A PERFECT ALLIANCE.

ODU MEDI-SNAP®

Miniature circular connectors with
Push-Pull locking as well as Break-Away function

PLASTIC HOUSING
METAL HOUSING

ODU MEDI-SNAP®

ODU MINI-SNAP® F | ODU MINI-SNAP® L/K/B | ODU MINI-SNAP® PC | ODU MINI-MED® | ODU AMC®

ODU MEDI-SNAP®

FEATURES

- 75% lighter than comparable metal connectors
- Minimal requirements in terms of installation and maintenance
- Space-saving product design
- High chemical resistance
- Fully sterilizable
- Quick mating via Push-Pull locking
- Easy-to-release Break-Away function

APPLICATIONS

- Medical
- Industrial
- Digital test and measurement

All shown connectors are according to IEC 61984:2008 (VDE 0627:2009); connectors without breaking capacity (COC).

ODU MEDI-SNAP® is UL-approved under File E110586.

Issue: 2019-01

TABLE OF CONTENTS

Clickable page numbers

THE ODU CORPORATE GROUP 4

PRODUCT INFORMATION 10

The complete series of ODU connectors at a glance 12
The circular connector MEDI-SNAP® with plastic and metal housing 13
Functional principle of the Push-Pull locking 14
Functional principle of the Break-Away function 14
Important issues at a glance 16
Turned contacts 16

CONFIGURATION GUIDELINE 18

Correct configuring – step by step 20

ODU MEDI-SNAP® WITH PLASTIC HOUSING 24

SIZE 1

Summary 26
Styles 28
Codings 39
Contact inserts and PCB layouts 40
Cable collet system 46
Accessories 47

SIZE 2

Summary 56
Styles 58
Codings 62
Contact inserts and PCB layouts 63
Cable collet system 68
Accessories 69

ODU MEDI-SNAP® WITH METAL HOUSING 74

SIZE 1

Summary 76
Styles 78
Codings 82
Contact inserts and PCB layouts 83
Cable collet system 88
Accessories 89

TOOLS, CRIMP INFORMATION, PROCESSING INSTRUCTIONS, ACCESSORIES 94

Crimping tools/assembly tools 96
Spanner wrench 98
Wrench for device front nuts 98
Removal tools for crimp-clip-contacts 99

TECHNICAL INFORMATION 101

International protection classes acc. IEC 60529:2013 (VDE 0470-1:2014) 102
Housing materials and insulator materials 104
Termination technologies 105
Conversions/AWG 106
Current load of turned contacts 107
Operating voltage 108
Autoclaving of ODU MEDI-SNAP® 109
Technical terms 110

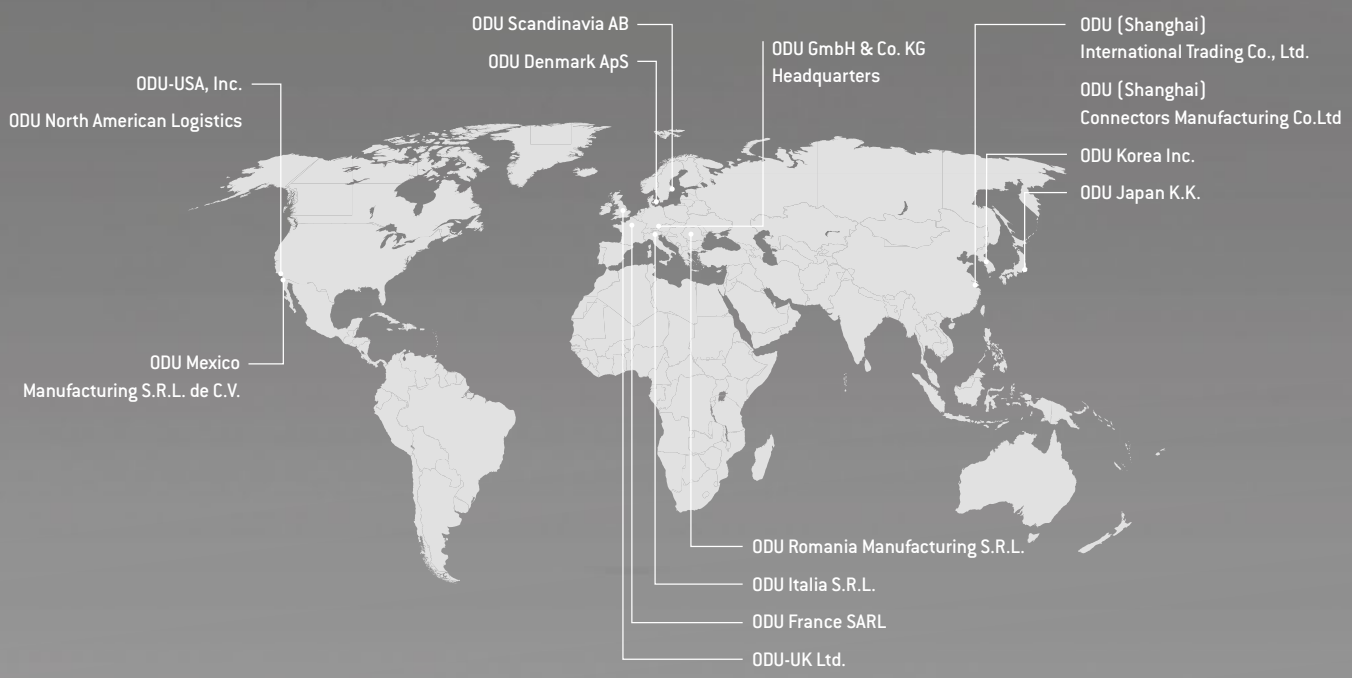
For assembly instructions, please refer to our website: www.odu-connectors.com/downloads/assembly-instructions

A PERFECT ALLIANCE.

Creating connections, building alliances, collaborating into the future: Whether two technical components come together to form a unit or people come together to strive for great results – the key is to aspire to achieve superb results. This goal drives our work. **Perfect connections that inspire and deliver on the promises.**

A PERFECT ALLIANCE.

WORLDWIDE CUSTOMER PROXIMITY



ODU GROUP OVERVIEW

- More than 75 years of experience in connector technology
- A turnover of € 200 million
- Over 2,300 employees worldwide
- Sales subsidiaries in China, Denmark, France, Germany, Italy, Japan, Korea, Sweden, UK and the US as well as 5 production and logistics sites
- All technologies under one roof: Design and development, machine tool and special machine construction, injection, stamping, turning, surface technology, assembly and cable assembly

As of February 2019

CERTIFICATES & APPROVALS

- ISO 9001
- IATF 16949
- ISO 13485
- ISO 14001
- ISO 50001
- Wide range of UL, CSA, VG and DVA approvals
- UL Wiring Harnesses certified

For a complete list of our certifications and approvals, please visit our website.

INGENIOUS IDEAS
PERFECT SOLUTIONS

Product portfolio of ODU

ELECTRICAL CONTACTS

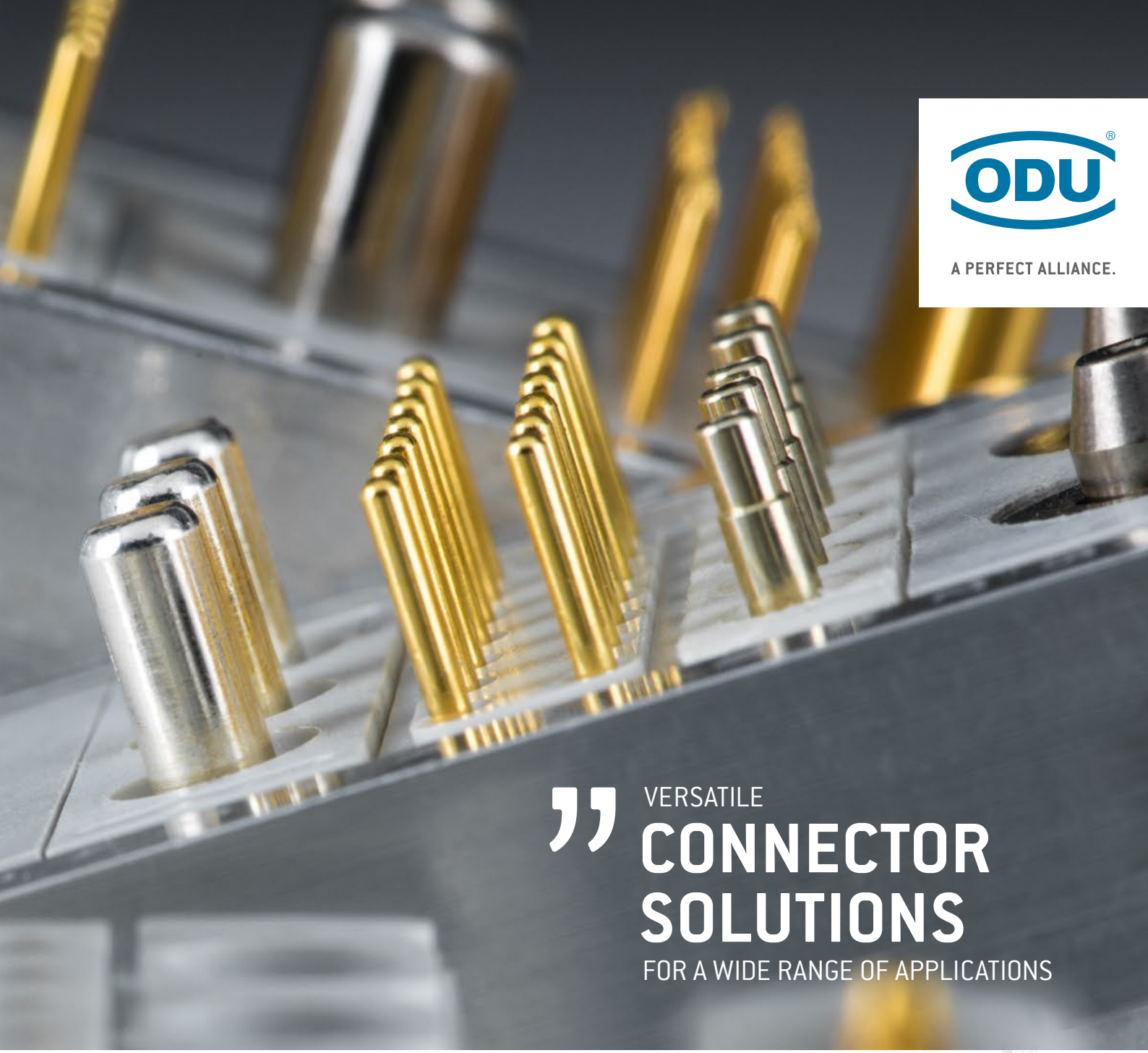
- Versatile connector technologies
- Outstanding reliability, lifetime and durability
- Up to 1 million mating cycles
- Current-carrying capacity of up to 2,400 A
- Rugged contact systems, suitable even for harsh environments
- Economical solutions for automatic processing
- Including cable assembly – complete solution

CIRCULAR CONNECTORS

- Circular connector series in robust metal or plastic housing
- Contacts for soldering, crimping and PCB termination
- Optional selectable Push-Pull locking or screw locking technology ensuring a secure connection at all times as well as easy to release Break-Away function
- 2 up to 55 contacts
- IP50 to IP69
- Autoclavable for medical applications
- Hybrid inserts for combined transmission
- Including cable assembly – complete solution

MODULAR CONNECTORS

- Application-specific hybrid interface
- For manual mating and automatic docking
- The highest packing density
- Flexible modular construction
- Multitude of data transmission modules
- For the transmission of signals, power, high current, high voltage, HF signals (coax), media, high-speed data and fiber optics
- Variety of locking options available
- Extremely durable – even under extreme conditions
- Mating cycles scalable as required from 10,000 to over 100,000 (1 million)
- Including cable assembly – complete solution



A PERFECT ALLIANCE.

VERSATILE CONNECTOR SOLUTIONS

FOR A WIDE RANGE OF APPLICATIONS

HEAVY DUTY CONNECTORS

- Extremely durable even under extreme / harsh environments
- High vibration resistance
- Up to 400 A (higher currents upon request)

PRINTED CIRCUIT BOARDS CONNECTORS

- Maximum flexibility in application designs
- High resilience and outstanding quality
- Including cable assembly – complete solution

APPLICATION AND CUSTOMER-SPECIFIC SOLUTIONS

- Contacts, connectors and cable assemblies for the highest technical requirements as well as special applications
- First-class implementation expertise
- High level of vertical manufacturing – all competences and key technologies under one roof
- Expert advice based on mutual partnership
- Short development and production paths

CABLE ASSEMBLY

- Complete systems from a single source based on years of expertise
- State-of-the-art production facilities with 100 % end testing
- Cleanroom production
- Overmolding in silicone, hot-melt and high-pressure procedures
- Customer-specific labeling
- Prototype, small series and high volume production
- Rapid prototyping

MORE THAN
A CONNECTION

Our Know-How for your success

HIGH PERFORMANCE CONNECTOR TECHNOLOGY FOR DEMANDING KEY MARKETS

Customers rely on ODU technology wherever first-class, high-performance connector solutions are required. All our skills go into our products to ensure your success.

In addition to the top quality, reliable stability and maximum flexibility our products also stand for dynamics, reliability, safety, precision, efficiency and sustainability.

ODU – A PERFECT ALLIANCE.

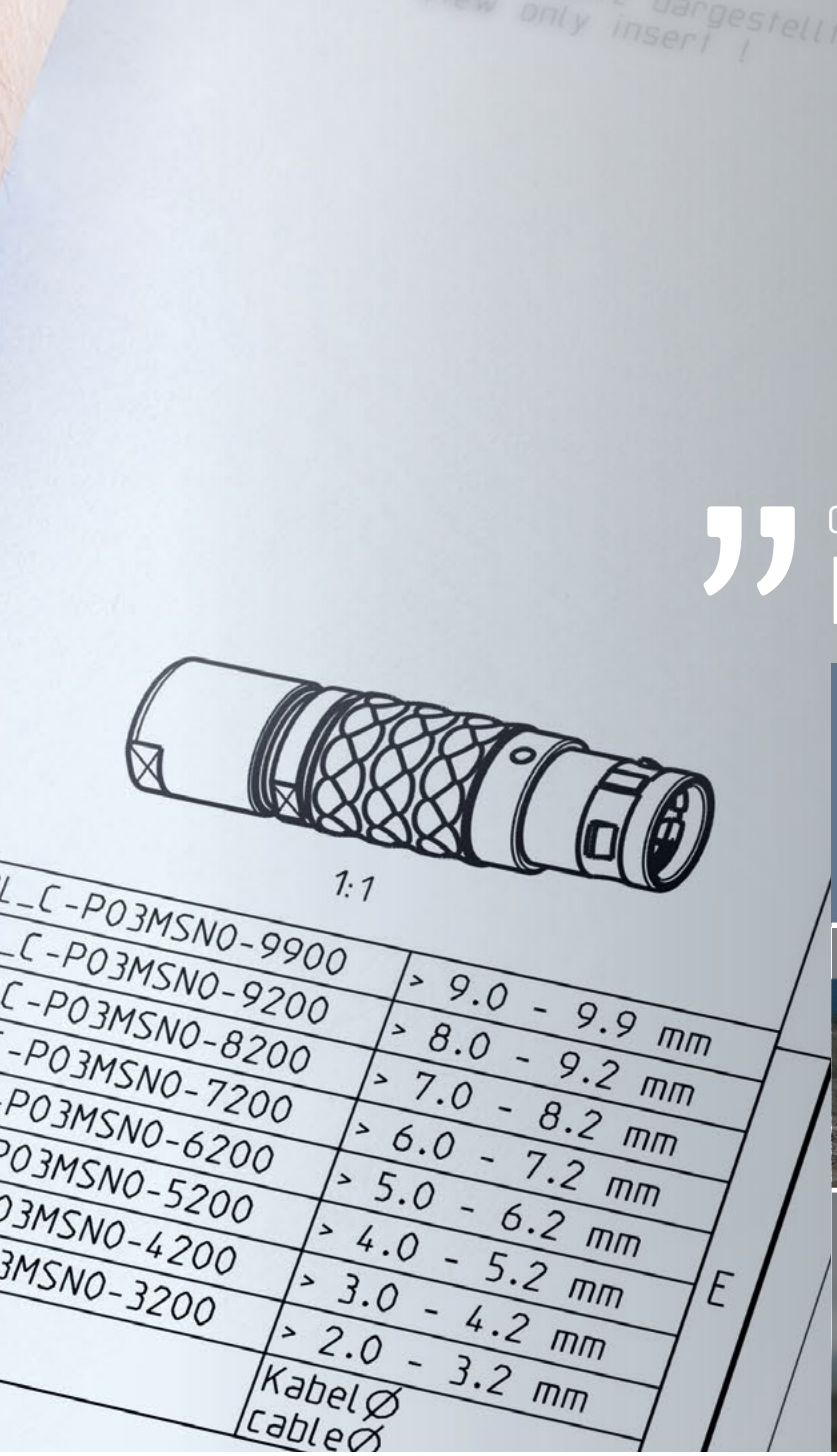
CONNECTIONS THAT LIVE UP TO ANY REQUIREMENT

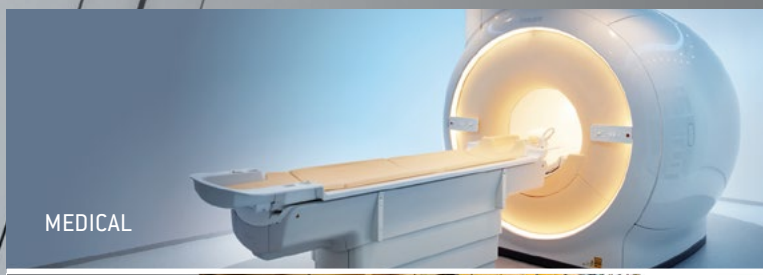
Contacts, connectors and integrated cable assembly solutions meeting the most demanding technical market requirements – ODU's connector solutions and value-added services are characterized by their exclusive focus on meeting the customer's needs.

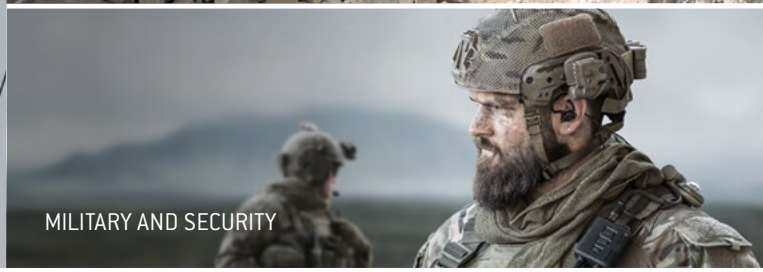
- Precise implementation of application-specific requirements regarding design, functionality, cost and exclusivity
- Modified connector solutions derived from standard products
- One-to-one local expertise and fair, friendly consulting
- Short development and production paths

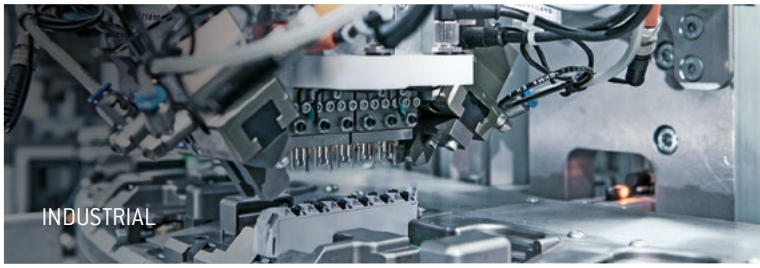
A PERFECT ALLIANCE.

CROSS-INDUSTRY KNOW-HOW









DEVELOPMENT OF CUSTOM SOLUTIONS

Demands that can't be pigeon-holed call for creative specialists who think outside the box. ODU offers the type of expertise that focuses solely on the specific requirements of our customers.

For every development order we get, we not only perform a thorough check to make sure it's feasible, we intensively incorporate our customers in the ongoing design process. This guarantees impressive, custom-fit final end products.

ODU MEDI-SNAP®

Table of Contents

PRODUCT INFORMATION

The complete series of ODU connectors at a glance 12

The circular connector MEDI-SNAP® with plastic and metal housing 13

Functional principle of the Push-Pull locking 14

Functional principle of the Break-Away function 14

Important issues at a glance 16

Turned contacts 16

THE COMPLETE SERIES OF ODU CONNECTORS AT A GLANCE

	Coding	Size	No. of possible mechanical codings	Plug diameter in mm	Max. cable diameter in mm	Number of max. contacts	Solder	Crimp	PCB	IP protection degree IEC 60529:2013 in mated condition	IP protection degree IEC 60529:2013 in unmated condition	Housing material	From page
ODU MEDI-SNAP® PLASTIC	Pin and groove	1	6	13.7	6.5	14	•	•	•	Up to IP67	Up to IP50	PSU Gray, Black PEI Black	24
	Pin and groove	2	3	18.5	9.2	26	•		•	Up to IP64	IP50	PSU Gray	54
ODU MEDI-SNAP® METAL	Pin and groove	1	3	14	6.5	14	•	•	•	Up to IP64	Up to IP68	Metal (Brass)	74

FURTHER PRODUCTS OF THE ODU PUSH-PULL CIRCULAR CONNECTOR SERIES:

ODU MINI-SNAP® L / K / B

- Coding over pin and groove
- 2–40 contacts
- 6 sizes
- IP50 and IP68
- Contacts for solder, crimp and PCB termination

ODU MINI-SNAP® PC

- Coding over half-shell
- 2–27 contacts
- Low weight
- IP67
- 3 sizes
- Plastic connector plug housing

ODU MINI-SNAP® F

- Coding over half-shell
- 2–27 contacts / mixed inserts
- 5 sizes
- IP50 and IP68 with same outer diameter possible
- Contacts for solder, crimp and PCB termination

ODU MINI-SNAP® S

- Coding over insulator
- 2–10 contacts / mixed inserts
- 3 sizes
- IP50 and IP68 with same outer diameter possible
- Contacts for solder, crimp and PCB termination

ODU AMC®

- Push-Pull and Break-Away version
- 3–55 contacts
- 6 sizes
- Watertight – IP68
- Easy-Clean and High-Density version
- Tested acc. MIL
- Low weight (aluminium connector plug housing)

THE CIRCULAR CONNECTOR MEDI-SNAP® WITH PLASTIC AND METAL HOUSING

The ODU MEDI-SNAP® combines distinctive coding options with over 2,000 mating cycles. The efficient plastic connector is available both with user-friendly Push-Pull locking and the easy-to-release Break-Away function, which comes as a premolded plug & play solution.

Its space-saving product design enables top performance even in the smallest available construction space. Further due to its plastic housing, this connector is up to 75% lighter than comparable metal products. The great diversity makes the ODU MEDI-SNAP® perfectly suited to your requirements in medical technology, industrial electronics as well as digital test and measurement technology.

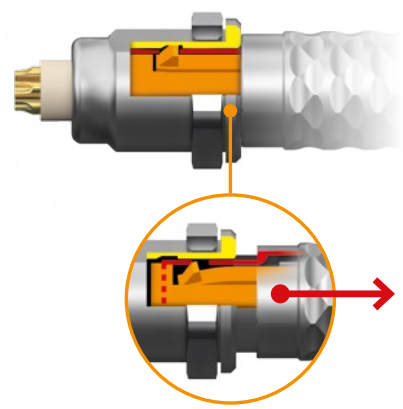
The IEC 60601-1:2012 (VDE 0750-1:2013) standard poses special requirements. In detail it defines strict requirements in regards to protection against electrical shock of medical devices and their components for both patients and users. The various protection measures (MOP: Means Of Protection) are described in detail from page 26 and 56.

VERSATILE CONFIGURATION OPTIONS

There are 7 color codings, up to 6 mechanical codings, 2 sizes, 3 termination types and a wide range of different contact inserts available.

