



ODU MEDI-SNAP[®]
Miniature Cylindrical Connectors
with
Push-Pull-Locking
in Plastic



The latest version of this catalogue
is posted on our websites:
www.odu.de
www.odu-usa.com
www.odu-china.com

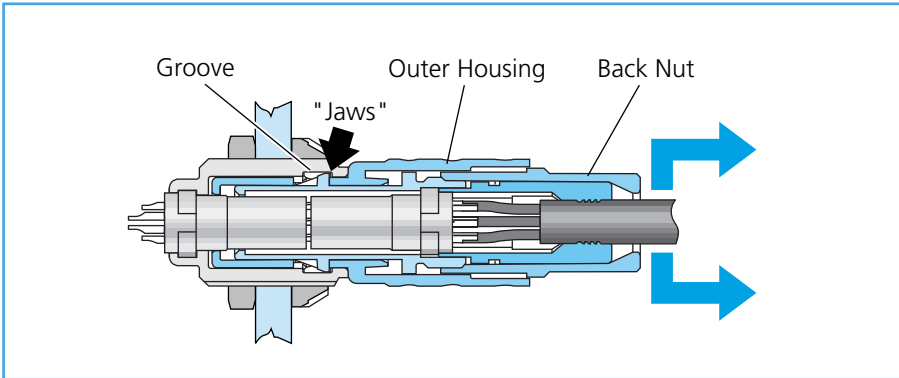
ODU is certified acc. to
DIN EN ISO 9001:2000 and **ISO/TS 16949**
ODU MEDI-SNAP is Listed under
UL (File E110586)
see page 52

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

Introduction	5
Push-Pull Locking	6
Important Issues At A Glance	7
Straight Plugs, Receptacles, In-Line Receptacles	8
Mating Force, Demating Force and Pull-Off-Force	9
Housing materials, Plastic Data	9
Contacts	10
Part Number Key	13
Dimensions	
Straight plugs	14
Right-Angle Plug	15
In-Line Receptacles	16
Disposable-Break-Apart Plug	17
Receptacles	18
Inserts and Contact Configurations	21
More details for the Part Number Key	
Coding, Housing	25
Contact type, Contact diameter	26
Contact - Termination Cross Section (AWG)	27
Collet systems	28
Right-angle PCB-contacts	28
Color Coding	29
Definition of the Back Nut (Straight Plug, Right-Angle Plug, In-Line Receptacle	30
Accessories	31
Tooling	34
Special solutions, custom specific solutions	
Fiber optic version.	36
Fluid version	37
ODU MEDI-SNAP with metal housing.	38
Custom specific solutions	42
Technical Informations.	43
Current Load - Contacts	44
Nominal Voltage acc. SAE	45
Assembly Instructions	46
International Protection (IP) Classes (DIN EN 60 529).	49
Autoclaving	50
Conversion Table AWG to Metric	51
Quality Management.	52
Technical Terms & Definations.	53
Inquiry Form (Fax)	55
Part Number Key fold- out	56



ODU MEDI-SNAP



Introduction

LP-Locking Concept
Keying with Pin and Groove





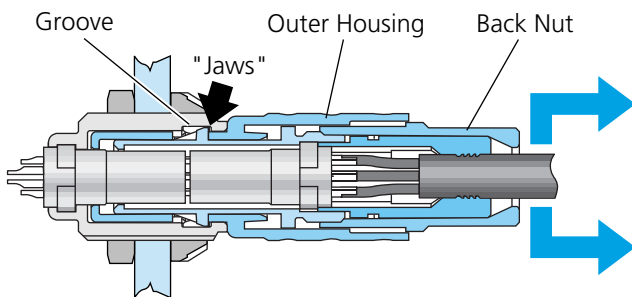
ODU-MEDI-SNAP: Plastic Connector with Push-Pull-Locking

Cylindrical Connectors are generally available with several locking mechanisms:

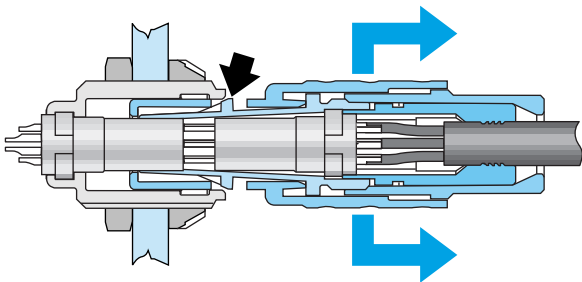
The most frequently used are:

- Threaded-Locking Sleeve
- Bayonet-Locking
- Push-Pull-Locking

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



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



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

- Quick and easy mating and demating
- Easy blind mating in difficult to-reach places
- Less panel space required
- Definite and secure locking condition
- Less mating force required

Important Issues At A Glance:

- **Connector with plastic housing (PSU or PEI)**
Outside diameter 14 mm.
Number of contact positions: 2 to 14 positions.
- **Available with solder or print termination**
- **Operation temperature: - 50 °C - + 120 °C**
Short term (e. g. for autoclaving) up to + 140 °C
- **Sterilization of connectors:**
 - Housing material PEI: Autoclaving/Steam Sterilization
- **More than 2.000 mating cycles**
- **Mating compatible to many Redel^{®1)} types of Series 1P** (tests are necessary)
- **Economic connector solution:**
 - Easy connector mounting (blind mounting)
 - Cost-effective solutions
- **Further Advantages:**
 - 100 % touch proof
 - Light-weight
 - Low mating forces
 - Non magnetic
 - Autoclavable, chemically resistant

¹⁾ There is no licence agreement or cooperation with Redel[®]

Applications

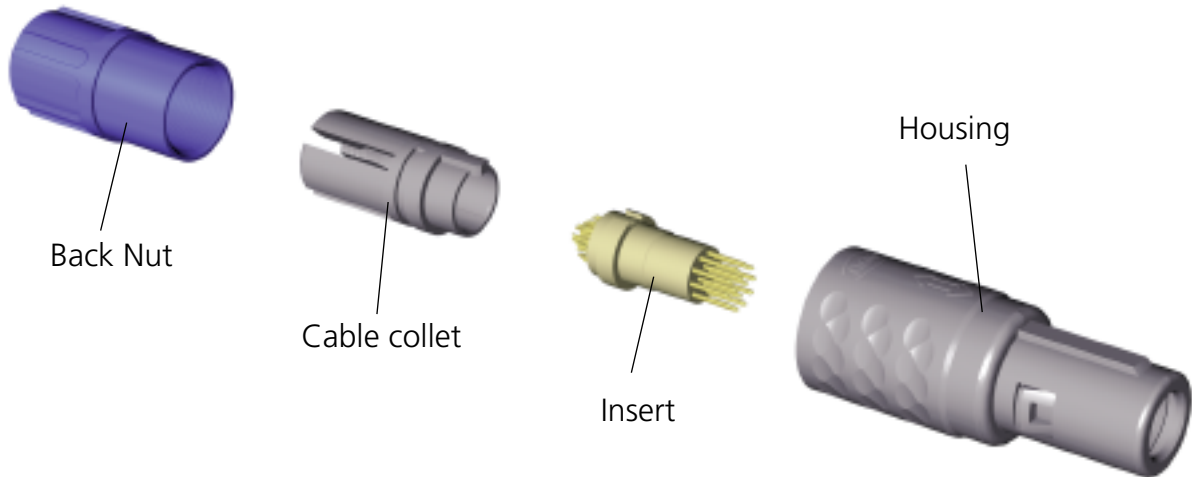
Primary Application: Medical Electronics



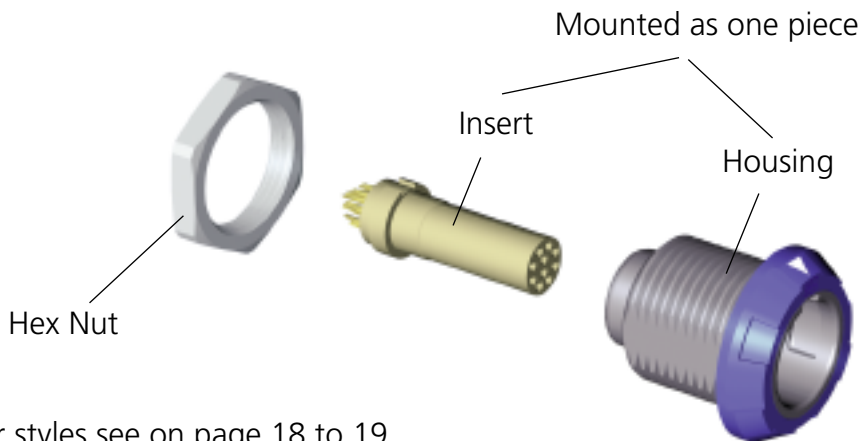
More Applications:

- Test and Measurement
- Consumer Products
- Commercial Electronics
- Industrial Electronics

Straight Plug, Style 1, IP 50

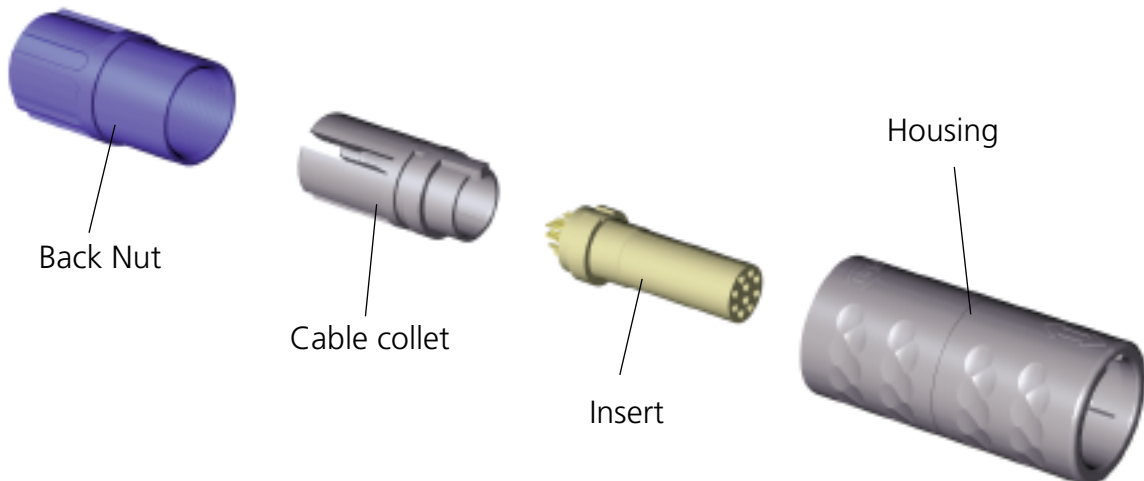


Receptacle, Style 1, IP 50

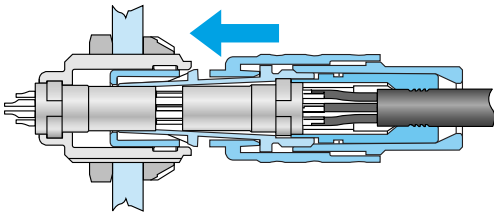


Other styles see on page 18 to 19

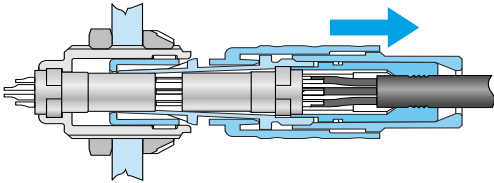
In-Line Receptacle, Style 1, IP 50



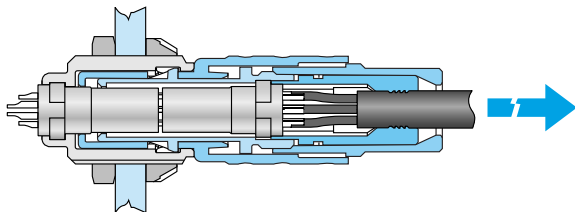
Mating Force, Demating Force and Pull-Off-Force



Mating Force: 3 N *



Demating Force: 4 N *



Pull-Off-Force: 90 N *

* Average of a series of measurements.
Housing (PSU) only, no contacts

Housing Materials and Surfaces

Material		
Component parts	Designation	Surface
Housing	→ PSU *	
Back Nut	Polysulfon	
Cable Collet	→ PEI *	
Front Nut	Polyetherimid	
Insulation body	→ PEEK Polyetheretherketon	
Hex Nut	→ Brass	→ Ni 4 - 8 µm
Contacts	→ Brass see next page	

* The material of plastic parts (except insulation bodies) varies by individual versions (please refer to page 25) either PSU or PEI.

