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With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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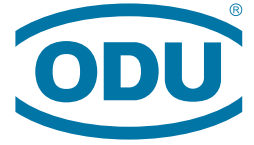
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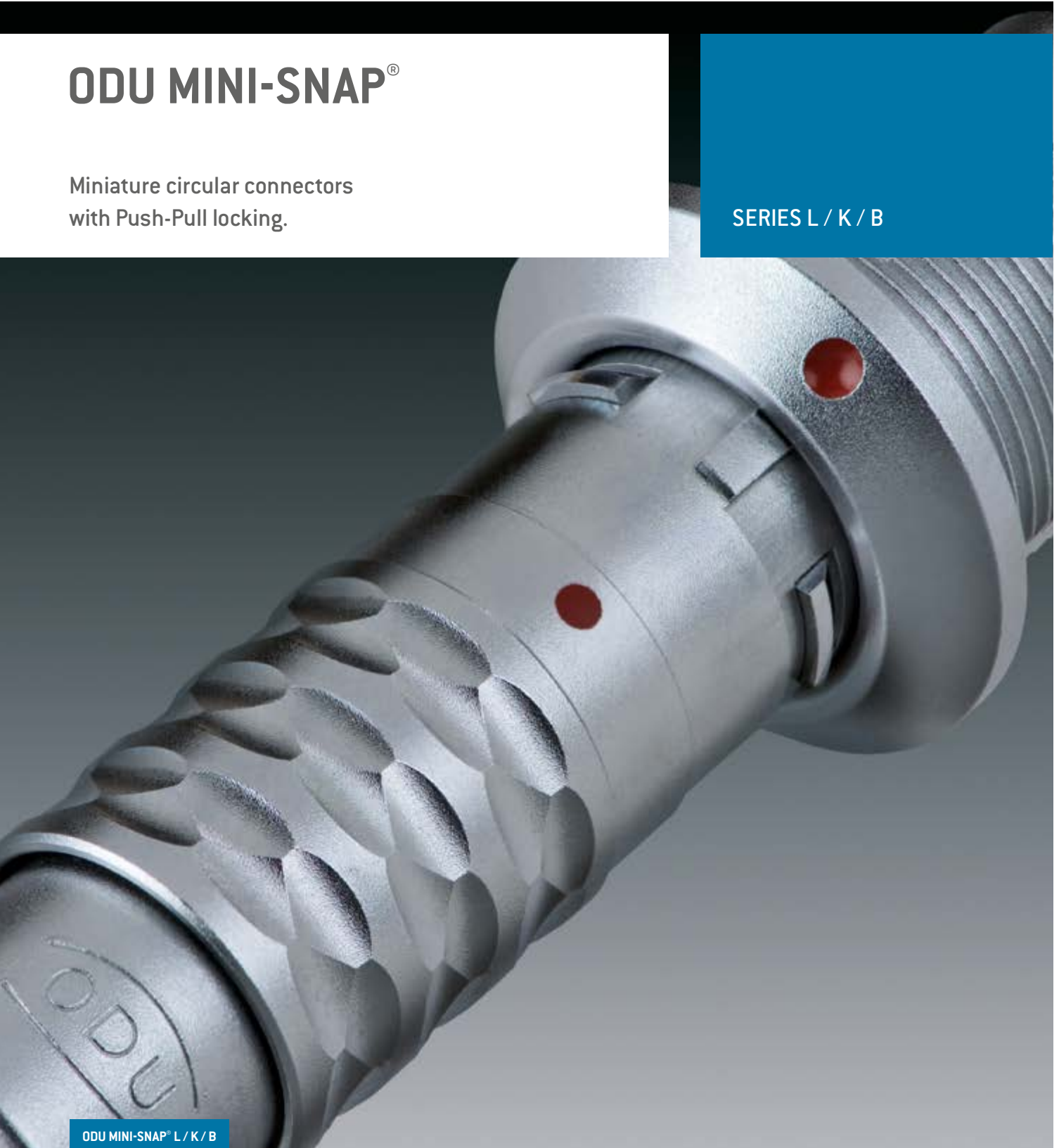
A PERFECT ALLIANCE.



# ODU MINI-SNAP<sup>®</sup>

Miniature circular connectors  
with Push-Pull locking.

SERIES L / K / B



ODU MINI-SNAP<sup>®</sup> L / K / B

ODU MINI-SNAP<sup>®</sup> F

ODU AMC<sup>®</sup>

ODU MEDI-SNAP<sup>®</sup>

ODU MINI-SNAP<sup>®</sup> PC

# ODU MINI-SNAP® L / K / B

## FEATURES

- Quick and easy mating and demating
- Blind mating and demating in difficult-to-reach places
- Low space requirements on the receptacles
- Definite and secure locking conditions
- Robotic mating and demating possible
- Easy cleaning of the connector plug housing possible
- High connector density
- Low power requirement

## APPLICATIONS

- Medical
- Industrial
- Test and measurement
- Military and security
- Energy
- eMobility



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

ODU MINI-SNAP is UL-approved under file E110586. MIL specification: Tests carried out (see page 170).

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-usa.com](http://www.odu-usa.com).

Issue: 2018-04

### Data transmission protocols

These ODU specific connectors can transmit common data transmission protocols such as USB® 2.0, USB® 3.1 Gen1, CAT 5, CAT 6, and Ethernet, but they are not USB®, CAT- and Ethernet-standard connectors.

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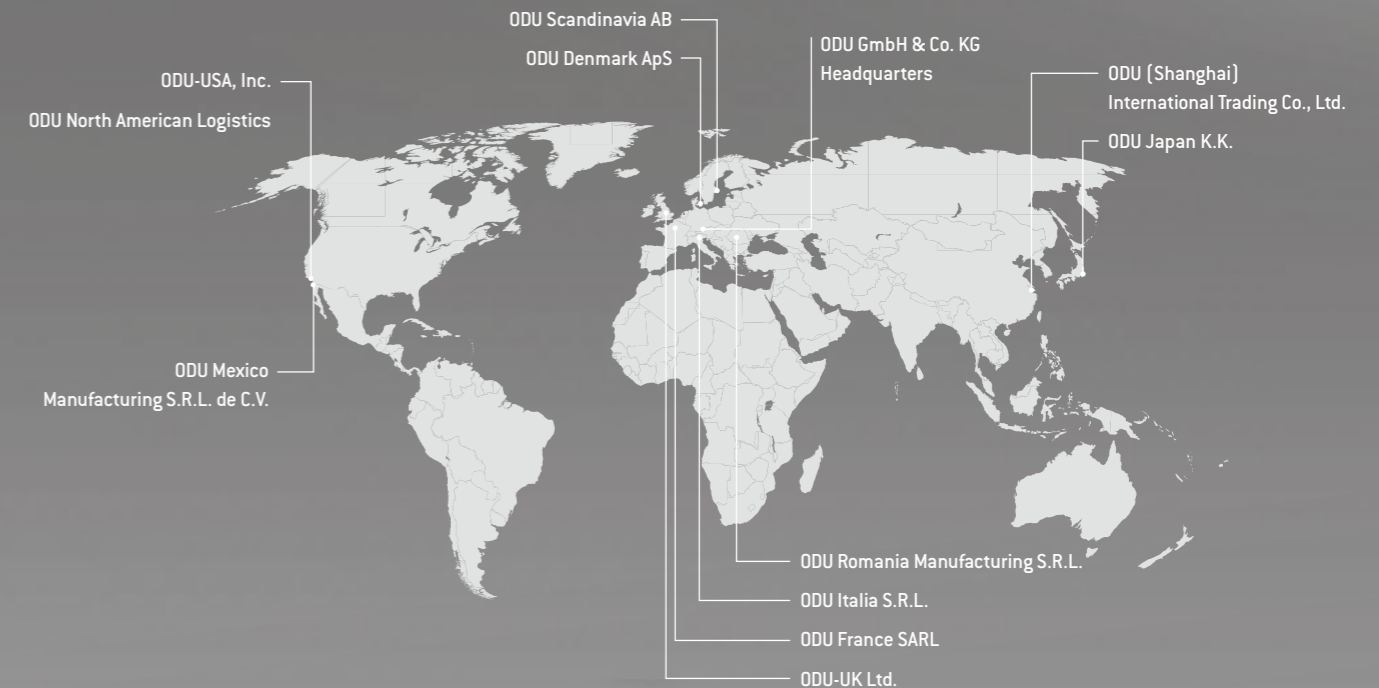
For assembly instructions, please refer to our website: [www.odu-usa.com/downloads/](http://www.odu-usa.com/downloads/)

# 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 IN ACHIEVING SUPERB RESULTS. THIS GOAL DRIVES OUR WORK. **PERFECT CONNECTIONS THAT INSPIRE AND DELIVER ON THE PROMISES.**



## ODU WORLDWIDE



### ODU GROUP OVERVIEW

- More than 75 years of experience in connector technology
- A turnover of 170 million Euro
- Over 1,900 employees worldwide
- 9 sales subsidiaries in China, Denmark, France, Germany, Italy, Japan, Sweden, the 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 2018

### CERTIFIED QUALITY

- DIN EN ISO 9001
- ISO/TS 16949
- DIN EN ISO 14001
- ISO 13485
- Wide range of UL, CSA, VG and DVA licenses
- UL certified cable assembly

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

# INGENIOUS IDEAS PERFECT SOLUTIONS

ODU'S PRODUCT PORTFOLIO.

+ Versatile connector solutions for transmission of power, signals, data, or media – ODU never fails to offer the right interface when quality and absolute reliability are the top priorities.



## COMPACT MODULAR CONNECTOR SOLUTIONS

- Application-specific hybrid interface
- For manual mating and automatic docking
- The highest packing density
- Flexible modular construction
- Multitude of data transmission modules
- Variety of locking options available
- For the transmission of signals, power, high current, high voltage, coax, high-speed data, fiber optics and other media such as air or fluid.
- Mating cycles scalable as required from 10,000 to over 100,000 (1 million)



## PUSH-PULL CIRCULAR CONNECTORS

- Circular connector series in robust metal or plastic housing
- Contacts for soldering, crimping and PCB termination
- Optional selectable Push-Pull locking ensuring a secure connection at all times as well as easy to release Break-Away function
- 2 up to 55 contacts
- IP 50 to IP 69
- Autoclavable for medical applications
- Hybrid inserts for combined transmission



## ELECTRICAL CONTACTS

- Versatile connector technologies
- Outstanding reliability, lifetime and durability
- Up to 1 million mating cycles
- Current-carrying capacity of up to 2,400 amperes and more
- Rugged contact systems, suitable even for harsh environments
- Economical solutions for automatic processing



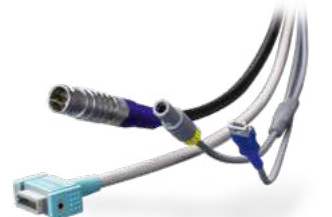
## HEAVY-DUTY & DOCKING AND ROBOTIC CONNECTOR SOLUTIONS

- Extremely durable even under extreme / harsh environments
- Interference-free and secure connection, even under vibration
- Up to 500 A (higher currents upon request)
- High contact security due to the springwire technology
- High pin density due to a minimum contact diameter
- Low contact resistance



## APPLICATION AND CUSTOMER-SPECIFIC SOLUTIONS

- Contacts, connectors and 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
- Fast development and production



## CABLE ASSEMBLY

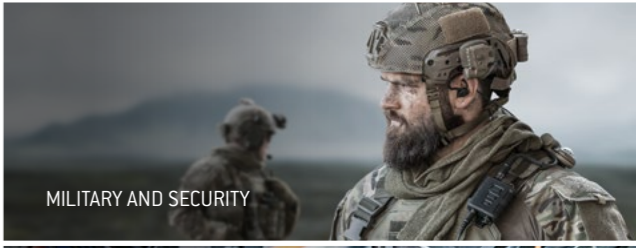
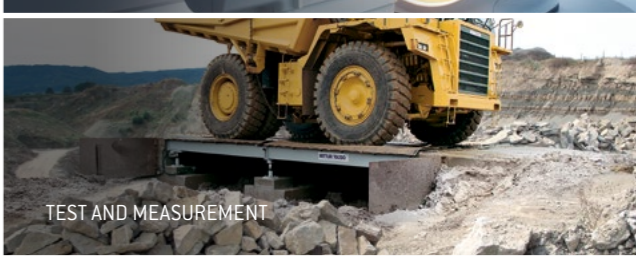
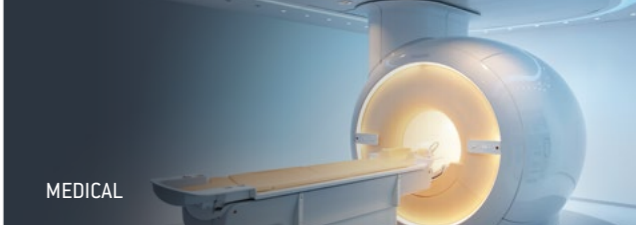
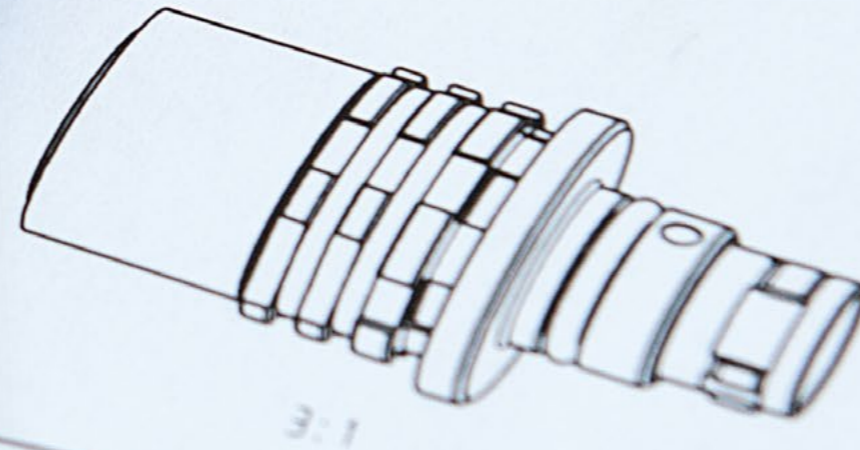
- Complete systems from a single source based on years of assembly expertise
- State-of-the-art production facilities with 100% end testing, high-voltage testing, component testing and pressure testing up to 100 bar
- Cleanroom production
- Hot-melt and high-pressure injection molding
- Customer-specific labeling
- Rapid prototyping of samples

# MORE THAN A CONNECTION

OUR KNOW-HOW FOR YOUR SUCCESS.

