact Configuration section.

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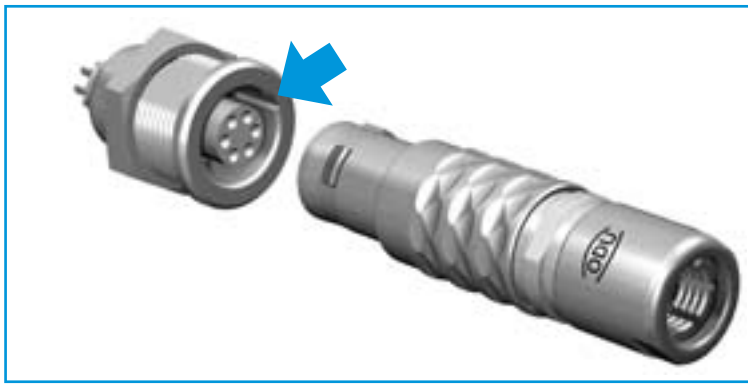
ODU MINI-SNAP

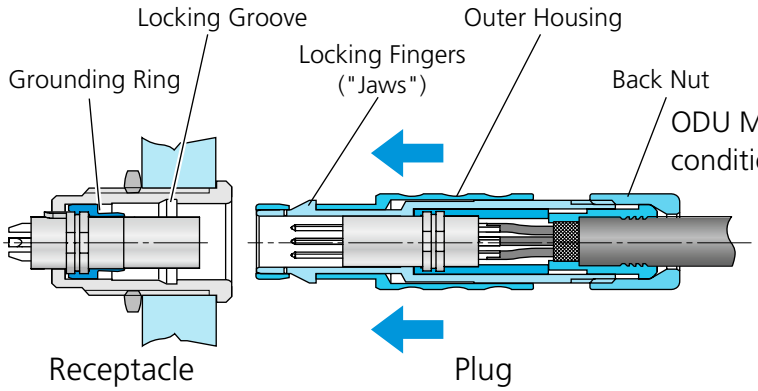


Series L – IP 50 (and IP 68)

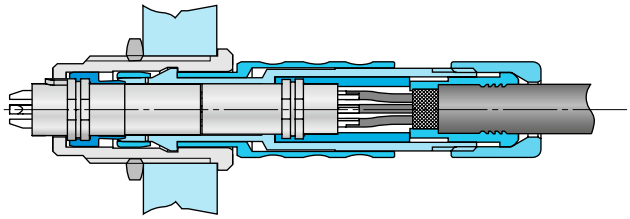
LP-Locking Concept

Keying with Pin and Groove

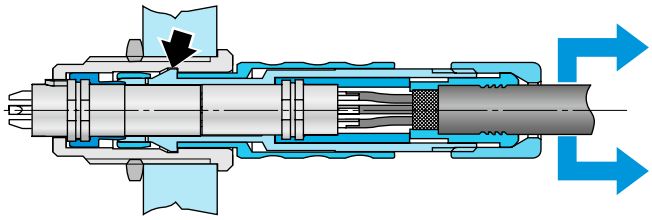
The Push-Pull Locking Principle: LP



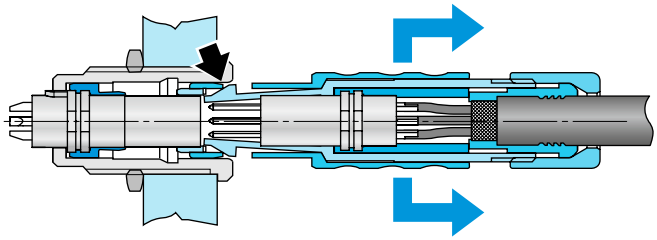
ODU MINI-SNAP connector in **unmated** condition.



ODU MINI-SNAP connector in **mated** condition.



Pulling on the cable or on the back nut causes the "jaws" to grip harder into the groove in the receptacle. A separation is virtually impossible.



Pulling on the outer plug housing disengages the "jaws" from the receptacle groove and the connector separates easily.

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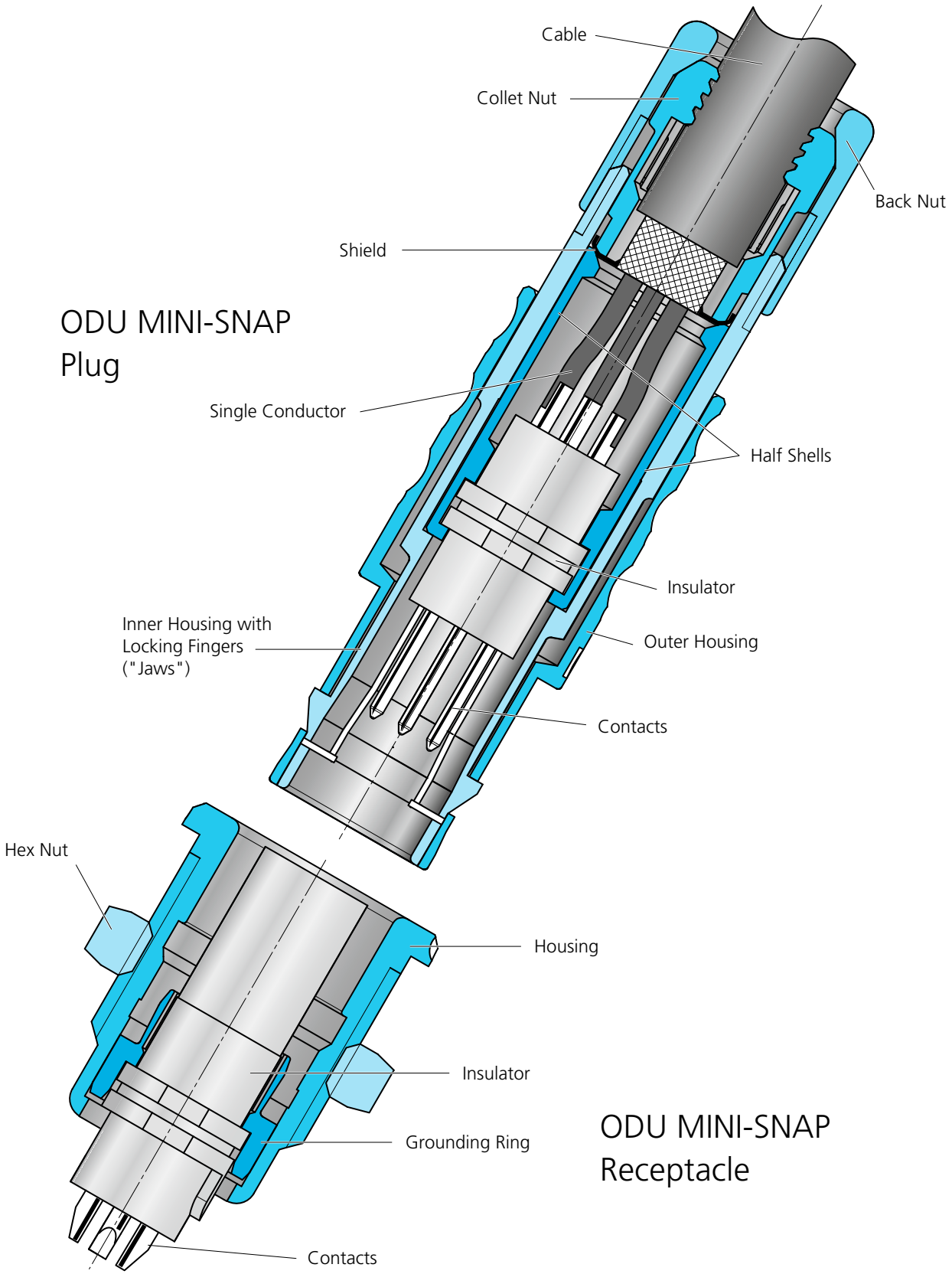
ODU MINI-SNAP

with **LP-Locking** Scheme in Cross Section



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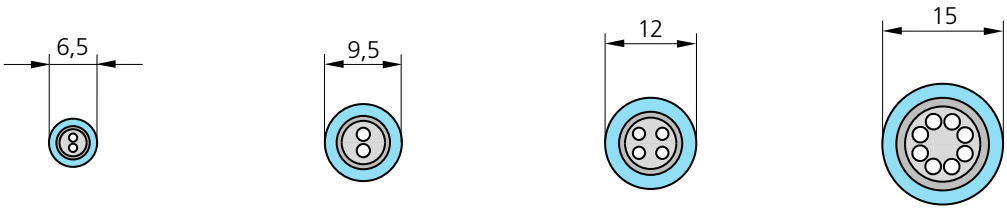
Available Housing Sizes

(Scale 1 : 1)

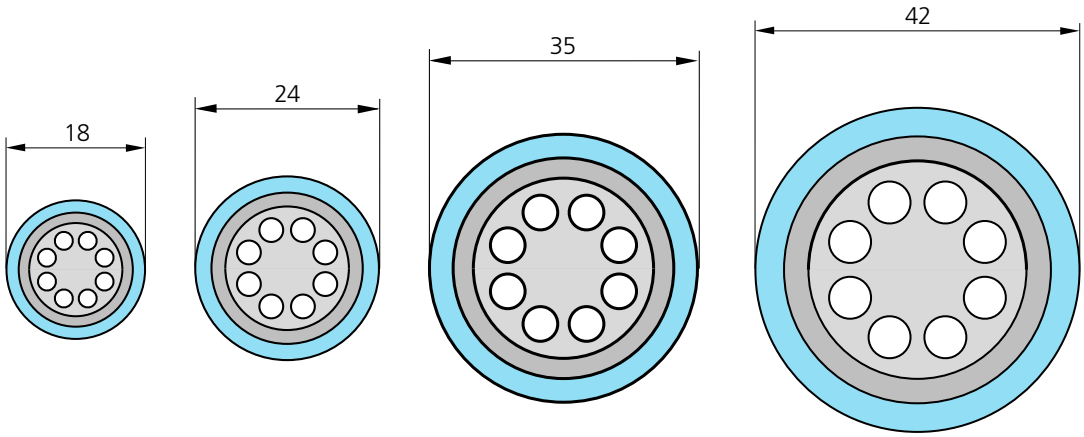
OD = Outside Diameter (Plug)
S = Size

OD:



S: 00 0 1 2

OD:



S: 3 4 5 6

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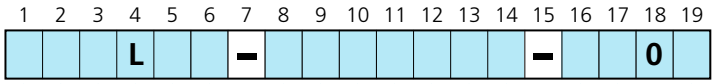
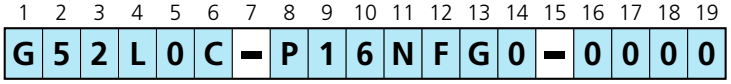
Part Number Key

The Part number key

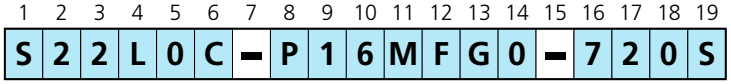


1. Type — **A** = Break-Apart Plug
   Panel mounted plug
   G = Receptacle
   K = In-Line Receptacle
   S = Straight Plug
   W = Right-Angle Plug
2. Style — **1 - 9** and **A - Z**
   X = Special
3. Size — **0 - 6** and **C**
   C = 00
4. Series — **L**
5. Coding (Page 30)
6. Material/Surface - Housing (Page 30)
7. empty
8. Material - Insulator (Page 72)
9. + 10. Contact Insert (Page 73 to 80)
   e.g. 18-way = **18**
11. Contact Type/Surface (Page 81)
12. Contact Diameter (Page 82 to 83)
   M = mixed arrangement
13. + 14. Term. Cross Section (Page 82 to 83)
   14. for special Contact Configurations **9**
15. empty
16. + 17. Collet System (Page 31)
19. Back Nut for Cable Bend Relief (Page 33)

Example:



Receptacle – Style 5 – Size 2 – Series L – Coding 0° – Brass matt chromate Housing – PEEK Insulator – 16-pos. – Socket(crimp) 0.75 µm Au – Term. Cross Section AWG22



Plug – Style 2 – Size 2 – Series L – Coding 0° – Brass matt chromate Housing – PEEK Insulator – 16-pos. – Pin (solder) 0.75 µm Au – Term. Cross Section AWG22 – Cable Diameter 6.0–7.2 mm – Back Nut for Silicone Cable Bend Relief (Silicone Cable Bend Relief to order seperatly)

Part Number Key

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			L			–								–			0	

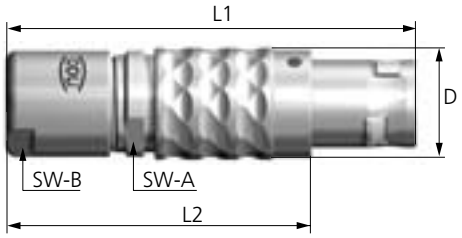
Straight Plug

(Suitable for all following receptacles and in-line receptacles)

S 1 **- IP 50** – with Standard Back Nut

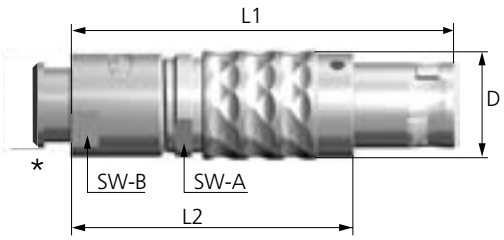
S 2 **- IP 50** – with Back Nut for Cable Bend Relief*

S 1



Contact configuration from page 73

S 2



Size	Dimensions in mm				**S1**	**S2**
	L1	L2	D	SW-A	SW-B	SW-B
00	~ 28	~ 20	6.4	5,5	5	5
0	~ 36	~ 26	9	8	7	7
1	~ 43	~ 32	11.5	10	10	10
2	~ 50	~ 38	14.5	13	12	13
3	~ 61	~ 46	17.5	15	14	15
4	~ 76	~ 58	25	21	20	20
5[1)]	~ 106	~ 81	35	31	30	-
6[1)]	~ 102	~ 78	42	40	40	-

1) only S1

*** Cable Bend Reliefs have to be ordered separately.**
(see page 104)

Part Number Key

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			L			–								–			0	

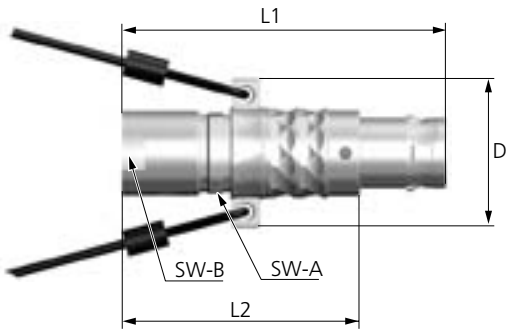
Straight Plug with lanyard for fast demating

(Suitable for all following receptacles and in-line receptacles)

S 7 **- IP 50** – with Standard Back Nut

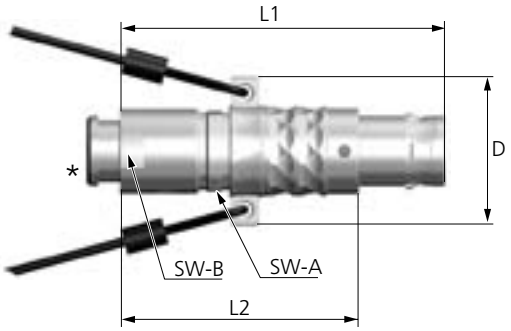
S 8 **- IP 50** – with Back Nut for Cable Bend Relief*

S 7



Contact configuration from page 73

S 8



Size	Dimensions in mm				S7	S8
	L1	L2	D	SW-A	SW-B	SW-B
0	~ 36	~ 26	14.5	8	7	7
1	~ 43	~ 32	18	10	10	10
2	~ 50	~ 38	21	13	12	13
4	~ 76	~ 58	32	21	20	20
5	~ 106	~ 81	42	31	30	28

*** Cable Bend Reliefs have to be ordered separately.**
(see page 104)

Part number key

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			L			–								–			0	

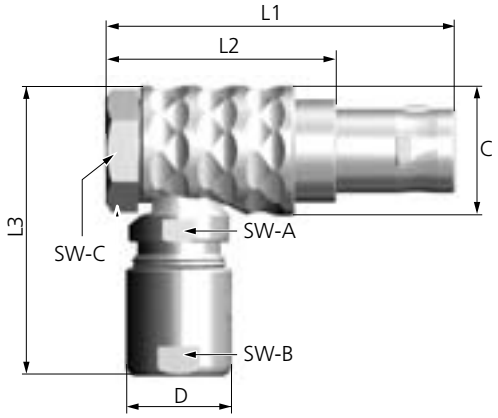
Right-Angle Plug

(Suitable for all following receptacles and in-line receptacles)

W 1 - **IP 50** – with Standard Back Nut

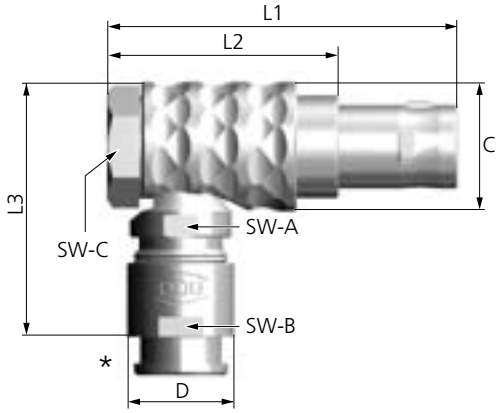
W 2 - **IP 50** – with Back Nut for Cable Bend Relief*

W 1



Contact configuration from page 73

W 2



Size	Dimensions in mm						W1	W2	
	L1	L2	L3	C	D	SW-A	SW-B	SW-B	SW-C
00	~ 24.3	16.3	~ 18.5	7.8	6.4	5.5	5	5	7
0	~ 30	20	~ 22.5	11	9	8	7	7	9
1	~ 36	25	~ 28.5	13.5	11	10	10	10	11
2	~ 41.5	29.5	~ 35	16.5	14	13	12	13	14
3	~ 50	35	~ 36.5	19	16.5	15	14	15	17
4	~ 65	47	~ 52	25	23	21	20	20	22

*** Cable Bend Reliefs have to be ordered separately.**
(see page 104)

Part number key

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			L			–								–			0	

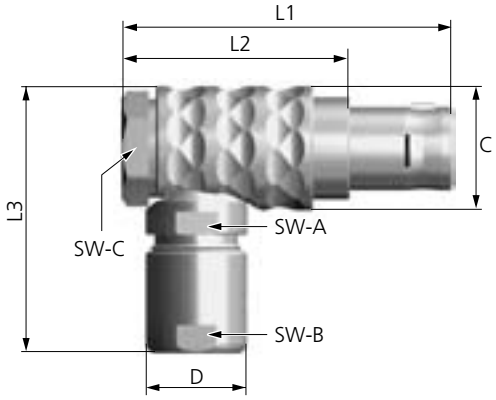
Right-angled Plug (Break-Apart version)

(Suitable for all following receptacles and in-line receptacles)

W 3 - **IP 50** – with Standard Back Nut

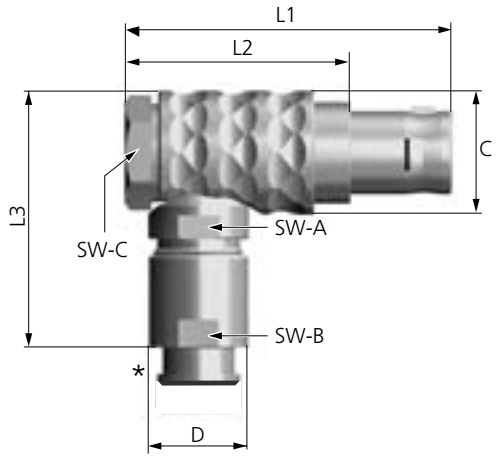
W 4 - **IP 50** – with Back Nut for Cable Bend Relief*

W 3



Contact configuration from page 73

W 4



Size	Dimensions in mm						W3	W4	
	L1	L2	L3	C	D	SW-A	SW-B	SW-B	SW-C
1	~ 36	25	~ 29	13.5	11	10	10	10	11
2	~ 41.5	29.5	~ 35	16.5	14	13	12	13	14

*** Cable Bend Reliefs have to be ordered separately.**
(see page 104)

Part number key

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			L			–								–			0	

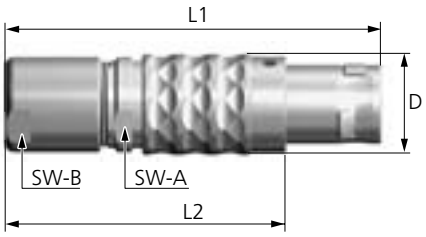
Break-Apart-Plug (with latching)

(Suitable for all following receptacles and in-line receptacles)

A 1 **- IP 50** – with Standard Back Nut

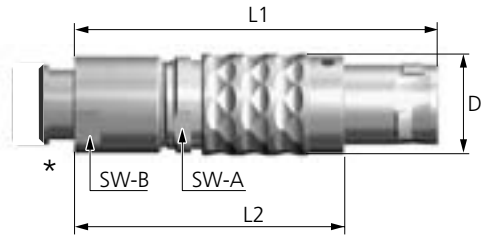
A 2 **- IP 50** – with Back Nut for Cable Bend Relief*

A 1



Contact configuration from page 73

A 2



Size	Dimensions in mm				A1	A2
	L1	L2	D	SW-A	SW-B	SW-B
00	~ 28	~ 20	6.4	5.5	5	5
0	~ 36	~ 26	9.0	8	7	7
1	~ 43	~ 32	11.5	10	10	10
2	~ 50	~ 38	14.5	13	12	13

Connector can be separated by pulling the cable.

*** Cable Bend Reliefs have to be ordered separately.**
(see page 104)

Part number key

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			L			–								–			0	0

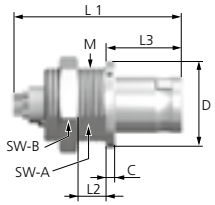
[1] L1 = Maximum Length incl. Contact Insert

Panel-Mounted Plug

(Suitable for all following receptacles and in-line receptacles)

A A - **IP 50** – with hex nut, **non-latching**, installation from front of panel

A A



Technical Data

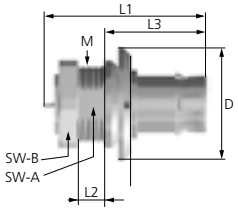
- IP 50 in mated condition
- anti-rotation feature
- contact configuration and PCB-Layout from page 73

Size	Dimensions in mm								Panel cut-out
	[1] L1	L2	L3	C	D	SW-A	SW-B	M	
00	~ 17.5	~ 4.5	9	1	8	6.3	9	M7 x 0.5	SW 6.4 / Ø 7.1
0	~ 21	~ 3.5	11.2	1.2	10	8.2	11	M9 x 0.5	SW 8.3 / Ø 9.1
1	~ 26.2	~ 7	12.3	1.5	14	10.5	14	M12 x 1	SW 10.6 / Ø 12.1
2	~ 27.5	~ 7	13.8	1.8	18	13.5	17	M15 x 1	SW 13.6 / Ø 15.1
3	~ 34.5	~ 9	17	2	22	16.5	22	M18 x 1	SW 16.6 / Ø 18.1
4	~ 37.1	~ 8	20.5	2.5	28	23.5	30	M25 x 1	SW 23.6 / Ø 25.1

Created to build up a docking connection between 2 instruments (E.g. a charging station).

A B - **IP 50** – with hex nut, **latching**, installation from front of panel

A B



Technical Data

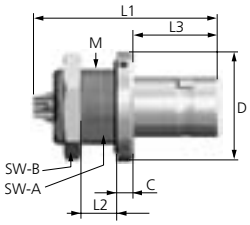
- IP 50 in mated condition
- anti-rotation feature
- contact configuration and PCB-Layout from page 73

Size	Dimensions in mm							Panel cut-out
	[1] L1	L2	L3	M	D	SW-A	SW-B	
1	~ 26.2	4	17	12 x 1	18	10.5	14	SW 10.6 / Ø 12.1

Created to build up a docking connection between 2 instruments (E.g. a charging station).

A D - **IP 68** – with hex nut, **non-latching**, installation from front of panel

A D



Technical Data

- IP 68 in mated condition
- anti-rotation feature
- contact configuration and PCB-Layout from page 73
- no crimp contacts possible

Size	Dimensions in mm								Panel cut-out
	[1] L1	L2	L3	C	D	SW-A	SW-B	M	
0	~ 23.5	~ 5.5	12	2	13	8.2	11	M9 x 0.5	SW 8.3 / Ø 9.1
1	~ 29.5	~ 8	13.3	2.5	17	10.5	14	M12 x 1	SW 10.6 / Ø 12.1
2	~ 29	~ 7	14.8	2.8	19.5	13.5	17	M15 x 1	SW 13.6 / Ø 15.1
3	~ 35	~ 7.5	18	3	24	16.5	22	M18 x 1	SW 16.6 / Ø 18.1

Created to build up a docking connection between 2 instruments (E.g. a charging station).

Part number key

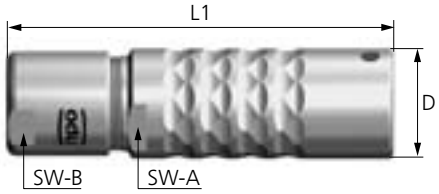
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			L			–								–			0	

In-Line Receptacle

K 1 - **IP 50** – with Standard Back Nut

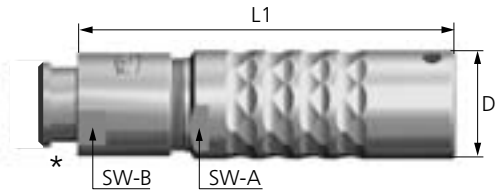
K 2 - **IP 50** – with Back Nut for Cable Bend Relief*

K 1



Contact configuration from page 73

K 2



Size	Dimensions in mm			K1	K2
	L1	D	SW-A	SW-B	SW-B
00	~ 27	6.4	5.5	5	5
0	~ 34.5	9.4	8	7	7
1	~ 41	11.5	10	10	10
2	~ 47	14.5	13	12	13
3	~ 56	17.5	16	14	15
4	~ 74	23.5	21	20	20

*** Cable Bend Reliefs have to be ordered separately.**
(see page 104)

ODU MINI-SNAP In-line Receptacle connect to plug for cable-to-cable connection.

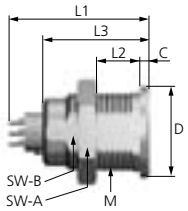
Part number key

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			L			–								–			0	0

[1] L1 = Maximum Length incl. Contact Insert
[2] L3 = Length of Housing

Receptacle

G 1 **Style 1** – ODU MINI-SNAP **RECEPTACLE IP 50,** installation from front of panel



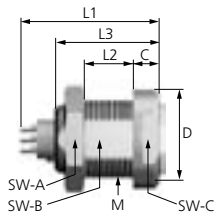
Technical Data

- IP 50
- anti-rotation feature
- contact configuration and PCB-Layout from page 73

Size	Dimensions in mm								Panel cut-out
	[1] L1	L2	[2] L3	M	D	SW-A	SW-B	C	
00	~ 16.0	~ 7.0	12.0	7x0.5	8.0	9.0	6.3	1.0	SW 6.4 / Ø 7.1
0	~ 19.5	~ 9.0	14.5	9x0.5	10.0	11.0	8.2	1.5	SW 8.3 / Ø 9.1
1	~ 24.0	~ 8.0	16.5	12x1	14.0	14.0	10.5	1.5	SW 10.6 / Ø 12.1
2	~ 27.5	~10.0	18.5	15x1	18.0	17.0	13.5	1.8	SW 13.6 / Ø 15.1
3	~ 33.0	~13.0	22.5	18x1	22.0	22.0	16.5	2.0	SW 16.6 / Ø 18.1
4	~ 36.0	~13.0	27.0	25x1	28.0	30.0	23.5	2.5	SW 23.6 / Ø 25.1
5	~ 43.5	~14	34.0	35x1	40.0	- *	33.5	3.0	SW 33.6 / Ø 35.1
6	~ 46.0	~18.0	33.0	42x1.5	48.0	48.0	40.0	3.5	SW 40.1 / Ø 42.1

* Attention: Size 5 is with a slotted nut instead of a hex nut

G 5 **Style 5** – ODU MINI-SNAP **RECEPTACLE IP 50,** CONTINUOUS THREAD, installation from rear or front of panel. Front extension adjustable



Technical Data

- IP 50
- anti-rotation feature
- contact configuration and PCB-Layout from page 73

Size	Dimensions in mm									Panel cut-out
	[1] L1	L2	[2] L3	M	D	SW-A	SW-B	SW-C	C	
00	~16.0	~ 6.0	12.0	7x0.5	9.0	9.0	6.3	8.0	2.0	SW 6.4 / Ø 7.1
0	~19.5	~ 8.0	14.5	9x0.5	11.5	11.0	8.2	10.0	2.5	SW 8.3 / Ø 9.1
1	~24.0	~ 8.0	16.5	12x1	15.0	14.0	10.5	13.0	4.0	SW 10.6 / Ø 12.1
2	~27.5	~10.0	18.5	15x1	20.0	17.0	13.5	17.0	4.0	SW 13.6 / Ø 15.1
3	~33.0	~12.0	22.5	18x1	23.0	22.0	16.5	20.0	5.0	SW 16.6 / Ø 18.1
4	~35.0	~10.5	27.0	25x1	30.0	30.0	23.5	27.0	4.5	SW 23.6 / Ø 25.1
5	~43.5	~12.0	34.0	35x1	42.0	- *	33.5	39.0	5.0	SW 33.6 / Ø 35.1

* Attention: Size 5 is with a slotted nut instead of a hex nut

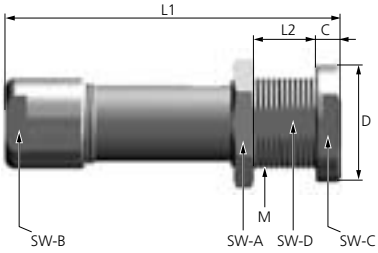
Part number key

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			L			–								–			0	0

[1] L1 = Maximum Length incl. Contact Insert
[2] L3 = Length of Housing

Receptacle

G 6 **Style 6** – ODU MINI-SNAP **RECEPTACLE IP 50, with round nut,** installation from rear or front of panel

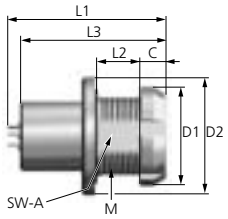


Technical Data

- IP 50
- anti-rotation feature
- contact configuration from page 73

Size	Dimensions in mm									Panel cut-out
	L1	L2	M	D	SW-A	SW-B	SW-C	SW-D	C	
0	~ 35.0	~ 6.0	9x0.5	11.5	11.0	7.0	10.0	8.2	2.5	SW 8.3 / Ø 9.1
1	~ 41.0	~ 5.0	12x1	15.0	14.0	10.0	13.0	10.5	4.0	SW 10.6 / Ø 12.1
2	~ 48.0	~ 6.5	15x1	20.0	17.0	12.0	17.0	13.5	3.8	SW 13.6 / Ø 15.1

G 8 **Style 8** – ODU MINI-SNAP **WATERTIGHT RECEPTACLE IP 68*, with slotted nut,** installation from rear of panel



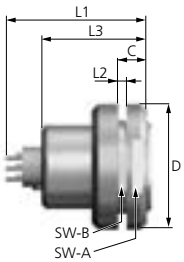
Technical Data

- IP 68 to the panel in mated or un-mated condition
- anti-rotation feature
- contact configuration and PCB-Layout from page 73
- nutdriver for slotted mounting nut, page 111
- no crimp contacts possible

Size	Dimensions in mm								Panel cut-out
	[1] L1	L2	[2] L3	M	D1	D2	SW-A	C	
0	~ 22.5	~ 6.0	18.5	9x0.5	12	14	8.2	3	SW 8.3 / Ø 9.1
1	~ 26.0	~ 7.0	22.5	12x1	15.0	18	10.5	4.0	SW 10.6 / Ø 12.1
2	~ 28.0	~ 6.0	23.0	15x1	19.0	20	13.5	4.0	SW 13.6 / Ø 15.1
3	~ 30.0	~ 8.5	26.5	18x1	23.0	24	16.5	5.0	SW 16.6 / Ø 18.1