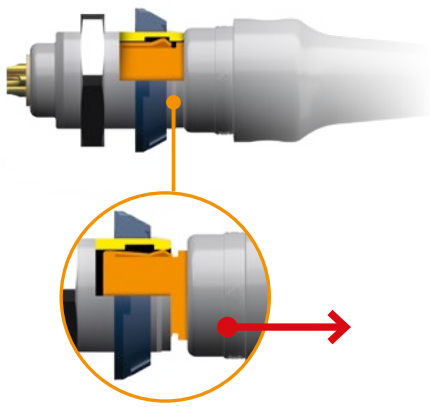
FUNCTIONAL PRINCIPLE OF THE PUSH-PULL LOCKING

The proven Push-Pull locking ensures establishing connections easily in less than a second. It is **self-securing** – this means that an accidental release by pulling on the cable can be precluded. During the mating process, the connector's locking claws will lock into place in the corresponding grooves in the receptacle and form a dependable connection between the connector and the receptacle. Consequently, when the connection is properly established, an unintentional demating of the connection by pulling on the cable cannot take place. The connection can only be released deliberately, by just pulling back the connector's outer sleeve. Push-Pull connectors from ODU are available in 2 different standard sizes with diameters from 13.7 mm to 18.5 mm.



FUNCTIONAL PRINCIPLE OF THE BREAK-AWAY FUNCTION

The efficient Break-Away function allows for an easy establishment of connections within fractions of a second just like the Push-Pull locking. But furthermore it also features an **emergency release** which enables demating the connection when needed by pulling on the cable. During mating, the connector's locking claws will lock into place in the corresponding grooves in the receptacle and form a dependable connection between the connector and the receptacle. The sloping shape of the locking claws ensures the "breaking away" of the connection when the connector or cable is pulled with a defined force. The ODU Break-Away connectors are available in 2 different standard sizes in diameters from 13.4 to 18 mm.



FOR YOUR NOTES

IMPORTANT ISSUES AT A GLANCE

WIDE VARIETY OF VERSION

- Plastic housing in 2 sizes
- Metal housing in one size
- Outer diameter of 13.4 mm to 18.5 mm
- 2 to 26 contacts
- IP50, IP64 and IP67 in mated condition / IP68 in unmated condition
- Overmolded as well as freely configurable solutions

APPLICATIONS AND MATERIALS

The ODU MEDI-SNAP® housings are available in plastic (PSU Gray/Black as well as PEI Black) or brass. Special material housing in PSU White or PEI Gray available on request.

The variety of the ODU MEDI-SNAP® allows it to adapt to your requirements in medical technology, industrial electronics as well as digital measurement and testing technology.

Under general application conditions, the temperature range of the ODU MEDI-SNAP® lies between –50 °C and a maximum of +120 °C, even up to +134 °C in the case of autoclavable connectors (see pag 109).

TURNED CONTACTS

Turned contacts are available in diameter 0.5 mm to 2 mm in the following termination types:
Solder, crimp and PCB.

Mating cycles	> 5.000
Material	Brass
Plating	Au

TERMINATION TECHNOLOGIES

	Insulator material PEEK	Contact material Ms
Crimp termination[1]	•	•
Solder termination	•	•
PCB termination (on PCB)	•	•

[1] Crimp-clip contacts available with diameters of 0.7 mm and 0.9 mm

STANDARD PIN CONTACTS

Information on diameters, termination types and current carrying capacity can be found after the inserts.

FOR YOUR NOTES

ODU MEDI-SNAP®

Table of Contents

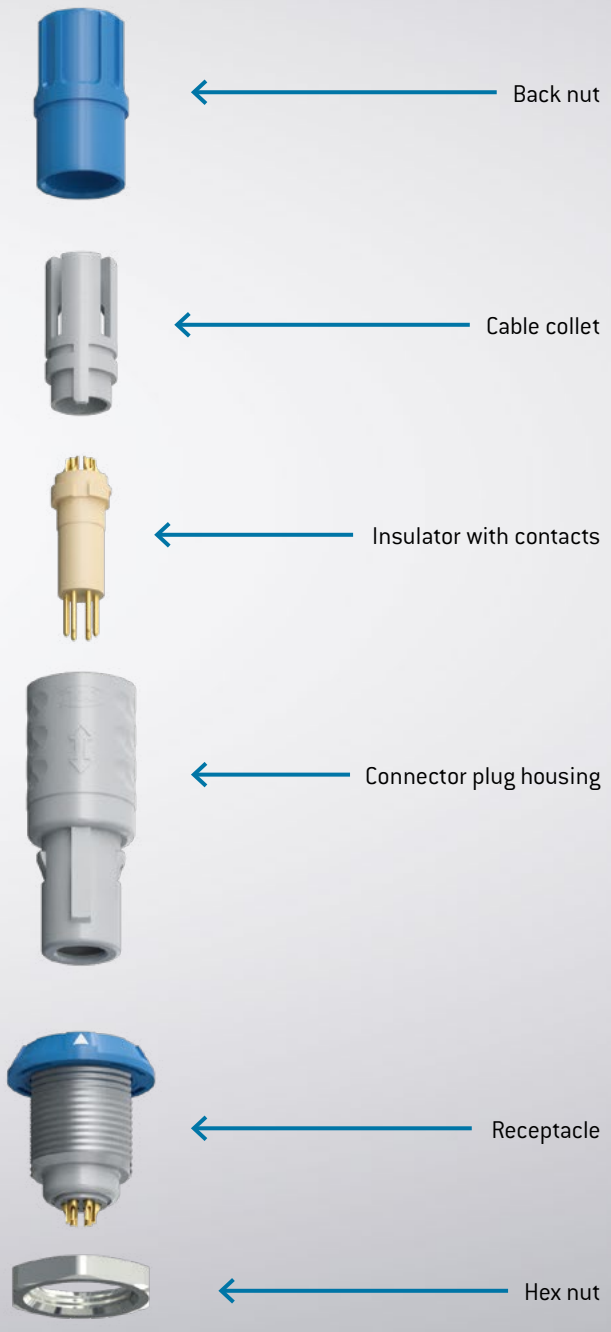
CONFIGURATION GUIDELINE

Correct configuring – step by step

Table of Contents

BIT BY BIT TO THE PERFECT CONNECTION

ODU offers you high-quality connectors and comprehensive service for the complete assembly. From connectors to watertight grouting, we provide the complete system from a single source.



YOUR WAY TO AN INDIVIDUAL CONNECTION:

HOW TO CONFIGURE WITH THE PART NUMBER KEY.

This shows you how ODU's part number key is composed. In the first part of the configuration, select the connector plug housing (such as style and size) of the connector. In the middle part of the part number key, you configure the contact insert and then the cable entry.

Type
A = Break-Away connector
G = Receptacle
K = In-line receptacle
S = Plug
W = Right-angled plug

Insulator material[1]
P = PEEK (standard), T = PBT

Cable collet system

Style
1–8, A, K

Size
1, 2

Series
MEDI-SNAP®

Coding

Housing material

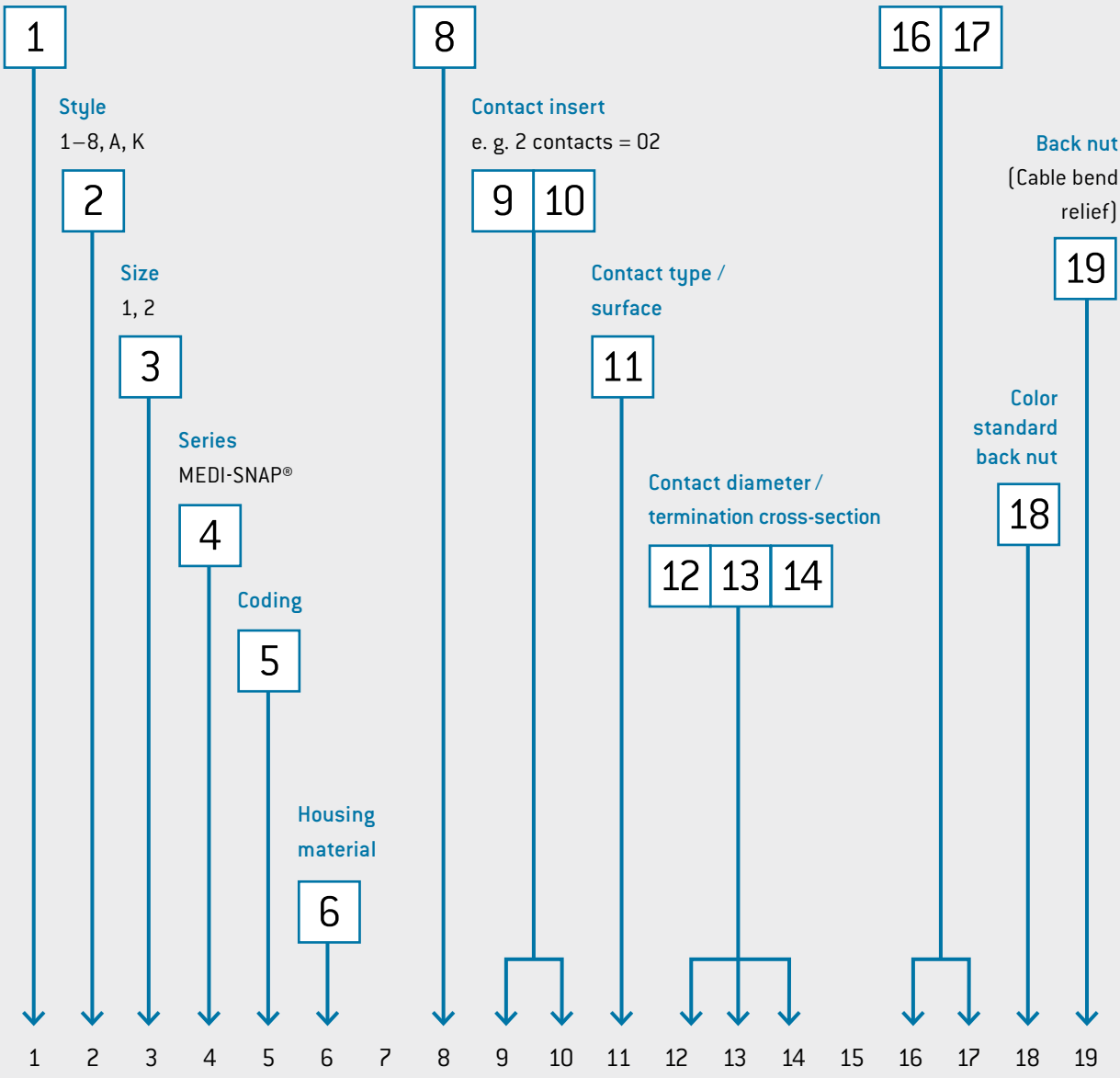
Contact insert
e. g. 2 contacts = 02

Contact type / surface

Contact diameter / termination cross-section

Back nut
(Cable bend relief)

Color standard back nut



Connector plug housing
Plastic from page 24, metal from page 74

Contact insert
Plastic from page 40, metal from page 83

Cable entry
Plastic from page 46, metal from page 88

[1] Other insulation materials on request

Table of Contents

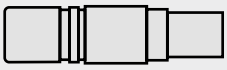
CORRECT CONFIGURING – STEP BY STEP

The perfect product for you in just a few steps. These step-by-step instructions show you how to configure your own individual product with the ODU part number key based on a sample configuration.

Connector in style 1 / size 1 / series ODU MEDI-SNAP® / coding 0° / connector plug housing plastic, Gray / insulator PEEK / 14 contacts / pin (solder) Au / termination cross-section AWG 28 / cable diameter 5.3–6.5 mm / standard back nut in the color Blue

1. STEP: SERIES (SEE POSITION 4)

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

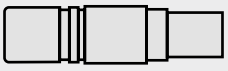


MEDI-SNAP®

2. STEP: STYLE (SEE POSITIONS 1, 2 AND 19)

SEE PAGE 28

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

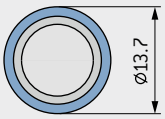


STYLE S1 WITH STANDARD BACK NUT

3. STEP: SIZE (SEE POSITION 3)

SEE PAGE 24

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

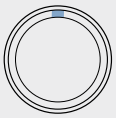


SIZE 1

4. STEP: CODING (SEE POSITION 5)

SEE PAGE 39

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



CODING 0°

5. STEP: HOUSING MATERIAL (SEE POSITION 6)

SEE PAGE 39

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

PSU
Gray

PLASTIC, GRAY

6. STEP: INSULATOR MATERIAL (SEE POSITION 8)

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

PEEK

7. STEP: CONTACT INSERT (SEE POSITIONS 9 AND 10)

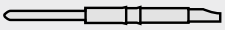
SEE PAGE 40

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

14 CONTACTS

8. STEP: CONTACT TYPE / SURFACE (SEE POSITION 11)

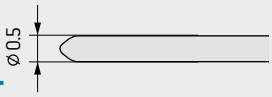
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
S	1	1	M	0	7	–	P	1	4	M				–				0



SOLDER (PIN)

9. STEP:CONTACT DIAMETER (SEE POSITION 12)

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



DIAMETER 0.5 mm

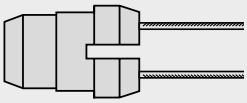
10. STEP: TERMINATION CROSS-SECTION (SEE POSITIONS 13 AND 14)

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

AWG 28

11. STEP: CABLE COLLET SYSTEM (SEE POSITIONS 16 AND 17)

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

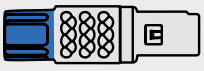


MIN. CABLE DIAMETER 5.3 mm
MAX. CABLE DIAMETER 6.5 mm

12. STEP: COLOR STANDARD BACK NUT (SEE POSITION 18)

SEE PAGE 47

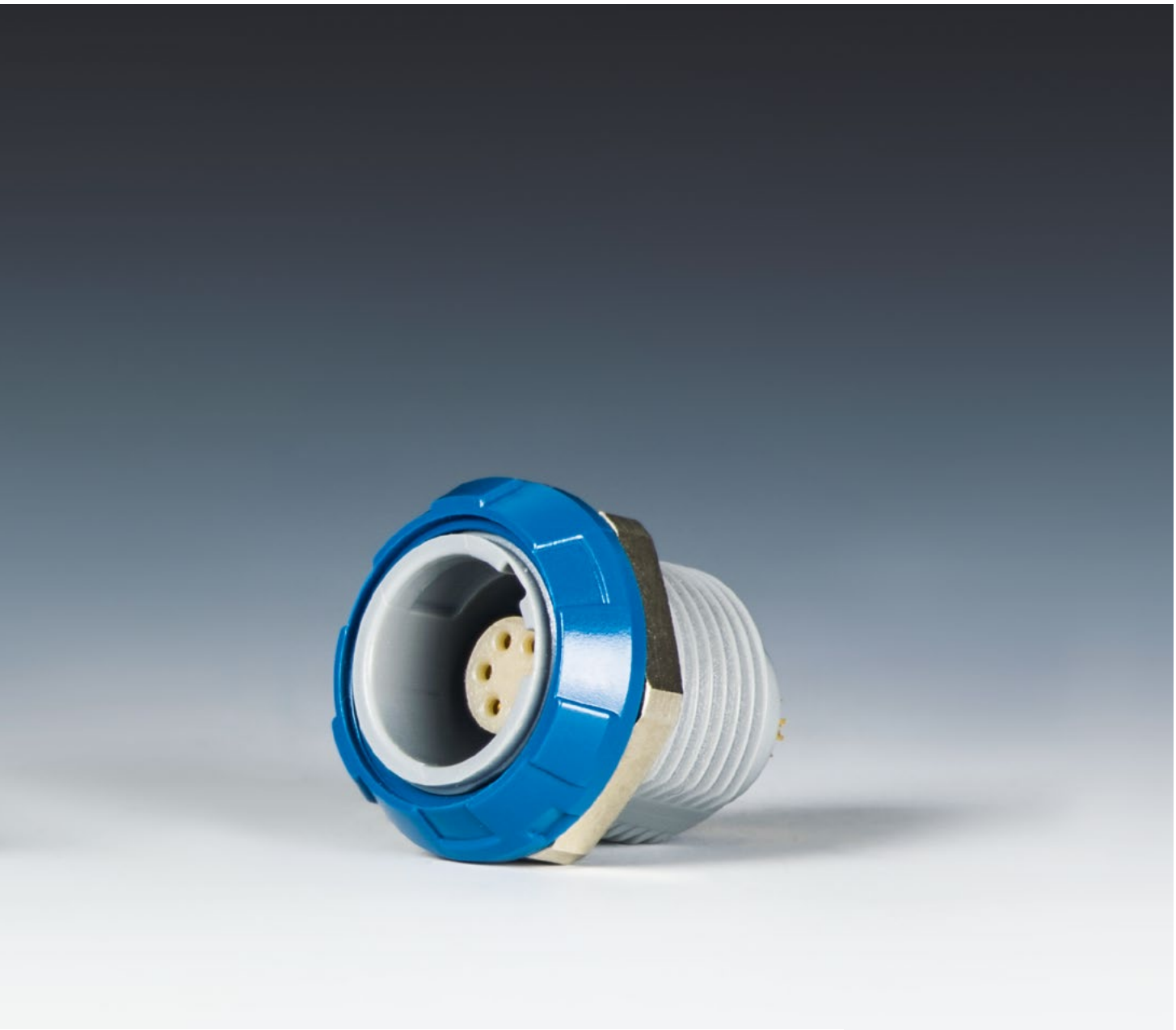
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
S	1	1	M	0	7	–	P	1	4	M	C	C	0	–	6	5	6	0



BLUE

ODU MEDI-SNAP®

Table of Contents



ODU MEDI-SNAP® WITH PLASTIC HOUSING SIZE 1

Summary 26

Styles 28

Codings 39

Contact inserts and PCB layouts 40

Cable collet system 46

Accessories 47

SUMMARY ODU MEDI-SNAP® PLASTIC HOUSING SIZE 1

The ODU MEDI-SNAP® with plastic housing in size 1 is coded by pin and groove. These circular connectors can have a variety of configurations: numerous styles of connectors, receptacles and in-line receptacles as well as various termination types, contact inserts and color codings.

- Coding over pin and groove
- 7 color codings
- 6 mechanical codings
- 2 – 14 contacts
- 3 termination types
- Contacts for solder, crimp and PCB termination
- A selection of numerous connectors as well as receptacles and in-line receptacles
- IP50/IP64 and IP67 available in mated condition
- Up to 5,000 mating cycles

STRAIGHT PLUG – PUSH-PULL

2,000 mating cycles

P. 28

IP50

S 1

S 2

IP64

S 4

RIGHT-ANGLED PLUG – PUSH-PULL

2,000 mating cycles

P. 30

IP50

W 1

W 2

BREAK-AWAY CONNECTOR

5,000 mating cycles

P. 31

IP67

A 5

For assembly instructions, please refer to our website: www.odu-connectors.com/downloads/assembly-instructions

IN-LINE RECEPTACLE IEC 60601-1

5,000 mating cycles

P. 32

IP50

2 MOOP[1]
1 MOPP[1]

K 1

K 2

RECEPTACLE IEC 60601-1

5,000 mating cycles

P. 33

IP50

2 MOOP[1]
1 MOPP[1]

G 1

G 5

G 6

(On request)

G 8

RECEPTACLE IEC 60601-1

5,000 mating cycles

P. 35

IP50

2 MOOP[1]
2 MOPP[1]

G 9

IP64 / IP67

2 MOOP[1]
2 MOPP[1]

G 4

G E

IP64 / IP67 / IP68[2]

2 MOOP[1]
2 MOPP[1]

G A

ONE-PIECE RECEPTACLE IEC 60601-1

5,000 mating cycles

P. 38

IP50

1 MOOP[1]
0 MOPP[1]

G 2

MEANS OF OPERATOR PROTECTION (MOOP) / MEANS OF PATIENT PROTECTION (MOPP)

Working voltage: 250 V AC, Degree of pollution 2

MOOP / MOPP	Clearance distance to the test finger mm	Creepage distances to the test finger mm	Test voltage V AC
1 MOOP	≥ 2	≥ 2.5	1,500
2 MOOP	≥ 4	≥ 5	3,000
1 MOPP	≥ 2.5	≥ 4	1,500
2 MOPP	≥ 5	≥ 8	4,000

The information refers to all plugs in mated condition on page 26.

[1] As per IEC 60601-1:2012 (VDE 0750-1:2013) [2] IP68 in unmated condition

STRAIGHT PLUG

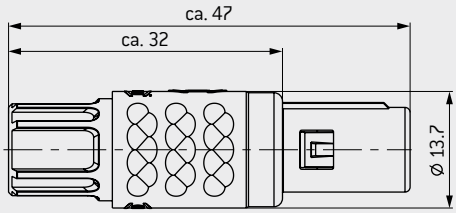
Push-Pull styles

S 1 0

STYLE: 1

IP50

With standard back nut

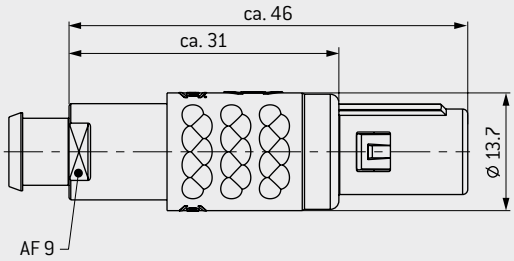


S 2 S

STYLE: 2

IP50

With back nut[1] for cable bend relief[2]



TECHNICAL DATA

- Contact configuration from page 40
- Explanation of the degrees of protection (see page 102)
- S1 with color coding

Size (1)

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

[1] Back nuts for cable bend reliefs have to be ordered in the same color as the connector housing. The color coding is based on the cable bend relief.
[2] Cable bend reliefs have to be ordered separately (see page 52).

STRAIGHT PLUG

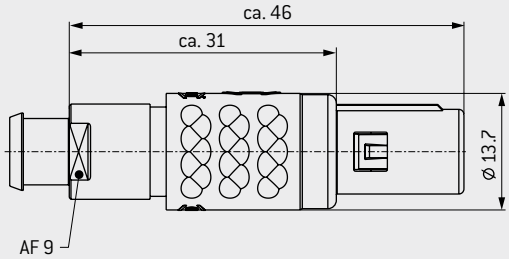
Push-Pull styles

S 4 S

STYLE: 4

IP64

With back nut[1] for cable bend relief[2]



TECHNICAL DATA

- Contact configuration from page 40
- Explanation of the degrees of protection (see page 102)
- IP64 in combination with receptacle style 4 (in mated condition)

Size (1)

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

[1] Back nuts for cable bend reliefs have to be ordered in the same color as the connector housing. The color coding is based on the cable bend relief.
[2] Cable bend reliefs have to be ordered separately (see page 52).

RIGHT-ANGLED PLUG

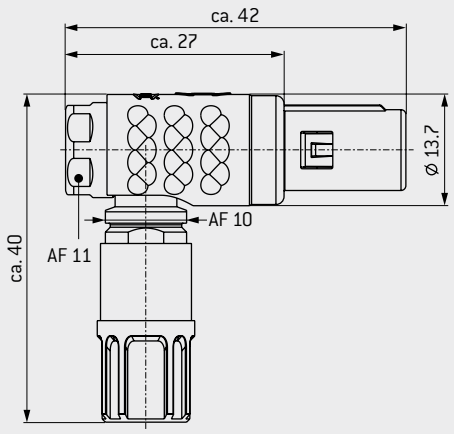
Push-Pull styles

W 1 0

STYLE: 1

IP50

With standard back nut

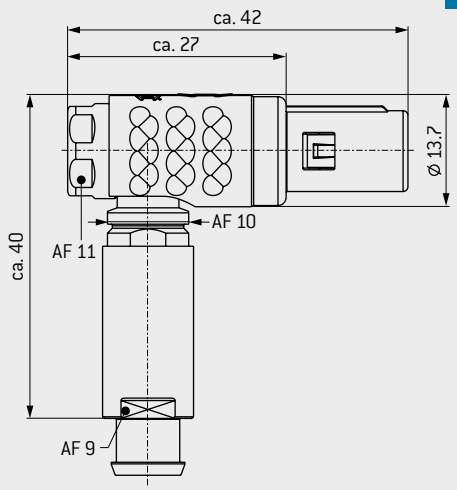


W 2 S

STYLE: 2

IP50

With back nut[1] for cable bend relief[2]



TECHNICAL DATA

- Contact configuration from page 40
- Explanation of the degrees of protection (see page 102)
- W1 with color coding

Size (1)

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

[1] Back nuts for cable bend reliefs have to be ordered in the same color as the connector housing. The color coding is based on the cable bend relief.
[2] Cable bend reliefs have to be ordered separately (see page 52).