Plastic Materials

	Norm	Unit	PSU	PEI	PEEK
Flammability rating	UL 94		V-0/4.5	V-0/0.41	V-0/1.5
Operating temperature		°C	-50 bis +170°C	-50 bis +170°C	-50 bis +250°C
Dielectric Strength	D149 / IEC 60243-1	kV/mm	17	27/1.6 (in oil)	19
Creepage distance acc. to CTI	IEC 60112	V	150	150	175
Water absorption	ASTM D570 / ISO 62	%	0.3	1.25	0.1
Sterilization/Autoclaving	DIN EN 13060	Quantity	~20	>200	>200

Contacts

Contacts are available in 0.5 to 1.3 mm diameter.

The contacts are available with following terminations:

- **Soldercup**
- **Print PCB**
- **Crimp**

Standard Socket Contact

Solder termination



Print termination



Crimp termination

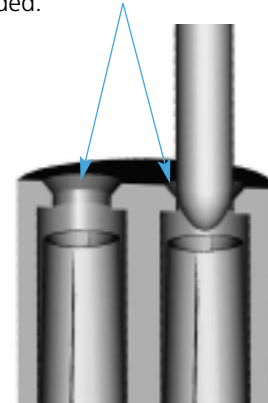


(Availability, please see page 24)

(Ejection tool see page 34)

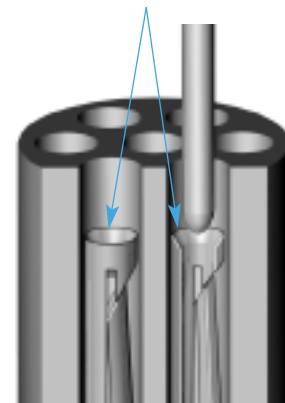
Contact Guiding Solder/Print

Optimized pin guiding due to chamfer on the insulation body. Malmating is avoided.



Contact Guiding - Crimp

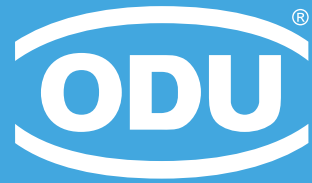
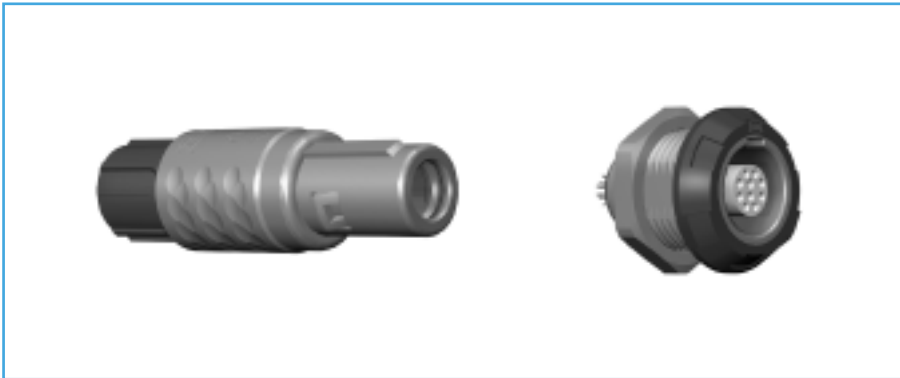
Optimized pin guiding due to closed chamfer on the contact. Malmating is avoided.



Mating cycles:	> 5000
Material:	Brass
Surface finish:	At least 1,25 µm Ni; at least 0,75 µm Au

Information for diameter, termination styles and current load can be found on Page 24

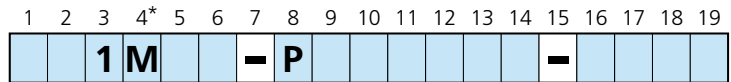
ODU MEDI-SNAP



**Part Number Key
Dimensions and
Contact Configurations**







- 1. Kind of Connector
 - S** = Plug
 - G** = Receptacle
 - K** = In-Line receptacle
 - A** = Break Apart Plug
 - W** = Right-Angle Plug
(Page 14 - 19)

- 2. Style
 - 1 - 9 / A-Z**

- 3. Size
 - 1**

- 4. 'M', for MEDI-SNAP

- 5. Coding (Page 25)

- 6. Material-Housing (Page 25)

- 8. Material-Insulator
 - PEEK** = P

- 9. + 10. Contact insert (Page 22 - 23)
z.B. 14-way = 14

- 11. Contact Type/Surface (Page 26)

- 12. Contact Diameter (Page 26)

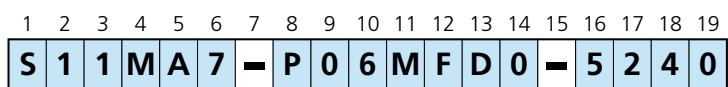
- 13. + 14. Term. Cross Section
(Page 27)

- 16. + 17. Cable Collet
(Page 28)

- 18. Colour Coding (Page 29)

- 19. Style of back nut (Page 30)

Example:



Plug – style 1 – size 1 – Coding 40° - PSU-Housing (grey) – 6-way PEEK Insulator – Pin (solder) 0,75 mm Au – AWG 26 – cable diameter 4,0 to 5,2 mm – colour coding (back nut) yellow

* If in field number 4 there is a M, it can be seen right away that this product is a Push-Pull Connector of the MEDI-SNAP series.

Part Number Key

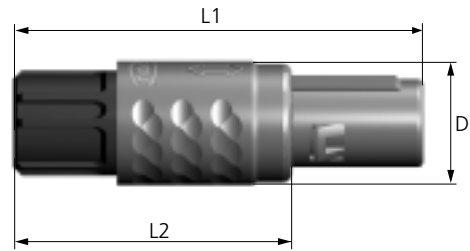
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		1	M			-	P							-				

Straight Plug

(Suitable for all following receptacles and In-Line-Receptacles)

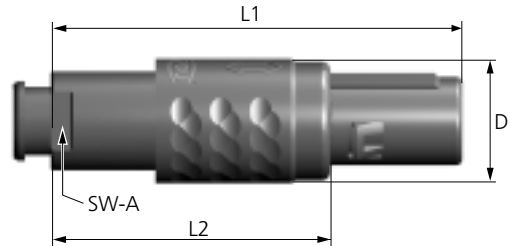
- S 1** - IP 50 – with Standard Back Nut
- S 2** - IP 50 – with Back Nut for Cable Bend Relief

S 1



Contact configuration from page 22

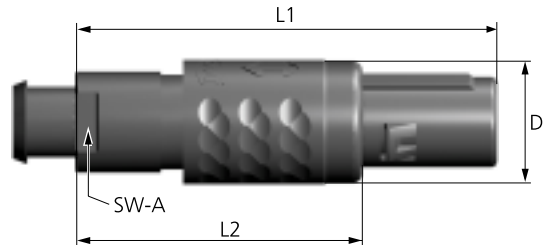
S 2



Size	Dimensions in mm			
	L1	L2	D	SW-A
1	~47	~32	13,7	9

- S 4** - IP 64 – in mated condition, with Backnut for Cable Bend Relief

S 4



Size	Dimensions in mm			
	L1	L2	D	SW-A
1	~46	~31	13,7	9

Part Number Key

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

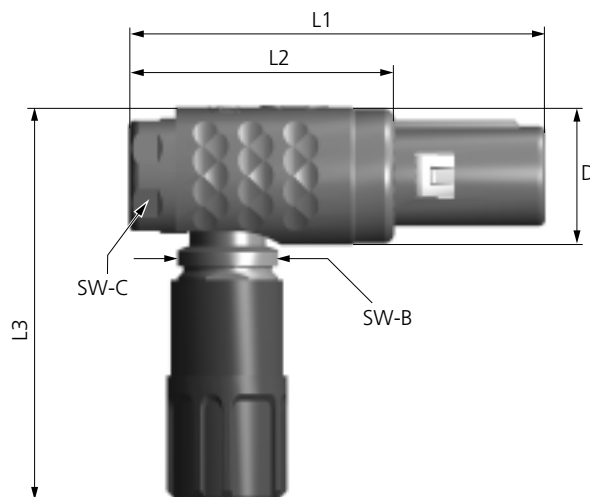
Right-Angle Plug

(Suitable for all following receptacles and In-Line-Receptacles)

W 1 - IP 50 – with Standard Back Nut

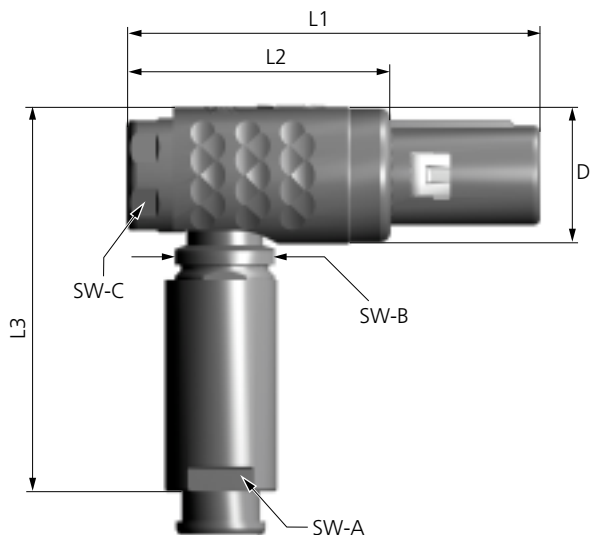
W 2 - IP 50 – with Back Nut for Cable Bend Relief

W 1



Contact configuration from page 22

W 2



Size	Dimensions in mm						
	L1	L2	L3	D	SW-A	SW-B	SW-C
1	~42	~27	~40	13,7	9	10	11

Part Number Key

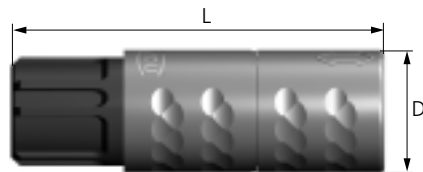
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		1	M			-	P							-				

In-Line-Receptacle

(Suitable for all shown plugs)

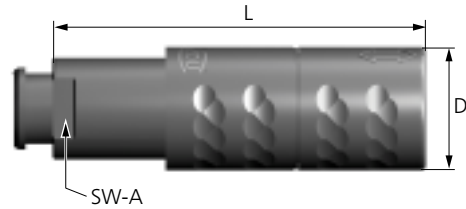
- K 1** - IP 50 – with Standard Back Nut
- K 2** - IP 50 – with Back Nut for Cable Bend Relief

K 1



Contact configuration from page 22

K 2



Size	Dimensions in mm		
	L	D	SW-A
1	~41	13,5	9

ODU MEDI-SNAP In-Line-Receptacle connect to plug for cable-to-cable connection

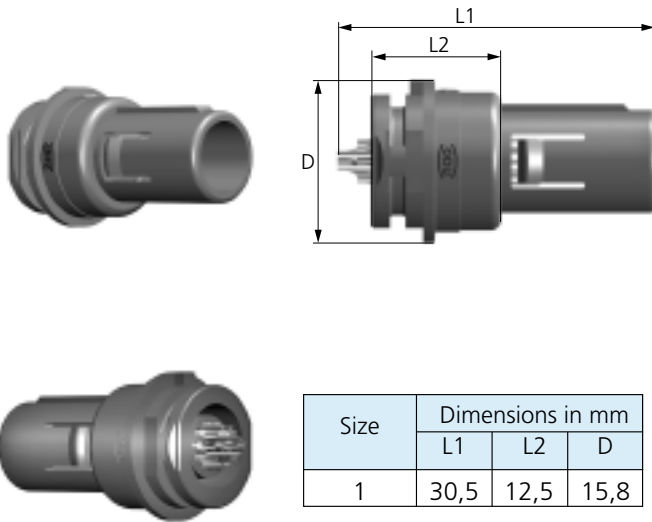
Part Number Key

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

Disposable - Break-Apart Plug

(Suitable for all showed Receptacles and In-Line-Receptacles)

A 5 - IP 67 – Break-Apart Plug (Single use)



Size	Dimensions in mm		
	L1	L2	D
1	30,5	12,5	15,8

Technical Data

- Housing and insulator made in special plastic
- IP 67 with overmoulding
- On Position 8 of the P/N there is a 0
- Special Protective Cover KM1 013 50. 9.. 00.
- Autoclavable version on request



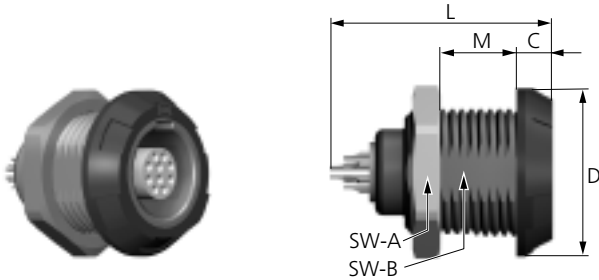
Break-Apart Plug mated with Protective Cover (page 33)