* Reference: Potted Receptacle please see page 123

G A **Style A** – ODU MINI-SNAP **RECEPTACLE IP 50, with round nut,** installation from rear of panel



Technical Data

- IP 50
- anti-rotation feature
- contact configuration and PCB-Layout from page 73

Size	Dimensions in mm							Panel cut-out
	[1] L1	L2	[2] L3	M	D	SW-A	SW-B	C	
1	~ 26.0	~ 2.0	16.5	14x1	19.0	17.0	12.0	5.0	SW 12.1 / Ø 14.1
2	~ 29.0	~ 2.0	18.5	16x1	22.0	19.0	15.0	5.0	SW 15.1 / Ø 16.1
3	~ 33.0	~ 2.0	23.5	20x1	27.0	24.0	18.0	6.0	SW 18.1 / Ø 20.1
6	~ 46.0	~ 5.0	33.0	42x1.5	50.0	45.0	40.0	11	SW 40.1 / Ø 42.1

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Part number key

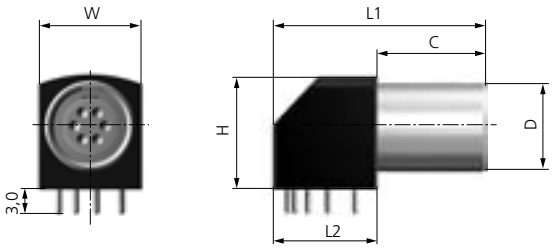
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			L			–								–			0	0

Receptacle

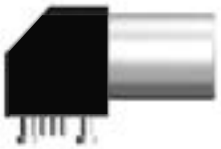
G F **Style F** – ODU MINI-SNAP **RIGHT-ANGLE RECEPTACLE (without thread)**

Technical Data

- IP 50
- Contact configuration from page 73
- PCB-Layout from page 84–88



Receptacle for Screw-mounting on the PCB



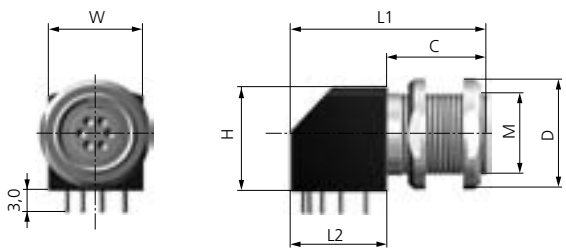
Size	Dimensions in mm						
	L1	L2	C	H	W	D	Maximum Postions
00	17.5	7	10.5	7	7	6.8	4
0	24.8	13.2	11.6	12.7	11.6	9	7
1	26.8	13.2	13.6	14	12.6	11	10

Order informations to the Screw mounting please see page 32

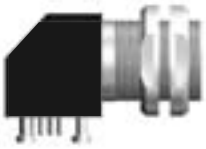
G G **Style G** – ODU MINI-SNAP **RIGHT-ANGLE RECEPTACLE (with thread)**

Technical Data

- IP 50
- Contact configuration from page 73
- PCB-Layout from page 84–88



Receptacle for Screw-mounting on the PCB



Size	Dimensions in mm							
	L1	L2	C	H	W	M	D	Maximum Positions
0	24.8	13.2	11.6	12.7	11.6	9x0.5	11.5	4
1	26.8	13.2	13.6	14	12.6	11x0.5	14.9	7

Order informations to the Screw mounting please see page 32

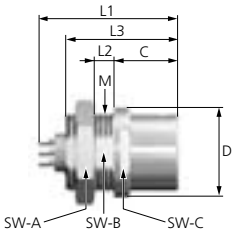
Part number key

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			L			–								–			0	0

[1] L1 = Maximum Length incl. Contact Insert
[2] L3 = Length of Housing

Receptacle

G H **Style H** – ODU MINI-SNAP **Receptacle IP 50,** with low rear profile

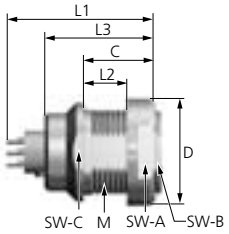


Technical Data

- IP 50
- anti-rotation feature
- contact configuration and PCB-Layout from page 73

Size	Dimensions in mm									Panel cut-out
	[1] L1	L2	[2] L3	M	D	SW-A	SW-B	SW-C	C	
00	~ 16.0	~ 2.5	12.5	7x0.5	9.0	9.0	6.3	8.0	8.0	SW 6.4 / Ø 7.1
0	~ 21.5	~ 3.5	15.0	9x0.5	11.5	11.0	8.2	10.0	9.0	SW 8.3 / Ø 9.1
1	~ 24.0	~ 4.5	17.5	12x1	14.0	14.0	10.5	12.0	10.0	SW 10.6 / Ø 12.1
2	~ 26.0	~ 6.0	19.5	15x1	18.0	17.0	13.5	16.0	11.0	SW 13.6 / Ø 15.1
3	~ 29.0	~ 6.0	22.5	18x1	22.0	22.0	16.5	-	12.5	SW 16.6 / Ø 18.1

G K **Style K** – ODU MINI-SNAP **Receptacle IP 50, with round nut,** installation from rear of panel

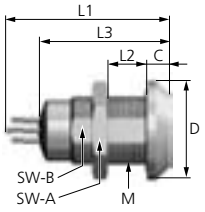


Technical Data

- IP 50
- anti-rotation feature
- contact configuration and PCB-Layout from page 73

Size	Dimensions in mm									Panel cut-out
	[1] L1	L2	[2] L3	M	D	SW-A	SW-B	SW-C	C	
0	~ 19.5	~ 3.8	14.5	9x0.5	11.5	10.0	8.2	9.0	6.3	SW 8.3 / Ø 9.1
1	~ 24.0	~ 7.0	16.5	12x1	15.0	13.0	10.5	13.0	11.0	SW 10.6 / Ø 12.1
2	~ 27.5	~ 5.0	18.5	15x1	20.0	17.0	13.5	15.0	9.0	SW 13.6 / Ø 15.1
3	~ 31.0	~ 7.0	22.5	18x1	23.0	20.0	16.5	20.0	12.0	SW 16.6 / Ø 18.1
4	~ 35.0	~ 10.0	27.0	25x1	30.0	27.0	23.5	27.0	14.5	SW 23.6 / Ø 25.1

G L **Style L** – ODU MINI-SNAP **Receptacle IP 68,** installation from front of panel



Technical Data

- IP 68 in reference to the tightness of the end device
- anti-rotation feature
- contact configuration and PCB-Layout from page 73
- no crimp contacts possible

Size	Dimensions in mm								Panel cut-out
	[1] L1*	L2	[2] L3*	M	D	SW-A	SW-B	C	
00	~ 18	~ 8.0	14.5	7x0.5	11.0	9.0	6.3	1.5	SW 6.4 / Ø 7.1
0	~ 21	~ 7.5	16.5	9x0.5	13.0	11.0	8.2	3.0	SW 8.3 / Ø 9.1
1	~ 27	~ 9.0	21.5	12x1	16.0	14.0	10.5	4.5	SW 10.6 / Ø 12.1
2	~ 29	~ 8.0	24.0	15x1	20.0	17.0	13.5	4.0	SW 13.6 / Ø 15.1

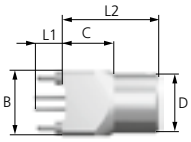
* Reference: Potted receptacle please see page 123

Part number key

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			L			–								–			0	0

Receptacle

G P **Style P** – ODU MINI-SNAP **PCB Receptacle IP 50**



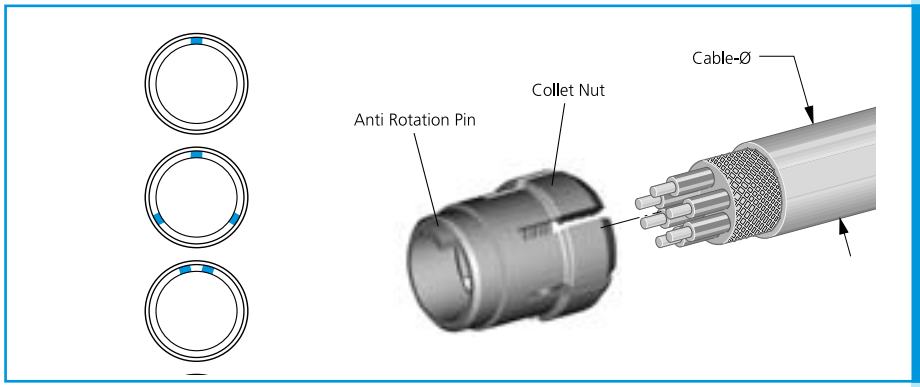
Size	Dimensions in mm				
	L1	L2	B	C	D
0	4.5	15.0	10.0	8.0	9.0
1	3.6	19.0	12.0	8.0	11.0

Technical Data

- IP 50
- contact configuration from page 73

PCB-layout on request

Details for the Part Number Key:



Keyings
Housing Materials / Surfaces
Collet System
Bend Protection Sleeves

Coding

Part number key

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			L			–								–			0	

	Angle	Receptacle Front View	Size							
			00	0	1	2	3	4	5	6
0	0°		●	●	●	●	●	●	●	
0	0°									●
A	30°		●	●	●	●	●	❍		
B	37.5°					●	●	❍		
C	45°					●	●	❍		
C	- 45°		●	●	●					
F	60°		●	●	●	●	●	❍		
J	90°			●	●					
K	95°					●	●	❍		
Q	120°					●	●	❍		
V	135°			❍	●					
W	145°			❍	❍	●	❍	❍		
Y	155°			●	●					

● Standard
❍ On Request

Housing Materials / Surfaces

Part number key

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			L			–								–				

Standard

C Cu-alloy / matt chromate

Special materials and surfaces on request.

N Cu-alloy / nickel

S Cu-alloy / black chromate

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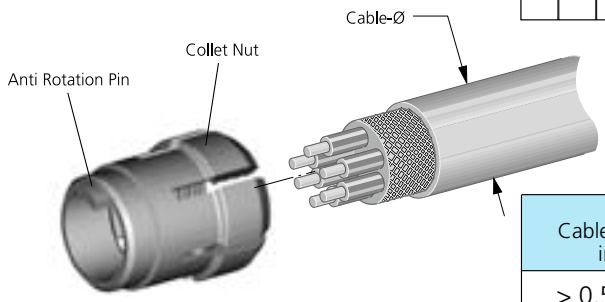
Site web : www.hvssystem.com

Collet System

Part number key

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			L			–								–			0	



* It's possible that the collet nut cannot be covered completely over the cable.

Cable diameter in mm	Size								
	00	0	1	2	3	4	5	6	
> 0,5 - 1,0	●								10
> 1,0 - 1,5	●								15
> 1,5 - 2,0	●								20
> 1,5 - 2,2		●	●						22
> 2,0 - 2,5	●								25
> 2,5 - 3,0	●								30
> 2,0 - 3,2		●	●	●					32
> 3,0 - 3,5	●*								35
> 3,0 - 4,2		●	●	●	●				42
> 4,0 - 5,2		●*	●	●	●				52
> 5,0 - 5,6		●*							56
> 5,0 - 6,2			●	●	●	●			62
> 6,0 - 7,2			●*	●	●	●			72
> 7,0 - 7,7			❍*						77
> 7,0 - 8,0						●			80
> 7,0 - 8,2				●	●				82
> 8,0 - 9,2				●*	●	●			92
> 9,0 - 9,9				❍*					99
> 9,0 - 10,2					●				02
> 9,1 - 10,5						●			02
> 10,0 - 11,0						●			11
> 10,0 - 11,2					●*				12
> 11,0 - 11,9					❍*	●			19
> 12,0 - 13,0						●		●	13
> 13,0 - 14,0						●			14
> 14,0 - 15,0						●*	●	●	15
> 15,0 - 16,0						●*			16
without collet system									00

❍ This diameters are not deliverable for applications with cable bend relief.

References:

Useable: for all Plugs and In-Line Receptacles and Receptacle style 6.

Application: **Collet nut** for strain relief.

Series L

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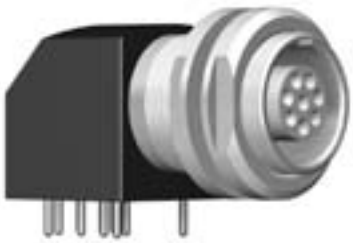
Right-Angled Print Contacts in the Receptacle

Part number key

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			L			–				Q		0	0	–			0	0

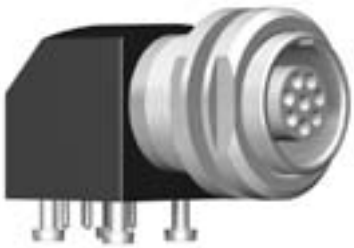
PCB-Layout see Page 84–91
Pin version on request

Right-Angled Print Contact **A**



Pin version on request

Receptacle style F and G with 4 solder pins (see page 25) **0**



Receptacle style F and G for Screw Mounting (see page 25) **S**

Max. tightening torque of the screws M1.4: 0.1 Nm

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Definition of the Back Nut

(Straight-Angled-Break Apart Plugs, Inline Receptacles, Receptacles Style 6)

Part number key

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			L			–								–			0	

Standard Back Nut — **0**

Back Nut for Silicon Cable Bend Reliefs — **S**

Cable Bend Reliefs on page 104

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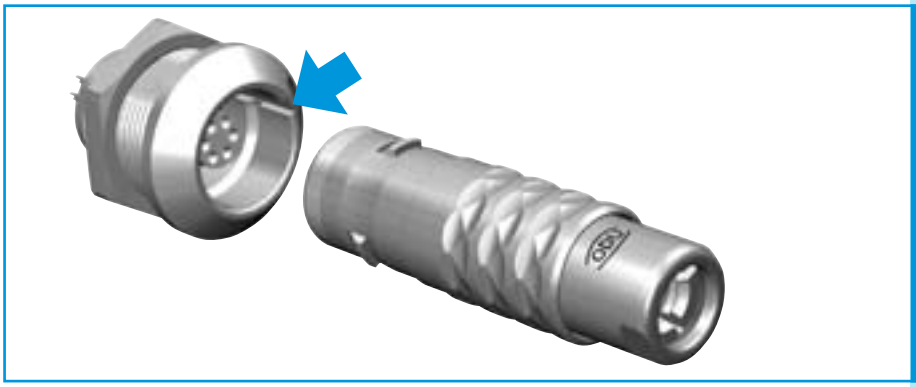
ODU MINI-SNAP

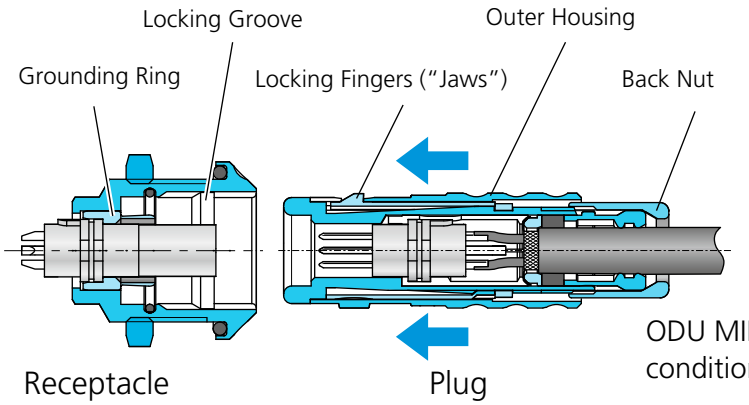


Series K – IP 68

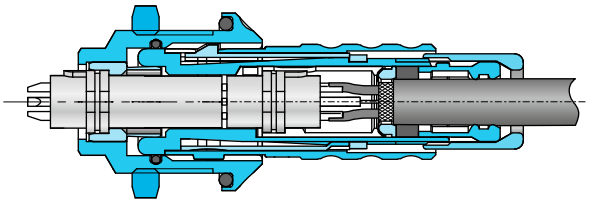
LP-Locking Concept

Keying with Pin and Groove

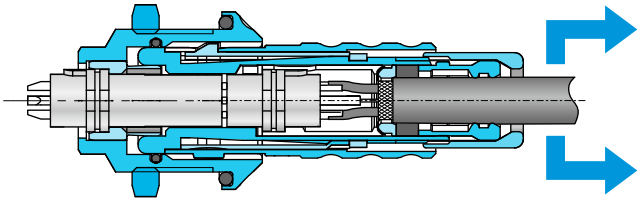
The Push-Pull Locking Principle: LP



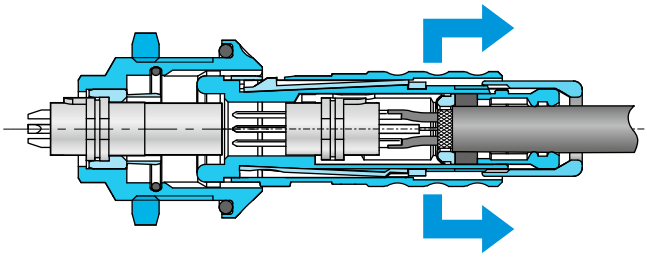
ODU MINI-SNAP connector in **unmated** condition.



ODU MINI-SNAP connector in **mated** condition.



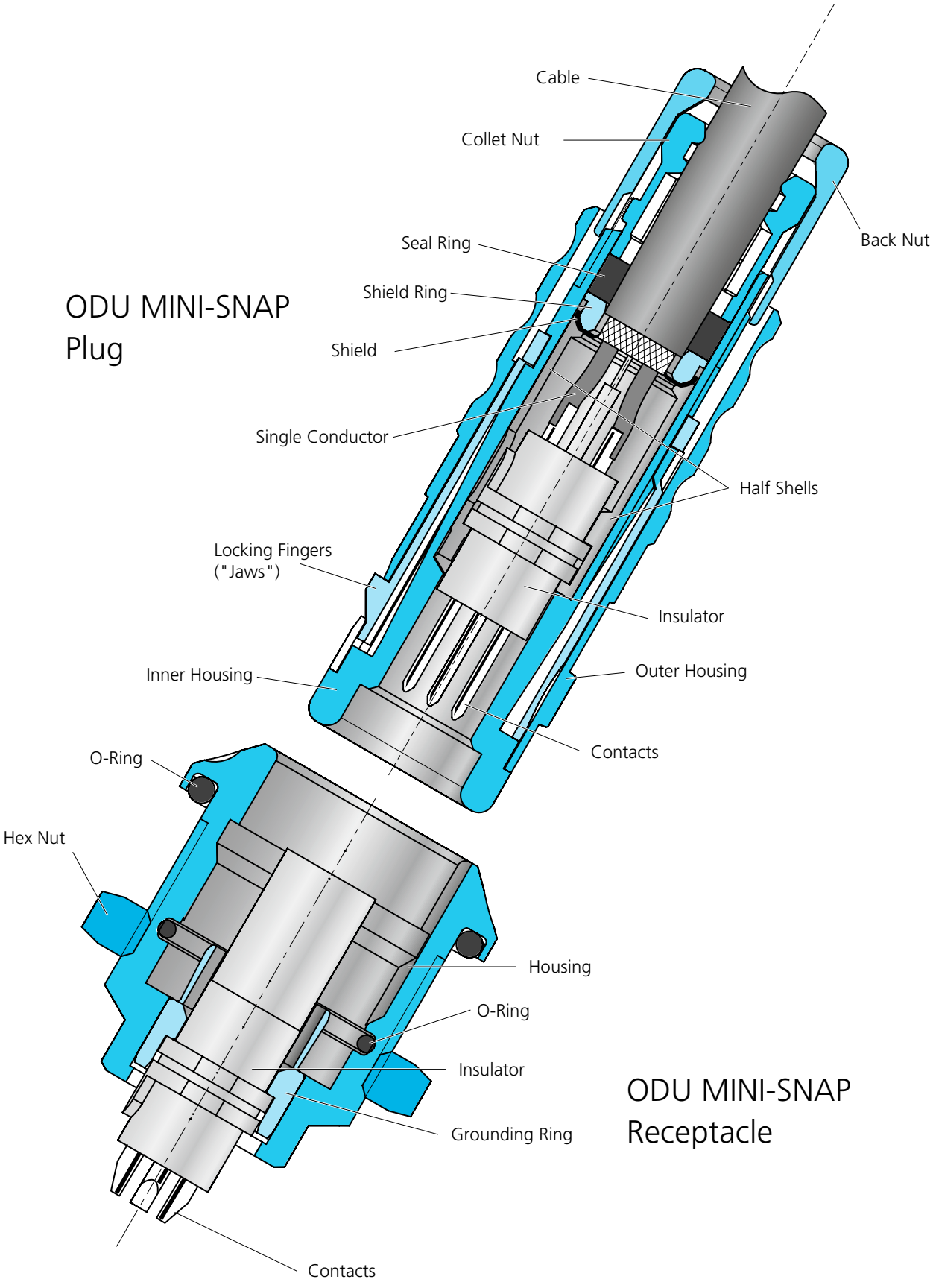
Pulling on the cable or on the back nut causes the “jaws” to grip harder into the groove in the receptacle. A separation is virtually impossible.



Pulling on the outer plug housing disengages the “jaws” from the receptacle groove and the connector separates easily.

ODU MINI-SNAP

with **LP-Locking** Scheme in Cross Section



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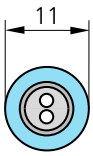
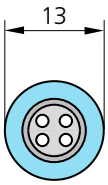
Available Housing Sizes

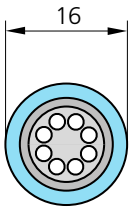
(Scale 1 : 1)

OD = Outside Diameter (Plug)
S = Size

OD:

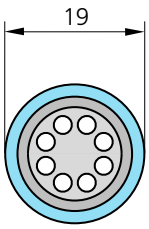


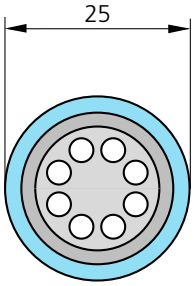




S: 0 1 2

OD:





S: 3 4

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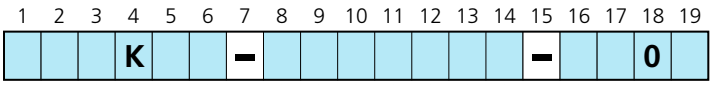
Part number key

The Part number key



1. Type
   - **A** = Break-Apart Plug
   - Panel mounted plug
   - **G** = Receptacle
   - **K** = In-Line Receptacle
   - **S** = Straight Plug
   - **W** = Right-Angle Plug
2. Style
   - **1 - 8**
   - **X** = Special
3. Size
   - **0 - 4**
4. Series
   - K
5. Coding (Page 50)
6. Material/Surface - Housing (Page 50)
7. empty
8. Material - Insulator (Page 72)
9. + 10. Contact Insert (Page 73 to 80)
   - e.g. 18-way = **18**
11. Contact Type/Surface (Page 81)
12. Contact diameter (Page 82 to 83)
    - **M** = mixed arrangement
13. + 14. Term. Cross Section (Page 82 to 83)
    - 14. for special Contact Configurations **9**
15. empty
16. + 17. Collet System (Page 51)
19. Back Nut for Cable Bend Relief (Page 52)

Example:

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

G	3	2	K	0	C	–	P	1	6	N	F	G	0	–	0	0	0	0

Receptacle – Style 3 – Size 2 – Series K – Coding 0° – Brass matt chromate Housing –
PEEK Insulator – 16-pos. – Socket(crimp) 0.75 µm Au –Term. Cross Section AWG22

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

S	2	2	K	0	C	–	P	1	6	M	F	G	0	–	7	0	0	S

Plug – Style 2 – Size 2 – Series K – Coding 0° – Brass matt chromate Housing –
PEEK Insulator – 16-pos. – Pin (solder) 0.75 µm Au – Term. Cross Section AWG22 –
Cable Diameter 6.5–7.0 mm – Back Nut for Silicone Cable Bend Relief (Cable Bend Relief to order seperatly)

Part number key

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			K			–								–			0	

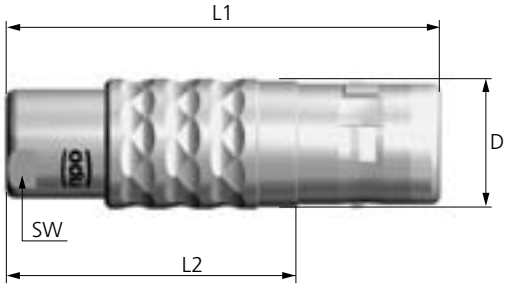
Straight Plug

(Suitable for all following receptacles and in-line receptacles)

S 1 **- IP 68** – with Standard Back Nut

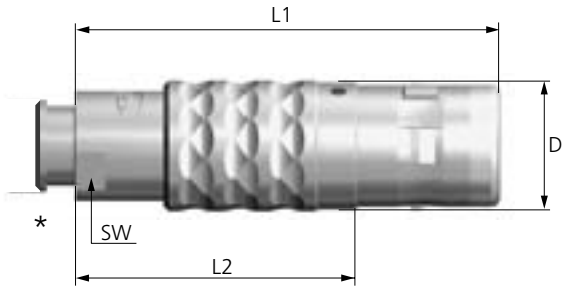
S 2 **- IP 68** – with Back Nut for Cable Bend Relief*

S 1



Contact configuration from page 73

S 2



Size	Dimensions in mm			S1	S2
	L1	L2	D	SW	SW
0	~ 37	~ 25	11	7	7
1	~ 44	~ 27	13	10	10
2	~ 50	~ 33	16	12	13
3	~ 60	~ 40	19	14	15
4	~ 70	~ 49	25	20	20

*** Cable Bend Reliefs have to be ordered separately.**
(see page 104)

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Part number key

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			K			–								–			0	

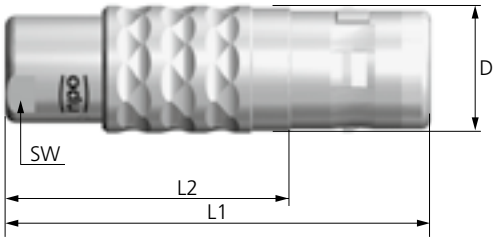
Break-Apart-Plug

A 1 - **IP 68** – with Standard Back Nut

A 2 - **IP 68** – with Back Nut for Cable Bend Relief*

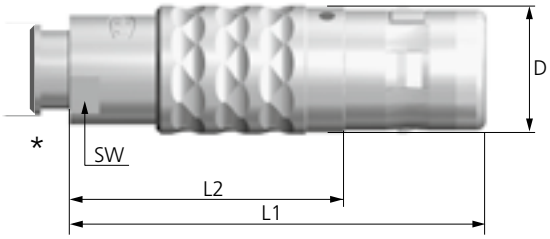
Size	Dimensions in mm			A1	A2
	L1	L2	D	SW	SW
0	~ 37	~ 25	11	7	7
1	~ 44	~ 27	13	10	10
3	~ 60	~ 40	19	14	15

A 1



Contact configuration from page 73

A 2

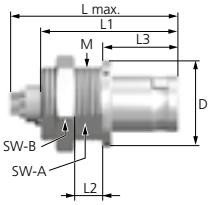


Connector can be separated by pulling the cable.

*** Cable Bend Reliefs have to be ordered separately** (see page 104).

Panel-Mounted Plug

A A - **IP 68** – with hex nut, non-latching, installation from front of panel

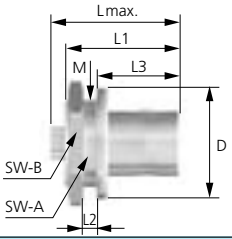


Technical Data

- IP 68 in mated condition
- anti-rotation feature
- contact configuration and PCB-Layout from page 73

Size	Dimensions in mm								Panel cut-out
	L max.	L1	L2	L3	M	D	SW-A	SW-B	
1	28	23.5	~ 4	16.3	16x1	19.9	14.5	18.5	SW 14.6 / Ø 16.1
2	32	28	~ 4.5	19	20x1	24.9	18.5	25	SW 18.6 / Ø 20.1

A D - **IP 68** – with hex nut, non-latching, installation from front of panel



Technical Data

- IP 68 in reference to the tight of the end device and in unmated condition
- anti-rotation feature
- crimp contacts not possible
- contact configuration and PCB-Layout from page 73

Size	Dimensions in mm								Panel cut-out
	L max.	L1	L2	L3	M	D	SW-A	SW-B	
3	36	32.2	~ 4	23.2	24x1.0	31	22.5	30	SW 22.6 / Ø 24.1

Created to build up a docking connection between 2 instruments (E.g. a charging station).

