

BIX Circular Push-Pull Connector



Foreword

BIX Electronics is committed to creating the best quality and most innovative supplier of connectors.

Parts, modules, system and application software are the four key components of the modern manufacturing industry, which are four categories to distinguish coordination of the modern manufacturing industry. Electrical signal connectors are categorized into parts, which is the most basic Right angled stone to support a country's advanced manufacturing level. Depending on the application, transmitting and processing different collected signals are tasks undertaken by electrical signal connectors. The structure, size, material, processing equipment, processing accuracy and technology as well as electroplating quality determine whether the mechanical and electrical properties of the connector comply with the corresponding environmental requirements. The connector quality and reliability largely determine the operating quality and reliability of the equipment attached to it. For the high-level electrical equipment, failure caused due to quality issues of the connector or other parts should not occur. In the modern military communication, medical electronics, detection & measuring precision instruments, and other industries, quality issues arising from use of the low-level connector are often fatal.

The connector quality depends on the manufacturing level of the connector, which also depends on the connector's design level. According to the standard requirements of different industries and the environmental requirements of customers, our goal is to provide or design connectors meeting the requirements based on many years of manufacturing and design experience of BIX Electronics. New requirements are proposed for the connector depending on the diversity of customer products and continuous design of new products by customers for the market demands. BIX Electronics will be happy to follow up on customer's demands. BIX Electronics is confident that it can develop "High-grade, precision and advanced" products with the high-end manufacturing equipment and a sophisticated design process team.

Over the past decade, the domestic modern manufacturing industry has been developing very fast with considerable improvement in the design and manufacturing level. The manufacturing cost advantage increases the export proportion of the domestically manufactured products. Therefore, substituting the expensive imported connectors with the high quality cost-effective connectors is an inevitable trend, which is an important requirements for the national defense security of the military industry.

China is now in an important stage in its efforts to enhance the manufacturing level and step towards a global advanced manufacturing country. BIX sticks to the goals of high quality, high reliability and continuous innovation, and strives to provide customers with cost-effective products.



Contents I

SN	Description	Page No.
1	Preface	2
2	Product Description of Series F, B, I, X, A,Y	6
	Locking mechanism and principle	7
	Main technical features	10
3	Series F	11
	Description of Series F	12
	Housing size	13
	Plug type	14
	Receptacle type	17
	Coding, housing material and surface plating	20
	Insulator material	21
	Number of contacts and PCB layout	22
	Pin/socket type, surface plating and pin/socket diameter	32
	Pin/socket diameter and termination cross section	33
	Cable clamp	34
	PCB right angled receptacle	35
	Back nut	36
	Cable bend relief	37
4	Series B	38
	description of Series B	39
	Housing size	40
	Plug type	41
	Receptacle type	42
	Coding, housing material and surface plating	48
	Insulator material	49
	Number of contacts and PCB layout	50
	Pin/socket type, surface plating and pin/socket diameter	66
	Pin/socket diameter and termination cross section	67
	Cable clamp	68
	PCB right angled receptacle	69
	Back nut	70
	Cable bend relief	71

Contents II

SN	Description	Page No.
5	Series I	72
	Description of Series I	73
	Housing size	74
	Plug type	75
	Receptacle type	76
	Coding, housing material and surface plating	78
	Insulator material	79
	Number of contacts and PCB layout	80
	Pin/socket type, surface plating and pin/socket diameter	96
	Pin/socket diameter and termination cross section	97
	Cable clamp	98
	PCB right angled receptacle	99
	Back nut	100
	Cables shield	101
6	Series X	102
	Description of Series X	103
	Housing size	104
	Plug type	105
	Receptacle type	106
	Coding, housing material and surface plating	110
	Insulator material	111
	Number of contacts and PCB layout	112
	Pin/socket type, surface plating and pin/socket diameter	124
	Pin/socket diameter and termination cross section	125
7	Series A	126
	Description of Series A products	127
	Housing size	128
	Plug type	129
	Receptacle type	131
	Coding, housing material and surface plating	132
	Insulator material	133
	Number of contacts	134
	Pin/socket type, surface plating and pin/socket diameter	140
	Pin/socket diameter and termination cross section	141



Contents III

SN	Description	Page No.
8	Series Y	142
	Description of Series Y	143
	Housing size	144
	Plug type	145
	Receptacle type	146
	Coding, housing material and surface plating	150
	Insulator material	151
	Spring pin	152
	Number of contacts and PCB layout	153
	Pin/socket type, surface plating and pin/socket diameter	159
	Pin/socket diameter and termination cross section	160
9	Assembly Processing and Cable	161
10	Accessories	165
11	Tools	178
12	Technical Data	180

Product Description of Series, F、B、I、X、A、Y



Series F



Series X



Series B



Series A



Series I



Series Y

Locking mechanism and principle

BIX circular connector has three main common locking mechanisms

- Push-pull
- Break away
- Easy-to-clean

Push-pull locking mechanism

——When you mate the plug in the receptacle, the plug can't be separated from the receptacle as the locking on the plug is embedded in the receptacle groove.

——When you demate the plug end and pull the cable, the plug can't be separated from the receptacle as the locking is snapped in the groove.

——When you demate the plug housing, the plug is easily separated from the receptacle as the locking is released from the receptacle groove.

Break away locking mechanism

——When you demate the plug end and pull the cable, the plug can be removed if the tension is greater than the separation force; otherwise, the plug can't be removed. Depending on the size and pin number, the separation force of the plug varies.

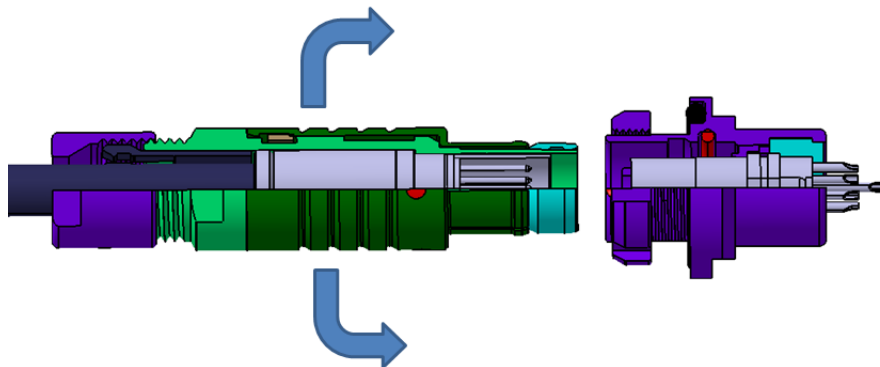
Easy-to-clean locking mechanism

——The easy-to-clean plug and receptacle can be cleaned and separated quickly. When you demate the plug end and pull the cable, the plug can be removed if the tension is greater than the separation force; otherwise, the plug can't be removed. It is more convenient to be used in the outdoor harsh environment.

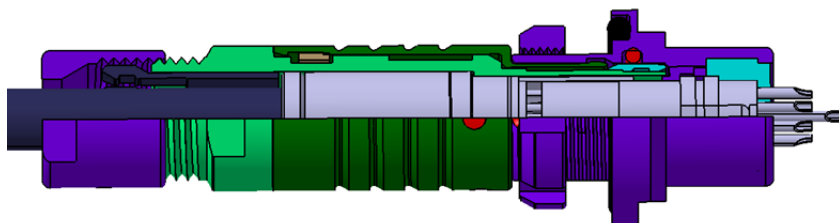
Locking mechanism and principle

Push-pull locking principle

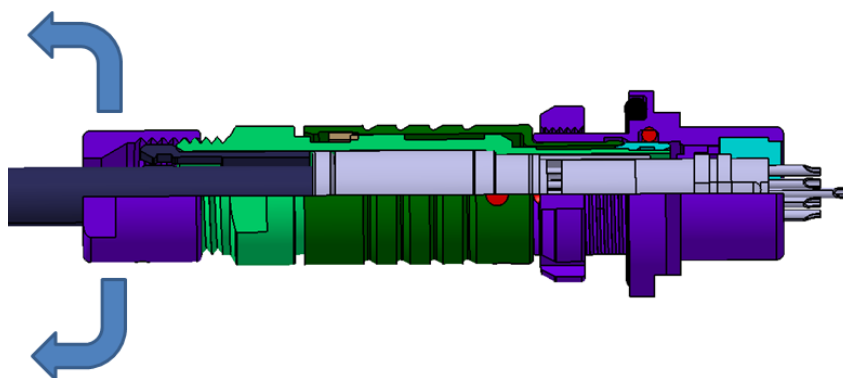
Before mating



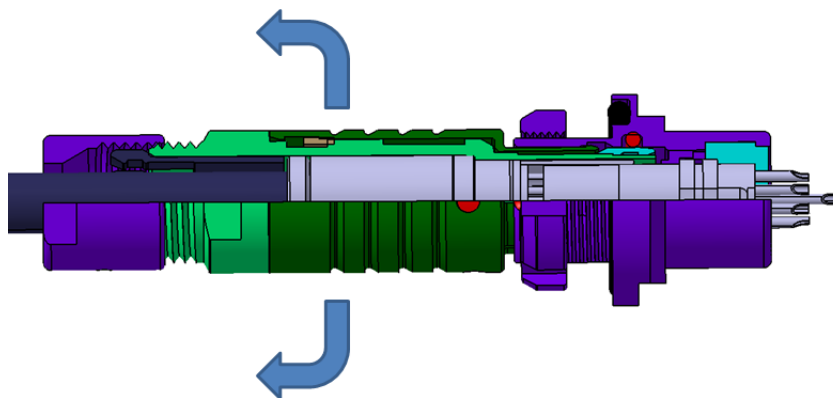
After mating



When you pull the cable or the rear back nut, the plug can't be separated from the receptacle as the locking is embedded in the locking groove of the receptacle.



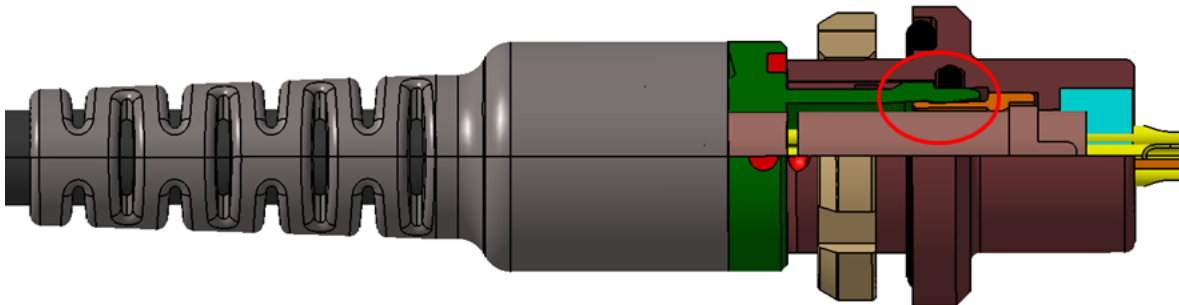
When you pull the housing, the plug is separated from the receptacle as the locking is released from the locking groove.



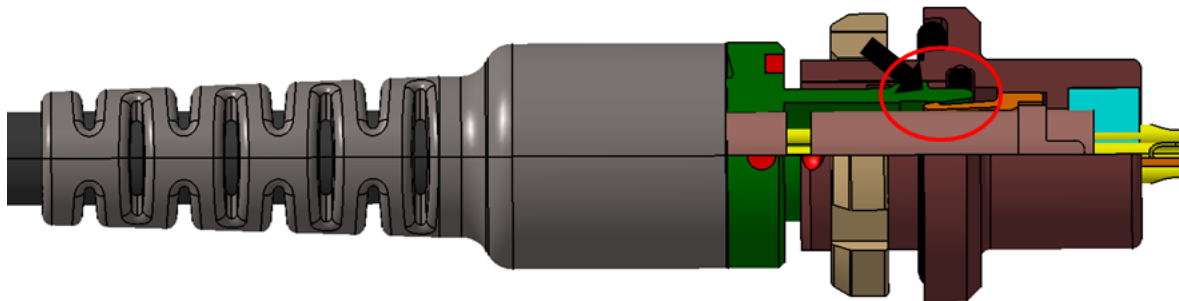
Locking mechanism and principle

Break away locking principle

Locking



Separation



The insertion force is usually about 25N while the pulling force is usually about 45N.

Main technical features

1. Small, lightweight, easy to operate
2. Operating temperature range: -55°C - +125°C
3. Mechanical Coding and Color Coding, double anti-error
4. Mating cycles>5000
5. Easy operation, blind mating supported
6. A variety of standard insulators are available
7. Personalized pin configuration
8. Signal, high/low voltage, coaxial/triaxial optical fiber, gas circuit and other signals can be mixed in a connector
9. It can provide system solutions, including assembly processing
10. Good shielding properties (360°)
11. A portfolio of hot-swappable products are available
12. Protection class: IP50, IP68
13. Reliable data transmission
14. Metal series are supported with 7 sizes; outer diameter range: 6.5mm-42mm, number of pins: 1-40 pins; mixed insulators can be provided
15. For the diameter, termination type, operating current and other information, please refer to the "Number of contacts" part.

Series F, IP68 FP locking Half shell coding



Description of Series F

SN	Description	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		T	3	0	F	1	S	—	P	0	9	M	F	D	0	—	2	5	0	0
1	Type: Straight plug =T3, T4, TX Panel mounted plug =MD Floating receptacle =F3, F4 Receptacle = Z1, ZX, Z8																			
2																				
3	Size: 0, 1, 2, 3, A (1.5)																			
4	Series: F																			
5	Coding																			
6	Housing material and plating																			
8	Insulator material																			
9	Number of pins																			
10																				
11	Terminal and surface processing																			
12	Pin/socket diameter (M: mixed)																			
13	Terminal cross-section area																			
14	Special terminals are represented as 9																			
16	Cable clamp size (PCB right angled number:A0)																			
17																				
18	0																			
19	Back nut																			

Note:

The 18th and 19th bits are 00, representing the standard back nut; OS can be installed with silicone bend relief back nuts

When the second style is X as other figures, it indicates the version number. For different version numbers, certain accessories adopted vary

Example: Plug

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

Plug - Style 3- Housing size 0 - Series F -Coding 1 - Copper alloy housing, surface black chrome plating - PEEK insulator - 9-pin - Gold-plated soldering pin - Pin diameter $\Phi 0.5$ - For 28AWG, gauge cross-section area - Applicable to the cable of 2.0~2.5mm - Standard Back nut

Example: Receptacle

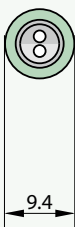
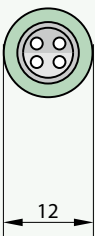
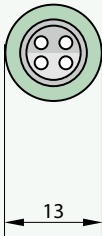
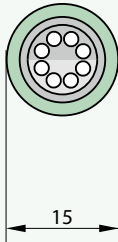
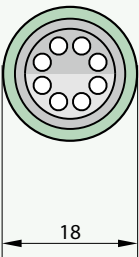
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Z	1	0	F	1	S	—	P	0	9	L	C	C	0	—	0	0	0	0

Receptacle - Style 3- Housing size 0 - Series F - Coding 1 - Copper alloy housing, surface black chrome plating - PEEK insulator - 9-pin - Gold-plated soldering socket - Socket diameter $\Phi 0.5$

Housing size (scale 1:1)

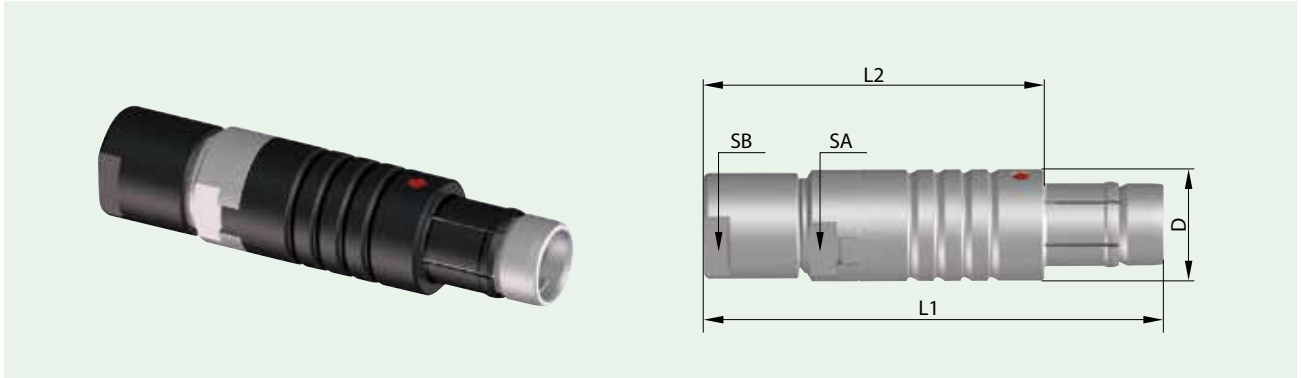
OD = Outer diameter of the plug (unit: mm)

S = Size

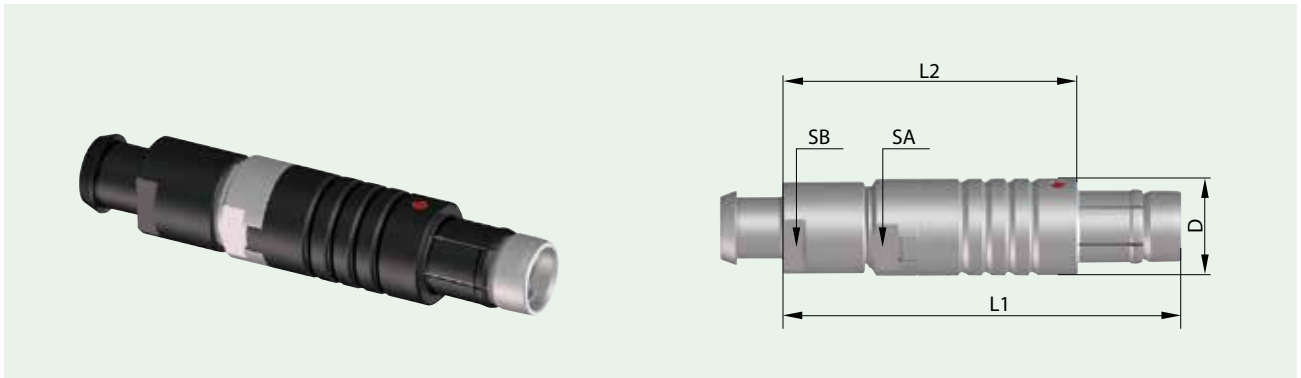
OD					
S	0	1	1.5	2	3
Corresponding number	0	1	A	2	3

Straight plug (T3, T4)

T 3 IP68, standard back nut



T 4 IP68, for cable bend relief or overmoulding



Size	Unit: mm				
	L1	L2	D	SA	SB
0	~40	~30	9.4	8	7
1	~49	~38	12	10	10
1.5	~50	~40	13	11	12
2	~53	~40	15	13	13
3	~62	~47	18	16	15

Panel mounted plug (MD)

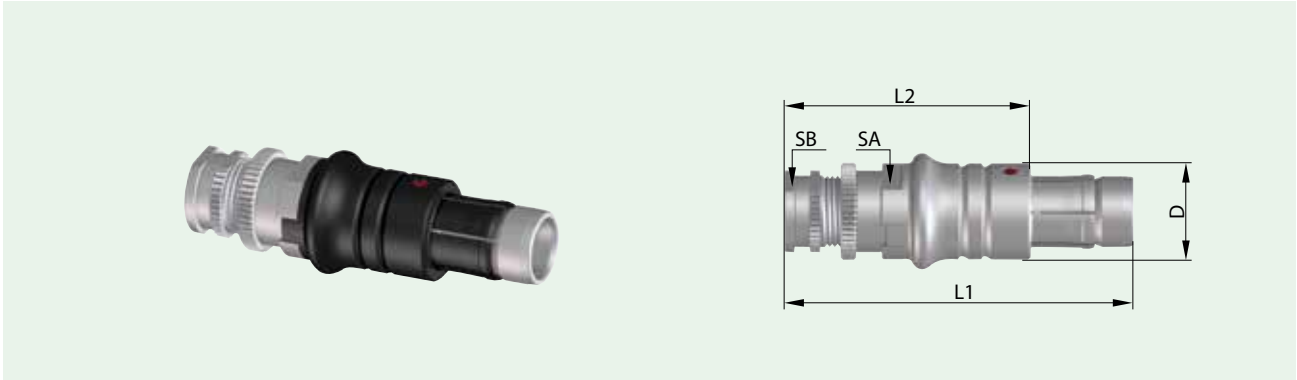
M D IP68, hexagon nut, install from rear of panel (without the locking)



Size	Unit: mm							 Panel Cut-out
	L1	L2	L3	C	D	SA	SB	
0	~14.5	~4.5	10	3	13	9	11	~ $\Phi 9.1^*$
1	~18.5	~6.5	10.8	2.5	17	11	14	SW11.2/ $\Phi 12.1^{**}$
2	~19.7	~7	12.1	3	22	15.2	19	SW 15.3/ $\Phi 16.1^{**}$

Plug (TX)

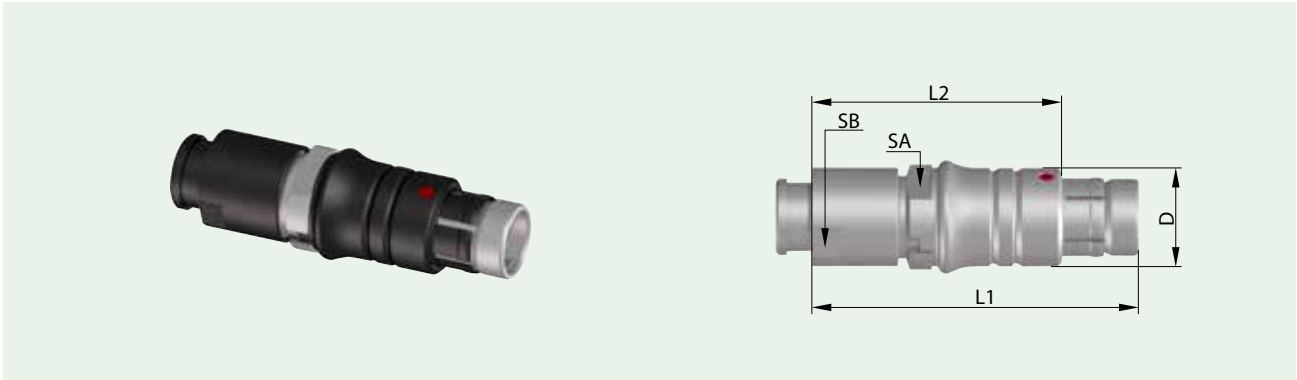
T X IP68, 0F changed to the short plug



Note: TX 0F plugs are used with ZX receptacles.