Part Number Key

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

Receptacle

G 1 Style 1 – ODU MEDI-SNAP receptacle IP50, installation from front of panel

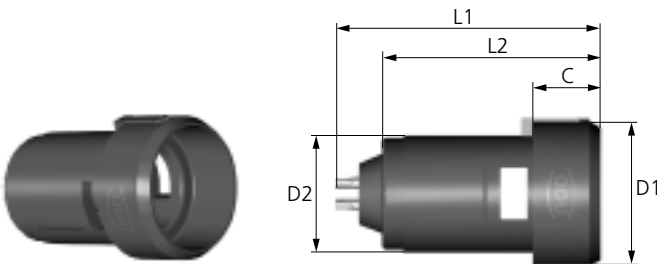


Technical Data

- IP 50 in mated condition
- Anti-rotation feature
- contact configuration and PCB-Layout from page 22

Size	Dimensions in mm						Panel Cut-Out
	L max.	D	C	M max.	SW-A	SW-B	
1	24,2	19	4	~9	17	12,4	SW 12,5 / Ø 14

G 2 Style 2 – ODU MEDI-SNAP receptacle IP50, one-piece housing, snap-in assembly



Technical Data

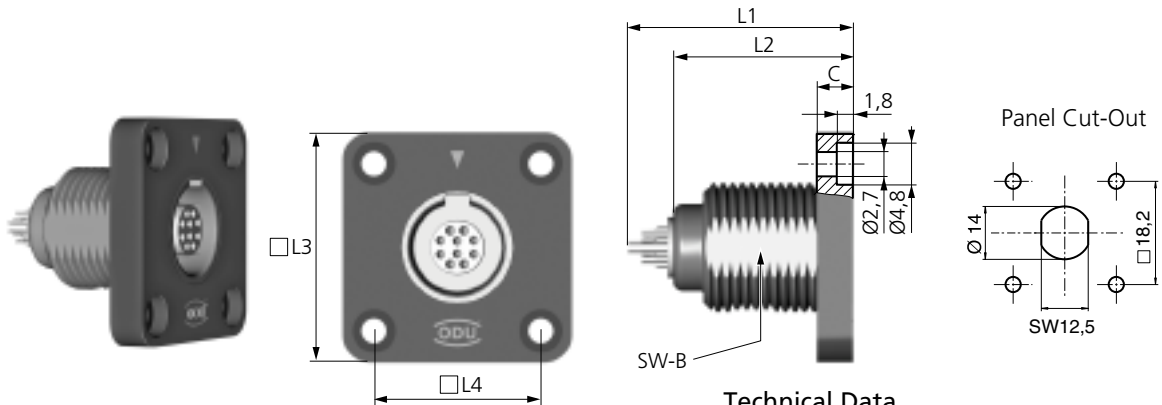
- IP 50 in mated condition
- Anti-rotation feature
- Housing and insulator made in special plastic
- On Position 8 of the P/N there is a 0
- Special Protective Cover see page 33
- Autoclavable version on request

Size	Dimensions in mm				
	L1 max.	L2	C	D1	D2
1	31,2	26,7	7,5	16	13

Receptacle mated with Protective Cover (page 33)



G 3 Style 3 – ODU MEDI-SNAP receptacle IP50, installation from front of panel



Technical Data

- IP 50 in mated condition
- Anti-rotation feature
- contact configuration and PCB-Layout from page 22
- On position 19 of the P/N there is a "2"

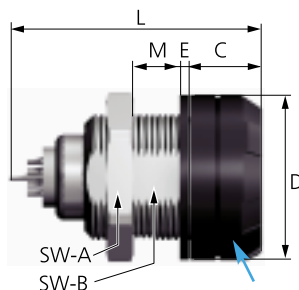
Size	Dimensions in mm					
	L1 max.	L2	L3	L4	C	SW-B
1	24,2	20,2	25	18,2	4	12,4

Part Number Key

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

Receptacle


G 4 Style 4 – ODU MEDI-SNAP Receptacle, installation from front of panel



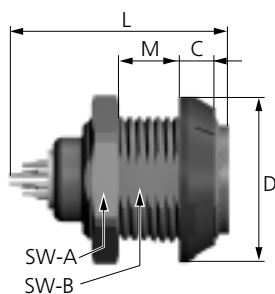
Technical Data

- IP 64 = G41M + S41M
IP 67 = G41M + A51M in mated condition
- Anti-rotation feature
- contact configuration and PCB-Layout from page 22

Only available in black. Other colour codings available on request.


Size	Dimensions in mm							 Panel Cut-Out
	L max.	D	E	C	M max.	SW-A	SW-B	
1	28,5	19	1	8,1	~8	17	12,4	SW 12,5 / Ø 14

G 5 Style 5 – ODU MEDI-SNAP Receptacle IP50 installation from rear or front of panel

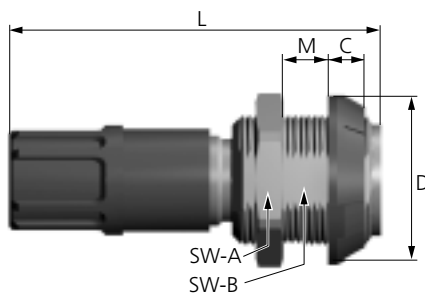


Technical Data

- IP 50 in mated condition
- Anti-rotation feature
- contact configuration and PCB-Layout from page 22


Size	Dimensions in mm						 Panel cut-out
	L max.	D	C	M max.	SW-A	SW-B	
1	24,2	19	4	~9	17	12,4	SW 12,5 / Ø 14

G 6 Style 6 – ODU MEDI-SNAP receptacle IP50, with strain relief, installation from rear or front of panel with standard backnut



Technical Data

- IP 50 in mated condition
- Anti-rotation feature
- contact configuration and PCB-Layout from page 22
- Application with cable bend relief on request

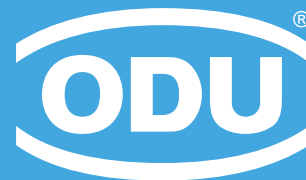
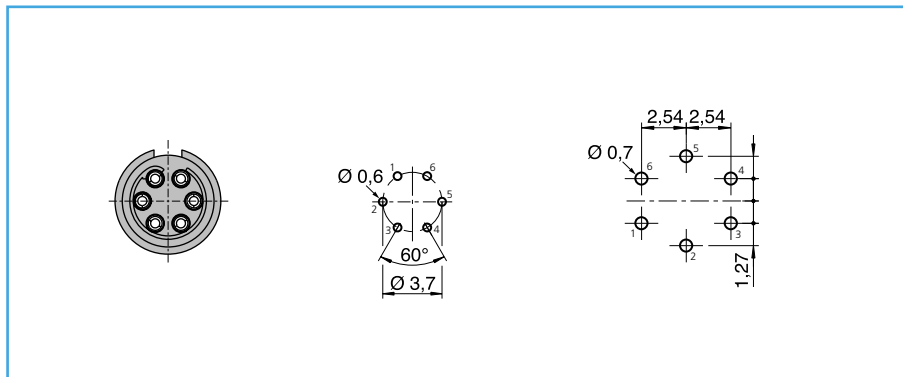
Size	Dimensions in mm						 Panel cut-out
	L max.	D	C	M max.	SW-A	SW-B	
1	~40	19	4	~9	17	12,4	SW 12,5 / Ø 14

Attention:

All receptacles are also available without front nut or hex nut. Part numbers on request.



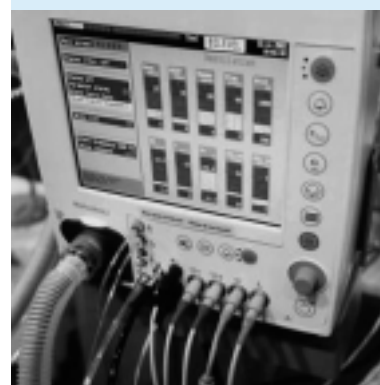
ODU MEDI-SNAP



Contact Configuration

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

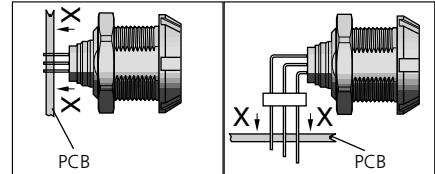
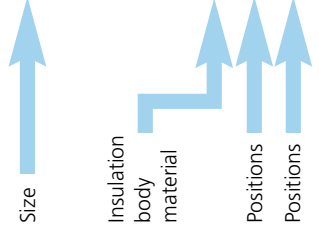
Attention: Pin insert for plugs.
Socket inserts for receptacles.
Pin and Socket are not interchangeable



Size 1, turned Contacts

Part Number Key

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



View from termination side

Pin Part Socket

Panel Cut-Out for PCB-Layout

Straight PCB-Contact (View X - X)

Right-angled PCB-Contact (View X - X)

1	PEEK	0 2				
1	PEEK	0 4				
1	PEEK	0 5				
1	PEEK	0 6				
1	PEEK	0 7				
1	PEEK	0 8				
1	PEEK	0 9				
1	PEEK	1 0				
1	PEEK	1 4				

Size 1, turned Contacts

Part Number Key

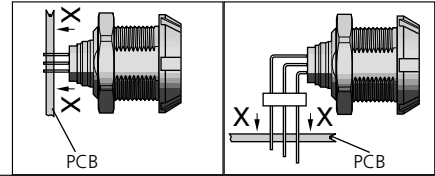
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
		1	M				-	P					9*	-					

↑ Size

↑ Insulation body material

↑ Positions

↑ Positions



View from termination side		Panel Cut-Out for PCB-Layout	
Pin Part	Socket	Straight PCB-Contact (View X - X)	Right-angled PCB-Contact (View X - X)

*) Special Contact Configuration (not compatible to competitors)
Special code 9 in the Part Number Key (field 14)

Technical Data to the inserts

Positions	Kind of Termination			Contact Ø (mm)	Solder bucket Ø (mm)	Max. AWG / mm ² solder	Max. AWG / mm ² crimp	Trough resistance (mΩ)	Insulation Resistance (Ω)	max. Creepage and clearance (mm) distance acc. DIN EN 60664-1 (VDE 0110-T1)	Current load (A): Single Contact / Insert acc. VDE 0298 T4 / IEC 512-3 (1976)	Test voltage (kV) acc. SAE AS 13441 (1998)	Nominal Voltage (kV) acc. SAE AS 13441 (1998)
	Solder	Crimp	Print										
2	●		●	1,3	1,1	20 0,5		< 3,5	>10 ¹²	1,3	14 * ₁ 14	1,9	0,6
3	●		●	1,3	1,1	20 0,5		< 3,5	>10 ¹²	1,2	14 * ₁ 14	1,9	0,6
4	●	●	●	0,9	0,85	22 0,38	20 0,5	< 4,5	>10 ¹²	1,2	10 10	1,9	0,6
5	●	●	●	0,9	0,85	22 0,38	20 0,5	< 4,5	>10 ¹²	0,8	10 7,5	1,6	0,5
6	●	●	●	0,7	0,65	26 0,15	22 0,38	< 6,0	>10 ¹²	0,85	7 4,55	1,6	0,5
7	●	●	●	0,7	0,65	26 0,15	22 0,38	< 6,0	>10 ¹²	0,85	7 4,55	1,6	0,5
8	●	●	●	0,7	0,65	26 0,15	22 0,38	< 6,0	>10 ¹²	0,6	7 3,85	1,6	0,5
9	●		●	0,5	0,45	28 0,08		< 8,5	>10 ¹²	0,65	5 2,75	1,35	0,4
10	●		●	0,5	0,45	28 0,08		< 8,5	>10 ¹²	0,5	5 2,75	1,35	0,4
12	●		●	0,5	0,45	28 0,08		< 8,5	>10 ¹²	0,5	5 2,75	1,2	0,4
14	●		●	0,5	0,45	28 0,08		< 8,5	>10 ¹²	0,5	5 2,5	1,2	0,4

*₁ Print = 10 A

Coding

Part Number Key

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

	Angle	Plug Front View
0	0°	
A	40°	
C	60°	
E	80°	
H	170°	
J	205°	

Housing

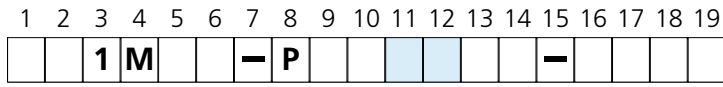
Part Number Key

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

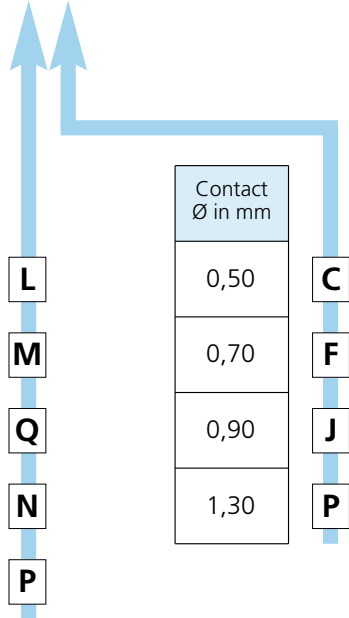
- 7** Plastic, grey (PSU)
- 8** Plastic, black (PSU)
- 3** Plastic, white (PSU)
- S** Plastic, black (PEI), autoclavable

Contact Type - Contact Surface - Contact Diameter

Part Number Key



Type	Surface
Socket	L - 0,75 µm Au (min.)
Pin	L - 0,75 µm Au (min.)
Socket	P - 0,75 µm Au (min.)
Socket	C - 0,75 µm Au (min.)
Pin	C - 0,75 µm Au (min.)