BREAK-AWAY CONNECTOR

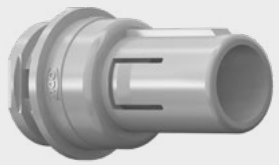
Break-Away styles

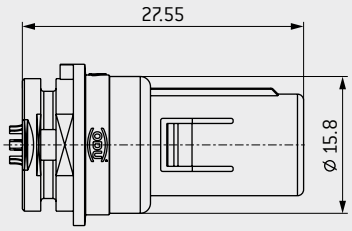
A 5

STYLE: 5

IP67

Connector suitable for overmolding



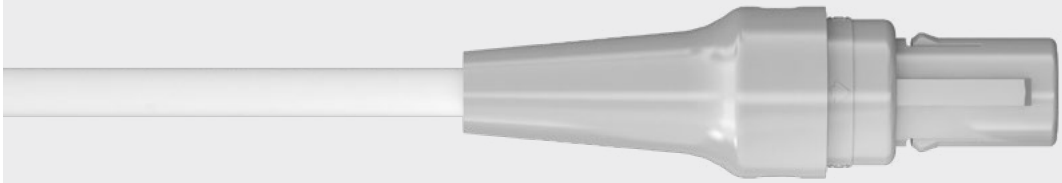


TECHNICAL DATA

- Contact inserts (starting on page 42)
- Explanation of the degrees of protection (starting on page 102)
- IP67 with overmolding in combination receptacle style 4/E/A
- The complete housing with molded insulators made of plastic[1]
- Break-Away connectors available in PSU
- May not be inserted in metal housing.
- Suited for all ODU MEDI-SNAP® receptacles and in-line receptacles made of plastic
- Available with solder contacts

All ODU MEDI-SNAP® Break-Away connectors can be purchased with overmolding and cable assembly.

BREAK-AWAY CONNECTOR ASSEMBLED



Size (1)

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

[1] In the case of this style, the connector housing as well as the insulator are made of the housing material PSU.

IN-LINE RECEPTACLE

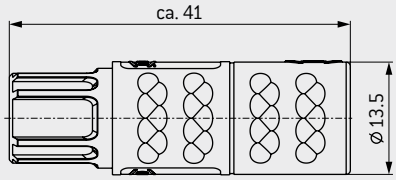
Suitable for creating a cable-cable connection

K 1 0

STYLE: 1

IP50

With standard back nut

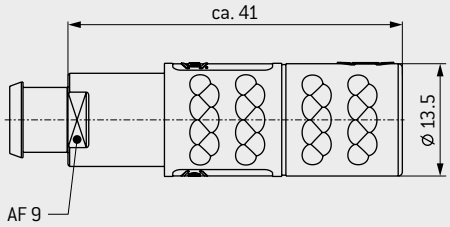


K 2 S

STYLE: 2

IP50

With back nut[1] for cable bend relief[2]



TECHNICAL DATA

- Contact configuration from page 40
- Explanation of the degrees of protection (see page 102)
- K1 with color coding

Size (1)

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

[1] Back nuts for cable bend reliefs have to be ordered in the same color as the connector housing. The color coding is based on the cable bend relief.
[2] Cable bend reliefs have to be ordered separately (see page 52).

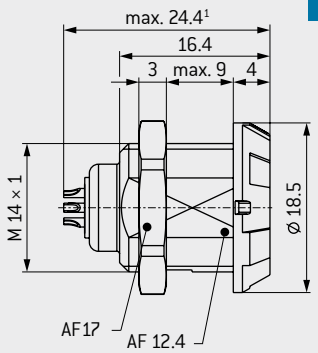
RECEPTACLE

G 1

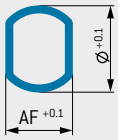
STYLE: 1

IP50

For front panel installation



PANEL CUT-OUT



AF : 12.5 mm
Ø : 14 mm

TECHNICAL DATA

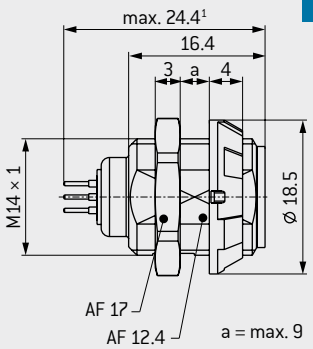
- Contact inserts and PCB layouts (see page 40)
- Explanation of the degrees of protection (see page 102)
- IP50 in reference to the tightness of the end device
- Anti-rotation feature
- With color coding

G 5

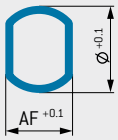
STYLE: 5

IP50

Receptacle with continuous thread, can be installed from front or rear; extension in front of panel is adjustable



PANEL CUT-OUT



AF : 12.5 mm
Ø : 14 mm

TECHNICAL DATA

- Contact inserts and PCB layouts (see page 40)
- Explanation of the degrees of protection (see page 102)
- IP50 in reference to the tightness of the end device
- Anti-rotation feature
- With color coding
- Right-angled PCB contact possible (see page 44)

Size (1)

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

[1] Depending on the insert

RECEPTACLE

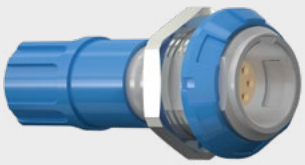
G 6

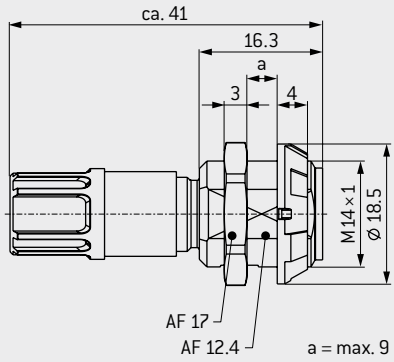
STYLE: 6

ON REQUEST

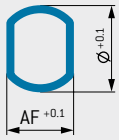
IP50

With strain relief, suitable for front and rear installation





PANEL CUT-OUT



AF : 12.5 mm
Ø : 14 mm

TECHNICAL DATA

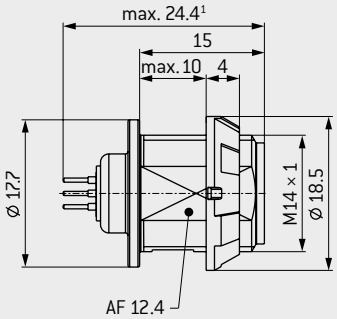
- Contact inserts and PCB layouts (see page 40)
- Explanation of the degrees of protection (see page 102)
- IP50 in reference to the tightness of the end device
- Anti-rotation feature
- With color coding

G 8

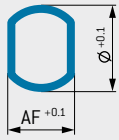
STYLE: 8

IP50

For rear panel installation



PANEL CUT-OUT



AF : 12.5 mm
Ø : 14 mm

TECHNICAL DATA

- Contact inserts and PCB layouts (see page 40)
- Explanation of the degrees of protection (see page 102)
- IP50 in reference to the tightness of the end device
- Anti-rotation feature
- With color coding
- Right-angled PCB contact possible (see page 44)

Size (1)

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

[1] Depending on the insert

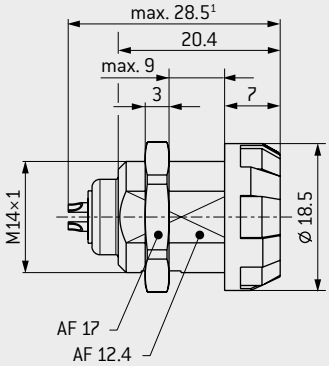
RECEPTACLE

G 9

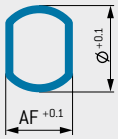
STYLE: 9

For front panel installation

IP50



PANEL CUT-OUT



AF : 12.5 mm
Ø : 14 mm

TECHNICAL DATA

- Contact inserts and PCB layouts (see page 40)
- Explanation of the degrees of protection (see page 102)
- IP50 in reference to the tightness of the end device
- Anti-rotation feature
- Receptacle made of PSU material is available in Gray and Black, other colors on request.

Size (1)

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

[1] Depending on the insert

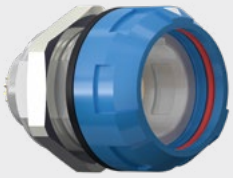
RECEPTACLE

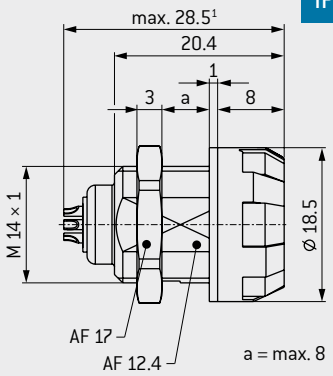
G 4

STYLE: 4

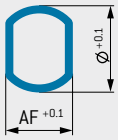
For front panel installation

IP64/67





PANEL CUT-OUT



AF : 12.5 mm
Ø : 14 mm

TECHNICAL DATA

- Contact inserts and PCB layouts (see page 40)
- Explanation of the degrees of protection (see page 102)
- IP50 in reference to the tightness of the end device
- IP64 in combination with connector style 4 in mated condition (page 31)
- IP67 in combination with connector style 5 in mated condition (page 33)
- Anti-rotation feature
- With color coding

Size (1)

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

[1] Depending on the insert

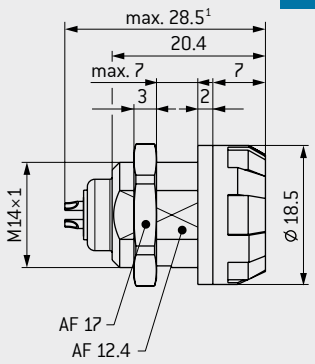
RECEPTACLE

G E

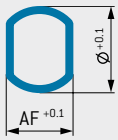
STYLE: E

IP64/67

For front panel installation



PANEL CUT-OUT



AF : 12.5 mm
Ø : 14 mm

TECHNICAL DATA

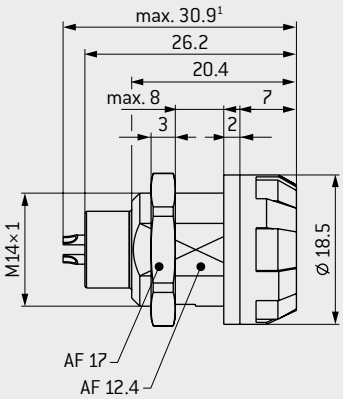
- Contact inserts and PCB layouts (see page 40)
- Explanation of the degrees of protection (see page 102)
- IP50 in reference to the tightness of the end device
- IP64 in combination with connector style 4 in mated condition (page 31)
- IP67 in combination with connector style 5 in mated condition (page 33)
- Anti-rotation feature
- Receptacle made of PSU material is available in Gray and Black, other colors on request

G A

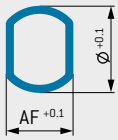
STYLE: A

IP64/67/68²

For front panel installation



PANEL CUT-OUT



AF : 12.5 mm
Ø : 14 mm

TECHNICAL DATA

- Contact inserts and PCB layouts (see page 40)
- Explanation of the degrees of protection (see page 102)
- IP68 in reference to the tightness of the end device
- IP64 in combination with connector style 4 in mated condition (page 31)
- IP67 in combination with connector style 5 in mated condition (page 33)
- Anti-rotation feature.
- Receptacle made of PSU material is available in Gray and Black, other colors on request

Size (1)

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

¹ Depending on the insert ² IP68 in unmated condition

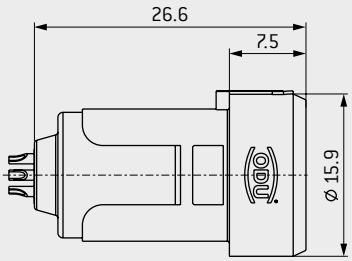
RECEPTACLE

G 2

STYLE: 2

IP50

One-piece receptacle



PANEL CUT-OUT

Ø: 13 mm

TECHNICAL DATA

- Contact configuration from page 40
- Explanation of the degrees of protection (see page 102)
- IP50 in reference to the tightness of the end device (min. panel thickness 4 mm)
- The complete housing with molded insulators made of plastic[1]
- Anti-rotation feature
- Snap-in assembly

Protective cover for receptacle style G2, IP50

Protective cover for termination area on page 51

Size (1)

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

[1] In the case of this style, the connector housing as well as the insulator are made of the housing material PSU.

CODINGS

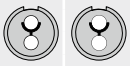
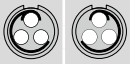
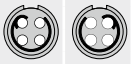
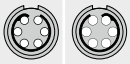
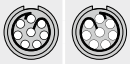
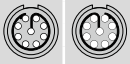
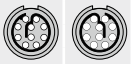
	Angle	Receptacle front view
0	0°	
A	40°	
C	60°	
E	80°	
H	170°	
J	205°	

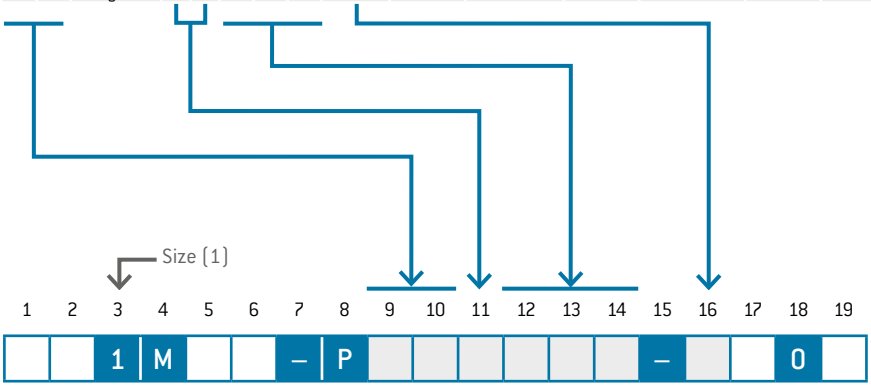
		Housing material[1]
7	Standard	Plastic, Gray (PSU)
8	Standard	Plastic, Black (PSU)
S	Standard	Plastic, Black (PEI), autoclavable[2]
3	On request	Plastic, White (PSU)
G	On request	Plastic, Gray (PEI), autoclavable[2]

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

[1] Styles A5 and G2 only available with housing material PSU [2] More detailed information on the topic of "autoclaving" on page 109

CONTACT INSERTS

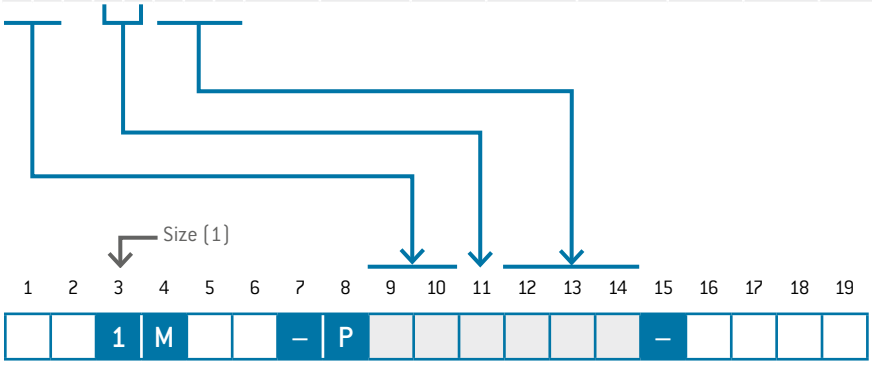
Number of contacts		Contact type: Termination	Socket	Pin	Part number key			Contact style	Contact diameter mm	Single contact nominal current[1] A	Nominal current insert A	Clearance and creepage distance contact to contact mm	Test voltage[2] kV DC	Nominal voltage[5] kV DC	Working voltage[7,8] Veff	Termination diameter mm	Termination cross-section AWG	Termination cross-section mm²	View on termination area: Pin piece	Socket piece
0	2	Solder	L	M	P	N	0	0	1.3	15	15	1	1.6	0.5	38	1.4	18	1		
					P	H	0			12	12	1.3	1.9	0.6	80	1.1	20	0.5		
		Print straight[4]	Q		P	0	0									0.7	–	–		
		Angled[4]						A								0.8	–	–		
0	3	Solder	L	M	P	N	9[6]	0	1.3	15	15	0.9	1.6	0.5	37	1.4	18	1		
					P	H	9[6]			12	12	1.2	1.9	0.6	50	1.1	20	0.5		
		Print straight[4]	Q		P	0	9[6]									0.7	–	–		
		Angled[4]						A								0.8	–	–		
0	4	Solder	L	M	J	H	0	0	0.9	10	10	0.9	1.6	0.5	37	1.1	20	0.5		
					J	G	0			7.5	7.5	1.2	1.9	0.6	50	0.85	22	0.38		
		Crimp[3]	N	P	J	H	0			10	10	0.9	1.6	0.5	37	–	20–24	0.5–0.25		
					J	G	0			7.5	7.5	1.2	1.9	0.6	50	–	22–26	0.38–0.15		
		Print straight[4]	Q		J	0	0									0.7	–	–		
		Angled[4]						A								0.6	–	–		
0	5	Solder	L	M	J	H	0	0	0.9	10	7.5	0.5	1.35	0.4	25	1.1	20	0.5		
					J	G	0			7.5	5.6	0.8	1.6	0.5	35	0.85	22	0.38		
		Crimp[3]	N	P	J	H	0			10	7.5	0.5	1.35	0.4	25	–	20–24	0.5–0.25		
					J	G	0			7.5	5.6	0.8	1.6	0.5	35	–	22–26	0.38–0.15		
		Print straight[4]	Q		J	0	0									0.7	–	–		
		Angled[4]						A								0.6	–	–		
0	6	Solder	L	M	F	G	0	0	0.7	7.5	5.6	0.65	1.35	0.4	33	0.85	22	0.38		
					F	D	0			6	4.5	0.85	1.6	0.5	36	0.65	26	0.15		
		Crimp[3]	N	P	F	G	0			7.5	5.6	0.65	1.35	0.4	33	–	22–26	0.38–0.15		
		Print straight[4]	Q		F	0	0			6	4.5	0.85	1.6	0.5	36	0.5	–	–		
		Angled[4]						A								0.6	–	–		
0	7	Solder	L	M	F	G	0	0	0.7	7.5	4.9	0.65	1.35	0.4	33	0.85	22	0.38		
					F	D	0			6	3.9	0.85	1.6	0.5	36	0.65	26	0.15		
		Crimp[3]	N	P	F	G	0			7.5	4.9	0.65	1.35	0.4	33	–	22–26	0.38–0.15		
		Print straight[4]	Q		F	0	0			6	3.9	0.85	1.6	0.5	36	0.5	–	–		
		Angled[4]						A								0.6	–	–		
0	8	Solder	L	M	F	G	0	0	0.7	7.5	4.9	0.4	1.2	0.4	10	0.85	22	0.38		
					F	D	0			6	3.9	0.6	1.6	0.5	32	0.65	26	0.15		
		Crimp[3]	N	P	F	G	0			7.5	4.9	0.4	1.2	0.4	10	–	22–26	0.38–0.15		
		Print straight[4]	Q		F	0	0			6	3.9	0.6	1.6	0.5	32	0.5	–	–		
		Angled[4]						A								0.6	–	–		
0	9	Solder	L	M	C	D	0	0	0.5	6	3.9	0.45	1.2	0.4	16	0.65	26	0.15		
					C	C	0			4	2.6	0.65	1.35		33	0.45	28	0.08		
		Print straight[4]	Q		C	0	0									0.5	–	–		
		Angled[4]						A								0.5	–	–		
1	0	Solder	L	M	C	D	0	0	0.5	6	3.3	0.3	0.75	0.25	7.5	0.65	26	0.15		
					C	C	0			4	2.2	0.5	1.35	0.4	25	0.45	28	0.08		
		Print straight[4]	Q		C	0	0									0.5	–	–		
		Angled[4]						A								0.5	–	–		
1	2	Solder	L	M	C	D	9[6]	0	0.5	6	3.3	0.4	1.2	0.4	10	0.65	26	0.15		
					C	C	9[6]			4	2.2	0.5			25	0.45	28	0.08		
		Print straight[4]	Q		C	0	9[6]									0.5	–	–		
		Angled[4]						A								0.5	–	–		
1	4	Solder	L	M	C	D	0	0	0.5	6	3	0.3	0.75	0.25	7.5	0.65	26	0.15		
					C	C	0			4	2	0.5	1.2	0.4	25	0.45	28	0.08		
		Print straight[4]	Q		C	0	0									0.5	–	–		
		Angled[4]						A								0.5	–	–		



[1] Derating factor, see page 107
[2] SAE AS 13441:2004 method 3001.1
[3] Tools for crimping and adjustment dimensions for crimping tool, see page 96
[4] PCB layouts (see page 43); print termination only available for receptacle styles 5 and 8
[5] Max. operating voltage at NN (sea level) acc. to SAE AS 13441:2004 method 3001.1, further information on page 108
[6] Not compatible to competition
[7] IEC 60664-1:2007 (VDE 0110-1:2008) pollution degree 2
[8] IEC 60664-1:2007 (VDE 0110-1:2008): Overvoltage category III / test voltage: 0.94 kVeff

SPECIAL-CONTACT INSERT

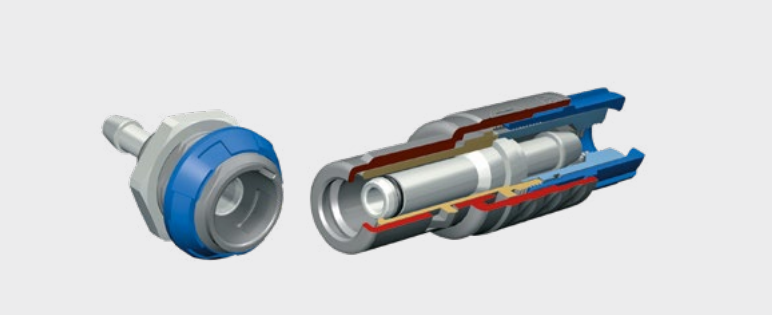
Number of contacts		Contact type: Termination	Contact type: Socket	Contact type: Pin	Part number key			Contact diameter mm	Single contact nominal current A	Nominal current insert A	Clearance and creepage distance contact to contact: mated mm	Clearance and creepage distance contact to contact: unmated mm	Contact-to-contact voltage: Working voltage V AC	Contact-to-contact voltage: Nominal voltage kV DC	Contact-to-contact voltage: Test voltage mated kV	Contact-to-contact voltage: Test voltage unmated kV	Contact diameter mm	Termination cross-section AWG	Termination cross-section mm²	View on termination area: Pin piece	View on termination area: Socket piece
0	3	Solder	L	M	J	N	0	1 × 0.9 (first mate last break) 2 × 0.9	10	9	4.7	2	230[1, 2, 3]	1.5[4]	5[2, 3] 6.75[4]	3[2, 3] 4.5[4]	1.4	18	1		



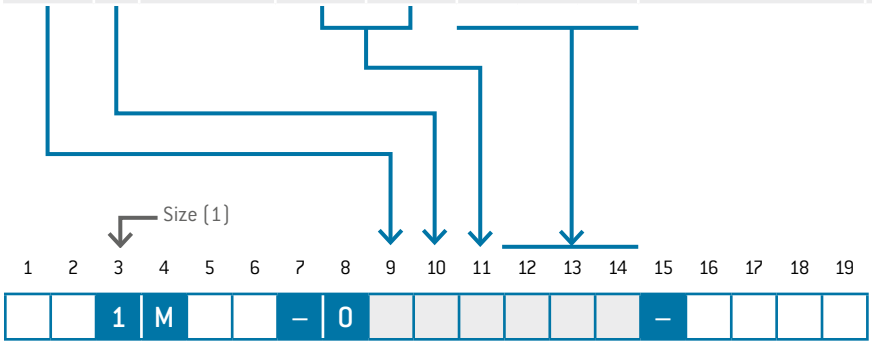
The socket is installed in the plug;
the pin is installed in the receptacle.