Size	Unit: mm				
	L1	L2	D	SA	SB
0	33	23	9.4	8	7

T X IP68, AF short version

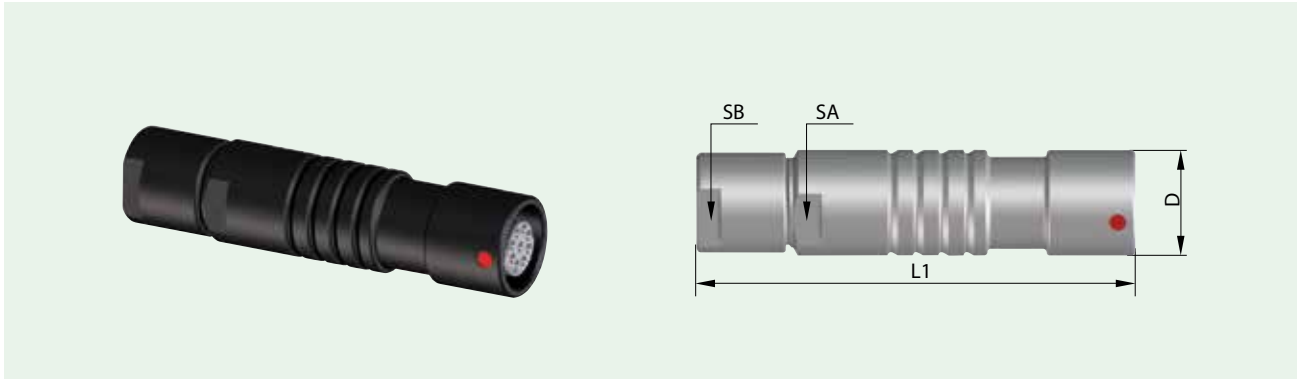


Note: TX AF plugs are used with other receptacles except ZX

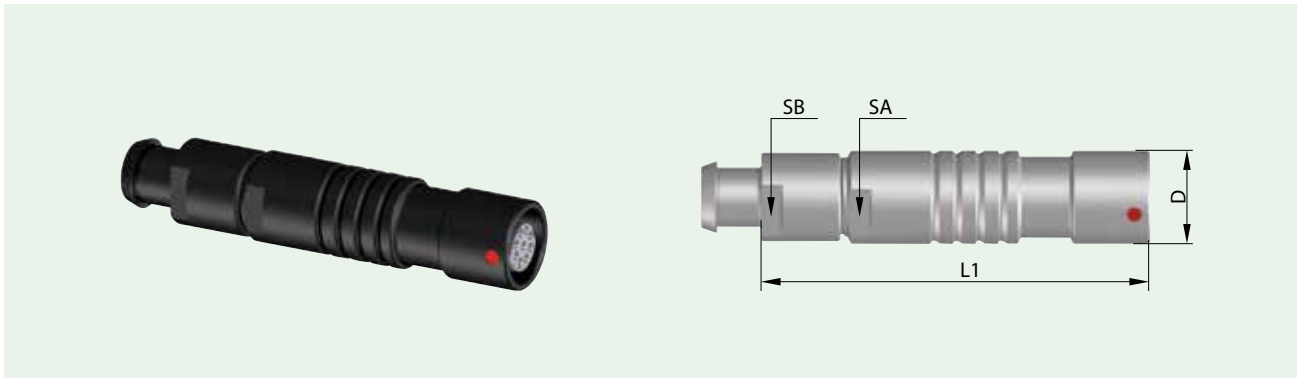
Size	Unit: mm				
	L1	L2	D	SA	SB
AF	44	33	13	11	12

Floating receptacle (F3, F4)

F 3 IP68, standard back nut



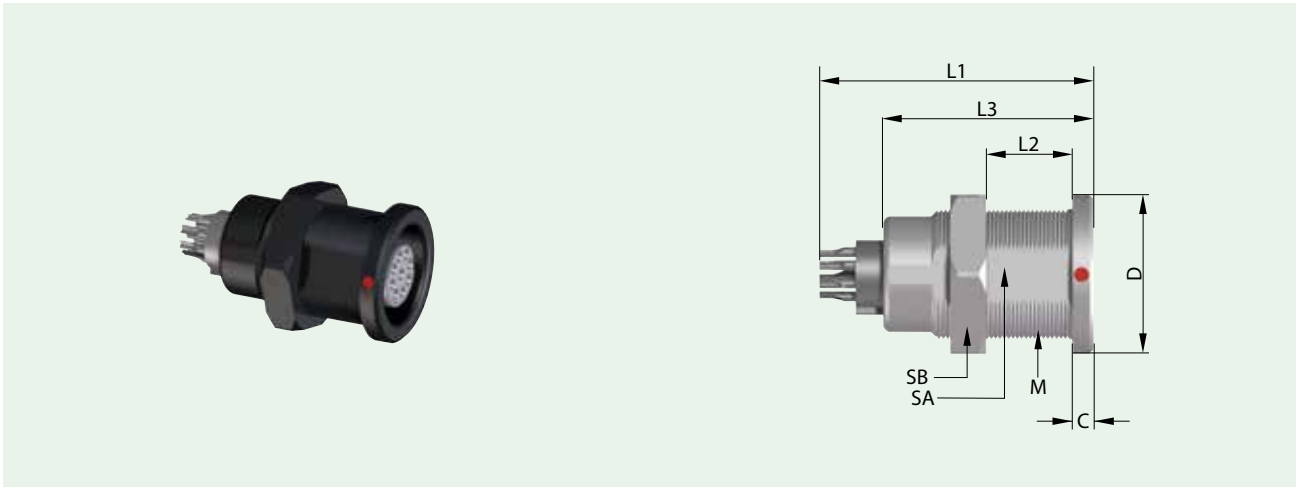
F 4 IP68, for cable bend relief or overmoulding



Size	Unit: mm			
	L1	D	SA	SB
0	~39	10	8	7
1	~47	13	10	10
2	~50	16	13	12

Receptacle (Z1)

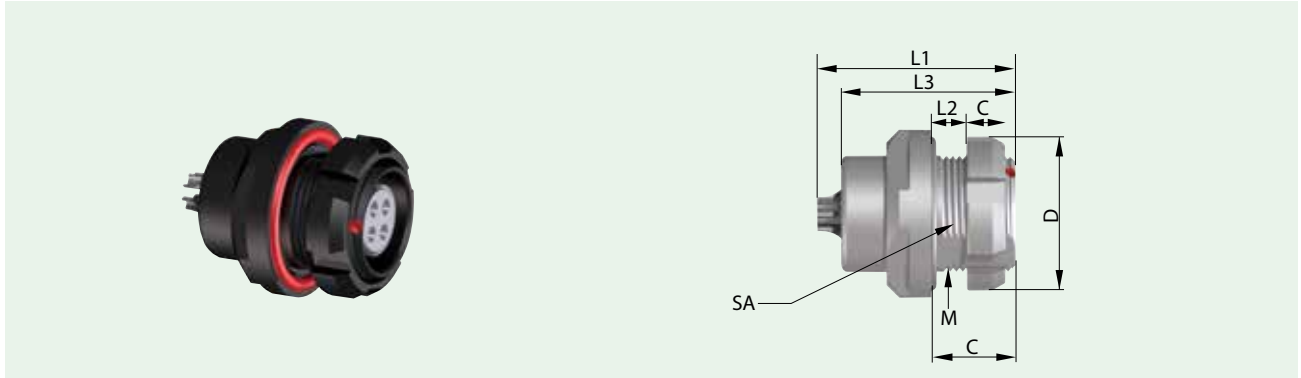
Z 1 IP50, install from rear of panel

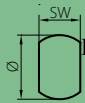


Size	Unit: mm								Panel cut-out
	L1	L2	L3	M	D	SA	SB	C	
0	~20.0	~9.0	14.5	9×0.5	10.0	8.2	11.0	1.5	SW 8.3/Φ9.1
1	~24.0	~8.0	16.5	12×1	14.0	10.0	14.0	1.5	SW 10.1/Φ12.1
1.5	~25.0	~8.0	15.5	14×1	16.0	12.0	17.0	2.0	SW 12.1/Φ14.1
2	~27.0	~10.0	18.5	15×1	18.0	14.1	17.0	2.0	SW 14.2/Φ15.1
3	~30.5	~13.0	22.5	18×1	22.0	16.5	22.0	2.0	SW 16.6/Φ18.1

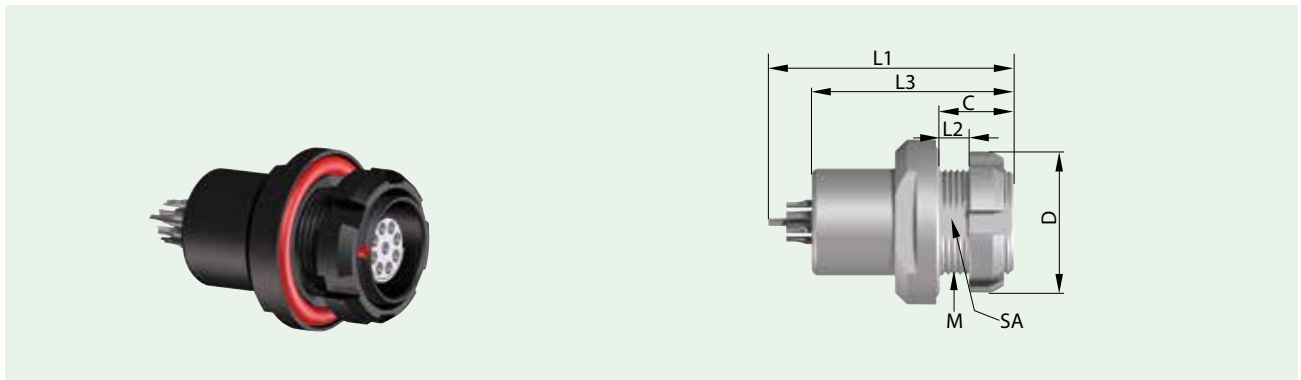
Receptacle (ZX, Z8)

Z X IP68, install from both side of panel



Size	Unit: mm							 Panel cut-out
	L1	L2	L3	M	D	SA	C	
0	~15.5	~3	13.5	9×0.5	11.9	8.2	6.5	SW 8.3/Φ9.1

Z 8 IP68, slotted nut, install from front of panel, water-tight



Size	Unit: mm							 Panel cut-out
	L1	L2	L3	M	D	SA	C	
0	~22.0	~3.5	17.0	9X0.5	14.0	8.2	6.5	SW 8.3/Φ9.1**
1	~27.5	~4.0	21.0	14×1	18.0	12.0	8.0	SW 12.1/Φ14.1*
1.5	~24.0	~3.0	19.5	14×1	19.0	12.0	7.0	SW 12.1/Φ14.1**
2	~29.0	~3.0	23.0	16×1	21.0	14.3	8.0	SW 14.4/Φ16.1*
3	~33.0	~6.0	26.5	20×1	26.0	18.0	11.0	SW 18.1/Φ20.1*

Coding, housing material and surface plating

Coding

No.	Front view of the receptacle	Size				
		0	1	1.5	2	3
1		●	●	●	●	●
2		●	●	●	●	●
3				●	●	●

Housing material and surface plating

No.	Housing material and surface plating
C	Standard type Copper alloy/surface chrome plating
S	Copper alloy/surface black black chrome plating
R	aluminum alloy/surface chrome plating *only for receptacles

Insulator material

PEEK material, turned pin

No.	Termination method	PEEK
P	Soldering	●
	PCB	●

Number of contacts

Size 0

Size	Insulator material	Number of pins	Pin diameter mm	Single-pin load current	Test voltage (KV) VDE0627: 1986-06	Test voltage (KV) SAE S13441:1998 method3001.1	Operating voltage (KV) SAE S13441:1998 method 3001.1	Termination method		View on the termination side	
								Soldering	PCB	Pin	Socket
0	P	02	0.9	10	1.000	1.500	0.500	●	●		
0	P	03	0.9	10	0.875	1.200	0.400	●	●		
0	P	04	0.7	7	0.875	0.900	0.300	●	●		
0	P	05	0.7	7	0.750	1.100	0.366	●	●		
0	P	07	0.5	5	1.000	0.900	0.300	●	●		
0	P	09	0.5	5	1.000	0.900	0.300	●	●		

PCB layout

Size 0

Number of pins	PCB straight	PCB right angled
2-pin		
3-pin		
4-pin		
5-pin		
7-pin		

Number of pins	PCB straight	PCB right angled
9-pin		

Number of contacts

Size 1

Size	Insulator material	Number of pins	Pin diameter mm	Single-pin load current	Test voltage (KV) VDE0627:1986-06	Test voltage (KV) SAE S13441:1998 method3001.1	Operating voltage (KV) SAE S13441:1998 method 3001.1	Termination method		View on the termination side	
								Soldering	PCB	Pin	Socket
1	P	02	1.3	14	1.250	1.650	0.550	●	●		
1	P	03	1.3	14	1.000	1.500	0.500	●	●		
1	P	04	0.9	10	1.000	1.500	0.500	●	●		
1	P	05	0.9	10	0.875	1.350	0.450	●	●		
1	P	06	0.7	7	0.875	1.200	0.400	●	●		
1	P	07	0.7	7	0.875	1.200	0.400	●	●		
1	P	12	0.5	5	0.750	1.100	0.366	●	●		

PCB layout

Size 1

Number of pins	PCB straight	PCB layout	Number of pins	PCB straight	PCB layout
2-pin			6-pin		
3-pin			7-pin		
4-pin			12-pin		
5-pin					

Number of contacts

Size 1.5

Size	Insulator material	Number of pins	Pin diameter mm	Single-pin load current	Test voltage (KV) VDE0627: 1986-06	Test voltage (KV) SAE S13441:1998 method3001.1	Operating voltage (KV) SAE S13441:1998 method 3001.1	Termination method		View on the termination side	
								Soldering	PCB	Pin	Socket
A	P	10	0.7	7	0.875	1.200	0.400	●	●		
A	P	12	0.7	7	0.875	1.200	0.400	●	●		
A	P	19	0.5	5	0.750	1.000	0.333	●	●		

PCB layout

Size 1.5

Number of pins	PCB straight	PCB layout
10-pin		
12-pin		
19-pin		

Number of contacts

Size 2

Size	Insulator material	Number of pins	Pin diameter mm	Single-pin load current	Test voltage (KV) VDE0627:1986-06	Test voltage (KV) SAE S13441:1998 method3001.1	Operating voltage (KV) SAE S13441:1998 method 3001.1	Termination method		View on the termination side	
								Soldering	PCB	Pin	Socket
2	P	05	1.3	14	1.000	1.500	0.500	●	●		
2	P	06	0.9	10	1.250	1.800	0.600	●	●		
2	P	11	0.9	10	0.875	1.350	0.450	●	●		
2	P	16	0.7	7	0.875	1.350	0.450	●	●		
2	P	19	0.7	7	0.750	1.200	0.400	●	●		

PCB layout

Size 2

Number of pins	PCB straight	PCB layout
5-pin		
5-pin		
6-pin		
11-pin		
16-pin		
19-pin		

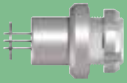
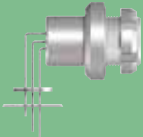
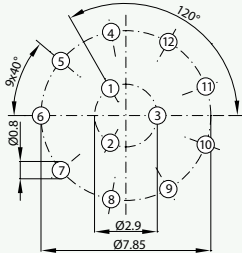
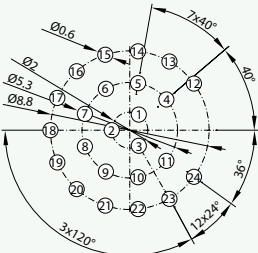
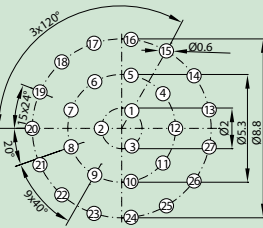
Number of contacts

Size 3

Size	Insulator material	Number of pins	Pin diameter mm	Single-pin load current	Test voltage (KV) VDE0627: 1986-06	Test voltage (KV) SAE S13441:1998 method3001.1	Operating voltage (KV) SAE S13441:1998 method 3001.1	Termination method		View on the termination side	
								Soldering	PCB	Pin	Socket
3	P	12	1.3	14	0.875	1.350	0.450	●	●		
3	P	15	0.9	10	0.875	1.350	0.450	●	●		
3	P	24	0.7	7	0.750	1.000	0.333	●	●		
3	P	27	0.7	7	0.750	1.000	0.333	●	●		

PCB layout

Size 3

Number of pins	PCB straight	PCB layout
12-pin		
15-pin		
24-pin		
27-pin		

Pin/socket type, surface plating and pin/socket diameter

Pin/socket type, surface plating

Type	No.	Surface plating
Socket	L	L-1 $\mu\text{m Au}$ (min.)
Pin	M	L-1 $\mu\text{m Au}$ (min.)
Socket	Q	P-1 $\mu\text{m Au}$ (min.)
Pin	R	P-1 $\mu\text{m Au}$ (min.)

L=Soldering

P=PCB

Pin/socket diameter

Pin/socket diameter	No.
0.50	C
0.70	F
0.90	J
Mixed	M
1.30	P

Pin/socket diameter and termination cross section

Soldering

No.	Pin/socket diameter	Termination diameter	Termination cross section	
			AWG	mm ²
C 0	0.5	0.4	28	0.08
D 0	0.7	0.6	26	0.15
G 0	0.7	0.85	22	0.38
G 0	0.9	0.85	22	0.38
H 0	1.3	1.1	20	0.50

PCB

No.	Pin/socket diameter	Termination diameter
0 0	0.5	0.5
0 0	0.7	0.5
0 0	0.9	0.7
0 0	1.3	0.7

Cable clamp

No.		Cable outer diameter mm	Housing size				
			0	1	1.5	2	3
1	5	> 1.0-1.5	●	●			
2	0	> 1.5-2.0	●	●			
2	5	> 2.0-2.5	●	●		●	
3	0	> 2.5-3.0	●	●	●	●	
3	5	> 3.0-3.5	●	●	●	●	●
4	0	> 3.5-4.0	●	●	●	●	●
4	5	> 4.0-4.5	●	●	●	●	●
5	0	> 4.5-5.0	●	●	●	●	●
5	5	> 5.0-5.5		●	●	●	●
6	0	> 5.5-6.0		●	●	●	●
6	5	> 6.0-6.5		●	●	●	●
7	0	> 6.5-7.0		●	●	●	●
7	5	> 7.0-7.5		●	●	●	●
8	0	> 7.5-8.0				●	●
8	5	> 8.0-8.5				●	●
9	0	> 8.5-9.0				●	●
9	5	> 9.0-9.5				●	●
0	1	> 9.5-10.0					●
0	2	> 10.0-10.5					●
0	3	> 10.5-11.5					●
0	0	Without a cable clamp					

Applicable to all plugs and floating receptacles

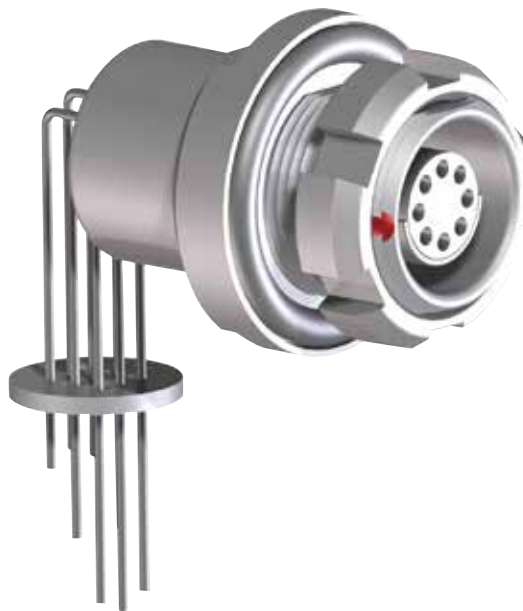
Schematic diagram of cable clamp



PCB right angled receptacle

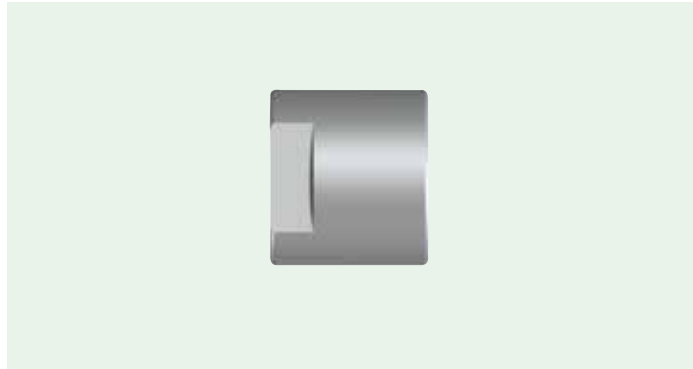
Series F receptacles can off PCB right angled receptacles, regardless of the water-proof level, number of pins and Housing size.