Part number key

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			K			–								–			0	

Right-Angle Plug

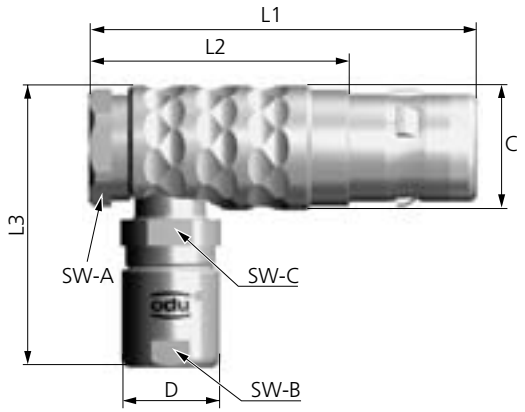
(Suitable for all following receptacles and in-line receptacles)

W 1 - **IP 68** – with Standard Back Nut

W 2 - **IP 68** – with Back Nut for Cable Bend Relief*

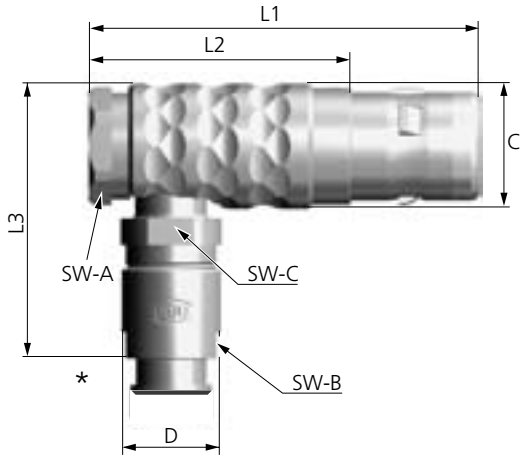
IP 68

W 1



Contact configuration from page 73

W 2



Size	Dimensions in mm						W1	W2	
	L1	L2	L3	C	D	SW-A	SW-B	SW-B	SW-C
0	~ 34.7	23.2	~ 27	11.5	9	10	7	7	8
1	~ 43	28.7	~ 33	14	11	12	10	10	10
2	~ 51	35	~ 37	17.5	14	15	12	13	13
3	~ 60	40	~ 43	20	16.5	18	14	15	15

*** Cable Bend Reliefs have to be ordered separately.**
(see page 104)

Part number key

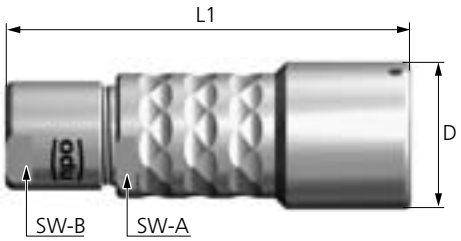
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			K			–								–			0	

In-Line Receptacle

K 1 - **IP 68** – with Standard Back Nut

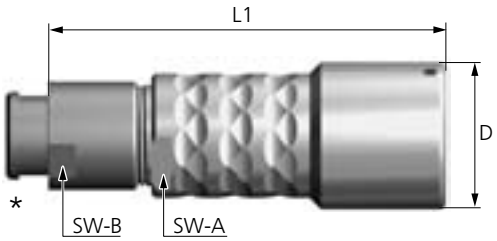
K 2 - **IP 68** – with Back Nut for Cable Bend Relief*

K 1



Contact configuration from page 73

K 2



Size	Dimensions in mm			K1	K2
	L1	D	SW-A	SW-B	SW-B
0	~ 38	13	9	7	7
1	~ 46	15	11	10	10
2	~ 54	19	14	12	13
3	~ 64	23	16.5	14	15
4	~ 74	29	20	20	20

*** Cable Bend Reliefs have to be ordered separately.**
(see page 104)

ODU MINI-SNAP In-line Receptacle connect to plug for cable-to-cable connection

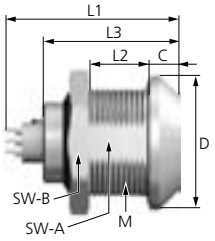
Part number key

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			K			–								–			0	0

[1] L1 = Maximum Length incl. Contact insert
[2] L3 = Length of Housing

Receptacle

G 1 **Style 1** – ODU MINI-SNAP **RECEPTACLE IP 68,** installation from front of panel

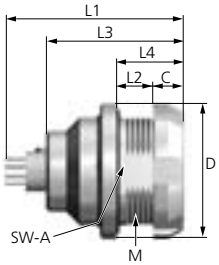


Technical Data

- IP 68 in mated condition
- anti-rotation feature
- contact configuration and PCB-Layout from page 73

Size	Dimensions in mm								Panel Cut-Out
	[1] L1	L2	[2] L3	M	D	C	SW-A	SW-B	
0	20.7	~ 5.5	15.5	14x1	18	4.0	12.5	17	SW 12.6 / Ø 14.1
1	28	~ 9	20.5	16x1	20	4.5	14.5	19	SW 14.6 / Ø 16.1
2	31	~ 9	23	20x1	25	5	18.5	29	SW 18.6 / Ø 20.1
3	36	~ 11	28	24x1	31	6	22.5	30	SW 22.6 / Ø 24.1
4	39.5	~ 11	31.5	30x1	40.5	6.5	28.5	36	SW 28.6 / Ø 30.1

G 3 **Style 3** – ODU MINI-SNAP **RECEPTACLE IP 68 WITH SLOTTED MOUNTING NUT,** installation from rear of panel



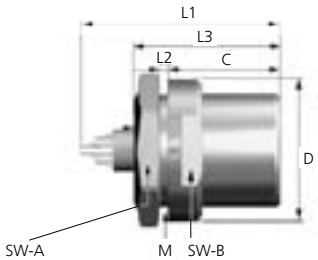
Technical Data

- IP 68 in mated condition
- anti-rotation feature
- contact configuration and PCB-Layout from page 73
- Nutdriver, page 111

Size	Dimensions in mm								Panel Cut-Out
	[1] L1	L2	[2] L3	L4	M	D	C	SW-A	
0	21	~ 3.0	15.5	7	14x1	18	4.0	12.5	SW 12.6 / Ø 14.1
1	28	~ 6.2	20.5	10	16x1	20	3.5	14.5	SW 14.6 / Ø 16.1
2	31	~ 6.2	23	10	20x1	25	3.5	18.5	SW 18.6 / Ø 20.1
3*	36	~ 7.5	28	12	24x1	31	4.5	22.5	SW 22.6 / Ø 24.1
4	40	~ 6.5	31.5	13.5	30x1	41.5	7.0	28.5	SW 28.6 / Ø 30.1

* Reference: Size 3 with round nut SW 27

G 4 **Style 4** – ODU MINI-SNAP **WATERTIGHT RECEPTACLE IP 68*,** installation from front of panel with low rear profile



Technical Data

- IP 68 in mated condition
- Anti-rotation feature
- contact configuration and PCB-Layout from page 73

* No crimp contacts possible – only Solder- and Print design can be used here

Size	Dimensions in mm								Panel Cut-Out
	[1] L1	L2	[2] L3	M	D	SW-A	SW-B	C	
1	~ 28.0	~ 1.5	20.5	16x1	20	19	17	15.5	SW 14.6 / Ø 16.1
2	~ 32	~ 2	23	20x1	25	24	20	17	SW 18.6 / Ø 20.1

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Site web : www.hvssystem.com

Part number key

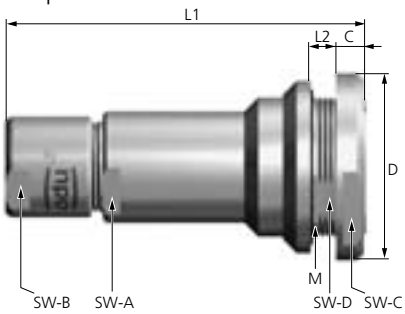
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			K			–								–			0	0

[1] L1 = Maximum Length incl. Contact Insert
[2] L3 = Length of Housing

Receptacle

G 6

Style 6 – ODU MINI-SNAP **Receptacle IP 68, WITH STRAIN RELIEF,** installation of rear of panel



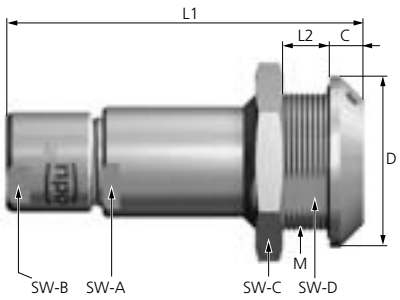
Technical Data

- IP 68 in mated condition
- anti-rotation feature
- Contact configuration from page 73

Size	Dimensions in mm									Panel Cut-Out
	L1	L2	M	D	C	SW-A	SW-B	SW-C	SW-D	
1	~ 48	~ 7	16x1	22	3	11	10	19	14.5	SW 14.6 / Ø 16.1
2	~ 54	~ 4	20x1	27	4	14	12	24	18.5	SW 18.6 / Ø 20.1
3	~ 64	~ 6	24x1	31	4.5	16.5	14	27	22.5	SW 22.6 / Ø 24.1

G 7

Style 7 – ODU MINI-SNAP **RECEPTACLE IP 68, WITH STRAIN RELIEF,** installation from front of panel



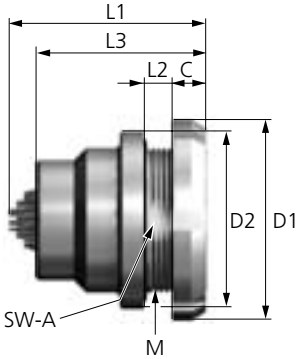
Technical Data

- IP 68 in mated condition
- anti-rotation feature
- Contact configuration from page 73

Size	Dimensions in mm									Panel Cut-Out
	L1	L2	M	D	C	SW-A	SW-B	SW-C	SW-D	
2	~ 54	~ 9	20x1	25	5	14	12	24	18.5	SW 18.6 / Ø 20.1

G 8

Style 8 – ODU MINI-SNAP **RECEPTACLE IP 68,** with slotted mounting nut, installation from rear of panel



Technical Data

- IP 68 in reference to the end device in unmated condition
- anti-rotation feature
- Crimp contacts not possible
- Contact configuration from page 73

Size	Dimensions in mm								Panel Cut-Out
	[1] L1	L2	[2] L3	M	D1	D2	C	SW-A	
1	~ 31	~ 6	26.6	16x1	20	20	3.5	14.5	SW 14.6 / Ø 16.1
2	~ 34	~ 6	27	20x1	25	25	3,5	18.5	SW 18.6 / Ø 20.1
3*	~ 39	~ 7	32.7	24x1	30	31	4.5	22.5	SW 22.6 / Ø 24.1
4	~ 41	~ 6	35.5	30x1	41.5	36.9	7	28.5	SW 28.6 / Ø 30.1

* Reference: Size 3 with round nut SW 27

Part number key

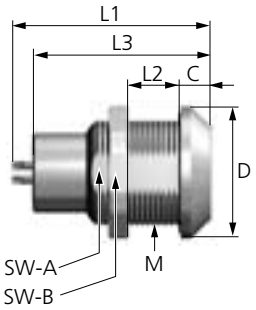
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			K			–								–			0	0

[1] L1 = Maximum Length incl. Contact Insert
[2] L3 = Length of Housing

Receptacle

G L

Style L – ODU MINI-SNAP **RECEPTACLE IP 68,** installation from front of panel



Technical Data

- IP 68 in reference to the end device in unmated condition
- anti-rotation feature
- Crimp contacts not possible
- Contact configuration from page 73

Size	Dimensions in mm								Panel Cut-Out
	[1] L1	L2	[2] L3	M	D	C	SW-A	SW-B	
0	~ 24	~ 5	19.7	14x1	18	4	12.5	17	SW 12.6 / Ø 14.1
1	~ 30	~ 9	26.6	16x1	20	4.5	14.5	19	SW 14.6 / Ø 16.1
2	~ 32	~ 9	27	20x1	25	5	18.5	24	SW 18.6 / Ø 20.1

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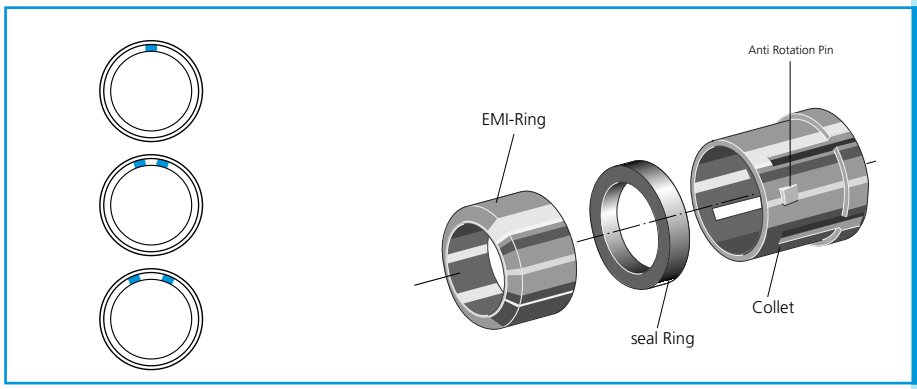
Details for the Part Number Key:



Keying
Housing Materials / Surfaces
Collet System
Bend Protection Sleeves

Coding

Part number key

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			K			–								–				

	Angle	Receptacle Front View	Size 0	1	2	3	4
0	0°		●	●	●	●	●
A	30°		●	●	●	○	○
C	45°		●	●	●	○	○
F	60°		●	●	●	○	○
H	75°		○	○	○	○	○
K	95°		○	○	○	○	○
Q	120°		○	○	○	○	○
W	145°		○	○	○	○	○

● Standard
○ On request

Housing Materials / Surfaces

Part number key

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			K			–								–			0	

C — **Standard**
Cu-alloy / matt chromate

Special materials and surfaces on request.

N — Cu-alloy / nickel

S — Cu-alloy / black chromate

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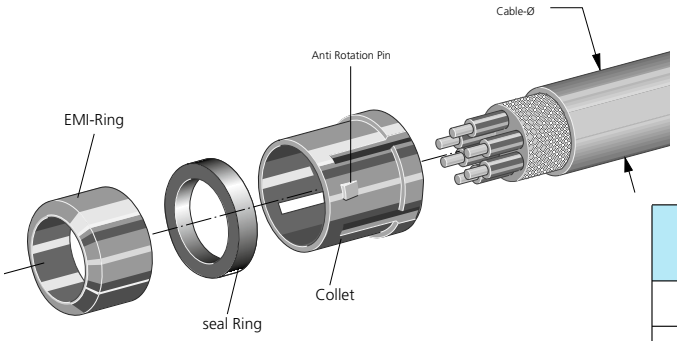
Collet System

Part number key

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			K			–								–			0	



Useable: for all Plugs and In-Line Receptacles.

Application: **Collet nut** for strain relief.

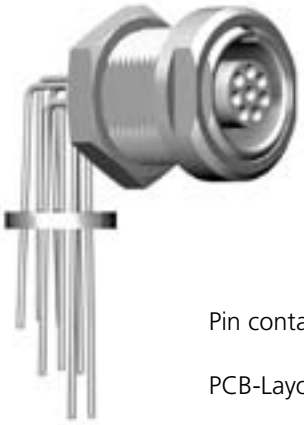
Reference: ❶ This application is not available for applications with cable bend relief.

Cable diameter in mm	Size 0	1	2	3	4	
> 1.5 – 2.0	●	❶				20
> 2.0 – 2.5	●	●				25
> 2.5 – 3.0	●	●	●			30
> 3.0 – 3.5	●	●	●	●		35
> 3.5 – 4.0	●	●	●	●		40
> 4.0 – 4.5	●	●	●	●		45
> 4.5 – 5.0	●	●	●	●		50
> 5.0 – 5.5		●	●	●		55
> 5.5 – 6.0		●	●	●		60
> 6.0 – 6.5		●	●	●		65
> 6.5 – 7.0		●	●	●		70
> 7.0 – 7.5			●	●		75
> 7.5 – 8.0			●	●		80
> 8.0 – 8.5			●	●		85
> 8.5 – 9.0			●	●		90
> 9.0 – 9.5				●	●	95
> 9.5 – 10.0				●		01
> 10.5 – 10.5				●	●	02
> 10.5 – 11.5					●	03
> 13.5 – 14.0					●	14
without cable collet						00

Right-Angled Print Contacts in the Receptacle

Part number key

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			K			–				Q		0	0	–			0	0



Right-Angled Print Contact **A**

Pin contacts on request!

PCB-Layout see Page 84–91

Definition of the Back Nut

(Straight-Angled-Break Apart Plugs, Inline Receptacles, Receptacles Style 6 & 7)

Part number key

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			K			–								–			0	

Standard Back Nut **0**

Back Nut for Silicon Cable Bend Reliefs **S**

Cable Bend Reliefs on page 104

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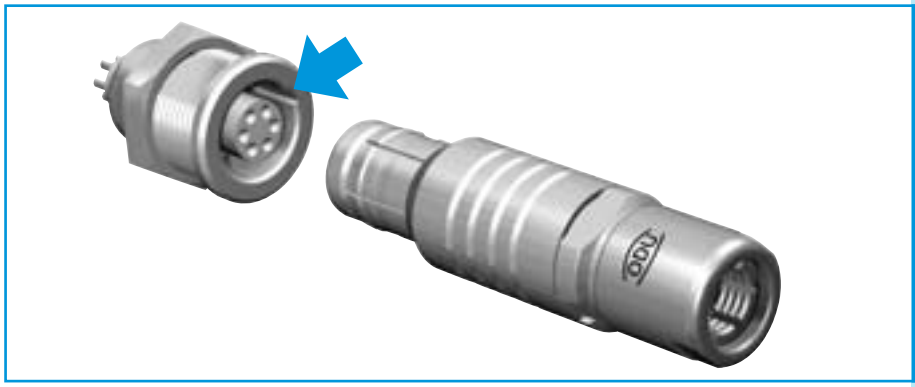
ODU MINI-SNAP

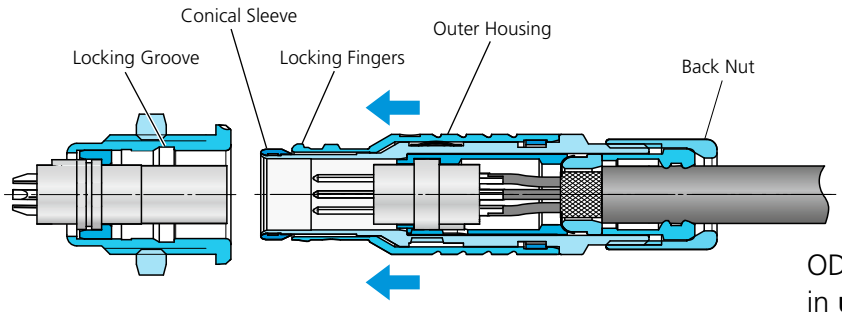


Series B – IP68

FP-Locking Concept

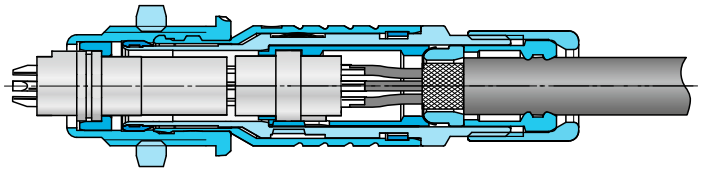
Keying with Pin and Groove

The Push-Pull Locking Principle: FP

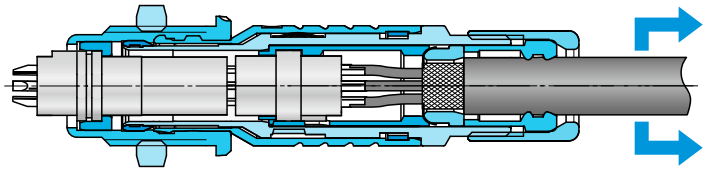


ODU MINI-SNAP connector in **unmated** condition.

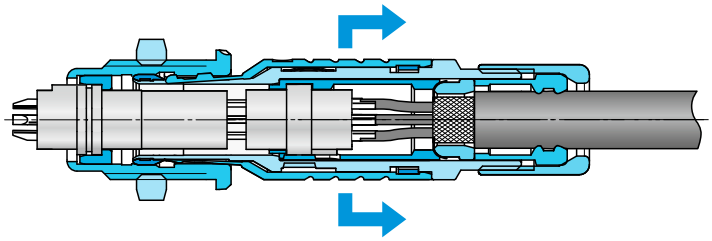
Receptacle Plug



ODU MINI-SNAP connector in **mated** condition.



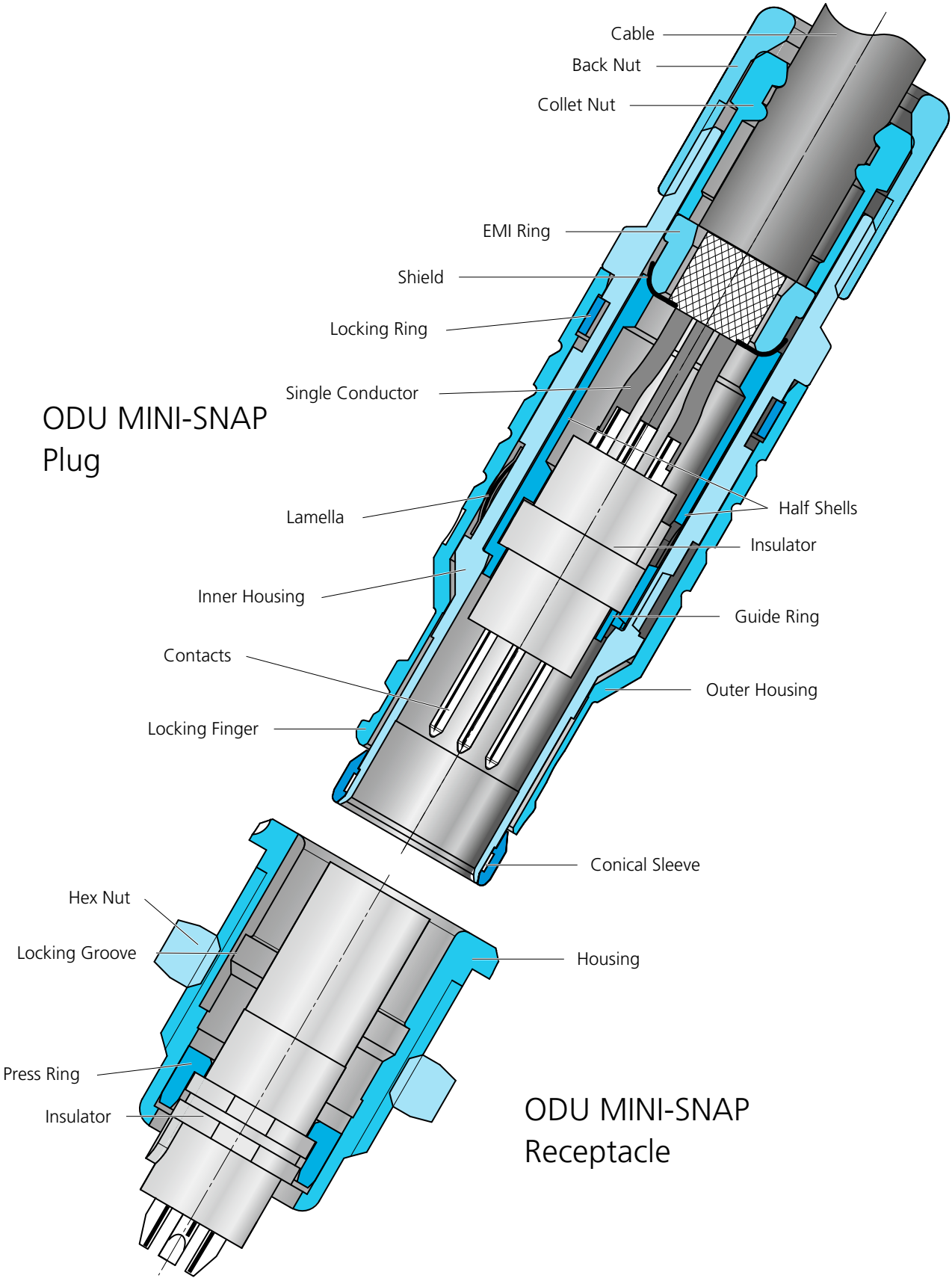
Pulling on the cable or on the back nut causes the locking fingers to grip tighter into the groove inside the receptacle. A separation is virtually impossible.



Pulling on the outer plug housing disengages the locking fingers from the receptacle groove and the connector separates easily.

ODU MINI-SNAP

with **FP-Locking** Scheme in Cross Section



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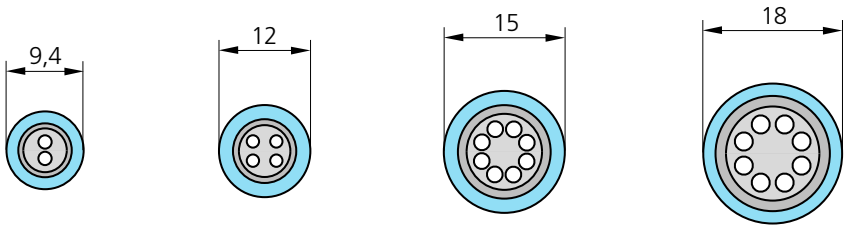
Available Housing Sizes

(Scale 1 : 1)

OD = Outside Diameter (Plug)
S = Size

OD:



S: 0 1 2 3

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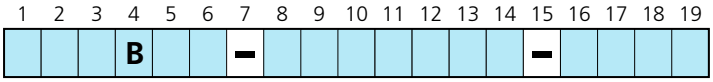
The Part Number Key

Part number key



1. Type — **A** = Break-Apart Plug; **G** = Receptacle; **K** = In-Line Receptacle; **S** = Straight Plug; **W** = Right-Angle Plug
2. Style — **1 - 9** and **A - Z**; **X** = Special
3. Size — **0 - 3**
4. Series — **B**
5. Coding (Page 66)
6. Material/Surface - Housing (Page 67)
7. empty
8. Material - Insulator (Page 72)
9. + 10. Contact Insert (Page 73 to 80)
   e.g. 18-way = **18**
11. Contact Type/Surface (Page 81)
12. Contact Diameter (Page 82 to 83)
    M = mixed arrangement
13. + 14. Term. Cross Section (Page 82 to 83)
    14. for special Contact Configurations **9**
15. empty
16. + 17. Collet System (Page 68)
18. + 19. Cable Bend Relief (Page 70)

Example:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
G	2	2	B	0	C	–	P	1	6	N	F	G	0	–	0	0	0	0

Receptacle – Style 2 – Size 2 – Series B – Coding 0° – Brass matt chromate Housing – PEEK Insulator – 16-pos. – Socket(crimp) 0.75 µm Au – Term. Cross Section AWG22

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
S	4	2	B	0	C	–	P	1	6	M	F	G	0	–	7	5	E	S

Plug – Style 4 – Size 2 – Series B – Coding 0° – Brass matt chromate Housing – PEEK Insulator – 16-pos. – Pin (solder) 0.75 µm Au – Term. Cross Section AWG22 – Cable Diameter 7.0–7.5 – Blue Cable Bend Relief – Material Silicone

Part number key

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			B			–								–				

Straight Plug

(Suitable for all following receptacles and in-line receptacles)

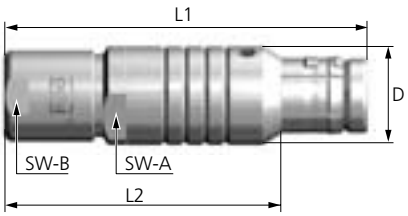
S 3 - **IP 68** – watertight with Standard Back Nut

S 4 - **IP 68** – watertight with Back Nut for Cable Bend Relief*

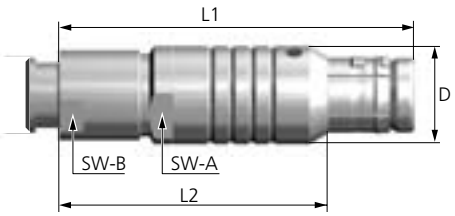
Contact configuration from page 73

IP 68

S 3



S 4



IP 68

Size	Dimensions in mm				S3	S4
	L1	L2	D	SW-A	SW-B	SW-B
0	~ 40	~ 28	9.4	8	7	7
1	~ 49	~ 36	12	10	10	10
2	~ 53	~ 39	15	13	12	13
3	~ 61	~ 46	18	16	15	15

*** Cable Bend Reliefs**
(see page 70)

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Part number key

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			B			–								–				

Right-Angle Plug

(Suitable for all following receptacles and in-line receptacles)

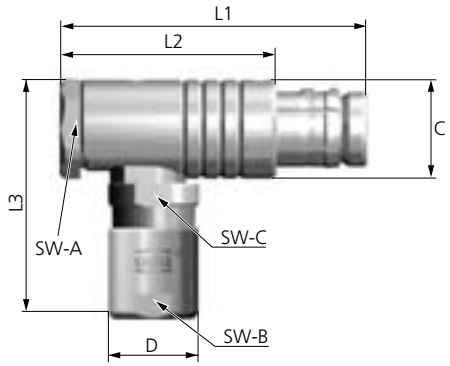
W 3 - **IP 68** – watertight with Standard Back Nut

W 4 - **IP 68** – watertight with Back Nut for Cable Bend Relief*

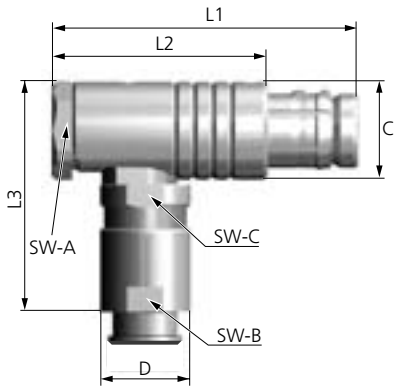
Contact configuration from page 73

IP 68

W 3



W 4



IP 68

Size	Dimensions in mm						W3	W4	
	L1	L2	L3	C	D	SW-A	SW-B	SW-B	SW-C
0	~ 34	~ 24	~ 30	12	9	10	7	7	8
1	~ 42	~ 31.5	~ 32	12.5	11	11	10	10	10
2	~ 46	~ 34	~ 39	16	14	14	12	13	13
3	~ 60	~ 45	~ 41	18	17	16	15	15	16

*** Cable Bend Reliefs**
(see page 70)

Assembly Tool Size 0: 700.412.106.000.000

Part number key

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			B			–								–				

Break-Apart-Plug

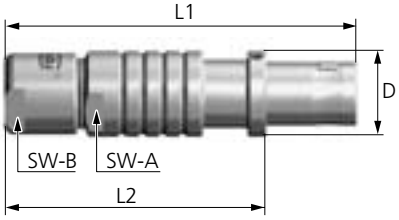
(Suitable for all following receptacles and in-line receptacles)

A 5 - **IP 68** – with Standard Back Nut

A 6 - **IP 68** – with Back Nut for Cable Bend Relief*

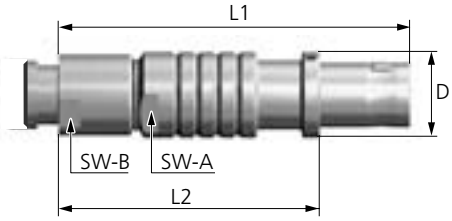
IP 68

A 5



Contact configuration from page 73

A 6



Size	Dimensions in mm				
	L1	L2	D	SW-A	SW-B
0	~ 39.5	~ 29.5	9.4	8	7

Connector can be separated by pulling the cable.

*** Cable Bend Reliefs**
(see page 70)

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Part number key

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			B			–								–				

In-Line Receptacle

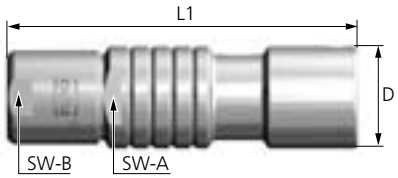
K 3 - **IP 68** – watertight with Standard Back Nut

K 4 - **IP 68** – watertight with Back Nut for Cable Bend Relief*

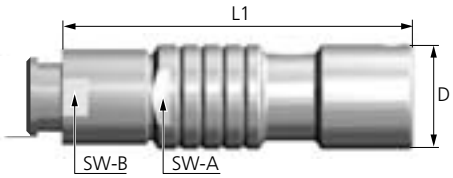
Contact configuration from page 73

IP 68

K 3



K 4



IP 68

Size	Dimensions in mm			K3	K4
	L1	D	SW-A	SW-B	SW-B
0	~ 39	10	8	7	7
1	~ 46	13	10	10	10
2	~ 50	16	13	12	13
3	~ 60	19	16	15	15

*** Cable Bend Reliefs**
(see page 70)

ODU MINI-SNAP In-line Receptacle connect to plug for cable-to-cable connection.

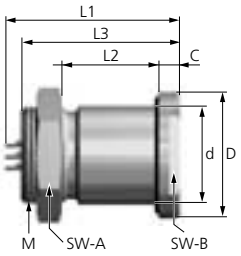
Part number key

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			B			–								–				

[1] L1 = Maximum Length incl. Contact Insert
[2] L3 = Length of Housing

Receptacle

G 2 **Style 2** – ODU MINI-SNAP **WATERTIGHT RECEPTACLE IP 68*,** installation from front of panel



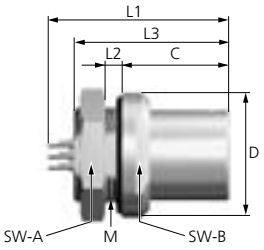
Technical Data

- IP 68 in reference to the end device and in mated condition
- contact configuration and PCB-Layout from page 73
- distance ring for wall-thickness adustment, see page 106
- no crimp contacts possible

Size	Dimensions in mm									Panel Cut-Out
	[1] L1	[3] L2	[2] L3	M	D	SW-A	SW-B	C	d	
0	~ 22.5	8	18.5	9x0.5	14.5	11.0	11.0	3.0	10.0	Ø 10.1
1	~ 27	13	22.5	14x1	18.0	17.0	14.0	3.0	14.0	Ø 14.1
2	~ 29.5	9	23.0	16x1	22.0	19.0	17.0	4.0	16.0	Ø 16.1
3	~ 32	12	26.5	20x1	26.0	25.0	24.0	4.0	20.0	Ø 20.1

[3] min. wallthickness without using a distance ring.