[1] In the case of the pin piece, voltage may only be applied in mated condition.
[2] Acc. IEC 60664-1:2007 (VDE 0110-1:2008): pollution degree 3
[3] Acc. IEC 60664-1:2007 (VDE 0110-1:2008): Overvoltage category III
[4] Acc. SAE AS 13441:2004 method 3001.1 (kV DC)

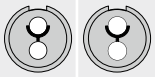
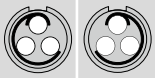
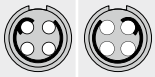
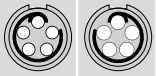
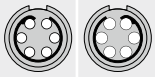
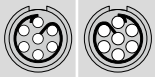
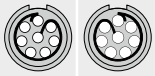
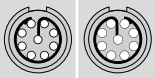
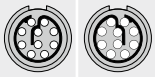
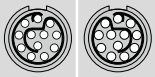
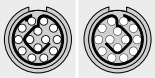
MEDIA FEED THROUGH

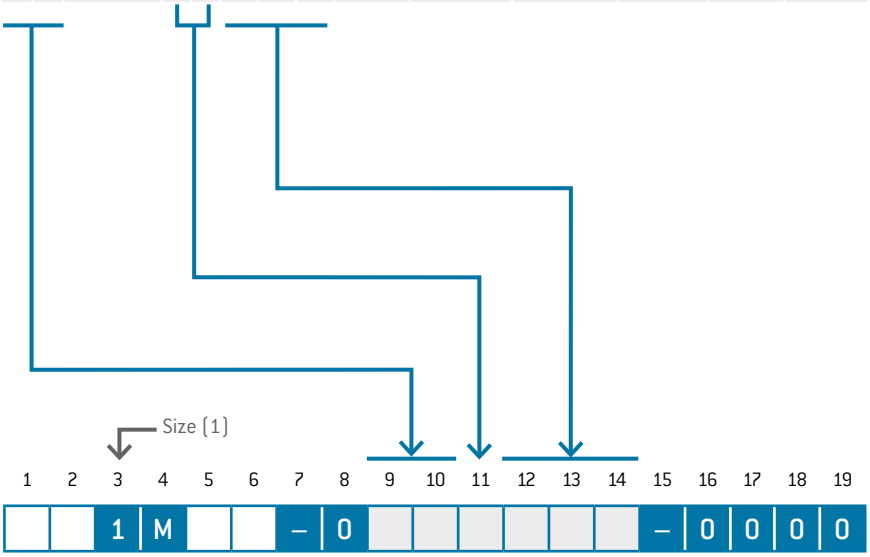


Media feed through	Feed through		Contact type: Socket	Contact type: Pin	Part number key			Contact inner diameter mm	Working pressure max. bar	Termination diameter mm	Tube diameter max. mm
F	1	Not shut off	B	S	1	1	0	2.5	2	4	6
	A	Shut off	B	S	On request			1.9	2	4	6



CONTACT INSERTS STYLES A5 AND G2

Polzahl		Contact type			Part number key			Contact diameter	Single contact nominal current[1]	Nominal current insert	Clearance and creepage distance contact to contact	Test voltage[2]	Nominal voltage[3]	Working voltage[4,5]	Termination diameter	Termination cross-section		View on termination area	
		Termination	Socket	Pin				mm	A	A	mm	kV DC	kV DC	Veff	mm	AWG	mm²	Pin piece	Socket piece
0	2	Solder	A	B	P	H	0	1.3	12	12	1.3	1.9	0.6	80	1.1	20	0.5		
0	3	Solder	A	B	P	H	9	1.3	12	12	1.2	1.9	0.6	50	1.1	20	0.5		
0	4	Solder	A	B	J	G	0	0.9	7.5	7.5	1.2	1.9	0.6	50	0.85	22	0.38		
0	5	Solder	A	B	J	G	0	0.9	7.5	5.6	0.8	1.6	0.5	35	0.85	22	0.38		
0	6	Solder	A	B	F	D	0	0.7	6	4.5	0.85	1.6	0.5	36	0.65	26	0.15		
0	7	Solder	A	B	F	D	0	0.7	6	3.9	0.85	1.6	0.5	36	0.65	26	0.15		
0	8	Solder	A	B	F	D	0	0.7	6	3.9	0.6	1.6	0.5	32	0.65	26	0.15		
0	9	Solder	A	B	C	C	0	0.5	4	2.6	0.65	1.35	0.4	33	0.45	28	0.08		
1	0	Solder	A	B	C	C	0	0.5	4	2.2	0.5	1.35	0.4	25	0.45	28	0.08		
1	2	Solder	A	B	C	C	9	0.5	4	2.2	0.5	1.2	0.4	25	0.45	28	0.08		
1	4	Solder	A	B	C	C	0	0.5	4	2	0.5	1.2	0.4	25	0.45	28	0.08		

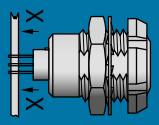
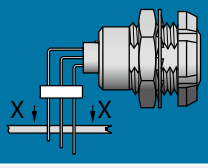
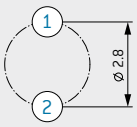
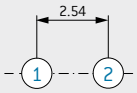
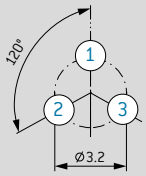
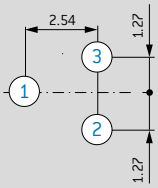
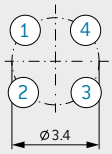
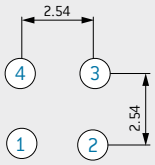
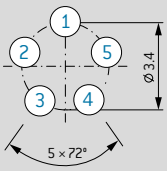
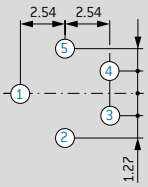
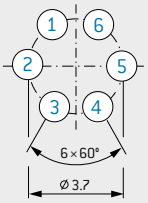
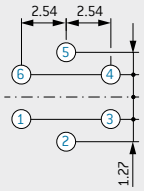
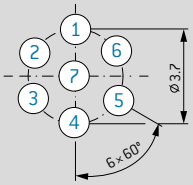
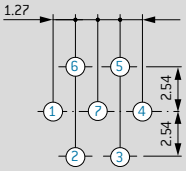


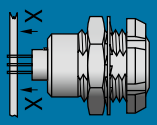
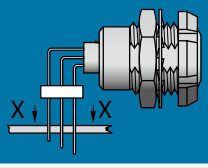
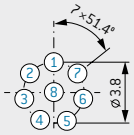
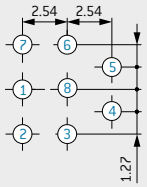
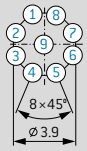
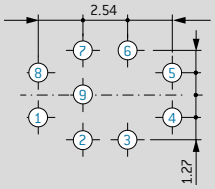
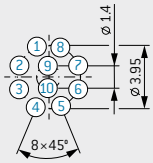
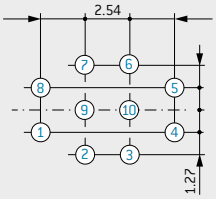
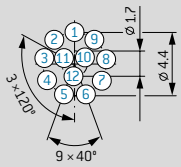
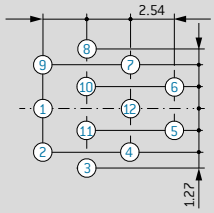
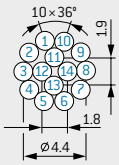
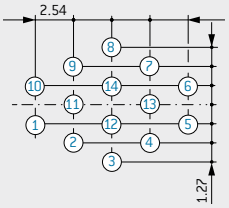
The sockets are installed in the receptacle style 2; the pins are installed in the plug style 5.

[1] Derating factor, see page 107
[2] SAE AS 13441:2004 method 3001.1 (kV DC)
[3] Max. operating voltage at sea level as per SAE AS 13441:2004 method 3001.1 (kV DC), further information on page 108
[4] IEC 60664-1:2007 (VDE 0110-1:2008): pollution degree 2
[5] IEC 60664-1:2007 (VDE 0110-1:2008): overvoltage category III / test voltage: 0.94 kVeff

PCB LAYOUTS

For PCB contacts (Size 1)

	Straight	90° right-angled
		
2 contacts	Contact borehole: Ø 0.8 mm 	Contact borehole: Ø 0.9 mm 
3 contacts	Contact borehole: Ø 0.8 mm 	Contact borehole: Ø 0.9 mm 
4 contacts	Contact borehole: Ø 0.8 mm 	Contact borehole: Ø 0.7 mm 
5 contacts	Contact borehole: Ø 0.8 mm 	Contact borehole: Ø 0.7 mm 
6 contacts	Contact borehole: Ø 0.6 mm 	Contact borehole: Ø 0.7 mm 
7 contacts	Contact borehole: Ø: 0.6 mm 	Contact borehole: Ø 0.7 mm 

	Straight	90° right-angled
		
8 contacts	Contact borehole: Ø 0.6 mm 	Contact borehole: Ø 0.7 mm 
9 contacts	Contact borehole: Ø 0.6 mm 	Contact borehole: Ø 0.7 mm 
10 contacts	Contact borehole: Ø 0.6 mm 	Contact borehole: Ø 0.7 mm 
12 contacts	Contact borehole: Ø 0.6 mm 	Contact borehole: Ø: 0.7 mm 
14 contacts	Contact borehole: Ø 0.6 mm 	Contact borehole: Ø 0.7 mm 

All specifications are only valid for socket inserts, pin inserts on request. Further PCB layouts upon request

RIGHT-ANGLED PCB CONTACTS IN THE RECEPTACLE

A

RIGHT-ANGLED PCB CONTACT

IP50

For style G5, G8

Contact diameter mm	Termination diameter mm
0.5	0.5
0.7	0.6
0.9	0.6
1.3	0.8

Technical Data

- PCB layouts, see page 43

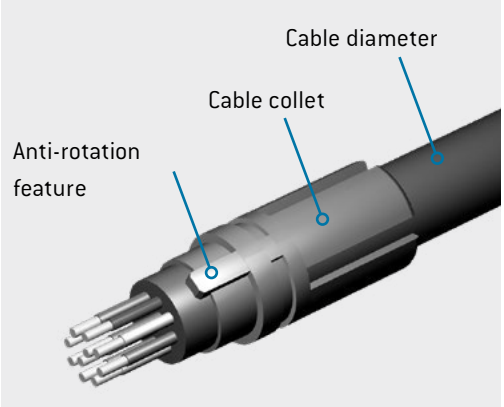
Size (1)

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

FOR YOUR NOTES

CABLE COLLET SYSTEM

For plugs, in-line receptacles as well as receptacles of style 6



		Cable diameter mm	Material	Part number
3	9	> 2.7–3.9	PSU	KM1.020.121.934.007
5	2	> 4.0 – 5.2		KM1.020.122.934.007
6	5	> 5.3–6.5		KM1.020.123.934.007
3	9	> 2.7–3.9	PEI	KM1.020.121.933.008
5	2	> 4.0 – 5.2		KM1.020.122.933.008
6	5	> 5.3–6.5		KM1.020.123.933.008

APPLICATION: for all plugs and in-line receptacles and for receptacle style 6

USE: cable collet for strain relief

Size (1)

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

COLOR CODINGS

Color coding possibility of the back nut (for plugs, right-angled plugs, in-line receptacles) and the front nut (for receptacles).

Back nuts for cable bend relief have to be ordered in the same color as the connector housing. **The color coding is based on the cable bend relief.**

Back nut

Front nut

	Color	Similar RAL systems		Material
		Design	Classic	
2	Red	030 40 40	3002	Plastic (PSU)
3	White	000 90 00	9003	
4	Yellow	095 80 70	1016	
5	Green	170 60 50	6032	
6	Blue	250 40 40	5019	
7	Gray	000 55 00	7045	Plastic (PSU/PEI)
8	Black	000 25 00	9004	

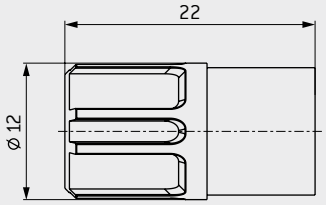
Size (1)

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

DEFINITION OF THE BACK NUTS

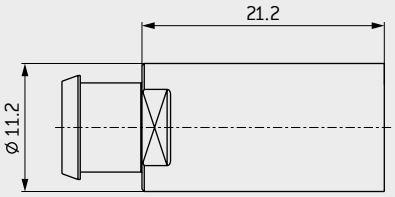
Applicable to all straight plugs, right-angled plugs, in-line receptacles as well as receptacles of style 6

STANDARD BACK NUT



Part number	Material	Color	Similar RAL systems	
			Design	Classic
KM1.020.111.934.002	PSU	Red	030 40 40	3002
KM1.020.111.934.003		White	000 90 00	9003
KM1.020.111.934.004		Yellow	095 80 70	1016
KM1.020.111.934.005		Green	170 60 50	6032
KM1.020.111.934.006		Blue	250 40 40	5019
KM1.020.111.934.007		Gray	000 55 00	7045
KM1.020.111.934.008		Black	000 25 00	9004
KM1.020.111.933.008	PEI	Black	000 25 00	9004

STANDARD BACK NUT FOR CABLE BEND RELIEF[1]



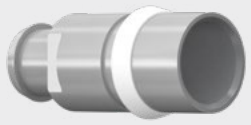
Part number	Material	Color	Similar RAL systems	
			Design	Classic
KM1.020.113.934.007	PSU[2]	Gray	000 55 00	7045
KM1.020.113.934.008		Black	000 25 00	9004
KM1.020.113.933.008	PEI	Black	000 25 00	9004

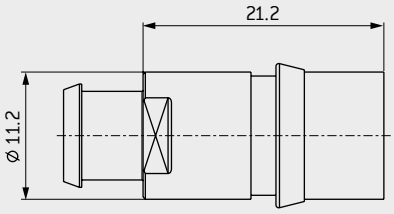
[1] Silicone cable bend reliefs have to be ordered separately (see page 52). [2] Additional colors on request

DEFINITION OF THE BACK NUTS

Applicable to all straight plugs, right-angled plugs, in-line receptacles as well as receptacles of style 6

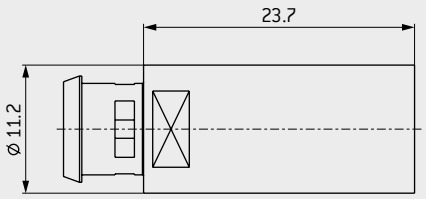
STANDARD BACK NUT FOR CABLE BEND RELIEF FOR PLUG IP64[1]





Part number	Material	Color	Similar RAL systems	
			Design	Classic
KM1.026.113.934.107	PSU[2]	Gray	000 55 00	7045
KM1.026.113.934.108		Black	000 25 00	9004
KM1.026.113.933.108	PEI	Black	000 25 00	9004

STANDARD BACK NUT FOR OVERMOLDING ON REQUEST



Part number	Material	Color	Similar RAL systems	
			Design	Classic
KM1.020.114.934.007	PSU[2]	Gray	000 55 00	7045
KM1.020.114.934.008		Black	000 25 00	9004
KM1.020.114.933.008	PEI	Black	000 25 00	9004

[1] Silicone cable bend reliefs have to be ordered separately (see page 52). [2] Additional colors on request

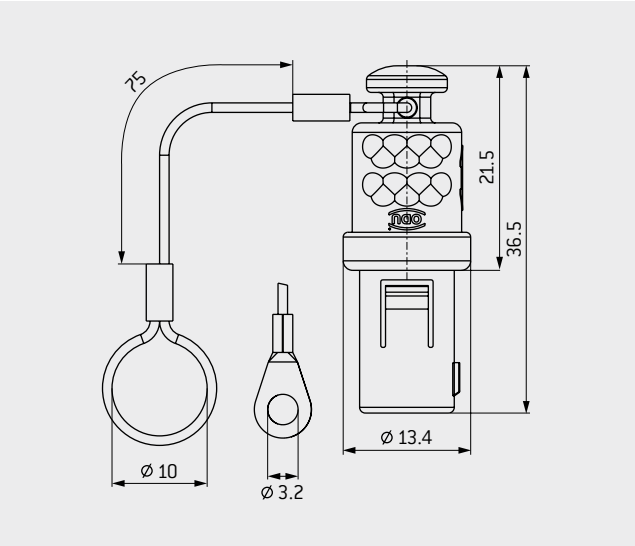
PROTECTIVE COVER

Applicable to receptacles and in-line receptacles with plastic housing

Part number	Material	Color	
		Cover	Polyamide lanyard
KM1.097.0_6.934._02	PSU	Red	White
KM1.097.0_6.934._03	PSU	White	White
KM1.097.0_6.934._04	PSU	Yellow	White
KM1.097.0_6.934._05	PSU	Green	White
KM1.097.0_6.934._06	PSU	Blue	White
KM1.097.0_6.934._07	PSU	Gray	White
KM1.097.0_6.934._08	PSU	Black	Black
KM1.097.0_6.933._08	PEI	Black	Black

	Coding
0	0°
A	40°
C	60°
E	80°
H	170°
J	205°

Lanyard material	
0	Polyamide lanyard with loop
1	Stainless steel lanyard with loop
2	Polyamide lanyard with solder lug
3	Stainless steel lanyard with solder lug

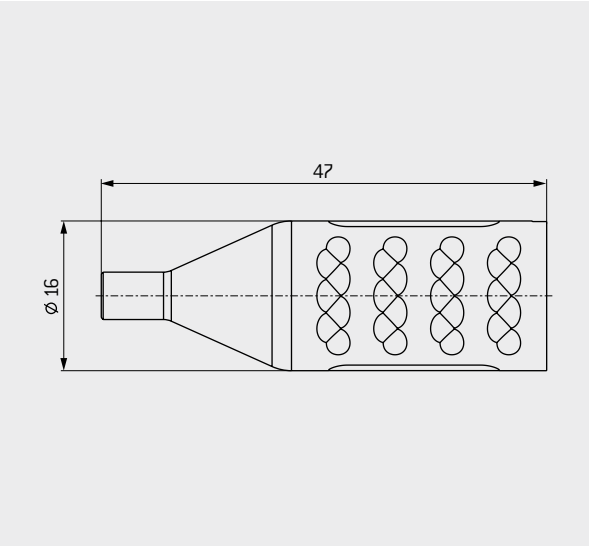


PROTECTIVE COVER

Applicable to the styles G2 and A5

Part number	Material	Color
KM1.013. _.934.007	PSU	Gray[1]

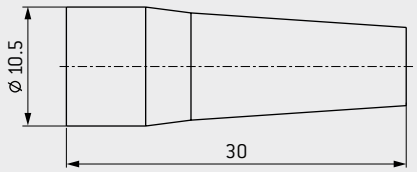
	∅ for cable exit
500	2.5
501	2.7
502	2.8
504	1.7



[1] Additional colors on request

SILICONE CABLE BEND RELIEF

SILICONE CABLE BEND RELIEF



TEMPERATURE RANGE

Silicone: –50 °C up to +200 °C, short-term up to +230 °C
Autoclaveable

Part number	Cable jacket (Ø outside)	
	min.	max.
701.023.___.965.025	2.5	3
701.023.___.965.030	3	3.5
701.023.___.965.035	3.5	4
701.023.___.965.040	4	5
701.023.___.965.050	5	6
701.023.___.965.060	6	6.5

COLORS

Color code	Color	RAL-Nr.[1] (similar) Classic
202	Red	3020
203	White	9010
204	Yellow	1016
205	Green	6029
206	Blue	5002
207	Gray	7005
208	Black	9005

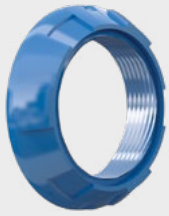
The silicone cable bend reliefs must always be ordered separately.

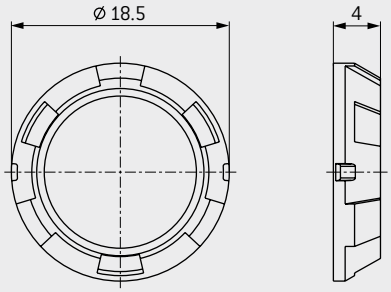
[1] Because of differing basic materials, the colors may differ slightly from RAL numbers.

NUTS

FRONT NUT

For receptacle style 5, 6 and 8

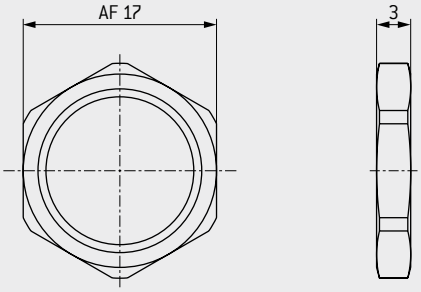




Part number	Material	Color	Similar RAL system Design
KM1.311.002.934.002	PSU	Red	030 40 40
KM1.311.002.934.003		White	000 90 00
KM1.311.002.934.004		Yellow	095 80 70
KM1.311.002.934.005		Green	170 60 50
KM1.311.002.934.006		Blue	250 40 40
KM1.311.002.934.007		Gray	000 55 00
KM1.311.002.934.008		Black	000 25 00
KM1.311.002.933.008	PEI	Black	000 25 00

HEX NUT

For receptacle style 1, 4, 5, 6, 9, E and A



Part number	Material
021.310.115.304.000	Nickel-plated brass

ODU MEDI-SNAP®

Table of Contents

ODU MEDI-SNAP® WITH PLASTIC HOUSING SIZE 2

Summary 56

Styles 58

Codings 62

Contact inserts and PCB layouts 63

Cable collet system 68

Accessories 69

SUMMARY ODU MEDI-SNAP® PLASTIC HOUSING SIZE 2

The ODU MEDI-SNAP® with plastic housing in size 2 is coded by pin and groove. These circular connectors can have a variety of configurations: numerous styles of connectors and receptacles as well as various termination types, contact inserts and color codings.

- Coding over pin and groove
- 7 color codings
- 3 mechanical codings
- 3–26 contacts
- 2 termination types
- Contacts for solder and PCB termination
- A selection of numerous connectors and receptacles
- IP50 and IP64 available in mated condition
- Up to 5,000 mating cycles

STRAIGHT PLUG – PUSH-PULL

2,000 mating cycles

P. 58

IP50

S 1

IP50/64

S 4

BREAK-AWAY CONNECTOR

2,000 mating cycles

P. 59

IP64

A 5

For assembly instructions, please refer to our website: www.odu-connectors.com/downloads/assembly-instructions

RECEPTACLE		IEC 60601-1		5,000 mating cycles	P. 60
IP50		2 MOOP[1]	1 MOPP[1]	G	1
IP64		2 MOOP[1]	2 MOPP[1]	G	4
IP50		2 MOOP[1]	1 MOPP[1]	G	5

MEANS OF OPERATOR PROTECTION (MOOP) / MEANS OF PATIENT PROTECTION (MOPP)

Working voltage: 250 V AC, pollution degree 2

MOOP / MOPP	Clearance distance to the test finger mm	Creepage distances to the test finger mm	Test voltage V AC
1 MOOP	≥ 2	≥ 2.5	1,500
2 MOOP	≥ 4	≥ 5	3,000
1 MOPP	≥ 2.5	≥ 4	1,500
2 MOPP	≥ 5	≥ 8	4,000

The information refers to all plugs in mated condition on page 56.