PCB right angled



Back nut

Standard back nut



For cable bend relief or overmoulding



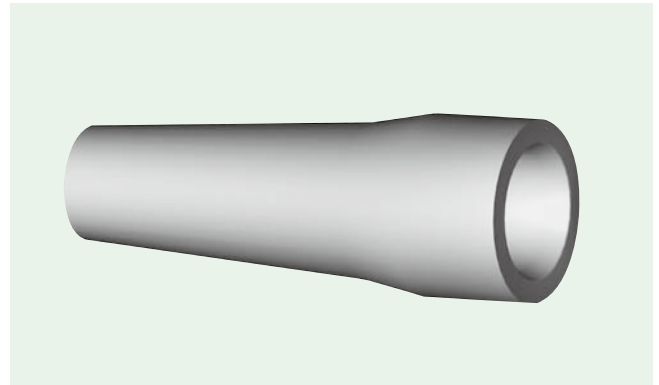
Cable bend relief

Color

No.	Color/RAL-No. (Similar)	
A	Red	RAL 3020
B	White	RAL 9010
C	Yellow	RAL 1016
D	Green	RAL 6029
E	Blue	RAL 5002
F	Grey	RAL 7005
G	Black	RAL 9005
0	Without a bend relief	

Material

No.	Material
S	Silicon rubber
0	Without a bend relief



Silicon rubber

Operating temperature: -50°C ~ +200°C

Up to +230°C within a short time

High temperature disinfection

Series B, IP68 / IP50

FP locking

Block and groove coding



Description of Series B products

SN	Description	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		T	3	0	B	A	C	—	P	0	9	M	F	D	0	—	2	5	0	0
1	Type: Straight plug T3, T4 Floating receptacles F3, F4																			
2	Receptacles Z2, Z4, Z8, ZE, ZL, ZH, Z1, Z5, ZF, ZG																			
3	Size: 0、1、2、3																			
4	Series: B																			
5	Coding																			
6	Housing material and plating																			
8	Insulator material																			
9	Number of pins																			
10																				
11	Terminal and surface processing																			
12	Pin/socket diameter (M: mixed)																			
13	Terminal cross-section area																			
14	Special terminals are represented as 9																			
16	Cable clamp size (PCB right angled number:A0)																			
17																				
18	0																			
19	Back nut																			

Note:

The 18th and 19th bits are 00, representing the standard back nut; OS can be installed with silicone bend relief back nuts

When the second style is X as other figures, it indicates the version number. For different version numbers, it indicates that certain accessories adopted vary

Example: Plug

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

Plug - Style 3- Housing size 0 - Series B -Coding A - Copper alloy housing, surface chrome plating - PEEK insulator - 9-pin - Gold-plated Soldering pin - Pin diameter $\Phi 0.5$ - For 28AWG, gauge cross-section area - Applicable to the cable of 2.0~2.5mm - Back nut for cable bend relief or over moulding

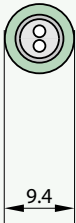
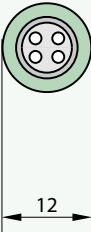
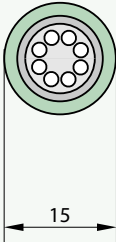
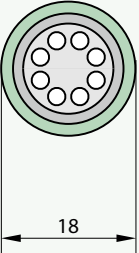
Example: Receptacle

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Z	2	0	B	A	C	—	P	0	9	Q	C	0	0	—	0	0	0	0

Receptacle - Style 2- Housing size 0 - Series B - Coding A - Copper alloy housing, surface chrome plating - PEEK insulator - 9-pin - Gold-plated PCB socket - Socket diameter $\Phi 0.5$

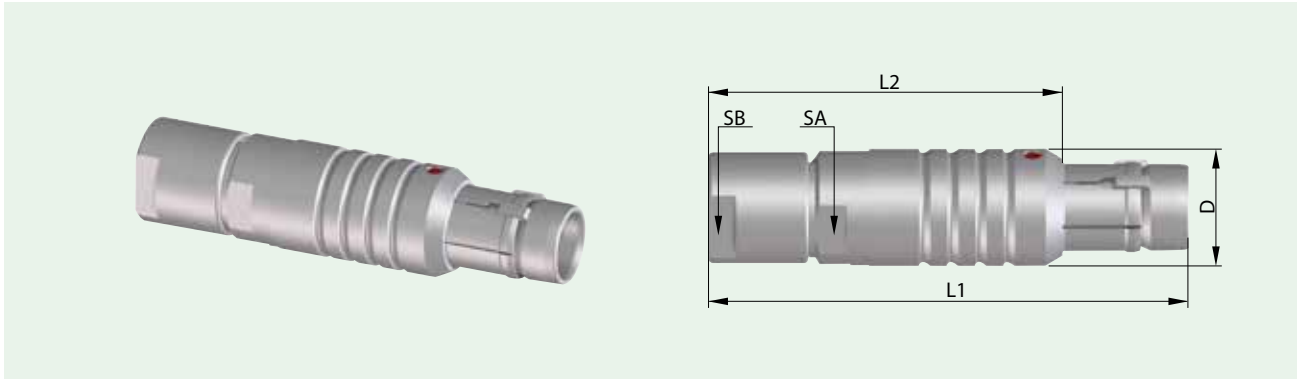
Housing size (scale 1:1)

OD = Outer diameter of the plug (unit: mm)
S = Size

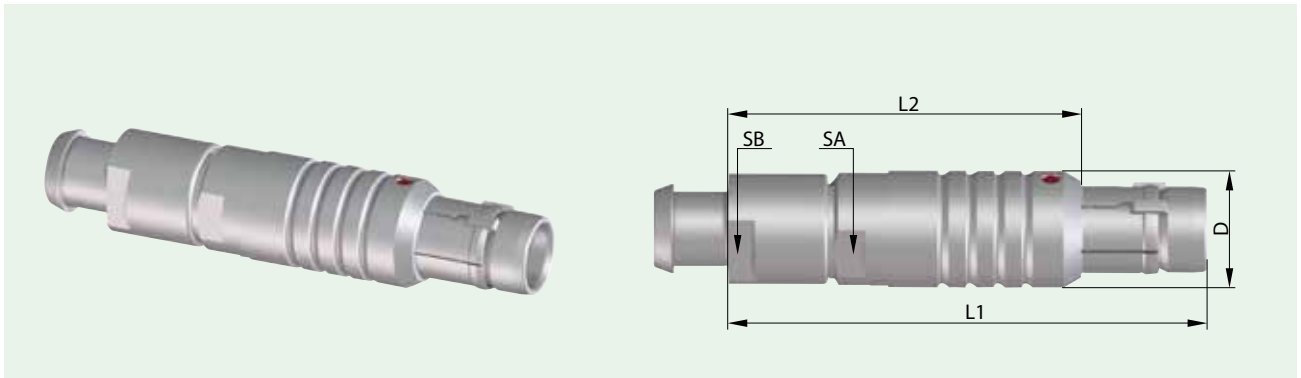
OD				
S	0	1	2	3
Corresponding number	0	1	2	3

Straight plug (T3, T4)

T 3 IP68, standard back nut



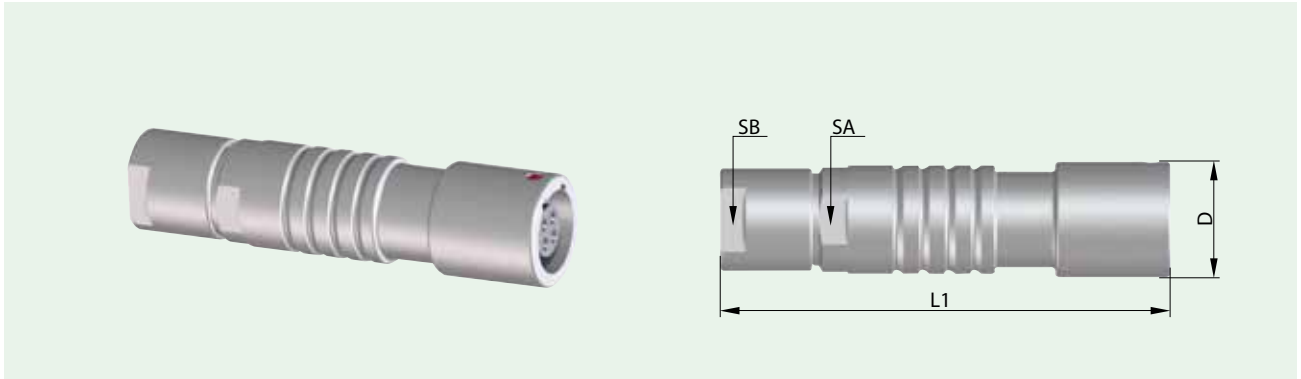
T 4 IP68, for cable bend relief or over moulding



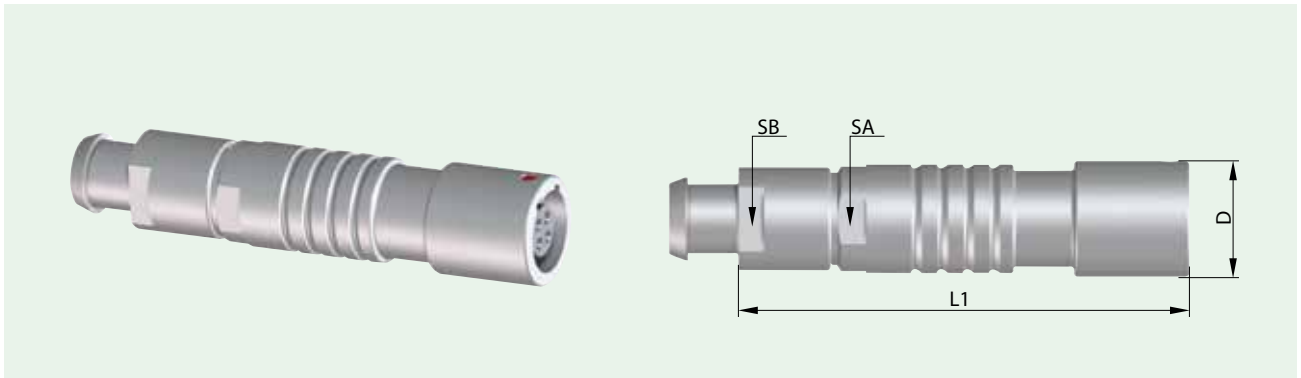
Size	Unit: mm					
	L1	L2	D	SA	T3 SB	T4 SB
0	~40.0	~30.0	9.4	8	7	7
1	~49.0	~38.0	12.0	10	10	10
2	~53.0	~41.0	15.0	13	12	13
3	~61.0	~46.0	18.0	16	15	15

Floating receptacle (F3, F4)

F 3 IP68, standard back nut



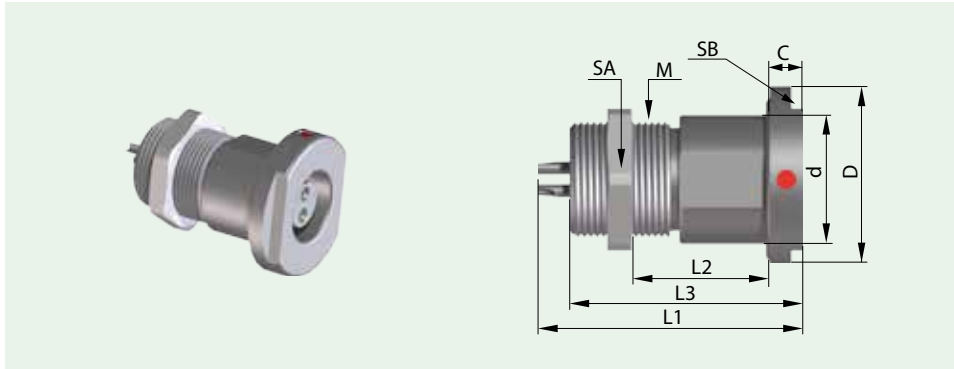
F 4 IP68, for cable bend relief or over moulding



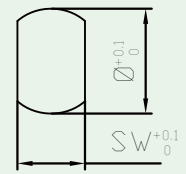
Size	Unit: mm				
	L1	D	SA	F3 SB	F4 SB
0	~39.0	10.0	8	7	7
1	~46.0	13.0	10	10	10
2	~50.0	16.0	13	12	13
3	~60.0	19.0	16	15	15

Receptacle (Z2, Z4)

Z 2 IP68, install from rear of panel



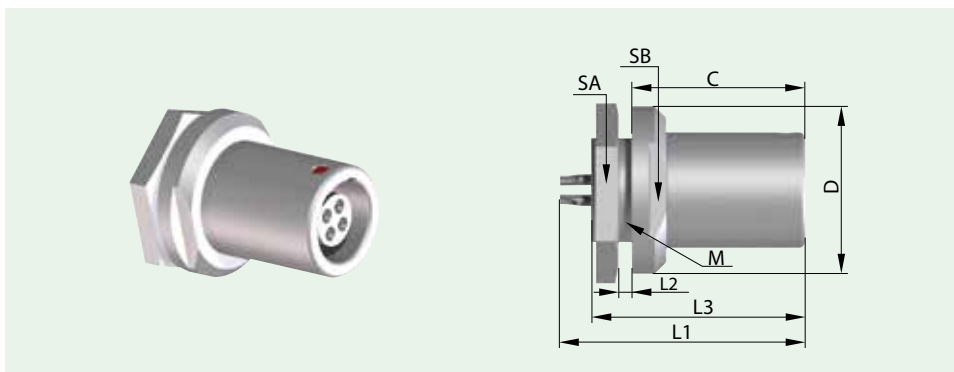
Panel cut-out



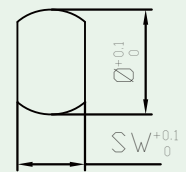
Size	Unit: mm									Panel hole
	L1	L2 ^①	L3	M	D	SA	SB	C	d	
0	~22.5	8.0	18.5	9×0.5	14.5	11.0	11.0	3.0	10.0	10.1
1	~27.0	13.0	22.5	14×1	18.0	17.0	14.0	3.0	14.0	14.1
2	~29.5	9.0	23.0	16×1	22.0	19.0	17.0	4.0	16.0	16.1
3	~32.0	12.0	26.5	20×1	26.0	25.0	24.0	4.0	20.0	20.1

① Minimum wall thickness in absence of the thickness adjustment ring

Z 4 IP68, install from rear of panel, with less installation depth



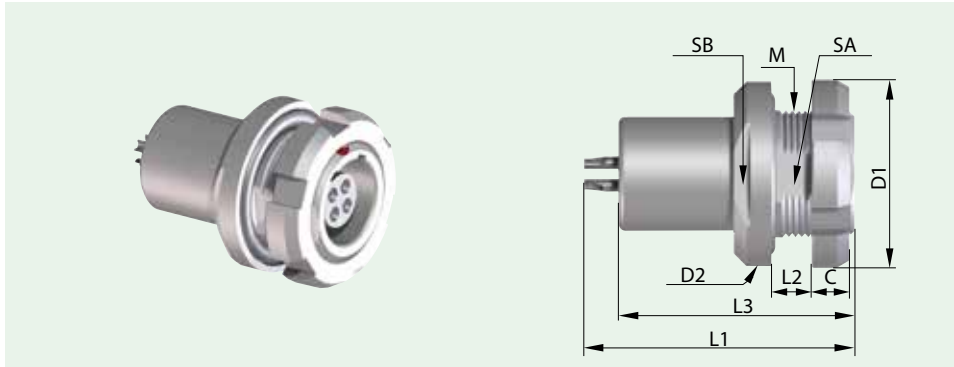
Panel cut-out



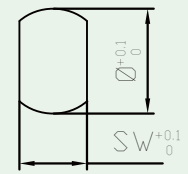
Size	Unit: mm									Panel hole size	
	L1	L2	L3	M	D	SA	SB	C		SW	Φ
0	~22.5	~4.0	18.5	9×0.5	14.5	11.0	12.0	12.0		8.3	9.1
1	~27.0	~4.0	22.5	14×1	18.0	17.0	14.0	15.5		12.1	14.1
2	~29.5	~4.5	23.0	16×1	21.0	19.0	17.0	15.5		13.6	16.1
3	~32.0	~6.0	26.5	18×1	24.0	22.0	20.0	16.0		16.6	18.1

Receptacle (Z8, ZE)

Z 8 IP68, slotted nut, install from front of panel

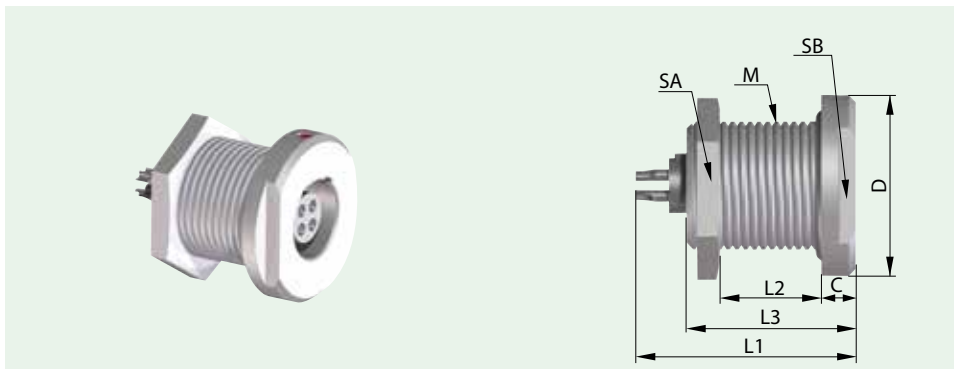


Panel cut-out

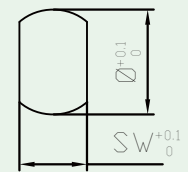


Size	Unit: mm									Panel hole size	
	L1	L2	L3	M	D1	D2	C	SA	SB	SW	Φ
0	~22.5	~3.5	18.5	10×0.5	15.0	14.5	3.0	9	12	9.1	10.1
1	~27.0	~4.0	22.5	14×1	18.0	18.0	4.0	12	14	12.1	14.1
2	~29.5	~3.0	23.0	16×1	22.0	21.0	5.0	15	18	15.1	16.1
3	~32.0	~6.0	26.5	20×1	25.0	26.0	5.0	18	-	18.1	20.1

Z E IP68, install from front of panel



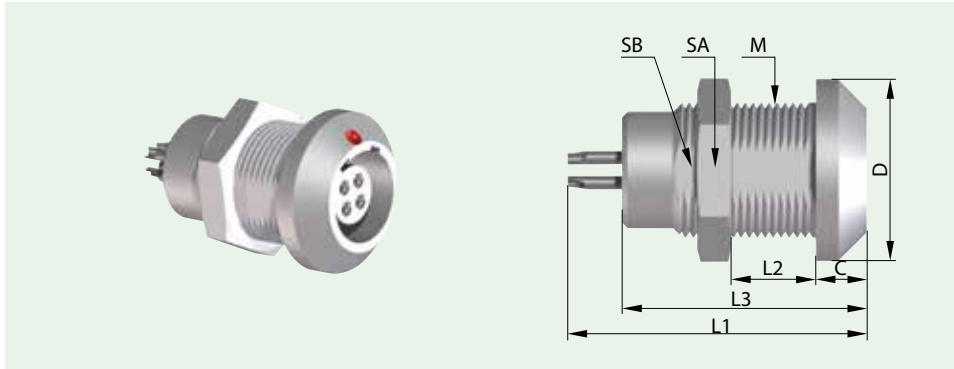
Panel cut-out



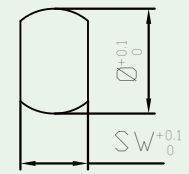
Size	Unit: mm								Panel hole sizeΦ
	L1	L2	L3	M	D	SA	SB	C	
0	~22.5	~8.0	14.5	11×0.75	15.5	13	12	3.0	11.1
1	~27.0	~10.0	16.5	14×1	18.0	17	14	3.0	14.1
2	~29.5	~11.0	18.0	17×1	22.0	19	17	4.0	17.1

Receptacle (ZL, ZH)

Z L IP68, install from rear of panel

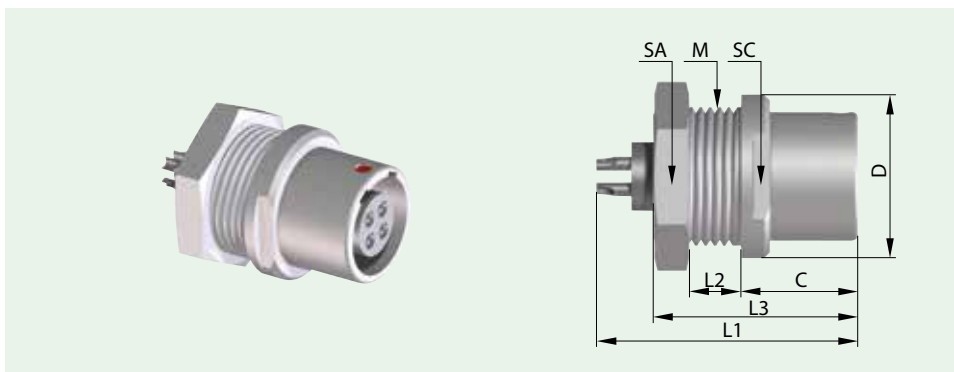


Panel cut-out

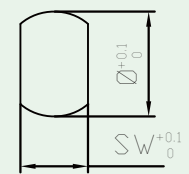


Size	Unit: mm									Panel hole size	
	L1	L2	L3	M	D	SA	SB	C	SW	Φ	
0	~22.5	~7.5	16.5	9×0.5	13.0	11.0	8.2	3.0	8.3	9.1	
1	~27.0	~9.0	21.5	12×1	16.0	14.0	10.5	4.5	10.6	12.1	
2	~29.5	~8.0	24.5	15×1	20.0	17.0	13.5	4.0	13.6	15.1	

Z H IP50, install from rear of panel



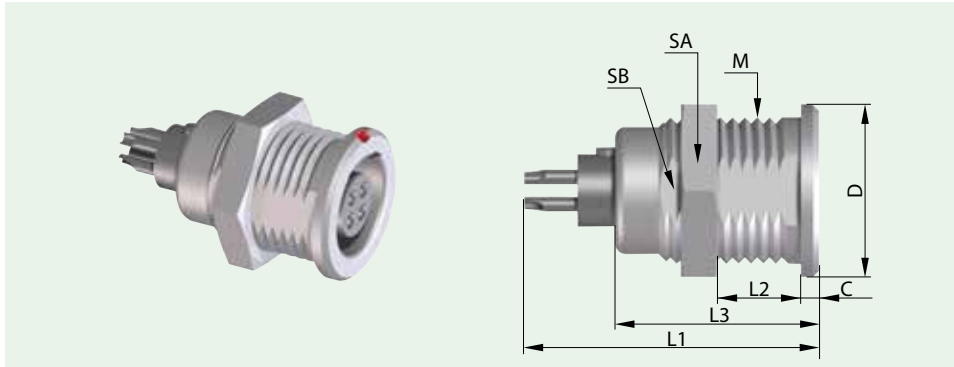
Panel cut-out



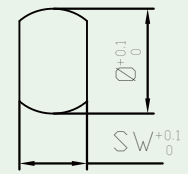
Size	Unit: mm										Panel hole size	
	L1	L2	L3	M	D	SA	SB	SC	C	SW	Φ	
0	~22.5	~4.0	15.0	9×0.5	11.5	11.0	8.2	10.0	9.0	8.3	9.1	
1	~27.0	~4.5	17.5	12×1	14.0	14.0	10.5	12.0	10.0	10.6	12.1	
2	~29.5	~6.0	19.5	15×1	18.0	17.0	13.5	16.0	11.0	13.6	15.1	
3	~32.0	~6.0	22.5	18×1	22.0	22.0	16.5	-	12.5	16.6	18.1	