Contact Ø in mm
0,50
0,70
0,90
1,30

- L** = Solder termination
- P** = Print termination
- C** = Crimp termination

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
		1	M				-	P						-				

Solder Contact

Contact Ø	Term. Ø	Term. Cross	
		AWG	mm ²
0,5	0,45	28	0,08
0,7	0,65	26	0,15
0,9	0,85	22	0,38
1,3	1,1	20	0,50

C	0
D	0
G	0
H	0

Print Contact

Contact Ø	Term.-Ø	
	straight	right-angled*
0,5	0,5	0,5
0,7	0,5	0,6
0,9	0,7	0,6
1,3	0,7	0,8

0	0
0	0
0	0
0	0

* Image see page 28

Crimp Contact

Contact Ø	Term. Cross	
	AWG	mm ²
0,7	22/26	0,38/0,15
0,9	20/24	0,5/0,25

G	0
H	0



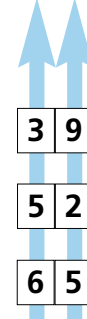
Plastic Cable Collet



Part Number Key

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

Cable diameter in mm
> 2,7 - 3,9
> 4,0 - 5,2
> 5,3 - 6,5



Utilization: for all Plugs, In-Line Receptacles and receptacle style 6

Right-Angle PCB Solder Contacts Receptacle Style 5

Part Number Key

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

Right-Angle PCB Contact

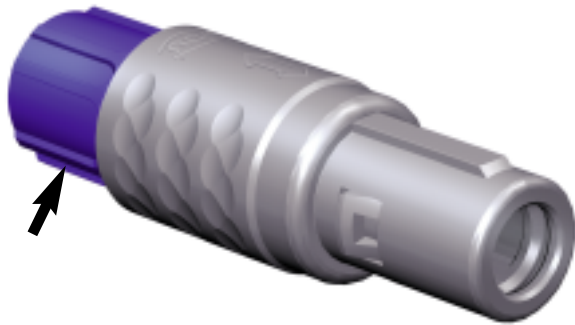


Colour Coding of Plugs, Right-Angle Plugs and In-Line Receptacles

Part Number Key

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

Colour Coding of the Back Nut*



PEI is only available in black



	Colour	Similar RAL design
2	red	030 40 40
3	white	000 90 00
4	yellow	095 80 60
5	green	170 60 45
6	blue	270 40 30
7	grey	000 55 00
8	black	000 25 00



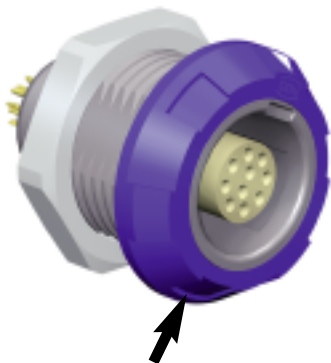
* Back Nuts for Cable Bend Reliefs must have the same colour as the housing parts. The colour coding will be done by the cable bend relief.

Colour Coding of Receptacles

Part Number Key

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

Colour Coding of the Front Nut



PEI is only available in black



	Colour	Similar RAL design
2	red	030 40 40
3	white	000 90 00
4	yellow	095 80 60
5	green	170 60 45
6	blue	270 40 30
7	grey	000 55 00
8	black	000 25 00

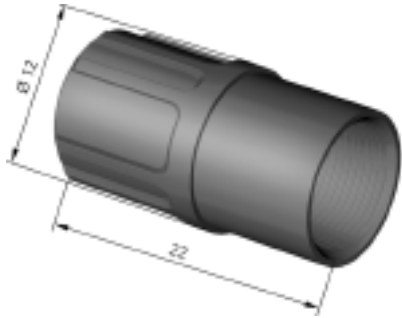


Definition of the Back Nut (Straight Plug, Right-Angle Plug, In-Line Receptacle)

Part Number Key

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

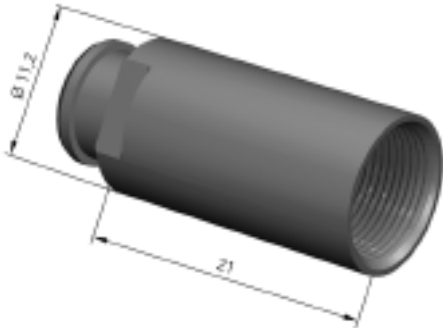
Standard Back Nut



Part Number Key

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

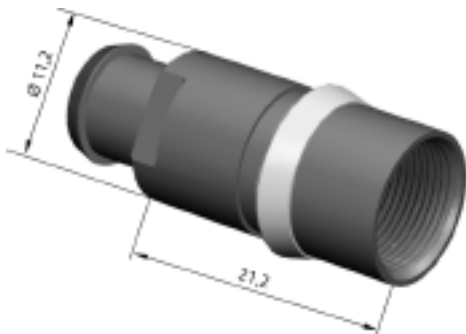
Back Nut for Cable Bend Relief from silicon



Part Number Key

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

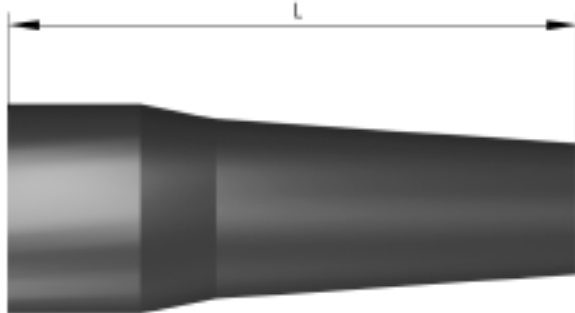
Back Nut for Cable Bend Relief from silicon for Plug IP64



Cable Bend Relief made from Silicon = autoclaveable

(Has to be ordered separately)

Attention: Not mounting compatible with cable bend reliefs of REDEL® or LEMO®.



Temperature range

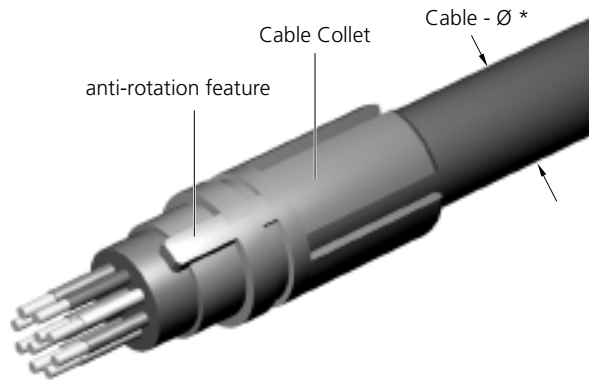
Silicon -50 °C bis +200 °C
Short-term up to +230 °C

* = In ... please indicate color code

Size	Part Number*	Dim. L	Cable O.D	
			min.	max.
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

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

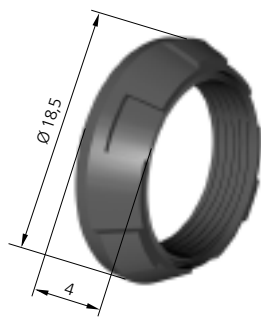
Cable Collet



Material	Part-No.	Cable - Ø in mm
PSU (grey)	KM1 020 121 934 007	2,7 - 3,9
	KM1 020 122 934 007	4,0 - 5,2
	KM1 020 123 934 007	5,3 - 6,5
PEI (black)	KM1 020 121 933 008	2,7 - 3,9
	KM1 020 122 933 008	4,0 - 5,2
	KM1 020 123 933 008	5,3 - 6,5

* Representation is only a example

Front Nut for Style 5 Receptacle



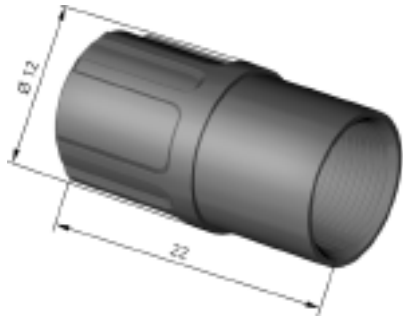
Material	Colour	Part-No.	similar RAL-design
PSU	black	KM1 311 002 934 008	000 25 00
	grey	KM1 311 002 934 007	000 55 00
	white	KM1 311 002 934 003	000 90 00
	red	KM1 311 002 934 002	030 40 40
	green	KM1 311 002 934 005	170 60 45
	yellow	KM1 311 002 934 004	095 80 60
	blue	KM1 311 002 934 006	270 40 30
PEI	black	KM1 311 002 933 008	000 25 00

Hex nut for receptacle style 1, 3, 5 and 6 (brass, nickel plated)



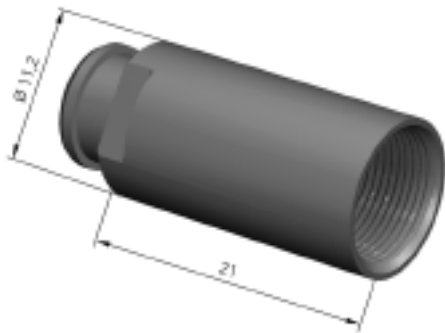
Part Number: 021 310 115 304 000

Standard Back Nut



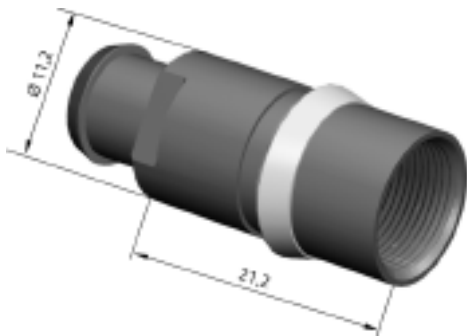
Material	Colour	Part-No.	similar RAL-design
PSU	black	KM1 020 111 934 008	000 25 00
	grey	KM1 020 111 934 007	000 55 00
	white	KM1 020 111 934 003	000 90 00
	red	KM1 020 111 934 002	030 40 40
	green	KM1 020 111 934 005	170 60 45
	yellow	KM1 020 111 934 004	095 80 60
	blue	KM1 020 111 934 006	270 40 30
PEI	black	KM1 020 111 933 008	000 25 00

Back Nut for Cable Bend Relief



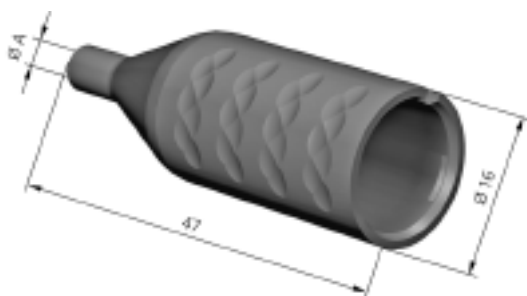
Material Bend Relief	Material Back Nut	Colour	Part-No.	similar RAL-design
Silicon	PSU	black	KM1 020 113 934 008	000 25 00
		grey	KM1 020 113 934 007	000 55 00
		white	KM1 020 113 934 003	000 90 00
	PEI	black	KM1 020 113 933 008	000 25 00

Back Nut for Cable Bend Relief for Plug IP 64



Material Bend Relief	Material Back Nut	Colour	Part-No.	similar RAL-design
Silicon	PSU	black	KM1 026 113 934 108	000 25 00
		grey	KM1 026 113 934 107	000 55 00
		white	KM1 026 113 934 103	000 90 00
	PEI	black	KM1 026 113 933 108	000 25 00

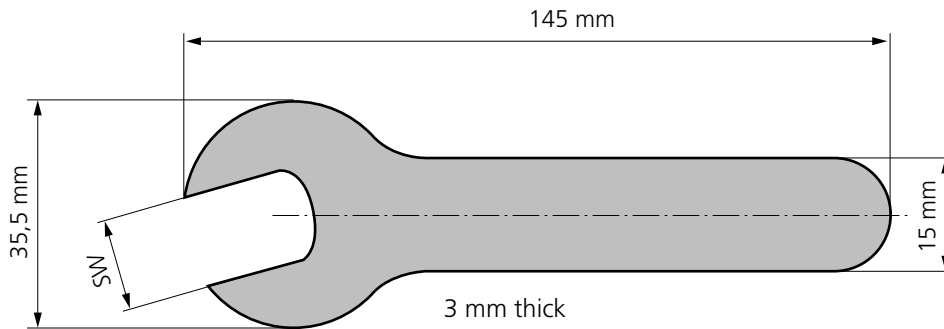
Protective Cover for Receptacle style 2 (Disposable) and plug style A51M (Disposable)