All shown connectors are according to DIN EN 61984:2009 connectors without breaking capacity (COC)!

General tolerances to DIN ISO 2768-mK		Tolerance to DIN ISO 8015	
2013	date	name	designation
prep.	11.06	Unterblum	Break-A
app.			
norm.			



## 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 in customer-specific requirements, our products also stand for dynamics, reliability, safety, precision, efficiency and sustainability. And they guarantee unrestricted functionality for the final product due to our high quality connectors. ODU – A PERFECT ALLIANCE.

## APPLICATION-SPECIFIC 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 an impressive, custom-fit final result. Our solutions are frequently based on the modifications of our products, especially for the ODU MINI-SNAP and ODU-MAC connectors.

## HIGH LEVEL OF VERTICAL INTEGRATION

ODU combines all the competences and key technologies for the connector manufacturing. These include design and development, machine tool and special machine construction, injection, stamping, turning, surface technology, assembly and cable assembly and our own test laboratory.

## INDIVIDUAL CABLE ASSEMBLY

Our production skills together with our cutting edge production facilities from Europe, China and the USA enable us to deliver to our customers locally tested assemblies and also global ones.






## PRODUCT INFORMATION

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ODU MINI-SNAP®

# THE COMPLETE SERIES OF ODU PUSH-PULL CONNECTORS AT A GLANCE

	Keying	Size	No. of possible mechanical keyings	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	From page
 <p><b>ODU MINI-SNAP® L</b></p>	Pin and groove	00	4	6.4	3.5	04	•	•	•	IP 50	Up to IP 68	22
		0	8	9	5.6	10						
		1	8	11.5	7.7	16						
		2	8	14.5	9.9	26						
		3	8	17.5	11.9	30						
		4	8	25	16	40						
 <p><b>ODU MINI-SNAP® K</b></p>	Pin and groove	0	8	11	5	10	•	•	•	Up to IP 68	Up to IP 68	74
		1	8	13	7	16						
		2	8	16	9	26						
		3	8	19	10.5	30						
		4	8	25	14	40						
 <p><b>ODU MINI-SNAP® B</b></p>	Pin and groove	0	8	9.4	5	10	•	•	•	IP 68	Up to IP 68	114
		1	9	12	7	16						
		2	10	15	9	26						
		3	13	18	10.5	30						

## FURTHER PRODUCTS OF THE ODU PUSH-PULL CONNECTOR SERIES.



- Versatile keying possibilities – in terms of color and mechanical
- Low weight
- 14 contacts
- IP 64
- Shielded version (BG 2) available
- Simplest assembly
- Autoclaveable / sterilisable model

- Keying over half-shell
- 2–27 contacts
- Low weight
- IP 67
- 3 sizes
- Plastic connector plug housing

- Keying over half-shell
- 2–27 contacts / mixed inserts
- 5 sizes
- IP 50 and IP 68 with same outer diameter possible
- Contacts for solder, crimp and PCB termination

- Keying over insulator
- 2–10 contacts / mixed inserts
- 3 sizes
- IP 50 and IP 68 with same outer diameter possible
- Contacts for solder, crimp and PCB termination

- Push-Pull and Break-Away version
- 3–55 contacts
- 6 sizes
- Watertight – IP 68
- Easy-Clean and High-Density version
- Tested acc. MIL
- Low weight (aluminium connector plug housing)

# CIRCULAR CONNECTORS WITH PUSH-PULL LOCKING IN METAL CONNECTOR PLUG HOUSING



ODU MINI-SNAP is the ideal self-locking circular connector for a wide range of applications. Whether used for transmitting power, signals, data or other media, this circular connector in its robust metal connector plug housing impresses customers with its exceptional quality, high reliability and ideal handling characteristics.

The Push-Pull principle reliably ensures that the connector will not come loose during application in practice: Once plugged in, the ODU MINI-SNAP locks itself into the receptacle automatically. It cannot be separated by pulling on the cable. Instead, the connector can easily be separated from the receptacle by pulling on the outer housing.

The ODU MINI-SNAP is available in a wide range of sizes and models. In addition, you can choose between three base codings.

### VERSATILE CONFIGURATION OPTIONS

There are 6 sizes, 3 termination types and a great variety of various contact inserts to choose from.

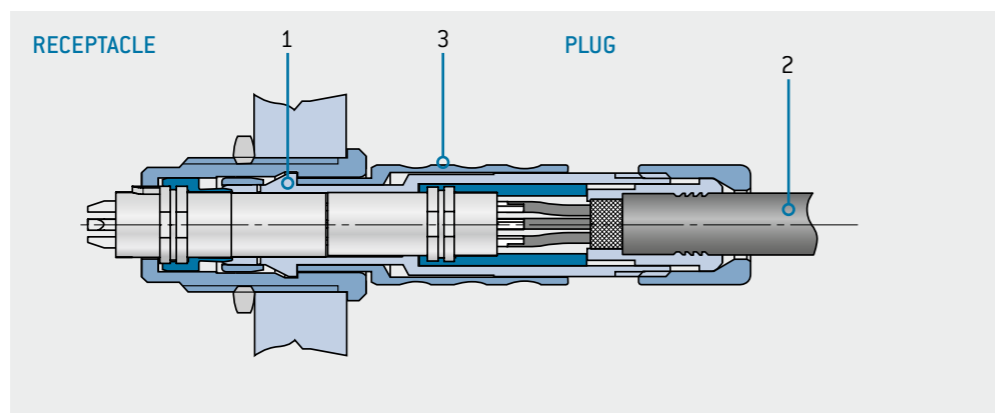


## FUNCTIONAL PRINCIPLE OF THE PUSH-PULL LOCKING

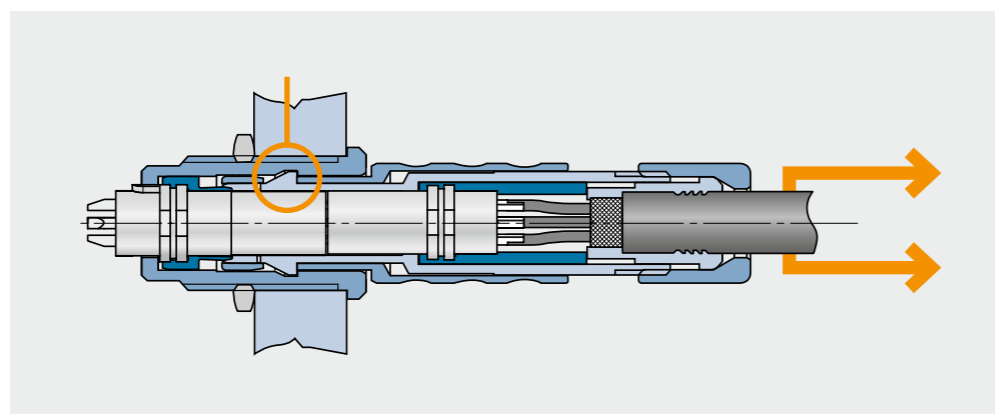
Push-Pull locking systems have a highly user-friendly locking mechanism. When the connector is mated with the receptacle, the connector's locking fingers (1) will lock into place in the receptacle and form a dependable connection between both parts. It cannot be separated by pulling on the connector's cable (2). Instead, the connector can easily be separated from the receptacle by pulling on the outer housing (3). Push-pull connectors from ODU are available in 6 different standard sizes with diameters from 6.4 mm to 25 mm.

You can read about the precise functioning of the locking mechanism in the relevant series.

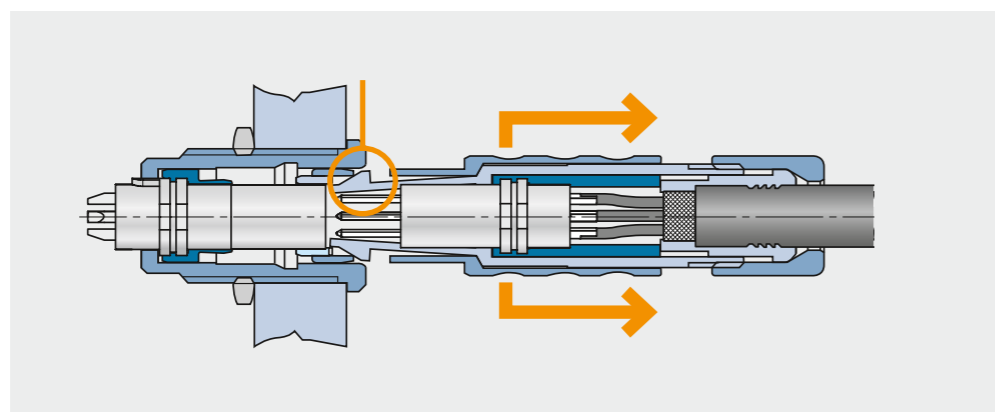
Connector in **mated** condition



Pulling on the cable or back nut will lock the "fingers" firmly in place in the receptacle's locking groove. This prevents the connector from being disconnected.



But pulling on the outer housing will cause the fingers to emerge from the locking groove, making it easy to disconnect the connector.



## IMPORTANT ISSUES AT A GLANCE

### VARIOUS SIZES

- Metal connector plug housing deliverable in 6 sizes
- Outer diameter 6.4 mm to 25 mm
- Number of contacts 2 to 40 contacts, mixed inserts
- IP 50 and IP 68 are deliverable.

### APPLICATIONS AND MATERIALS

The ODU MINI-SNAP uses PEEK insulator material as a standard feature. Other materials are available upon request. ODU MINI-SNAP connector plug housings are made of brass, nickel plated and then matt chrome plated. Nickel and black chrome plated connector plug housings are available upon request as special materials. The internal parts are made of nickel-plated brass.

Thanks to its versatility and autoclavability, the ODU MINI-SNAP is used in a wide range of fields, such as medical technology, measurement and testing technology, military and security technology, industrial electronics and energy technology.

The temperature of ODU MINI-SNAP range under general conditions of use runs from -40 °C to +120 °C, while autoclavable connectors can even be used at temperatures up to +134 °C (see page 170).

## TURNED CONTACTS

Turned contacts are available in diameter 0.5 mm to 2 mm in the following termination types:

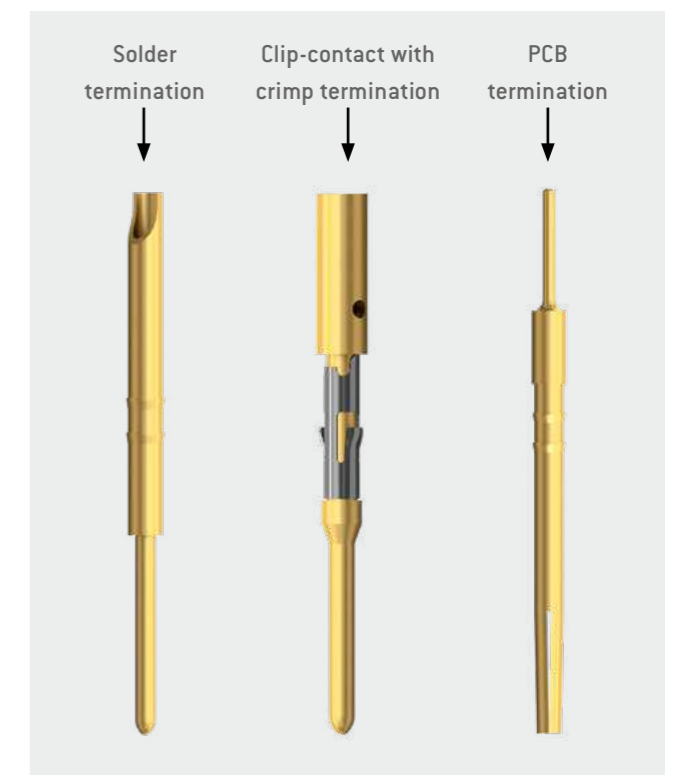
### Solder, crimp and PCB

Mating cycles	> 5.000
Material	Brass
Plating	Ni and Au

### TERMINATION TECHNOLOGIES

	Plug	Receptacle
Crimp termination	•	•
Solder termination	•	•
PCB termination	•	•

### STANDARD PIN CONTACTS



Information on diameters, terminal types and current-carrying capacity can be found in the relevant series after the inserts.