Receptacle (Z1, Z5)

Z 1 IP50, install from rear of panel

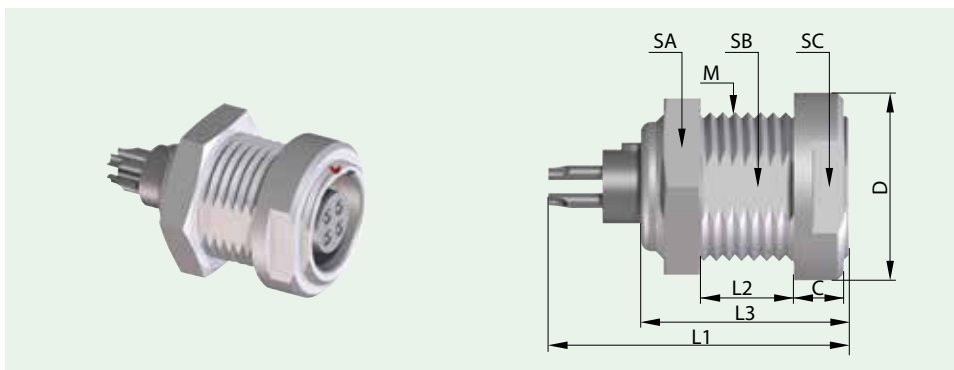


Panel cut-out

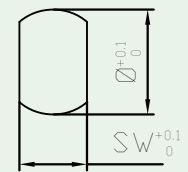


Size	Unit: mm									Panel hole size	
	L1	L2	L3	C	D	SA	SB	M		SW	Φ
0	~22.5	~9.0	14.5	1.5	10.0	11.0	8.2	9×0.5		8.3	9.1
1	~27.0	~8.0	16.5	1.5	14.0	14.0	10.5	12×1		10.6	12.1
2	~29.5	~10.0	18.5	1.8	18.0	17.0	13.5	15×1		13.6	15.1
3	~32.0	~13.0	22.5	2.0	22.0	22.0	16.5	18×1		16.6	18.1

Z 5 IP50, housing full thread, install from both side of panel



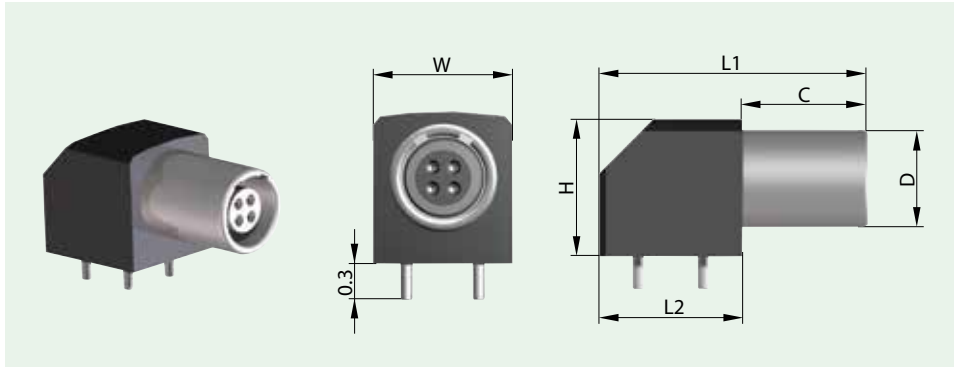
Panel cut-out



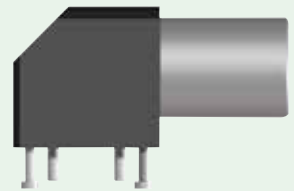
Size	Unit: mm										Panel hole size	
	L1	L2	L3	C	D	SA	SB	SC	M		SW	Φ
0	~22.5	~8.0	14.5	2.5	11.5	11.0	8.2	10.0	9×0.5		8.3	9.1
1	~27.0	~8.0	16.5	4.0	15.0	14.0	10.5	13.0	12×1		10.6	12.1
2	~29.5	~10.0	18.5	3.8	20.0	17.0	13.5	17.0	15×1		13.6	15.1
3	~32.0	~12.0	22.5	5.0	23.0	22.0	16.5	20.0	18×1		16.6	18.1

Right angled receptacle (ZF, ZG)

Z F IP50, right angled receptacle (without thread)

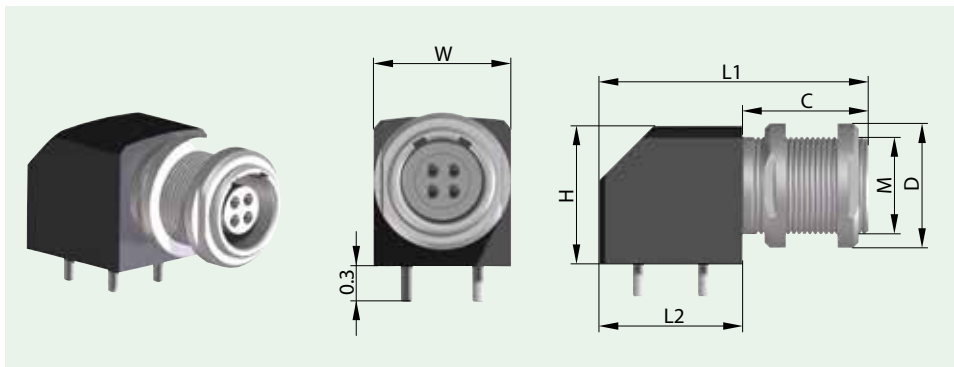


Receptacle to be fixed with screws

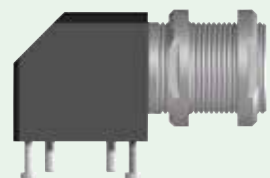


Size	Unit: mm						Maximum pin number
	L1	L2	C	H	W	D	
0	24.8	13.2	11.6	12.7	11.6	9.0	7
1	26.8	13.2	13.6	14.0	12.6	11.0	10

Z G IP50, right angled receptacle (without thread)



Receptacle to be fixed with screws



Size	Unit: mm							Maximum pin number
	L1	L2	C	H	W	M	D	
0	24.8	13.2	11.6	12.7	11.6	9×0.5	11.5	7
1	26.8	13.2	13.6	14.0	12.6	11×0.5	14.9	10

Coding, housing material and surface plating

Coding

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

● Standard

○ Special

Housing material and surface plating

No.	Housing material and surface plating
C	Standard type Copper alloy/surface chrome plating
S	Copper alloy/surface black chrome plating



Insulator material

PEEK material, turned pin

No.	Termination	PEEK
P	Soldering	●
	PCB	●

Number of contacts

Size 0 (Part I)

Size	Insulator material	Number of pins	Pin diameter mm	Single-pin load current	Creepage distance		Test voltage acc.SAE 13441 KV	Operating voltage KV	Termination method		View on the termination side	
					Pin and pin mm	Pin and housing mm			Soldering	PCB	Pin	Socket
0	P	02	0.9	10	1.0	1.0	1.500	0.500	●	●		
0	P	03	0.9	10	0.8	1.0	1.200	0.400	●	●		
0	P	04	0.7	7	0.8	1.0	0.900	0.300	●	●		
0	P	05	0.7	7	0.7	0.8	1.100	0.366	●	●		
0	P	06	0.5	5	0.9	0.8	0.900	0.300	●	●		

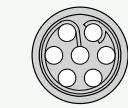
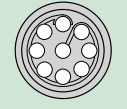
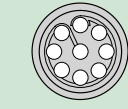
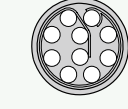
PCB layout

Size 0 (Part I)

Number of pins	PCB straight	90°	Without thread	With thread
2				
3				
4				
5				
6				

Number of contacts

Size 0 (Part II)

Size	Insulator material	Number of pins	Pin diameter mm	Single-pin load current	Creepage distance		Test voltage acc.SAE 13441 KV	Operating voltage KV	Termination method		View on the termination side	
					Pin and pin mm	Pin and housing mm			Soldering	PCB	Pin	Socket
0	P	07	0.5	5	0.7	0.8	0.900	0.300	●	●		
0	P	09	0.5	5	0.4	0.8	0.600	0.200	●	●		
0	P	10	0.5	5	0.3	0.7	0.600	0.200	●	●		

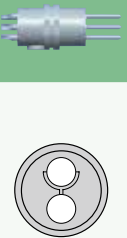
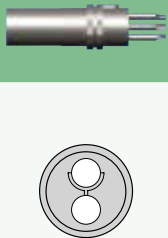
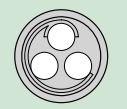
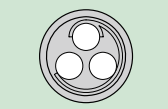
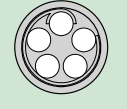
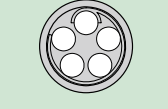
PCB layout

Size 0 (Part II)

Number of pins	PCB straight	90°	Without thread	With thread
7	Hole diameter: 0.6mm 	Hole diameter: 0.7mm 	Terminal hole: 0.8mm Screw hole: 0.8mm 	Terminal hole: 0.8mm Screw hole: 1.5mm
	Hole diameter: 0.6mm 	Hole diameter: 0.6mm 		

Number of contacts

Size 1 (Part I)

Size	Insulator material	Number of pins	Pin diameter mm	Single-pin load current	Creepage distance		Test voltage acc.SAE 1341 KV	Operating voltage KV	Termination method		View on the termination side	
					Pin and pin mm	Pin and housing mm			Soldering	PCB	Pin	Socket
1	P	02	1.3	14	1.3	1.4	1.65	0.550	●	●		
1	P	03	1.3	14	1.1	1.3	1.500	0.500	●	●		
1	P	04	0.9	10	1.0	1.4	1.500	0.500	●	●		
1	P	05	0.9	10	0.9	1.2	1.350	0.450	●	●		
1	P	06	0.7	7	0.9	1.2	1.200	0.400	●	●		

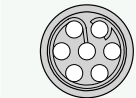
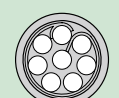
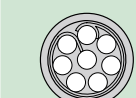
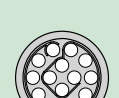
PCB layout

Size 1 (Part I)

Number of pins	PCB straight	90°	Without thread	With thread
2	Hole diameter: 0.8mm	Hole diameter: 0.9mm	Terminal hole: 0.8mm Screw hole: 0.8mm	Terminal hole: 0.8mm Screw hole: 1.5mm
3	Hole diameter: 0.8mm	Hole diameter: 0.9mm	Terminal hole: 0.8mm Screw hole: 0.8mm	Terminal hole: 0.8mm Screw hole: 1.5mm
4	Hole diameter: 0.6mm	Hole diameter: 0.7mm	Terminal hole: 0.8mm Screw hole: 0.8mm	Terminal hole: 0.8mm Screw hole: 1.5mm
5	Hole diameter: 0.8mm	Hole diameter: 0.8mm	Terminal hole: 0.8mm Screw hole: 0.8mm	Terminal hole: 0.8mm Screw hole: 1.5mm
6	Hole diameter: 0.6mm	Hole diameter: 0.7mm	Terminal hole: 0.8mm Screw hole: 0.8mm	Terminal hole: 0.8mm Screw hole: 1.5mm

Number of contacts

Size 1 (Part II)

Size	Insulator material	Number of pins	Pin diameter mm	Single-pin load current	Creepage distance		Test voltage acc.SAE 13441 KV	Operating voltage KV	Termination method		View on the termination side	
					Pin and pin mm	Pin and housing mm			Soldering	PCB	Pin	Socket
1	P	07	0.7	7	0.9	1.2	1.200	0.400	●	●		
1	P	08	0.7	7	0.6	1.1	1.000	0.333	●	●		
1	P	10	0.5	5	0.5	1.2	1.000	0.333	●	●		
1	P	14	0.5	5	0.5	0.9	0.900	0.300	●	●		
1	P	16	0.5	5	0.4	0.9	0.900	0.300	●	●		

PCB layout

Size 1 (Part II)

Number of pins	PCB straight	90°	Without thread	With thread
7	Hole diameter: 0.6mm	Hole diameter: 0.7mm	Terminal hole: 0.8mm Screw hole: 0.8mm	Terminal hole: 0.8mm Screw hole: 1.5mm
8	Hole diameter: 0.6mm	Hole diameter: 0.7mm	Terminal hole: 0.8mm Screw hole: 0.8mm	Terminal hole: 0.8mm Screw hole: 1.5mm
10	Hole diameter: 0.6mm	Hole diameter: 0.7mm	Terminal hole: 0.8mm Screw hole: 0.8mm	Terminal hole: 0.8mm Screw hole: 1.5mm
14	Hole diameter: 0.6mm	Hole diameter: 0.7mm		
16	Hole diameter: 0.6mm			

Number of contacts

Size 2 (Part I)

Size	Insulator material	Number of pins	Pin diameter mm	Single-pin load current	Creepage distance		Test voltage acc.SAE 13441 KV	Operating voltage KV	Termination method		View on the termination side	
					Pin and pin mm	Pin and housing mm			Soldering	PCB	Pin	Socket
2	P	02	2.0	22	2.0	1.4	2.100	0.700	●	●		
2	P	03	1.6	17	1.9	1.6	2.100	0.700	●	●		
2	P	04	1.3	14	2.0	1.6	1.950	0.650	●	●		
2	P	05	1.3	14	1.6	1.5	1.800	0.600	●	●		
2	P	06	1.3	14	1.3	1.3	1.500	0.500	●	●		
2	P	07	1.3	14	1.3	1.2	1.800	0.600	●	●		
2	P	08	0.9	10	1.3	1.1	1.500	0.500	●	●		
2	P	10	0.9	10	1.0	1.1	1.500	0.500	●	●		
2	P	12	0.7	7	1.0	1.1	1.350	0.450	●	●		

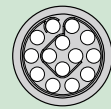
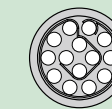
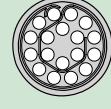
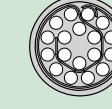
PCB layout

Size 2 (Part I)

Number of pins	PCB straight	90°	Number of pins	PCB straight	90°
	Hole diameter: 0.8mm	Hole diameter: 0.9mm		Hole diameter: 0.8mm	Hole diameter: 0.9mm
2			7		
3			8		
4			10		
5			12		
6					

Number of contacts

Size 2 (Part II)

Size	Insulator material	Number of pins	Pin diameter mm	Single-pin load current	Creepage distance		Test voltage acc.SAE 13441 KV	Operating voltage KV	Termination method		View on the termination side	
					Pin and pin mm	Pin and housing mm			Soldering	PCB	Pin	Socket
2	P	14	0.7	7	0.9	1.1	1.200	0.400	●	●		
2	P	16	0.7	7	0.8	1.1	1.100	0.366	●	●		
2	P	18	0.7	7	0.7	1.1	0.900	0.300	●	●		
2	P	19	0.7	7	0.7	1.1	1.000	0.333	●	●		
2	P	26	0.5	5	0.6	1.0	0.900	0.300	●	●		

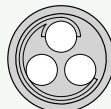
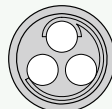
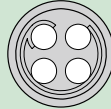
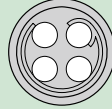
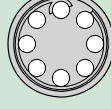
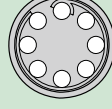
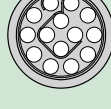
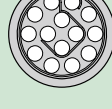
PCB layout

Size 2 (Part II)

Number of pins	PCB straight		90°	
14	Hole diameter: 0.6mm	Hole diameter: 0.7mm	Hole diameter: 0.6mm	Hole diameter: 0.7mm
16	Hole diameter: 0.6mm	Hole diameter: 0.7mm	Hole diameter: 0.6mm	
18	Hole diameter: 0.6mm	Hole diameter: 0.7mm		

Number of contacts

Size 3 (Part I)

Size	Insulator material	Number of pins	Pin diameter mm	Single-pin load current	Creepage distance		Test voltage acc.SAE 13441 KV	Operating voltage KV	Termination method		View on the termination side	
					Pin and pin mm	Pin and housing mm			Soldering	PCB	Pin	Socket
3	P	03	2.0	22	2.4	2.1	1.800	0.600	●	●		
3	P	04	2.0	22	2.0	1.8	1.650	0.550	●	●		
3	P	07	1.6	17	1.5	1.6	1.800	0.600	●	●		
3	P	08	1.3	14	1.4	1.6	1.650	0.550	●	●		
3	P	10	1.3	14	1.2	1.4	1.350	0.450	●	●		
3	P	14	0.9	10	1.2	1.4	1.350	0.450	●	●		
3	P	16	0.9	10	1.1	1.3	1.350	0.450	●	●		

PCB layout

Size 3 (Part I)

Number of pins	PCB straight		90°	
3	Hole diameter: 0.8mm		Hole diameter: 0.8mm	
4	Hole diameter: 0.8mm		Hole diameter: 0.9mm	
7	Hole diameter: 0.8mm		Hole diameter: 0.9mm	
8	Hole diameter: 0.8mm		Hole diameter: 0.9mm	
10	Hole diameter: 0.8mm		Hole diameter: 0.9mm	
14	Hole diameter: 0.8mm		Hole diameter: 0.7mm	
16	Hole diameter: 0.8mm		Hole diameter: 0.7mm	

Number of contacts

Size 3 (Part II)

Size	Insulator material	Number of pins	Pin diameter mm	Single-pin load current	Creepage distance		Test voltage acc.SAE 13441 KV	Operating voltage KV	Termination method		View on the termination side	
					Pin and pin mm	Pin and housing mm			Soldering	PCB	Pin	Socket
3	P	18	0.9	10	1.0	1.2	1.350	0.450	●	●		
3	P	20	0.7	7	0.9	1.3	1.100	0.366	●	●		
3	P	22	0.7	7	0.9	1.2	1.100	0.366	●	●		
3	P	26	0.7	7	0.7	1.1	1.000	0.333	●	●		
3	P	30	0.7	7	0.6	1.2	0.900	0.300	●	●		

PCB layout Size 3 (Part II)

Number of pins	PCB straight		90°		Number of pins	PCB straight		90°	
	Hole diameter: 0.8mm	Hole diameter: 0.7mm	Hole diameter: 0.6mm	Hole diameter: 0.7mm		Hole diameter: 0.6mm	Hole diameter: 0.7mm		
18					26				
20					30				
22									

The hole shown only applies to the socket in the receptacle

Contact/socket type, surface plating and contact/socket contact diameter

Contact/socket type, surface plating

Type	No.	Surface plating
Socket	L	L-1 $\mu\text{m Au}$ (min.)
Pin	M	L-1 $\mu\text{m Au}$ (min.)
Socket	Q	P-1 $\mu\text{m Au}$ (min.)
Pin	R	P-1 $\mu\text{m Au}$ (min.)

L=Soldering

P=PCB

Contact/socket contact diameter

Contact/socket contact diameter	No.
0.50	C
0.70	F
0.90	J
Mixed	M
1.30	P

Contact/socket diameter and termination cross section

Soldering

Socket contact diameter	diameter	Contact/ socket contact diameterNo.	Termination cross section No.		Termination cross section	
					AWG	mm ²
0.5	0.4	C	C	0	28	0.08
0.7	0.6	F	D	0	26	0.15
0.7	0.85	F	G	0	22	0.38
0.9	0.85	J	G	0	22	0.38
1.3	1.1	P	H	0	20	0.5
1.6	1.4	S	N	0	18	1.00
2.0	1.85	T	Q	0	14	1.5
2.0	2.4	T	S	0	12	2.5
5.0	2.7	V	T	0	10	4.0

PCB

Contact/socket contact diameter	Termination diameter	No. of contact/ socket diameter	No. of termination cross section	
0.5	0.5	C	C	0
0.7	0.5	F	0	0
0.9	0.7	J	0	0
1.3	0.7	P	0	0
1.6	0.7	S	0	0
2.0	0.7	T	0	0

Cable clamp

No.		Cable outer diameter mm	Housing size			
			0	1	2	3
1	5	> 1.0-1.5		●		
2	0	> 1.5-2.0	●	●		
2	5	> 2.0-2.5	●	●	●	
3	0	> 2.5-3.0	●	●	●	
3	5	> 3.0-3.5	●	●	●	●
4	0	> 3.5-4.0	●	●	●	●
4	5	> 4.0-4.5	●	●	●	●
5	0	> 4.5-5.0	●	●	●	●
5	5	> 5.0-5.5		●	●	●
6	0	> 5.5-6.0		●	●	●
6	5	> 6.0-6.5		●	●	●
7	0	> 6.5-7.0		●	●	●
7	5	> 7.0-7.5			●	●
8	0	> 7.0-8.0			●	●
8	5	> 8.0-8.5			●	●
9	0	> 8.5-9.0			●	●
9	5	> 9.0-9.5				●
0	1	> 9.5-10.0				●
0	2	> 10.0-10.5				●
0	0	Without a cable clamp				

Applicable to all plugs and floating receptacles

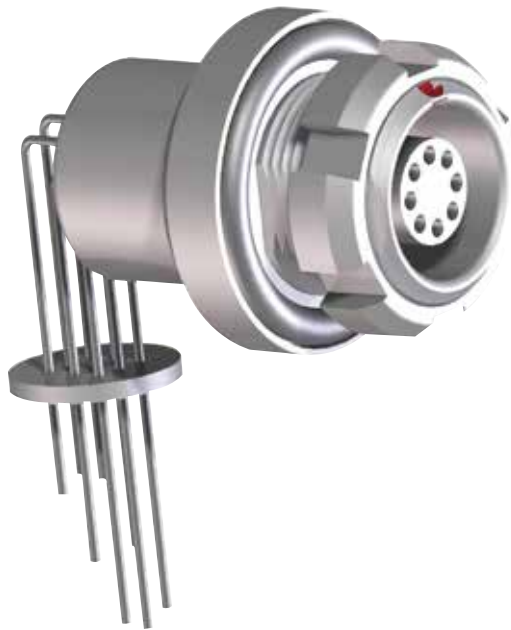
Schematic diagram of cable clamp



PCB right-angled receptacle

Series B receptacles can off PCB right-angled receptacles, regardless of the water-proof level, number of contacts and housing size.