[1] Acc. IEC 60601-1:2012 (VDE 0750-1:2013)

STRAIGHT PLUG

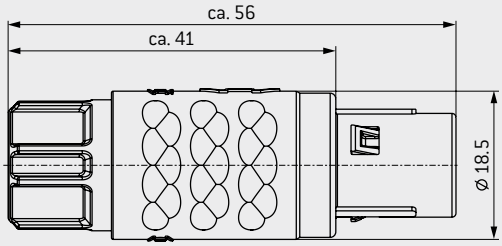
Push-Pull styles

S 1 0

STYLE: 1

IP50

With standard back nut



TECHNICAL DATA

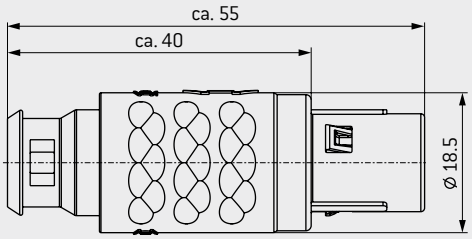
- Contact configuration from page 63
- Explanation of the degrees of protection (see page 102)
- Only available in Gray
- With color coding

S 4 S

STYLE: 4

IP50/64

With back nut[1] for cable bend relief[2]



TECHNICAL DATA

- Contact configuration from page 63
- Explanation of the degrees of protection (see page 102)
- IP50 in combination with receptacle style 1 and 5 (in mated condition)
- IP64 in combination with receptacle style 4 (in mated condition)
- Only available in Gray
- Alternative style S2 with IP50

Size (2)

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

[1] Back nuts for cable bend reliefs have to be ordered in the same color as the connector housing. The color coding is based on the cable bend relief.
[2] Cable bend reliefs have to be ordered separately (see page 72).

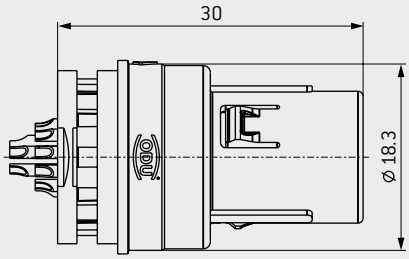
BREAK-AWAY CONNECTOR

Break-Away styles

A 5 0

STYLE: 5 **IP64**

Connector suitable for overmolding



TECHNICAL DATA

- Contact configuration from page 63
- Explanation of the degrees of protection (see page 102)
- The complete housing with molded insulators made of plastic[1]
- Break-Away connectors available in PSU
- IP64 with overmolding in combination receptacle style 4
- Available with solder contacts
- Available with 5, 16 or 26 contacts configuration, other configurations upon request
- Coding available in C = 60°, other codings on request

All ODU MEDI-SNAP® Break-Away connectors can be purchased with overmolding and cable assembly.

Size (2)

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

[1] In the case of this style, the connector housing as well as the insulator are made of the housing material PSU.

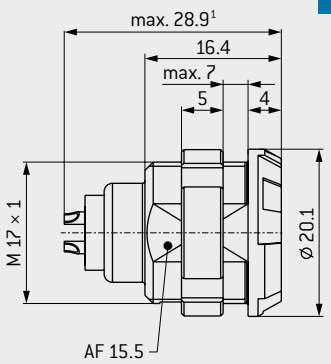
RECEPTACLE

G 1

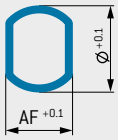
STYLE: 1

IP50

For front panel installation



PANEL CUT-OUT



AF : 15.6 mm
ø : 17.1 mm

TECHNICAL DATA

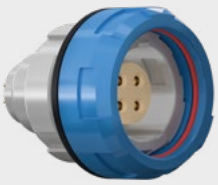
- Contact inserts and PCB layouts (see page 63)
- Explanation of the degrees of protection (see page 102)
- IP50 in reference to the tightness of the end device
- Anti-rotation feature
- Front flange in color of housing
- Color coding on request

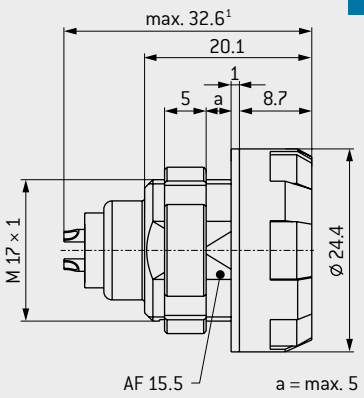
G 4

STYLE: 4

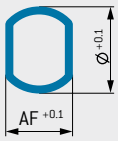
IP64

For front panel installation





PANEL CUT-OUT



AF : 15.6 mm
ø : 17.1 mm

TECHNICAL DATA

- Contact inserts and PCB layouts (see page 63)
- Explanation of the degrees of protection (see page 102)
- IP50 in reference to the tightness of the end device
- IP64 in combination with plug style 4 as well as Break-Away connector style 5 in mated condition
- With color coding

Size (2)

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

[1] Depending on the insert

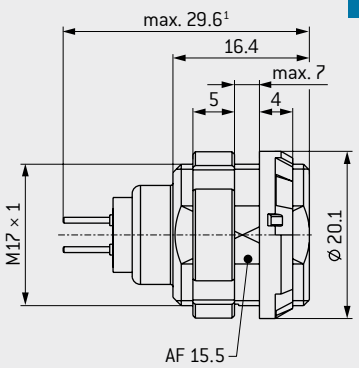
RECEPTACLE

G 5

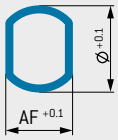
STYLE: 5

For front or rear panel installation

IP50



PANEL CUT-OUT



AF : 15.6 mm
Ø : 17.1 mm

TECHNICAL DATA

- Contact inserts and PCB layouts (see page 63)
- Explanation of the degrees of protection (see page 102)
- IP50 in reference to the tightness of the end device
- Anti-rotation feature
- With color coding
- Right-angled PCB contact possible (see page 66)

Size (2)

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

[1] Depending on the insert

CODINGS

	Angle	Receptacle front view
C	60°	
E	80°	
F	90°	

Further codings on request

HOUSING MATERIAL

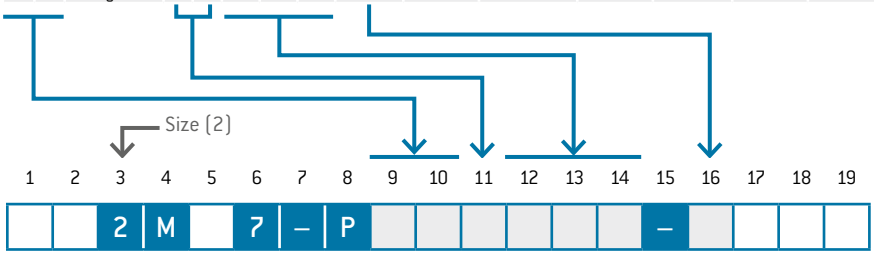
	Housing material
Standard	Plastic, Gray (PSU)

Further housing materials on request

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

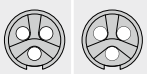
CONTACT INSERTS

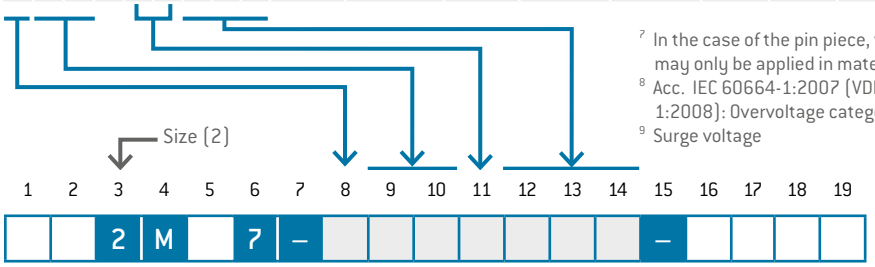
Number of contacts		Contact type: Termination	Socket	Pin	Part number key			Contact style	Contact diameter mm	Single contact nominal current[1] A	Nominal current insert A	Clearance and creepage distance contact to contact mm	Test voltage[2] kV DC	Nominal voltage[3] kV DC	Working voltage[4,5] Veff	Termination diameter mm	Termination cross-section AWG	Termination cross-section mm²	View on termination area: Pin piece	Socket piece
0	4	Solder	L	M	P	N	0	0	1.3	15	15	1.6	3	0.9	160	1.4	18	1		
					P	H	0			12	12	2			200	1.1	20	0.5		
		Print straight[6]	Q		P	0	0									0.7	–	–		
		Angled[6]						A								0.8	–	–		
1	2	Solder	L	M	F	G	0	0	0.7	7.5	3.75	0.8	1.6	0.5	37	0.85	22	0.38		
					F	D	0			6	3	1			50	0.65	26	0.15		
		Print straight[6]	Q		F	0	0									0.7	–	–		
		Angled[6]						A								0.6	–	–		
1	6	Solder	L	M	F	G	0	0	0.7	7.5	3.75	0.5	1.6	0.5	25	0.85	22	0.38		
					F	D	0			6	3	0.7			34	0.65	26	0.15		
		Print straight[6]	Q		F	0	0									0.7	–	–		
		Angled[6]						A								0.6	–	–		
1	9	Solder	L	M	F	G	0	0	0.7	7.5	3.4	0.5	1.35	0.4	25	0.85	22	0.38		
					F	D	0			6	2.7	0.7			34	0.65	26	0.15		
		Print straight[6]	Q		F	0	0									0.7	–	–		
		Angled[6]						A								0.6	–	–		
2	6	Solder	L	M	C	C	0	0	0.5	4	1.6	0.5	1.35	0.4	25	0.45	28	0.08		
		Print straight[6]	Q		C	0	0									0.5	–	–		
		Angled[6]						A								0.5	–	–		



[1] Derating factor, see page 107
[2] SAE AS 13441:2004 method 3001.1 (kV DC)
[3] Max. operating voltage at sea level as per SAE AS 13441:2004 method 3001.1 (kV DC), further information on page 108
[4] IEC 60664-1:2007 (VDE 0110-1:2008): pollution degree 2
[5] IEC 60664-1:2007 (VDE 0110-1:2008): overvoltage category III / test voltage: 0.94 kVeff
[6] PCB layouts, see page 65; Terminationdiameter print straight/print angled (receptacle style 5)

SPECIAL-CONTACT INSERT

Insulator material[13]	Number of contacts		Contact type: Termination	Socket	Pin	Part number key			Contact diameter mm	Single contact nominal current A	Nominal current insert A	Clearance and creepage distance contact to contact: mated mm	unmated mm	Contact-to-contact voltage: Nominal voltage V AC[7,8]	Nominal voltage V DC[7,8]	Test voltage mated kV[9]	Test voltage unmated kV[9]	Termination diameter mm	Termination cross-section AWG	Termination cross-section mm²	View on termination area: Pin piece	Socket piece
P	0	3[10]	Solder	L	M	T	S	0	1 × 2 (first mate last break) 2 × 2	22	22	4.7	2	230[12]	320[12]	5[8]	3[8]	2.4	12	2.5		
T	0	5	Solder	L	M	P	Q	9	1 × 1.3 (first mate last break) 2 × 1.3 (lagging)	16	12	9.9	3.2	600[11,12]	840[11,12]	7.4[8,11,12]	5[8,11,12]	1.9	14	1.5		
						P	Q	L	2 × 1.3			13.6	3.2	1,000[11,12]	1,400[11,12]	9.9[8,11,12]	5[8,11,12]					



[7] In the case of the pin piece, voltage may only be applied in mated condition.
[8] Acc. IEC 60664-1:2007 (VDE 0110-1:2008): Overvoltage category III.
[9] Surge voltage
[10] The socket is installed in the plug; the pin is installed in the receptacle.
[11] Voltage may only be applied to fully assembled and potted connectors in mated condition.
[12] Acc. IEC 60664-1:2007 (VDE 0110-1:2008): pollution degree 3.
[13] P: PEEK / T: PBT

CONTACT INSERTS STYLE A5

Number of contacts		Contact type: Termination	Contact type: Pin	Part number key			Contact diameter mm	Single contact nominal current[1] A	Nominal current insert A	Clearance and creepage distance contact to contact mm	Test voltage[2] kV DC	Nominal voltage[3] kV DC	Working voltage[5,6] Veff	Termination diameter mm	Termination cross-section AWG	Termination cross-section mm²	View on termination area Pin piece
0	5[4]	Solder	M	M	M	9	1 × 1.3 (first mate last break) 2 × 1.3	16	12	1.8	1.5	0.5	180	1.85	14	1.5	
							2 × 0.9	10	7.5					1.10	20	0.5	
1	6	Solder	M	F	G	0	0.7	7.5	3.8	0.5	1.35	0.4	25	0.85	22	0.38	
2	6	Solder	M	C	D	0	0.5	6	2.4	0.4	0.825	0.275	10	0.65	26	0.15	

CAUTION: Style A5 (5-pos.) mateable with the following receptacles

G12MC7-P05LMM9-0001
G42MC7-P05LMM9-0071
G52MC7-P05LMM9-0002

Other variants upon request

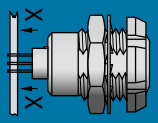
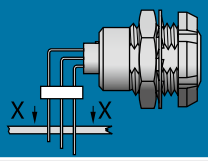
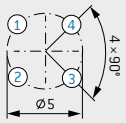
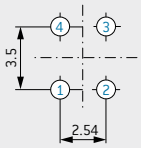
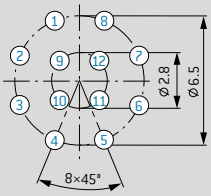
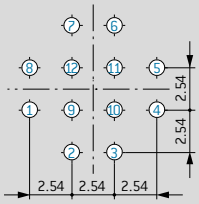
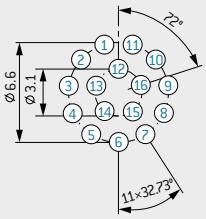
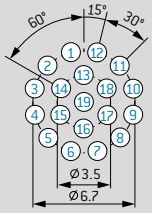
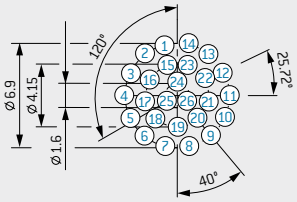
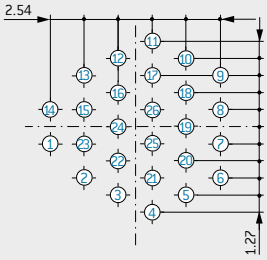
Size (2)

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

[1] Derating factor, see page 107
[2] SAE AS 13441:2004 method 3001.1 (kV DC)
[3] Max. operating voltage at sea level as per SAE AS 13441:2004 method 3001.1 (kV DC), further information on page 108
[4] Contact in leading position by 1.5 mm
[5] IEC 60664-1:2007 (VDE 0110-1:2008): pollution degree 2
[6] IEC 60664-1:2007 (VDE 0110-1:2008): Overvoltage category III / test voltage: 0.94 kVeff

PCB LAYOUTS

For PCB contacts (Size 2)

	Straight	90° right-angled
		
4 contacts	Contact borehole: Ø 0.8 mm 	Contact borehole: Ø 0.9 mm 
12 contacts	Contact borehole: Ø 0.8 mm 	Contact borehole: Ø 0.7 mm 
16 contacts	Contact borehole: Ø 0.8 mm 	
19 contacts	Contact borehole: Ø 0.8 mm 	
26 contacts	Contact borehole: Ø 0.6 mm 	Contact borehole: Ø 0.6 mm 

All specifications are only valid for socket inserts, pin inserts on request.
Further PCB layouts upon request

RIGHT-ANGLED PCB CONTACTS IN THE RECEPTACLE

A

RIGHT-ANGLED PCB CONTACT

IP50

For style G5

Contact diameter mm	Termination diameter mm
0.5	0.5
0.7	0.6
1.3	0.8

TECHNICAL DATA

- PCB layouts, see page 65

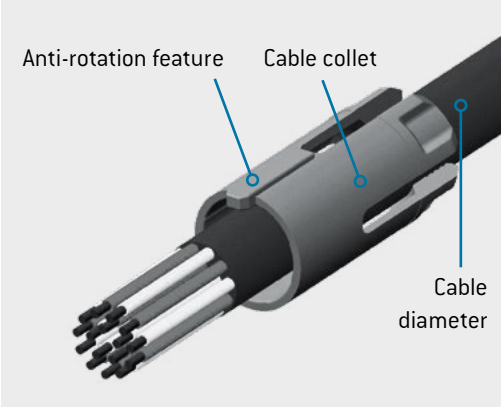
Size (2)

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

FOR YOUR NOTES

CABLE COLLET SYSTEM

For plug parts



		Cable diameter mm	Material	Part number
5	4	> 3.2 – 5.4	PSU	KM2.020.121.934.007
7	4	> 5.4 – 7.4		KM2.020.122.934.007
9	2	> 7.4 – 9.2		KM2.020.123.934.007

APPLICATION: for all plug parts

USE: cable collet for strain relief

Size (2)

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

COLOR CODINGS

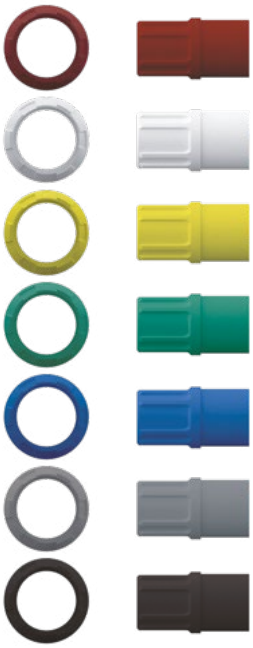
Color coding of the front nut only for receptacles G4 and G5
Color coding of the back nut only for straight plug S1

The color coding for plug style 4 is based on the cable bend relief.

Back nut

Front nut

	Color	Similar RAL systems		Material
		Design	Classic	
2	Red	030 40 40	3002	Plastic (PSU)
3	White	000 90 00	9003	
4	Yellow	095 80 70	1016	
5	Green	170 60 50	6032	
6	Blue	250 40 40	5019	
7	Gray	000 55 00	7045	
8	Black	000 25 00	9004	

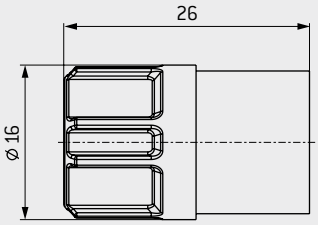


1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		2	M		7	–	P							–				

DEFINITION OF THE BACK NUTS

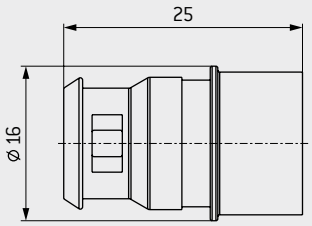
Applicable to all straight plug parts

STANDARD BACK NUT



Part number	Material	Color	Similar RAL systems	
			Design	Classic
KM2.020.111.934.002	PSU	Red	030 40 40	3002
KM2.020.111.934.003		White	000 90 00	9003
KM2.020.111.934.004		Yellow	095 80 70	1016
KM2.020.111.934.005		Green	170 60 50	6032
KM2.020.111.934.006		Blue	250 40 40	5019
KM2.020.111.934.007		Gray	000 55 00	7045
KM2.020.111.934.008		Black	000 25 00	9004

STANDARD BACK NUT FOR CABLE BEND RELIEF[1] FOR PLUGS IP50/IP64



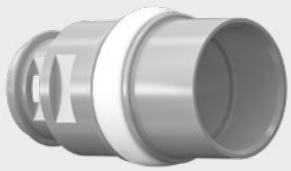
Part number	Material	Color	Similar RAL systems	
			Design	Classic
KM2.026.112.934.007	PSU	Gray	000 55 00	7045

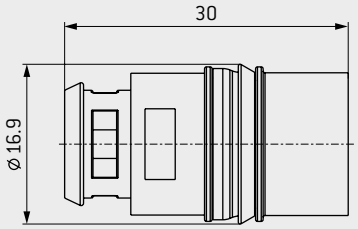
[1] Cable bend reliefs have to be ordered separately (see page 72).

DEFINITION OF THE BACK NUTS

Applicable to all straight plug parts

STANDARD BACK NUT FOR OVERMOLDING | ON REQUEST



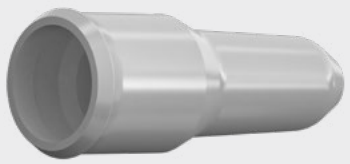


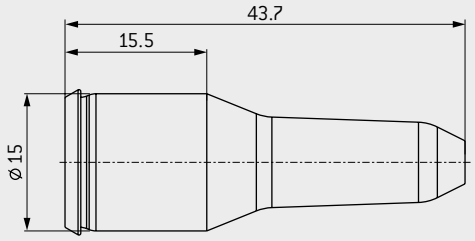
Part number	Material	Color	Similar RAL systems	
			Design	Classic
KM2.026.113.934.007[1]	PSU	Gray	000 55 00	7045
KM2.026.113.934.107[2]	PSU	Gray	000 55 00	7045

[1] IP50 with connector style 2 [2] IP64 with connector style 4

SILICONE CABLE BEND RELIEF

SILICONE CABLE BEND RELIEF





TEMPERATURE RANGE

Silicone: –50 °C up to +200 °C, short-term up to +230 °C
Autoclaveable

Part number	Cable jacket (Ø outside)	
	min.	max.
KM2.023.___.965.032	3.2	4.7
KM2.023.___.965.047	4.7	6.2
KM2.023.___.965.062	6.2	7.7
KM2.023.___.965.077	7.7	9.2

COLORS

Color code	Color	RAL no.[1] (similar) Classic
207	Gray	7000
208	Black	9005

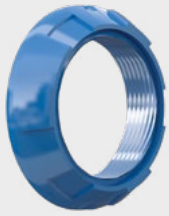
The silicone cable bend reliefs must always be ordered separately.

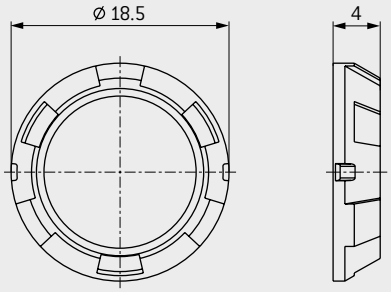
[1] Because of differing basic materials, the colors may differ slightly from RAL numbers.

NUTS

FRONT NUT

For receptacle style 5

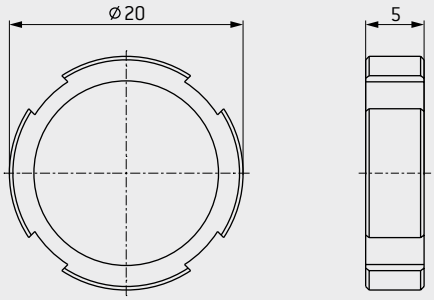




Part number	Material	Color	Similar RAL system Design
KM2.311.002.934.002	PSU	Red	030 40 40
KM2.311.002.934.003		White	000 90 00
KM2.311.002.934.004		Yellow	095 80 70
KM2.311.002.934.005		Green	170 60 50
KM2.311.002.934.006		Blue	250 40 40
KM2.311.002.934.007		Gray	000 55 00
KM2.311.002.934.008		Black	000 25 00

MOUNTING NUT

For receptacle style 1, 4 and 5



Part number	Material	Color	Similar RAL systems	
			Design	Classic
KM2.311.001.933.007	PEI	Gray	000 55 00	7045

ODU MEDI-SNAP®

Table of Contents

ODU MEDI-SNAP®
WITH METAL HOUSING

Summary 76

Styles 78

Codings 82

Contact inserts and PCB layouts 83

Cable collet system 88

Accessories 89

SUMMARY ODU MEDI-SNAP® METAL HOUSING

The ODU MEDI-SNAP® with metal housing in size 1 is coded by pin and groove. These circular connectors can have a variety of configurations: numerous styles of connectors, receptacles and in-line receptacles as well as various termination types, contact inserts and color codings.

- Compatible with plastic finish
- Robust housing finish
- Coding over pin and groove
- 7 color codings
- 3 mechanical codings
- 2–14 contacts
- 3 termination types
- Contacts for solder, crimp and PCB termination
- A selection of numerous connectors as well as receptacles and in-line receptacles
- IP50 and IP64 available in mated condition
- Up to 5,000 mating cycles

NOTE
The ODU MEDI-SNAP® Break-Away connector A5 in size 1 is not generally mateable on metal receptacles.