G 4 **Style 4** – ODU MINI-SNAP **WATERTIGHT RECEPTACLE IP 68*,** installation from front of panel with low rear profile



Technical Data

- IP 68 in reference to the end device and in unmated condition
- Anti-rotation feature
- contact configuration and PCB-Layout from page 73
- No crimp contacts possible

Size	Dimensions in mm								Panel Cut-Out
	[1] L1	L2	[2] L3	M	D	SW-A	SW-B	C	
0	~ 22.5	~ 4	18.5	9x0.5	14.5	11.0	12.0	12.0	SW 8.3 / Ø 9.1
1	~ 27	~ 4	22.5	14x1	18.0	17.0	14.0	15.5	SW 12.1 / Ø 14.1
2	~ 29.5	~ 4.5	23.0	16x1	21.0	19.0	17.0	15.5	SW 13.6 / Ø 16.1
3	~ 32	~ 6	26.5	18x1	24.0	22.0	20.0	16.0	SW 16.6 / Ø 18.1

*Reference: Potted Receptacle please see page 123 III

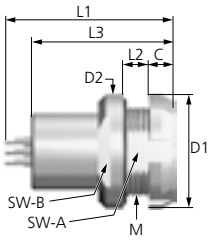
Part number key

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			B			–								–				

[1] L1 = Maximum Length incl. Contact Insert
[2] L3 = Length of Housing

Receptacle

G 8 **Style 8** – ODU MINI-SNAP **WATERTIGHT RECEPTACLE IP 68*, with slotted nut,** installation from rear of panel



Technical Data

- IP 68 in reference to the end device and in mated condition
- Anti-rotation feature
- contact configuration and PCB-Layout from page 73
- nutdriver for slotted mounting nut, Page 111
- no crimp contacts possible

Size	Dimensions in mm									Panel Cut-Out
	[1] L1	L2	[2] L3	M	D1	D2	C	SW-A	SW-B	
0	~ 22.5	~ 3.5	18.5	10x0.5	15.0	14.5	3.0	9	12	SW 9.1 / Ø 10.1
1	~ 27	~ 4.0	22.5	14x1	18.0	18.0	4.0	12	14	SW 12.1 / Ø 14.1
2	~ 29.5	~ 3.0	23.0	16x1	22.0	21.0	5.0	15	18	SW 15.1 / Ø 16.1
3	~ 32	~ 6.0	26.5	20x1	25.0	26.0	5.0	18	-	SW 18.1 / Ø 20.1

*Reference: Potted Receptacle please see page 123 III.

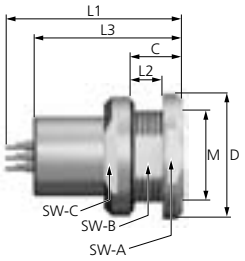
Part number key

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			B			–								–				

[1] L1 = Maximum Length incl. Contact Insert
[2] L3 = Length of Housing

Receptacle

G D **Style D** – ODU MINI-SNAP **RECEPTACLE IP 68*, with round nut,** installation from rear of panel

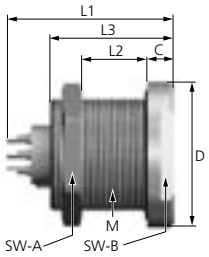


Technical Data

- IP 68 in reference to the end device and in mated condition
- Anti-rotation feature
- contact configuration and PCB-Layout from page 73
- no crimp contacts possible

Size	Dimensions in mm									Panel Cut-Out
	[1] L1	L2	[2] L3	M	D	SW-A	SW-B	SW-C	C	
0	~ 22.5	~ 4.0	18.5	10x0.5	14.5	12	9	12	6.5	SW 9.1 / Ø 10.1
1	~ 27	~ 5.0	22.5	14x1	19.0	17	12	14	8.0	SW 12.1 / Ø 14.1
2	~ 29.5	~ 5.0	23.0	16x1	21.8	19	15	18	8.0	SW 15.1 / Ø 16.1
3	~ 32	~ 7.0	26.5	20x1	26.9	24	18	-	11.0	SW 18.1 / Ø 20.1

G E **Style E** – ODU MINI-SNAP **RECEPTACLE IP 68*,** installation from front of panel



Technical Data

- IP 68 in mated condition
- contact configuration and PCB-Layout from page 73

Size	Dimensions in mm								Panel Cut-Out
	[1] L1	L2	[2] L3	M	D	SW-A	SW-B	C	
0	~ 20	~ 8	14.5	11x0.75	15.5	13	12	3	Ø 11.1
1	~ 24	~ 10	16.5	14x1	18.0	17	14	3	Ø 14.1
2	~ 27	~ 11	18.5	17x1	22.0	19	17	4	Ø 17.1

*Reference: Potted Receptacle please see page 123 III

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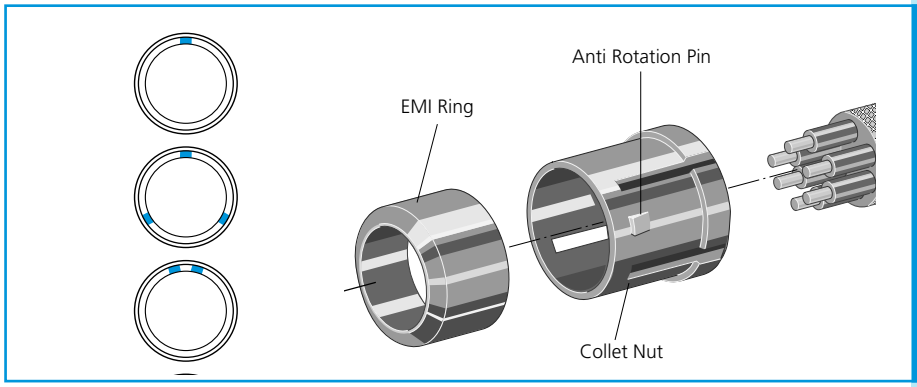
Details for the Part Number Key:

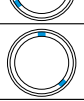
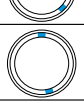
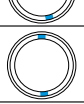


Keying
Housing Materials / Surfaces
Collet System
Bend Protection Sleeves

Coding Series B

Part number key

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			B			–								–				

	Angle	Receptacle Front View	Size 0	1	2	3
0	0°		●	●	●	●
A	30°		●	●	●	●
B	37.5°				●	○
C	45°				●	●
C	- 45°		●	●		
F	60°		●	●	●	●
H	75°				●	●
J	90°		●	●		●
K	95°				●	●
M	100°				○	●
Q	120°			●	●	○
T	125°					●
V	135°		○	●		●
W	145°		○	○	●	○
Y	155°		●	●		

● Standard
○ On request

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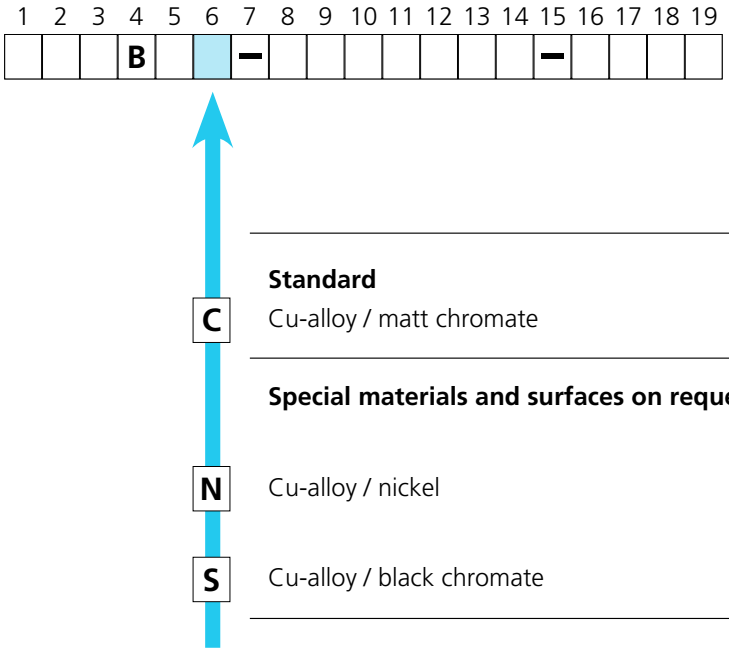
Housing Materials / Surfaces

Part number key



Standard

C Cu-alloy / matt chromate

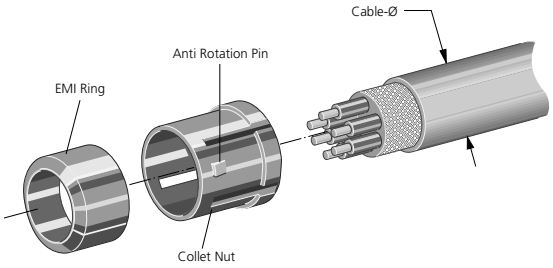
Special materials and surfaces on request.

N Cu-alloy / nickel

S Cu-alloy / black chromate

Collet System

Part number key



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			B			–								–				

Insert: for all Plugs and In-Line Receptacles.

Application: **Collet nut** for strain relief, **EMI ring** for conductive path between shield and housing.

References:

❶ This application is not available for applications with cable bend relief

Cable diameter in mm	Size 0	1	2	3	Part number
> 1.0 – 1.5		●			15
> 1.5 – 2.0	●	❶			20
> 2.0 – 2.5	●	●	●		25
> 2.5 – 3.0	●	●	●		30
> 3.0 – 3.5	●	●	●	●	35
> 3.5 – 4.0	●	●	●	●	40
> 4.0 – 4.5	●	●	●	●	45
> 4.5 – 5.0	●	●	●	●	50
> 5.0 – 5.5		●	●	●	55
> 5.5 – 6.0		●	●	●	60
> 6.0 – 6.5		●	●	●	65
> 6.5 – 7.0		●	●	●	70
> 7.0 – 7.5			●	●	75
> 7.5 – 8.0			●	●	80
> 8.0 – 8.5			●	●	85
> 8.5 – 9.0			●	●	90
> 9.0 – 9.5				●	95
> 9.5 – 10.0				●	01
> 10.5 – 10.5				●	02
> 10.5 – 11.5					03
without collet system					00

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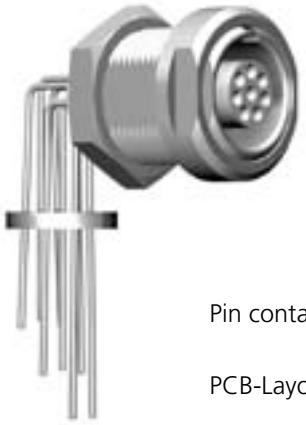
Right-Angled Print Contacts in the Receptacle

Part number key

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			B			–				Q		0	0	–			0	0



Right-Angled Print Contact **A**

Pin contacts on request!

PCB-Layout see Page 84–91

Series B

Definition of the Back Nut

(Straight-Angled-Break Apart Plugs, Inline Receptacles, Receptacles Style 6 & 7)

Part number key

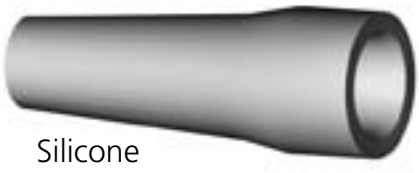
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			B			–								–			0	

Standard Back Nut **0**

Back Nut for Silicon Cable Bend Reliefs **S**

Cable Bend Reliefs on page 70

Cable Bend Reliefs



Silicone

Temperature range

Silicone	-50 °C up to +200 °C short term up to +230 °C autoclavable

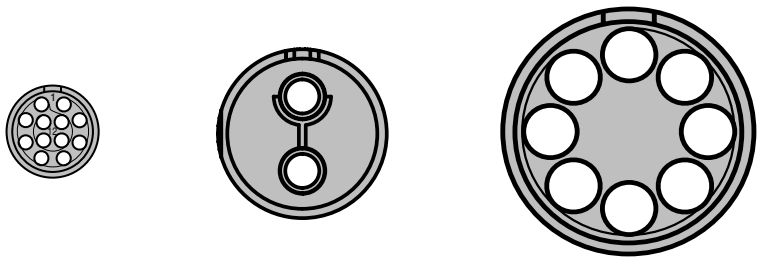
Part number key

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
						–								–				S

Color of the Cable Bend Relief

Color / RAL-number (similar)		
red	RAL 3020	A
white	RAL 9010	B
yellow	RAL 1016	C
green	RAL 6029	D
blue	RAL 5002	E
grey	RAL 7005	F
black	RAL 9005	G
without cable bend relief		0

Inserts Series L, K, B

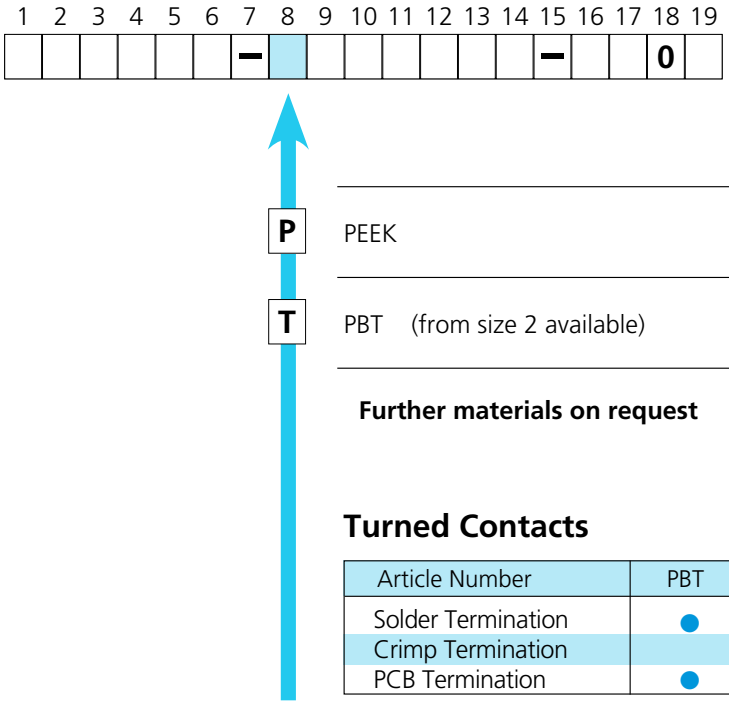


PCB and solder contacts are factory-installed in the insulation body.

Crimp contacts are shipped separately

Insulation Body Material

Part number key



Further materials on request

Turned Contacts

Article Number	PBT	PEEK
Solder Termination	●	●
Crimp Termination		●
PCB Termination	●	●

● = available

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Size 00

Part number key

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		C				–								–				

	Size	Material insulating body	Positions	Positions	Contact Ø mm	Nominal Signal Contact Current Load in A (Derating Factor see page 130)	Clearance and creepage distance: Series	Clearance and creepage distance: Contact to contact in mm	Clearance and creepage distance: Series	Clearance and creepage distance: Contact to housing in mm	Test Voltage acc. SAE AS13441:1998 method 3001.1 (kVeff)	Nominal Voltage acc. SAE AS13441:1998 method 3001.1 (kVrms) [1]	Termination: Solder	Termination: Crimp (Tools for assembling see page 110)	Termination: Print (PCB Layout see page 84)	View on termination side: Pin Part	View on termination side: Socket
Standard Contact Configuration	C	P	0	2	0.5	5	L B K	0.6 N/A N/A	L B K	0.8 N/A N/A	1.100	0.366	●		●		
	C	P	0	3	0.5	5	L B K	0.5 N/A N/A	L B K	0.7 N/A N/A	1.100	0.366	●		●		
	C	P	0	4	0.5	5	L B K	0.4 N/A N/A	L B K	0.6 N/A N/A	0.900	0.300	●		●		

Attention: Inserts in Size 00 are only in PEEK available.

1) Nominal Voltage acc. SAE AS 13441:1998 method 3001.1 meet the MIL-STD 1344, method 3001, Test acc. IEC 60512 test 4a.
Method of calculation, utilization warning and Proposals see page 124

Size 0

Part number key

1	2	3	4	5	6	7	8	9	10	11	12	13	14 *	15	16	17	18	19
		0				–								–				

Standard Contact Configuration

Size	Material insulating body	Positions	Positions	Contact Ø mm	Nominal Signal Contact Current Load in A (Derating Factor see page 130)	Clearance and creepage distance: Series	Contact to contact in mm	Series	Contact to housing in mm	Test Voltage acc. SAE AS13441:1998 method 3001.1 (kVeff)	Nominal Voltage acc. SAE AS13441:1998 method 3001.1 (kVrms) [1]	Termination: Solder	Crimp (Tools for assembling see page 110)	Print (PCB Layout see page 85 - 86)	View on termination side: Pin Part	Socket
0	P	0	2	0.9	10	L B K	1.0 1.0 1.0	L B K	1.0 1.0 0.9	1.500	0.500	●	●	●		
0	P	0	3	0.9	10	L B K	0.8 0.8 0.8	L B K	1.0 1.0 0.8	1.200	0.400	●	●	●		
0	P	0	4	0.7	7	L B K	0.8 0.8 0.8	L B K	1.0 1.0 0.8	0.900	0.300	●	●	●		
0	P	0	5	0.7	7	L B K	0.7 0.7 0.7	L B K	0.8 0.8 0.7	1.100	0.366	●	●	●		
0	P	0	6	0.5	5	L B K	0.9 0.9 0.9	L B K	0.8 0.8 0.7	0.900	0.300	●		●		
0	P	0	7	0.5	5	L B K	0.7 0.7 0.7	L B K	0.8 0.8 0.7	0.900	0.300	●		●		
0	P	0	9	0.5	5	L B K	0.4 0.4 0.4	L B K	0.8 0.8 0.7	0.600	0.200	●		●		
0	* P	1	0	0.5	5	L B K	0.3 0.3 0.3	L B K	0.7 0.7 0.5	0.600	0.200	●				

Attention: Inserts in Size 0 are only in PEEK available.

* Not compatible to the competitors. Position 14 of order number = 9

1) Nominal Voltage acc. SAE AS 13441:1998 method 3001.1 meet the MIL-STD 1344, method 3001, Test acc. IEC 60512 test 4a.
Method of calculation, utilization warning and Proposals see page 124.

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Size 1

Part number key

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		1				–								–				

Standard Contact Configuration

Size	Material insulating body	Positions	Positions	Contact Ø mm	Nominal Signal Contact Current Load in A (Derating Factor see page 130)	Clearance and creepage distance: Series	Clearance and creepage distance: Contact to contact in mm	Clearance and creepage distance: Series	Clearance and creepage distance: Contact to housing in mm	Test Voltage acc. SAE AS13441:1998 method 3001.1 (kVeff)	Nominal Voltage acc. SAE AS13441:1998 method 3001.1 (kVrms) [1]	Termination: Solder	Termination: Crimp (Tools for assembling see page 110)	Termination: Print (PCB Layout see page 87 – 88)	View on termination side: Pin part	View on termination side: Socket
1	P	0	2	1.3	14	L B K	1.3 1.3 1.3	L B K	1.4 1.4 1.0	1.650	0.550	●	●	●		
1	P	0	3	1.3	14	L B K	1.1 1.1 1.1	L B K	1.3 1.3 0.9	1.500	0.500	●	●	●		
1	P	0	4	0.9	10	L B K	1.0 1.0 1.0	L B K	1.4 1.4 1.1	1.500	0.500	●	●	●		
1	P	0	5	0.9	10	L B K	0.9 0.9 0.9	L B K	1.2 1.2 0.9	1.350	0.450	●	●	●		
1	P	0	6	0.7	7	L B K	0.9 0.9 0.9	L B K	1.2 1.2 0.9	1.200	0.400	●	●	●		
1	P	0	7	0.7	7	L B K	0.9 0.9 0.9	L B K	1.2 1.2 0.9	1.200	0.400	●	●	●		
1	P	0	8	0.7	7	L B K	0.6 0.6 0.6	L B K	1.1 1.1 0.8	1.000	0.333	●	●	●		
1	P	1	0	0.5	5	L B K	0.5 0.5 0.5	L B K	1.2 1.2 0.9	1.000	0.333	●		●		
1	P	1	4	0.5	5	L B K	0.5 0.5 0.5	L B K	0.9 0.9 0.6	0.900	0.300	●		●		
1	P	1	6	0.5	5	L B K	0.4 0.4 0.4	L B K	0.9 0.9 0.6	0.900	0.300	●		●		

Attention: Inserts in Size 1 are only in PEEK available.

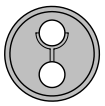
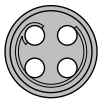
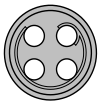
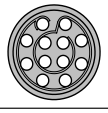
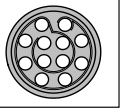
1) Nominal Voltage acc. SAE AS 13441:1998 method 3001.1 meet the MIL-STD 1344, method 3001, Test acc. IEC 60512 test 4a.
Method of calculation, utilization warning and Proposals see page 124

Size 2

Part number key

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		2				–								–				

Standard Contact Configuration

Size	Material Isolierkörper	Positions	Positions	Contact Ø mm	Nominal Signal Contact Current Load in A (Derating Factor see page 130)	Clearance and creepage distance: Series	Contact to contact in mm	Clearance and creepage distance: Series	Contact to housing in mm	Test Voltage acc. SAE AS13441:1998 method 3001.1 (kVeff)	Nominal Voltage acc. SAE AS13441:1998 method 3001.1 (kVrms) [1]	Termination: Solder	Termination: Crimp (Tools for assembling see page 110)	Termination: Print (PCB Layout see page 89)	View on termination side: Pin part	View on termination side: Socket
2	PEEK P / PBT T	0	2	2.0	22	L B K	2.0 2.0 2.0	L B K	1.6 1.4 1.4	2.100	0.700	●		●		
2	PEEK P / PBT T	0	3	1.6	17	L B K	1.9 1.9 1.9	L B K	1.7 1.6 1.5	2.400	0.800	●	●	●		
2	PEEK P / PBT T	0	4	1.3	14	L B K	2.0 2.0 2.0	L B K	1.8 1.6 1.4	1.950	0.650	●	●	●		
2	PEEK P / PBT T	0	5	1.3	14	L B K	1.6 1.6 1.6	L B K	1.7 1.5 1.3	1.800	0.600	●	●	●		
2	PEEK P / PBT T	0	6	1.3	14	L B K	1.3 1.3 1.3	L B K	1.5 1.3 1.1	1.500	0.500	●	●	●		
2	PEEK P / PBT T	0	7	1.3	14	L B K	1.3 1.3 1.3	L B K	1.4 1.2 1.0	1.800	0.600	●	●	●		
2	PEEK P / PBT T	0	8	0.9	10	L B K	1.3 1.3 1.3	L B K	1.2 1.1 0.9	1.500	0.500	●	●	●		
2	PEEK P / PBT T	1	0	0.9	10	L B K	1.0 1.0 1.0	L B K	1.2 1.1 0.9	1.500	0.500	●	●	●		
2	PEEK P / PBT T	1	2	0.7	7	L B K	1.0 1.0 1.0	L B K	1.3 1.1 1.0	1.350	0.450	●	●	●		

Continue next page

1) Nominal Voltage acc. SAE AS 13441:1998 method 3001.1 meet the MIL-STD 1344, method 3001, Test acc. IEC 60512 test 4a.
Method of calculation, utilization warning and Proposals see page 124

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Size 2 (Continue)

Part number key

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		2				–								–				

	Size	Material insulating body	Positions	Positions	Contact Ø mm	Nominal Signal Contact Current Load in A (Derating Factor see page 130)	Clearance and creepage distance: Series	Clearance and creepage distance: Contact to contact in mm	Clearance and creepage distance: Series	Clearance and creepage distance: Contact to housing in mm	Test Voltage acc. SAE AS13441:1998 method 3001.1 (kVeff)	Nominal Voltage acc. SAE AS13441:1998 method 3001.1 (kVrms) [1]	Termination: Solder	Termination: Crimp (Tools for assembling see page 110)	Termination: Print (PCB Layout see page 89)	View on termination side: Pin part	View on termination side: Socket
Standard Contact Configuration	2	PEEK P / PBT T	1	4	0.7	7	L B K	0.9 0.9 0.9	L B K	1.2 1.1 0.9	1.200	0.400	●	●	●		
	2	PEEK P / PBT T	1	6	0.7	7	L B K	0.8 0.8 0.8	L B K	1.2 1.1 0.9	1.100	0.366	●	●	●		
	2	PEEK P / PBT T	1	8	0.7	7	L B K	0.7 0.7 0.7	L B K	1.2 1.1 0.9	0.900	0.300	●	●	●		
	2	PEEK P / PBT T	1	9	0.7	7	L B K	0.7 0.7 0.7	L B K	1.2 1.1 0.9	1.000	0.333	●	●	●		
	2	PEEK P / PBT T	2	6	0.5	5	L B K	0.6 0.6 0.6	L B K	1.1 1.0 0.8	0.900	0.300	●		●		

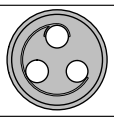
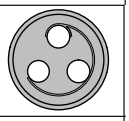
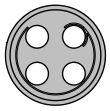
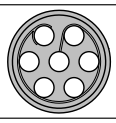
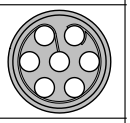
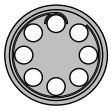
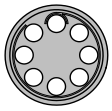
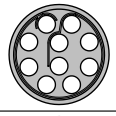
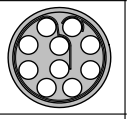
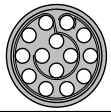
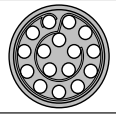
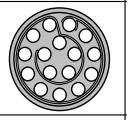
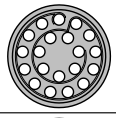
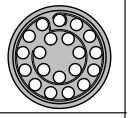
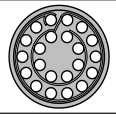
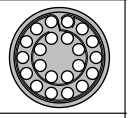
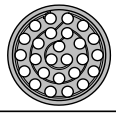
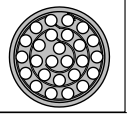
1) Nominal Voltage acc. SAE AS 13441:1998 method 3001.1 meet the MIL-STD 1344, method 3001, Test acc. IEC 60512 test 4a.
Method of calculation, utilization warning and Proposals see page 124

Size 3

Part number key

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		3				–								–				

Standard Contact Configuration

Size	Material insulating body	Positions	Positions	Contact Ø mm	Nominal Signal Contact Current Load in A (Derating Factor see page 130)	Clearance and creepage distance: Series	Clearance and creepage distance: Contact to contact in mm	Clearance and creepage distance: Series	Clearance and creepage distance: Contact to housing in mm	Test Voltage acc. SAE AS13441:1998 method 3001.1 (kVeff)	Nominal Voltage acc. SAE AS13441:1998 method 3001.1 (kVrms) [1]	Termination: Solder	Termination: Crimp (Tools for assembling see page 110)	Termination: Print (PCB Layout see page 90)	View on termination side: Pin part	View on termination side: Socket
3	PEEK P / PBT T	0	3	2.0	22	L B K	2.4 2.4 2.4	L B K	2.1 2.1 1.8	1.800	0.600	●		●		
3	PEEK P / PBT T	0	4	2.0	22	L B K	2.0 2.0 2.0	L B K	1.8 1.8 1.5	1.650	0.550	●		●		
3	PEEK P / PBT T	0	7	1.6	17	L B K	1.5 1.5 1.5	L B K	1.6 1.6 1.3	1.800	0.600	●	●	●		
3	PEEK P / PBT T	0	8	1.3	14	L B K	1.4 1.4 1.4	L B K	1.6 1.6 1.2	1.650	0.550	●		●		
3	PEEK P / PBT T	1	0	1.3	14	L B K	1.2 1.2 1.2	L B K	1.4 1.4 1.0	1.350	0.450	●		●		
3	PEEK P / PBT T	1	4	0.9	10	L B K	1.2 1.2 1.2	L B K	1.4 1.4 1.1	1.350	0.450	●	●	●		
3	PEEK P / PBT T	1	6	0.9	10	L B K	1.1 1.1 1.1	L B K	1.3 1.3 1.0	1.350	0.450	●		●		
3	PEEK P / PBT T	1	8	0.9	10	L B K	1.0 1.0 1.0	L B K	1.2 1.2 0.9	1.350	0.450	●	●	●		
3	PEEK P / PBT T	2	0	0.7	7	L B K	0.9 0.9 0.9	L B K	1.3 1.3 1.0	1.100	0.366	●	●	●		
3	PEEK P / PBT T	2	2	0.7	7	L B K	0.9 0.9 0.9	L B K	1.2 1.2 0.9	1.100	0.366	●	●	●		
3	PEEK P / PBT T	2	6	0.7	7	L B K	0.7 0.7 0.7	L B K	1.1 1.1 0.8	1.000	0.333	●	●	●		

1) Nominal Voltage acc. SAE AS 13441:1998 method 3001.1 meet the MIL-STD 1344, method 3001, Test acc. IEC 60512 test 4a.
Method of calculation, utilization warning and Proposals see page 124

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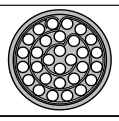
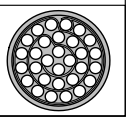
Size 3 (Continue)

Part number key

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

3 – – –

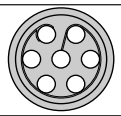
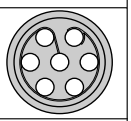
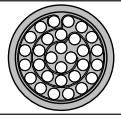
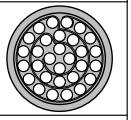
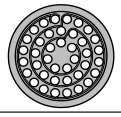
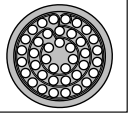
Size	Material insulating body	Positions	Positions	Contact Ø mm	Nominal Signal Contact Current Load in A (Derating Factor see page 130)	Series	Clearance and creepage distance: Contact to contact in mm	Series	Clearance and creepage distance: Contact to housing in mm	Test Voltage acc. SAE AS13441:1998 method 3001.1 (kVeff)	Nominal Voltage acc. SAE AS13441:1998 method 3001.1 (kVrms) [1]	Termination: Solder	Termination: Crimp (Tools for assembling see page 110)	Termination: Print (PCB Layout see page 90)	View on termination side: Pin part	View on termination side: Socket
3	PEEK P PBT T	3	0	0.7	7	L B K	0.6 0.6 0.6	L B K	1.2 1.2 0.9	0.900	0.300	●	●	●		

Size 4

Part number key

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

4 – – –

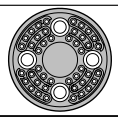
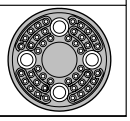
Size	Material insulating body	Positions	Positions	Contact Ø mm	Nominal Signal Contact Current Load in A (Derating Factor see page 130)	Series	Clearance and creepage distance: Contact to contact in mm	Series	Clearance and creepage distance: Contact to housing in mm	Test Voltage acc. SAE AS13441:1998 method 3001.1 (kVeff)	Nominal Voltage acc. SAE AS13441:1998 method 3001.1 (kVrms) [1]	Termination: Solder	Termination: Crimp (Tools for assembling see page 110)	Termination: Print (PCB Layout see page 91)	View on termination side: Pin part	View on termination side: Socket
4	PEEK P PBT T	0	7	2.0	22	L B K	2.1 2.1 2.1	L B K	2.2 N/A 1.6	1.650	0.550	●	●	●		
4	PEEK P PBT T	3	0	0.9	10	L B K	0.8 0.8 0.8	L B K	1.7 N/A 1.0	1.575	0.520	●		●		
4	PEEK P PBT T	4	0	0.7	7	L B K	0.8 0.8 0.8	L B K	1.7 N/A 1.0	1.000	0.333	●	●	●		

1) Nominal Voltage acc. SAE AS 13441:1998 method 3001.1 meet the MIL-STD 1344, method 3001, Test acc. IEC 60512 test 4a.
Method of calculation, utilization warning and Proposals see page 124

Size 5

Part number key

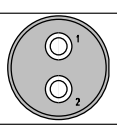
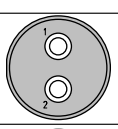
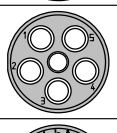
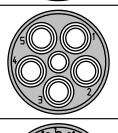
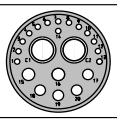
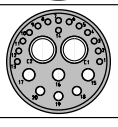
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		5				–								–				

Size	Material insulating body	Positions	Positions	Contact Ø mm	Nominal Signal Contact Current Load in A (Derating Factor see page 122)	Clearance and creepage distance: Contact to contact in mm	Clearance and creepage distance: Contact to housing in mm	Test Voltage acc. SAE AS13441:1998 method 3001.1 (kVeff)	Nominal Voltage acc. SAE AS13441:1998 method 3001.1 (kVrms) [1]	Termination: Solder	Termination: Crimp (Tools for assembling see page 110)	Termination: Print (PCB Layout and pin lenght on request)	View on termination side: Pin part	View on termination side: Socket
5	PEEK P PBT T	2	5	20 x 0.9 4 x 3.0 1 x 50 Ω Koax	Special insert: Electrical Datas on Request					●	●	●		

Size 6

Part number key

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		6				–								–				

Standard Contact Configuration	Size	Material insulating body	Positions	Positions	Contact Ø mm	Nominal Signal Contact Current Load in A (Derating Factor see page 122)	Clearance and creepage distance: Contact to contact in mm	Clearance and creepage distance: Contact to housing in mm	Test Voltage acc. SAE AS13441:1998 method 3001.1 (kVeff)	Nominal Voltage acc. SAE AS13441:1998 method 3001.1 (kVrms) [1]	Termination: Solder	Termination: Crimp (Tools for assembling see page 110)	Termination: Print (PCB Layout and pin lenght on request)	View on termination side: Pin part	View on termination side: Socket
	6	PEEK P PBT T	0	2	2 x 4.0	Special insert: Electrical Datas on Request					●				
	6	PEEK P PBT T	0	5	5 x 75 Ω Koax	Special insert: Electrical Datas on Request					●				
	6	PEEK P PBT T	2	2	14 x 0.9 3 x 1.6 3 x 2.5 2 x 75 Ω Koax	Special insert: Electrical Datas on Request					●				

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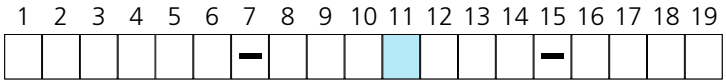
Site web : www.hvssystem.com

Contact Type / Contact Surface

Part number key



	Type	Surface	
Solder	Socket	0.75 µm Au (min.)	L
	Pin	0.75 µm Au (min.)	M
Crimp	Socket	0.75 µm Au (min.)	N
	Pin	0.75 µm Au (min.)	P
Print	Socket	0.75 µm Au (min.)	Q
	Pin	0.75 µm Au (min.)	R

Contact Termination Cross Sections

Part number key

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
						–								–			0	0

Crimp Contact

Size	Pos.	Contact Ø (mm)	AWG	mm²			
0	4-5	0.7	28-32	0.09-0.04	F	C	0
			22-26	0.38-0.15	F	G	0
	2-3	0.9	22-26	0.38-0.15	J	G	0
			20-24	0.50-0.25	J	H	0
1	6-8	0.7	28-32	0.09-0.04	F	C	0
			22-26	0.38-0.15	F	G	0
	4-5	0.9	22-26	0.38-0.15	J	G	0
			20-24	0.50-0.25	J	H	0
	2-3	1.3	18-20	1.0-0.5	P	L	0
2	12-19	0.7	28-32	0.09-0.04	F	C	0
			22-26	0.38-0.15	F	G	0
	8-10	0.9	22-26	0.38-0.15	J	G	0
			20-24	0.50-0.25	J	H	0
	4-7	1.3	18-20	1.0-0.5	P	L	0
3	20-30	0.7	28-32	0.09-0.04	F	C	0
			22-26	0.38-0.15	F	G	0
	14-18	0.9	22-26	0.38-0.15	J	G	0
			20-24	0.50-0.25	J	H	0
	8-10	1.3	18-20	1.0-0.5	P	L	0
	7	1.6	18-20	1.0-0.5	S	L	0
			14-18	1.5-1.0	S	N	0

Tools for crimping and their adjustments see page 108 to 110

Contact Termination Cross Sections

Part number key

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
						–								–			0	0

Solder Contact

Contact Ø	Term. Ø	Term. Cross AWG	Term. Cross mm²
0.5	0.4	28	0.08
0.7	0.6	26	0.15
0.7	0.85	22	0.38
0.9	0.85	22	0.38
1.3	1.1	20	0.50
1.6	1.4	18	1.00
2.0	1.85	14	1.5
2.0	2.4	12	2.5

C	C	0
F	D	0
F	G	0
J	G	0
P	H	0
S	N	0
T	Q	0
T	S	0

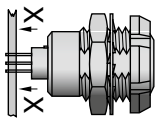
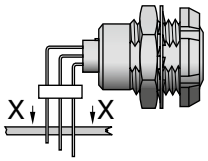
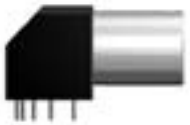
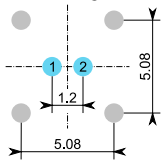
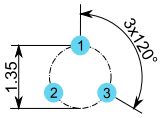
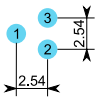
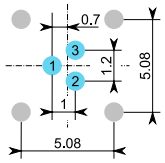
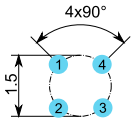
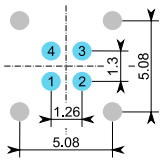
PCB Contact

Contact Ø	Term. Ø
0.5	0.5
0.7	0.5
0.9	0.7
1.3	0.7
1.6	0.7
2.0	0.7

C	0	0
F	0	0
J	0	0
P	0	0
S	0	0
T	0	0

For mixed inserts 0 0 (Please provide details of termination cross section!)