PCB right angled

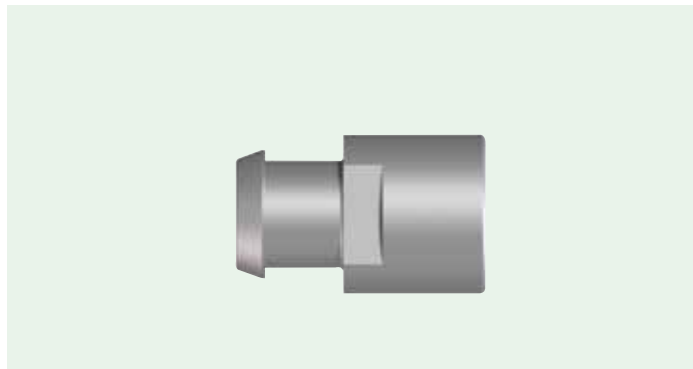


Back Nut

Standard back nut



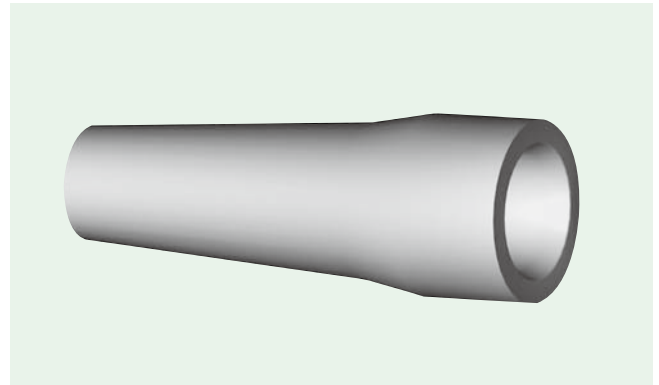
For cable bend relief or overmoulding



Cable bend relief

Color

No.	Color/RAL-No. (Similar)	
A	Red	RAL 3020
B	White	RAL 9010
C	Yellow	RAL 1016
D	Green	RAL 6029
E	Blue	RAL 5002
F	Grey	RAL 7005
G	Black	RAL 9005
0	Without a bend relief	



Material

No.	Mate
S	Silicon rubber
0	Without a bend relief

Silicon rubber

Operating temperature: -50°C ~ +200°C

Up to +230°C within a short time

High temperature disinfection

Series I, IP68
FP locking
Block and groove coding



Part Description of Series I

SN	Description	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		T	1	1	I	0	C	—	P	0	8	M	F	D	0	—	4	0	0	0
1	Type: Straight plug T1, T2 Receptacles Z1, Z3, Z8																			
2																				
3	Size: 0、1、2、3																			
4	Series: I																			
5	Coding																			
6	Housing material and plating																			
8	Insulator material																			
9	Number of pins																			
10																				
11	Terminal and surface processing																			
12	Pin/socket diameter (M: mixed)																			
13	Terminal cross-section area Special terminals are represented as 9																			
14																				
16	Cable clamp size (PCB right angled number:A0)																			
17																				
18	0																			
19	Back nut																			

Note:

The 18th and 19th bits are 00, representing the standard back nut; OS can be installed with silicone bend relief back nuts

When the second style is X as other figures, it indicates the version number. For different version numbers, it indicates that certain accessories adopted vary

Example: Plug

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

Plug - Style 1- Housing size1 - Series I -Coding 0
- Copper alloy housing, surface black black chrome plating - PEEK insulator - 8-contact - Gold-plated solderingcontact - Contact diameter $\Phi 0.7$ - For 26AWG, gauge cross-section area - Applicable to the cable of 3.5~4.0mm - Standard Back nut

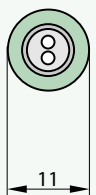
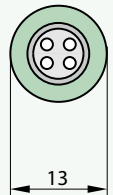
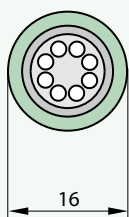
Example: Receptacle

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Z	1	1	I	0	S	—	P	0	8	Q	F	0	0	—	0	0	0	0

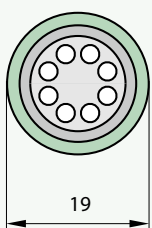
Receptacle - Style 1-Housing size1 - Series I -Coding 0
- Copper alloy housing, surface black black chrome plating - PEEK insulator - 8-contact - Gold-plated PCB socket - Socket contact diameter $\Phi 0.7$

Housing size (scale 1:1)

OD = Outer diameter of the plug (unit: mm)
S=Size

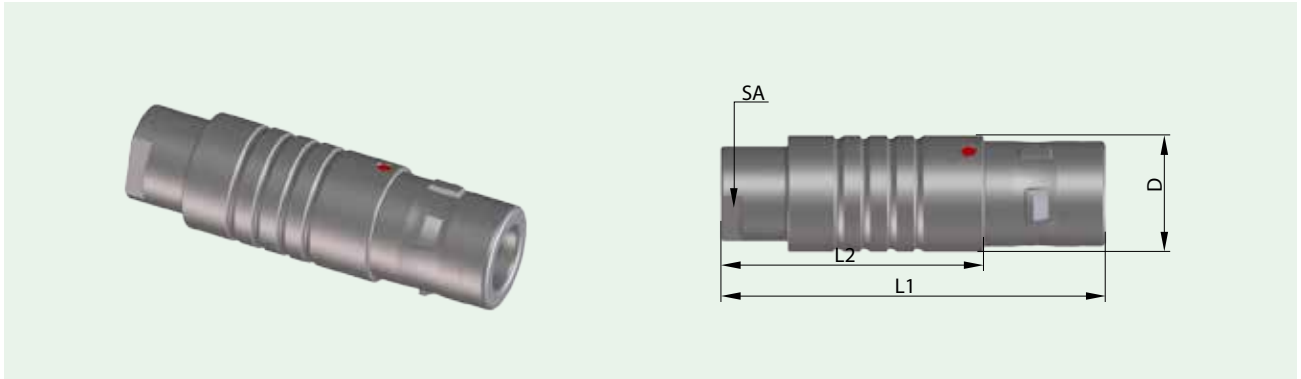
OD			
S	0	1	2
No.	0	1	2

OD = Outer diameter of the plug (unit: mm)
S=Size

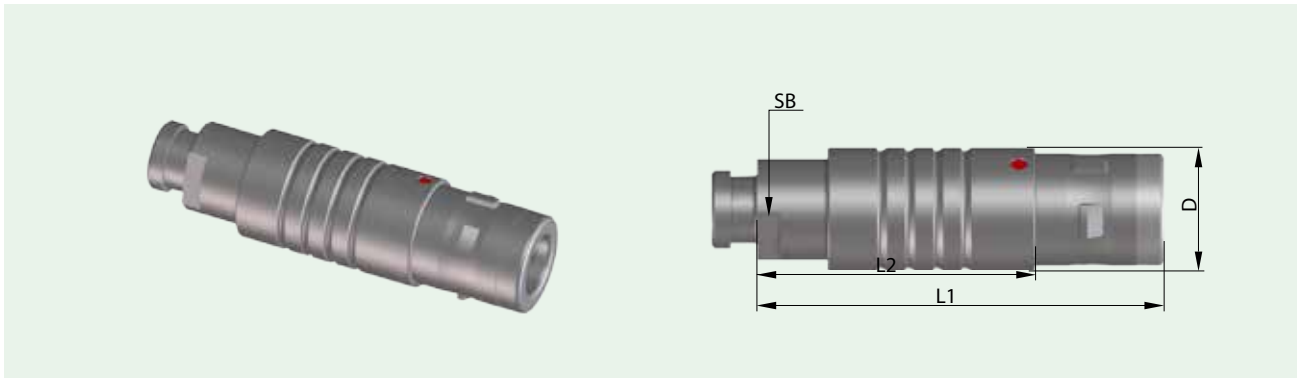
OD			
S	3		
No.	3		

Straight plug(T1, T2)

T 1 IP68, standard back nut



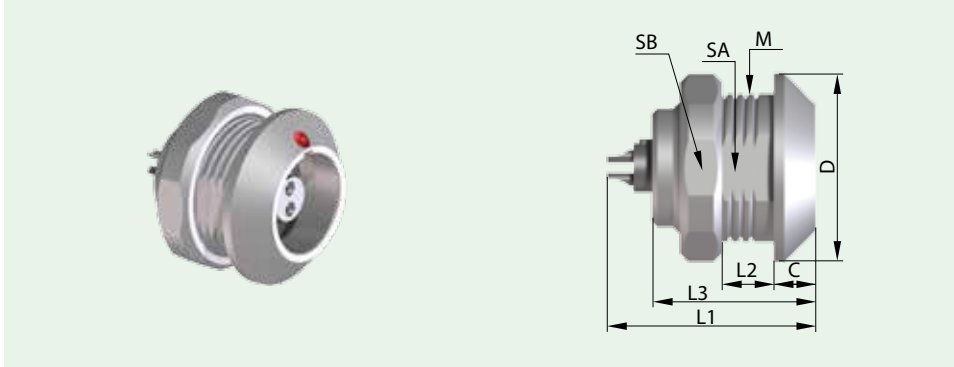
T 2 IP68, for bend relief or over molding



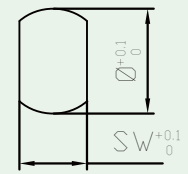
Size	Unit: mm				
	L1	L2	D	SA	SB
0	~37.0	~26.0	11.0	7	7
1	~44.0	~30.0	13.0	10	10
2	~50.0	~34.0	16.0	12	13
3	~60.0	~40.0	19.0	14	15

Receptacle (Z1, Z3)

Z 1 IP68, install from rear of panel

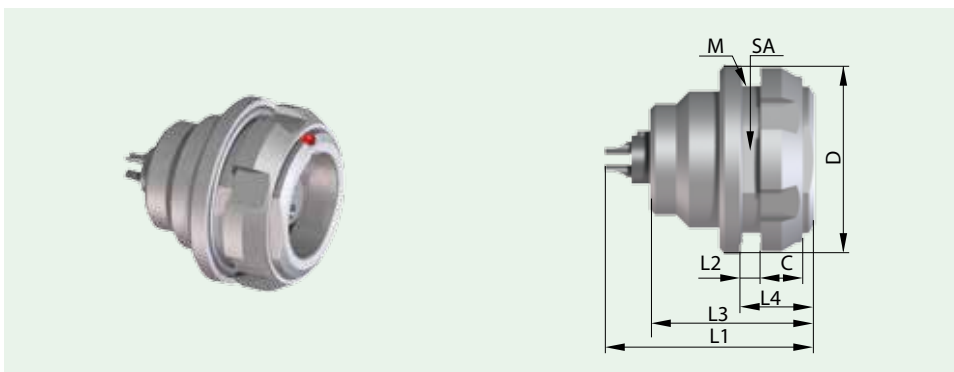


Panel cut-out

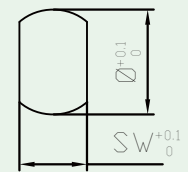


Size	Unit: mm									Panel hole size	
	L1	L2	L3	M	D	SA	SB	C	SW	Φ	
0	~21.0	~5.5	15.5	14×1	18.0	12.5	17.0	4.0	12.6	14.1	
1	~28.0	~9.0	20.5	16×1	20.0	14.5	19.0	4.5	14.6	16.1	
2	~31.0	~9.0	23.0	20×1	25.0	18.5	24.0	5.0	18.6	20.1	
3	~36.0	~11.0	28.0	24×1	31.0	22.5	30.0	6.0	22.6	24.1	

Z 3 IP68, slotted nut, install from rear of panel



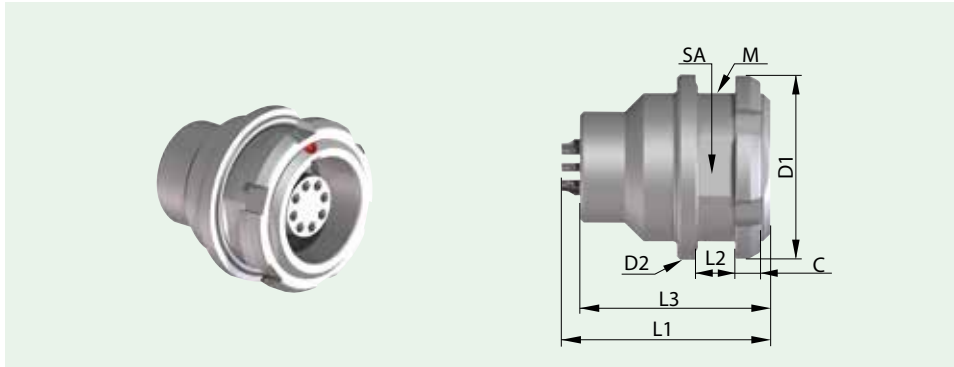
Panel cut-out



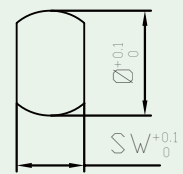
Size	Unit: mm									Panel hole size	
	L1	L2	L3	L4	M	D	C	SA	SW	Φ	
0	~ 21.0	~ 3.0	15.5	7.0	14×1	18.0	4.0	12.5	12.6	14.1	
1	~ 28.0	~ 6.0	20.5	10.0	16×1	20.0	3.5	14.5	14.6	16.1	
2	~ 31.0	~ 6.0	23.0	10.0	20×1	25.0	3.5	18.5	18.6	20.1	
3	~ 36.0	~ 7.5	28.0	12.0	24×1	31.0	4.5	22.5	22.6	24.1	

Receptacle (Z8)

Z 8 IP68, slotted nut, install from front of panel



Panel cut-out



Size	Unit: mm								Panel hole size	
	L1	L2	L3	M	D1	D2	C	SA	SW	Φ
1	~ 32.0	~ 6.0	26.6	16×1	20.0	20.0	3.5	14.5	14.6	16.1
2	~ 34.0	~ 6.0	27.0	20×1	25.0	25.0	3.5	18.5	18.6	20.1
3	~ 39.0	~ 7.0	32.7	24×1	30.0	31.0	4.5	22.5	22.6	24.1

Coding, housing materials and surface plating

Coding

Angle	Coding	Front view of the receptacle	Size			
			0	1	2	3
0°	0		●	●	●	●
30°	A		●	●	●	○
45°	C		●	●	●	○
60°	F		●	●	●	○
75°	H		○	○	○	○
95°	K		○	○	○	○
120°	Q		○	○	○	○
145°	W		○	○	○	○

- Standard
 ○ Special

Housing material and surface plating

No.	Housing material and surface plating
C	Standard type Copper alloy/surface chrome plating
S	Copper alloy/surface black chrome plating

Insulator material

PEEK material, turned contact

No.	Termination method	PEEK
P	Soldering	●
	PCB	●

Number of contacts

Size 0 (Part I)

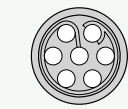
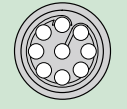
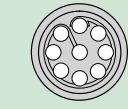
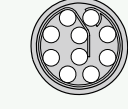
Size	Insulator material	Number of pins	Pin diameter mm	Single-pin load current	Creepage distance		Test voltage acc.SAE 13441 KV	Operating voltage KV	Termination method		View on the termination side	
					Pin and pin mm	Pin and housing mm			Soldering	PCB	Pin	Socket
0	P	02	0.9	10	1.0	0.9	1.500	0.500	●	●		
0	P	03	0.9	10	0.8	0.8	1.200	0.400	●	●		
0	P	04	0.7	7	0.8	0.8	0.900	0.300	●	●		
0	P	05	0.7	7	0.7	0.7	1.100	0.366	●	●		
0	P	06	0.5	5	0.9	0.7	0.900	0.300	●	●		

PCB layout Size 0 (Part I)

Number of pins	PCB straight	90°
	Hole diameter: 0.8mm	Hole diameter: 0.7mm
2		
	Hole diameter: 0.8mm	Hole diameter: 0.7mm
3		
	Hole diameter: 0.6mm	Hole diameter: 0.7mm
4		
	Hole diameter: 0.6mm	Hole diameter: 0.7mm
5		
	Hole diameter: 0.6mm	Hole diameter: 0.7mm
6		

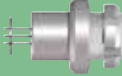
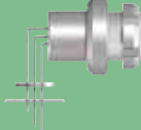
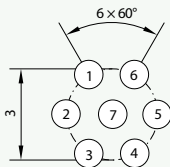
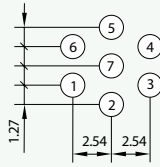
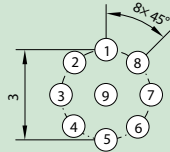
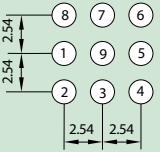
Number of contacts

Size 0 (Part II)

Size	Insulator material	Number of pins	Pin diameter mm	Single-pin load current	Creepage distance		Test voltage acc.SAE 13441 KV	Operating voltage KV	Termination method		View on the termination side	
					Pin and pin mm	Pin and housing mm			Soldering	PCB	Pin	Socket
0	P	07	0.5	5	0.7	0.7	0.900	0.300	●	●		
0	P	09	0.5	5	0.4	0.7	0.600	0.200	●	●		
0	P	10	0.5	5	0.3	0.5	0.600	0.200	●	●		

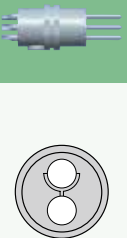
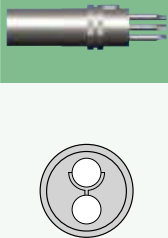
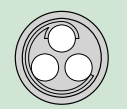
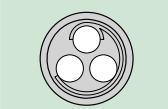
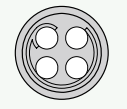
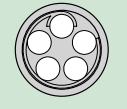
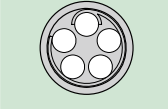
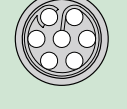
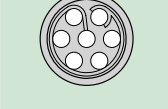
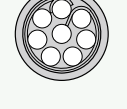
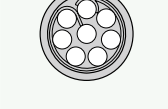
PCB layout

Size 0 (Part II)

Number of pins	PCB straight	90°
		
7	Hole diameter: 0.6mm	Hole diameter: 0.7mm
		
9	Hole diameter: 0.6mm	Hole diameter: 0.6mm
		

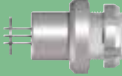
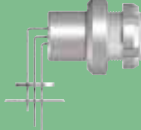
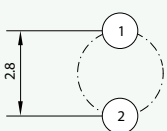
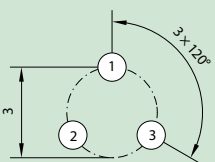
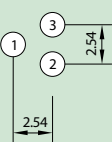
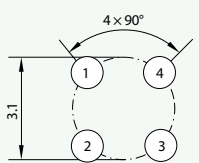
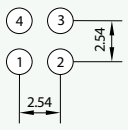
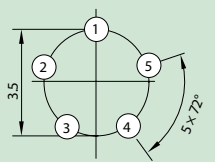
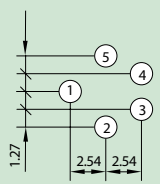
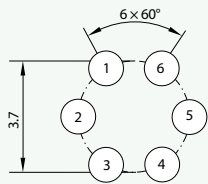
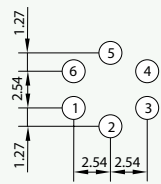
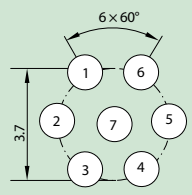
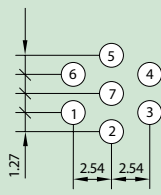
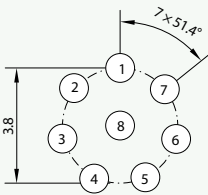
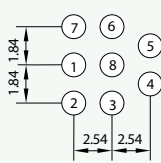
Number of contacts

Size 1 (Part I)

Size	Insulator material	Number of pins	Pin diameter mm	Single-pin load current	Creepage distance		Test voltage acc.SAE 13441 KV	Operating voltage KV	Termination method		View on the termination side	
					Pin and pin mm	Pin and housing mm			Soldering	PCB	Pin	Socket
1	P	02	1.3	14	1.3	1.0	1.650	0.550	●	●		
1	P	03	1.3	14	1.1	0.9	1.500	0.500	●	●		
1	P	04	0.9	10	1.0	1.1	1.500	0.500	●	●		
1	P	05	0.9	10	0.9	0.9	1.350	0.450	●	●		
1	P	06	0.7	7	0.9	0.9	1.200	0.400	●	●		
1	P	07	0.7	7	0.9	0.9	1.200	0.400	●	●		
1	P	08	0.7	7	0.6	0.8	1.000	0.333	●	●		

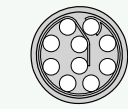
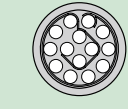
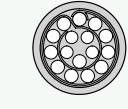
PCB layout

Size 1 (Part I)

Number of pins	PCB straight		90°	
				
2	Hole diameter: 0.8mm		Hole diameter: 0.9mm	
				
3	Hole diameter: 0.8mm		Hole diameter: 0.9mm	
				
4	Hole diameter: 0.8mm		Hole diameter: 0.8mm	
				
5	Hole diameter: 0.8mm		Hole diameter: 0.8mm	
				
6	Hole diameter: 0.6mm		Hole diameter: 0.7mm	
				
7	Hole diameter: 0.6mm		Hole diameter: 0.7mm	
				
8	Hole diameter: 0.6mm		Hole diameter: 0.7mm	
				

Number of contacts

Size 1 (Part II)

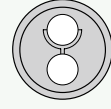
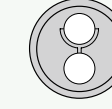
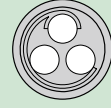
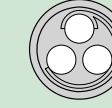
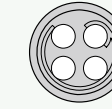
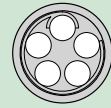
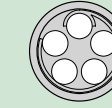
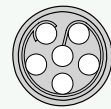
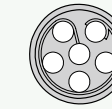
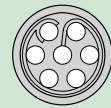
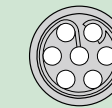
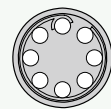
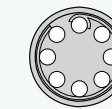
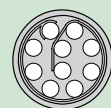
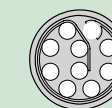
Size	Insulator material	Number of pins	Pin diameter mm	Single-pin load current	Creepage distance		Test voltage acc.SAE 13441 KV	Operating voltage KV	Termination method		View on the termination side	
					Pin and pin mm	Pin and housing mm			Soldering	PCB	Pin	Socket
1	P	10	0.5	5	0.5	0.9	1.000	0.333	●	●		
1	P	14	0.5	5	0.5	0.6	0.900	0.300	●	●		
1	P	16	0.5	5	0.4	0.6	0.900	0.300	●	●		

PCB layout Size 1 (Part II)