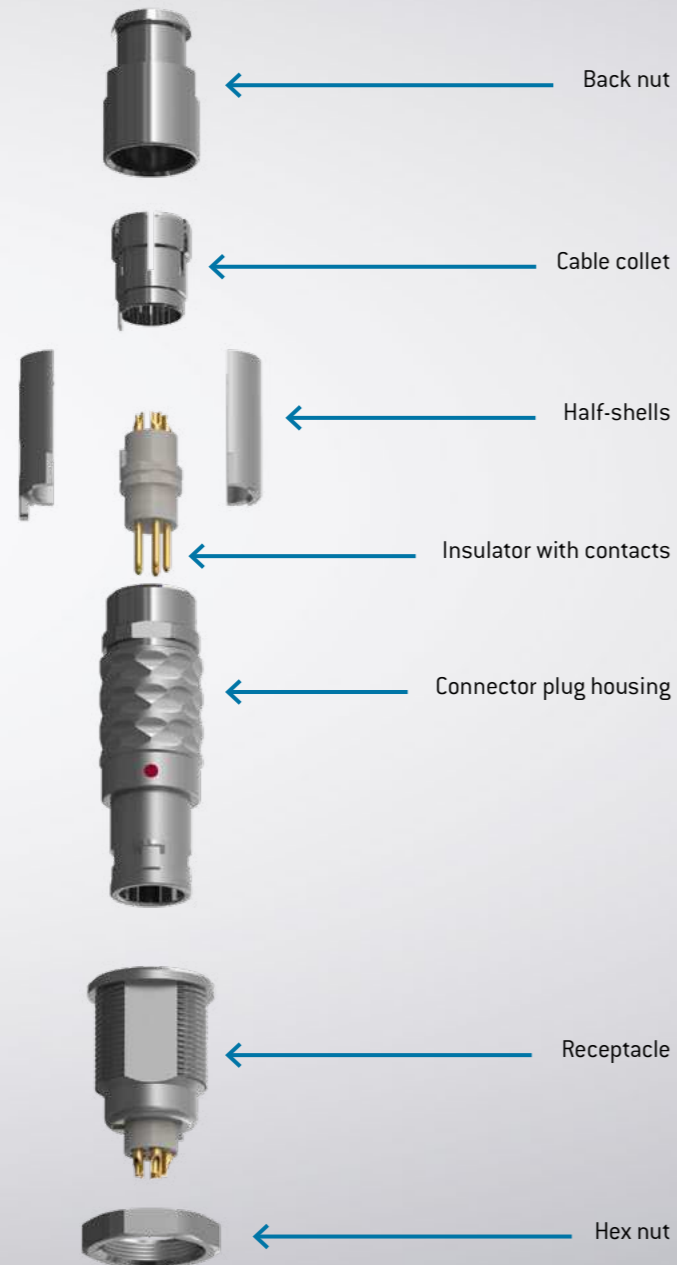
## CONFIGURATION GUIDELINE

Correct configuring – step by step

ODU MINI-SNAP®

# 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.



## SAMPLE CONFIGURATION 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 2 / size 2 / series L / keying 0° / connector plug housing Ms matt chrome plated / insulator PEEK / 16 contacts / pin [solder] Au / termination cross-section AWG 22 / cable diameter 6–7.2 mm / back nut for silicone cable bend relief [silicone cable bend relief has to be ordered separately]

### STEP 1: SERIES (SEE POSITION 4)

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

← SERIES L

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

Page 28–38 [Series L], 80–87 [Series K], 120–124 [Series B]

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

← STYLE S 2 WITH BACK NUT FOR CABLE BEND RELIEF

### STEP 3: SIZE (SEE POSITION 3)

Page 28–38 [Series L], 80–87 [Series K], 120–124 [Series B]

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

← SIZE 2

### STEP 4: KEYING (SEE POSITION 5)

Page 39 [Series L], 88 [Series K], 125 [Series B]

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

← KEYING 0°

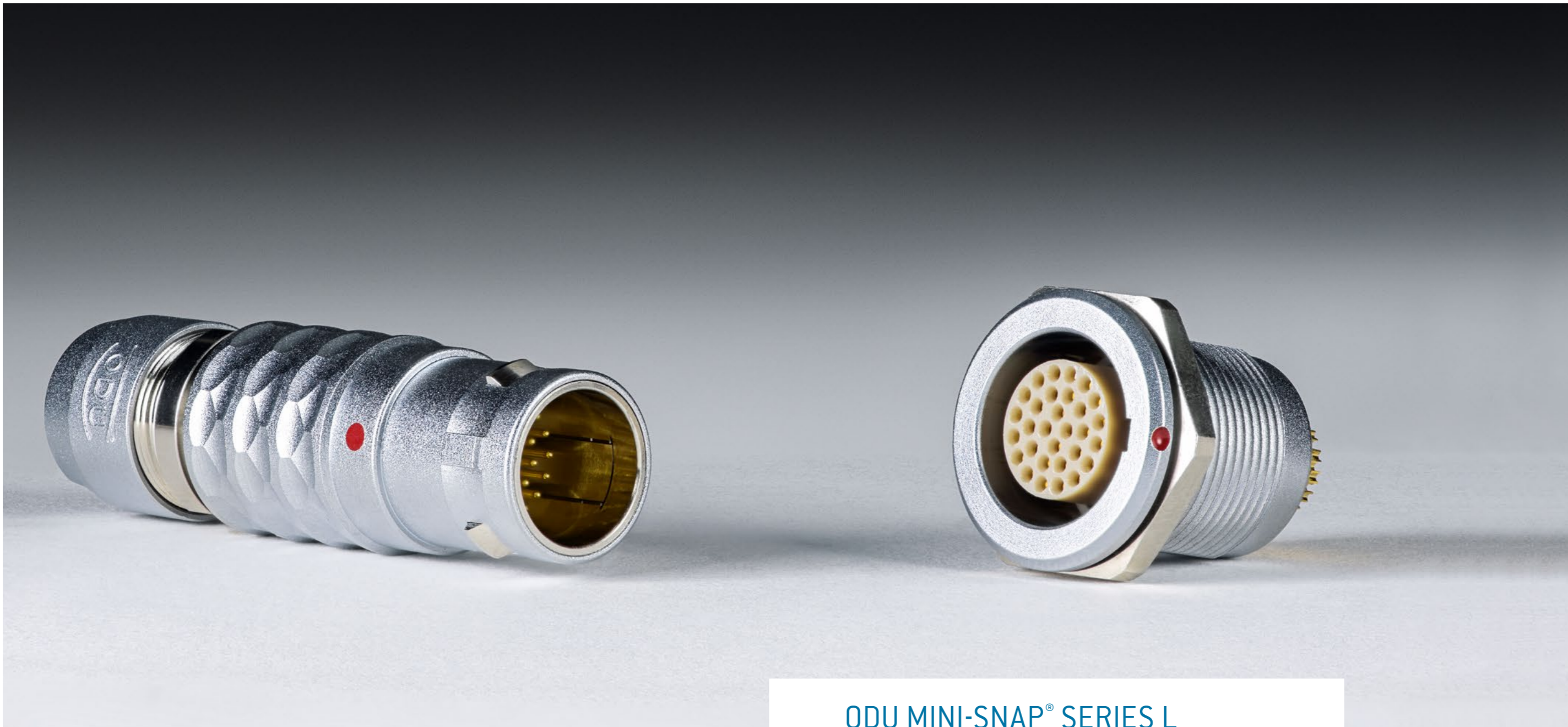
### STEP 5: HOUSING MATERIAL (SEE POSITION 6)

Page 39 [Series L], 88 [Series K], 125 [Series B]

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

← CR matt  
SURFACE MATT CHROMATE (OTHERS UPON REQUEST)





## ODU MINI-SNAP® SERIES L

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# SUMMARY ODU MINI-SNAP® SERIES L

The ODU MINI-SNAP Series L is keyed by pin and groove. These Push-Pull circular connectors can be configured in many different ways: a wide variety of sizes and termination types and contact inserts are available.

- Keying over pin and groove
- 2–40 contacts/mixed inserts
- Up to 6 sizes and 3 termination types
- Choice of numerous plugs and receptacles
- IP 50 and IP 68<sup>1</sup> available
- 5,000 mating cycles and more
- Contacts for solder, crimp and PCB termination

STRAIGHT PLUG		P.28
IP 50		S 1
		S 2
		A 1
		A 2

PANEL-MOUNTED PLUG		P.30
IP 50		A A
IP 68 <sup>1</sup>		A D

RIGHT-ANGLED PLUG		P.31
IP 50		W 1
		W 2

IN-LINE RECEPTACLE		P.32
IP 50		K 1
		K 2

RECEPTACLE		P.33
IP 50		G 1
		G 5
		G 6
IP 68 <sup>1</sup>		G 8
IP 50		G A

RECEPTACLE (RIGHT-ANGLED)		P.36
IP 50		G F
		G G

RECEPTACLE		P.37
IP 50		G H
		G K
IP 68 <sup>1</sup>		G L

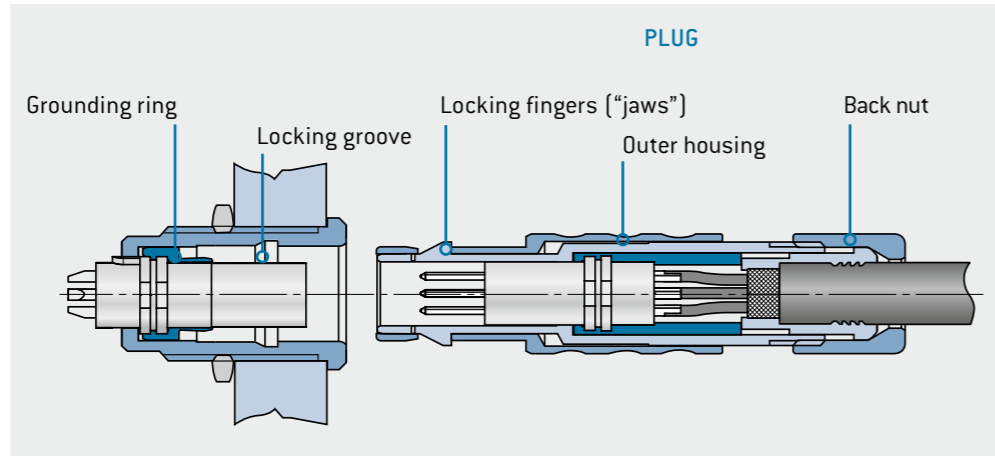
RECEPTACLE (PCB)		P.38
IP 50		G P

<sup>1</sup>IP 68 in reference to the tightness of the end device in unmated condition.

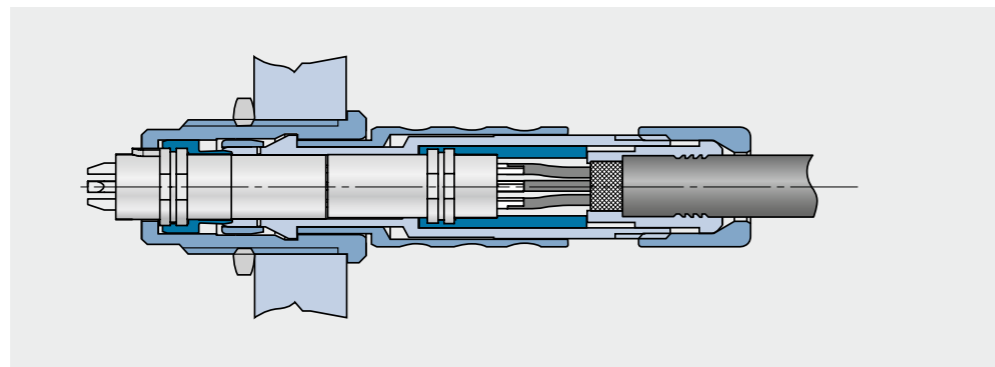
For assembly instructions, please refer to our website: [www.odu-connectors.com/downloads/assembly-instructions](http://www.odu-connectors.com/downloads/assembly-instructions)