Size 00 – PCB-Layout for print-contacts

Positions	Straight	90° right-angled	without thread
			
2	Drill: 0.6 mm 	Drill: 0.6 mm 	Drill-contact: 0.6 mm Drill-mounting: 0.8 mm 
3	Drill: 0.6 mm 	Drill: 0.6 mm 	Drill-contact: 0.6 mm Drill-mounting: 0.8 mm 
4	Drill: 0.6 mm 	Drill: 0.6 mm 	Drill-contact: 0.6 mm Drill-mounting: 0.8 mm 

The showed layouts are only considered with sockets in the receptacle.

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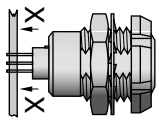
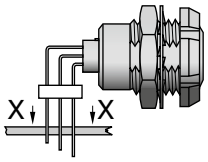
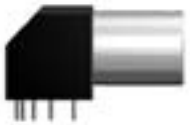
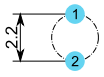
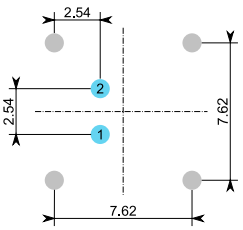
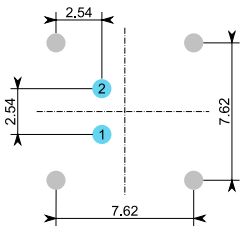
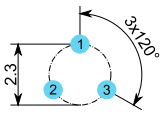
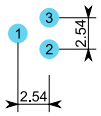
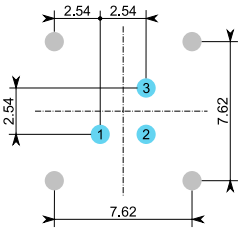
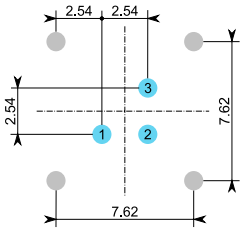
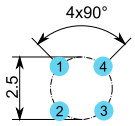
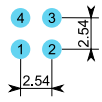
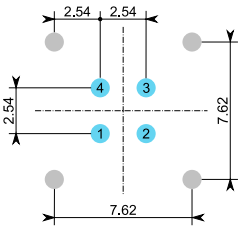
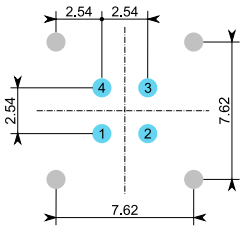
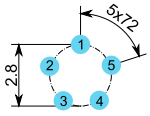
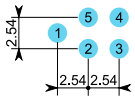
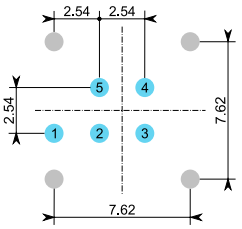
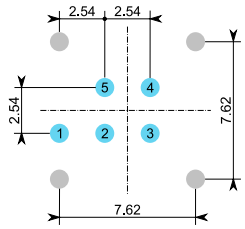
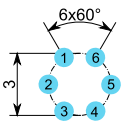
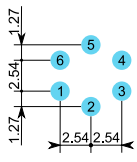
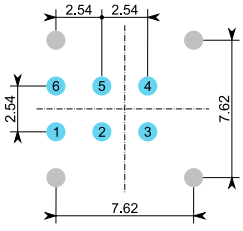
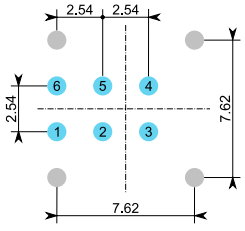
Site web : www.hvssystem.com

Size 0 – PCB-Layout for print-contacts

Positions	Straight	90° right-angled	without thread	with thread
				
2	Drill: 0.8 mm 	Drill: 0.7 mm 	Drill-contact: 0.8 mm Drill-mounting: 0.8 mm 	Drill-contact: 0.8 mm Drill-mounting: 1.5 mm 
3	Drill: 0.8 mm 	Drill: 0.7 mm 	Drill-contact: 0.8 mm Drill-mounting: 0.8 mm 	Drill-contact: 0.8 mm Drill-mounting: 1.5 mm 
4	Drill: 0.6 mm 	Drill: 0.7 mm 	Drill-contact: 0.8 mm Drill-mounting: 0.8 mm 	Drill-contact: 0.8 mm Drill-mounting: 1.5 mm 
5	Drill: 0.6 mm 	Drill: 0.7 mm 	Drill-contact: 0.8 mm Drill-mounting: 0.8 mm 	Drill-contact: 0.8 mm Drill-mounting: 1.5 mm 
6	Drill: 0.6 mm 	Drill: 0.7 mm 	Drill-contact: 0.8 mm Drill-mounting: 0.8 mm 	Drill-contact: 0.8 mm Drill-mounting: 1.5 mm 

The showed layouts are only considered with sockets in the receptacle.

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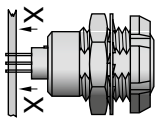
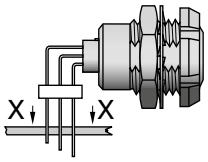
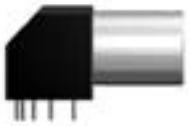
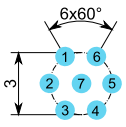
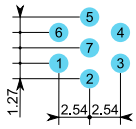
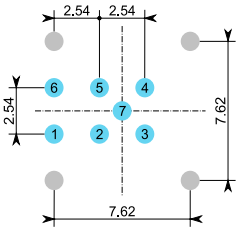
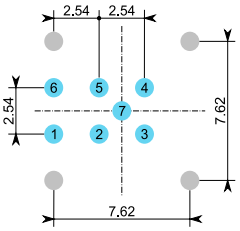
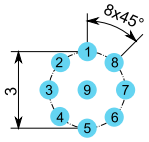
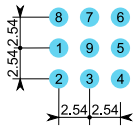
Size 0 – PCB-Layout for print-contacts

Positions	Straight	90° right-angled	without thread	with thread
				
7	Drill: 0.6 mm 	Drill: 0.7 mm 	Drill-contact: 0.8 mm Drill-mounting: 0.8 mm 	Drill-contact: 0.8 mm Drill-mounting: 1.5 mm 
9	Drill: 0.6 mm 	Drill: 0.6 mm 		

The showed layouts are only considered with sockets in the receptacle.

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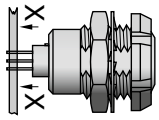
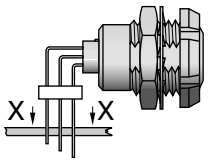
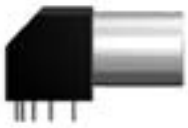
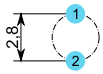
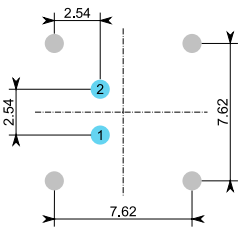
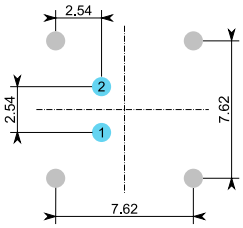
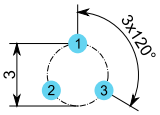
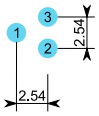
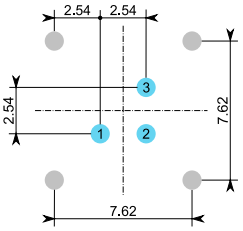
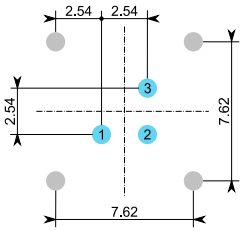
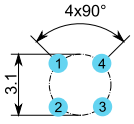
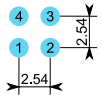
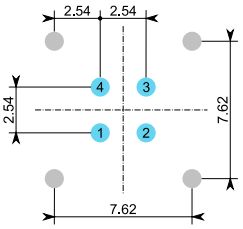
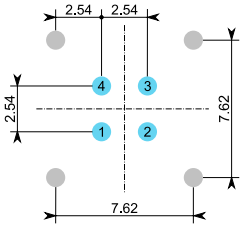
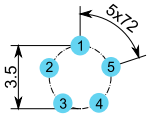
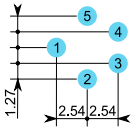
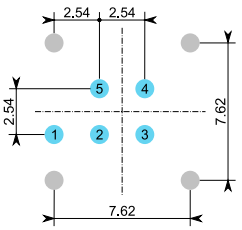
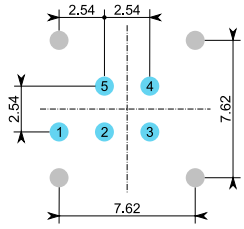
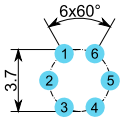
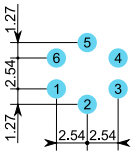
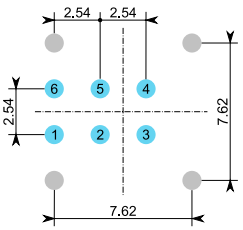
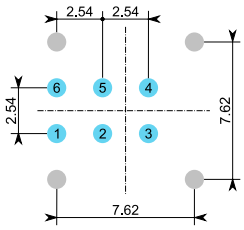
Size 1 – PCB-Layout for print-contacts

Positions	Straight	90° right-angled	without thread	with thread
				
2	Drill: 0.8 mm 	Drill: 0.9 mm 	Drill-contact: 0.8 mm Drill-mounting: 0.8 mm 	Drill-contact: 0.8 mm Drill-mounting: 1.5 mm 
3	Drill: 0.8 mm 	Drill: 0.9 mm 	Drill-contact: 0.8 mm Drill-mounting: 0.8 mm 	Drill-contact: 0.8 mm Drill-mounting: 1.5 mm 
4	Drill: 0.6 mm 	Drill: 0.7 mm 	Drill-contact: 0.8 mm Drill-mounting: 0.8 mm 	Drill-contact: 0.8 mm Drill-mounting: 1.5 mm 
5	Drill: 0.8 mm 	Drill: 0.7 mm 	Drill-contact: 0.8 mm Drill-mounting: 0.8 mm 	Drill-contact: 0.8 mm Drill-mounting: 1.5 mm 
6	Drill: 0.6 mm 	Drill: 0.7 mm 	Drill-contact: 0.8 mm Drill-mounting: 0.8 mm 	Drill-contact: 0.8 mm Drill-mounting: 1.5 mm 

The showed layouts are only considered with sockets in the receptacle.

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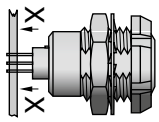
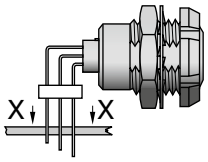
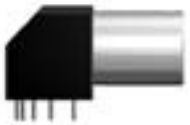
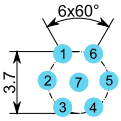
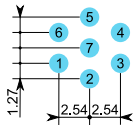
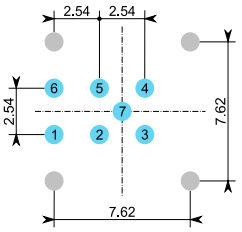
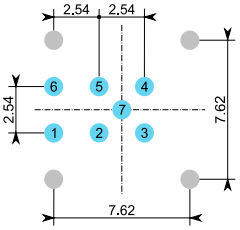
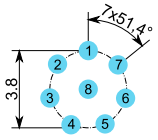
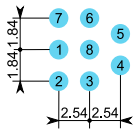
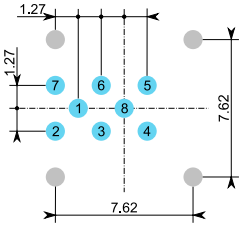
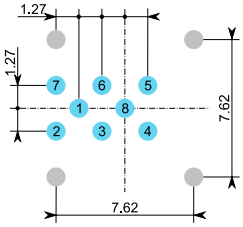
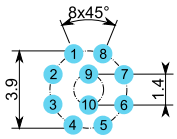
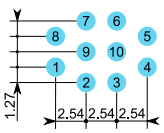
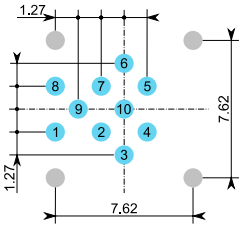
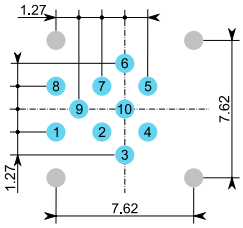
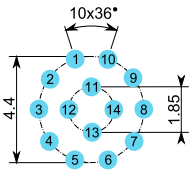
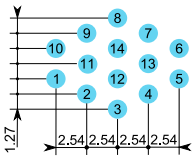
Site web : www.hvssystem.com

Size 1 – PCB-Layout for print-contacts

Positions	Straight	90° right-angled	without thread	with thread
				
7	Drill: 0.6 mm 	Drill: 0.7 mm 	Drill-contact: 0.8 mm Drill-mounting: 0.8 mm 	Drill-contact: 0.8 mm Drill-mounting: 1.5 mm 
8	Drill: 0.6 mm 	Drill: 0.7 mm 	Drill-contact: 0.8 mm Drill-mounting: 0.8 mm 	Drill-contact: 0.8 mm Drill-mounting: 1.5 mm 
10	Drill: 0.6 mm 	Drill: 0.7 mm 	Drill-contact: 0.8 mm Drill-mounting: 0.8 mm 	Drill-contact: 0.8 mm Drill-mounting: 1.5 mm 
14	Drill: 0.6 mm 	Drill: 0.7 mm 		

The showed layouts are only considered with sockets in the receptacle.

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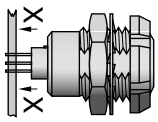
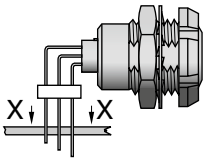
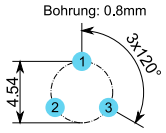
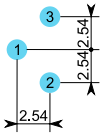
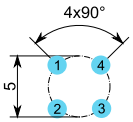
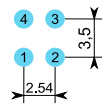
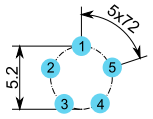
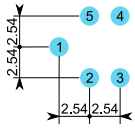
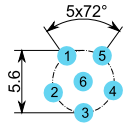
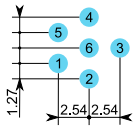
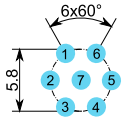
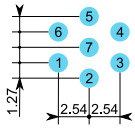
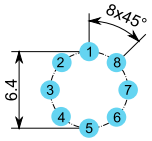
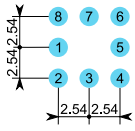
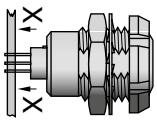
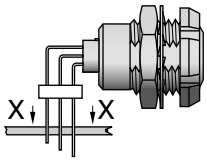
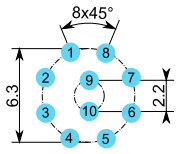
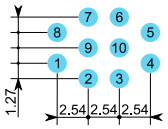
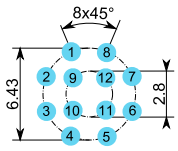
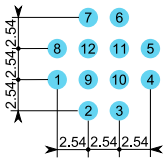
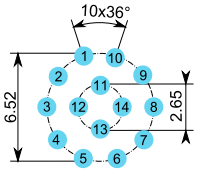
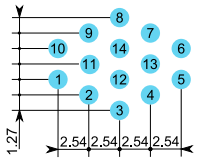
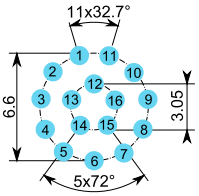
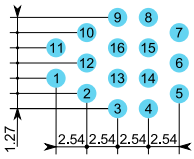
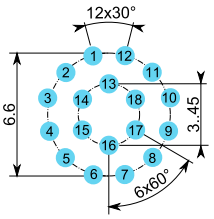
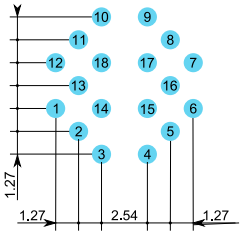
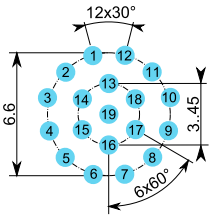
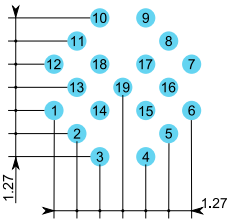
Site web : www.hvssystem.com

Size 2 – PCB-Layout for print-contacts

Positions	Straight	90° right-angled
		
3	Drill: 0.8 mm 	Drill: 0.9 mm 
4	Drill: 0.8 mm 	Drill: 0.9 mm 
5	Drill: 0.8 mm 	Drill: 0.9 mm 
6	Drill: 0.8 mm 	Drill: 0.9 mm 
7	Drill: 0.8 mm 	Drill: 0.7 mm 
8	Drill: 0.8 mm 	Drill: 0.9 mm 

Size 2 – PCB-Layout for print-contacts

Positions	Straight	90° right-angled
		
10	Drill: 0.8 mm 	Drill: 0.7 mm 
12	Drill: 0.6 mm 	Drill: 0.7 mm 
14	Drill: 0.6 mm 	Drill: 0.7 mm 
16	Drill: 0.6 mm 	Drill: 0.7 mm 
18	Drill: 0.6 mm 	Drill: 0.7 mm 
19	Drill: 0.6 mm 	Drill: 0.7 mm 

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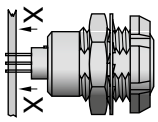
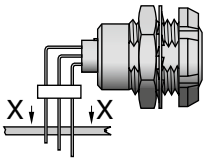
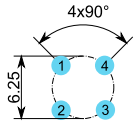
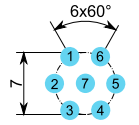
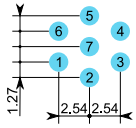
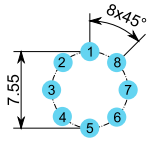
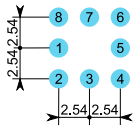
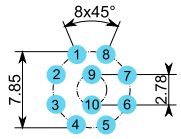
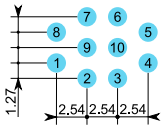
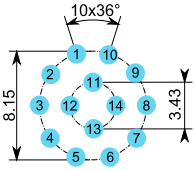
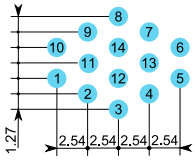
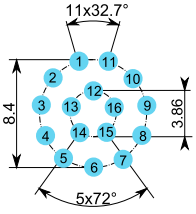
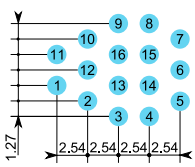
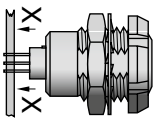
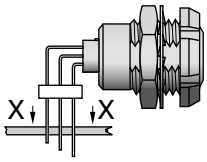
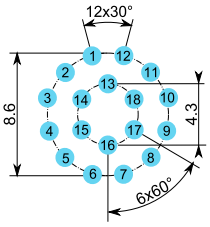
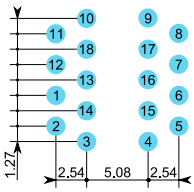
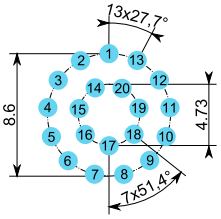
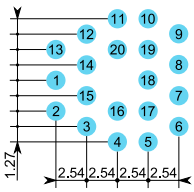
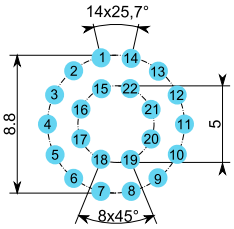
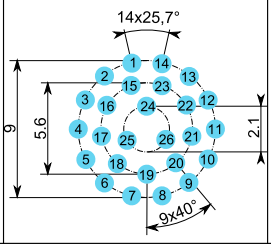
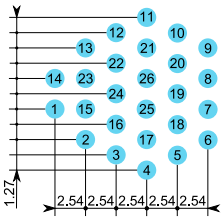
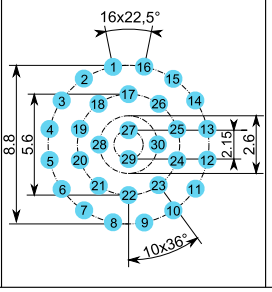
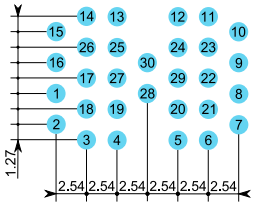
Site web : www.hvssystem.com

Size 3 – PCB-Layout for print-contacts

Positions	Straight	90° right-angled
		
4	Drill: 0.8 mm 	Drill: 0.7 mm
7	Drill: 0.8 mm 	Drill: 0.9 mm 
8	Drill: 0.8 mm 	Drill: 0.9 mm 
10	Drill: 0.8 mm 	Drill: 0.9 mm 
14	Drill: 0.8 mm 	Drill: 0.7 mm 
16	Drill: 0.8 mm 	Drill: 0.7 mm 

Size 3 – PCB-Layout for print-contacts

Positions	Straight	90° right-angled
		
18	Drill: 0.8 mm 	Drill: 0.7 mm 
20	Drill: 0.6 mm 	Drill: 0.7 mm 
22	Drill: 0.6 mm 	
26	Drill: 0.6 mm 	Drill: 0.7 mm 
30	Drill: 0.6 mm 	Drill: 0.7 mm 

The showed layouts are only considered with sockets in the receptacle.

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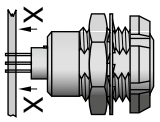
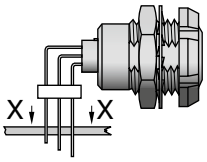
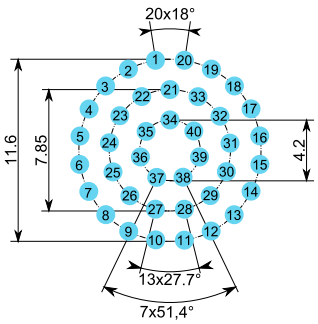
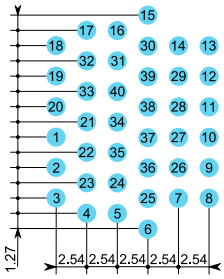
Size 4 – PCB-Layout for print-contacts

Positions	Straight	90° right-angled
		
40	Drill: 0.6 mm 	Drill: 0.7 mm 

The showed layouts are only considered with sockets in the receptacle.

Special Solutions

Customer specific solutions for ODU MINI-SNAP

ODU as a specialist for customized solutions have all main competences under one roof.

Development, an own tool shop, stamping, molding, surface plating, manufacturing of complete assembly machines etc.
With all these possibilities we are able to offer "coustom tailored" solutions for our customers.

When do we actively pursue customer specific solutions?

First we have to study the customers requirements. In order to use existing development resources efficiently, it is necessary to concentrate on those ideas that are very likely to produce sustained earnings. And so we work very closely with you to develop exactly the product that optimally fulfills the requirements. And naturally the feasibility is analyzed in the starting phase of every development in order to make it possible to estimate the costs for a new development.

Here are a few examples how a special solution may look like:

Custom Specific Inserts

Special insulators and special assemblings for High-Voltage applications

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Site web : www.hvssystem.com

Custom specific PCB assembling

Different types of surface plating

Special overmouldings and insulation sleeves

Also different locking mechanism are possible (picture: Bajonett and Threaded Locking)

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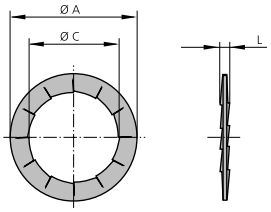
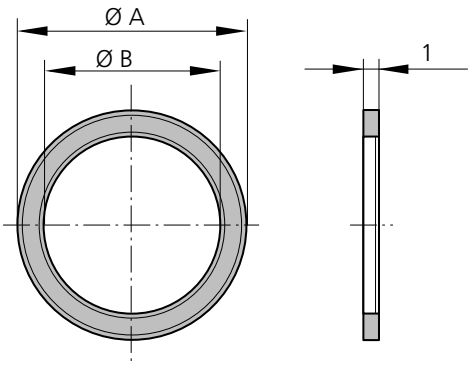
Site web : www.hvssystem.com

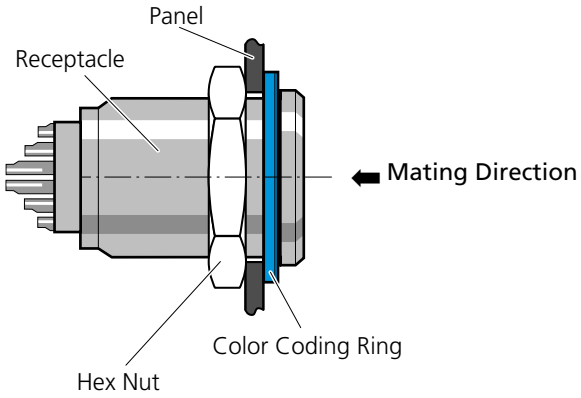
Accessories



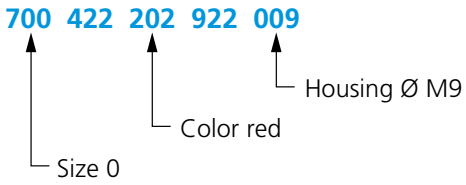
Color Coding Ring for Series L and B



Mounting Example:



Order Example



* = In ... please indicate color code

Size

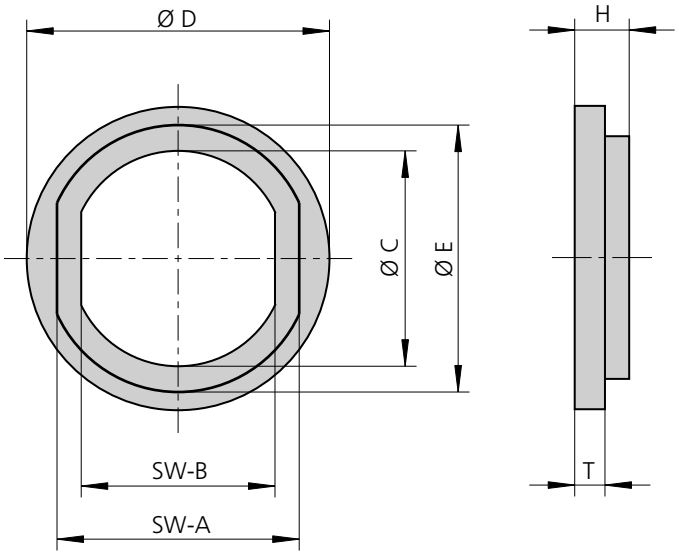
Size	Part Number with Colour	Ø A	Ø B
00	713 422 ... 922 007	11.0	7.1
0	700 422 ... 922 009	13.5	9.1
0	700 422 ... 922 010	16.5	10.1
1	701 422 ... 922 012	17.0	12.1
1	701 422 ... 922 014	20.0	14.1
2	702 422 ... 922 015	22.0	15.1
2	702 422 ... 922 016	23.0	16.1
3	703 422 ... 922 018	25.0	18.1
3	703 422 ... 922 020	28.0	20.1

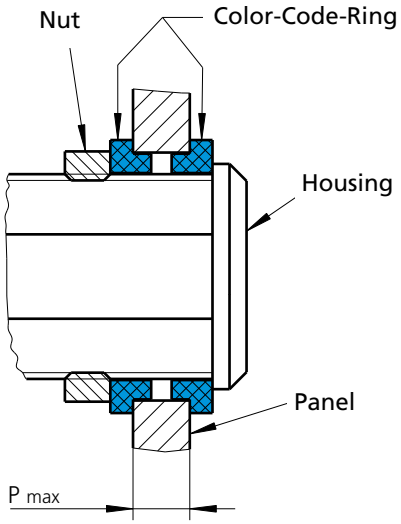
Color

Part Number with color	Color	RAL-No. (similar)
202	red	3020
203	white	9010
204	yellow	1016
205	green	6029
206	blue	5002
207	grey	7005
208	black	9005

Because of different raw materials the colors may sligthly differ from RAL numbers.