STRAIGHT PLUG – PUSH-PULL (2,000 mating cycles)		P. 78
IP50		S 1
		S 2
IP64		S 4

For assembly instructions, please refer to our website: www.odu-connectors.com/downloads/assembly-instructions

RECEPTACLE– PUSH-PULL

5,000 mating cycles

P. 79

IP50		G 1
		G 5
IP64/IP68[1]		G A
IP50		G K

IN-LINE RECEPTACLE

5,000 mating cycles

P. 81

IP50		K 5
		K 6

[1] IP68 in reference to the tightness of the end device in unmated condition

STRAIGHT PLUG

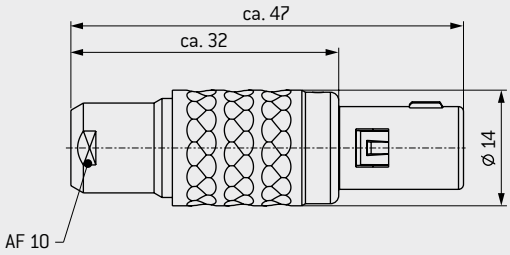
Push-Pull styles

S 1 0

STYLE: 1

IP50

With standard back nut

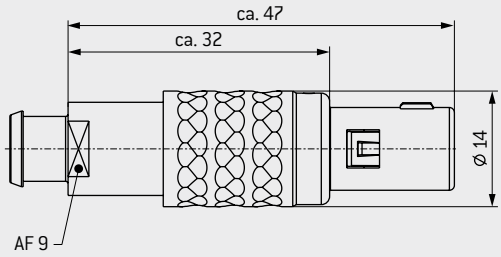


S 2 S

STYLE: 2

IP50

With back nut[1] for cable bend relief[2]

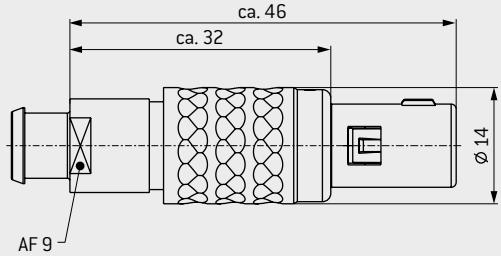


S 4 S

STYLE: 4

IP64

With back nut[1] for cable bend relief[2]



TECHNICAL DATA

- Contact configuration from page 83
- Explanation of the degrees of protection (see page 102)
- Color coding for S1 possible
- IP64 in combination with receptacle style 4 (in mated condition).

Size (1)

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

[1] Back nuts for cable bend reliefs have to be ordered in the same color as the connector housing. The color coding is based on the cable bend relief.
[2] Cable bend reliefs have to be ordered separately (see page 92).

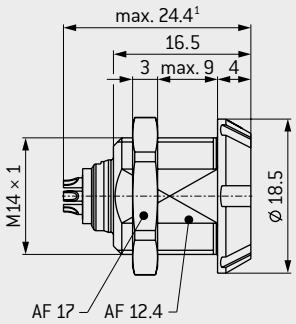
RECEPTACLE

G 1

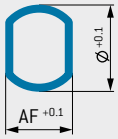
STYLE: 1

IP50

For front panel installation



PANEL CUT-OUT



AF : 12.5 mm
Ø : 14 mm

TECHNICAL DATA

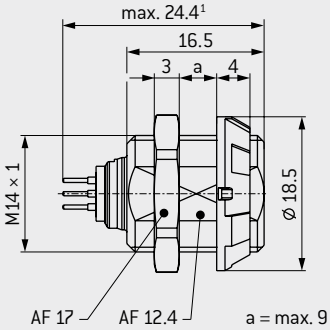
- Contact inserts and PCB layouts (see page 83)
- Explanation of the degrees of protection (see page 102)
- Anti-rotation feature
- IP50 in reference to the tightness of the end device

G 5

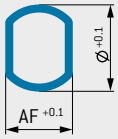
STYLE: 5

IP50

Receptacle with continuous thread, can be installed from front or rear; extension in front of panel is adjustable



PANEL CUT-OUT



AF : 12.5 mm
Ø : 14 mm

TECHNICAL DATA

- Contact inserts and PCB layouts (see page 83)
- Explanation of the degrees of protection (see page 102)
- IP50 in reference to the tightness of the end device.
- Anti-rotation feature
- With color coding
- Right-angled PCB contact possible (see page 86)

Size (1)

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

[1] Depending on the insert

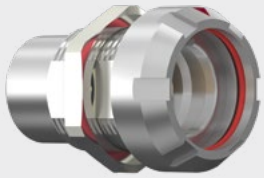
RECEPTACLE

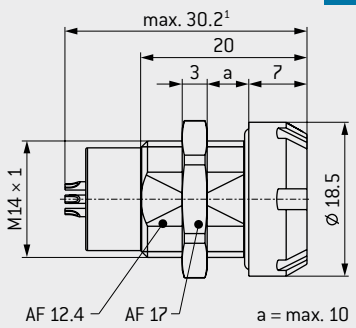
G A

STYLE: A

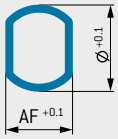
IP64/68

For front panel installation





PANEL CUT-OUT



AF : 12.5 mm
Ø : 14 mm

TECHNICAL DATA

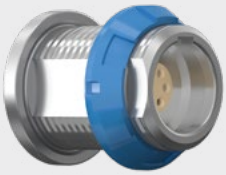
- Contact inserts and PCB layouts (see page 83)
- Explanation of the degrees of protection (see page 102)
- IP64 in combination with connector style 4 in mated condition (page 78)
- IP68 in reference to the tightness of the end device in unmated condition
- Anti-rotation feature

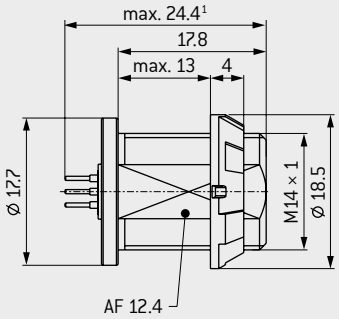
G K

STYLE: K

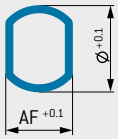
IP50

For rear panel installation





PANEL CUT-OUT



AF : 12.5 mm
Ø : 14 mm

TECHNICAL DATA

- Contact inserts and PCB layouts (see page 83)
- Explanation of the degrees of protection (see page 102)
- IP50 in reference to the tightness of the end device
- Anti-rotation feature
- With color coding
- Right-angled PCB contact possible (see page 86)

Size (1)

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

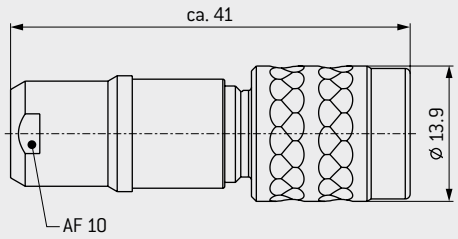
[1] Depending on the insert

IN-LINE RECEPTACLE

K 5 0

STYLE: 5 ON REQUEST IP50

With standard back nut



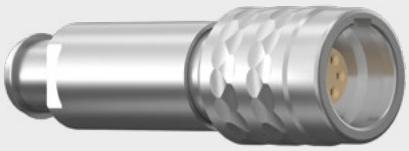
TECHNICAL DATA

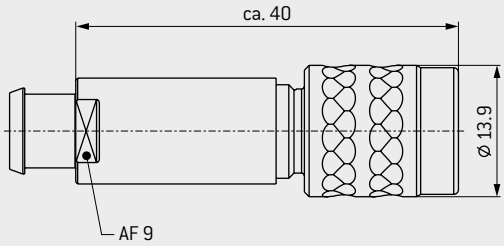
- Contact configuration from page 83
- Explanation of the degrees of protection (see page 102)
- Color coding via back nut possible (see page 89)

K 6 S

STYLE: 6 ON REQUEST IP50

With back nut for cable bend relief[1]





TECHNICAL DATA

- Contact configuration from page 83
- Explanation of the degrees of protection (see page 102)

Size (1)

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

[1] Cable bend reliefs have to be ordered separately (see page 92).

CODINGS

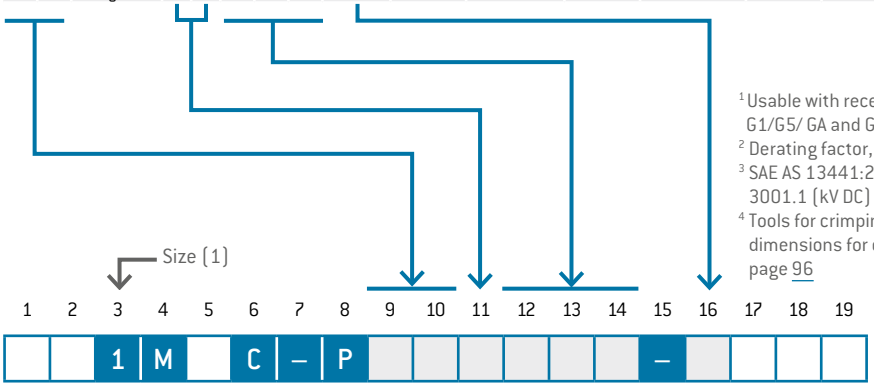
	Angle	Receptacle front view
0	0°	
A	40°	
C	60°	

Housing material: metal

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

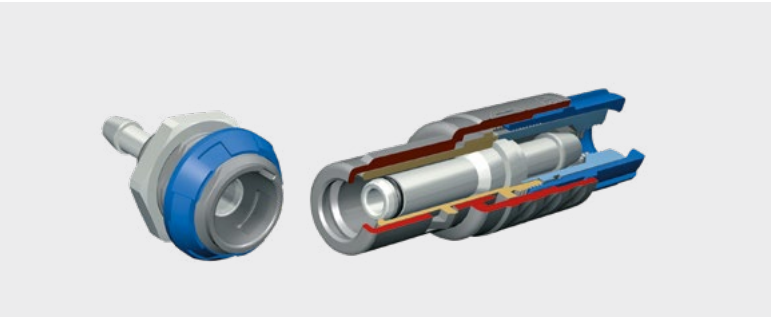
CONTACT INSERTS

Number of contacts		Contact type: Termination	Contact type: Socket	Contact type: Pin	Part number key			Contact style[1]	Contact diameter mm	Single contact nominal current[2] A	Nominal current insert A	Clearance and creepage distance contact to contact mm	Test voltage[3] kV DC	Nominal voltage[5] kV DC	Working voltage[7,8] Veff	Termination diameter mm	Termination cross-section AWG	Termination cross-section mm²	View on termination area: Pin piece	View on termination area: Socket piece
0	2	Solder	L	M	P	N	0	0	1.3	15	15	1	1.6	0.5	38	1.4	18	1		
					P	H	0			12	12	1.3	1.9	0.6	80	1.1	20	0.5		
		Print straight[6]	Q		P	0	0									0.7	–	–		
		Angled[6]						A								0.8	–	–		
0	3	Solder	L	M	P	N	9[9]	0	1.3	15	15	0.9	1.6	0.5	37	1.4	18	1		
					P	H	9[9]			12	12	1.2	1.9	0.6	50	1.1	20	0.5		
		Print straight[6]	Q		P	0	9[9]									0.7	–	–		
		Angled[6]						A								0.8	–	–		
0	4	Solder	L	M	J	H	0	0	0.9	10	10	0.9	1.6	0.5	37	1.1	20	0.5		
					J	G	0			7.5	7.5	1.2	1.9	0.6	50	0.85	22	0.38		
		Crimp[4]	N	P	J	H	0			10	10	0.9	1.6	0.5	37	–	20–24	0.5–0.25		
					J	G	0			7.5	7.5	1.2	1.9	0.6	50	–	22–26	0.38–0.15		
		Print straight[6]	Q		J	0	0									0.7	–	–		
		Angled[6]						A								0.6	–	–		
0	5	Solder	L	M	J	H	0	0	0.9	10	7.5	0.5	1.35	0.4	25	1.1	20	0.5		
					J	G	0			7.5	5.6	0.8	1.6	0.5	35	0.85	22	0.38		
		Crimp[4]	N	P	J	H	0			10	7.5	0.5	1.35	0.4	25	–	20–24	0.5–0.25		
					J	G	0			7.5	5.6	0.8	1.6	0.5	35	–	22–26	0.38–0.15		
		Print straight[6]	Q		J	0	0									0.7	–	–		
		Angled[6]						A								0.6	–	–		
0	6	Solder	L	M	F	G	0	0	0.7	7.5	5.6	0.65	1.35	0.4	33	0.85	22	0.38		
					F	D	0			6	4.5	0.85	1.6	0.5	36	0.65	26	0.15		
		Crimp[4]	N	P	F	G	0			7.5	5.6	0.65	1.35	0.4	33	–	22–26	0.38–0.15		
		Print straight[6]	Q		F	0	0			6	4.5	0.85	1.6	0.5	36	0.5	–	–		
		Angled[6]						A								0.6	–	–		
0	7	Solder	L	M	F	G	0	0	0.7	7.5	4.9	0.65	1.35	0.4	33	0.85	22	0.38		
					F	D	0			6	3.9	0.85	1.6	0.5	36	0.65	26	0.15		
		Crimp[4]	N	P	F	G	0			7.5	4.9	0.65	1.35	0.4	33	–	22–26	0.38–0.15		
		Print straight[6]	Q		F	0	0			6	3.9	0.85	1.6	0.5	36	0.5	–	–		
		Angled[6]						A								0.6	–	–		
0	8	Solder	L	M	F	G	0	0	0.7	7.5	4.9	0.4	1.2	0.4	10	0.85	22	0.38		
					F	D	0			6	3.9	0.6	1.6	0.5	32	0.65	26	0.15		
		Crimp[4]	N	P	F	G	0			7.5	4.9	0.4	1.2	0.4	10	–	22–26	0.38–0.15		
		Print straight[6]	Q		F	0	0			6	3.9	0.6	1.6	0.5	32	0.5	–	–		
		Angled[6]						A								0.6	–	–		
0	9	Solder	L	M	C	D	0	0	0.5	6	3.9	0.45	1.2	0.4	16	0.65	26	0.15		
					C	C	0			4	2.6	0.65	1.35		33	0.45	28	0.08		
		Print straight[6]	Q		C	0	0									0.5	–	–		
		Angled[6]						A								0.5	–	–		
1	0	Solder	L	M	C	D	0	0	0.5	6	3.3	0.3	0.75	0.25	7,5	0.65	26	0.15		
					C	C	0			4	2.2	0.5	1.35	0.4	25	0.45	28	0.08		
		Print straight[6]	Q		C	0	0									0.5	–	–		
		Angled[6]						A								0.5	–	–		
1	2	Solder	L	M	C	D	9[9]	0	0.5	6	3.3	0.4	1.2	0.4	10	0.65	26	0.15		
					C	C	9[9]			4	2.2	0.5			25	0.45	28	0.08		
		Print straight[6]	Q		C	0	9[9]									0.5	–	–		
		Angled[6]						A								0.5	–	–		
1	4	Solder	L	M	C	D	0	0	0.5	6	3	0.3	0.75	0.25	7,5	0.65	26	0.15		
					C	C	0			4	2	0.5	1.2	0.4	25	0.45	28	0.08		
		Print straight[6]	Q		C	0	0									0.5	–	–		
		Angled[6]						A								0.5	–	–		



[1] Usable with receptacle styles G1/G5/ GA and GK
[2] Derating factor, see page 107
[3] SAE AS 13441:2004 method 3001.1 (kV DC)
[4] Tools for crimping and adjustment dimensions for crimping tool, see page 96
[5] Max. operating voltage from mean sea level to 2,000 m in accordance with SAE AS 13441:2004 method 3001.1 (kV DC), further information on page 108.
[6] PCB layouts (see page 85)
[7] IEC 60664-1:2007 (VDE 0110-1:2008): pollution degree 2
[8] IEC 60664-1:2007 (VDE 0110-1:2008): overvoltage category III / test voltage: 0.94 kVeff
[9] Not compatible to competition

MEDIA FEED THROUGH



Media feed through	Feed through		Contact type		Part number key			Contact inner diameter	Working pressure max.	Termination diameter	Tube diameter max.
			Socket	Pin				mm	bar	mm	mm
F	1	Not shut off	B	S	1	1	0	2.5	2	4	6
	A	Shut off	B	S	On request[1]			1.9	2	4	6

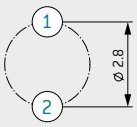
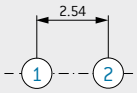
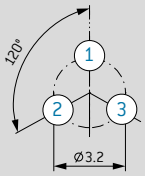
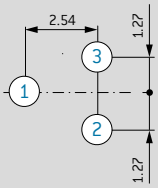
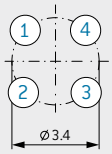
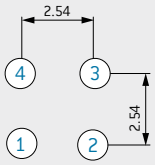
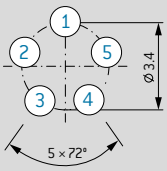
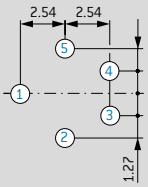
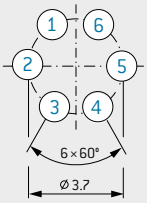
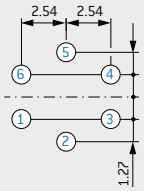
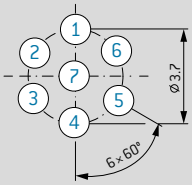
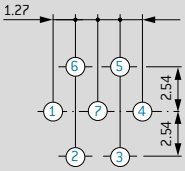
Size (1)

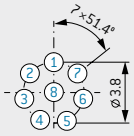
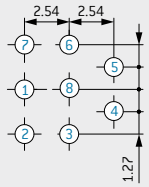
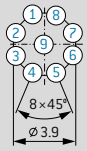
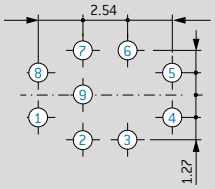
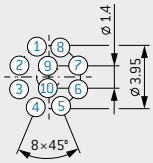
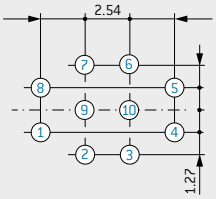
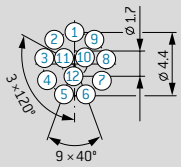
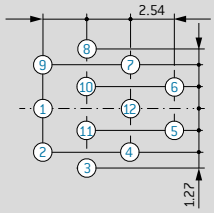
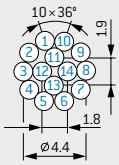
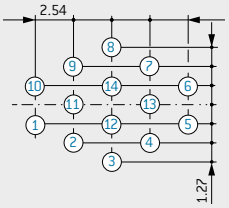
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		1	M		C	–	0							–			0	

[1] Not compatible to competition

PCB LAYOUTS

For PCB contacts (Size 1)

	Straight	90° right-angled
2 contacts	Contact borehole: Ø 0.8 mm 	Contact borehole: Ø 0.9 mm 
3 contacts	Contact borehole: Ø 0.8 mm 	Contact borehole: Ø 0.9 mm 
4 contacts	Contact borehole: Ø 0.8 mm 	Contact borehole: Ø 0.7 mm 
5 contacts	Contact borehole: Ø 0.8 mm 	Contact borehole: Ø 0.7 mm 
6 contacts	Contact borehole: Ø 0.6 mm 	Contact borehole: Ø 0.7 mm 
7 contacts	Contact borehole: Ø: 0.6 mm 	Contact borehole: Ø 0.7 mm 

	Straight	90° right-angled
8 contacts	Contact borehole: Ø 0.6 mm 	Contact borehole: Ø 0.7 mm 
9 contacts	Contact borehole: Ø 0.6 mm 	Contact borehole: Ø 0.7 mm 
10 contacts	Contact borehole: Ø 0.6 mm 	Contact borehole: Ø 0.7 mm 
12 contacts	Contact borehole: Ø 0.6 mm 	Contact borehole: Ø: 0.7 mm 
14 contacts	Contact borehole: Ø 0.6 mm 	Contact borehole: Ø 0.7 mm 

All specifications are only valid for socket inserts, pin inserts on request. Further PCB layouts upon request

RIGHT-ANGLED PCB CONTACTS IN THE RECEPTACLE

A

RIGHT-ANGLED PCB CONTACT

For style G5, GK

Contact diameter mm	Termination diameter mm
0.5	0.5
0.7	0.6
0.9	0.6
1.3	0.8

Technical Data

- PCB layouts, see page 85

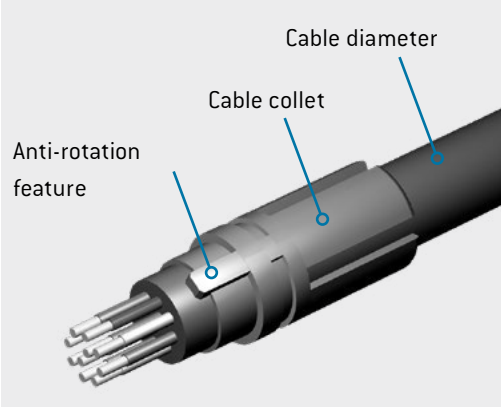
Size (1)

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

FOR YOUR NOTES

CABLE COLLET SYSTEM

For plugs and in-line receptacles



APPLICATION: for all plugs and in-line receptacles

USE: cable collet for strain relief

		Cable diameter mm	Material	Part number
3	9	> 2.7–3.9	PSU	KM1.020.121.934.007
5	2	> 4.0 – 5.2		KM1.020.122.934.007
6	5	> 5.3–6.5		KM1.020.123.934.007
3	9	> 2.7–3.9	PEI	KM1.020.121.933.008
5	2	> 4.0 – 5.2		KM1.020.122.933.008
6	5	> 5.3–6.5		KM1.020.123.933.008

Size (1)

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

COLOR CODINGS

Color coding of the front nut only for receptacles G5 and GK
Color coding of the back nut only for straight plug S1 and in-line receptacle K5

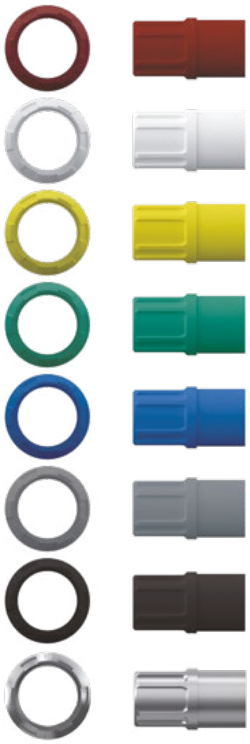
The color coding here is based on the cable bend relief in combination with back nut made of brass.