# THE LP LOCKING PRINCIPLE SERIES L

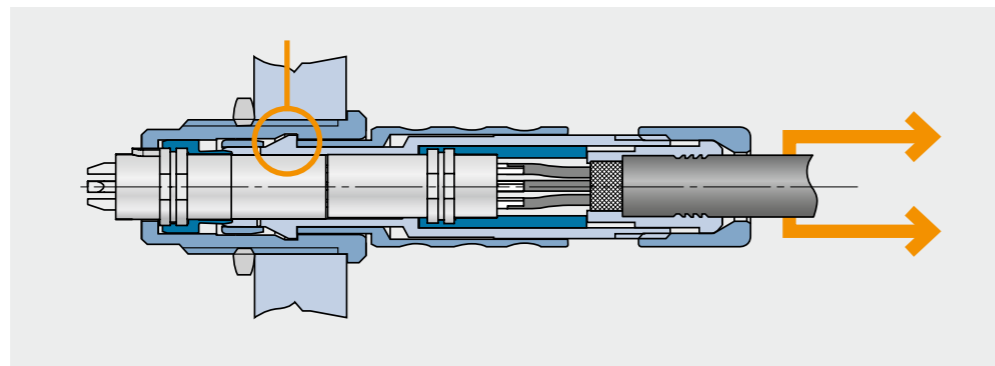
Connector in **unmated** condition



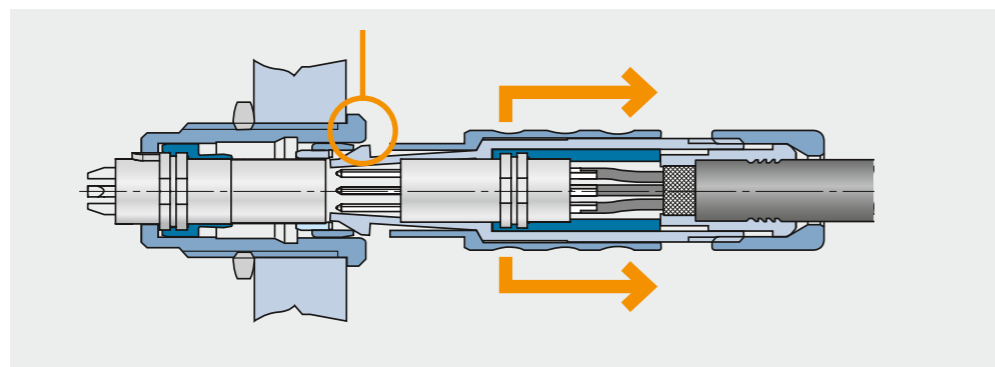
Connector in **mated** condition



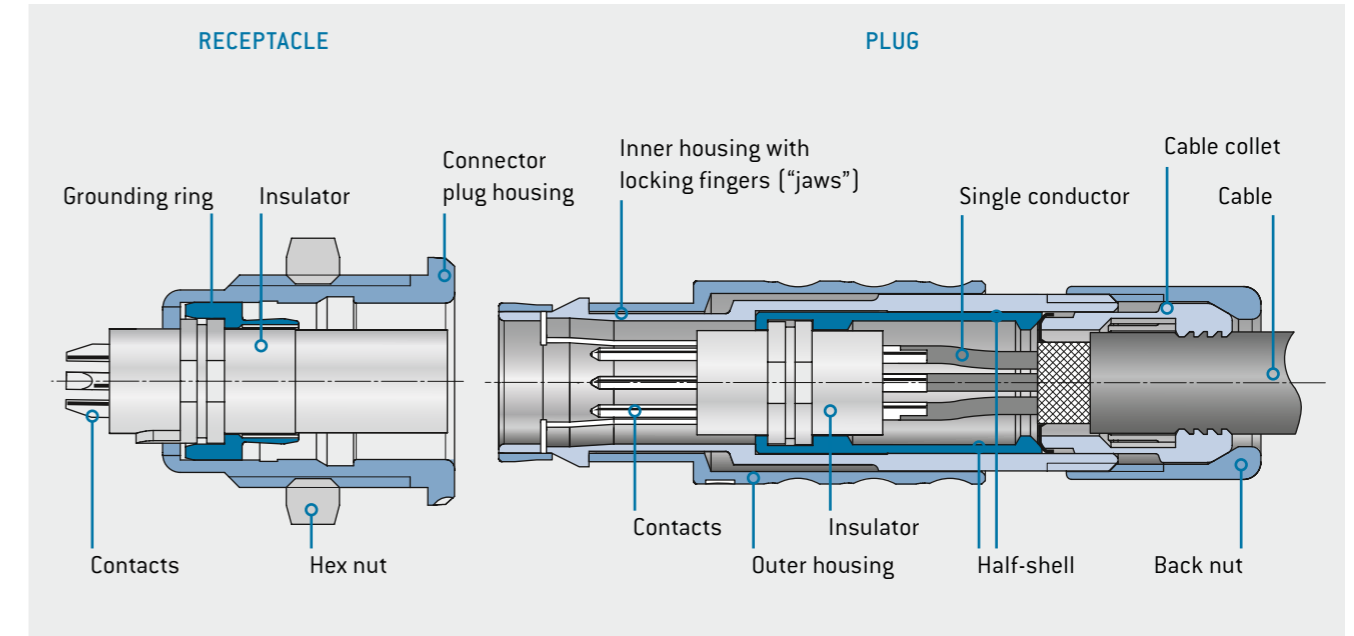
Pulling on the cable or back nut will lock the "fingers" firmly in place in the receptacle's locking groove. This prevents the connector from being disconnected.



But pulling on the outer housing will cause the "fingers" to emerge from the locking groove, making it easy to disconnect the connector.



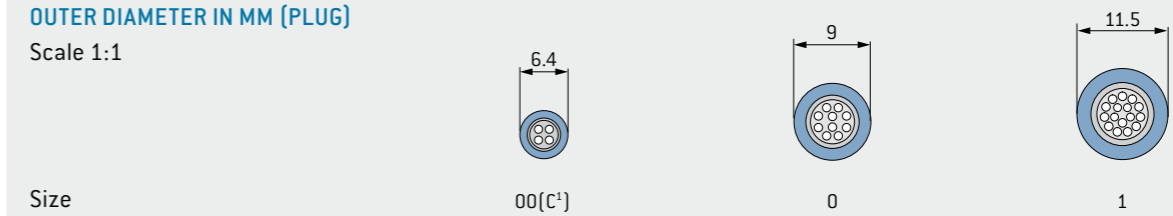
# THE LP LOCKING SERIES L IN SECTIONAL VIEW



## AVAILABLE SIZES

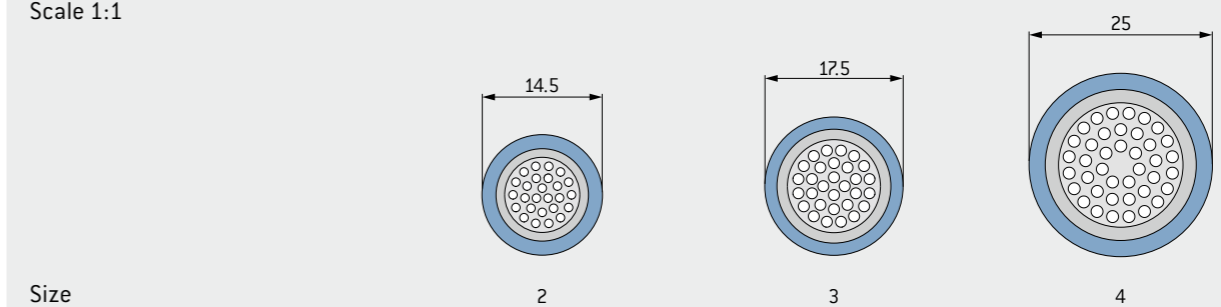
### OUTER DIAMETER IN MM (PLUG)

Scale 1:1



### OUTER DIAMETER IN MM (PLUG)

Scale 1:1



<sup>1</sup> Configuration for size 00 in part number key.

# STRAIGHT PLUG



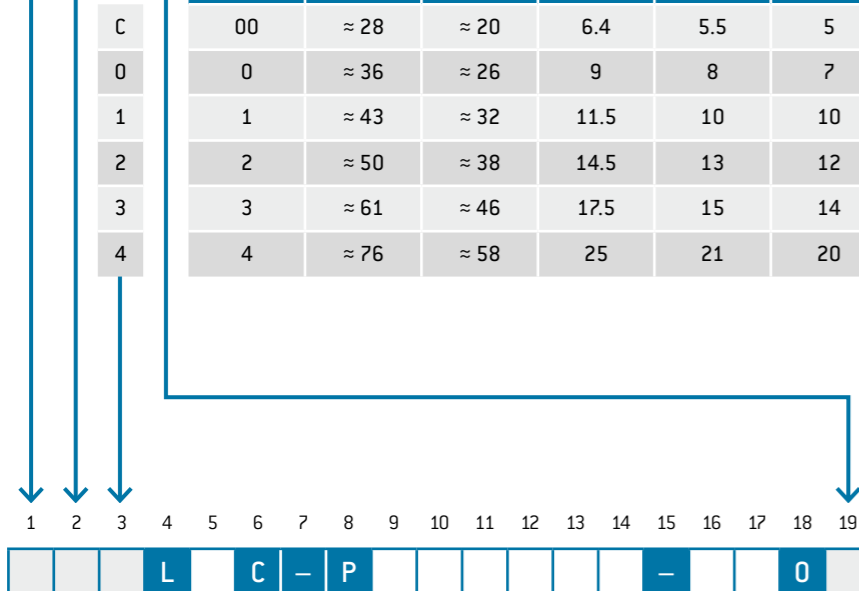
**S 1 0** **STYLE: 1** **IP 50**  
 With standard back nut

**S 2 S** **STYLE: 2** **IP 50**  
 With back nut for cable bend relief<sup>1</sup>

Size	L1 mm	L2 mm	D mm	SWA mm	S1 SW B mm	S2 SW B mm
00	≈ 28	≈ 20	6.4	5.5	5	5
0	≈ 36	≈ 26	9	8	7	7
1	≈ 43	≈ 32	11.5	10	10	10
2	≈ 50	≈ 38	14.5	13	12	13
3	≈ 61	≈ 46	17.5	15	14	15
4	≈ 76	≈ 58	25	21	20	20

**TECHNICAL DATA**

• Contact configuration from page 40.



<sup>1</sup> Please order cable bend reliefs separately, see page 70.

# BREAK-AWAY CONNECTOR (WITH LOCKING)



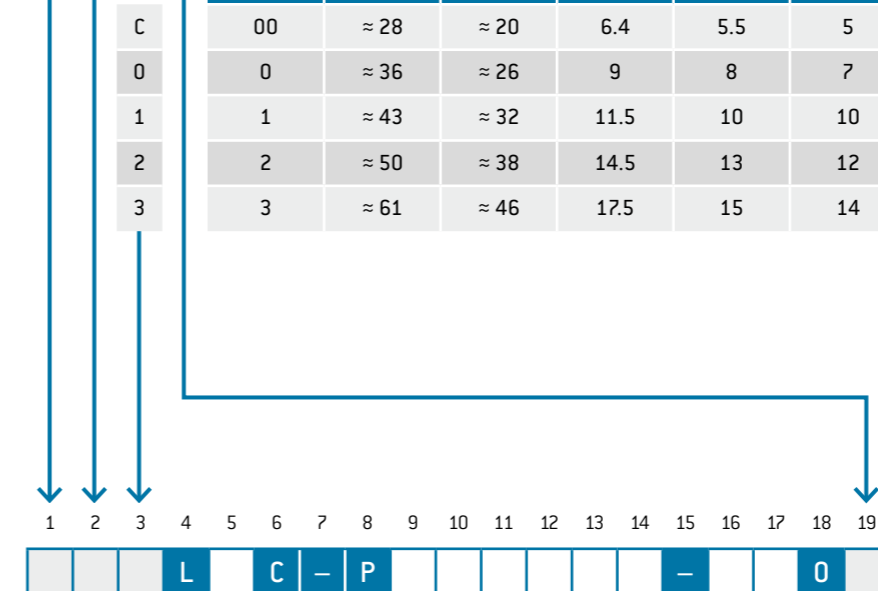
**A 1 0** **STYLE: 1** **IP 50**  
 With standard back nut

**A 2 S** **STYLE: 2** **IP 50**  
 With back nut for cable bend relief<sup>1</sup>

Size	L1 mm	L2 mm	D mm	SWA mm	A1 SW B mm	A2 SW B mm
00	≈ 28	≈ 20	6.4	5.5	5	5
0	≈ 36	≈ 26	9	8	7	7
1	≈ 43	≈ 32	11.5	10	10	10
2	≈ 50	≈ 38	14.5	13	12	13
3	≈ 61	≈ 46	17.5	15	14	15

**TECHNICAL DATA**

• Contact configuration from page 40.  
 • Plug can be separated by pulling on the cable.



<sup>1</sup> Please order cable bend reliefs separately, see page 70.



# PANEL-MOUNTED PLUG



Suitable for creating a docking connection between 2 devices.

**STYLE: A** **IP 50**

With hex nut, without locking, installation from front of panel

Panel cut-out

● Keying indication

Size	L1 <sup>1</sup> mm	L2 mm	L3 mm	C mm	D mm	SW A mm	SW B mm	M mm	Panel cut-out	
									SW mm	Ø mm
00	≈ 17.5	≈ 4.5	9	1	8	6.3	9	7 × 0.5	6.4	7.1
0	≈ 21	≈ 3.5	11.2	1.2	10	8.2	11	9 × 0.5	8.3	9.1
1	≈ 26.2	≈ 7	12.3	1.5	14	10.5	14	12 × 1	10.6	12.1
2	≈ 27.5	≈ 7	13.8	1.8	18	13.5	17	15 × 1	13.6	15.1
3	≈ 34.5	≈ 9	17	2	22	16.5	22	18 × 1	16.6	18.1
4	≈ 37.1	≈ 8	20.5	2.5	28	23.5	30	25 × 1	23.6	25.1

- TECHNICAL DATA**
- IP 50 in reference to the tightness of the end device.
  - Anti-rotation feature.
  - Contact configuration from page 40.
  - PCB layouts, see page 41.

**STYLE: D** **IP 68**

With hex nut, without locking, installation from front of panel

Panel cut-out

● Keying indication

Size	L1 <sup>1</sup> mm	L2 mm	L3 mm	C mm	D mm	SW A mm	SW B mm	M mm	Panel cut-out	
									SW mm	Ø mm
0	≈ 23.5	≈ 5.5	12	2	13	8.2	11	9 × 0.5	8.3	9.1
1	≈ 29.5	≈ 8	13.3	2.5	17	10.5	14	12 × 1	10.6	12.1
2	≈ 30.5	≈ 7	14.8	2.8	19.5	13.5	17	15 × 1	13.6	15.1
3	≈ 35	≈ 7.5	18	3	24	16.5	22	18 × 1	16.6	18.1

- TECHNICAL DATA**
- IP 68 in reference to the tightness of the end device, also in unmated condition.
  - Anti-rotation feature.
  - No crimp contact possible.
  - Contact configuration from page 40.
  - PCB layouts, see page 41.

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

L C - P - O O

<sup>1</sup>L1 = maximum length including contact insert.

# RIGHT-ANGLED PLUG



**STYLE: 1** **IP 50**

With standard back nut

**STYLE: 2** **IP 50**

With back nut and cable bend relief<sup>1</sup>

Size	L1 <sup>1</sup> mm	L2 mm	L3 mm	C mm	D mm	SW A mm	W1 SW B mm	W2 SW B mm	SW C mm
0	≈ 30	20	22.5	11	9	8	7	7	9
1	≈ 36	25	29	13.5	11	10	10	10	11
2	≈ 41.5	29.5	35	16.5	14	13	12	13	14
3	≈ 50	35	36.5	19	16.5	15	14	15	17
4	≈ 65	47	52	25	23	21	20	20	22

- TECHNICAL DATA**
- Contact configuration from page 40.