Color Coding Ring for Series L and B





Mounting Example:

Order Example

700 423 202 922 009

- 700: Size 0
- 423: Color red
- 922: Housing Ø M9
- 009

Size

Size	Part Number	SW-A	SW-B	Ø C	Ø D	Ø E	H	T	P max
00	713 423 ... 922 007	8.0	6.4	7.1	10.0	8.8	1.8	1.0	4.0
0 *	700 423 ... 922 009	9.9	8.3	9.1	12.0	10.8	1.8	1.0	4.0
0	700 423 ... 922 010	10.7	9.1	10.1	16.5	11.8	1.8	1.0	1.5
1 *	701 423 ... 922 012	12.2	10.6	12.1	16.0	13.8	1.8	1.0	5.0
1	701 423 ... 922 014	13.7	12.1	14.1	21.0	15.8	1.8	1.0	2.0
2 *	702 423 ... 922 015	16.2	13.6	15.1	21.0	17.8	2.2	1.2	4.6
2	702 423 ... 922 016	17.7	15.1	16.1	23.0	18.8	2.2	1.2	0.6
3 *	703 423 ... 922 018	20.2	16.6	18.2	25.0	21.8	2.2	1.2	7.6
3	703 423 ... 922 020	21.7	18.1	20.2	28.0	23.8	2.2	1.2	3.6
4 *	704 423 ... 922 025	27.2	23.7	25.2	32.0	28.8	2.5	1.5	10.0
5 *	705 423 ... 922 035	38.3	33.7	35.2	44.0	39.8	2.5	1.5	
6 *	706 423 ... 922 042	44.8	40.2	42.2	54.0	46.8	2.5	1.5	15.0

* = In ... please indicate color code

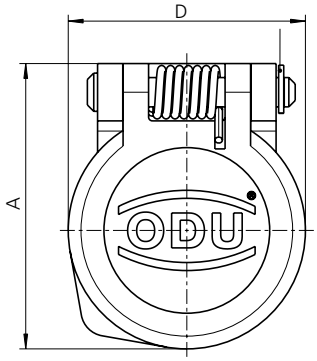
Colors

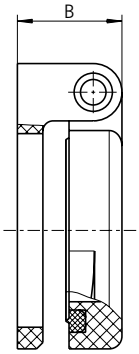
	Color	RAL-No. (similar)
202	red	3020
203	white	9010
204	yellow	1016
205	green	6029
206	blue	5002
207	grey	7005
208	black	9005

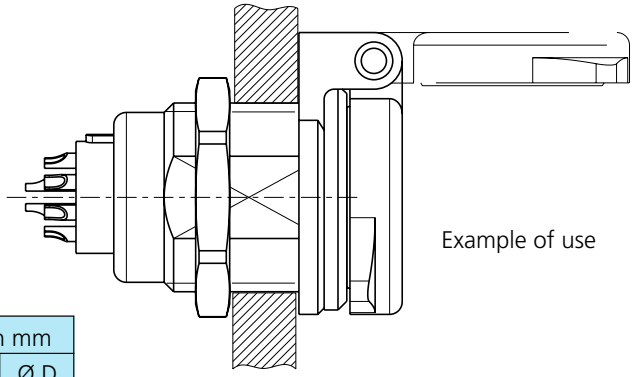
Because of different raw materials the colors may sligthly differ from RAL numbers.

Hinged cover for series B, L

Suitable for all receptacle styles G1



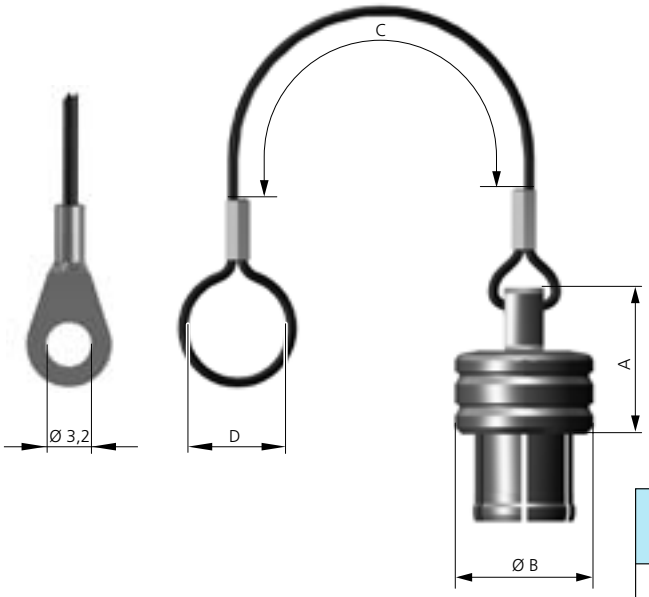




Example of use

Size	Part Number	Dimensions in mm		
		A	B	Ø D
0	700 096 001 926 007	13.3	5.5	11
1	701 096 001 926 007	17.1	6.3	14.2
2	702 096 001 926 007	22.4	8.2	18.5
3	703 096 001 926 007	26.5	8.2	27.5

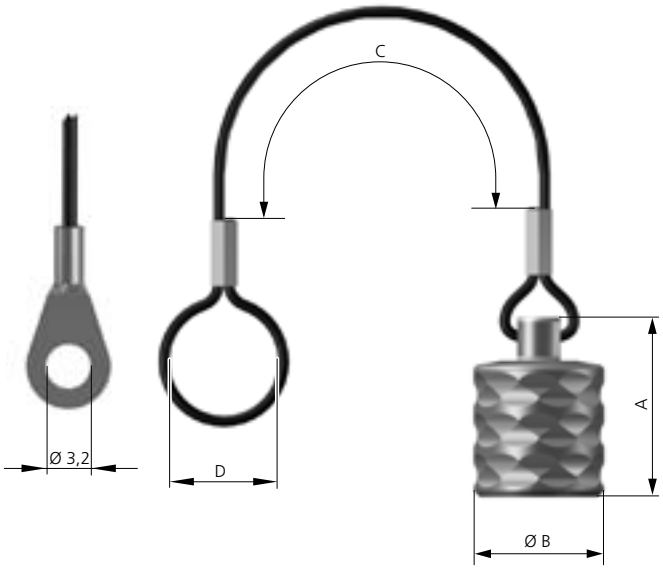
Protective Covers for Receptacles (IP 50) in Series L



* = With . please, register desired lanyard material
0 = Polyamide lanyard with loop
1 = Stainless steel lanyard with loop
2 = Polyamide lanyard solder lug
3 = Stainless steel lanyard solder lug
Surface: Matt chromate

Size	Part Number*	Dimensions in mm			
		A	B	C	D
0	700 097 003 215 .00	10.5	10	70	8
1	701 097 003 215 .00	12.5	12	75	10
2	702 097 003 215 .00	14.85	15	85	13
3	703 097 003 215 .00	16.6	18	100	16
4	704 097 003 215 00	16.9	25	110	19.5

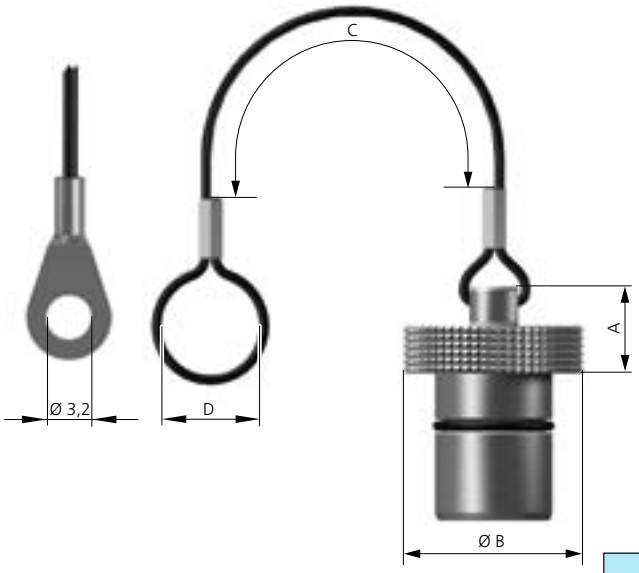
Protective Covers for Plugs (IP 50) in Series L



* = With . please, register desired lanyard material
0 = Polyamide lanyard with loop
1 = Stainless steel lanyard with loop
2 = Polyamide lanyard solder lug
3 = Stainless steel lanyard solder lug
Surface: Matt chromate

Size	Part Number*	Dimensions in mm				Codings (see page 30)									
		A	B	C	D	0	A	B	C	F	J	K	Q	V	W	Y
0	750 097 005 215 .0_	15	9	70	8	•	•		•	•	•					•
1	751 097 005 215 .0_	16.5	12	75	10	•	•		•	•	•			•		•
2	752 097 005 215 .0_	18	15	85	13	•	•	•	•	•		•	•		•	
3	753 097 005 215 .0_	21	18	100	15	•	•	•	•	•		•	•			

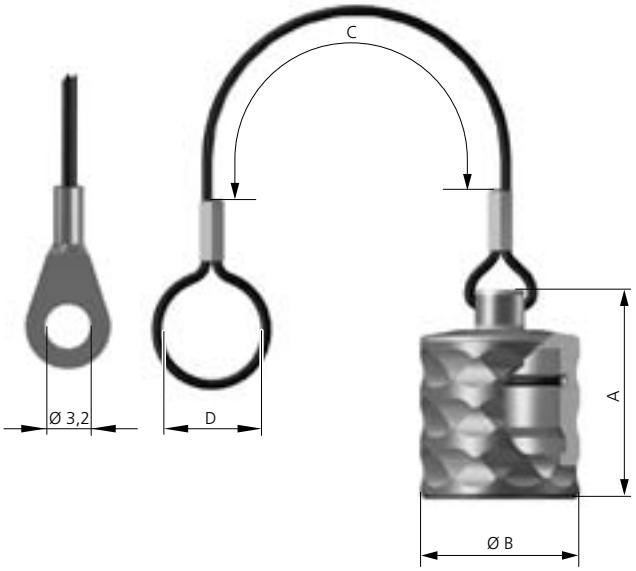
Protective Covers for Receptacles (IP 68) in Series K



* = With . please, register desired lanyard material
0 = Polyamide lanyard with loop
1 = Stainless steel lanyard with loop
2 = Polyamide lanyard solder lug
3 = Stainless steel lanyard solder lug
Surface: Matt chromate

Size	Part number*	Dimensions in mm			
		A	B	C	D
0	720 097 007 215 .00	9	15	70	6
1	721 097 007 215 .00	9	18.5	75	8
2	722 097 007 215 .00	9	21.5	85	10
3	723 097 007 215 .00	9.6	24	120	12
4	724 097 007 215 .00	11.2	31.5	140	16

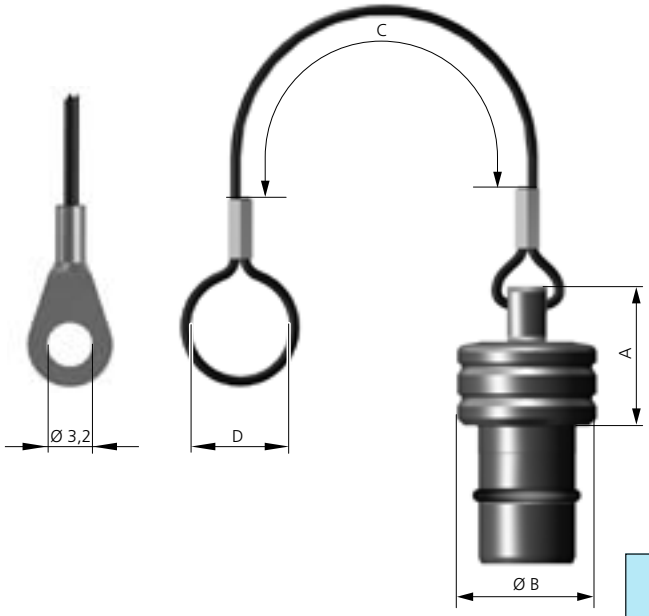
Protective Covers for Plugs (IP 68) in Series K



* = With . please, register desired lanyard material
0 = Polyamide lanyard with loop
1 = Stainless steel lanyard with loop
2 = Polyamide lanyard solder lug
3 = Stainless steel lanyard solder lug
= With _please register desired coding (standard = 0)

Size	Part number*	Dimensions in mm				Codings (see page 50)							
		A	B	C	D	0	A	C	F	H	K	Q	W
0	720 097 004 215 .0_	16	14	70	6	•	•	•	•				
1	721 097 004 215 .0_	21	16	75	8	•	•	•	•				
2	722 097 004 215 .0_	21.5	20	85	10	•	•	•	•				
3	723 097 004 215 .0_	25.5	24	120	12	•	•	•	•				
4	724 097 004 215 .0_	28	30	140	16	•							

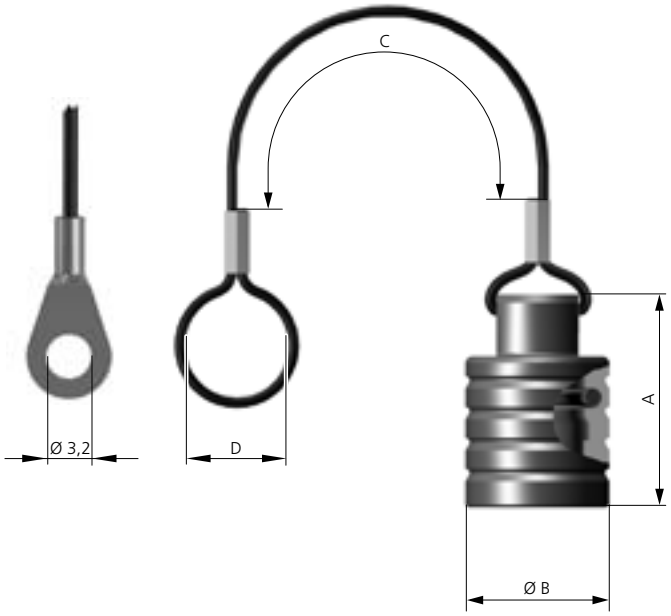
Protective Covers for Receptacles (IP 68) in Series B



* = With . please, register desired lanyard material
0 = Polyamide lanyard with loop
1 = Stainless steel lanyard with loop
2 = Polyamide lanyard solder lug
3 = Stainless steel lanyard solder lug
Surface: Matt chromate

Size	Part number*	Dimensions in mm			
		A	B	C	D
0	700 097 007 215 .00	10	10	70	8
1	701 097 007 215 .00	12	12	75	10
2	702 097 007 215 .00	15	15	85	13
3	703 097 007 215 .00	17.1	18	100	16

Protective Covers for Plugs (IP 68) in Series B

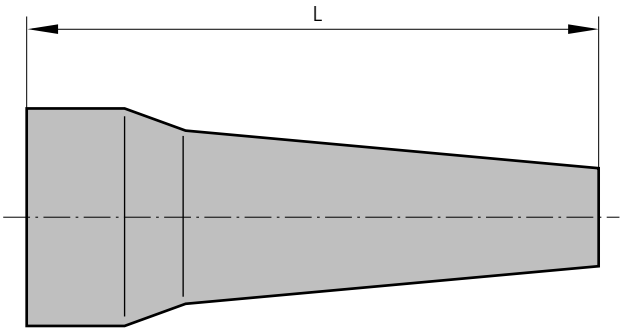


* = With . please, register desired lanyard material
0 = Polyamide lanyard with loop
1 = Stainless steel lanyard with loop
2 = Polyamide lanyard solder lug
3 = Stainless steel lanyard solder lug
Surface: Matt chromate

Protective covers for A5 / A6 on request.

Size	Part Number*	Dimensions in mm		
		A	B	C
0	700 097 004 215 .00	15.5	10.5	70
1	701 097 004 215 .00	16.5	13	75
2	702 097 004 215 .00	18.5	16	85
3	703 097 004 215 .00	21.0	19	100

Silcone-Cable Bend Relief for all Series



* = In ... please indicate color code

Size	Part Number *	Dim. L	Cable O.D.	
			min.	max.
00	713 023 ... 965 005	19	> 0.5	1.5
00	713 023 ... 965 015	19	> 1.5	2.5
00	713 023 ... 965 025	19	> 2.5	3.5
0	700 023 ... 965 020	27	> 2.0	2.5
0	700 023 ... 965 025	27	> 2.5	3.0
0	700 023 ... 965 030	27	> 3.0	3.5
0	700 023 ... 965 035	27	> 3.5	4.0
0	700 023 ... 965 040	27	> 4.0	4.5
0	700 023 ... 965 045	27	> 4.5	5.0
1	701 023 ... 965 025	30	> 2.5	3.0
1	701 023 ... 965 030	30	> 3.0	3.5
1	701 023 ... 965 035	30	> 3.5	4.0
1	701 023 ... 965 040	30	> 4.0	5.0
1	701 023 ... 965 050	30	> 5.0	6.0
1	701 023 ... 965 060	30	> 6.0	6.5
1	701 023 ... 965 070	30	> 6.5	7.5
2	702 023 ... 965 030	36	> 3.0	3.5
2	702 023 ... 965 035	36	> 3.5	4.0
2	702 023 ... 965 040	36	> 4.0	5.0
2	702 023 ... 965 050	36	> 5.0	6.0
2	702 023 ... 965 060	36	> 6.0	7.0
2	702 023 ... 965 070	36	> 7.0	8.0
2	702 023 ... 965 080	36	> 8.0	9.0
3	703 023 ... 965 040	42	> 4.0	5.0
3	703 023 ... 965 050	42	> 5.0	6.0
3	703 023 ... 965 060	42	> 6.0	7.0
3	703 023 ... 965 070	42	> 7.0	8.0
3	703 023 ... 965 080	42	> 8.0	9.0
3	703 023 ... 965 090	42	> 9.0	10.0
3	703 023 ... 965 100	42	> 10.0	11.0
3	703 023 ... 965 110	42	> 11.0	12.0
4	704 023 ... 965 080	60	> 8.0	10.0
4	704 023 ... 965 100	60	> 10.0	12.0
4	704 023 ... 965 120	60	> 12.0	14.0
4	704 023 ... 965 140	60	> 14.0	16.0

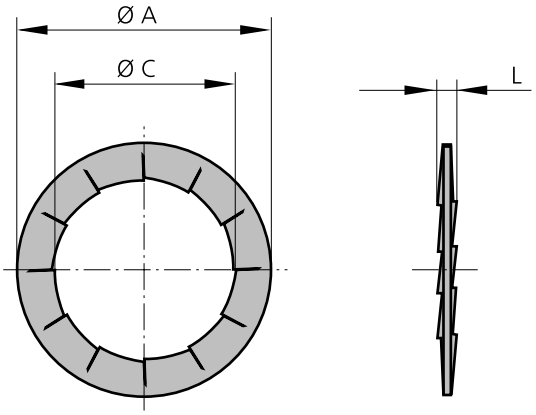
Color Code	Color	RAL-Nr. (similar)
202	red	3020
203	white	9010
204	yellow	1016
205	green	6029
206	blue	5002
207	grey	7005
208	black	9005

Because of different raw materials the colors may sligthly differ from RAL numbers.

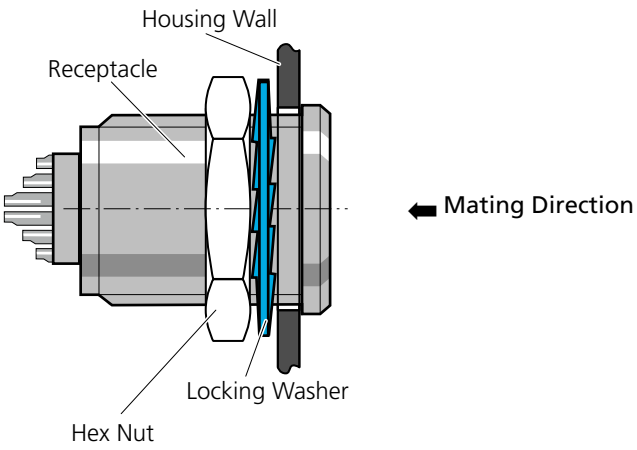
Temperature range

Silicone -50 °C up to +200 °C
Short-term up to +230 °C
autoclavable

Locking Washers for Series L and B



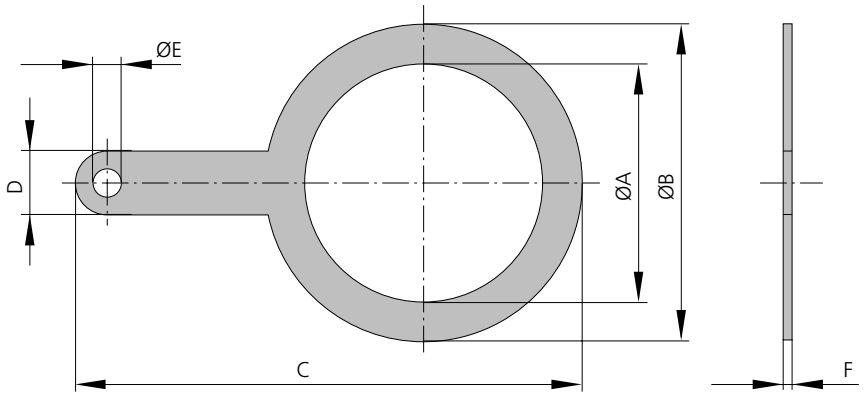
Mounting example:



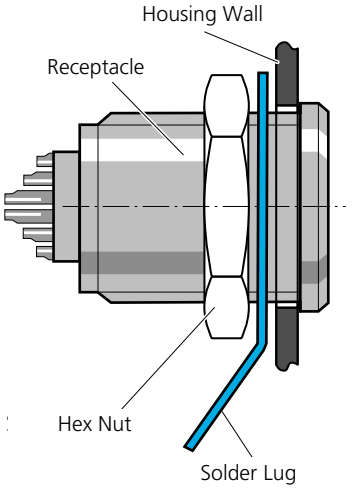
Nickel-plated surface

Size	Part number	Dimensions in mm		
		A	C	L
M7	945 000 001 000 057	9.5	7.1	1.0
M9	945 000 001 000 046	12.5	9.1	1.0
M12	945 000 001 000 047	16.0	12.1	1.1
M14	945 000 001 000 070	19.5	14.2	1.1
M15	945 000 001 000 048	19.3	15.1	1.1
M16	945 000 001 000 072	21.5	16.1	1.1
M18	945 000 001 000 049	25.0	18.1	1.1
M20	945 000 001 000 121	25.0	20.1	1.1
M25	945 000 001 000 086	32.0	25.1	1.4
M35	945 000 001 000 084	41.0	35.5	1.4

Solder Lugs for Series L and B



Mounting example:



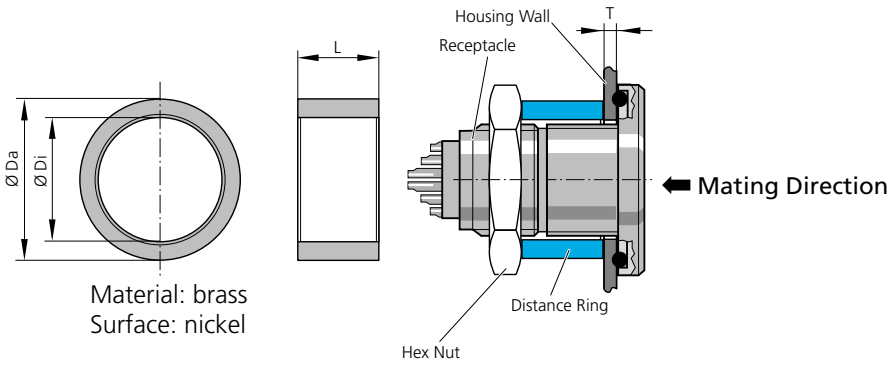
Silver-plated surface

Thread	Part number	Dimensions in mm					
		A	B	C	D	E	F
M7	713 140 246 301 000	7.4	10.0	17.0	4	3.1	0.3
M9	700 140 246 301 000	9.7	13.2	21.6	4	1.6	0.5
M12	701 140 246 301 000	12.2	17.0	27.5	4	1.6	0.5
M14	715 140 246 301 000	14.1	18.0	27.0	4	2.0	0.5
M15	702 140 246 301 000	15.2	20.0	32.0	4	1.6	0.5
M16	721 140 246 301 000	16.2	20.0	32.0	4	1.6	0.5
M18	703 140 246 301 000	18.2	25.0	39.0	4	1.6	0.5
M20	722 140 246 301 000	20.2	25.0	39.0	4	1.6	0.5
M25	704 140 246 301 000	25.6	35.0	51.0	5	2.1	0.6
M35	705 140 246 301 000	35.5	41.0	57.0	5	2.1	0.6

Distance Ring for Wall Thickness Adjustment for style 2 in Series B

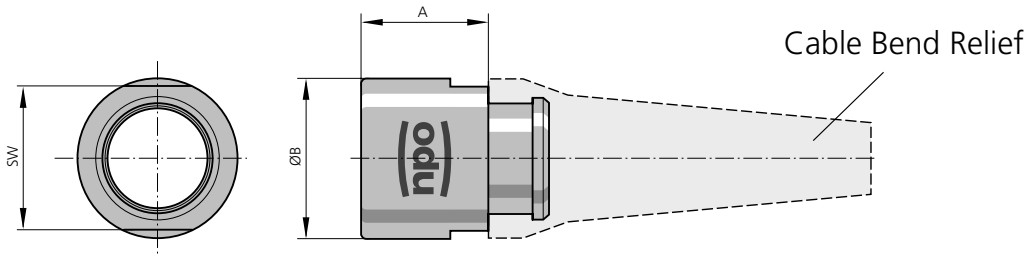
(see page 60)

Mounting example:



Part number	Size	Da	Di	L	T
700 123 102 304 000	0	13	10.3	7	1-6
701 123 102 304 000	1	17	14.3	12	0.5-6
701 123 102 304 001	1	17	14.3	6	6-16
702 123 102 304 000	2	21	16.3	8	1-9
703 123 102 304 000	3	25	20.3	11.5	0.5-7

Backnut for Silicone-Cable Bend Relief



Size	Part number A	Dimensions in mm			Series		
		ØB	SW		L	B	K
00	713 022 117 3.. 000	6.0	6.4	5	•		
0	700 022 117 3.. 002	8.0	8.9	7	•	•	•
1	701 022 117 3.. 002	10.0	11.2	10	•	•	•
2	702 022 117 3.. 002	11.5	13.9	13	•	•	•
3	703 022 117 3.. 002	11.5	16.9	15		•	
3	753 022 117 3.. 002	11.5	16.5	15	•		•
4	704 022 117 3.. 002	15.0	23.0	20	•	•	•

* = In .. please indicate surface finish:
15 = Cu-alloy / matt chromate
11 = Cu-alloy / black chromate
04 = Cu-alloy / nickel

Tools

Crimping Tools

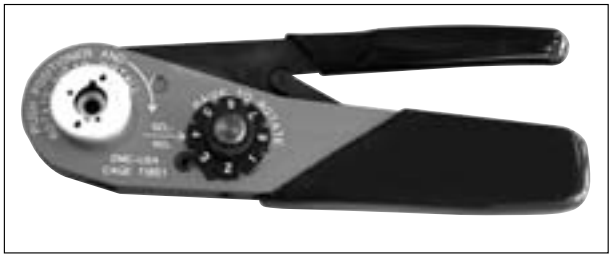
8-point-crimptong

Order-Nr.: 080.000.037.000.000

for crimp contacts: 0.7 mm and 0.9 mm.

cross section: 0.08 mm² up to 0.5 mm²

You can find all informations abaut adjustment and using of this tools on page 109



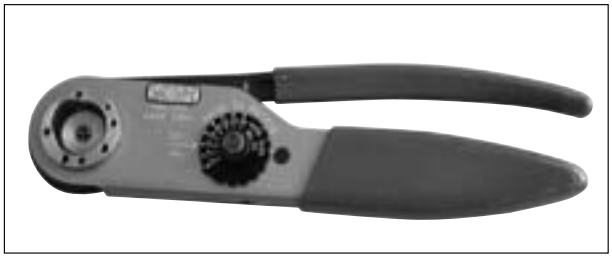
8-point-crimptong

Order-Nr.: 080.000.038.000.000

for crimp contacts: 1.3 mm and 1.6 mm.

for cross section: 0.38 mm² up to 2.5 mm²

You can find all informations abaut adjustment and using of this tools on page 109

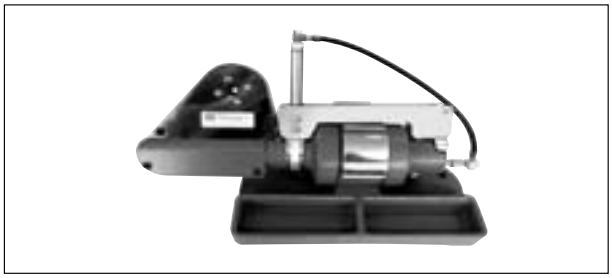


Pneumatic crimping tool

Order-Nr.: 080.000.032.000.000

For all MINI-SNAP contacts applicable

cross section: 0.08 mm² up to 2.5 mm²



Crimping and Removal Tools for Crimp Contacts (037 and 038)

Position	Size	AWG	mm²	Adjustment 037 Crimptool 080.000.037.000.000	Adjustment 038 Crimptool 080.000.038.000.000	Positionier		Removal Tool
						Socket	Pin	
2	0	22-26 20/22/24	0.38-0.15 0.50/0.38/0.25	4 7/6/5	- -	081 700 004 749 037 081 700 003 749 037	081 701 002 849 037 081 701 003 849 037	087 7CC 090 001 000
3	0	22-26 20/22/24	0.38-0.15 0.50/0.38/0.25	4 7/6/5	- -	081 700 004 749 037 081 700 003 749 037	081 701 002 849 037 081 701 003 849 037	087 7CC 090 001 000
4	0	28-32 22-26	0.09-0.04 0.38-0.15	3 4	- -	081 700 005 748 037	081 701 002 848 037	087 7CC 070 001 000
5	0	28-32 22-26	0.09-0.04 0.38-0.15	3 4	- -	081 700 005 748 037	081 701 002 848 037	087 7CC 070 001 000
2	1	18-20	1.0-0.50	-	5	081 701 002 744 038	081 701 002 844 038	087 7CC 130 001 000
3	1	18-20	1.0-0.50	-	5	081 701 002 744 038	081 701 002 844 038	087 7CC 130 001 000
4	1	22-26 20/22/24	0.38-0.15 0.50/0.38/0.25	4 7/6/5	- -	081 701 002 749 037 081 701 003 749 037	081 701 002 849 037 081 701 003 849 037	087 7CC 090 001 000
5	1	22-26 20/22/24	0.38-0.15 0.50/0.38/0.25	4 7/6/5	- -	081 701 002 749 037 081 701 003 749 037	081 701 002 849 037 081 701 003 849 037	087 7CC 090 001 000
6	1	28-32 22-26	0.09-0.04 0.38-0.15	3 4	- -	081 701 002 748 037	081 701 002 848 037	087 7CC 070 001 000
7	1	28-32 22-26	0.09-0.04 0.38-0.15	3 4	- -	081 701 002 748 037	081 701 002 848 037	087 7CC 070 001 000
8	1	28-32 22-26	0.09-0.04 0.38-0.15	3 4	- -	081 701 002 748 037	081 701 002 848 037	087 7CC 070 001 000
2	2	14-18 12-14	1.5-1.0 2.5-1.5	-	6 7	081 702 001 702 038	081 702 001 802 038	087 7CC 200 002 000
3	2	14-18	1.5-1.0	-	6	081 702 001 751 038	081 702 001 851 038	087 7CC 160 001 000
4	2	18-20 20-24	1.0-0.50 0.50/0.38/0.25	-	5 2/2/1	081 702 001 744 038 081 702 002 744 038	081 702 001 844 038 081 702 002 844 038	087 7CC 130 001 000
5	2	18-20 20-24	1.0-0.50 0.50/0.38/0.25	-	5 2/2/1	081 702 001 744 038 081 702 002 744 038	081 702 001 844 038 081 702 002 844 038	087 7CC 130 001 000
6	2	18-20 20-24	1.0-0.50 0.50/0.38/0.25	-	5 2/2/1	081 702 001 744 038 081 702 002 744 038	081 702 001 844 038 081 702 002 844 038	087 7CC 130 001 000
7	2	18-20 20-24	1.0-0.50 0.50/0.38/0.25	-	5 2/2/1	081 702 001 744 038 081 702 002 744 038	081 702 001 844 038 081 702 002 844 038	087 7CC 130 001 000
8	2	22-26 20/22/24	0.38-0.15 0.50/0.38/0.25	4 7/6/5	- -	081 702 003 749 037 081 702 002 749 037	081 701 002 849 037 081 701 003 849 037	087 7CC 090 001 000
10	2	22-26 20/22/24	0.38-0.15 0.50/0.38/0.25	4 7/6/5	- -	081 702 003 749 037 081 702 002 749 037	081 701 002 849 037 081 701 003 849 037	087 7CC 090 001 000
12	2	28-32 22-26	0.09-0.04 0.38-0.15	3 4	- -	081 702 001 748 037	081 702 001 848 037	087 7CC 070 001 000
14	2	28-32 22-26	0.09-0.04 0.38-0.15	3 4	- -	081 702 001 748 037	081 702 001 848 037	087 7CC 070 001 000
16	2	28-32 22-26	0.09-0.04 0.38-0.15	3 4	- -	081 702 001 748 037	081 702 001 848 037	087 7CC 070 001 000
18	2	28-32 22-26	0.09-0.04 0.38-0.15	3 4	- -	081 702 001 748 037	081 702 001 848 037	087 7CC 070 001 000
19	2	28-32 22-26	0.09-0.04 0.38-0.15	3 4	- -	081 702 001 748 037	081 702 001 848 037	087 7CC 070 001 000
7	3	18-20 14-18	1.0-0.5 1.5-1.0	-	5 6	081 703 002 751 038	081 702 001 851 038	087 7CC 160 001 000
14	3	22-26 20/22/24	0.38-0.15 0.50/0.38/0.25	4 7/6/5	- -	081 703 003 749 037	081 701 002 849 037 081 701 003 849 037	087 7CC 090 001 000
18	3	22-26 20/22/24	0.38-0.15 0.50/0.38/0.25	4 7/6/5	- -	081 703 003 749 037	081 701 002 849 037 081 701 003 849 037	087 7CC 090 001 000
20	3	28-32 22-26	0.09-0.04 0.38-0.15	3 4	- -	081 703 002 748 037	081 702 001 848 037	087 7CC 070 001 000
22	3	28-32 22-26	0.09-0.04 0.38-0.15	3 4	- -	081 703 002 748 037	081 702 001 848 037	087 7CC 070 001 000
26	3	28-32 22-26	0.09-0.04 0.38-0.15	3 4	- -	081 703 002 748 037	081 702 001 848 037	087 7CC 070 001 000
30	3	28-32 22-26	0.09-0.04 0.38-0.15	3 4	- -	081 703 002 748 037	081 702 001 848 037	087 7CC 070 001 000

The Crimp information does only apply for Crimp-Clip-Contacts!