Code C (brass chromate) always for straight plug S2 and receptacles G1 and GA

Back nut

Front nut

	Color	Similar RAL systems		Material
		Design	Classic	
2	Red	030 40 40	3002	Plastic (PSU)
3	White	000 90 00	9003	
4	Yellow	095 80 70	1016	
5	Green	170 60 50	6032	
6	Blue	250 40 40	5019	
7	Gray	000 55 00	7045	
8	Black	000 25 00	9004	Plastic (PSU/PEI)
C	Chrome matt	–	–	Brass

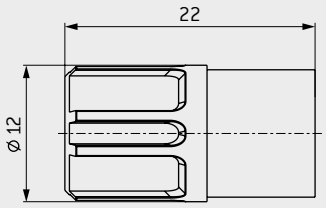


1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		1	M		C	–	P							–				

DEFINITION OF THE BACK NUTS

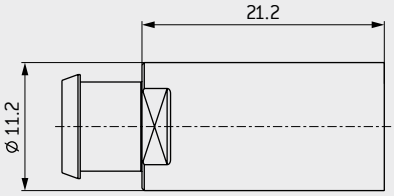
Applicable to all straight plugs as well as in-line receptacles

STANDARD BACK NUT



Part number	Material	Color	Similar RAL systems	
			Design	Classic
KM1.020.111.934.002	PSU	Red	030 40 40	3002
KM1.020.111.934.003		White	000 90 00	9003
KM1.020.111.934.004		Yellow	095 80 70	1016
KM1.020.111.934.005		Green	170 60 50	6032
KM1.020.111.934.006		Blue	250 40 40	5019
KM1.020.111.934.007		Gray	000 55 00	7045
KM1.020.111.933.008	PEI	Black	000 25 00	9004
KM1.020.111.315.000	Brass	Chrome matt	–	–

STANDARD BACK NUT FOR CABLE BEND RELIEF[1]



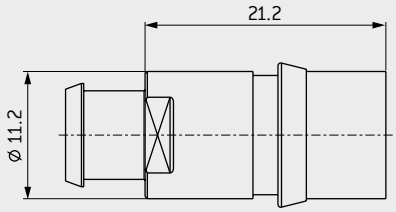
Part number	Material	Color	Similar RAL systems	
			Design	Classic
KM1.020.113.934.007	PSU[2]	Gray	000 55 00	7045
KM1.020.113.933.008	PEI	Black	000 25 00	9004
KM1.020.113.315.000	Brass	Chrome matt	–	–

[1] Silicone cable bend reliefs have to be ordered separately (see page 92). [2] Additional colors on request

DEFINITION OF THE BACK NUTS

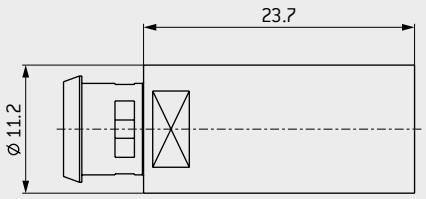
Applicable to all straight plugs as well as in-line receptacles

STANDARD BACK NUT FOR CABLE BEND RELIEF FOR PLUG IP64[1]



Part number	Material	Color	Similar RAL systems	
			Design	Classic
KM1.026.113.934.107	PSU[2]	Gray	000 55 00	7045
KM1.026.113.933.108	PEI	Black	000 25 00	9004
KM1.026.113.315.000	Brass	Chrome matt	–	–

STANDARD BACK NUT FOR OVERMOLDING ON REQUEST

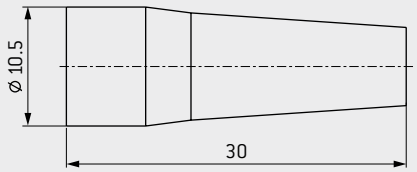


Part number	Material	Color	Similar RAL systems	
			Design	Classic
KM1.020.114.934.007	PSU[2]	Gray	000 55 00	7045
KM1.020.114.934.008		Black	000 25 00	9004
KM1.020.114.933.008	PEI	Black	000 25 00	9004

[1] Silicone cable bend reliefs have to be ordered separately (see page 92). [2] Additional colors on request

SILICONE CABLE BEND RELIEF

SILICONE CABLE BEND RELIEF



TEMPERATURE RANGE

Silicone: –50 °C up to +200 °C, short-term up to +230 °C
Autoclaveable

Part number	Cable jacket (Ø outside)	
	min.	max.
701.023.___.965.025	2.5	3
701.023.___.965.030	3	3.5
701.023.___.965.035	3.5	4
701.023.___.965.040	4	5
701.023.___.965.050	5	6
701.023.___.965.060	6	6.5

COLORS

Color code	Color	RAL-Nr.[1] (similar) Classic
202	Red	3020
203	White	9010
204	Yellow	1016
205	Green	6029
206	Blue	5002
207	Gray	7005
208	Black	9005

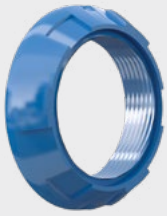
The silicone cable bend reliefs must always be ordered separately.

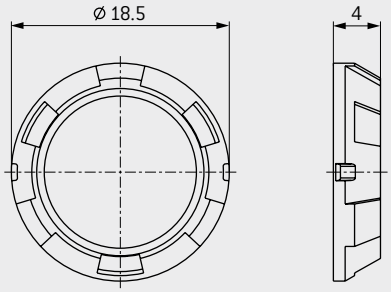
[1] Because of differing basic materials, the colors may differ slightly from RAL numbers.

NUTS

FRONT NUT

For receptacle style 5

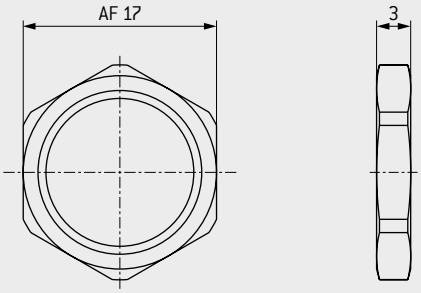




Part number	Material	Color	Similar RAL system Design
KM1.311.002.934.002	PSU	Red	030 40 40
KM1.311.002.934.003		White	000 90 00
KM1.311.002.934.004		Yellow	095 80 70
KM1.311.002.934.005		Green	170 60 50
KM1.311.002.934.006		Blue	250 40 40
KM1.311.002.934.007		Gray	000 55 00
KM1.311.002.933.008	PEI	Black	000 25 00

HEX NUT

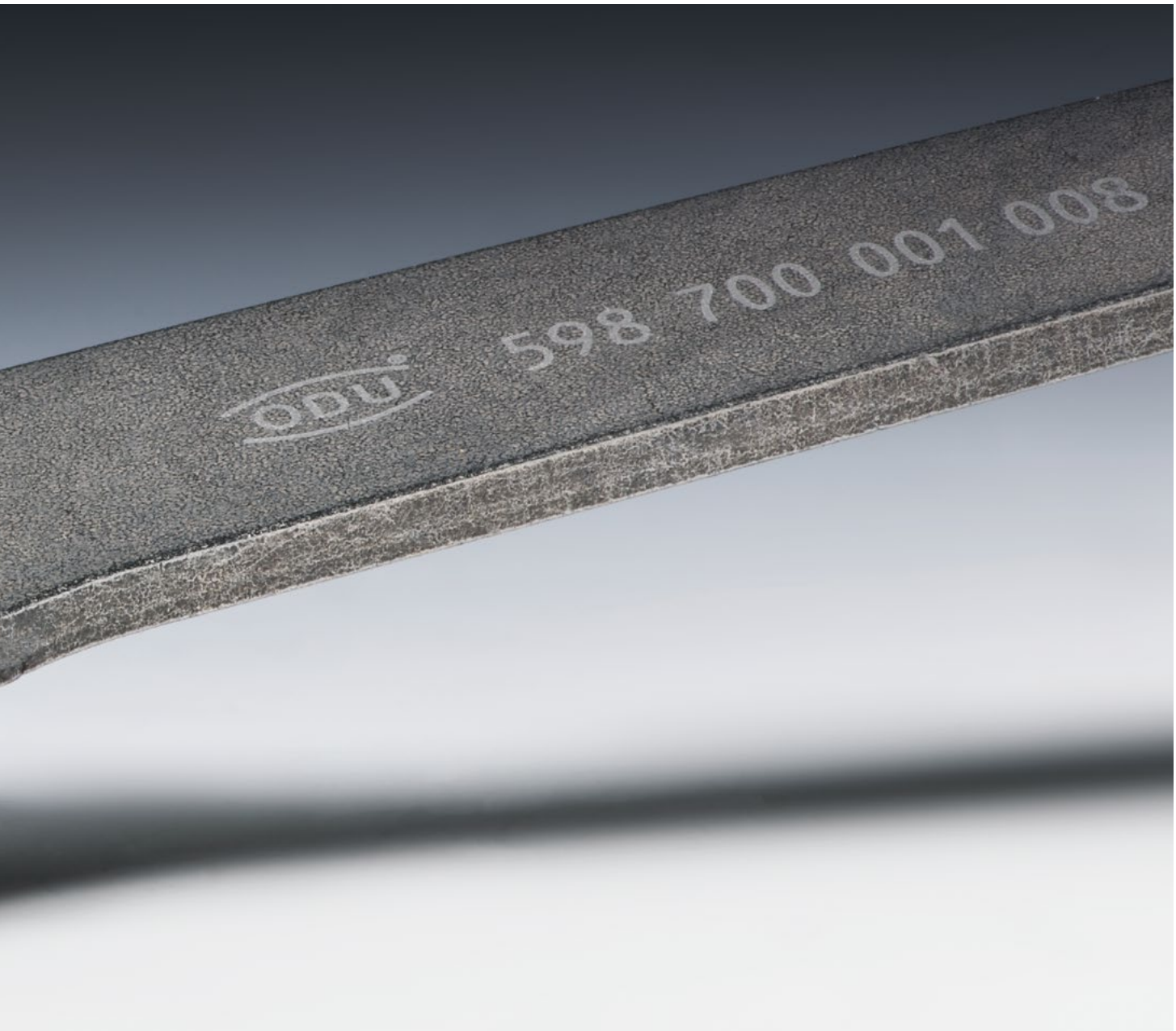
For receptacle style 1, 5 and A



Part number	Material
021.310.115.304.000	Nickel-plated brass

ODU MEDI-SNAP®

Table of Contents



TOOLS

The following pages contain tools and wrenches to ensure that your ODU connectors function flawlessly.

CRIMPING TOOLS/ASSEMBLY TOOLS

PART NUMBER CRIMPING TOOL
080.000.051.000.000

Part number positioner, see table

PROCESSING TOOL FOR CRIMP CONTACTS

Digital adjustment, multiposition

Size	Number of contacts	Contact diameter	Termination cross-section		Adjustment dim.	Positioner	Positioning setting		Removal tool
		mm	AWG	mm²	mm		Pin	Socket	
1	6 to 8	0.7	24–26	0.25–0.15	0.67	080.000.051.109.000	9	3	087.7CC.070.001.000
			22–26	0.38–0.15	0.67	080.000.051.109.000	9	3	087.7CC.070.001.000
	4 to 5	0.9	22–26	0.38–0.15	0.67	080.000.051.109.000	8	2	087.7CC.090.001.000
			20–24	0.50–0.25	0.67	080.000.051.109.000	8	2	087.7CC.090.001.000

CRIMPING TOOLS/ASSEMBLY TOOLS

PART NUMBER CRIMPING TOOL
080.000.037.000.000

Part number positioner, see table

PROCESSING TOOL FOR CRIMP CONTACTS

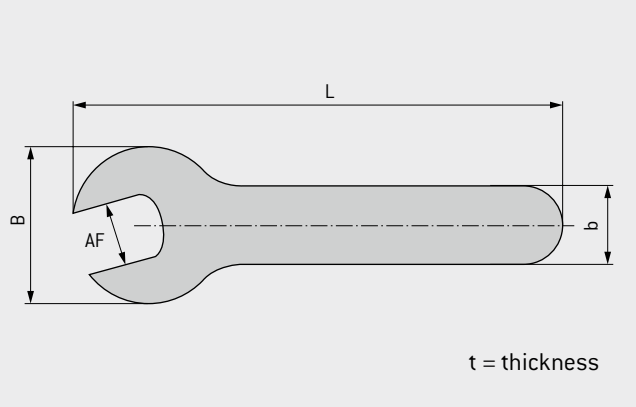
Mil approved, single position

Size	Number of contacts	Contact diameter	Termination cross-section		Positioner		Selector setting		Removal tool
		mm	AWG	mm²	Pin	Socket	Pin	Socket	
1	6 to 8	0.7	22–26	0.38–0.15	081.KM1.001.948.037	081.KM1.001.948.037	4	4	087.7CC.070.001.000
		0.7	24–26	0.25–0.15	081.KM1.001.948.037	081.KM1.001.948.037	4	4	087.7CC.070.001.000
	4 to 5	0.9	20–24	0.50–0.25	081.704.001.849.037	081.KM1.001.949.037	7/6/5[1]	7/6/5[1]	087.7CC.090.001.000
		0.9	22–26	0.38–0.15	081.704.001.849.037	081.KM1.001.949.037	4	4	087.7CC.090.001.000

[1] For AWG 20 position 7/for AWG 22 position 6/for AWG 24 position 5

SPANNER WRENCH SIZE 1

Part number	Dimensions in mm				
	AF	t	B	L	b
598.700.001.008.000	17	3	35.5	145	15

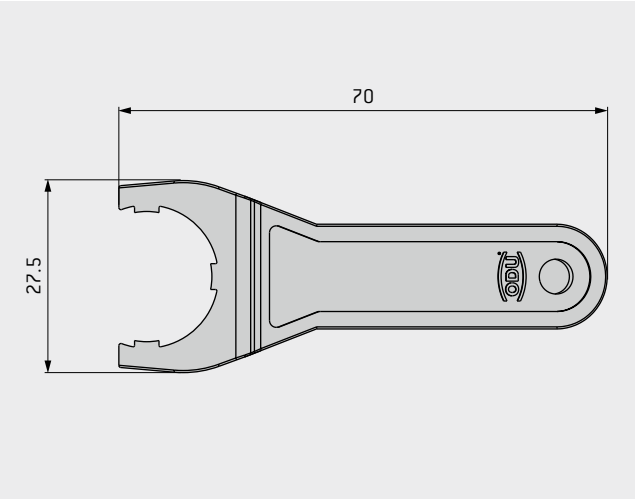


Tightening torque of the hex nut receptacle (styles 1/4/5/6/A): 1 Nm

SPANNER WRENCH SIZE 2

PART NUMBER KM2.098.002.923.008

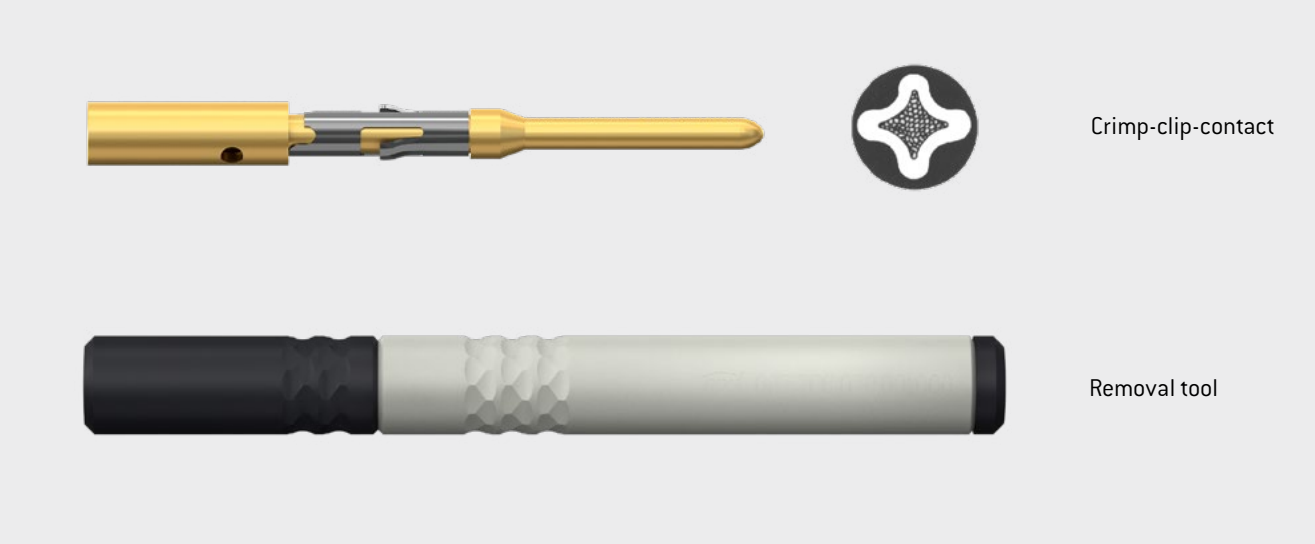
For slotted mounting nuts receptacle styles 1, 4, 5



BOX SPANNER FOR RECEPTACLE FRONT NUTS

Part number	Size	Material front nut
KM1.098.001.923.008	1	Plastic
KM1.098.002.902.000	1	Metal
KM2.098.001.923.008	2	Plastic

REMOVAL TOOLS FOR CRIMP-CLIP-CONTACTS



Part number	Contact ∅ mm
087.7CC.070.001.000	0.7
087.7CC.090.001.000	0.9

NOTE ON ADHESIVE !

Recommended adhesive for the back nut
Scotch-Weld™, DP 190 (Gray)
ODU PART NUMBER: 890.204.000.030.025

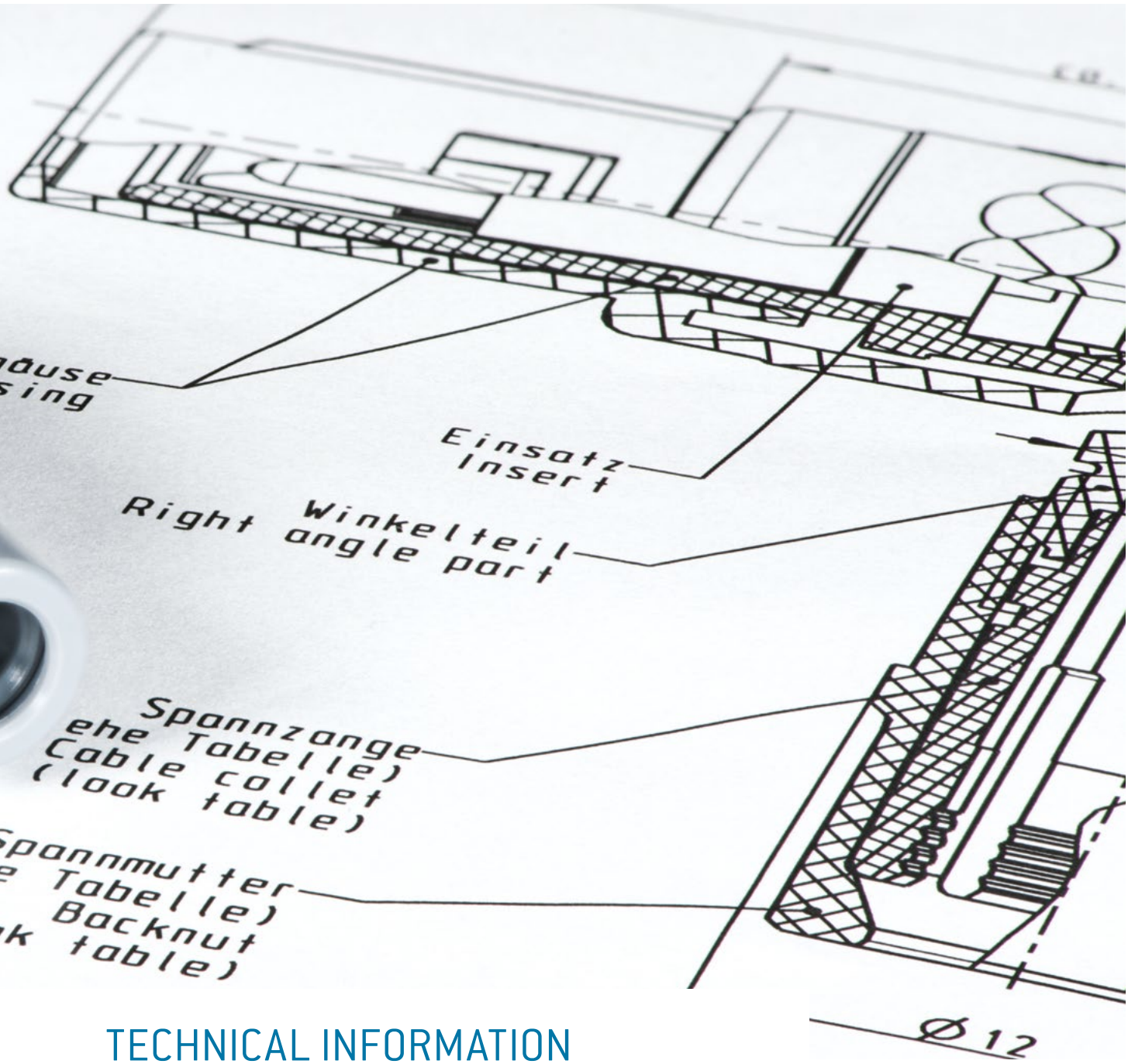
Recommended cleaning agent: Isopropyl alcohol

Caution! Cracks may later appear with the use of unauthorized adhesives and cleaning agents.

For assembly instructions, please refer to our website: www.odu-connectors.com/downloads/assembly-instructions

ODU MEDI-SNAP®

Table of Contents



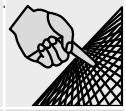
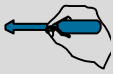
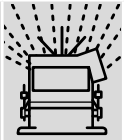
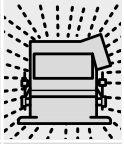
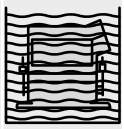
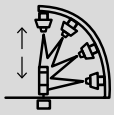
TECHNICAL INFORMATION

ODU connectors ensure perfect and reliable transmission of power, signal, data and other media in a wide variety of applications.

Further information can be found on the following pages.

INTERNATIONAL PROTECTION CLASSES

Acc. IEC 60529:2013 (VDE 0470-1:2014)

Code letters (International Protection)	First code number (Degrees of protection against access to hazardous parts respectively against solid foreign objects)			Second code number (Degrees of protection against water)			
IP	6			5			
Code number	Protection against access to hazardous parts / Protection against ingress of solid foreign objects			Code number	Protection against harmful effects due to the ingress of water		
0	No protection		No protection against contact / No protection against solid foreign objects	0	No protection against water		No protection against water
1	Protection against large foreign objects		Protection against contact with the back of the hand / Protection against solid foreign objects Ø ≥ 50 mm	1	Protection against dripping water		Protection against vertically falling waterdrops
2	Protection against medium-sized foreign objects		Protection against contact with the fingers / Protection against solid foreign objects Ø ≥ 12.5 mm	2	Protection against angular dripping water (from angles)		Protection against waterdrops falling at an angle (any angle up to 15° of the vertical)
3	Protection against small foreign objects		Protection against contact with tools / Protection against solid foreign objects Ø ≥ 2.5 mm	3	Protection against spray water		Protection against spray water (any angle up to 60° of the vertical)
4	Protection against granular foreign objects		Protection against contact with a wire / Protection against solid foreign objects Ø ≥ 1.0 mm	4	Protection against splashing water		Protection against splashing water from any direction
5	Dustproof		Protection against contact with a wire / Protection against uncontrolled ingress of dust	5	Protection against water jet		Protection against water jet from any direction
6	Dustproof		Protection against contact with a wire / Complete protection against ingress of dust	6	Protection against powerful water jet		Protection against powerful water jet from all directions
				7	Protection against the effects of temporary immersion in water		Protection against ingress of water negatively impacting the proper function by temporary submersion into water
				8	Protection against the effects of continuous immersion in water		Protection against ingress of quantities of water negatively impacting the proper function by continuous submersion into water
				9	Protection against high pressure water jet featuring high temperatures		Protection against water from all directions characterized by high pressure and high temperatures

FOR YOUR NOTES

HOUSING MATERIALS/SURFACES

Component	Material designation	Surface
Housing	PSU[1]/PEI[1]/Brass	
Back nut Cable collet Front nut Mounting nut	PSU[1]/PEI[1]	
Insulator	PEEK	
Hex nut	Brass	Ni
Contacts	Brass	Au

INSULATOR MATERIALS (ROHS 2011/65/EU COMPLIANT)

	Norm	Unit	PSU	PEI	PEEK
Flammability rating	UL 94		V-0/4.5	V-0/0.41	V-0/1.5
Operation temperature		C	–50 to +170°	–50 to +170°	–50 to +250°
Dielectric strength	IEC 60243-1:2013 (VDE 0303-21:2014)	kV/mm	17	27/1.6 (in oil)	19
Comparative figure of the creep resistance CTI	IEC 60112: 2009 (VDE 0303-11:2010)		150	150	175
Water absorption	ASTM D 570:1998 / ISO 62:2008	%	0.3	0.25	0.1
Sterilization (autoclaving)	DIN EN 13060:2015	Quantity	~ 20	> 200	> 200
Insulation resistance	IEC 60512-3-1:2002 (DIN EN 60512-3-1:2003-01)	Ω			$> 1 \times 10^{12}$ Ω

All values in the new condition

NOTE ON ADHESIVE

Recommended adhesive for the back nut
Scotch-Weld™, DP 190 (Gray)
ODU PART NUMBER: 890.204.000.030.025

Recommended cleaning agent: Isopropyl alcohol

Caution! Cracks may later appear with the use of unauthorized adhesives and cleaning agents.

[1] Corresponding to the version, either the material PSU or PEI is used for all plastic component parts (except insulator) of a complete plug, in-line receptacle or receptacle.

TERMINATION TECHNOLOGIES

In general, insulators with socket contacts are installed in the live part (to provide protection from accidental touch). The means of mounting the contacts in the insulator is important on account of the termination technologies. Termination technologies for ODU MEDI-SNAP® connectors include: soldering, crimping and PCB.