Material	Colour	Part-No.	similar RAL-design
PSU	black	KM1 013 50 . 934 008	000 25 00
	grey	KM1 013 50 . 934 007	000 55 00
	white	KM1 013 50 . 934 003	000 90 00
	red	KM1 013 50 . 934 002	030 40 40
	green	KM1 013 50 . 934 005	170 60 45
	yellow	KM1 013 50 . 934 004	095 80 60
	blue	KM1 013 50 . 934 006	270 40 30
PEI	black	KM1 013 50 . 933 008	000 25 00

\uparrow
 $\varnothing A =$ 500 2,5 mm
 501 2,7 mm
 502 2,8 mm

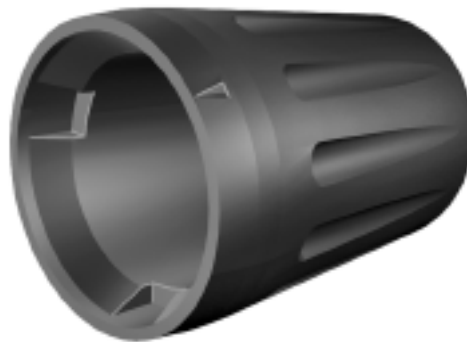
Spanner Wrench



Part-No.:	598 700 001 022 000	SW 9
	598 700 001 002 000	SW 10
	598 700 001 012 000	SW 11
	598 700 001 017 000	SW 12,4
	598 700 001 008 000	SW 17

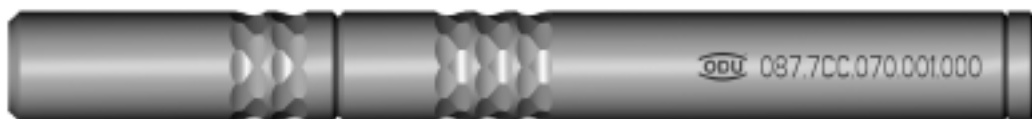
Tightening torque of the hex nut:
 Receptacle style 1, 4, 5, 6: 1,5 Nm

Wrench for the Front Nut



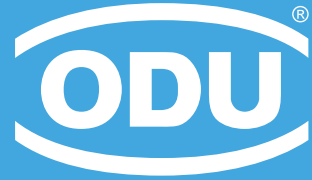
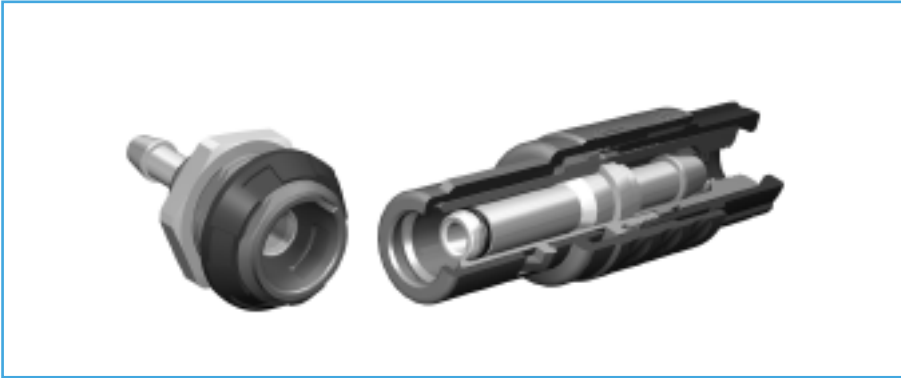
Part-No.: KM1 098 001 923 008

Ejection tool for Crimp Contacts

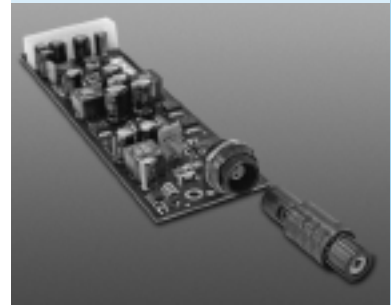


Part.-No:	Contact Ø
087 7CC 070 001 000	0,7 mm
087 7CC 090 001 000	0,9 mm

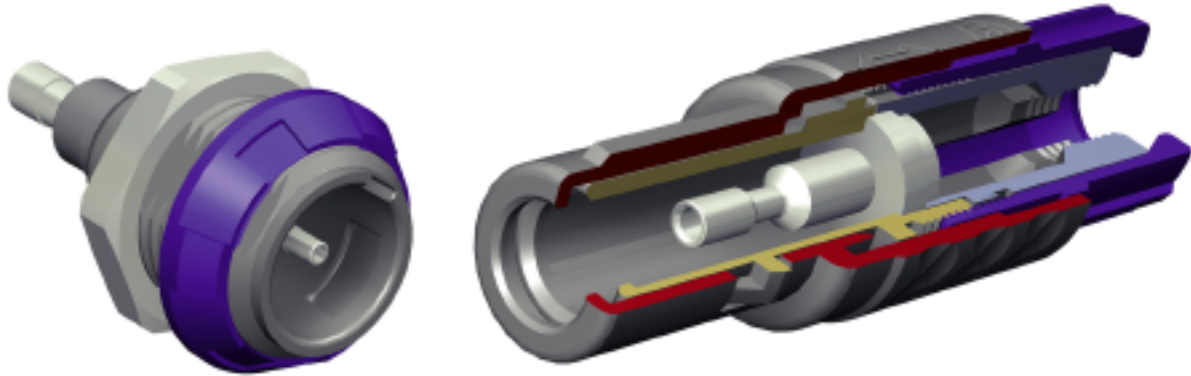
ODU MEDI-SNAP



Special solutions
Custom-specific solutions



ODU MEDI-SNAP in LWL version for Multi-Mode Cable (Plastic Optical Fibre = POF)



Technical Information

- Termination: Crimp
- suitable for LWL-POF 980/1000 µm (other fibres on request)
- IP 50

Order Information

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

Kind of connector, style
(see page 14-19)

Coding
(see page 25)

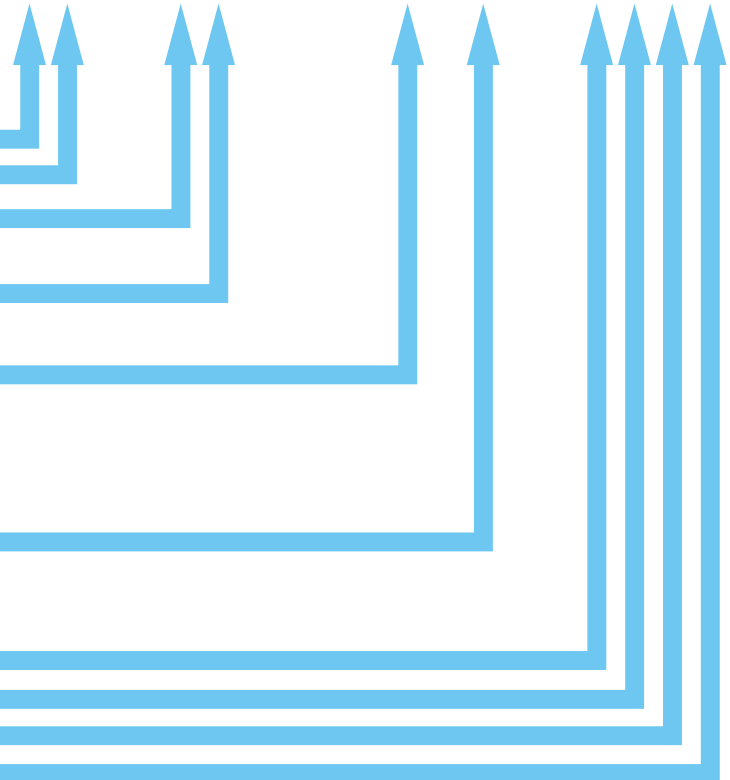
Housing material
(see page 25)

Contact type:
S = Pin (in the receptacle)
B = Socket (in the plug)

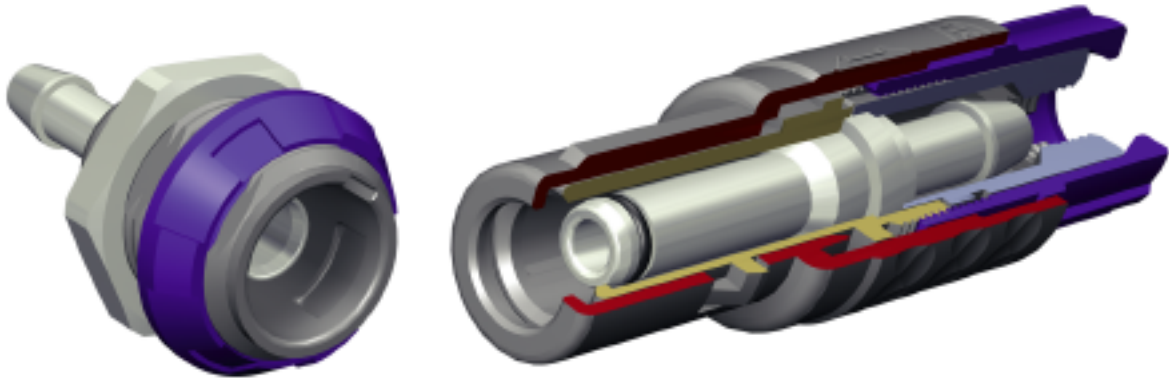
Fibre type
1 = POF 980/1000
 (other fibres on request)

Cable collet (if necessary)
(see page 28)

Colour Coding
(see page 29)



ODU MEDI-SNAP with fluid insert



Technical Information

- Working pressure: up to 2 bar
- Outer diameter of the cable: up to 6,0 mm

Order Information

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

Kind of connector, style
(see page 14-19)

Coding
(see page 25)

Housing material
(see page 25)

Contact type:

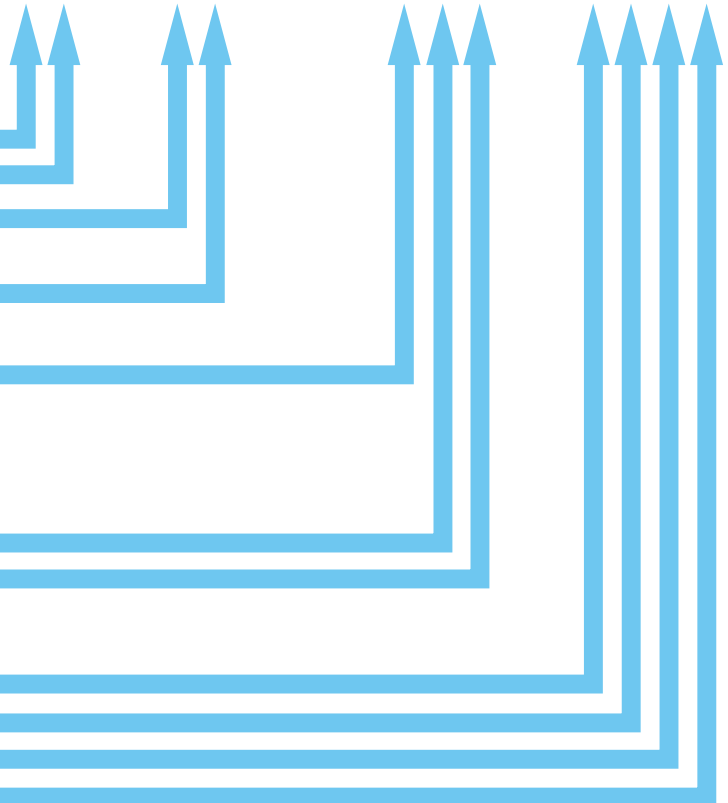
S = Pin

B = Socket

Diameter of tube and contact
11 = Inner-Ø tube 4,0 mm
Inner-Ø contact 2,5 mm
(other diameters on request)

Cable collet (depends on the tube)
(see page 28)

Colour Coding
(see page 29)



ODU MEDI-SNAP with metal housing

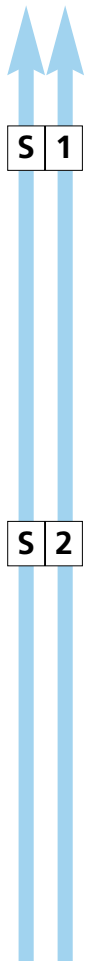


Merkmale

- robust housing styles
- compatible to the plastic version
- almost all combinations possible
- flexible receptacle design