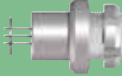
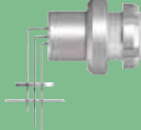
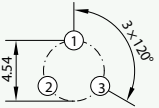
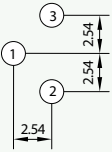
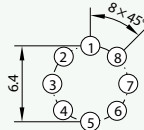
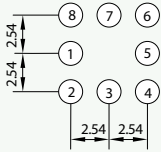
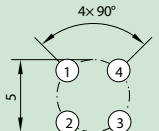
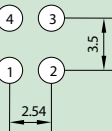
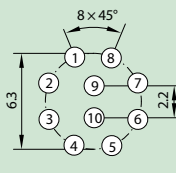
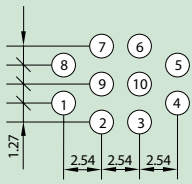
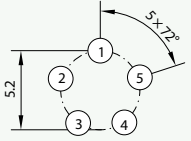
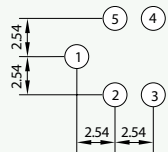
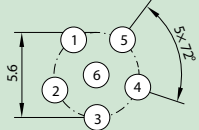
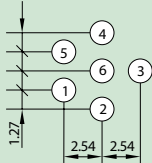
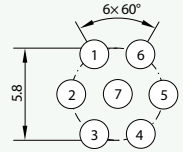
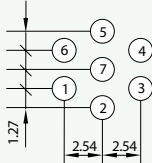
Number of pins	PCB straight	90°
	Hole diameter: 0.6mm	Hole diameter: 0.7mm
10		
14		

Number of contacts

Size 2 (Part II)

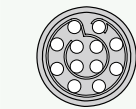
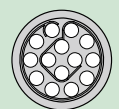
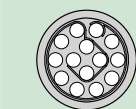
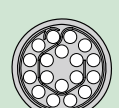
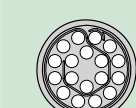
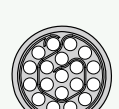
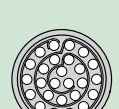
Size	Insulator material	Number of pins	Pin diameter mm	Single-pin load current	Creepage distance		Test voltage acc.SAE 13441 KV	Operating voltage KV	Termination method		View on the termination side	
					Pin and pin mm	Pin and housing mm			Soldering	PCB	Pin	Socket
2	P	02	2.0	22	2.0	1.4	2.100	0.700	●	●		
2	P	03	1.6	17	1.9	1.5	2.100	0.700	●	●		
2	P	04	1.3	14	2.0	1.4	1.950	0.650	●	●		
2	P	05	1.3	14	1.6	1.3	1.800	0.600	●	●		
2	P	06	1.3	14	1.3	1.1	1.500	0.500	●	●		
2	P	07	1.3	14	1.3	1.0	1.800	0.600	●	●		
2	P	08	0.9	10	1.3	0.9	1.500	0.500	●	●		
2	P	10	0.9	10	1.0	0.9	1.500	0.500	●	●		

PCB layout Size 2 (Part I)

Number of pins	PCB straight		90°	
				
3	Hole diameter: 0.8mm	Hole diameter: 0.9mm	Hole diameter: 0.8mm	Hole diameter: 0.9mm
				
4	Hole diameter: 0.8mm	Hole diameter: 0.9mm	Hole diameter: 0.8mm	Hole diameter: 0.7mm
				
5	Hole diameter: 0.8mm	Hole diameter: 0.9mm		
				
6	Hole diameter: 0.8mm	Hole diameter: 0.9mm		
				
7	Hole diameter: 0.8mm	Hole diameter: 0.9mm		
				

Number of contacts

Size 2 (Part II)

Size	Insulator material	Number of pins	Pin diameter mm	Single-pin load current	Creepage distance		Test voltage acc.SAE 13441 KV	Operating voltage KV	Termination method		View on the termination side	
					Pin and pin mm	Pin and housing mm			Soldering	PCB	Pin	Socket
2	P	12	0.7	7	1.0	1.0	1.350	0.450	●	●		
2	P	14	0.7	7	0.9	0.9	1.200	0.400	●	●		
2	P	16	0.7	7	0.8	0.9	1.100	0.366	●	●		
2	P	18	0.7	7	0.7	0.9	0.900	0.300	●	●		
2	P	19	0.7	7	0.7	0.9	1.000	0.333	●	●		
2	P	26	0.5	5	0.6	0.8	0.900	0.300	●	●		

PCB layout

Size 2 (Part II)

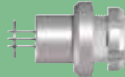
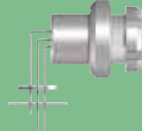
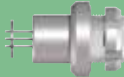
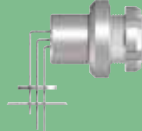
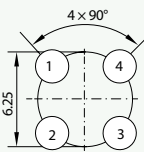
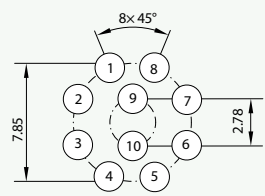
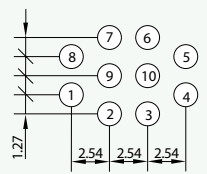
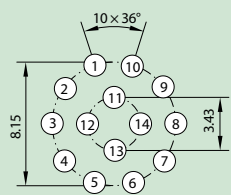
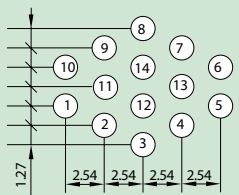
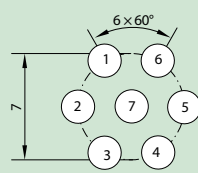
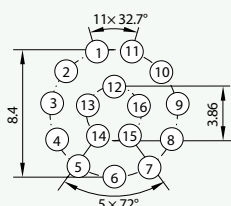
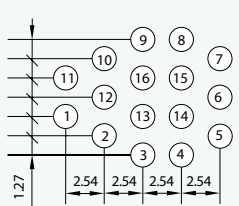
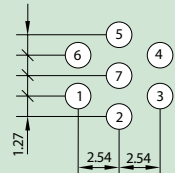
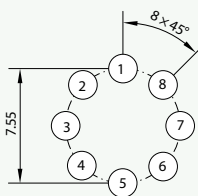
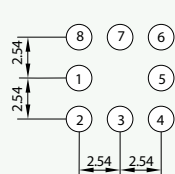
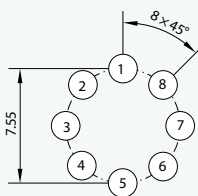
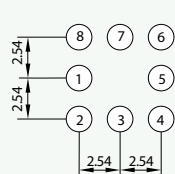
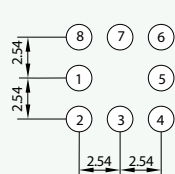
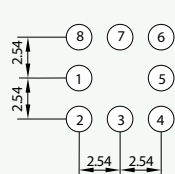
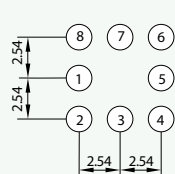
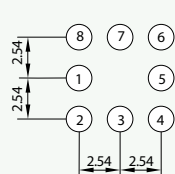
Number of pins	PCB straight		90°	
12	Hole diameter: 0.6mm		Hole diameter: 0.7mm	
14	Hole diameter: 0.6mm		Hole diameter: 0.7mm	
16	Hole diameter: 0.6mm		Hole diameter: 0.7mm	
18	Hole diameter: 0.6mm		Hole diameter: 0.7mm	
19	Hole diameter: 0.6mm		Hole diameter: 0.7mm	

Number of contacts

Size 3 (Part I)

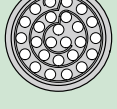
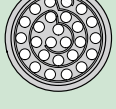
Size	Insulator material	Number of pins	Pin diameter mm	Single-pin load current	Creepage distance		Test voltage acc.SAE 13441 KV	Operating voltage KV	Termination method		View on the termination side	
					Pin and pin mm	Pin and housing mm			Soldering	PCB	Pin	Socket
3	P	03	2.0	22	2.4	1.8	1.800	0.600	●	●		
3	P	04	2.0	22	2.0	1.5	1.650	0.550	●	●		
3	P	07	1.6	17	1.5	1.3	1.800	0.600	●	●		
3	P	08	1.3	14	1.4	1.2	1.650	0.550	●	●		
3	P	10	1.3	14	1.2	1.0	1.350	0.450	●	●		
3	P	14	0.9	10	1.2	1.1	1.350	0.450	●	●		
3	P	16	0.9	10	1.1	1.0	1.350	0.450	●	●		

PCB layout Size 3 (Part I)

Number of pins	PCB straight		90°					
								
4	Hole diameter: 0.8mm		10	Hole diameter: 0.8mm		Hole diameter: 0.9mm		
	Hole diameter: 0.8mm			Hole diameter: 0.8mm		Hole diameter: 0.7mm		
7	Hole diameter: 0.8mm		14	Hole diameter: 0.8mm		16	Hole diameter: 0.7mm	
	Hole diameter: 0.9mm			Hole diameter: 0.8mm			Hole diameter: 0.9mm	
8	Hole diameter: 0.8mm		16	Hole diameter: 0.8mm		16	Hole diameter: 0.7mm	
	Hole diameter: 0.9mm			Hole diameter: 0.8mm			Hole diameter: 0.9mm	

Number of contacts

Size 3 (Part II)

Size	Insulator material	Number of pins	Pin diameter mm	Single-pin load current	Creepage distance		Test voltage acc.SAE 13441 KV	Operating voltage KV	Termination method		View on the termination side	
					Pin and pin mm	Pin and housing mm			Soldering	PCB	Pin	Socket
3	P	18	0.9	10	1.0	0.9	1.350	0.450	●	●		
3	P	20	0.7	7	0.9	1.0	1.100	0.366	●	●		
3	P	22	0.7	7	0.9	1.9	1.100	0.366	●	●		
3	P	26	0.7	7	0.7	0.8	1.000	0.333	●	●		
3	P	30	0.7	7	0.6	0.9	0.900	0.300	●	●		

PCB layout

Size 3 (Part II)

Number of pins	PCB straight		90°	
18	Hole diameter: 0.8mm		Hole diameter: 0.7mm	
	Hole diameter: 0.6mm		Hole diameter: 0.7mm	
20	Hole diameter: 0.6mm		Hole diameter: 0.7mm	
	Hole diameter: 0.6mm		Hole diameter: 0.7mm	
22	Hole diameter: 0.6mm		Hole diameter: 0.7mm	
	Hole diameter: 0.6mm		Hole diameter: 0.7mm	
26	Hole diameter: 0.6mm		Hole diameter: 0.7mm	
	Hole diameter: 0.6mm		Hole diameter: 0.7mm	
30	Hole diameter: 0.6mm		Hole diameter: 0.7mm	
	Hole diameter: 0.6mm		Hole diameter: 0.7mm	

Contact/socket type, surface plating and contact/socket diameter

Contact/socket type, surface plating

Type	No.	Surface plating
Socket	L	L-1 $\mu\text{m Au}$ (min.)
Pin	M	L-1 $\mu\text{m Au}$ (min.)
Socket	Q	P-1 $\mu\text{m Au}$ (min.)
Pin	R	P-1 $\mu\text{m Au}$ (min.)

L=Soldering

P=PCB

Contact/socket contact diameter

Contact/socket contact diameter	No.
0.50	C
0.70	F
0.90	J
Mixed	M
1.30	P

Contact/socket diameter and termination cross section

Soldering

Contact/ socket contact diameter	Termination diameter	Contact/ socket contact diameterNo.	Termination cross section No.		Termination cross section	
					AWG	mm ²
0.5	0.4	C	C	0	28	0.08
0.7	0.6	F	D	0	26	0.15
0.7	0.85	F	G	0	22	0.38
0.9	0.85	J	G	0	22	0.38
1.3	1.1	P	H	0	20	0.5
1.6	1.4	S	N	0	18	1.00
2.0	1.85	T	Q	0	14	1.5
2.0	2.4	T	S	0	12	2.5
5.0	2.7	V	T	0	10	4.0

PCB

Contact/ socket contact diameter	Termination diameter	No. of contact/ socket diameter	No. of termination cross section	
0.5	0.5	C	C	0
0.7	0.5	F	0	0
0.9	0.7	J	0	0
1.3	0.7	P	0	0
1.6	0.7	S	0	0
2.0	0.7	T	0	0

Cable clamp

Cable outer diameter mm	Housing sizeSize				No.
	0	1	2	3	
> 1.0-1.5		●			1 5
> 1.5-2.0	●	●			2 0
> 2.0-2.5	●	●			2 5
> 2.5-3.0	●	●	●		3 0
> 3.0-3.5	●	●	●	●	3 5
> 3.5-4.0	●	●	●	●	4 0
> 4.0-4.5	●	●	●	●	4 5
> 4.5-5.0	●	●	●	●	5 0
> 5.0-5.5		●	●	●	5 5
> 5.5-6.0		●	●	●	6 0
> 6.0-6.5		●	●	●	6 5
> 6.5-7.0		●	●	●	7 0
> 7.0-7.5			●	●	7 5
> 7.5-8.0			●	●	8 0
> 8.0-8.5			●	●	8 5
> 8.5-9.0			●	●	9 0
> 9.0-9.5				●	9 5
> 9.5-10.0				●	0 1
> 10.0-10.5				●	0 2
Without a cable clamp					0 0

Schematic diagram of cable clamp

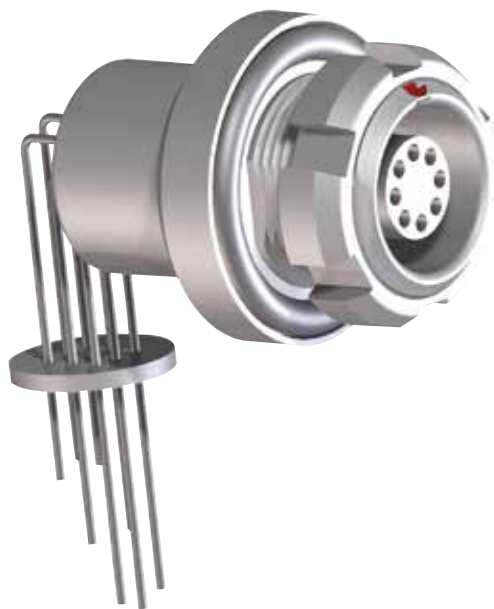


Applicable to all plugs and floating receptacles.
The cable clamp is used for protecting soldering spots.

PCB right-angled receptacle

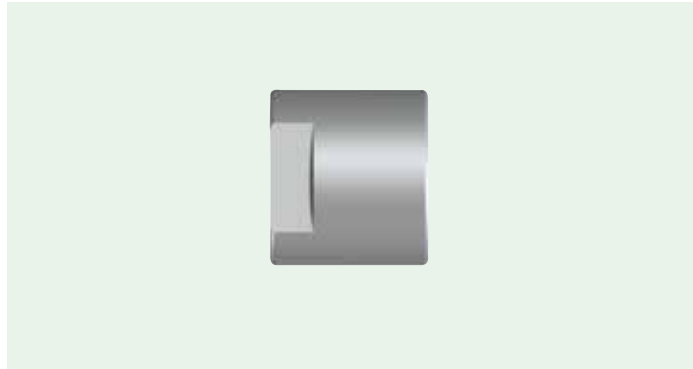
Series I receptacles can off PCB right-angled receptacles, regardless of the water-proof level, number of contacts and housing size.

PCB right angled



Back Nut

Back Nut



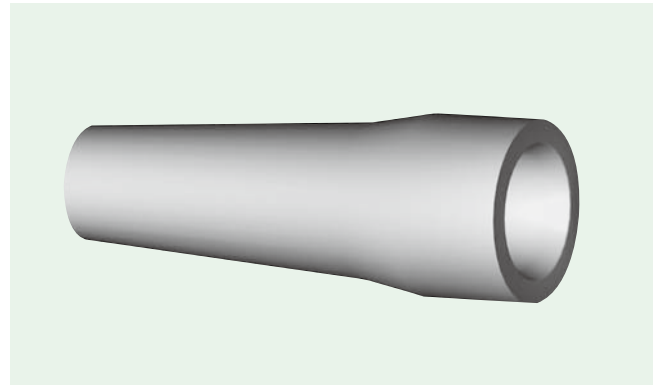
For cable bend relief or overmoulding



Cable bend relief

Color

No.	Color/RAL-No. (Similar)	
A	Red	RAL 3020
B	White	RAL 9010
C	Yellow	RAL 1016
D	Green	RAL 6029
E	Blue	RAL 5002
F	Gray	RAL 7005
G	Black	RAL 9005
0	Without a bend relief	



Material

No.	Material
S	Silicon rubber
0	Without a bend relief

Silicon rubber

Operating temperature: -50°C ~ +200°C

Up to +230°C within a short time

High temperature disinfection

Series X, IP68

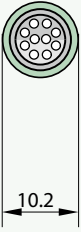


Part Description of Series X

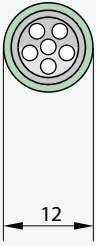
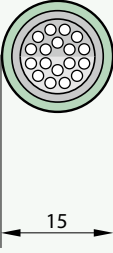
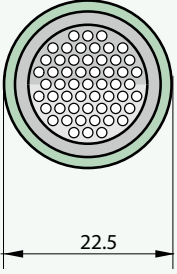
SN	Description	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		T	1	1	X	A	R	—	P	0	8	X	F	G	0	—	0	0	0	0
1	Type: Straight plug = T1 Floating receptacle = F1 Receptacle = ZK, Z8, ZX																			
2																				
3	Size: 0、1、A、2、3、E																			
4	Series: X																			
5	Coding: A-D																			
6	Housing material/plating: R																			
8	Insulator material																			
9	Number of pins																			
10																				
11	PinSocketType																			
12	Contact/socket contact diameter																			
13	Termination cross section																			
14	0																			
16	0																			
17	Front nut: 0 (standard)																			
18	0																			
19	Receptacle grounding plate - ZK and Z8 receptacles: L																			

Housing size (scale 1:1)

OD = Outer diameter of the plug (unit: mm)
S=Size

OD			
S	0	1	1.5
No.	0	1	A

OD = Outer diameter of the plug (unit: mm)
S=Size

OD			
S	2	3	4.5
No.	2	3	E

Plug(T1)

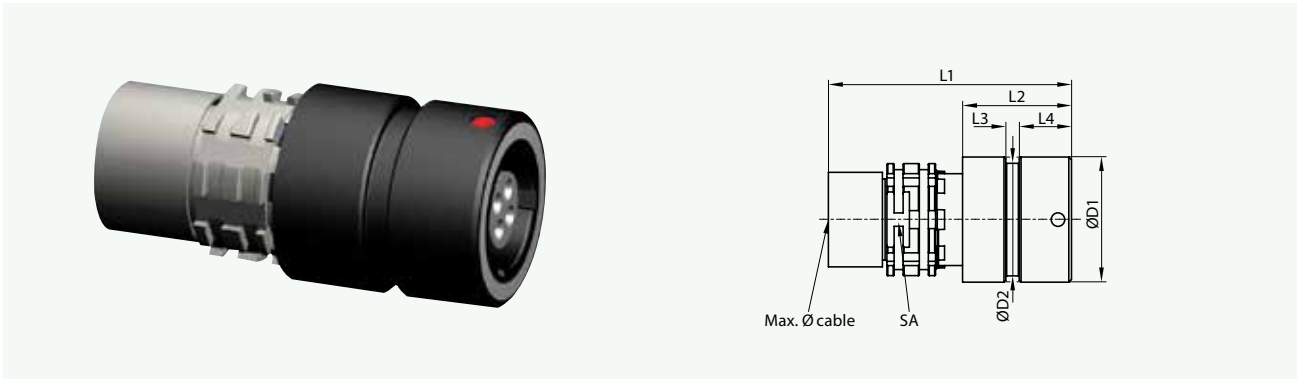
T 1 IP68, push-pull plug



Unit: mm									
Size	L1	L2	L3	L4	D1	D2	D3	SA	Maximum cable diameter
0	31.4	1.5	21.4	10.4	11.9	14.0	12.0	7	5.5
1	33.2	1.5	22.4	11.4	13.9	15.9	13.9	8	6.5
1.5	32.7	1.5	22.7	11.7	14.5	16.5	14.5	10	8.0
2	35.2	1.5	23.2	12.2	17.6	19.6	17.6	12	10.0
3	38.3	1.5	23.2	12.2	21.9	23.9	22.0	14	11.5
4.5	52.6	2.2	34.1	18.1	29.8	33.0	30.0	21	17.5

Floating receptacle (F1)

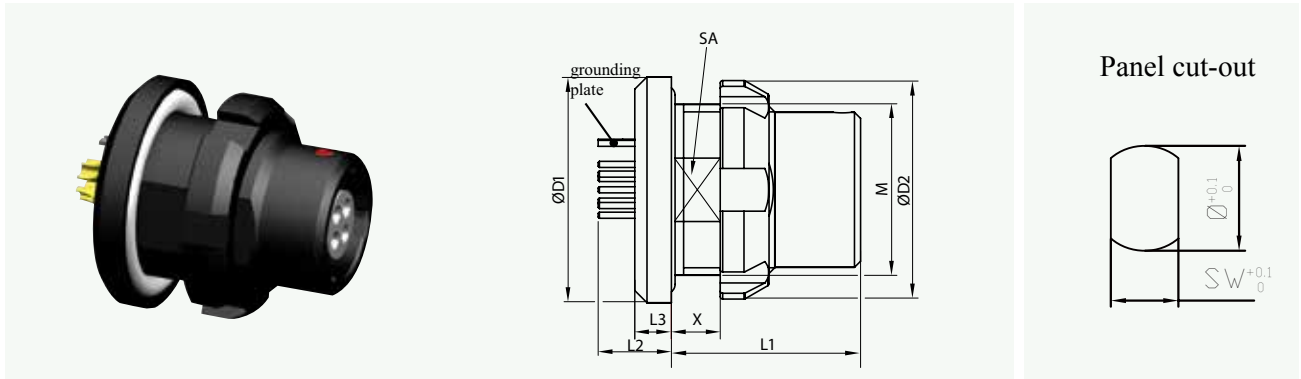
F 1 IP68, floating receptacle



Unit: mm								
Size	L1	L2	L3	L4	D1	D2	SA	Maximum cable diameter
0	25.0	13.0	1.5	5.8	11.9	10.5	9	5.5
1	27.0	12.1	1.5	5.8	13.9	12.5	11	6.5
1.5	27.0	12.0	1.5	5.8	15.9	14.5	12	8.0
2	30.0	15.0	1.5	5.8	17.6	16.2	14	10.0
3	38.0	19.5	1.5	5.8	21.9	20.8	18	11.5

Receptacle (ZK)