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

L C - P - O

<sup>1</sup>Please order cable bend reliefs separately, see page 70.

# IN-LINE RECEPTACLE

Suitable for creating a cable-cable connection.



**K 1 0** **STYLE: 1** **IP 50**  
With standard back nut

**K 2 S** **STYLE: 2** **IP 50**  
With back nut for cable bend relief<sup>1</sup>

Size	L1 mm	D mm	SW A mm	K1 SW B mm	K2 SW B mm
00	≈ 27	6.4	5.5	5	5
0	≈ 35	9.4	8	7	7
1	≈ 41	11.5	10	10	10
2	≈ 47	14.5	13	12	13
3	≈ 57	17.5	16	14	15
4	≈ 74	23.5	21	20	20

**TECHNICAL DATA**

- Contact configuration from page 40.

C 0 1 2 3 4

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

L C - P - O

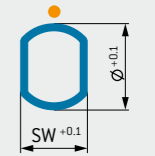
<sup>1</sup> Please order cable bend reliefs separately, see page 70.

# RECEPTACLE



**G 1** **STYLE: 1** **IP 50**  
Installation from front of panel

**Panel cut-out**



• Keying indication

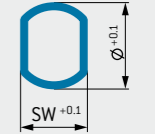
Size	L1 <sup>1</sup> mm	L2 mm	L3 <sup>2</sup> mm	M mm	D mm	SW A mm	SW B mm	C mm	Panel cut-out	
									SW mm	Ø mm
00	≈ 16	≈ 7	12	7 × 0.5	8	9	6.3	1	6.4	7.1
0	≈ 20	≈ 9	14.5	9 × 0.5	10	11	8.2	1.5	8.3	9.1
1	≈ 24	≈ 8	16.5	12 × 1	14	14	10.5	1.5	10.6	12.1
2	≈ 27	≈ 10	18.5	15 × 1	18	17	13.5	1.8	13.6	15.1
3	≈ 30.5	≈ 13	22.5	18 × 1	22	22	16.5	2	16.6	18.1
4	≈ 35	≈ 13	27	25 × 1	28	30	23.5	2.5	23.6	25.1

**TECHNICAL DATA**

- IP 50 in reference to the tightness of the end device.
- Anti-rotation feature.
- Contact configuration from page 40.
- Only straight PCB contact possible.
- PCB layouts, see page 41.

**G 5** **STYLE: 5** **IP 50**  
Receptacle with continuous thread, installation from front or rear of panel, with optimal distance adjustment

**Panel cut-out**



• Keying indication

Size	L1 <sup>1</sup> mm	L2 mm	L3 <sup>2</sup> mm	M mm	D mm	SW A mm	SW B mm	SW C mm	C mm	Panel cut-out	
										SW mm	Ø mm
00	≈ 16	≈ 6	12	7 × 0.5	9	9	6.3	8	2	6.4	7.1
0	≈ 20	≈ 8	14.5	9 × 0.5	11.5	11	8.2	10	2.5	8.3	9.1
1	≈ 24	≈ 8	16.5	12 × 1	15	14	10.5	13	4	10.6	12.1
2	≈ 27	≈ 10	18.5	15 × 1	20	17	13.5	17	3.8	13.6	15.1
3	≈ 30.5	≈ 12	22.5	18 × 1	23	22	16.5	20	5	16.6	18.1
4	≈ 35	≈ 10.5	27	25 × 1	30	30	23.5	27	4.5	23.6	25.1

**TECHNICAL DATA**

- IP 50 in reference to the tightness of the end device.
- Anti-rotation feature.
- Contact configuration from page 40.
- Right-angled PCB contact possible, see page 62.
- PCB layouts, see page 41.

C 0 1 2 3 4

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

L C - P - O O

<sup>1</sup> L1 = maximum length including contact insert. <sup>2</sup> L3 = length of connector plug housing.

# RECEPTACLE

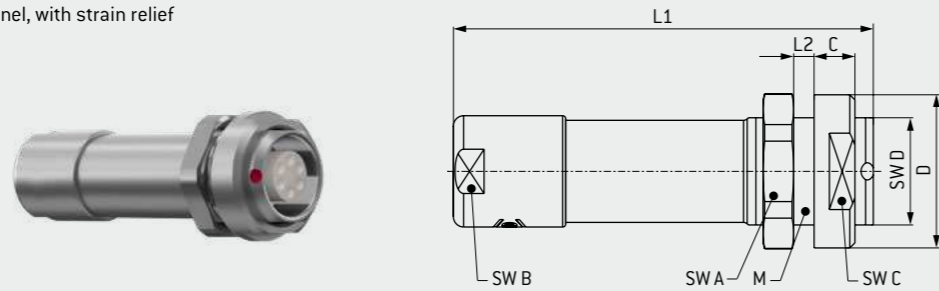


6 6

## STYLE: 6

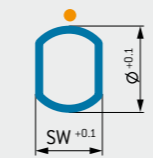
With round nut, installation from front or rear of panel, with strain relief

IP 50



Size	L1 mm	L2 mm	M mm	D mm	SW A mm	SW B mm	SW C mm	SW D mm	C mm	Panel cut-out	
										SW mm	∅ mm
0	≈ 35	≈ 6	9 × 0.5	11.5	11	7	10	8.2	2.5	8.3	9.1
1	≈ 41	≈ 5	12 × 1	15	14	10	13	10.5	4	10.6	12.1
2	≈ 47	≈ 6.5	15 × 1	20	17	12	17	13.5	3.8	13.6	15.1
3	≈ 58	≈ 9	18 × 1	23	22	14	20	16.5	5	16.6	18.1

### Panel cut-out



● Keying indication

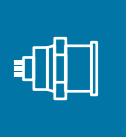
### TECHNICAL DATA

- IP 50 in reference to the tightness of the end device.
- Anti-rotation feature.
- Contact configuration from page 40.

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

L C - P - O

# RECEPTACLE

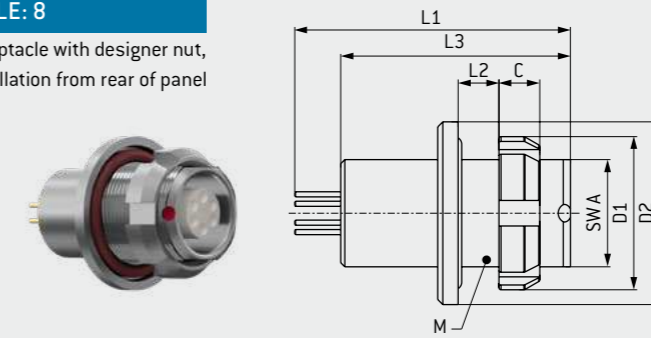


6 8

## STYLE: 8

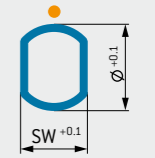
Receptacle with designer nut, installation from rear of panel

IP 68<sup>3</sup>



Size	L1 <sup>1</sup> mm	L2 mm	L3 <sup>2</sup> mm	M mm	D1 mm	D2 mm	SW A mm	C mm	Panel cut-out	
									SW mm	∅ mm
0	≈ 22.5	≈ 6	18.5	9 × 0.5	12	14	8.2	3	8.3	9.1
1	≈ 27	≈ 7	22.5	12 × 1	15	18	10.5	4	10.6	12.1
2	≈ 29.5	≈ 6	23	15 × 1	19	20	13.5	4	13.6	15.1
3	≈ 32	≈ 8.5	26.5	18 × 1	23	24	16.5	5	16.6	18.1

### Panel cut-out



● Keying indication

### TECHNICAL DATA

- IP 68 in reference to the tightness of the end device, also in unmated condition.
- Anti-rotation feature.
- Contact configuration from page 40.
- Assembly wrench, see page 158.
- No crimp contact possible.
- Right-angled PCB contact possible, see page 62.
- PCB layouts, see page 41.

0

1

2

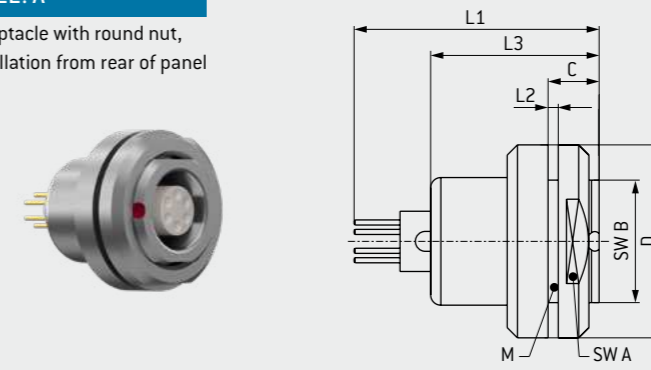
3

6 A

## STYLE: A

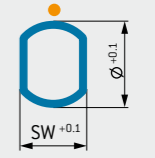
Receptacle with round nut, installation from rear of panel

IP 50



Size	L1 <sup>1</sup> mm	L2 mm	L3 <sup>2</sup> mm	M mm	D mm	SW A mm	SW B mm	C mm	Panel cut-out	
									SW mm	∅ mm
1	≈ 24	≈ 2	16.5	14 × 1	19	17	12	5	12.1	14.1
2	≈ 27	≈ 2	18.5	16 × 1	22	19	15	5	15.1	16.1
3	≈ 30.5	≈ 2	23.5	20 × 1	27	24	18	6	18.1	20.1

### Panel cut-out



● Keying indication

### TECHNICAL DATA

- IP 50 in reference to the tightness of the end device.
- Anti-rotation feature.
- Contact configuration from page 40.
- Right-angled PCB contact possible, see page 62.
- PCB layouts, see page 41.

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

L C - P - O O

<sup>1</sup> L1 = maximum length including contact insert. <sup>2</sup> L3 = length of connector plug housing. <sup>3</sup> Note: tight, grouted receptacle, see page 163.

# RECEPTACLE

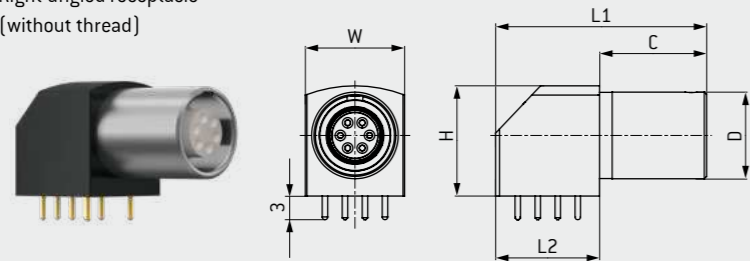


G F

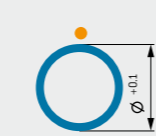
## STYLE: F

Right-angled receptacle (without thread)

IP 50



Panel cut-out



● Keying indication

Size	L1 mm	L2 mm	C mm	H mm	W mm	D mm	Max. no. of contacts	Panel cut-out Ø mm
00	17.5	7	10.5	7	7	6.8	4	6.9
0	24.8	13.2	11.6	12.7	11.6	9	7	9
1	26.8	13.2	13.6	14	12.6	11	10	11

### TECHNICAL DATA

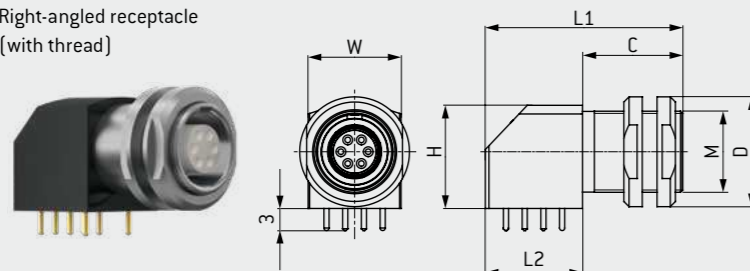
- Contact configuration from page 40.
- PCB layouts, see page 41.
- Only straight PCB contact possible.
- Alternatively, shield termination is available via screw connection.

G G

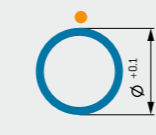
## STYLE: G

Right-angled receptacle (with thread)

IP 50



Panel cut-out



● Keying indication

Size	L1 mm	L2 mm	C mm	H mm	W mm	M mm	D mm	Max. no. of contacts	Panel cut-out Ø mm
0	24.8	13.2	11.6	12.7	11.6	9 × 0.5	11.5	7	9
1	26.8	13.2	13.6	14	12.6	11 × 0.5	14.9	10	11

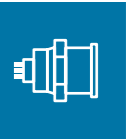
### TECHNICAL DATA

- Contact configuration from page 40.
- PCB layouts, see page 41.
- Only straight PCB contact possible.
- Alternatively, shield termination is available via screw connection.