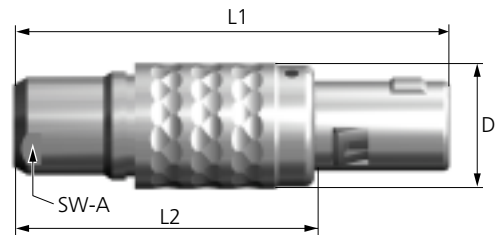
Part Number Key

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

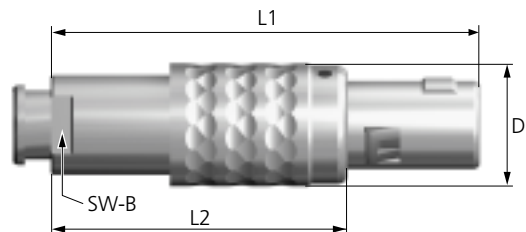


Straight Plug

S 1 Style 1 – ODU MEDI-SNAP **straight plug - IP 50** – with Standard Back Nut



S 2 Style 2 – ODU MEDI-SNAP **straight plug - IP 50** – with Back Nut for Cable Bend Relief



Size	Dimensions in mm				
	L1	L2	D	SW-A	SW-B
1	~47	~32	14	10	9

Contact configuration from page 22

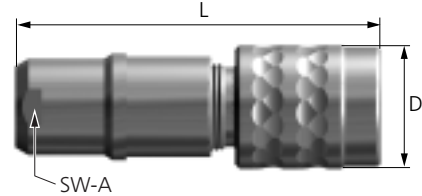
Part Number Key

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

↑↑
K 5

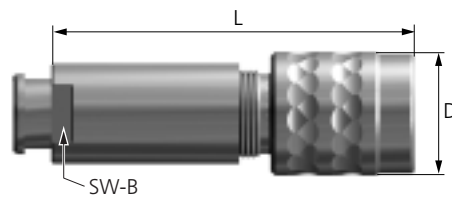
In-Line-Receptacle

Style 5 – ODU MEDI-SNAP In-Line-Receptacle - IP 50 – with Standard Back Nut



K 6

Style 6 – ODU MEDI-SNAP In-Line-Receptacle - IP 50 – with Back Nut for Cable Bend Relief



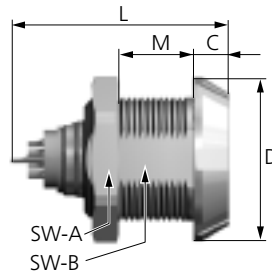
Size	Dimensions in mm			
	L1	D	SW-A	SW-B
1	~41	14	10	9

Contact configuration from page 22

ODU MEDI-SNAP In-Line-Receptacle connect to plug for cable-to-cable connection

G 1

Style 1 – ODU MEDI-SNAP Receptacle IP50 installation from front of panel



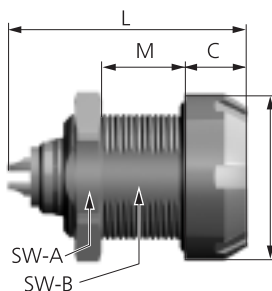
Technical Data

- IP 50 in mated condition
- Anti-rotation feature
- contact configuration and PCB-Layout from page 22

Size	Dimensions in mm						Panel Cut-Out
	L1 max.	D	C	M	SW-A	SW-B	
1	24,2	19	4	~9	17	12,4	SW 12,5 / Ø 14

G 4

Style 4 – ODU MEDI-SNAP Receptacle installation from front of panel



Technical Data

- IP 64 = G41M + S41M
IP 67 = G41M + A51M
in mated condition
- Anti-rotation feature
- contact configuration and PCB-Layout from page 22

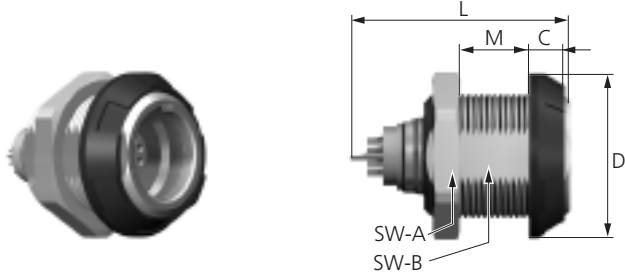
Size	Dimensions in mm						Panel Cut-Out
	L1 max.	D	C	M	SW-A	SW-B	
1	28,6	18,5	7	~10	17	12,4	SW 12,5 / Ø 14

Part Number Key

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

G 5

Style 5 – ODU MEDI-SNAP **Receptacle IP50** installation from rear or front of panel



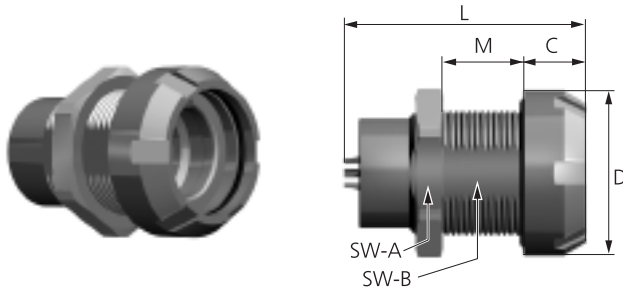
Technical Data

- IP 50 in mated condition
- Anti-rotation feature
- contact configuration and PCB-Layout from page 22

Size	Dimensions in mm						Panel Cut-Out
	L max.	D	C	M	SW-A	SW-B	
1	24,2	19	4	~9	17	12,4	SW 12,5 / Ø 14

G A

Style A – ODU MEDI-SNAP **Receptacle** installation from front of panel



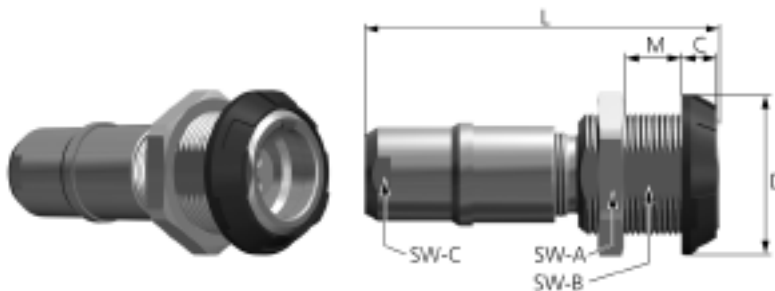
Technical Data

- IP 64 = GA1M + S41M
- IP 67 = GA1M + A51M in mated condition
- **IP 68 in reference to the end device**
- Anti-rotation feature
- contact configuration and PCB-Layout from page 22

Size	Dimensions in mm						Panel Cut-Out
	L1 max.	D	C	M	SW-A	SW-B	
1	30,8	18,5	7	~10	17	12,4	SW 12,5 / Ø 14

G 6

Style 6 – ODU MEDI-SNAP **Receptacle IP50**, with strain relief, installation from rear or front of panel with standard back nut



Technical Data

- IP 50 in mated condition
- Anti-rotation feature
- **Applicaton with Cable Bend Relief on request**

Size	Dimensions in mm							Panel Cut-Out
	L max.	D	C	M	SW-A	SW-B	SW-C	
1	~40	19	4	~9	17	12,4	10	SW 12,5 / Ø 14

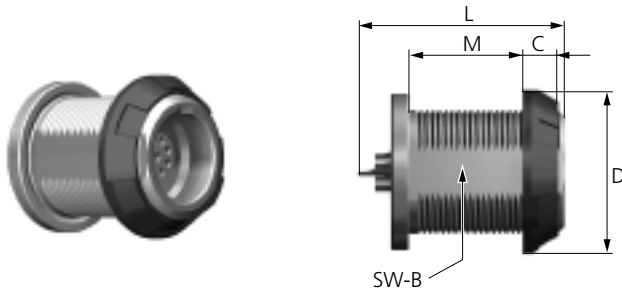
Part Number Key

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



G K

Style K – ODU MEDI-SNAP Receptacle IP50 with strain relief, installation from rear of panel



Technical Data

- IP 50 in mated condition
- Anti-rotation feature
- contact configuration and PCB-Layout from page 22

Size	Dimensions in mm					Panel Cut-Out
	L max.	D	C	M	SW-B	
1	24,2	19	4	~13,5	12,4	SW 12,5 / Ø 14

Order informations

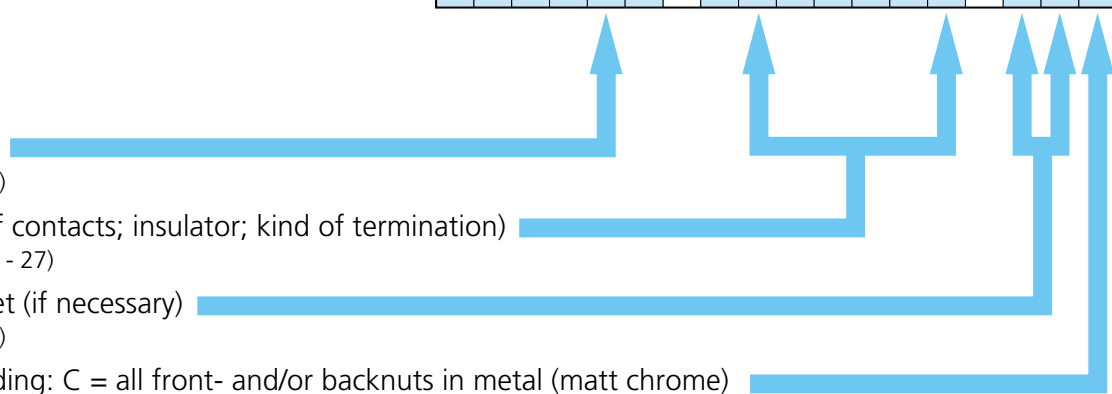
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
G	1	1	M	0	C	-	P	0	5	L	J	G	0	-	0	0	C	0

Coding
(see page 25)

Number of contacts; insulator; kind of termination)
(see page 22 - 27)

Cable collet (if necessary)
(see page 28)

Colour coding: C = all front- and/or backnuts in metal (matt chrome)
(1-8 = see page 29)



Customer specific solutions for ODU MEDI-SNAP

ODU as a specialist for customized solutions have all the main competences in house.

Development, an own tool shop, stamping, molding, surface plating, manufacturing of complete assembly machines etc. etc. .

With all these possibilities we are able to offer "coustom tailored" solutions for our customers.

When do we actively pursue customer specific solutions?

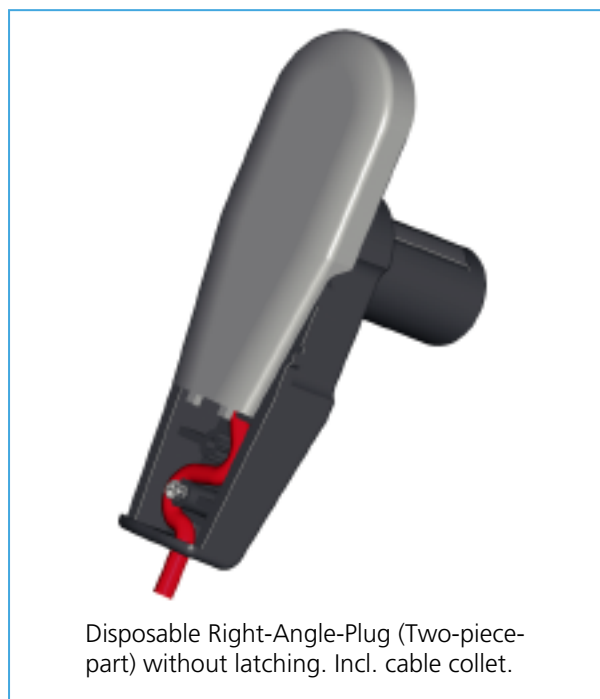
First we have to study the customers requirements. Here we would appreciate a precise technical specification and figures on quantities!

With all this information we decide whether we take this project or not.

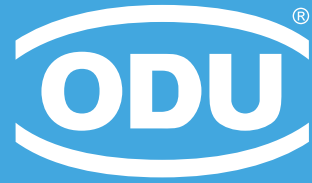
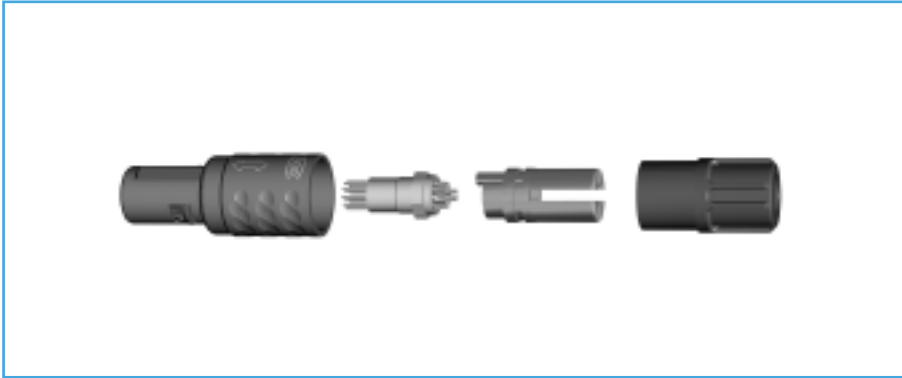
Most important is that the project potential will justify all the effort we have to put in!