Order example for the tongs type 037 and 038:

Assumed Connector: S12L0C-T08PJH0-7200

In this size 2 connector is a 8-way Pin Insert used.

The contact diameter is 0.9 mm.
The cable cross section is AWG 20/22

Therefore you have to order following tools:

080.000.037.000.000 Crimp Tong 037 (Adjustment 7)
081.702.001.849.037 Positionier for Pin Contacts
085.180.689.000.000 Removal tool
702.098.004.300.000 Assembly Jig

You can find all informations about adjustment and using of this tools on page 110.

Adjustment of the Crimp Tongs 080.000.037.000.000 and 080.000.038.000.000

(see page 109)

Required Tools:

1. Fasten the Positionier on the Crimp Tong

Please fasten the Positionier under consideration of the guiding into the tong

037: Thereby push the positionier down and turn it right at the same time.
038: You don't have to do this with this tong.

037: To fix the positionier in this position, you have to use the attached safety pin.
038: Here you have to fix the positionier with some attached allen screw and the suitable spanner.

2. Adjust of the Crimp Tong for the cable cross section

Please turn the adjustment wheel onto the right position. If the adjustment is done, so please fix the wheel with the attached safety pin.

Now the tong is ready adjusted. You can start with the crimp process

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2 rue René Laennec 51500 Taissy France
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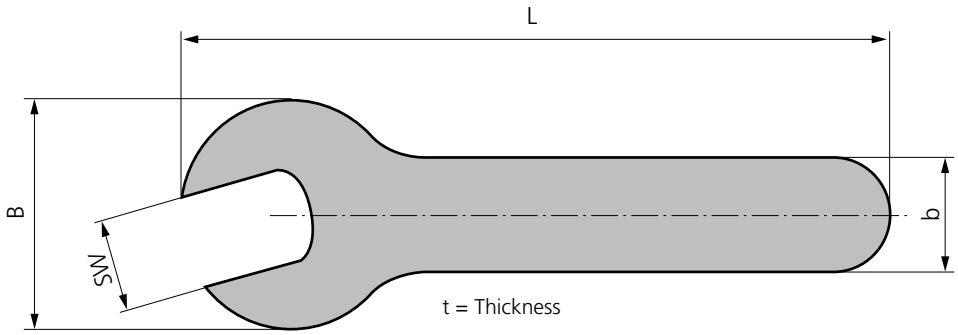
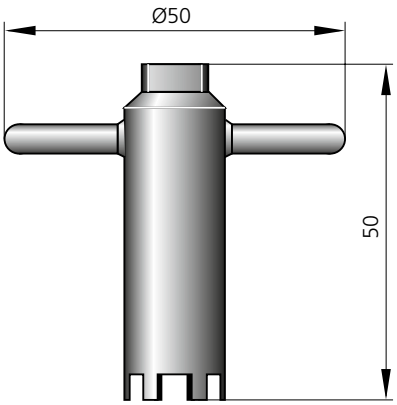
Spanner Wrench



Order No.	SW	t	B	L	b
598.700.001.016.000	5	1.5	18.5	92	8
598.700.001.015.000	5.5	1.5	18.5	92	8
598.700.001.021.000	6	2	18.5	92	8
598.700.001.011.000	7	2	18.5	92	8
598.700.001.001.000	8	2	18.5	92	8
598.700.001.022.000	9	2	21.5	102	9
598.700.001.002.000	10	2	21.5	102	9
598.700.001.012.000	11	2	24.5	115	10
598.700.001.003.000	12	2.5	24.5	115	10
598.700.001.017.000	12.5	4	24.5	115	10
598.700.001.004.000	13	2.5	30.5	98	16.5
598.700.001.005.000	14	2.5	30.5	98	16.5
598.700.001.006.000	15	3	35.5	145	15
598.700.001.007.000	16	3	35.5	145	15
598.700.001.008.000	17	3	35.5	145	15
598.700.001.023.000	18	3	42	172	16
598.700.001.013.000	19	3	42	172	16
598.700.001.009.000	20	3	42	172	16
598.700.001.018.000	21	3	42	172	16
598.700.001.010.000	22	3	47	119	23.5
598.700.001.014.000	24	3	47	119	23.5
598.700.001.019.000	30	3	50	150	25
598.700.001.020.000	31	3	50	150	25

Nutdriver for Slotted Mounting Nut



suitable for style 8 / Series L and B

Nutdriver	Thread
700 098 002 000 000	M 9x0.5
700 098 001 000 000	M 10x0.5
700 098 001 000 000	M 12x1
701 098 002 000 000	M 14x1
701 098 001 000 000	M 15x1
702 098 001 000 000	M 16x1
702 098 001 000 000	M 18x1
703 098 001 000 000	M 20x1

suitable for style 3 / Series K

Nutdriver	Thread
701 098 002 000 000	M 14x1
721 098 001 000 000	M 16x1
703 098 001 000 000	M 20x1
724 098 001 000 000	M 30x1

Removal tool for Crimp-Clip-Contacts

Part-Number	Contact Ø
087 7CC 050 001 000	0.5 mm
087 7CC 070 001 000	0.7 mm
087 7CC 090 001 000	0.9 mm
087 7CC 130 001 000	1.3 mm
087 7CC 160 001 000	1.6 mm

Crimp-Clip-Contact

Assembly tool series K

Order-Nr.: 080.000.055.000.000

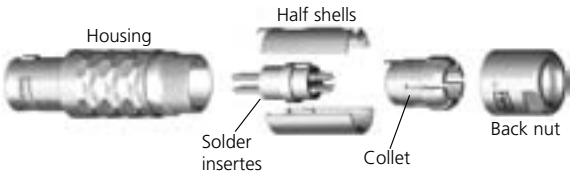
- Useable from Size 0 until 4
- To clamp the inner housing for back nut assembley
- Incl. jaws for bench vise fixing for easy handling

Assembly Instructions

Accessories / Tools

Assembly Instruction

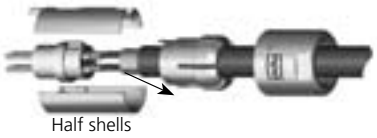
For unsealed Connectors Series L (IP 50)



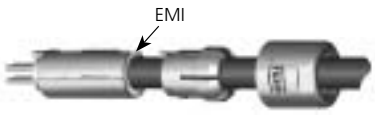
1. Slide Back nut and Collet over the cable.

2. Strip cable and wire
3. Pre-tinning of strands recommended

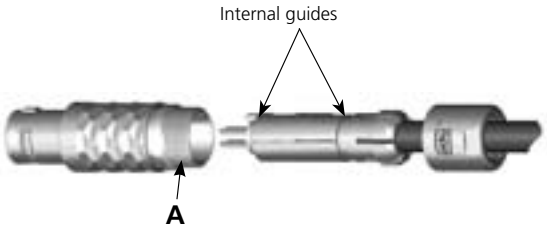
4. Solder each wire to the corresponding contact



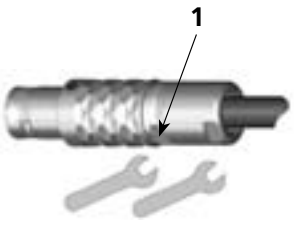
5. Bend cable shield outwards, assemble half shells.



6. Slide the EMI-Ring against the sleeve and clamp the shield between it.



7. Now you can put the assembled cable into the plug-housing. If needed, secure thread (A) with locking glue.



8. Screw back nut on the plug, hold against flat 1 and fasten cable in the housing*.

Attention! Torque value:

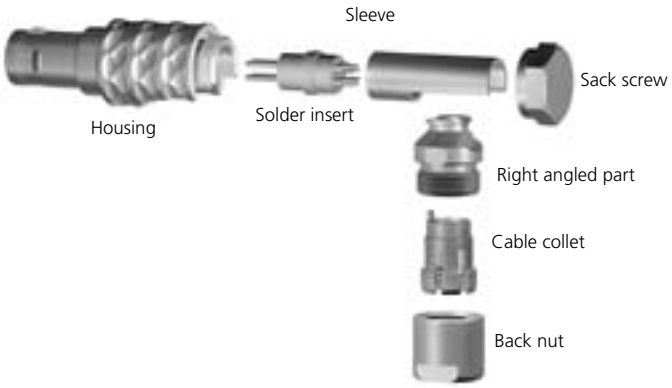
Size	00	0	1	2	3	4
Nm	0.5	0.6	1.0	2.0	3.5	4

Now the plug is assembled.

* ODU-Spanner-Wrench: see page 111

Assembly Instruction

For unsealed right-angle plug connectors (IP 50), series L

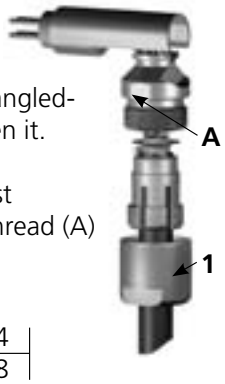


1. Slide back nut, collet, right-angled-part and sleeve over the cable.

2. Strip cable and wire
3. Pre-tinning of strands recommended

4. Solder each wire to the corresponding contact (Crimp version see straight Connector to Page 118)

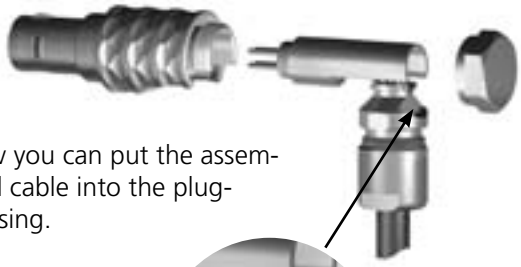
5. Pull cable back and bend 90° down. Spread the cable shield over collet ring. Slide sleeve over insulator.



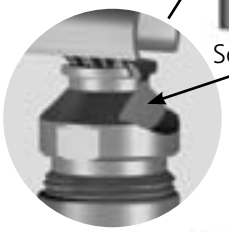
6. Slide the collet against the right-angled-part and clamp the shield between it. Screw back-nut (1) on the rigth-angled-part and hold against on the flat A. If needed, secure thread (A) with locking glue.

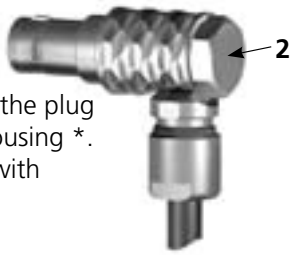
Attention! Torque value:

Size	00	0	1	2	3	4
Nm	0.5	0.6	1.0	2.0	3.5	8



7. Now you can put the assembled cable into the plug-housing.





8. Mount back-screw (2) on the plug and fasten cable in the housing *. If needed, secure thread with locking glue.

Attention! Torque value:

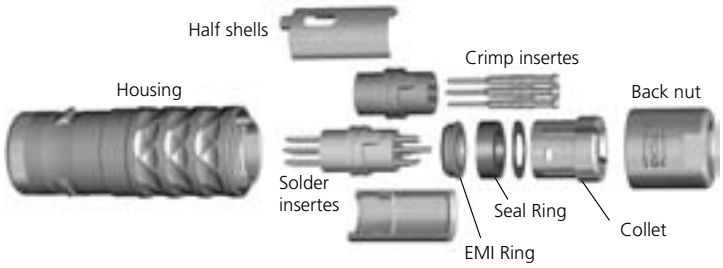
Size	00	0	1	2	3	4
Nm	0.2	0.3	0.4	0.9	1.3	2.0

Now the plug is assembled.

* ODU-Spanner-Wrench: see page 111

Assembly Instruction

For sealed connectors (IP 68) Series K



1. Slide Back nut, Collet, Seal Ring and EMI-Ring over the cable.

Crimp termination

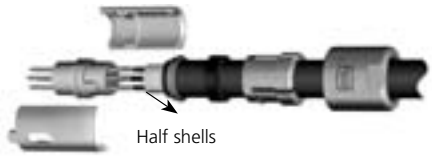
Detail information see page 108-109

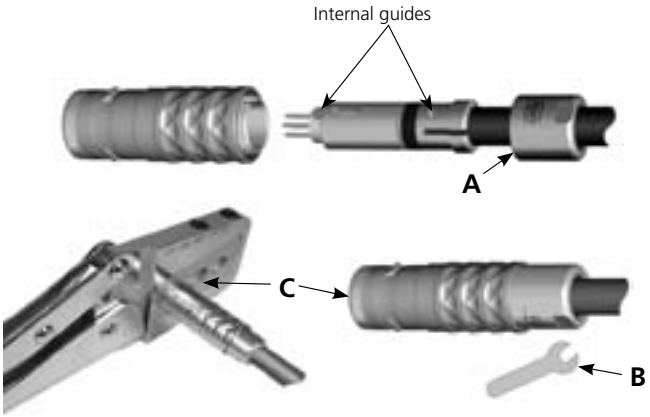
Part number see page 108

2. Strip cable and wire
3. Fit wire into the contact barrel and crimp

Part number see page 109

4. Insert contacts into insulator, use the insertion tool to push them in





Solder termination

2. Strip cable and wire
3. Pre-tinning of strands recommended

4. Solder each wire to the corresponding contact

5. Bend cable shield outwards, assemble half shells.

6. Slide the EMI-Ring against the sleeve and clamp the shield between it.

7. Now you can put the assembled cable into the plug-housing. If needed, secure thread (A) with locking glue.

8. Screw back nut on the plug and fasten cable in the housing. Tighten with ODU-Spanner-Wrench (B) and hold against with ODU tongs 080.000.055.000.000 (C).

Attention! Torque value:

Size	0	1	2	3	4
Nm	0.6	1.0	2.0	3.5	3.5

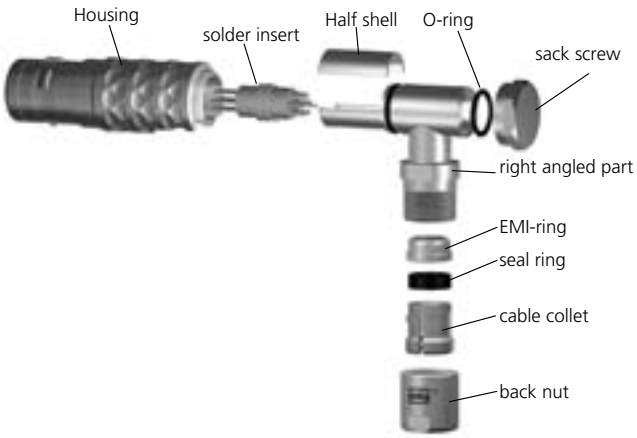
Now the plug is assembled.

* ODU-Spanner-Wrench: see page 111

Watertight connectors require a grommet seal designed for the intended cable. We require either the exact specification or a sample of the cable.

Assembly Instruction

For sealed right-angle plug connectors (IP 68) Series K

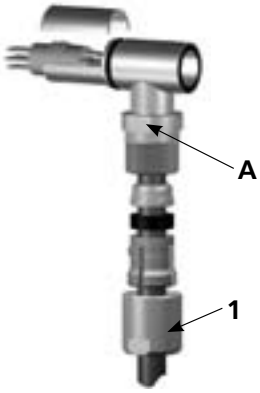


1. Slide back nut, collet, seal ring, EMI-ring and right-angled-part over the cable.
2. Strip cable and wire
3. Pre-tinning of strands recommended

4. Solder each wire to the corresponding contact (Crimp version see straight Connector to Page 116)

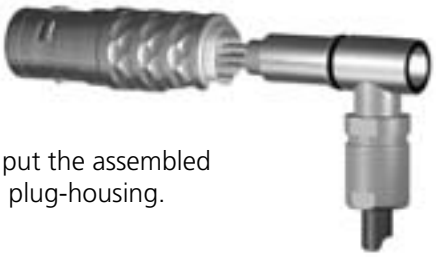
5. Pull cable back. Spread the cable shield over collet ring.

6. Slide collet, seal ring and EMI-ring against the right-angled-part and clamp the shield between EMI-ring and right-angled-part.
Screw back-nut (1) on the right-angled-part and hold against on flat (A). Please halfshell over insulator.
If needed, secure thread with locking glue.

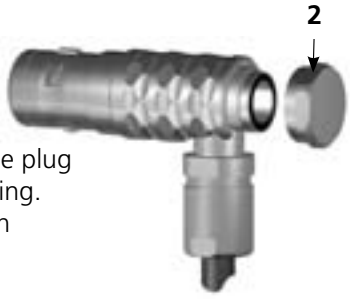


Attention! Torque value:

Size	0	1	2	3
Nm	0.6	1.0	2.0	3.5



7. Now you can put the assembled cable into the plug-housing.



8. Mount back-screw (2) on the plug and fasten cable in the housing.
If needed, secure thread with locking glue.

Attention! Torque value:

Size	0	1	2	3
Nm	0.3	0.4	0.9	1.3

Now the plug is assembled.
* ODU-Spanner-Wrench: see page 111

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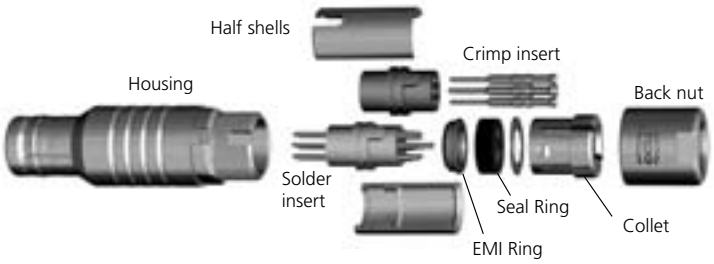
Site web : www.hvssystem.com

Assembly Instruction

For sealed connectors Series B (IP 68)



1. Slide Back nut, Collet, Seal Ring and EMI-Ring over the cable.

Crimp termination

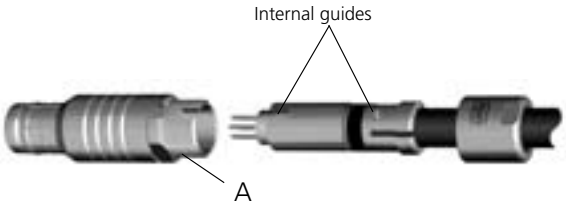
Detail information see page 108-109

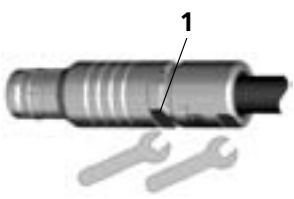
Part number see page 108

2. Strip cable and wire
3. Fit wire into the contact barrel and crimp

Part number see page 109

4. Insert contacts into insulator, use the insertion tool to push them in





Solder termination

2. Strip cable and wire
3. Pre-tinning of strands recommended

4. Solder each wire to the corresponding contact

5. Bend cable shield outwards, assemble half shells.

6. Slide the EMI-Ring against the sleeve and clamp the shield between it.

7. Now you can put the assembled cable into the plug-housing. If needed, secure thread (A) with locking glue.

8. Screw back nut on the plug, hold against flat 1 and fasten cable in the housing*.
Attention! Torque value:

Size	0	1	2	3
Nm	0.6	1.0	2.0	3.5

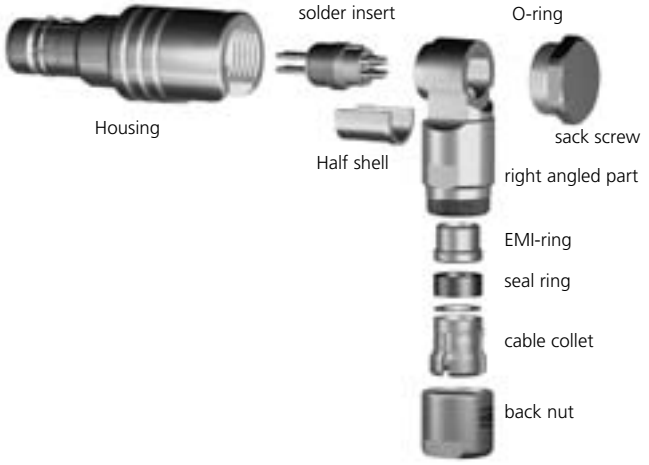
Now the plug is assembled.

* ODU-Spanner-Wrench: see page 111

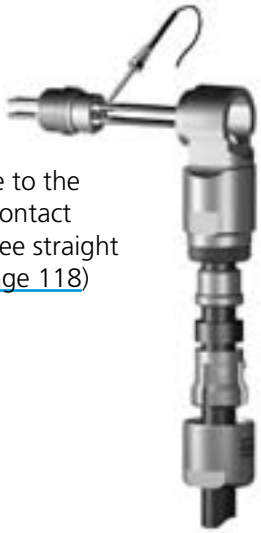
Watertight connectors require a grommet seal designed for the intended cable. We require either the exact specification or a sample of the cable.

Assembly Instruction

For sealed right-angle plug connectors (IP 68) Series B



1. Slide back nut, collet, seal ring, EMI-ring and right-angled-part over the cable.
2. Strip cable and wire
3. Pre-tinning of strands recommended



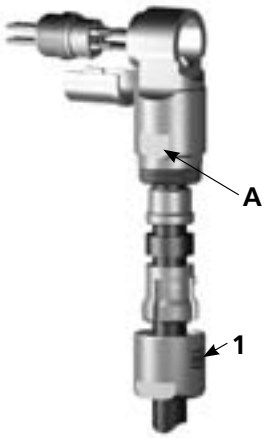
4. Solder each wire to the corresponding contact (Crimp version see straight Connector to Page 118)

5. Pull cable back. Spread the cable shield over collet ring.

6. Slide collet, seal ring and EMI-ring against the right-angled-part and clamp the shield between EMI-ring and right-angled-part.
Screw back-nut (1) on the right-angled-part and hold against on flat (A). Please halfshell over insulator.
If needed, secure thread with locking glue.

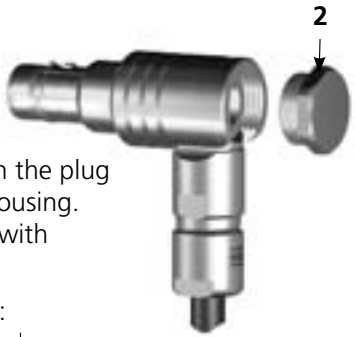
Attention! Torque value:

Size	0	1	2	3
Nm	0.6	1.0	2.0	3.5



Part No.700 412 106 000 000

7. Now you can put the assembled cable into the plug-housing.



8. Mount back-screw (2) on the plug and fasten cable in the housing.
If needed, secure thread with locking glue.

Attention! Torque value:

Size	0	1	2	3
Nm	0.3	0.4	0.9	1.3

Now the plug is assembled.

* ODU-Spanner-Wrench: see page 111

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Torque for back-nuts

Torque for styles

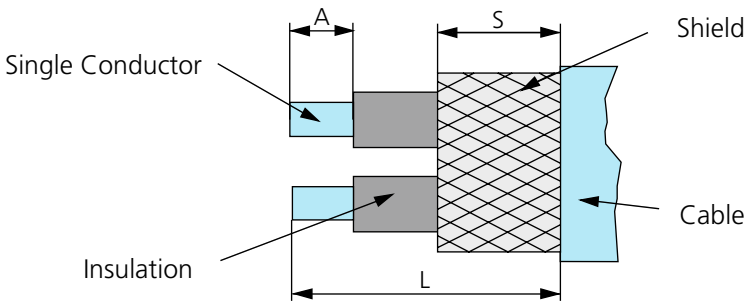
- Straight plug S1; S2; S3; S4
- Right-angled-plug W1; W2; W3; W4
- Break-apart-plug A5; A6; A7; A8
- In-line-receptacle K1; K2; K3; K4
- Receptacle G6; G7

Size	00	0	1	2	3	4
Torque	0.5 Nm	0.6 Nm	1.0 Nm	2.0 Nm	3.5 Nm	4 Nm

1 Nm = 8.85 inch-pounds

Cable Preparation:

The following Table provides recommended guidelines for cable preparation.
The according stripping measures have to be checked before assembly!
By the huge number of the different connectors partially the measures from the table mentioned below can differ.



A = Stripping length single conductor
L = Stripping length cable jacket
S = Stripping length braided shield

Size	Straight Plug						Right-angled Plug Series L						Right-angled Plug IP68 Series B					
	Solder Termination			Crimp Termination			Solder Termination			Crimp Termination			Solder Termination			Crimp Termination		
	L	A	S	L	A	S	L	A	S	L	A	S	L	A	S	L	A	S
00	5	2	2	–	–	–	11	2	2	–	–	–	–	–	–	–	–	–
0	7	2	2.5	10	3	2.5	16	2	2.5	21	3	2.5	18	2	2.5	21	3	2.5
1	9	2	2.5	12	3	2.5	18	2	2.5	21	3	2.5	18	2	2.5	21	3	2.5
2	11	2	2.5	14	3	2.5	27	2	2.5	30	3	2.5	27	2	2.5	30	3	2.5
3	13	2	2.5	17	3	2.5	30	2	2.5	32	3	2.5	28	2	2.5	32	3	2.5

All dimensions in mm

Exceptions are noted on special instructions.
Right-angle plugs have special instructions.

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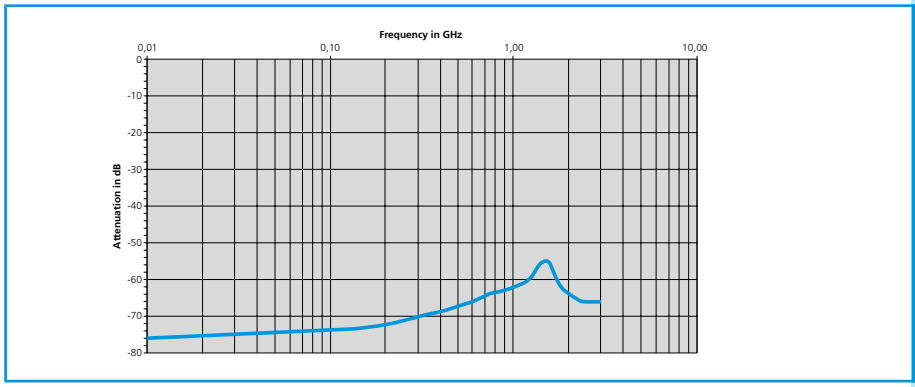
Technical Information



INDEX:

International Protection (IP) Classes DIN EN 60 529 (respectively IEC 529 / VDE 0470 T1)

The housing and the locking system of the ODU MINI-SNAP protect the contacts against outside mechanical influence, such as impact shocks, impurities, dust, unintended contact and penetration of moisture, water or other liquids (coolants, oils, etc.).
Protection classification is indicated with the letters **IP** and two numbers.

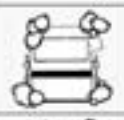
IP: International Protection

All IP 68 submersible ODU MINI-SNAP Connectors are rated to 2m water depth (0.2 bar) for 24 hours in accordance with DIN EN 60529.
A watertight plug requires a cable grommet in the collet. The grommet has to fit tightly over the cable.
The cable jacket must be smooth, cylindrical and free of grooves.
The plug should be potted for watertightness in unmated condition.