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

L C - P - O O O

# RECEPTACLE

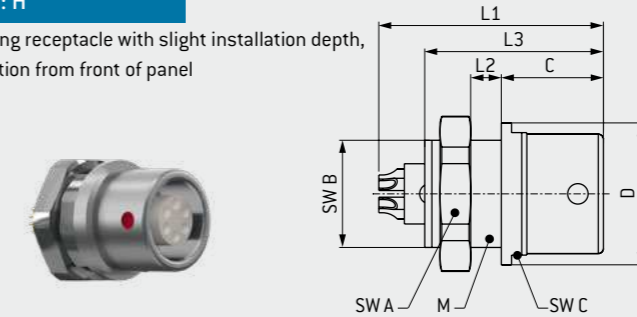


G H

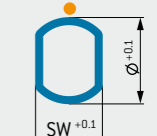
## STYLE: H

Projecting receptacle with slight installation depth, installation from front of panel

IP 50



Panel cut-out



● Keying indication

Size	L1 <sup>1</sup> mm	L2 mm	L3 <sup>2</sup> mm	M mm	D mm	SW A mm	SW B mm	SW C mm	C mm	Panel cut-out	
										SW mm	Ø mm
00	≈ 16	≈ 2.5	12.5	7 × 0.5	9	9	6.3	8	8	6.4	7.1
0	≈ 20	≈ 4	15	9 × 0.5	11.5	11	8.2	10	9	8.3	9.1
1	≈ 24	≈ 4.5	17.5	12 × 1	14	14	10.5	12	10	10.6	12.1
2	≈ 27	≈ 6	19.5	15 × 1	18	17	13.5	16	11	13.6	15.1
3	≈ 30.5	≈ 6	22.5	18 × 1	22	22	16.5	-	12.5	16.6	18.1

### TECHNICAL DATA

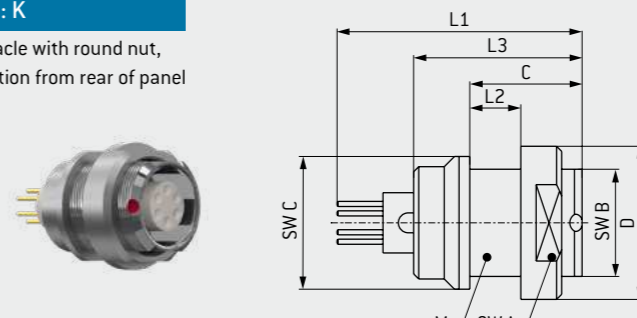
- IP 50 in reference to the tightness of the end device.
- Anti-rotation feature.
- Contact configuration from page 40.
- Only straight PCB contact possible.
- PCB layouts, see page 41.

G K

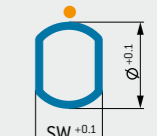
## STYLE: K

Receptacle with round nut, installation from rear of panel

IP 50



Panel cut-out



● Keying indication

Size	L1 <sup>1</sup> mm	L2 mm	L3 <sup>2</sup> mm	M mm	D mm	SW A mm	SW B mm	SW C mm	C mm	Panel cut-out	
										SW mm	Ø mm
0	≈ 20	≈ 3.8	14.5	9 × 0.5	11.5	10	8.2	9	6.3	8.3	9.1
1	≈ 24	≈ 7	16.5	12 × 1	15	13	10.5	13	11	10.6	12.1
2	≈ 27	≈ 5	18.5	15 × 1	20	17	13.5	15	9	13.6	15.1
3	≈ 30.5	≈ 7	22.5	18 × 1	23	20	16.5	20	12	16.6	18.1
4	≈ 35	≈ 10	27	25 × 1	30	27	23.5	27	14.5	23.6	25.1

### TECHNICAL DATA

- IP 50 in reference to the tightness of the end device.
- Anti-rotation feature.
- Contact configuration from page 40.
- Right-angled PCB contact possible, see page 62.
- PCB layouts, see page 41.

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

L C - P - O O

<sup>1</sup> L1 = maximum length including contact insert. <sup>2</sup> L3 = length of connector plug housing.

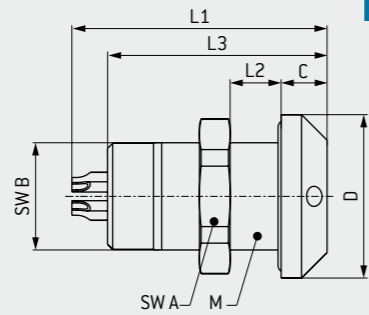
# RECEPTACLE



G L

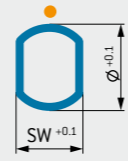
## STYLE: L

Installation from front of panel



IP 68<sup>3</sup>

### Panel cut-out



● Keying indication

### TECHNICAL DATA

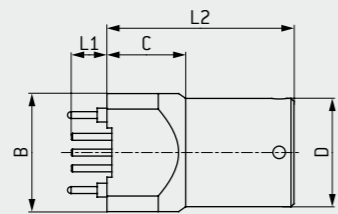
- IP 68 in reference to the tightness of the end device, also in unmated condition.
- Anti-rotation feature.
- Contact configuration from page 40.
- No crimp contacts possible.
- Only straight PCB contact possible.
- PCB layouts, see page 41.

Size	L1 <sup>1</sup> mm	L2 mm	L3 <sup>2</sup> mm	M mm	D mm	SW A mm	SW B mm	C mm	Panel cut-out	
									SW mm	Ø mm
C 00	≈ 18	≈ 8	14.5	7 × 0.5	11	9	6.3	1.5	6.4	7.1
0 0	≈ 22.5	≈ 7.5	16.5	9 × 0.5	13	11	8.2	3	8.3	9.1
1 1	≈ 27	≈ 9	21.5	12 × 1	16	14	10.5	4.5	10.6	12.1
2 2	≈ 29.5	≈ 8	24.5	15 × 1	20	17	13.5	4	13.6	15.1

G P

## STYLE: P

PCB receptacle



IP 50

### TECHNICAL DATA

- IP 50 in reference to the tightness of the end device.
- Anti-rotation feature.
- Contact configuration from page 40.
- PCB layouts, see page 41.

Size	L1 mm	L2 mm	B mm	C mm	D mm
C 00	2.6	14	7	7	6.8
0 0	4.5	15	10	8	9
1 1	3.6	19	12	8	11

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

L C - P - 0 0 0

<sup>1</sup> L1 = maximum length including contact insert. <sup>2</sup> L3 = length of connector plug housing. <sup>3</sup> Note: tight, gouted receptacle, see page 163.

# KEYINGS

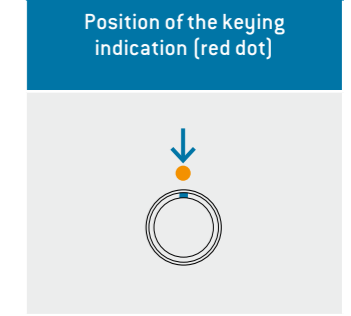


Angle	Receptacle front view	Size						
		00	0	1	2	3	4	
0		•	•	•	•	•	•	
A		•	•	•	•	•	o	
B					o	o	o	
C					•	•	o	
C		•	•	•				
F		•	•	•	•	•	o	
J			o	o				
K					o	o	o	
Q					o	o	o	
V			o	o				
W			o	o	o	o	o	
Y			o	o				

Housing material	Standard	On request

Special materials and surfaces on request.

2 3 4 5 6 7 8 9 10  
L C - P



• Standard  
o On request

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

L C - P - 0

# CONTACT INSERTS (SIZE 00)



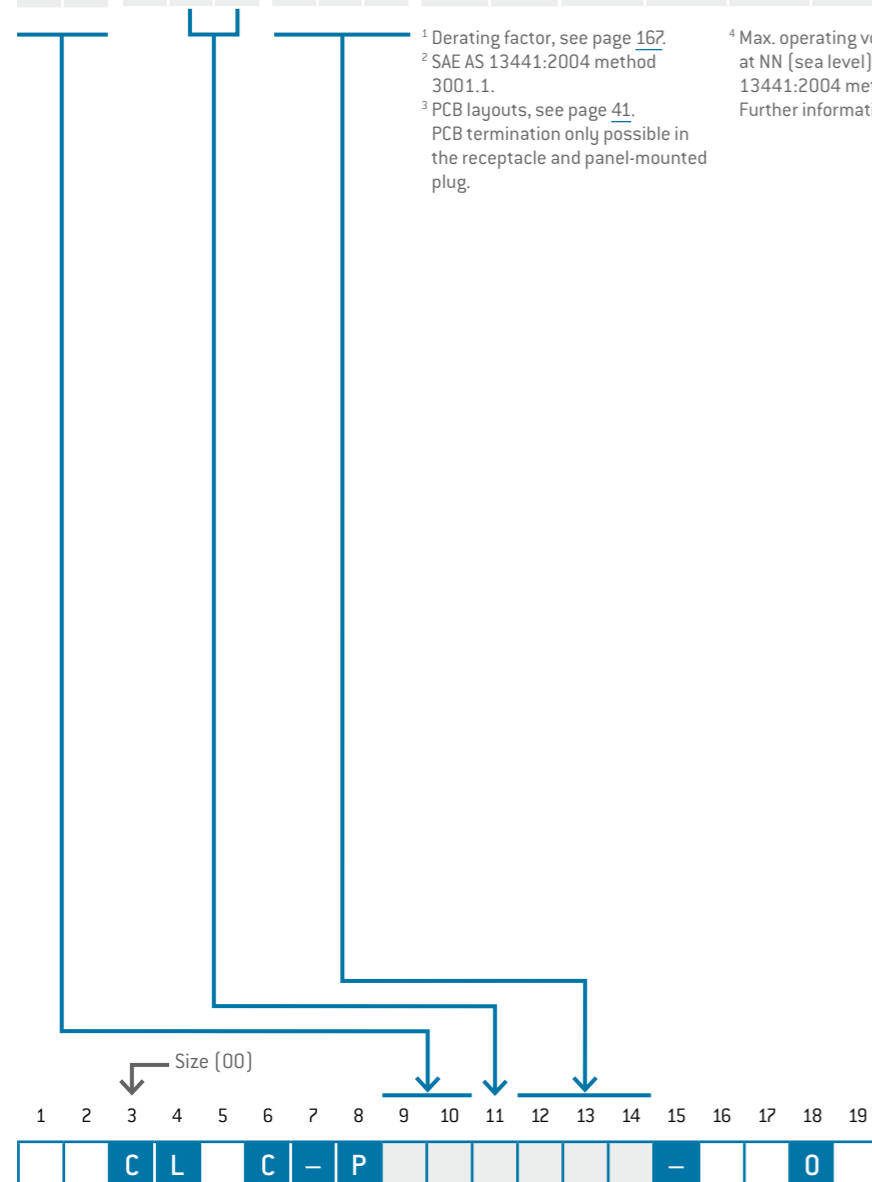
Number of contacts	Contact type			Part number key			Contact diameter mm	Single contact nominal current <sup>1</sup> A	Clearance and creepage distance		Test voltage <sup>2</sup> kVeff	Nominal voltage <sup>4</sup> kVrms	Termination diameter mm	Termination cross-section		View on termination area	
	Termination	Socket	Pin	C	C	0			Contact to contact mm	Contact to housing mm				AWG	mm <sup>2</sup>	Pin piece	Socket piece
0 2	Solder	L	M	C	C	0	0.5	4	0.6	0.8	1.100	0.366	0.4	28	0.08		
	PCB <sup>3</sup>	Q	R	C	0	0											
0 3	Solder	L	M	C	C	0	0.5	4	0.5	0.7	1.100	0.366	0.4	28	0.08		
	PCB <sup>3</sup>	Q	R	C	0	0											
0 4	Solder	L	M	C	C	0	0.5	4	0.4	0.6	0.900	0.300	0.4	28	0.08		
	PCB <sup>3</sup>	Q	R	C	0	0											

<sup>1</sup> Derating factor, see page 167.

<sup>2</sup> SAE AS 13441:2004 method 3001.1.

<sup>3</sup> PCB layouts, see page 41. PCB termination only possible in the receptacle and panel-mounted plug.

<sup>4</sup> Max. operating voltage at NN (sea level) acc. to SAE AS 13441:2004 method 3001.1. Further information on page 168.



# PCB LAYOUTS



For PCB contacts [Size 00].

	Straight	90° right-angled	Fixation via print terminations
<b>2 contacts</b>	 Contact borehole: $\varnothing 0.6$ mm	 Contact borehole: $\varnothing 0.6$ mm	 Contact borehole: $\varnothing 0.6$ mm Fastening borehole: $\varnothing 0.8$ mm
<b>3 contacts</b>	 Contact borehole: $\varnothing 0.6$ mm	 Contact borehole: $\varnothing 0.6$ mm	 Contact borehole: $\varnothing 0.6$ mm Fastening borehole: $\varnothing 0.8$ mm
<b>4 contacts</b>	 Contact borehole: $\varnothing 0.6$ mm	 Contact borehole: $\varnothing 0.6$ mm	 Contact borehole: $\varnothing 0.6$ mm Fastening borehole: $\varnothing 0.8$ mm

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

# CONTACT INSERTS (SIZE 0)



Number of contacts	Contact type			Part number key			Contact diameter mm	Single contact nominal current <sup>1</sup> A	Clearance and creepage distance		Test voltage <sup>2</sup> kVeff	Nominal voltage <sup>5</sup> kVrms	Termination diameter mm	Termination cross-section		View on termination area		
	Termination	Socket	Pin	J	G	O			Contact to contact mm	Contact to housing mm				AWG	mm <sup>2</sup>	Pin piece	Socket piece	
0	2	Solder	L	M	J	G	O	0.9	7.5	1	1	1.500	0.500	0.85	22	0.38		
		Crimp <sup>3</sup>	N	P	J	H	O		10	0.7	0.7	1.100	0.366	-	20-24	0.50-0.25		
		PCB <sup>4</sup>	Q	R	J	O	O		7.5	1	1	1.500	0.500	0.7	-	-		
0	3	Solder	L	M	J	G	O	0.9	7.5	0.8	1	1.200	0.400	0.85	22	0.38		
		Crimp <sup>3</sup>	N	P	J	H	O		10	0.5	0.7	0.600	0.200	-	20-24	0.50-0.25		
		PCB <sup>4</sup>	Q	R	J	O	O		7.5	0.8	1	1.200	0.400	0.7	-	-		
0	4	Solder	L	M	F	G	O	0.7	7.5	0.6	0.8	0.900	0.300	0.85	22	0.38		
		Crimp <sup>3</sup>	N	P	F	D	O		6	0.8	1			0.6	26	0.15		
		PCB <sup>4</sup>	Q	R	F	C	O		7.5	0.6	0.8			-	22-26	0.38-0.15		
		PCB <sup>4</sup>	Q	R	F	O	O		6	0.8	1			-	28-32	0.09-0.04		
0	5	Solder	L	M	F	G	O	0.7	7.5	0.5	0.6	0.600	0.200	0.85	22	0.38		
		Crimp <sup>3</sup>	N	P	F	D	O		6	0.7	0.8	1.100	0.366	0.6	26	0.15		
		PCB <sup>4</sup>	Q	R	F	C	O		7.5	0.5	0.6	0.600	0.200	-	22-26	0.38-0.15		
0	6	Solder	L	M	C	C	O	0.5	4	0.7	0.8	0.900	0.300	0.4	28	0.08		
		PCB <sup>4</sup>	Q	R	C	O	O			0.8	-	-	0.5	-	-			