After all these questions are clarified we are ready to go.

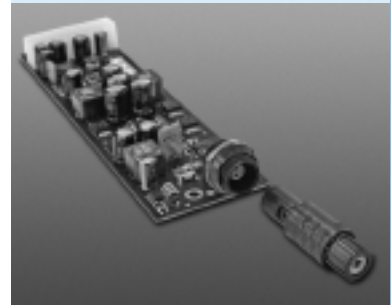
Here are a few examples how a special solution may look like:



ODU MEDI-SNAP



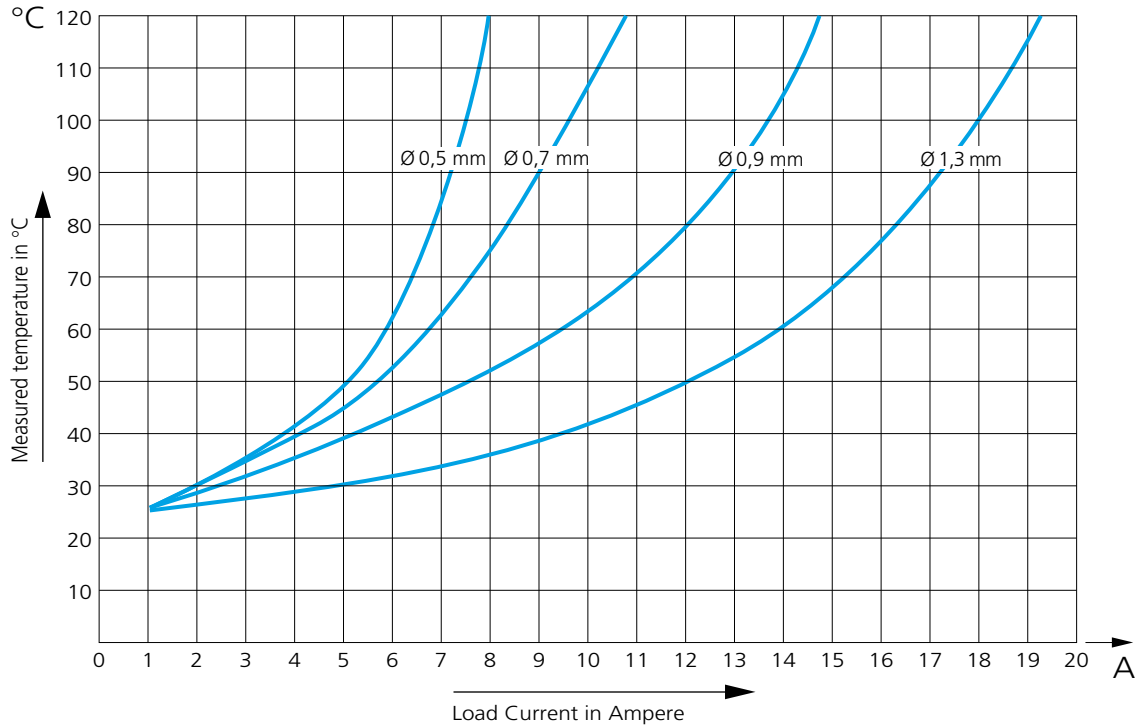
Technical Information about ODU MEDI-SNAP



Current Load of Contacts

Nominal Single Contact Current Load for pin / socket

(Nominal diameter 0,5 mm - 1,3 mm)



→ **Upper Maximum 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 VDE 0298-4 (2003). The Derating Factor is used starting with 5 loaded wires.

Derating Factor:

Number of loaded wires	Derating Factor
5	0,75
7	0,65
10	0,55
14	0,50

Operating voltage acc. to SAE AS 13441-method 3001.1 (1998)

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. 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 2000 m.

For any deviations one has to consider the reduction factor acc. to the relevant standards.

Test voltage: Break-down voltage x 0,75

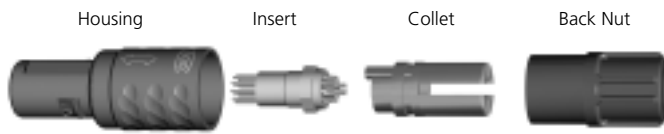
Operating voltage: Break-down voltage x 0,75 x 0,33

Caution:

Electrical appliances: for various applications the safety requirements regarding the operating voltage is even more severe!

The relevant datas in such cases for the operating voltage are the creepage and clearance distances. For any advise how to choose the proper connector please consult us and indicate the safty standard which your product has to meet.

Plug Assembly Instructions



1. Slide back nut and collet over the cable



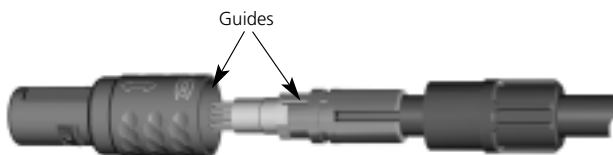
2. Strip cable and wire *1
3. Pre-tinning of strands recommended



4. Solder each wire to the corresponding contact
Recommended cleaning agent: Isopropyl Alcohol



5. Slide the collet against insert.
Caution: Don't damage the contacts!



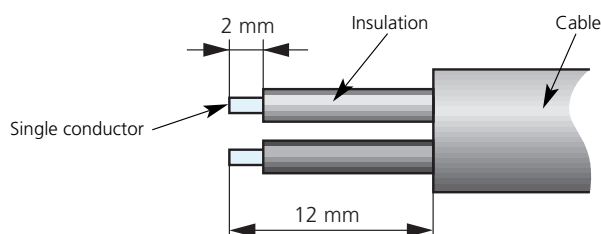
6. Now you can put the assembled cable into the housing.



7. Screw back nut on the plug and fasten cable in the housing.
The plug is assembled.

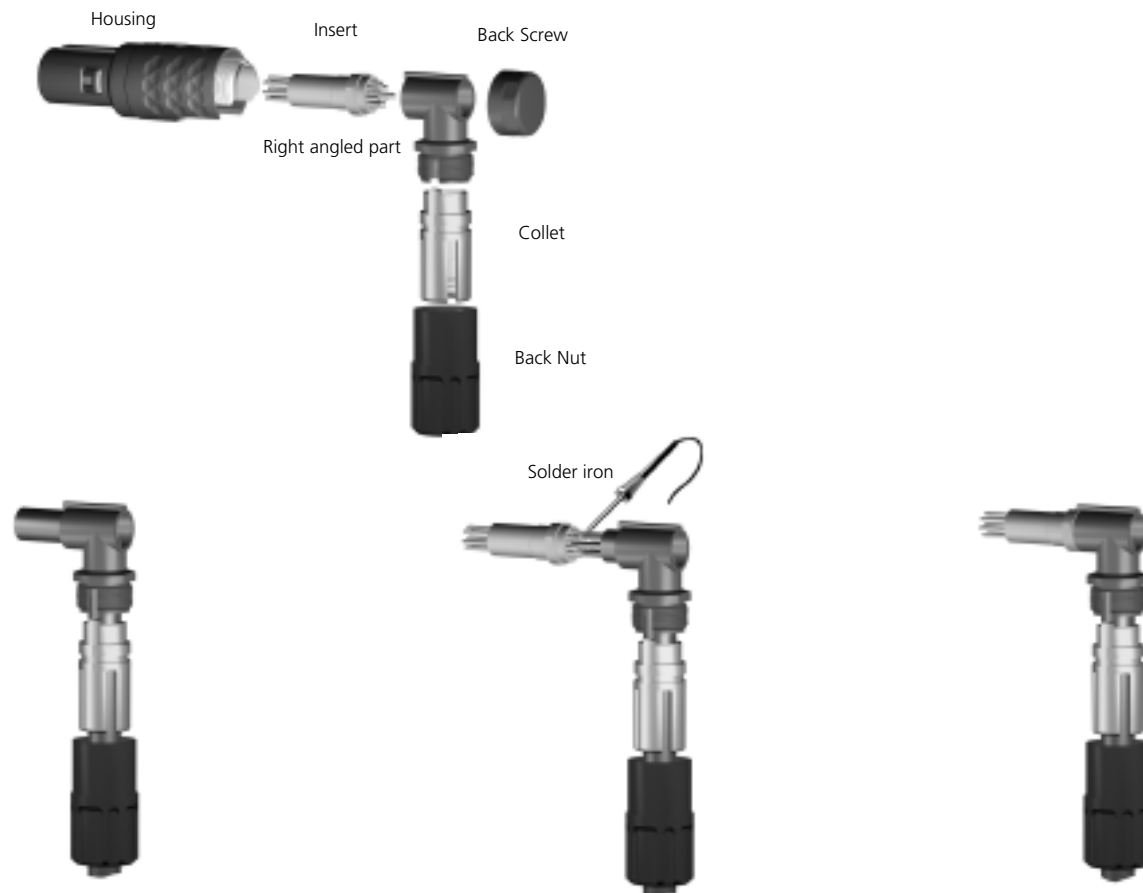
Torque of max. 0,25 Nm

Recommended Stripping Length *1



Recommended glue for the Back Nut:
Scotch Weld DP 190
ODU P/N: 890.204.000.030.025

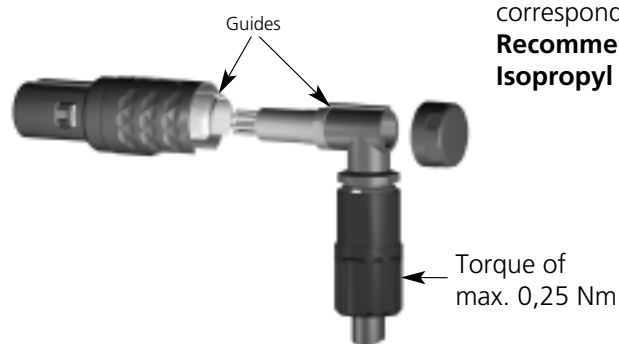
Right-Angle Plug Assembly Instructions



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

2. Strip cable and wire *1
 3. Pre-tinning of strands recommended
 4. Solder each wire to the corresponding contact
Recommended cleaning agent:
Isopropyl Alcohol

5. Slide the right-angled part against the insert.
Attention: Do not damage the contacts..

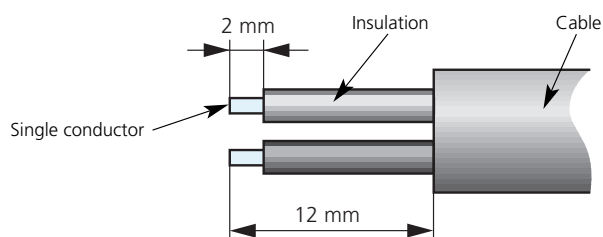


6. Slide the collet into the right-angled part and screw it with the back nut. Now you can put the assembled connector into the plug housing.



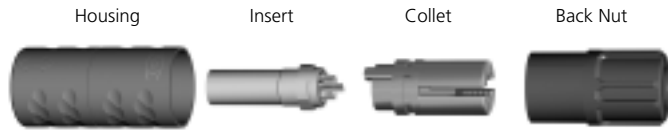
7. Mount the back screw on the plug. Now the plug is assembled.

Recommended Stripping Length *1



Recommended glue for the Back Nut and for the Back Screw:
 Scotch Weld DP 190
ODU P/N: 890.204.000.030.025

Assembly Instructions for In-Line Receptacle



1. Slide back nut and collet over the cable



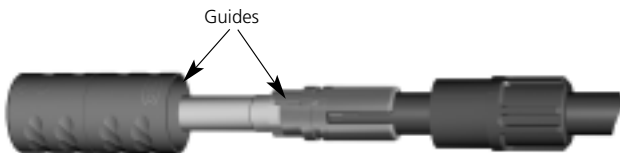
2. Strip cable and wire *1
3. Pre-tinning of strands recommended



4. Solder each wire to the corresponding contact
Recommended cleaning agent: Isopropyl Alcohol



5. Slide the collet against insert.
Caution: Don't damage the contacts!



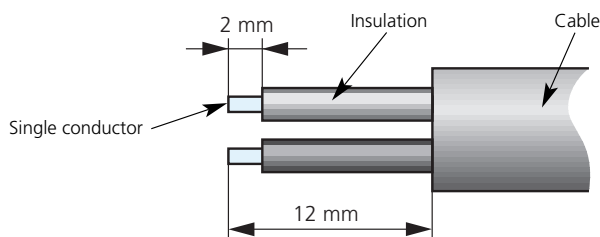
6. Now you can put the assembled cable into the housing.