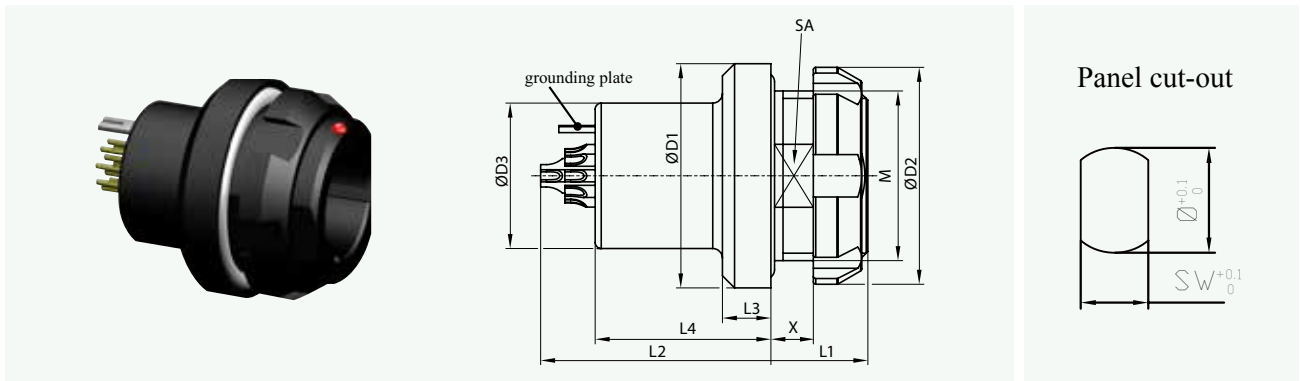
Z K IP68, install from rear of panel



Unit: mm									Panel hole size	
Size	L1	L2	L3	X	D1	D2	SA	M	SW	Ø
0	~13.0	~7.5	2.5	5	15.5	15.0	10	11 × 0.75	10.1	11.1
1	~15.5	~8.5	3.0	4	18.5	17.9	13	14 × 1	13.1	14.1
A	~14.2	~8.5	3.0	4	18.9	17.9	13	14 × 1	13.1	14.1
2	~17.5	~9.5	3.0	4	20.8	21.9	15	16 × 1	15.1	16.1

Receptacle (Z8)

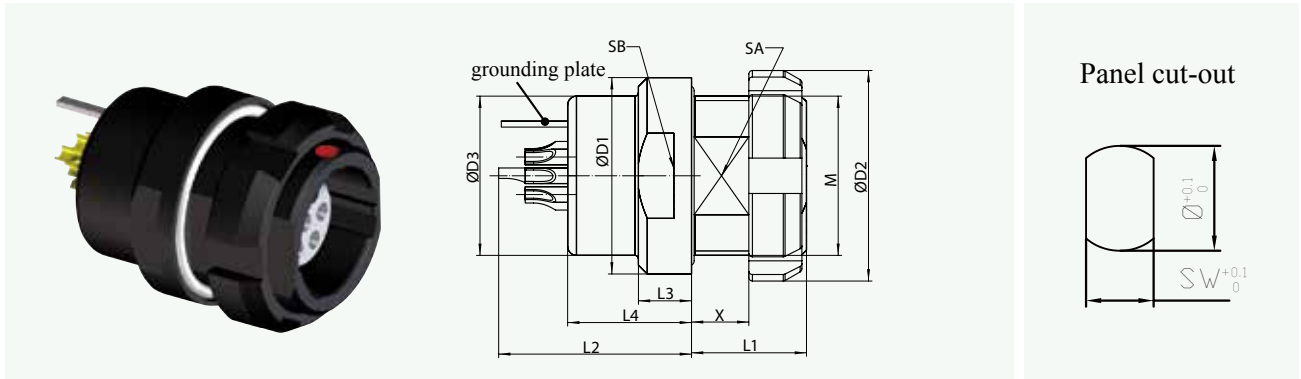
Z 8 IP68, install from rear of panel



Unit: mm											Panel hole size	
Size	L1	L2	L3	L4	X	D1	D2	D3	SA	M	SW	Ø
0	~6.5	~11.0	3.0	7.5	~3.0	15.5	15.0	10.0	10	11×0.75	10.1	11.1
1	~8.0	~19.0	4.0	14.5	~3.5	18.5	17.9	12.0	13	14×1	13.1	14.1
A	~7.0	~17.7	2.5	12.5	~3.0	18.9	17.9	14.0	13	14×1	13.1	14.1
2	~8.0	~21.5	4.0	15.0	~3.0	20.8	21.9	14.5	15	16×1	15.1	16.1
3	~11.0	~22.5	4.0	15.5	~5.5	26.0	25.0	18.0	18	20×1	18.1	20.1
E	~13.0	~19.0	5.0	13.0	~6.5	39.0	37.5	27.0	27	30×1.5	27.1	30.1

Receptacle (ZX)

Z X IP68, install from rear of panel



Unit: mm												Panel hole size	
Size	L1	L2	L3	L4	X	D1	D2	D3	SA	SB	M	SW	Ø
0	~6.5	~11.0	3.0	7.0	~3.0	11.1	11.9	9.0	7.85	10	9×0.5	8.0	9.1

Only match with the TX plug in series A, size 0

Coding, housing materials and surface plating

Coding

	Coding	Front view of the receptacle	Color Coding	
Standard	A			Light brown
	B			Red
	C			Blue
	D			Green

Housing material and surface plating

No.	Housing material and surface plating
R	Aluminum alloy / chrome plating (grey)
K	Copper alloy / chrome plating (grey)

Insulator materials

PEEK material, turned contact

No.	Termination method	PEEK
P	Soldering	●
	PCB	●

Number of contacts

Size 0

Size	Insulator material	Number of pins		Pin diameter mm	Single-pin load current A	Test voltage between contacts KV	Operating voltage KV	Termination method		View on the termination side	
								Soldering	PCB	Pin	Socket
0	P	0	2	0.9	10	1.200	0.400	●	●		
0	P	0	3	0.9	10	1.200	0.400	●	●		
0	P	0	4	0.7	7	0.900	0.300	●	●		
0	P	0	5	0.7	7	0.900	0.300	●	●		
0	P	0	6	0.5	5	0.900	0.300	●	●		
0	P	0	7	0.5	5	0.900	0.300	●	●		
0	P	0	9	0.5	5	0.600	0.200	●	●		
0	P	1	0	0.5	5	0.600	0.200	●	●		

PCB layout

Size 0

Number of pins	Layout	Z8 PCB Pin X (mm) Figure 1	ZK PCB Pin Y (mm) Figure 2	Number of pins	Layout	Z8 PCB Pin X (mm) Figure 1	ZK PCB Pin Y (mm) Figure 2
2-pin		3.5	3.5	6-pin		3.5	3.3
3-pin		3.5	3.5	7-pin		3.5	3.3
4-pin		3.5	3.5	9-pin		3.5	3.1
5-pin		3.5	3.5	10-pin		3.5	3.1

Figure 1: Grounding Plate and PCB Contact Length of Z8 Receptacle

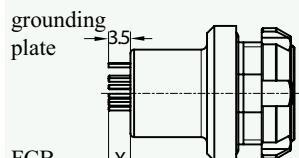
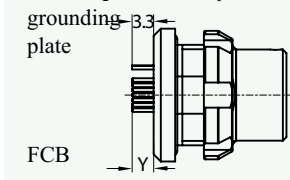
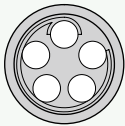
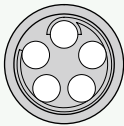
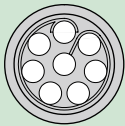
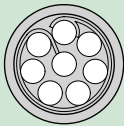
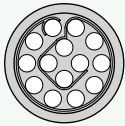
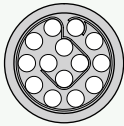
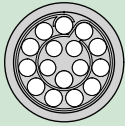
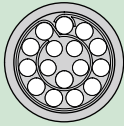


Figure 2: Grounding Plate and PCB Contact Length of ZK Receptacle



Number of contacts

Size 1

Size	Insulator material	Number of pins		Pin diameter mm	Single-pin load current A	Test voltage between contacts KV	Operating voltage KV	Termination method		View on the termination side	
								Soldering	PCB	Pin	Socket
1	P	0	5	0.9	10	1.350	0.450	●	●		
1	P	0	8	0.7	7	1.000	0.333	●	●		
1	P	1	4	0.5	5	0.900	0.300	●	●		
1	P	1	6	0.5	5	0.900	0.300	●	●		

PCB layout

Size 1

Number of pins	Layout	Z8 PCB Pin X (mm) Figure 1	ZK PCB Pin Y (mm) Figure 2
5-pin		3.5	3.0
8-pin		3.5	3.0
14-pin		3.0	3.0
16-pin		3.0	3.0

Figure 1: Grounding Plate and PCB Contact Length of Z8 Receptacle

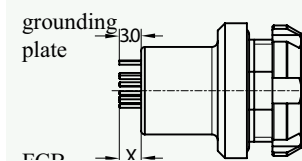
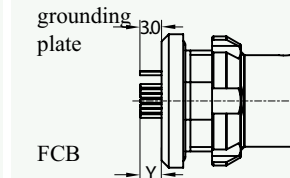
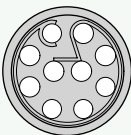
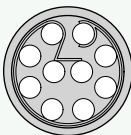
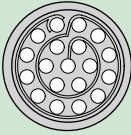
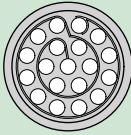


Figure 2: Grounding Plate and PCB Contact Length of ZK Receptacle



Number of contacts

Size 1.5

Size	Insulator material	Number of pins		Pin diameter mm	Single-pin load current A	Test voltage between contacts KV	Operating voltage KV	Termination method		View on the termination side	
								Soldering	PCB	Pin	Socket
A	P	1	0	0.7	7	1.200	0.400	●	●		
A	P	1	9	0.5	5	1.000	0.333	●	●		

PCB layout

Size 1.5

Number of pins	Layout	Z8 PCB Pin X (mm) Figure 1	ZK PCB Pin Y (mm) Figure 2
10-pin		3.2	3.0
19-pin		3.2	3.0

Figure 1: Grounding Plate and PCB Contact Length of Z8 Receptacle

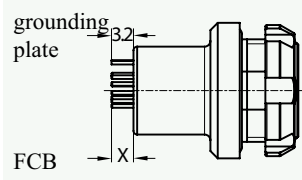
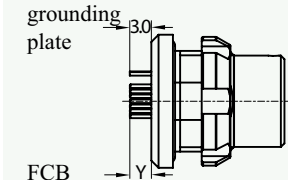
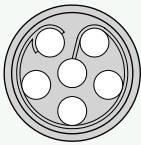
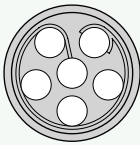
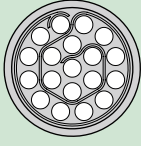
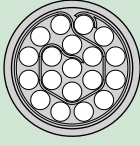
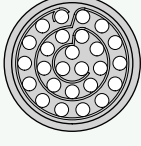


Figure 2: Grounding Plate and PCB Contact Length of ZK Receptacle



Number of contacts

Size 2

Size	Insulator material	Number of pins		Pin diameter mm	Single-pin load current A	Test voltage between contacts KV	Operating voltage KV	Termination method		View on the termination side	
								Soldering	PCB	Pin	Socket
2	P	0	6	1.3	14	1.500	0.500	●	●		
2	P	1	9	0.7	7	1.000	0.333	●	●		
2	P	2	6	0.5	5	0.900	0.300	●	●		

PCB layout

Size 2

Number of pins	Layout	Z8 PCB Pin X (mm) Figure 1	ZK PCB Pin Y (mm) Figure 2
6-pin		4.5	3.0
19-pin		5.5	3.0
26-pin		5.5	3.0

Figure 1: Grounding Plate and PCB Contact Length of Z8 Receptacle

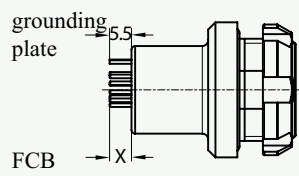
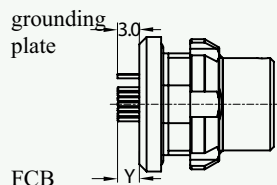
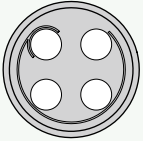
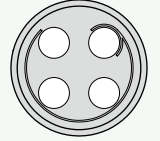
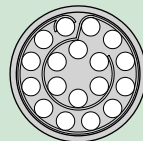
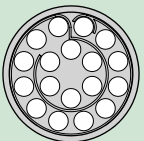
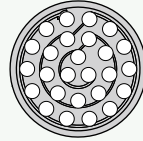
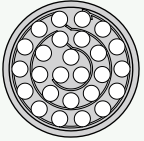
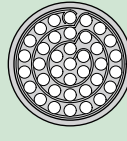
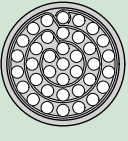


Figure 2: Grounding Plate and PCB Contact Length of ZK Receptacle



Number of contacts

Size 3

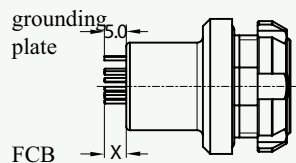
Size	Insulator material	Number of pins		Pin diameter mm	Single-pin load current A	Test voltage between contacts KV	Operating voltage KV	Termination method		View on the termination side	
								Soldering	PCB	Pin	Socket
3	P	0	4	2.0	22	1.650	0.550	●	●		
3	P	1	8	0.9	10	1.350	0.450	●	●		
3	P	2	6	0.7	7	1.000	0.333	●	●		
3	P	3	7	0.5	5	0.900	0.300	●	●		

PCB layout

Size 3

Number of pins	Layout	Z8 PCB Pin X (mm) Figure 1
4-pin		5.0
18-pin		4.5
26-pin		4.5
37-pin		4.5

Figure 1: Grounding Plate and PCB Contact Length of Z8 Receptacle



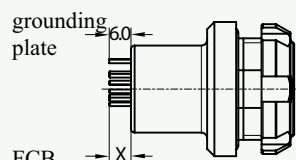
Number of contacts Size 4.5

Size	Insulator material	Number of pins		Pin diameter mm	Single-pin load current A	Test voltage between contacts KV	Operating voltage KV	Termination method		View on the termination side	
								Soldering	PCB	Pin	Socket
E	P	5	5	0.7	7	1.000	0.333	●	●		

PCB layout Size 4.5

Number of pins	Layout	Z8 PCB Pin X (mm) Figure 1
55-pin		6.0

Figure 1: Grounding Plate and PCB
Contact Length of Z8 Receptacle



Contact/socket type, surface plating and contact/socket diameter

Contact/socket type, surface plating

Type	No.	Surface plating
Socket	W	L-1 μm Au (min.)
Contact	X	L-1 μm Au (min.)
Socket	U	P-1 μm Au (min.)
Contact	V	P-1 μm Au (min.)

L=Soldering

P=PCB

Contact/socket diameter

Contact/socket diameter	No.
0.50	C
0.70	F
0.90	J
1.30	P
2.0	T

Contact/socket diameter and termination cross section

Soldering

Size	Contact/ socket diameter mm	Contact/ socket diameterNo.	No. of termination cross section	Termination cross section		Termination diameter
				AWG	mm ²	
0	0.5	C	D	26	0.15	
0	0.7	F	G	22	0.38	
0	0.9	J	G	22	0.38	
1	0.5	C	D	26	0.15	
1	0.7	F	G	22	0.38	
1	0.9	J	G	22	0.38	
1.5	0.5	C	D	26	0.15	
1.5	0.7	F	G	22	0.38	
2	0.5	C	D	26	0.15	
2	0.7	F	G	22	0.38	
2	1.3	P	H	20	0.5	
3	0.5	C	D	26	0.15	
3	0.7	F	G	22	0.38	
3	0.9	J	G	22	0.38	
3	2.0	T	S	12	2.5	
4.5	0.7	F	G	22	0.38	

PCB

Size	Contact/ socket diameter mm	Contact/ socket diameterNo.	No. of termination cross section	Termination cross section		Termination diameter
				AWG	mm ²	
0	0.5	C	0			0.5
0	0.7	F	0			0.5
0	0.9	J	0			0.7
1	0.5	C	0			0.5
1	0.7	F	0			0.5
1	0.9	J	0			0.7
1.5	0.5	C	0			0.5
1.5	0.7	F	0			0.5
2	0.5	C	0			0.5
2	0.7	F	0			0.5
2	0.9	J	0			0.7
2	1.3	P	0			0.7
3	0.5	C	0			0.5
3	0.7	F	0			0.5
3	0.9	J	0			0.7
3	2.0	T	0			0.7
4.5	0.7	F	0			0.5

Series A, IP68,

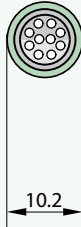


Description of Series A

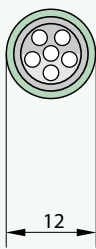
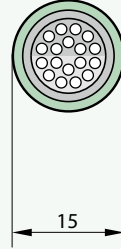
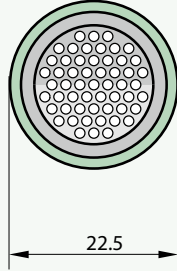
SN	Descript	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		T	1	1	A	A	R	—	P	0	8	X	F	G	0	—	0	0	0	0
1	Type: Straight plug = T1, TX Floating receptacle = F1 Receptacle = ZK, Z8, ZX																			
2																				
3	Size: 0、1、A、2、3、E																			
4	Series: A																			
5	Coding: A-D																			
6	Housing material/plating: R																			
8	Insulator materials																			
9	Number of pins																			
10																				
11	Pin/socket type																			
12	Contact/socket diameter																			
13	Termination cross section																			
14	0																			
16	0																			
17	Front nut: 0 (standard)																			
18	0																			
19	Receptacle grounding lug - ZK and Z8 receptacles: L																			

Housing size (scale 1:1)

OD = Outer diameter of the plug (unit: mm)
S=Size

OD				
S	0 (smaller version)	0	1	1.5
No.	0	0	1	A

OD = Outer diameter of the plug (unit: mm)
S=Size

OD			
S	2	3	4.5
No.	2	3	E

Plug (T1)

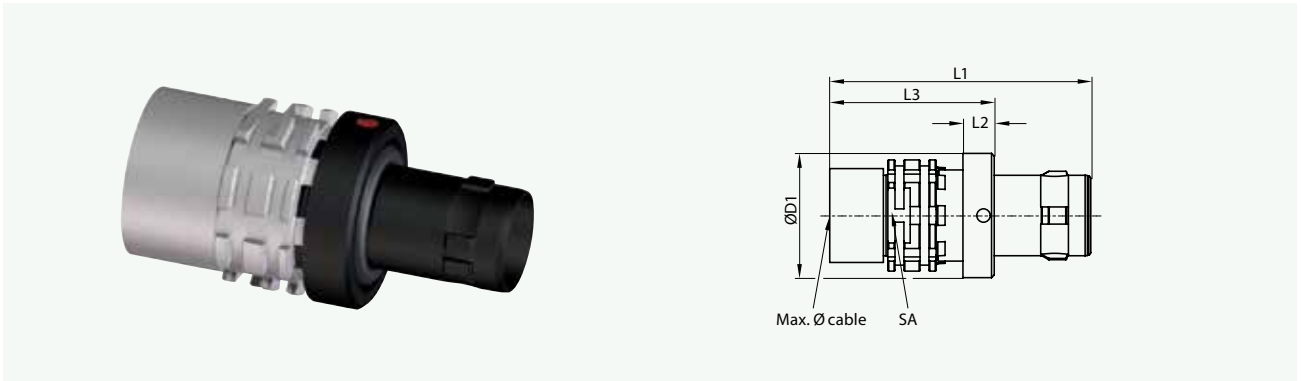
T 1 IP68, Break away plug



Unit (mm)						
Size	L1	L2	L3	D1	SA	Maximum cable diameter
0	25.0	3.0	15.0	11.9	9	5.5
1	29.2	3.5	18.4	13.9	11	6.5
1.5	28.5	3.5	18.5	15.9	12	8.0
2	31.0	4.0	19.0	17.6	14	10.0
3	37.5	4.0	22.4	21.9	18	11.5

Plug (TX)

T X IP68, Break away plug



Unit (mm)						
Size	L1	L2	L3	D1	SA	Maximum cable diameter
0	24.0	3.0	15.0	11.9	10	7.5



Socket

The receptacle type of Series A is the same as Series X; please refer to P110-P113

Coding, housing materials and surface plating

Coding

Coding	Front view of the receptacle	Color Coding	
A			Light brown
B			Red
C			Blue
D			Green

Housing material and surface plating

No.	Housing material and surface plating
R	Aluminum alloy / chrome plating (grey)
K	Copper alloy / chrome plating (grey)



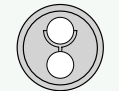
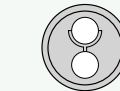
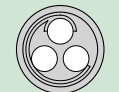
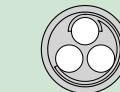
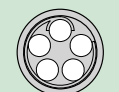
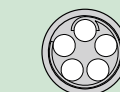
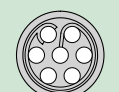
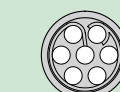
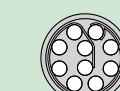
Insulator materials

PEEK material, turned pin

No.	Termination	PEEK
P	Soldering	●
	PCB	●

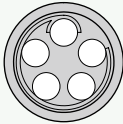
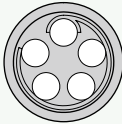
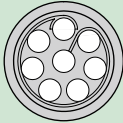
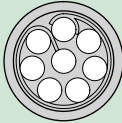
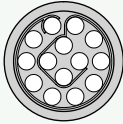
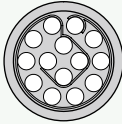
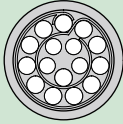
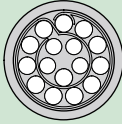
Number of contacts

Size 0

Size	Insulator materials	Number of pins		Pin diameter mm	current load per pin A	Test voltage between contacts KV	Working voltage KV	Termination method		View on the termination side	
								Soldering	PCB	Pin	Socket
0	P	0	2	0.9	10	1.200	0.400	●	●		
0	P	0	3	0.9	10	1.200	0.400	●	●		
0	P	0	4	0.7	7	0.900	0.300	●	●		
0	P	0	5	0.7	7	0.900	0.300	●	●		
0	P	0	6	0.5	5	0.900	0.300	●	●		
0	P	0	7	0.5	5	0.900	0.300	●	●		
0	P	0	9	0.5	5	0.600	0.200	●	●		
0	P	1	0	0.5	5	0.600	0.200	●	●		