SOLDER TERMINATION

CRIMP-CLIP-CONTACT FOR PEEK INSULATOR

PRINT TERMINATION

TERMINATION TECHNOLOGIES FOR TURNED CONTACTS

Solder termination

The contacts are mounted in the insulator before the single connectors are assembled.
An insulator with pre-installed contacts is referred to as a contact insert.

Crimp termination

Here, the individual contact is connected to the individual wires via deformation in the termination area. Then the contacts are individually installed in the insulator. Accordingly, insulators and individual contacts – and not complete contact inserts – are supplied for the crimp termination. The contact processing for the production of connecting cables via crimping creates a secure, durable and corrosion-free contact. Cold compaction (crimping) compresses the conductor and contact material to the press points so as to form a gas-tight connection with tensile strength to fit the conductor material. 8-point deformation is generally used for turned crimp contacts.

PCB termination

This is only used in the receptacle if the receptacle is to be mounted directly on a printed circuit board (PCB).
Further information is available upon request.

CONVERSIONS/AWG (AMERICAN WIRE GAUGE)

Circular wire					
AWG	Diameter		Cross-section	Weight	Max. resist-ance
	Inch	mm	mm²	kg/km	Ω/km
10 (1)	0.1019	2.590	5.26	46.77	3.45
10 (37/26)	0.1150	2.921	4.74	42.10	4.13
12 (1)	0.0808	2.050	3.31	29.41	5.45
12 (19/25)	0.0930	2.362	3.08	27.36	6.14
12 (37/28)	0.0910	2.311	2.97	26.45	6.36
14 (1)	0.0641	1.630	2.08	18.51	8.79
14 (19/27)	0.0730	1.854	1.94	17.23	9.94
14 (37/30)	0.0735	1.867	2.08	18.870	10.50
16 (1)	0.0508	1.290	1.31	11.625	13.94
16 (19/29)	0.0590	1.499	1.23	10.928	15.70
18 (1)	0.0403	1.020	0.823	7.316	22.18
18 (19/30)	0.0052	1.321	0.963	8.564	20.40
20 (1)	0.0320	0.813	0.519	4.613	35.10
20 (7/28)	0.0390	0.991	0.563	5.003	34.10
20 (19/32)	0.0420	1.067	0,616	5.473	32.00
22 (1)	0.0253	0.643	0,324	2.883	57.70
22 (7/30)	0.0288	0.732	0,324	2.965	54.80
22 (19/34)	0.0330	0.838	0.382	3.395	51.80
24 (1)	0.0201	0.511	0.205	1.820	91.20
24 (7/32)	0.0250	0.635	0.227	2.016	86.00
24 (19/36)	0.0270	0.686	0.241	2.145	83.30
26 (1)	0.0159	0.404	0.128	1.139	147.00
26 (7/34)	0.0200	0.508	0.141	1.251	140.00
26 (19/38)	0.0220	0.559	0.154	1,370	131.00
28 (1)	0.0126	0.320	0.0804	0.715	231.00
28 (7/36)	0.0160	0.406	0.0889	0.790	224.00
28 (19/40)	0.0170	0.432	0.0925	0.823	207.00
30 (1)	0.0100	0.254	0.0507	0.450	374.00
30 (7/38)	0.0130	0.330	0.0568	0.505	354.00
30 (19/42)	0.0123	0.312	0.0720	0.622	310.00
32 (1)	0.0080	0.203	0.0324	0.288	561.00
32 (7/40)	0.0110	0.279	0.0341	0.303	597.10
32 (19/44)	0.0100	0.254	0.0440	0.356	492.00
34 (1)	0.0063	0.160	0.0201	0.179	951.00
34 (7/42)	0.0070	0.180	0.0222	0.197	1,491.00
36 (1)	0.0050	0.127	0.0127	0.1126	1,519.00
36 (7/44)	0.0060	0.150	0.0142	0.1263	1,322.00

The American Wire Gauge (AWG) is based on the principle that the cross-section of the wire changes by 26% from one gauge number to the next. The AWG numbers decrease as the wire diameter increases, while the AWG numbers increase as the wire diameter decreases. This only applies to solid wire.

However, stranded wire is predominately used in practice. This has the advantage of a longer service life under bending and vibration as well as greater flexibility in comparison with solid wire.

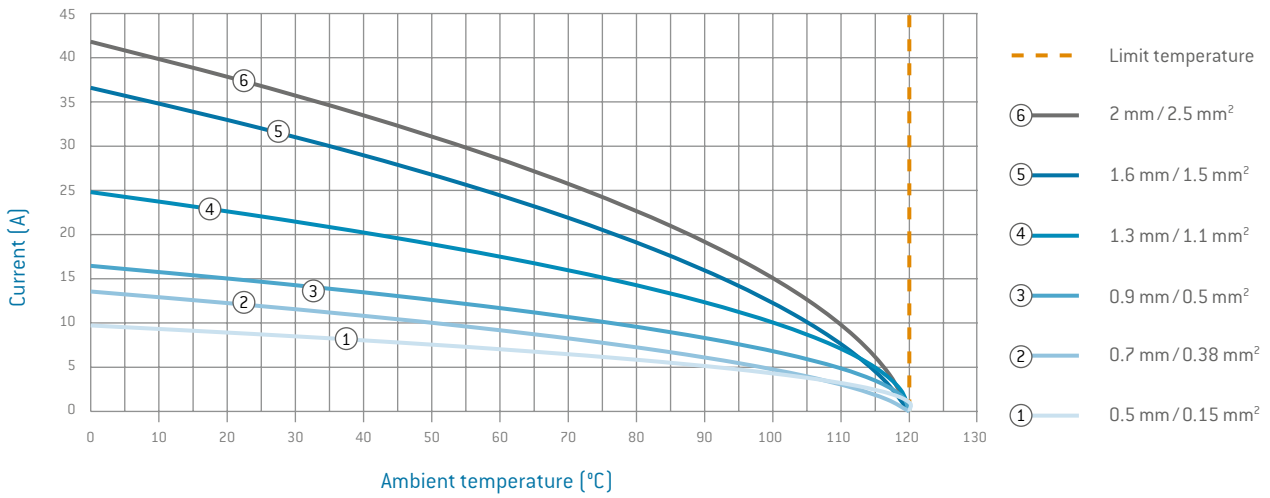
Stranded wires are made of multiple, smaller-gauge wires (higher AWG number). The stranded wire then receives the AWG numbers of a solid wire with the next closest cross-section to that of the stranded wire. In this case, the cross-section of the stranded wire refers to the sum of the copper cross-sections of the individual wires.

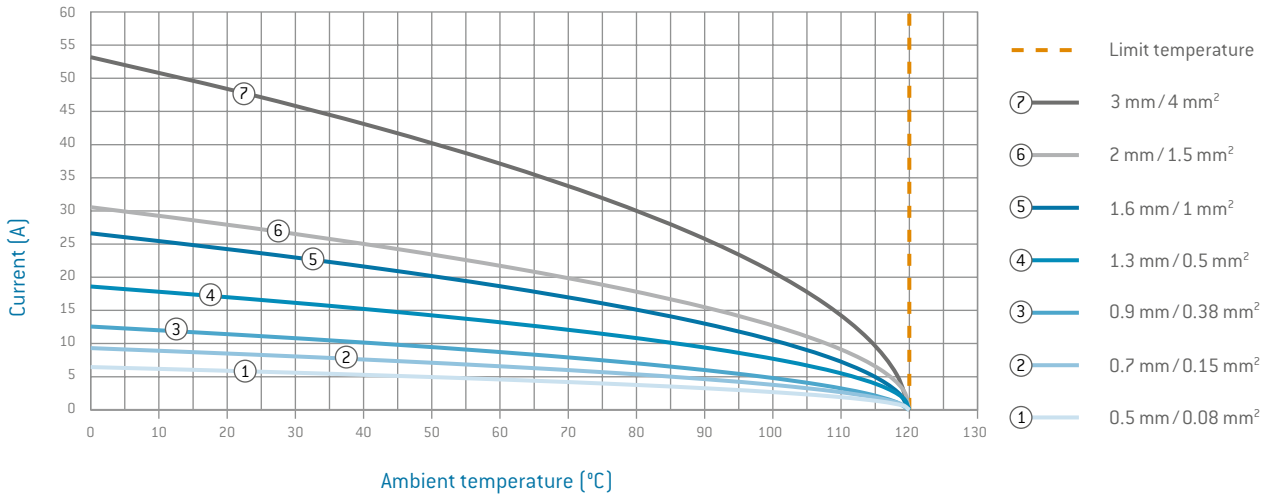
Accordingly, strands with the same AWG number but different numbers of wires differ in cross-section. For instance, an AWG 20 strand of 7 AWG 28 wires has a cross-section of 0.563 mm², while an AWG 20 strand of 19 AWG 32 wires has a cross-section of 0.616 mm².

Source: ASTM

CURRENT LOAD OF TURNED CONTACTS

Nominal single contact current load for pin / slotted socket (nominal diameter 0.5 mm – 2 mm)





UPPER LIMIT TEMPERATURE OF STANDARD CONTACTS: +120 °C

The wire cross-section shown in the legend was connected as test cable. In the case of multi-position connectors and cables, the heating is greater than it is with individual contacts. For that reason, it is calculated with a reduction factor.
For connectors, the reduction factors for multi-core cables pursuant to VDE 0298-4:2013 are applied. The reduction factor is factored in at 5 live wires and up.

DERATING CURVE

The corrected current-carrying capacity curve, derived from the base curve determined (0.8 x measured current). It factors in manufacturing tolerances as well as uncertainties in temperature measurement and measurement arrangement, see derating measurement method.

RATED CURRENT (NOMINAL CURRENT)

The metrologically determined current which is permitted to flow continuously through all contacts at the same time and will increase the contact temperature by 45 Kelvin.
The amperage is determined according to the derating measurement method (IEC 60512-5-2:2002 (DIN EN 60512-5-2:2003)) and derived from the derating curve.

DERATING FACTOR

Number of loaded wires	Derating factor
5	0.75
7	0.65
10	0.55
14	0.5
19	0.45
24	0.4

OPERATING VOLTAGE

Acc. SAE AS 13441:2004 method 3001.1

The values specified in the catalog correspond to SAE AS 13441:2004 method 3001.1. The table values were determined according to EIA 364-20E:2015. The inserts were tested while mated, and the test current was applied to the pin insert.

75% of the dielectric withstanding voltage is used for the further calculation. The operating voltage is 1/3 of this value.

All tests were conducted at normal indoor climate and apply up to an altitude of 2,000 m. If there are any deviations, the reduction factors are to be factored in according to the applicable standards.
Test voltage: Dielectric withstanding voltage × 0.75
Operating voltage: Dielectric withstanding voltage × 0.75 × 0.33

ATTENTION:
With certain applications, the safety requirements for electrical devices are very strict in terms of operating voltage. In such cases, the operating voltage is defined according to the clearance and creepage distances between parts which could be touched.

When selecting such a connector, please contact us and let us know the safety standard which the product must meet.

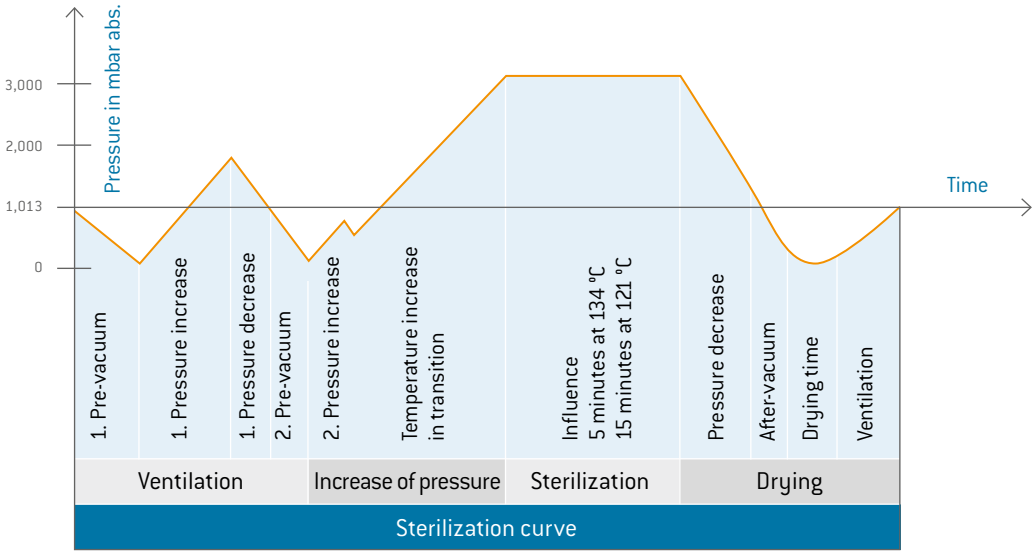
Test voltage: Dielectric withstanding voltage × 0.75
Operating voltage: Dielectric withstanding voltage × 0.75 × 0.33

AUTOCLAVING OF ODU MEDI-SNAP®

The ODU MEDI-SNAP® connectors are also available for the following sterilization processes: Steam sterilization with pre-vacuum or gravitation process. The connectors are tested with autoclave equipment in accordance with DIN EN 13060:2015 at 134 °C and 200 cycles (housing elements made of PEI).

With PSU housing 20 autoclave cycles. With PEI housing 200 autoclave cycles.
For other sterilization processes, please contact the appropriate indoor service.

Sterilization curve



TECHNICAL TERMS

AMBIENT TEMPERATURE

Temperature of the air or other medium in which a piece of equipment is intended to be used. (IEC 44/709/CDV:2014 (VDE 0113-1:2014).

AUTOCLAVABILITY

See page 109

AWG

American Wire Gauge – see page 106

BASE CURVE

A current-carrying capacity curve metrologically determined according to the method described in IEC 60512-5-2:2002 (DIN EN 60512-5-2:2003) depending on the permissible limit temperature of the materials.

CHEMICAL RESISTANCE

Many secondary processing procedures use adhesives, cleaning agents or other chemicals on our products. Contact with unsuitable chemicals may have an adverse effect on the mechanical and electrical properties of the insulation and housing materials which specified properties may not be able to withstand. Please observe our processing suggestions and technical instructions in this catalog.

CLEARANCE DISTANCE

The shortest distance in the air between two conductive parts.

CONNECTORS

Also known as connectors without breaking capacity (COC): (IEC 61984:2008 (VDE 0627:2009). An element which enables electrical conductors to be connected and is intended to create and/or separate connections with a suitable counterpart.

CONNECTOR WITHOUT BREAKING CAPACITY (COC)

Connector which is not deemed to be engaged or disengaged in normal use when live under load.

CONTACT RESISTANCE

Total resistance value measured from terminal to terminal. In this case, the resistance is significantly lower than the contact resistance. The specifications are average values.

CORES

Electrical conductor, solid wire or multi-wire strand, with insulation as well as any conductive layers. Cables or leads may have one or more cores.

CREEPAGE DISTANCES

The shortest distance between two conductive parts along the surface of a solid insulation material. This factors in all elevations and recesses in the insulator, as long as defined minimum dimensions are on hand.

CRIMP BARREL

A terminal sleeve which can accommodate one or more conductors and be crimped by a crimping tool.

CRIMP CONNECTION (CRIMP TERMINATION)

The permanent, non-detachable and solder-free mounting of a contact to a conductor via deforming or shaping under pressure to make a good electrical and mechanical connection. Executed with crimping tool, press or automatic crimping machine (see page 96).

CRIMPING AREA

The specified area of the crimp barrel in which the crimp termination is executed by means of deforming or shaping the barrel under pressure around the conductor.

DEGREE OF POLLUTION

The effect of pollution is factored in as degree of pollution when measuring clearance and creepage distances. Four degrees of pollution are defined for the micro-environment: IEC 60664-1:2007 (VDE 0110-1:2008).

DELIVERY FORM

Connectors can be delivered in assembled form or as individual parts.

DERATING FACTOR

According to VDE 0298-4:2013, with connectors and cables over 5 contacts, the heating is greater than it is with individual contacts. For that reason, the aforementioned standard is calculated with a reduction factor.

DERATING CURVE

See page 107

TECHNICAL TERMS

DERATING MEASUREMENT METHOD IEC 60512-5-2:2002 (DIN EN 60512-5-2:2003)

Measurement method to determine the current carrying capacity of connectors in consideration of the maximum permissible limit temperature (see page 107).

FIXED CONNECTORS

Intended for mounting on a fixed surface such as a frame, dock, device or wall (with ODU also receptacle or panel-mounted plug).

FREE CONNECTORS

Intended for mounting on free ends of mobile leads and cables (with ODU also connectors, plugs, in-line receptacles).

INSULATOR

Part of a connector which separates conductive parts with different potentials from one another; usually identical to the contact carrier.

CODING (ORIENTATION)

Arrangement with which differing polarization of otherwise identical connectors prevents interchangeability. This is a good idea if two or more identical connectors are attached to the same device (see also compatible connectors, see pages 39, 62, 82).

LOWERMOST LIMIT TEMPERATURE

The lowest permissible temperature at which a connector may be operated. At ODU MEDI-SNAP®, it amounts to –50 °C.

MATERIALS (STANDARD DESIGN)

See page 104

MATING AND UNMATING FORCE

The force required to fully insert or withdraw pluggable elements without the influence of a coupling or locking device.

MATING CYCLES

Mechanical actuation of connectors and plug devices via push and pull action: A mating cycle consists of one insertion and withdrawal action. The default value for the ODU MEDI-SNAP® push-pull connectors is 2,000 mating cycles, for the breakaway plugs it is up to 5,000 mating cycles.

MAX. CONTINUOUS CURRENT

The metrologically determined amperage at room temperature (approx. 20 °C) which increases the contact temperature to the limit temperature. The values specified in the catalog apply to either individual contacts or completely assembled inserts/modules, as indicated.

NOMINAL SINGLE CONTACT CURRENT LOAD

The current-carrying capacity which each individual contact can be loaded with on its own (see page 107).

NOMINAL VOLTAGE

The voltage which the manufacturer specifies for a connector and relates to the operating and performance features.

OPERATING TEMPERATURE FOR ODU MEDI-SNAP®

Range between the uppermost and lowermost temperature limits. –50 °C to +120 °C (see page 18).

OPERATING VOLTAGE

The nominal voltage of the power source for which the connector is being used. The operating voltage may not be higher than the nominal voltage of the connector.

PCB (A.K.A. "PRINTED CIRCUIT BOARD")

A PCB is a carrier for electronic components. It serves the purposes of mechanical mounting and electrical connection.

PCB TERMINATION

Production of a conductive connection between the PCB and an element in through-hole assembly, THT (through-hole technology).

RATED CURRENT (NOMINAL CURRENT)

See page 107

RATED VOLTAGE

According to IEC 60664-1:2007 (VDE 0110-1:2008) standard "Value of a voltage which is specified by the manufacturer for a component, device or operating medium and relates to the operating and performance features."

TECHNICAL TERMS

SOLDER CONNECTION (SOLDER TERMINATION)

Termination technology in which a molten additional metal (solder) with a lower melting point than the base materials to be connected is used to attach two metallic materials to one another.

TERMINATION CROSS-SECTION

The specified cross-sections correspond to a “fine-wire” conductor structure pursuant to IEC 60228:2004 (VDE 0295:2005; Class 5) or a “fine-wire” conductor structure (7/19 wire) according to AWG (ASTM B258-14).

TERMINATION TECHNOLOGIES

Methods for connecting the leads to the electro-mechanical element, such as solder-free connections pursuant to IEC 60352 (DIN EN 60352): crimp, screw connection etc. or soldering connection (see page 105).

TEST VOLTAGE

The voltage which a conductor can withstand under defined conditions without dielectric breakdown or flashover.

TIGHTNESS IEC 60529:2013 (VDE 0470-1:2014)

See protection types on page 102

UPPERMOST LIMIT TEMPERATURE

The maximum permissible temperature at which a connector may be operated. It includes contact heating through current-carrying capacity. With ODU MEDI-SNAP® standard TURNTAC® contacts, it amounts to +120 °C. Please consult ODU for high-temperature applications.

WIRE

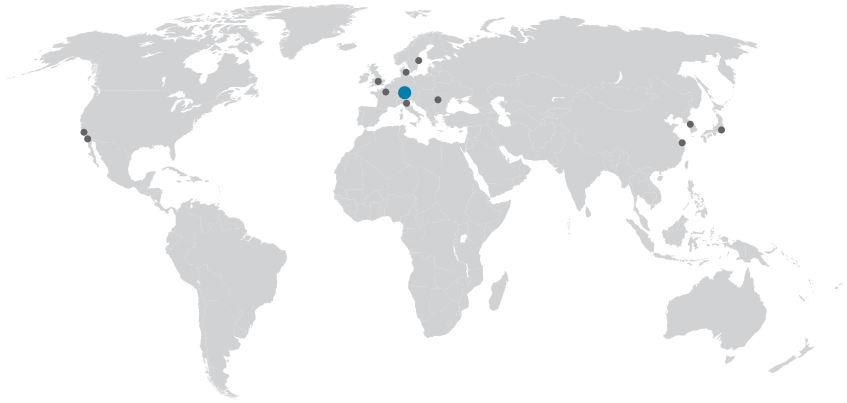
Wires (solid conductors) are available with an insulator sleeve and/or electrical shielding. Cables or conductors may be made up of one or more wires.

GENERAL NOTE

The connectors listed in this catalog are intended for use in high voltage and frequency ranges. Suitable precautionary measures must be taken to ensure that people do not come into contact with live conductors during installation and operation.
All entries in this catalog were thoroughly reviewed before printing. ODU reserves the right to make changes based on the current state of knowledge without prior notice without being obliged to provide replacement deliveries or refinements of older designs.

A PERFECT ALLIANCE.

ODU GROUP WORLDWIDE



HEADQUARTERS

ODU GmbH & Co. KG
Pregelstraße 11, 84453 Mühldorf a. Inn, Germany
Phone: +49 8631 6156-0, Fax: +49 8631 6156-49, E-mail: zentral@odu.de

SALES SUBSIDIARIES

ODU (Shanghai) International Trading Co., Ltd.
Phone: +86 21 58347828-0
E-mail: oduchina@odu.com.cn
www.odu.com.cn

ODU Italia S.R.L.
Phone: +39 331 8708847
E-mail: sales@odu-italia.it
www.odu-italia.it

ODU Scandinavia AB
Phone: +46 176 18262
E-mail: sales@odu.se
www.odu.se

ODU Denmark ApS
Phone: +45 2233 5335
E-mail: sales@odu-denmark.dk
www.odu-denmark.dk

ODU Japan K.K.
Phone: +81 3 6441 3210
E-mail: sales@odu.co.jp
www.odu.co.jp

ODU-UK Ltd.
Phone: +44 330 002 0640
E-mail: sales@odu-uk.co.uk
www.odu-uk.co.uk

ODU France SARL
Phone: +33 1 3935-4690
E-mail: odu@odu.fr
www.odu.fr

ODU Korea Inc.
Phone: +82 10 913008730
E-mail: sales@odu-korea.kr
www.odu-korea.kr

ODU-USA, Inc.
Phone: +1 805 484-0540
E-mail: sales@odu-usa.com
www.odu-usa.com

PRODUCTION AND LOGISTICS SITES

Germany	Otto Dunkel GmbH
China	ODU (Shanghai) Connectors Manufacturing Co.Ltd
Mexico	ODU Mexico Manufacturing S.R.L. de C.V.
Romania	ODU Romania Manufacturing S.R.L.
USA	ODU North American Logistics

Further information and specialized representatives can be found at:
www.odu-connectors.com/contact

Simply scan the QR code
to download the entire brochure.

All dimensions are in mm. Some figures are for illustrative purposes only. Subject to change without notice. Errors and omissions excepted. We reserve the right to change our products and their technical specifications at any time in the interest of technical improvement. This publication supersedes all prior publications. This publication is also available as a PDF file that can be downloaded from **www.odu-connectors.com**

GRASWALD • HEILIGTAG | Passau
ODU MEDI-SNAP®/B/0119/EN