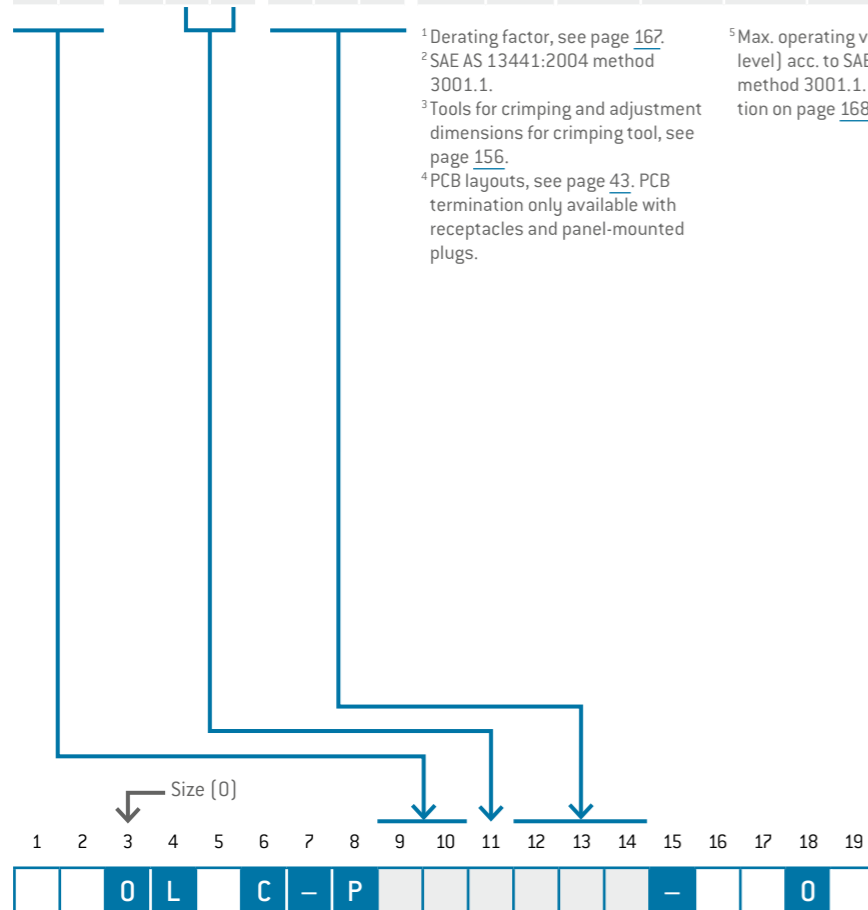
<sup>1</sup> Derating factor, see page 167.

<sup>2</sup> SAE AS 13441:2004 method 3001.1.

<sup>3</sup> Tools for crimping and adjustment dimensions for crimping tool, see page 156.

<sup>4</sup> PCB layouts, see page 43. PCB termination only available with receptacles and panel-mounted plugs.

<sup>5</sup> Max. operating voltage at NN (sea level) acc. to SAE AS 13441:2004 method 3001.1. Further information on page 168.



# PCB LAYOUTS

For PCB contacts [Size 0].



	Straight	90° right-angled	Fixation via print terminations	Fixation via screws
2 contacts	 Contact borehole: $\varnothing 0.8$ mm	 Contact borehole: $\varnothing 0.7$ mm	 Contact borehole: $\varnothing 0.8$ mm Fastening borehole: $\varnothing 0.8$ mm	 Contact borehole: $\varnothing 0.8$ mm Fastening borehole: $\varnothing 1.5$ mm
3 contacts	 Contact borehole: $\varnothing 0.8$ mm	 Contact borehole: $\varnothing 0.7$ mm	 Contact borehole: $\varnothing 0.8$ mm Fastening borehole: $\varnothing 0.8$ mm	 Contact borehole: $\varnothing 0.8$ mm Fastening borehole: $\varnothing 1.5$ mm
4 contacts	 Contact borehole: $\varnothing 0.6$ mm	 Contact borehole: $\varnothing 0.7$ mm	 Contact borehole: $\varnothing 0.8$ mm Fastening borehole: $\varnothing 0.8$ mm	 Contact borehole: $\varnothing 0.8$ mm Fastening borehole: $\varnothing 1.5$ mm
5 contacts	 Contact borehole: $\varnothing 0.6$ mm	 Contact borehole: $\varnothing 0.7$ mm	 Contact borehole: $\varnothing 0.8$ mm Fastening borehole: $\varnothing 0.8$ mm	 Contact borehole: $\varnothing 0.8$ mm Fastening borehole: $\varnothing 1.5$ mm
6 contacts	 Contact borehole: $\varnothing 0.6$ mm	 Contact borehole: $\varnothing 0.7$ mm	 Contact borehole: $\varnothing 0.8$ mm Fastening borehole: $\varnothing 0.8$ mm	 Contact borehole: $\varnothing 0.8$ mm Fastening borehole: $\varnothing 1.5$ mm

All specifications are only valid for socket inserts.

Pin inserts on request. Further PCB layouts upon request.

# CONTACT INSERTS (SIZE 0)



Number of contacts	Contact type			Part number key			Contact diameter mm	Single contact nominal current <sup>1</sup> A	Clearance and creepage distance		Test voltage <sup>2</sup> kVeff	Nominal voltage <sup>5</sup> kVrms	Termination diameter mm	Termination cross-section		View on termination area		
	Termination	Socket	Pin						Contact to contact mm	Contact to housing mm				AWG	mm <sup>2</sup>	Pin piece	Socket piece	
0	7	Solder	L	M	C	C	0	0.5	4	0.7	0.8	0.900	0.300	0.4	28	0.08		
		PCB <sup>4</sup>	Q	R	C	O	0											
0	9	Solder	L	M	C	C	0	0.5	4	0.4	0.8	0.600	0.200	0.4	28	0.08		
		PCB <sup>4</sup>	Q	R	C	O	0											
1	0 <sup>8</sup>	Solder	L	M	C	C	9	0.5	4	0.3	0.7	0.600	0.200	0.4	28	0.08		
		PCB <sup>4</sup>	Q	R	C	O	9											

## SPECIFIC INSERTS FOR HIGH DATA TRANSMISSION RATES

0	4	Solder	L	M	F	G	0	0.7	7.5	0.6	0.8	0.900	0.300	0.85	22	0.38			Ethernet <sup>6,10</sup> Type CAT 5 <sup>10</sup> up to 100 Mbit
		Crimp <sup>3</sup>	N	P	F	D	0							0.6	26	0.15			
		PCB <sup>4</sup>	Q	R	F	C	0							-	22-26	0.38-0.15			
					F	O	0							6	0.8	1			
U	4	Solder	-	M	F	G	0	0.7	7.5	0.6	0.8	0.900	0.300	0.85	22	0.38			USB <sup>9</sup> 2.0 <sup>2,10</sup>
		Crimp <sup>3</sup>	-	P	F	G	0							-	22-26	0.38-0.15			
0	4	Solder	L	-	F	G	0	0.7	7.5	0.6	0.8	0.900	0.300	0.85	22	0.38			USB <sup>9</sup> 2.0 <sup>2,10</sup>
		Crimp <sup>3</sup>	N	-	F	G	0							-	22-26	0.38-0.15			
		PCB <sup>4</sup>	Q	-	F	O	0	0.5	-	-	-	-	-	-	-	-			
1	0 <sup>8</sup>	Solder	A	B	M	M	9	4x0.5 6x0.3	5	0.3	0.6	0.600	0.200	0.7 0.45	24 28	0.25 0.08			USB <sup>9</sup> 3.1 Gen1 <sup>2,9,10</sup>

<sup>1</sup> Derating factor, see page 167.

<sup>2</sup> SAE AS 13441:2004 method 3001.1.

<sup>3</sup> Tools for crimping and adjustment dimensions for crimping tool, see page 156.

<sup>4</sup> PCB layouts, see page 45. PCB termination only available with receptacles and panel-mounted plugs.

<sup>5</sup> Max. operating voltage at NN (sea level) acc. to SAE AS 13441:2004 method 3001.1. Further information on page 168.

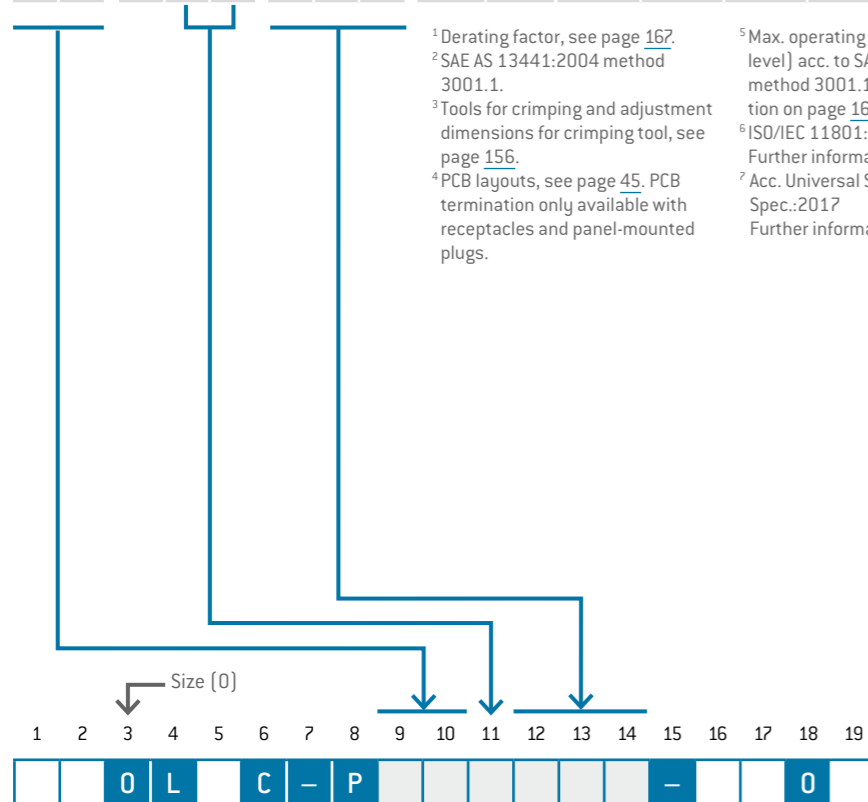
<sup>6</sup> ISO/IEC 11801:2017. Further information on request.

<sup>7</sup> Acc. Universal Serial Bus 3.2 Spec.:2017 Further information on request.

<sup>8</sup> Not compatible to competition.

<sup>9</sup> For style S1, S2, A1, A2, K1, K2 and G6 possible. For a cable diameter from 5.5 to 6 mm possible.

<sup>10</sup> Concerning data transmission protocols please note page 2.



# PCB LAYOUTS

For PCB contacts [Size 0].