7. Screw back nut on the In-Line Receptacle and fasten cable in the housing. In-Line Receptacle is assembled.

Torque of max. 0,25 Nm

Recommended Stripping Length *1



Recommended glue for the Back Nut:
Scotch Weld DP 190
ODU P/N: 890.204.000.030.025

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

The housing and the locking system of the ODU MEDI-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

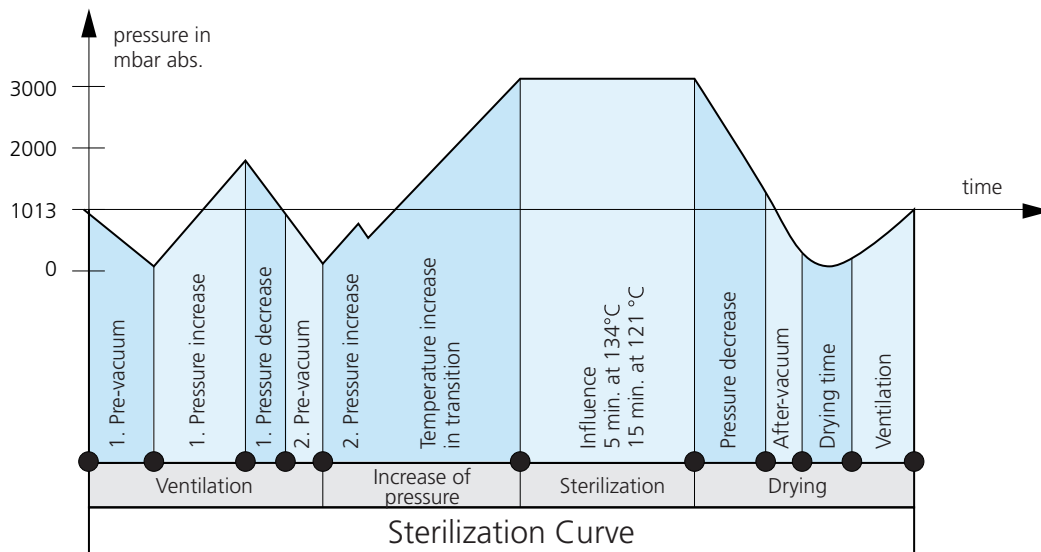
Code letters (International Protection)		First Index Figure (Foreign bodies protection)	Second Index Figure (Water protection)
IP		6	8
Index	Degree of protection	Index	Degree of protection
0	No protection against accidental contact, no protection against intrusion of solid foreign bodies	0	No protection against water
1	Protection against contact with any large area by hand and against large solid foreign bodies with $\varnothing > 50$ mm	1	Protection against vertical water drips
2	Protection against contact with the fingers, protection against large solid foreign bodies with $\varnothing > 12$ mm	2	Protection against water drips (up to a 15° angle)
3	Protection against tools, wires or similar objects with $\varnothing > 2.5$ mm. Protection, against small foreign solid bodies with $\varnothing > 2,5$ mm	3	Protection against diagonal water drips (up to a 60° angle)
4	As 3 however $\varnothing > 1$ 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.

Autoclaving of ODU MEDI-SNAP Connectors

If required ODU can deliver MEDI-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 200 cycles (housing material PEI).

Sterilization Curve:



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

Conversion: AWG to Metric

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.

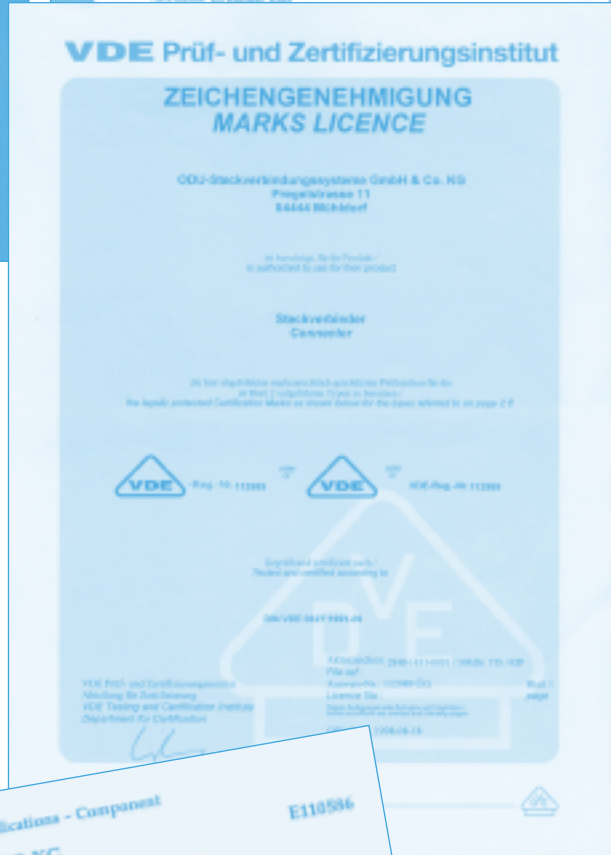
Conversion Table AWG / mm²

Circular Conductor			
AWG	Diameter		Cross Section mm ²
	in	mm	
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

(Source: Gore & Associates, Plainfeld)



Quality Management



ECBT2
 Connectors for Use in Data, Signal, Control and Power Applications - Component
 May 23, 2003
ODU STECKVERBINDUNGSSYSTEME GMBH & CO KG
 FREGELSTRASSE 11, 84453 MUEHLDORF GERMANY

Sub-D plug, Series 628 800-620090.
 DIP-socket connector, Series 507.
 Header, Series 511.
 Sub-D socket, Series 621 860-621960.
 IC-DIP plug, Series 531 099-530060.
 Long Jack, Cat. No. 511064129923.
 Metal cover for 620042, Series, Cat. No. 02000005, followed by 05, 25, 37 or 50.
 Polarisation key, Cat. No. 511363719123.
 PCB connector, Series 533 080-533060.
 Short Jack, Cat. No. 5138318523.
 Socket connector, Series 517.
 Flat cable connector, Series 538 800-538090.
 Serial port, Series 511, 512, 536, 620 and 621.
 Connectors, Mini 884P, Series S, W, R, G followed by any number or letter, followed by L, M, N, P, Q or R, followed by C, D, E, F, G, H, I, K, L, M or S, followed by 0, 1, 2, 3 or C, followed by R, S, R, L, or M, followed by any number or letter, followed by C, D, E, F, G, H, L, N or R, followed by 0, followed by any two digit number, followed by A or 2, B or 3, C or 4, D or 5, E or 6, F or 7, G or 8, I, K, L, M or S, followed by P, S or 8.

Marking: Company name or trademark and catalog designation on device or carton.

E110586

Technical Terms and Definitions

Air Gap

= Shortest distance between two conductive elements through the air.

Autoclaveable

(See page 50)

AWG

(See page 51)

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.

Connector

= a component that allows the connection of electrical conductors and that is intended to set up connections and/or to disconnect them with a suitable mating component. Connectors are operating materials that are not permitted to be inserted or separated during the intended use (when energized). The connector consists of the connector housing and the contact elements.

Plug-and-socket device

= operating materials that are permitted to be inserted or disconnected during the intended use (when energized or electrically charged).

Delivery

Connectors are shipped unassembled.

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.

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.

Lower Limit Temperature

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

Materials

(see page 9).

Mating Cycles

= Mechanical operation of connectors by mating and demating. One mating cycle comprises one insertion and one withdrawal operation (see page 7).

Nominal Single Contact Current Load

= Current load, carried by a single contact (see page 44).

Nominal Voltage

Nominal voltage for a component.



Operating Temperature of the ODU MEDI-SNAP

= Range between upper and lower temperature limits.
- 50 °C to + 120 °C (see page 44)

Print Connection

(see page 10)

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 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.

Solder Termination

(see page 10)

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.

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 MEDI-SNAP + 120 °C (see page 40).

Watertightness

(See page 49)

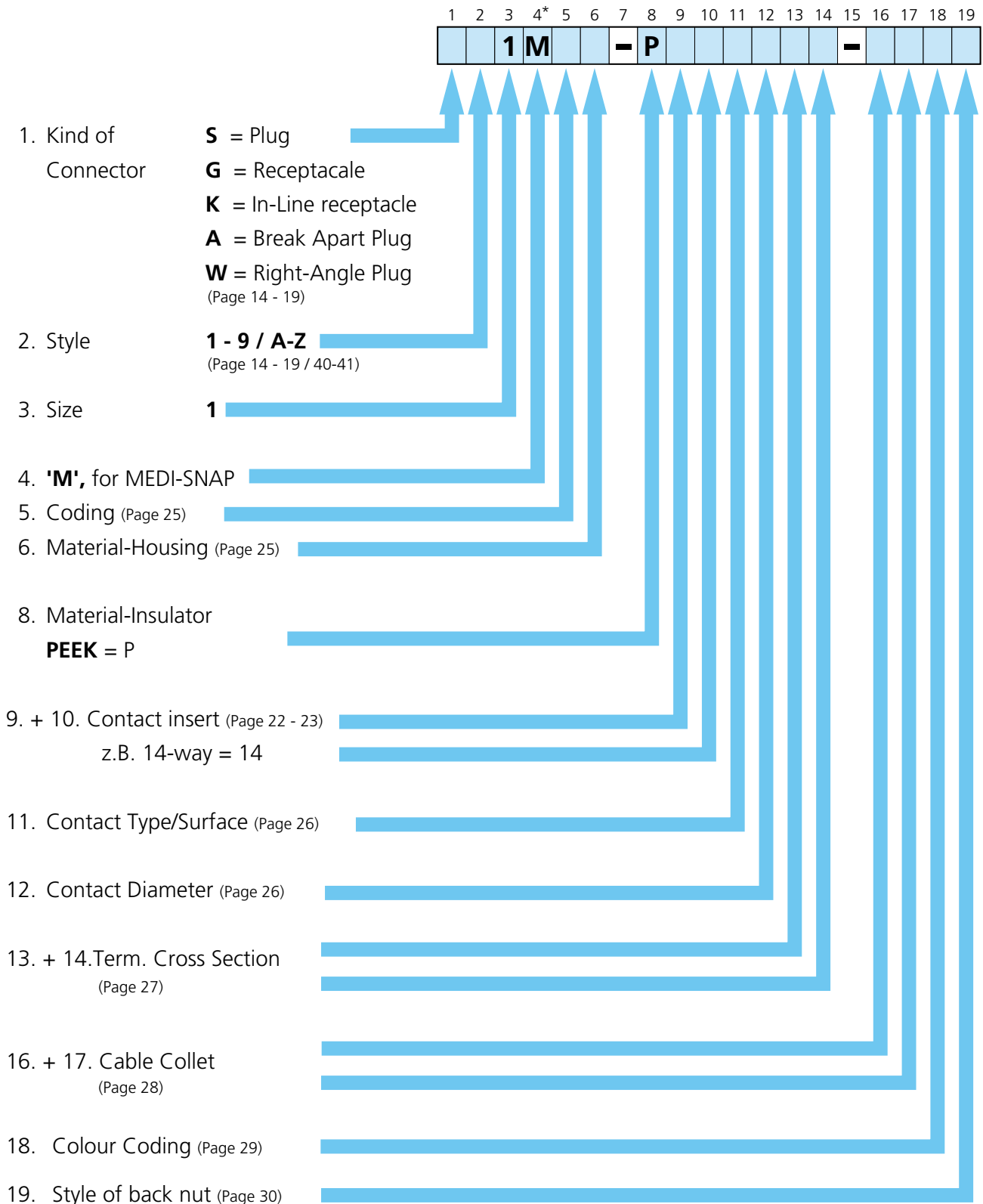
Wire

= 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 catalogue 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 assured that at the time of print all information in this catalog was correct. 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.

Part Number Key



Example:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
S	1	1	M	A	7	-	P	0	6	M	F	D	0	-	5	2	4	0

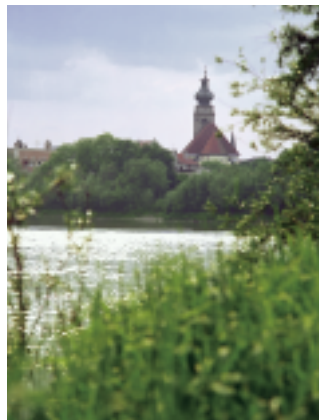
* If in field number 4 there is a M, it can be seen right away that this product is a Push-Pull Connector of the MEDI-SNAP series.



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



Photo of City Mühlendorf/Inn



Mühlendorf, an idyllic small town with its typical Inn-Salzach architecture.