(Higher requirements for Watertightness on request)

Code letters (International Protection) — **First Index Figure** (Foreign bodies protection) — **Second Index Figure** (Water protection)

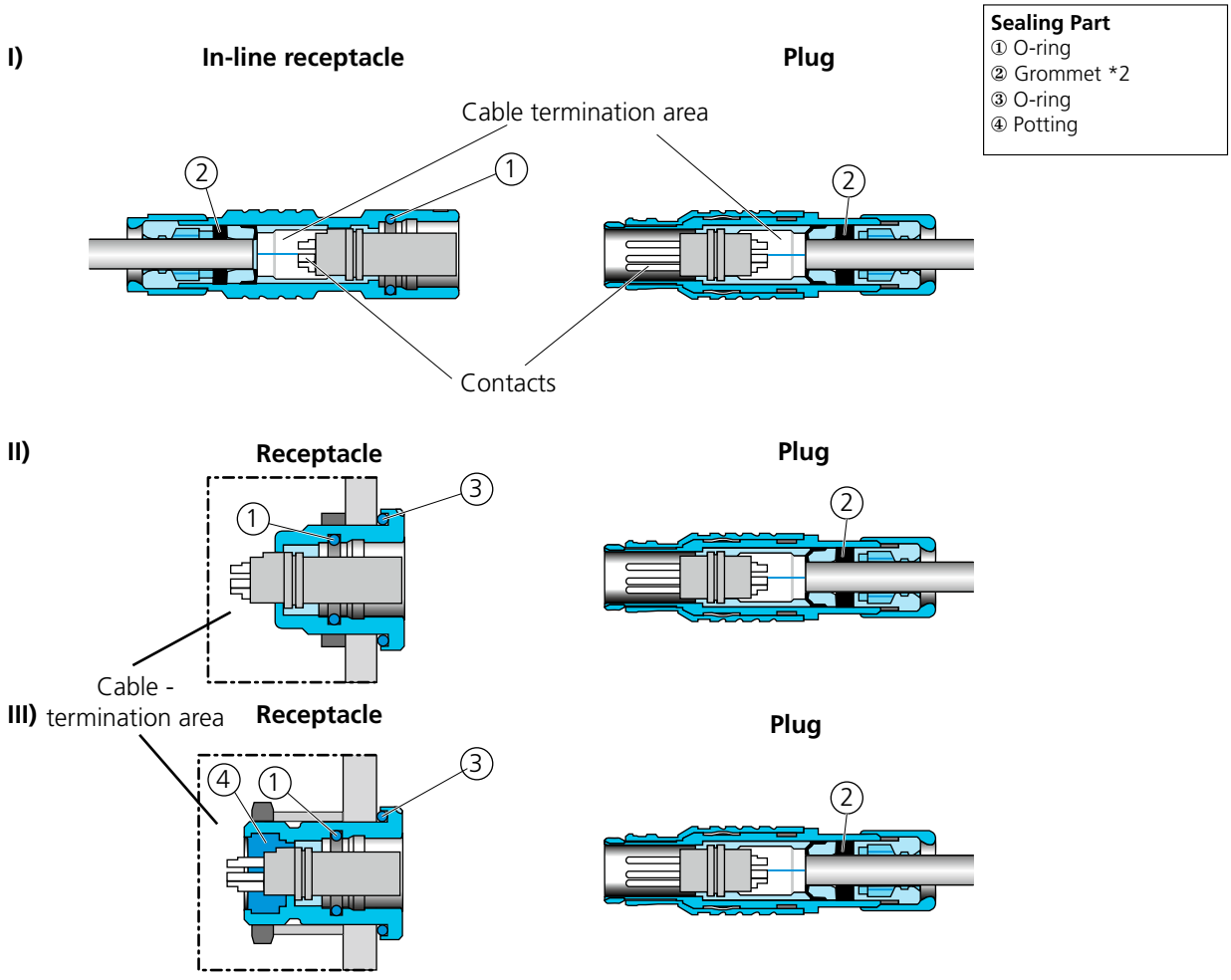
IP 6 8

Index	Degree of protection		Index	Degree of protection	
0		No protection against accidental contact, no protection against intrusion of solid foreign bodies	0		No protection against water
1		Protection against contact with any large area by hand and against large solid foreign bodies with Ø > 50 mm	1		Protection against vertical water drips
2		Protection against contact with the fingers, protection against large solid foreign bodies with Ø > 12 mm	2		Protection against water drips (up to a 15° angle)
3		Protection against tools, wires or similar objects with Ø > 2.5 mm. Protection, against small foreign solid bodies with Ø > 2.5 mm	3		Protection against diagonal water drips (up to a 60° angle)
4		As 3 however Ø >1 mm	4		Protection against splashed water from all directions
5		Full protection against contact. Protection against interior detrimental dust deposition.	5		Protection against water spray from all directions
6		Total protection against contact. Protection against intrusion of dust	6		Protection against temporary flooding
			7		Protection against temporary immersion
			8		Protection against water pressure

In accordance with DIN VDE 0470, DIN EN 60 529, IEC 529
Source: ZVEI = German Association of the Electrotechnical and Electronic Industry e.V.

Watertightness of the ODU MINI-SNAP

➡ ODU offers IP 50 and IP 68 connectors in series B and S in the same outside diameter. Because ODU connectors must be compatible with other manufacturers, the company also offers the series K. These connector is larger in diameter than the standard version (series L).



Protection against Water through following seals: *1

		mated	unmated
I	**Cable – Cable termination area**	**Yes ① + ②**	**No**
II	**Device – Cable termination area**	**Yes ① + ③ + ②**	**No**
III	**Device – Cable termination area**	**Yes ① + ③ + ②**	**Yes ③ + ④**

*1 Contacts: in mated condition the contacts are protected (in cases I, II, III) . In unmated condition the contacts can be protected using a protective cover (see page 101–103). The cover must be removed before mating the plug with the receptacle.

*2 The elastic grommet acts as the cable seal. It requires exact knowledge of the cable dimension. **Important factors:** Diameter tolerance, roundness, cable design and cable jacket hardness.

Operating voltage acc. to SAE AS 13441-method 3001.1

The values acc. to SAE AS 13441-method 3001.1 comply with MIL-Std. 1344 – method 3001.
The chart values results are acc. to IEC 60512-2; Test 4. The inserts have been tested in mated condition and the test voltage was applied to the pin insert.

75% of the measured break-down voltage is the basic for the further calculation. 1/3 of this value is the corresponding operating voltage.

All tests were performed at standard environment conditions (room temperature) and can be applied up to an altitude of 2,000 m.
For any deviations one has to consider the reduction factor acc. to the relevant standards.

Test voltage: **Break-down voltage x 0.75**

Operating voltage: **Break-down voltage x 0.75 x 0.33**

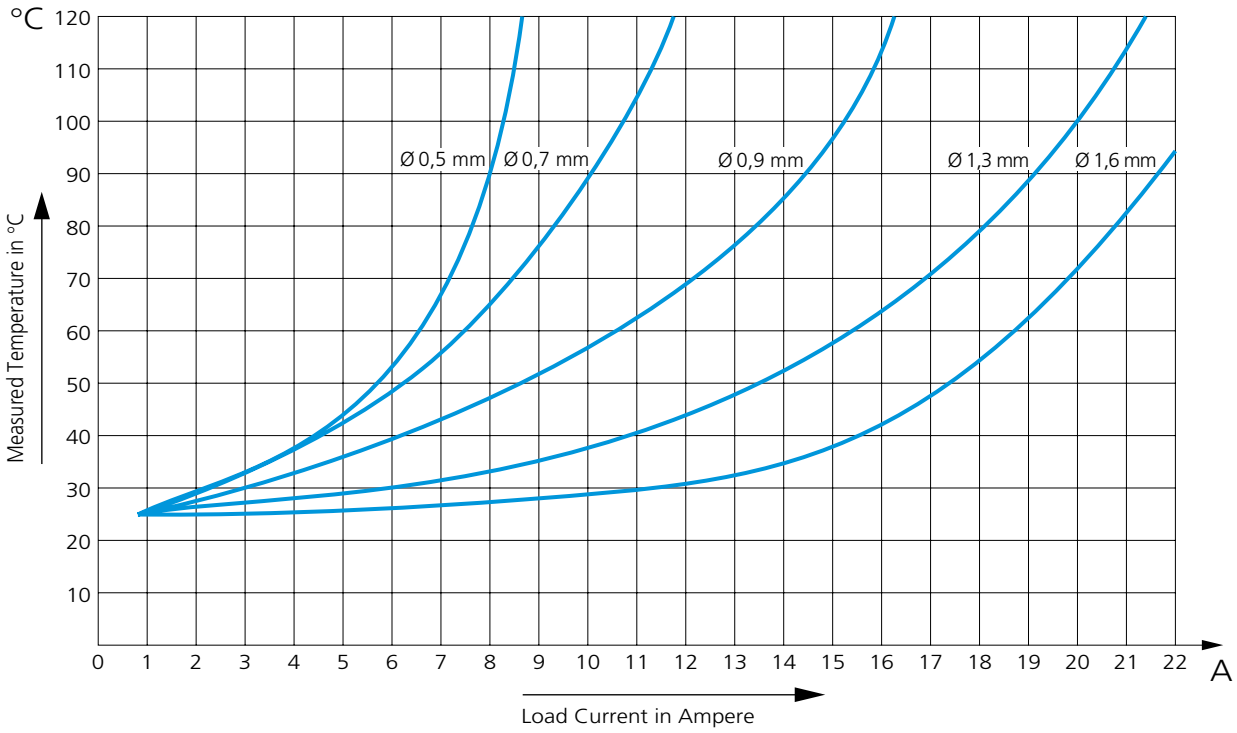
Caution:

Electrical appliances: for various applications the safety requirements regarding the operating voltage is even more severe!
The relevantdatas in such cases for the operating voltage are the creepage and clearance distances. For any advise how to chose the proper connector please consult us and indicate the safty standard which your product has to meet.

Current Load – Contacts

Nominal Single Contact Current Load for pin / slotted socket

(Nominal Diameter 0.5 mm – 1.6 mm)



➡ **Maximum operating temperature for Standard Contacts:** +120 °C

Test contact was terminated to largest possible conductor.

Connectors or cables with more than one contact or conductor generate a higher heat than a single contact. Therefore, a **Derating Factor** must be applied. For connectors the Derating Factor is applied according to DIN 57 298 Teil 4 / VDE 0298 Teil 2. The Derating Factor is used starting with 5 loaded wires (DIN 41 640 T3).

Derating Factor:

Number of loaded wires	Derating Factor
5	0.75
7	0.65
10	0.55
14	0.50
19	0.45
24	0.40

Termination Styles

Contact blocks (insulation bodies with contacts) are interchangeable between receptacle and plug. As a rule the socket contact blocks are mounted in the part under power.

ODU offers the following contact termination styles:

- **Solder**
- **Crimp**
- **PCB**

Termination Styles for Turned Contacts

Solder Termination:

The contacts come mounted by the factory. The insulation body and the pre-assembled contacts are called a contact block.

Crimp Termination

A single contact is crimped to a single conductor. Subsequently, the crimped contact is pushed into the insulation body. Crimp contacts and insulation bodies are shipped separately.

Crimping creates a reliable, corrosion-free and durable connection between the contact and the conductor.

Crimping causes the crimp barrel of the contact and the conductor material to cold flow. It creates a gas-tight connection between contact and conductor.

The ODU MINI-SNAP generally requires the industry-standard 8-point crimp tool .

Crimp-Clip-Contact for PEEK insulator

Printed Circuit Board (PCB) Termination:

PCB pins are used only for receptacles which are mounted directly to the PCB. The contacts are permanently installed in the insulation body.

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Conversion AWG - Cross Section

AWG = American Wire Gauge

The AWG system describes the cross section of a wire using a gauge number for every 26 % increase in conductor cross section. With larger wire diameters, the AWG gauge numbers decrease; as the wire sizes increase, the AWG gauge numbers decrease.

Most wires are made with **stranded conductors.** Compared to solid conductors stranded wires offer higher durability, higher flexibility and better performance under bending and vibration.

Stranded wires are made from wires with smaller gauge sizes (higher AWG gauge number). The AWG gauge number of the stranded wire is equal to that of a solid conductor of the same size wire. The cross section of the stranded conductor is the sum of cross sections of the single conductors.

For example, a AWG-20 stranded wire of 7 AWG-28 conductors has a cross section of 0.563 mm²; an AWG-20 stranded wire with 19 AWG-32 conductors has a cross section of 0.616 mm².

Conversion Table AWG / mm²

Circular Conductor			
AWG	Diameter		Cross Section
	in	mm	mm²
10 (1)	0.102	2.59	5.27
10 (37/26)	1.109	2.75	4.53
12 (1)	0.0808	2.05	3.31
12 (19/25)	0.0895	2.25	3.08
12 (37/28)	0.0858	2.18	2.97
14 (1)	0.0641	1.63	2.08
14 (19/27)	0.0670	1.70	1.94
14 (37/30)	0.0673	1.71	1.87
16 (1)	0.0508	1.29	1.31
16 (19/29)	0.0551	1.40	1.23
18 (1)	0.0403	1.02	0.82
18 (19/30)	0.0480	1.22	0.96
20 (1)	0.032	0.813	0.52
20 (7/28)	0.0366	0.93	0.56
20 (19/32)	0.0384	0.98	0.62
22 (1)	0.0252	0.64	0.324
22 (7/30)	0.0288	0.731	0.354
22 (19/34)	0.0307	0.780	0.382
24 (1)	0.0197	0.50	0.196
24 (7/32)	0.023	0.585	0.227
24 (19/36)	0.0252	0.640	0.240
26 (1)	0.157	0.40	0.122
26 (7/34)	0.0189	0.48	0.140
26 (19/38)	0.0192	0.487	0.15
28 (1)	0.0126	0.32	0.08
28 (7/36)	0.015	0.381	0.089
28 (19/40)	0.0151	0.385	0.095
30 (1)	0.0098	0.250	0.0506
30 (7/38)	0.0115	0.293	0.055
30 (19/42)	0.0123	0.312	0.072
32 (1)	0.0080	0.203	0.032
32 (7/40)	0.0094	0.240	0.035
32 (19/44)	0.0100	0.254	0.044
34 (1)	0.0063	0.160	0.0201
34 (7/42)	0.0083	0.211	0.0266
36 (1)	0.0050	0.127	0.0127
36 (7/44)	0.0064	0.163	0.0161
38 (1)	0.0040	0.100	0.0078
40 (1)	0.0031	0.080	0.0050
42 (1)	0.0028	0.0700	0.0038
44 (1)	0.0021	0.054	0.0023

(Font: Gore & Associates, Pleinfeld)

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Housing Materials and Surface Finish

MINI-SNAP housings are made from brass and are nickel-plated with a matt-chromate surface finish (sand-blasted). Nickel-plated or black chromate-finished housings are available on special request.

Inside metal components are made from nickel-plated brass.

	Material	Surface
Component Parts	**Designation**	**Thickness of the film**
Housing Back Nut Slotted Nut	➡ Cu-alloy	+ 1 µm Cu + 3–6 µm Ni + 0.3–1 µm matt chromate
Collet EMI-Ring Half-Shells Locking Washer Nut Retainer Ring	➡ Cu-alloy	➡ Ni matt: 6–8 µm
Pin (solder or PCB) Socket (solder or PCB) Pin (crimp) Socket (crimp)	➡ Cu-alloy	+ 1.25 µm Ni ➡ + 0.75 µm Au

Insulation Body Material (recognized)

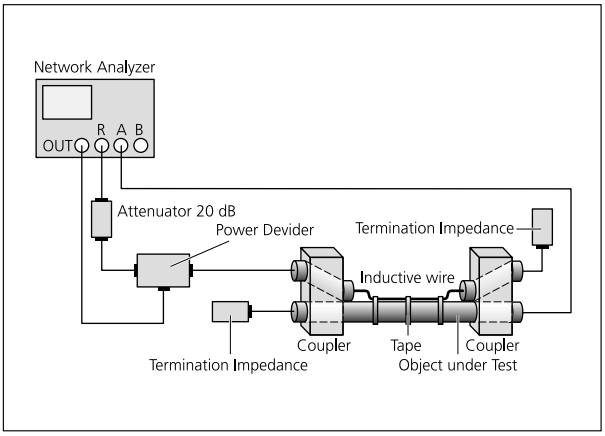
	Norm		Unit	PBT	PTFE 1)	PEEK
Dialectric Strength	DIN 53481	ASTM D-149	KV / mm	27	> 50	19
Operating Temperature	--	--	°C	-40/+140	-100/+260	-50/+250
Flammability rating	UL–94	--	--	V-0	V-0	V-0
Creeping distance acc. to CTI	IEC 60112			275	600	175

[1] PTFE (Teflon) is only used for Coax- and Triax Connectors

Electromagnetic Compatibility (EMC)

When discussing electromagnetic compatibility (EMC) one should not only consider the device or the circuit, but also include the network and the entire data communication link. This involves all connecting elements such as conductors and connectors. Electromagnetic interference from the outside into the connector can lead to system malfunctioning. The best way to prevent this is by providing a high-quality shield between the cable and the connector. In order to provide reliable EMC data to our customers we engaged the services of a certified test laboratory to investigate the EMC characteristics of the ODU MINI-SNAP. They tested for us Size 00, 0, 1, 2 and 3 MINI-SNAP connectors.

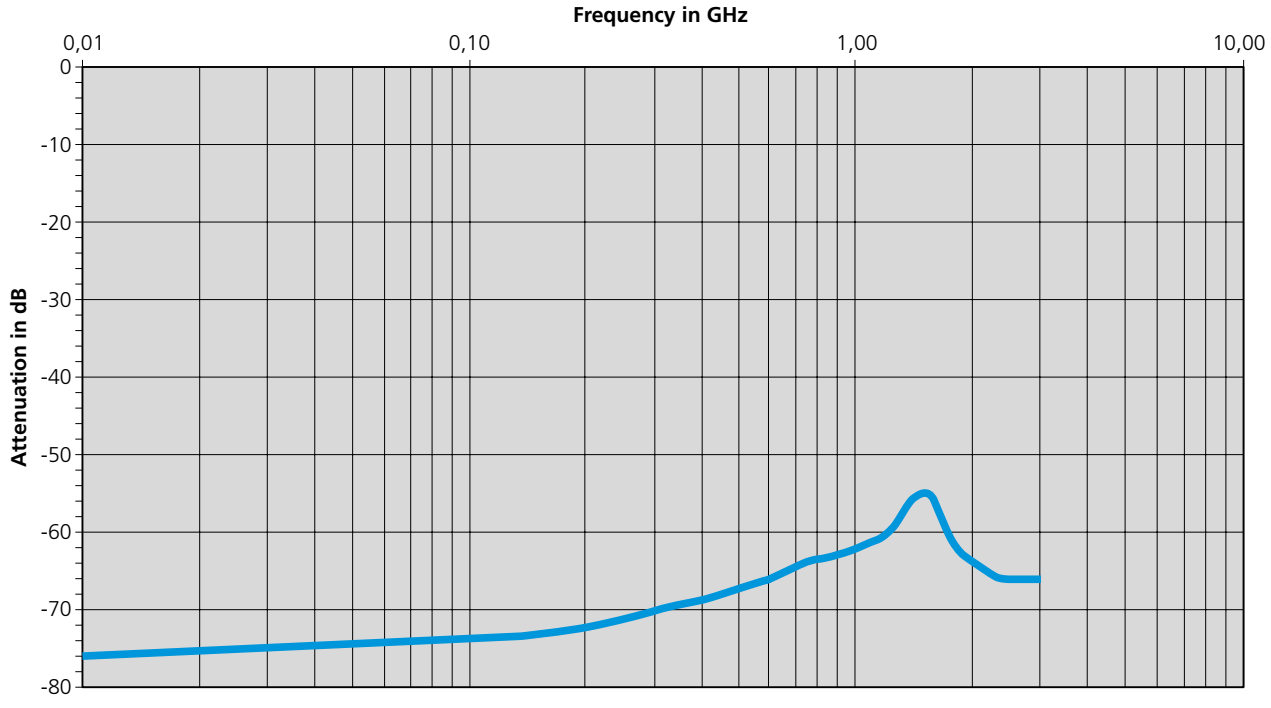
Measurements were conducted using the inductive wire or parallel wire method in accordance with test procedure VG 55214-6-2. In this set-up, the mated connector is connected on one end to a network analyzer and terminated on the other end with a suitable impedance. The inductive wire is then mounted in close proximity along the mated connector pair. The induction wire is a ribbon cable which permits to vary the level of induction by using more or less of the ribbon conductors.



Next, a signal with a frequency range of 10 kHz to 3 GHz is connected to the ribbon cable. The network analyzer is used to measure the amount of signal induced into the connector circuit. The result is shown as the shielding attenuation A_T in dB. It is essential that all leads to the connector are shielded so that no signal can be induced into the circuit at any other place except the connector. The various attenuation values are plotted on a logarithmic scale as attenuation in dB vs. frequency.

An attenuation of better than -55 dB is generally required for reliable connector and system operation. It can be shown that our connectors will meet this requirement in all applications.

The following diagram is valid for all series and standard sizes.



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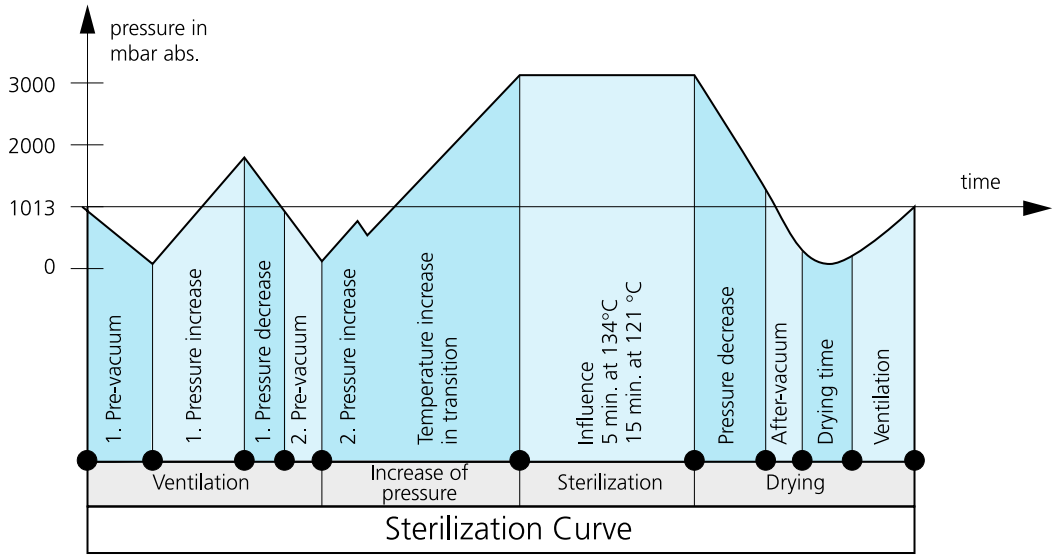
Autoclaving of ODU MINI-SNAP Connectors

If required ODU can deliver MINI-SNAP connectors for the following sterilization process:
Steam-sterilization with pre-vacuum or gravitation-process. Connectors were tested with autoklave equipment with reference to DIN EN 13 060 at 134° C and 500 cycles.

Sterilization Curve:



For other sterilization-processes please contact our technical support team.

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Quality Management at ODU

In the scope of quality approval the sizes 0 and 3 have been submitted to environmental and mechanical tests acc. to MIL.

All tests have been passed.

Tests carried out:

Definition	Nach Norm
High Temperature	MIL-STD 810 F / PV 501
Low Temperature	MIL-STD 810 F / PV 502
Temperature Shock	MIL-STD 810 F / PV 503
Humidity	MIL-STD 810 F / PV 507
Salt Fog	MIL-STD 810 F / PV 509 and MIL-STD 1344 A / Methode 1001.1
Shock	MIL-STD 810 F / PV 516
Vibration	MIL-STD 1344 A / Methode 2005.1 / IV
Water Thigtness IP 68	IEC 60529

Technical Terms and Definitions

Air Gap
= Shortest distance between two conductive elements through the air.

Autoclavibility
(See page 130)

AWG
(See page 127)

Creepage Distance
= The distance measured across the surface of a dielectric between two contacts or a contact and a metal part. The longer the distance, the lesser the risk of damage or tracking. Minimum creepage distances are specified according to the operating voltage and the applicable isolation group.

Crimp Area
= The part of a crimp barrel at which the crimp connection is achieved by pressure deformation or by reshaping the barrel around the conductor.

Crimp Barrel
A hollow part of a contact which accepts one or more conductors and which may be crimped through the application of a crimping tool.

Crimp Connection
= The permanent attachment of a contact to a conductor by pressure deformation or by reshaping the crimp barrel around the conductor so that a good electrical and mechanical connection is established.
(See page 126)

Connector
= A component which terminates conductors for the purpose of providing connection and disconnection to a suitable mating component. Depending on the fastening to a cabinet, panel, rack etc. or a cable, they are classification.

Delivery
Delivery of the connectors usually as components (that means not assembled).
Exception: Solder contacts are factory-installed in the insulation body.

Fixed Connector
= A connector for attachment to a rigid surface (panel).

Free Connector
= A connector for attachment to the free end of a wire or cable. Also called free hanging connector or inline receptacle.

Insertion Or Withdrawal Force
= The force required to fully mate or unmate a set of connectors without the effect of coupling, locking or similar devices. The insertion force is usually greater than the withdrawal force. Also called mating and unmating force.

Insulation Body
= Non-conductive part of a connector, to electrically and mechanically separate live parts and to protect against accidental touch.

Insulation Group
= Classification of connectors according to the operating and working conditions (insulation groups according DIN VDE 0110).

Keying
= System of projections and grooves on mating connectors which prevent otherwise identical connectors from being mated. This is useful when several connectors of the same style are used in the same application (see page 30, 50, 66).

Lower Limit Temperature
= The lowest permissible temperature which a connector or a plug-in device is allowed to be operated.

Materials
The contacts are made of Cu-alloy and gold-plated. The standard housings are made of Cu-alloy with a matt-chromate surface finish. All other materials and surfaces on special request. (see page 128).

Mating Cycles
= Mechanical operation of connectors and plug-in devices by insertion and withdrawal. One mating cycle comprises one insertion and one withdrawal operation.

Nominal Single Contact Current Load
= Current load, which can load every single contact (see page 125).

Nominal Voltage
Nominal voltage characterizes a component.

Operating Temperature of the ODU MINI-SNAP
= Range between upper and lower temperature limits.
-40°C to +120°C (see page 8)

Print Connection
(see page 126)

Printed Circuit Board
Boards, typically made of epoxy-filled glass fiber fabric, with conductive pattern on one or both sides, or in case of multilayer boards, also imbedded inside the board. They feature metallized holes for soldering wire-mounted components or for the insertion of insertion of resilient or rigid press-in pins or instead, pads for attaching components using surface mount technology (SMT).

Reference Current
= The current at which a connector can be operated permanently simultaneously through all contacts without reaching maximum temperature.

Reference Voltage
Normal voltage (VDE 0110) for a connector.

Solder Termination
(see page 126 Termination Styles)

Termination techniques
= Methods for connecting a wire to an electro-mechanical component, e.g. solderless connection according to IEC 60352: respectively such as crimp, press-in etc. or solder connections.

Test Voltage
= The voltage the connectors are tested, and are being referred on definite characteristics.

Upper Limit Temperature
= highest permissible temperature at which a connector or a plug-in device is allowed to operate. This temperature includes the self-heating and the ambient temperature. At ODU MINI-SNAP + 120 °C (see page 125).

Watertightness
(See page 123)

Wire
= Wires may be provided with an insulation cover, an electrical shielding. Cables or conductors may consist of one or more wires.

Connectors shown in this catalog are designed to operate at high voltages and high frequencies. Care must be taken to assure that no person can come in contact with live conductors during installation or operation of the connectors.

ODU reserves the right to change design and performance of any product to meet changing technical developments without prior notice. ODU reserves the right to discontinue any part in this catalog without prior notice and without obligation to continue production after the change.

Please visit us in the Internet

www.odu.de
www.odu-automotive.com
www.odu-usa.com
www.odu-china.com

On our website you can find a lot of applications. For example: Medical, Measurement and Testing, Telecommunication, Industrial Electronic, etc. .

More Push-Pull Series from ODU

ODU MINI-SNAP Series S

Cylindrical Connector made out of metall with push-pull locking – FP locking principle using conical sleeve, Keying with insulator.

ODU MINI-SNAP Series F

Cylindrical Connector made out of metal with push-pull locking – FP locking principle using conical sleeve, Keying with half-shells.

ODU MINI-SNAP PC

Cylindrical Connector made out of plastic with push-pull locking – FP locking principle using conical sleeve, Keying with half-shells.

ODU MEDI-SNAP

Cylindrical Connector made out of plastic with push-pull locking – especially for the medical industry.

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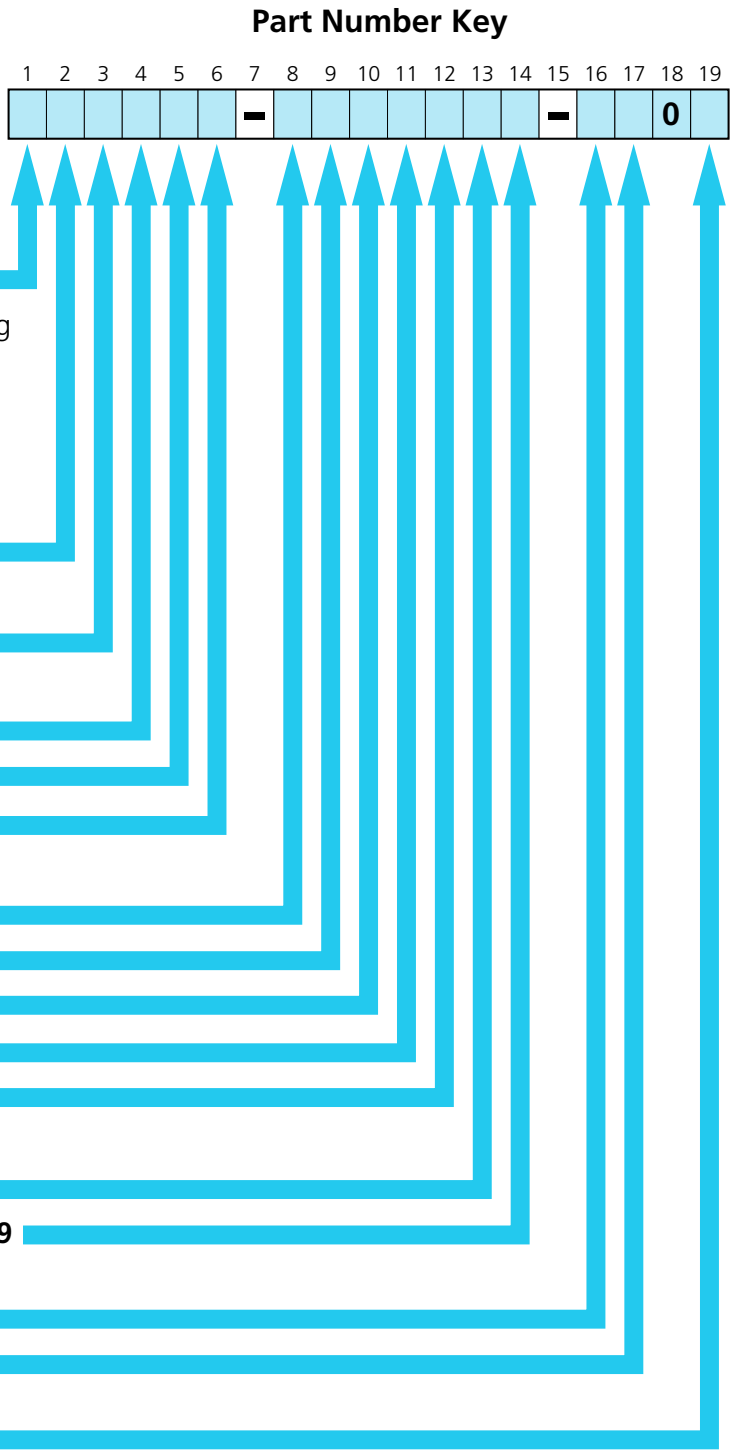
Please open

The Part Number Key



Example:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
G	5	2	L	0	C	–	P	1	6	N	F	G	0	–	0	0	0	0

Receptacle – Style 5 – Size 2 – Series L – Coding 60° – Brass matt chromate Housing – PBT Insulator – 16-pos. – Socket(crimp) 0.75 µm Au – Term. Cross Section AWG22

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
S	2	2	L	0	C	–	P	1	6	M	F	G	0	–	7	2	0	S

Plug – Style 2 – Size 2 – Series L – Coding 60° – Brass matt chromate Housing – PEEK Insulator – 16-pos. – Pin (solder) 0.75 µm Au – Term. Cross Section AWG22 - Cable Diameter 6.0–7.2 mm – Back Nut for Silicone Cable Bend Relief (to order seperatly)

ODU worldwide

ODU's headquarters and factory are located in Mühldorf at the river Inn, approximately 50 miles east of Munich, at the foothills of the Bavarian Alps.

Production: KOMMA 2009/12