	Straight	90° right-angled	Fixation via print terminations	Fixation via screws
<b>7 contacts</b>	 Contact borehole: $\varnothing 0.6$ mm	 Contact borehole: $\varnothing 0.7$ mm	 Contact borehole: $\varnothing 0.8$ mm Fastening borehole: $\varnothing 0.8$ mm	 Contact borehole: $\varnothing 0.8$ mm Fastening borehole: $\varnothing 1.5$ mm
<b>9 contacts</b>	 Contact borehole: $\varnothing 0.6$ mm	 Contact borehole: $\varnothing 0.6$ mm	 Contact borehole: $\varnothing 0.8$ mm Fastening borehole: $\varnothing 0.8$ mm	
<b>10 contacts</b>	 Contact borehole: $\varnothing 0.6$ mm	 Contact borehole: $\varnothing 0.7$ mm		
<b>High-speed versions</b>				
<b>4 contacts</b>	 Contact borehole: $\varnothing 0.6$ mm	 Contact borehole: $\varnothing 0.7$ mm	 Contact borehole: $\varnothing 0.8$ mm Fastening borehole: $\varnothing 0.8$ mm	 Contact borehole: $\varnothing 0.8$ mm Fastening borehole: $\varnothing 1.5$ mm
<b>10 contacts</b>	 Contact borehole: $\varnothing 0.6$ mm	 Contact borehole: $\varnothing 0.7$ mm		

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



# CONTACT INSERTS (SIZE 1)



Number of contacts	Contact type			Part number key	Contact diameter mm	Single contact nominal current <sup>1</sup> A	Clearance and creepage distance		Test voltage <sup>2</sup> kVeff	Nominal voltage <sup>5</sup> kVrms	Termination diameter mm	Termination cross-section		View on termination area		
	Termination	Socket	Pin				Contact to contact mm	Contact to housing mm				AWG	mm <sup>2</sup>	Pin piece	Socket piece	
0	2	Solder	L	M	P N O	1.3	15	1	1.1	1.650	0.550	1.4	18	1		
			P	H	O		1.1					20	0.5			
		Crimp <sup>3</sup>	N	P	P L O		15					–	18–20	1.00–0.50		
			PCB <sup>4</sup>	Q	R		P O O					12	–	–		
0	3	Solder	L	M	P N O	1.3	15	0.8	1	1.000	0.333	1.4	18	1		
			P	H	O		12	0.9	1.1	1.500	0.500	1.1	20	0.5		
		Crimp <sup>3</sup>	N	P	P L O		15	0.8	1	1.000	0.333	–	18–20	1.00–0.50		
			PCB <sup>4</sup>	Q	R		P O O	12	0.9	1.1	1.500	0.500	0.7	–		
0	4	Solder	L	M	J G O	0.9	7.5	1	1.4	1.500	0.500	0.85	22	0.38		
			P	H	O		10	0.7	1.1	1.000	0.333	–	20–24	0.50–0.25		
		Crimp <sup>3</sup>	N	P	J G O		7.5	1	1.4	1.500	0.500	–	22–26	0.38–0.15		
			PCB <sup>4</sup>	Q	R		J O O	10	0.7	1.1	1.000	0.333	0.7	–		
0	5	Solder	L	M	J H O	0.9	10	0.6	0.9	1.000	0.333	1.1	20	0.50		
			P	H	O		7.5	0.9	1.2	1.350	0.450	0.85	22	0.38		
		Crimp <sup>3</sup>	N	P	J G O		10	0.6	0.9	1.000	0.333	–	20–24	0.50–0.25		
			PCB <sup>4</sup>	Q	R		J O O	7.5	0.9	1.2	1.350	0.450	0.7	–		
0	6	Solder	L	M	F G O	0.7	7.5	0.7	1	1.000	0.333	0.85	22	0.38		
			P	H	O		6	0.9	1.2	1.200	0.400	0.65	26	0.15		
		Crimp <sup>3</sup>	N	P	F G O		7.5	0.7	1	1.000	0.333	–	22–26	0.38–0.15		
			PCB <sup>4</sup>	Q	R		F O O	6	0.9	1.2	1.200	0.400	–	28–32		

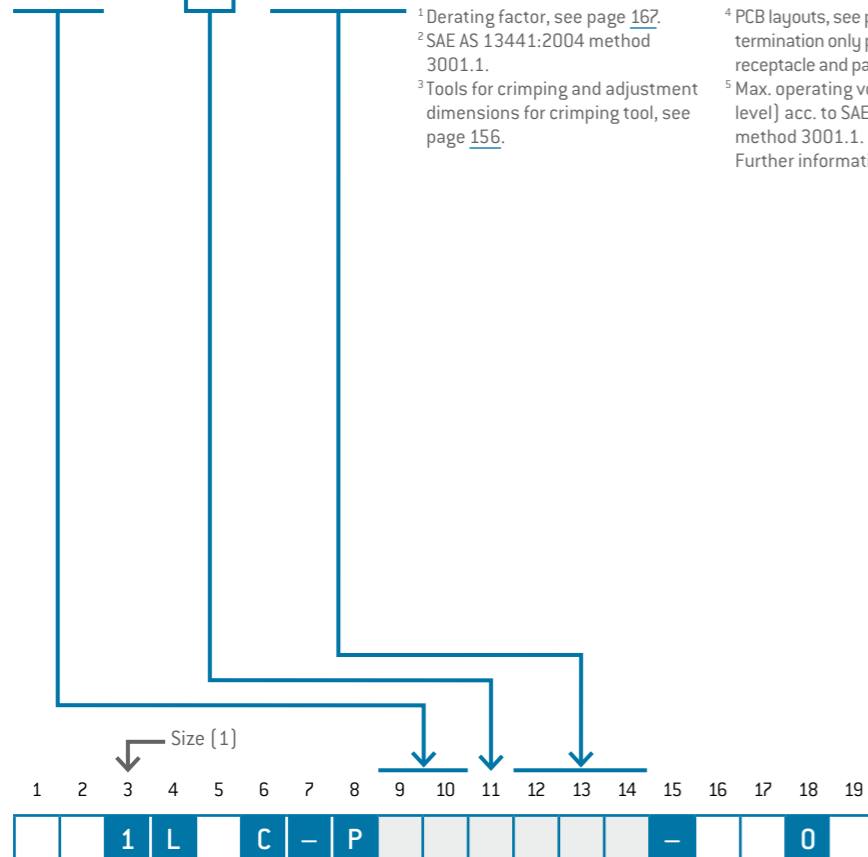
<sup>1</sup> Derating factor, see page 167.

<sup>2</sup> SAE AS 13441:2004 method 3001.1.

<sup>3</sup> Tools for crimping and adjustment dimensions for crimping tool, see page 156.

<sup>4</sup> PCB layouts, see page 47. PCB termination only possible in the receptacle and panel-mounted plug.

<sup>5</sup> Max. operating voltage at NN (sea level) acc. to SAE AS 13441:2004 method 3001.1. Further information on page 168.



# PCB LAYOUTS

For PCB contacts [Size 1].



	Straight	90° right-angled	Fixation via print terminations	Fixation via screws
<b>2 contacts</b>	 Contact borehole: $\varnothing 0.8$ mm	 Contact borehole: $\varnothing 0.9$ mm	 Contact borehole: $\varnothing 0.8$ mm Fastening borehole: $\varnothing 0.8$ mm	 Contact borehole: $\varnothing 0.8$ mm Fastening borehole: $\varnothing 1.5$ mm
<b>3 contacts</b>	 Contact borehole: $\varnothing 0.8$ mm	 Contact borehole: $\varnothing 0.9$ mm	 Contact borehole: $\varnothing 0.8$ mm Fastening borehole: $\varnothing 0.8$ mm	 Contact borehole: $\varnothing 0.8$ mm Fastening borehole: $\varnothing 1.5$ mm
<b>4 contacts</b>	 Contact borehole: $\varnothing 0.8$ mm	 Contact borehole: $\varnothing 0.7$ mm	 Contact borehole: $\varnothing 0.8$ mm Fastening borehole: $\varnothing 0.8$ mm	 Contact borehole: $\varnothing 0.8$ mm Fastening borehole: $\varnothing 1.5$ mm
<b>5 contacts</b>	 Contact borehole: $\varnothing 0.8$ mm	 Contact borehole: $\varnothing 0.7$ mm	 Contact borehole: $\varnothing 0.8$ mm Fastening borehole: $\varnothing 0.8$ mm	 Contact borehole: $\varnothing 0.8$ mm Fastening borehole: $\varnothing 1.5$ mm
<b>6 contacts</b>	 Contact borehole: $\varnothing 0.6$ mm	 Contact borehole: $\varnothing 0.7$ mm	 Contact borehole: $\varnothing 0.8$ mm Fastening borehole: $\varnothing 0.8$ mm	 Contact borehole: $\varnothing 0.8$ mm Fastening borehole: $\varnothing 1.5$ mm

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

# CONTACT INSERTS (SIZE 1)



Number of contacts	Contact type			Part number key	Contact diameter mm	Single contact nominal current <sup>1</sup> A	Clearance and creepage distance		Test voltage <sup>2</sup> kVeff	Nominal voltage <sup>5</sup> kVrms	Termination diameter mm	Termination cross-section		View on termination area		
	Termination	Socket	Pin				Contact to contact mm	Contact to housing mm				AWG	mm <sup>2</sup>	Pin piece	Socket piece	
0	7	Solder	L	M	F G 0	7.5	0.7	1	1.000	0.333	0.85	22	0.38			
			F D 0	6	0.9	1.2	1.200	0.400	0.65	26	0.15					
		Crimp <sup>3</sup>	N									P	F G 0			7.5
			F C 0	6	0.9	1.2	1.200	0.400	–	28–32	0.09–0.04	–	–			
0	8	Solder	L	M	F G 0	7.5	0.4	0.9	0.900	0.300	0.85	22	0.38			
			F D 0	6	0.6	1.1	1.000	0.333	0.65	26	0.15					
		Crimp <sup>3</sup>	N									P	F G 0			7.5
			F C 0	6	0.6	1.1	1.000	0.333	–	28–32	0.09–0.04	–	–			
1	0	Solder	L	M	C D 0	0.5	4	0.3	1	0.600	0.200	0.65	26	0.15		
			F D 0	0.5	1.2			1.000	0.333	0.45	28	0.08				
1	4	Solder	L	M	C C 0	0.5	4	0.5	0.9	0.900	0.300	0.45	28	0.08		
			F D 0	0.5	–			–	–	–						
1	6	Solder	L	M	C C 0	0.5	4	0.4	0.9	0.900	0.300	0.45	28	0.08		
			F D 0	0.4	–			–	–	–						

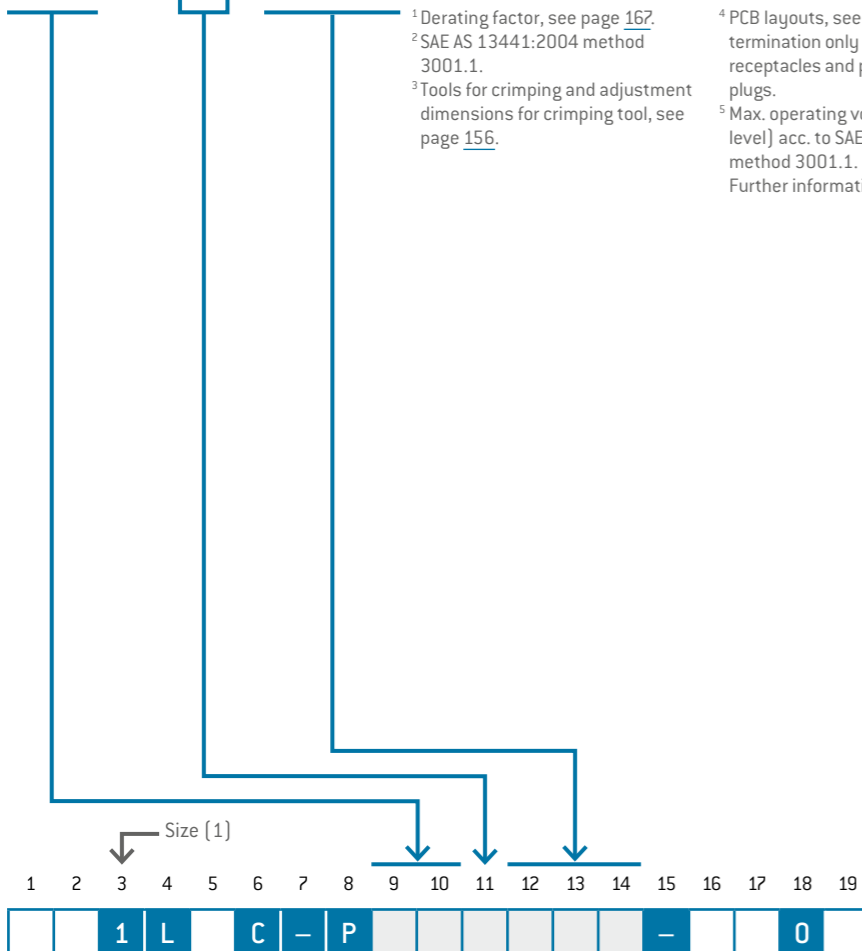
<sup>1</sup> Derating factor, see page 167.

<sup>2</sup> SAE AS 13441:2004 method 3001.1.

<sup>3</sup> Tools for crimping and adjustment dimensions for crimping tool, see page 156.

<sup>4</sup> PCB layouts, see page 49. PCB termination only available with receptacles and panel-mounted plugs.

<sup>5</sup> Max. operating voltage at NN (sea level) acc. to SAE AS 13441:2004 method 3001.1. Further information on page 168.



# PCB LAYOUTS

For PCB contacts [Size 1].



	Straight	90° right-angled	Fixation via print terminations	Fixation via screws
7 contacts	<p>Contact borehole: <math>\varnothing 0.6</math> mm</p>	<p>Contact borehole: <math>\varnothing 0.7</math> mm</p>	<p>Contact borehole: <math>\varnothing 0.8</math> mm Fastening borehole: <math>\varnothing 0.8</math> mm</p>	<p>Contact borehole: <math>\varnothing 0.8</math> mm Fastening borehole: <math>\varnothing 1.5</math> mm</p>
8 contacts	<p>Contact borehole: <math>\varnothing 0.6</math> mm</p>	<p>Contact borehole: <math>\varnothing 0.7</math> mm</p>	<p>Contact borehole: <math>\varnothing 0.8</math> mm Fastening borehole: <math>\varnothing 0.8</math> mm</p>	<p>Contact borehole: <math>\varnothing 0.8</math> mm Fastening borehole: <math>\varnothing 1.5</math> mm</p>
10 contacts	<p>Contact borehole: <math>\varnothing 0.6</math> mm</p>	<p>Contact borehole: <math>\varnothing 0.7</math> mm</p>	<p>Contact borehole: <math>\varnothing 0.8</math> mm Fastening borehole: <math>\varnothing 0.8</math> mm</p>	<p>Contact borehole: <math>\varnothing 0.8</math> mm Fastening borehole: <math>\varnothing 1.5</math> mm</p>
14 contacts	<p>Contact borehole: <math>\varnothing 0.6</math> mm</p>	<p>Contact borehole: <math>\varnothing 0.7</math> mm</p>		
16 contacts	<p>Contact borehole: <math>\varnothing 0.6</math> mm</p>	<p>Contact borehole: <math>\varnothing 0.7</math> mm</p>		

All specifications are only valid for socket inserts.

Pin inserts on request. Further PCB layouts upon request.