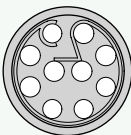
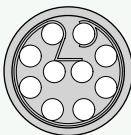
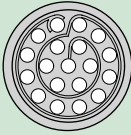
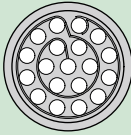
Number of contacts

Size 1

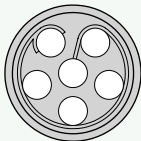
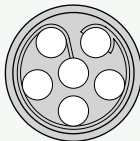
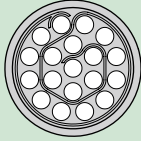
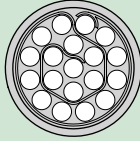
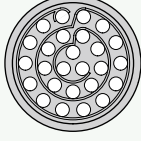
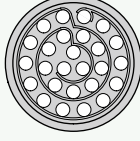
Size	Insulator materials	Number of pins		Pin diameter mm	current load per pin A	Test voltage between contacts KV	Working voltageKV	Termination method		View on the termination side	
								Soldering	PCB	Pin	Socket
1	P	0	5	0.9	10	1.350	0.450	●	●		
1	P	0	8	0.7	7	1.000	0.333	●	●		
1	P	1	4	0.5	5	0.900	0.300	●	●		
1	P	1	6	0.5	5	0.900	0.300	●	●		

Number of contacts

Size 1.5

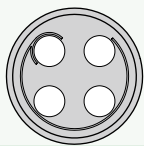
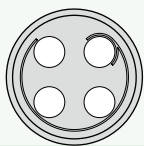
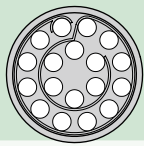
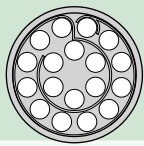
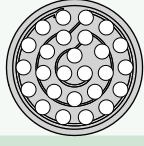
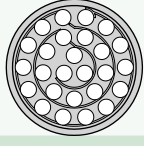
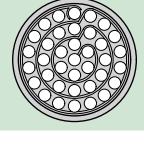
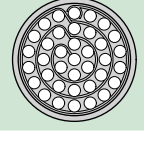
Size	Insulator materials	Number of pins		Pin diameter mm	current load per pin A	Test voltage between contacts KV	Working voltageKV	Termination method		View on the termination side	
								Soldering	PCB	Pin	Socket
A	P	1	0	0.7	7	1.200	0.400	●	●		
A	P	1	9	0.5	5	1.000	0.333	●	●		

Number of contacts Size 2

Size	Insulator materials	Number of pins		Pin diameter mm	current load per pin A	Test voltage between contacts KV	Working voltageKV	Termination method		View on the termination side	
								Soldering	PCB	Pin	Socket
2	P	0	6	1.3	1.4	1.500	0.500	●	●		
2	P	1	9	0.7	7	1.000	0.333	●	●		
2	P	2	6	0.5	5	0.900	0.300	●	●		

Number of contacts

Size 3

Size	Insulator materials	Number of pins		Pin diameter mm	current load per pin A	Test voltage between contacts K V	Working voltageKV	Termination method		View on the termination side	
								Soldering	PCB	Pin	Socket
3	P	0	4	2.0	22	1.650	0.550	●	●		
3	P	1	8	0.9	10	1.350	0.450	●	●		
3	P	2	6	0.7	7	1.000	0.333	●	●		
3	P	3	7	0.5	5	0.900	0.300	●	●		

Number of contacts Size 4.5

Size	Insulator materials	Number of pins		Pin diameter mm	current load per pin A	Test voltage between contacts KV	Working voltageKV	Termination method		View on the termination side	
								Soldering	PCB	Pin	Socket
E	P	5	5	0.7	7	1.000	0.333	●	●		

Pin/socket type, surface plating and pin/socket diameter

Contact/SocketType、 Surface plating

Type	No.	Surface plating
Socket	W	L-1 μm Au (min.)
Contact	X	L-1 μm Au (min.)
Socket	U	P-1 μm Au (min.)
Contact	V	P-1 μm Au (min.)

L=Soldering

P=PCB

Contact/socket diameter

Contact/socket diameter	No.
0.50	C
0.70	F
0.90	J
1.30	P
2.0	T

Pin/socket diameter and termination cross section

Soldering

Size	Contact/ socket diameter mm	Contact/socket diameterNo.	Termination cross sectionNo.	Termination cross section		Termination diameter
				AWG	mm ²	
0	0.5	C	D	26	0.15	
0	0.7	F	G	22	0.38	
0	0.9	J	G	22	0.38	
1	0.5	C	D	26	0.15	
1	0.7	F	G	22	0.38	
1	0.9	J	G	22	0.38	
1.5	0.5	C	D	26	0.15	
1.5	0.7	F	G	22	0.38	
2	0.5	C	D	26	0.15	
2	0.7	F	G	22	0.38	
2	1.3	P	H	20	0.5	
3	0.5	C	D	26	0.15	
3	0.7	F	G	22	0.38	
3	0.9	J	G	22	0.38	
3	2.0	T	S	12	2.5	
4.5	0.7	F	G	22	0.38	

PCB

Size	Contact/ socket diameter mm	Contact/socket diameterNo.	Termination cross sectionNo.	Termination cross section		Termination diameter
				AWG	mm ²	
0	0.5	C	0			0.5
0	0.7	F	0			0.5
0	0.9	J	0			0.7
1	0.5	C	0			0.5
1	0.7	F	0			0.5
1	0.9	J	0			0.7
1.5	0.5	C	0			0.5
1.5	0.7	F	0			0.5
2	0.5	C	0			0.5
2	0.7	F	0			0.5
2	1.3	P	0			0.7
3	0.5	C	0			0.5
3	0.7	F	0			0.5
3	0.9	J	0			0.7
3	2.0	T	0			0.7
4.5	0.7	F	0			0.5

Series Y, IP68

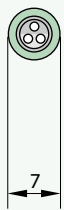
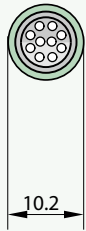


Description of Series Y

SN	Descript	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		T	1	1	Y	A	R	—	P	0	8	X	F	G	0	—	0	0	0	0
1	Type: Straight plug = T1 Floating receptacle = F1 Receptacle = ZK, Z8, ZW																			
2																				
3	Size: 0、1、A、2、3、E																			
4	Series: Y																			
5	Coding: A-D																			
6	Housing material/plating: R																			
8	Insulator materials: P																			
9	Number of pins																			
10																				
11	Pin/SocketType																			
12	Contact/socket diameter																			
13	Termination cross section																			
14	0																			
16	0																			
17	Front nut: 0 (standard)																			
18	0																			
19	Receptacle grounding plate - ZK, GW and Z8 receptacles: L																			

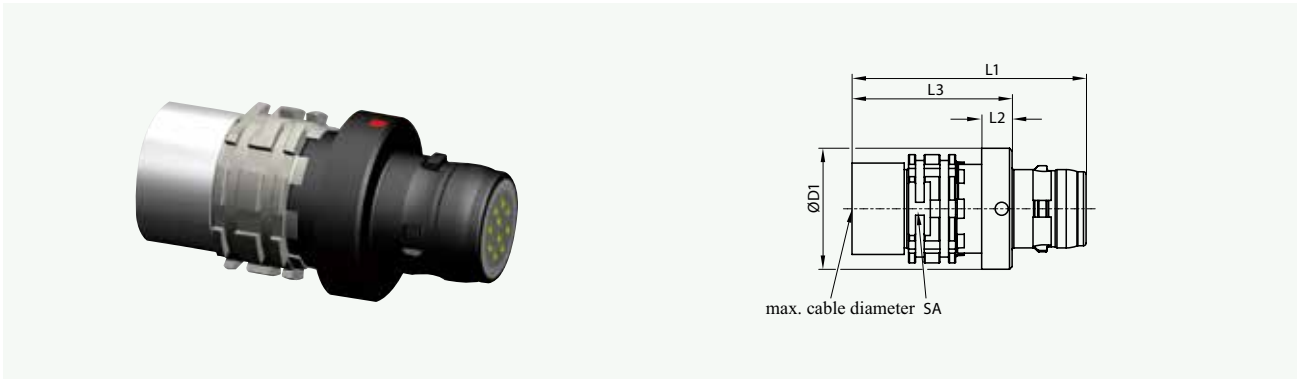
Housing size (scale 1:1)

OD = Outer diameter of the plug (unit: mm)
S=Size

OD			
S	0	1	1.5
No.	0	1	A

Plug (T1)

T 1 IP68, easy-to-clean plug



Unit (mm)						
Size	L1	L2	L3	D1	SA	Maximum cable diameter
0	~23.5	3.0	15.0	11.9	9	5.5
1	~26.9	3.5	18.4	13.9	11	6.5
A	~27.5	3.5	18.5	15.9	12	8.0

Receptacle (F1)

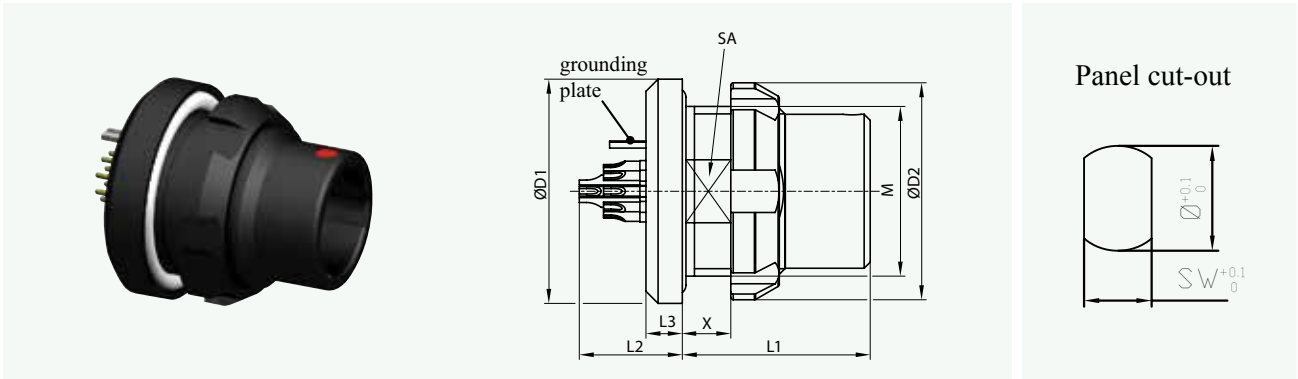
F 1 IP68, floating receptacle



Unit (mm)								
Size	L1	L2	L3	L4	D1	D2	SA	Maximum cable diameter
0	25.0	13.0	1.5	5.8	11.9	10.5	9	5.5
1	27.0	12.1	1.5	5.8	13.9	12.5	11	6.5
A	27.0	12.0	1.5	5.8	15.9	14.5	12	8.0

Receptacle (ZK)

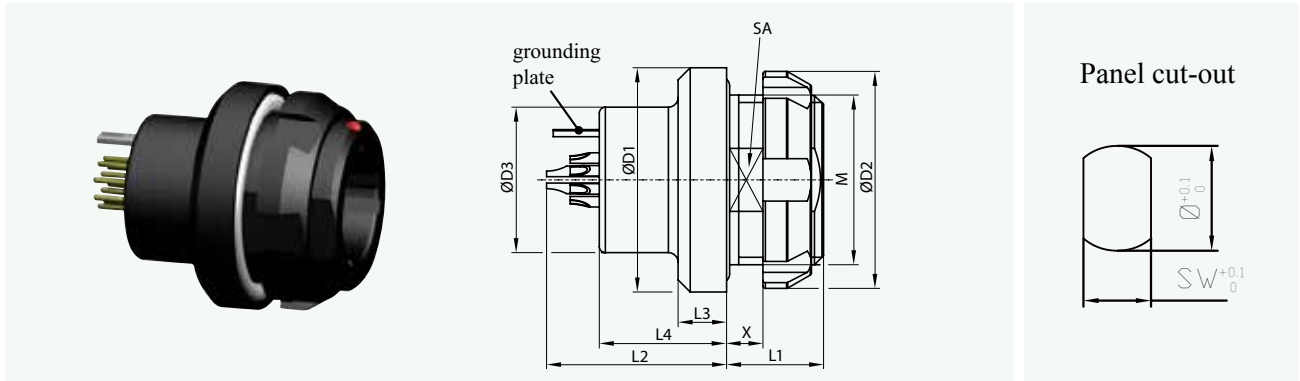
Z K IP68, install from rear of panel



Size	Unit (mm)								Panel hole size	
	L1	L2	L3	X (max.)	D1	D2	SA	M	SW	Ø
0	15.5	7.3	2.5	7.0	15.5	10	10	11×0.75	10.1	11.1
1	15.5	7.4	3.0	4.0	18.5	17.9	13	14×1	13.1	14.1
A	16.5	8.2	3.0	5.5	18.9	17.9	13	14×0.75	13.1	14.1

Receptacle (Z8)

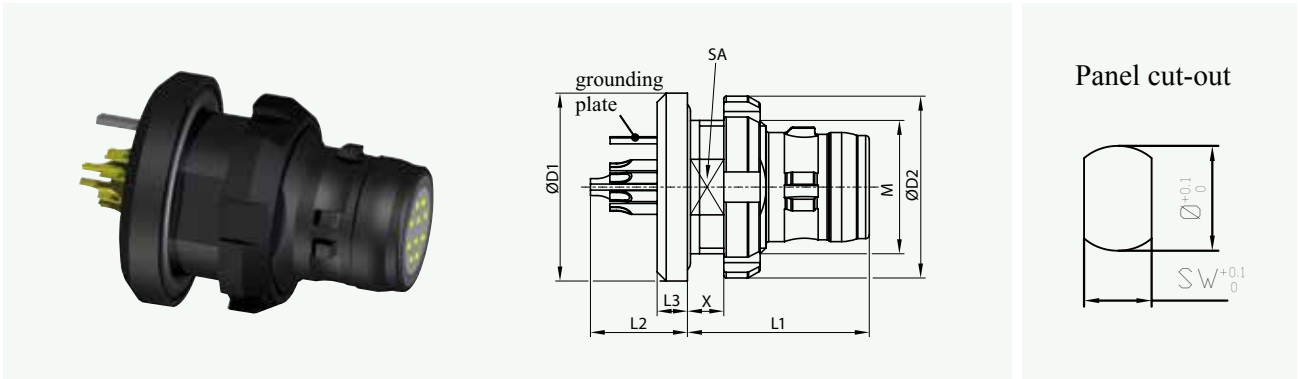
Z 8 IP68, install from rear of panel



Unit (mm)											Panel hole size	
Size	L1	L2	L3	L4	X (max.)	D1	D2	D3	SA	M	SW	Ø
0	6.5	16.3	3.0	11.5	3.0	15.5	15.0	10.0	10.0	11×0.75	10.1	11.1
1	8.0	14.9	4.0	10.5	3.5	18.5	17.9	12.0	13	14×1	13.1	14.1
A	7.0	17.7	2.5	12.5	3.0	18.9	17.9	14.0	13	14×0.75	13.1	14.1

Receptacle (ZW)

Z **W** IP68, docking plug



Unit (mm)									Panel hole size	
Size	L1	L2	L3	X (max.)	D1	D2	SA	M	SW	Ø
0	15.0	6.4	2.5	3.0	13.2	12.8	9.2	10×0.5	9.3	10.1
1	15.0	8.0	2.5	3.5	15.5	15.0	10.0	11×0.75	10.1	11.1
A	16.5	9.7	4.0	3.5	17.5	17.9	13.0	14×0.75	13.1	14.1

Coding, housing materials and surface plating

Coding

	Coding	Front view of the receptacle	Color Coding	
Standard	A			Light brown
	B			Red
	C			Blue
	D			Green

Housing material and surface plating

No.	Housing material and surface plating
R	Aluminum alloy / chrome plating (grey)
K	Copper alloy / chrome plating (grey)



Insulator materials

PEEK material, turned pin

No.	Termination method	PEEK
P	Soldering	●

Spring pin

Environmental parameters

Operating temperature range

Stainless steel: -51 °C -+125 °C

Materials

Contact Gold-plated copper alloy

Solder cup Tin-plated copper alloy

Spring Stainless steel

Clip Beryllium copper plating

Mechanical parameters

Minimum diameter 0.8mm

Minimum initial length 9mm

Shrinking rate Max 0.15

Stroke 1.5mm

Minimum initial elastic force 0.2N

mating cycles 40,000 cycles

Electrical parameters

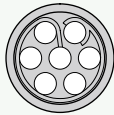
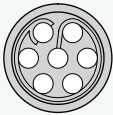
Contact resistance Max. 20mΩ

Maximum operating current Continuous operating current 2A/peak current 4A



Number of contacts

Size 0

Size	Insulator materials	Number of pins		Pin diameter mm	current load per pin A	Test voltage between contacts KV	Working voltageKV	Termination method		View on the termination side	
								Soldering	PCB	Pin	Socket
0	P	0	7	0.6	2	0.600	0.200	●	●		

PCB layout Size 0

Number of pins	Layout	Z8 PCBPin X (mm) Figure 1	ZK PCBPin X (mm) Figure 2	ZW PCBPin X (mm) Figure 3
7		4.3	4.3	3.0

Figure 1: Grounding Plate and PCB Pin Length of Z8 Receptacle

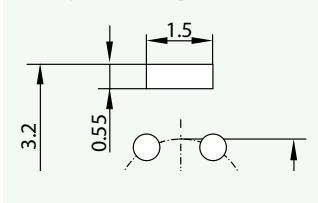


Figure 2: Grounding Plate and PCB Pin Length of ZK Receptacle

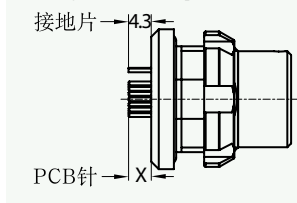
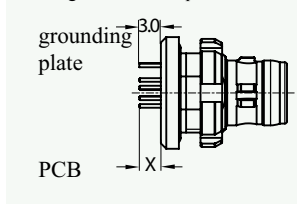
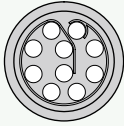
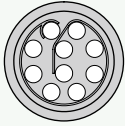
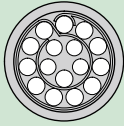
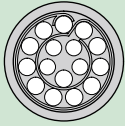


Figure 3: Grounding pin and PCB Pin Length of ZW Receptacle



Number of contacts

Size 1

Size	Insulator materials	Number of pins		Pin diameter mm	current load per pin A	Test voltage between contacts KV	Working voltageKV	Termination method		View on the termination side	
								Soldering	PCB	Pin	Socket
1	P	1	0	0.6	2	0.600	0.200	●	●		
1	P	1	6	0.6	2	0.600	0.200	●	●		

PCBLayout Size 1

Number of pins	Layout	Z8 PCBPin X (mm) Figure 1	ZK PCBPin X (mm) Figure 2	ZW PCBPin X (mm) Figure 3
10		3.8	3.8	3.0
16		3.8	3.8	3.0

Figure 1: Grounding Plate and PCB Pin Length of Z8 Receptacle

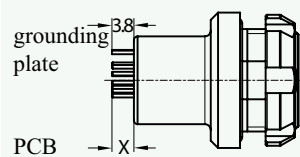


Figure 2: Grounding Plate and PCB Pin Length of ZK Receptacle

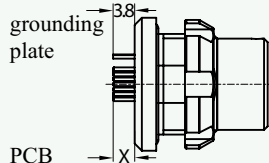
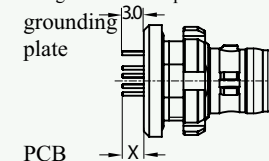
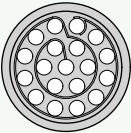
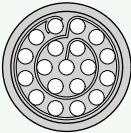


Figure 3: Grounding pin and PCB Pin Length of ZW Receptacle



Number of contacts Size 1.5

Size	Insulator materials	Number of pins		Pin diameter mm	current load per pin A	Test voltage between contacts KV	Working voltageKV	Termination method		View on the termination side	
								Soldering	PCB	Pin	Socket
A	P	1	9	0.6	2	0.600	0.200	●	●		

PCB layout

Size 1.5

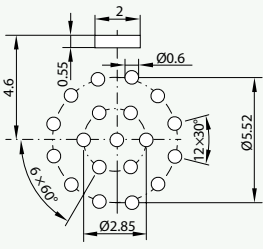
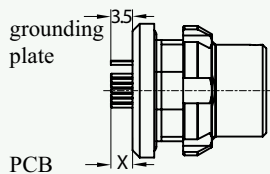
Number of pins	Layout	ZK PCBPin X (mm) Figure 1
19-pin		3.5

Figure 1: Grounding Plate and PCB
Pin Length of ZK Receptacle



Pin/socket type, surface plating and pin/socket diameter

Contact/SocketType、 Surface plating

Type	No.	Surface plating
Socket	W	L-1 μm Au (min.)
Contact	X	L-1 μm Au (min.)
Socket	U	P-1 μm Au (min.)
Contact	V	P-1 μm Au (min.)

L=Soldering

P=PCB

Contact/socket diameter

Contact/socket diameter	No.
0.6	D
0.6	D
0.6	C

Pin/socket diameter and termination cross section

Soldering

Size	Pin/ socket diameter mm	Contact diameter	Termination cross sectionNo.	Termination cross section		Termination diameter
				AWG	mm ²	
0	0.6	D	D	26	0.15	
1	0.6	D	D	26	0.15	
1.5	0.6	C	C	26	0.15	

PCB

Size	Pin/ socket diameter mm	Contact diameter	Termination cross sectionNo.	Termination cross section		Termination diameter
				AWG	mm ²	
0	0.6	D	0			0.5
1	0.6	D	0			0.5
1.5	0.6	C	0			0.5

Assembly Processing and Cable



Assembly Processing and Cable

With the complete process of R&D design, mold processing, injection, and assembling, BIX can provide processing services for various cable assemblies according to the customer's requirements. With one end as the connector produced by BIX, the other end is other types of interfaces, such as DB9 plug, USB, audio interface and video interface, which can be processed into one divided two and one divided three assemblies. BIX implements 200% inspection on the processed assemblies to ensure that the delivered assemblies can be used directly. We provide options, customization, project planning, design & development of connectors, and make test samples. In short, BIX can accomplish the entire assembly solutions, thus satisfying your demands!

Custom solutions:

1. Soldering

Soldering precautions:

The cable's outer diameter shall match the size of the cable clamp

The cable specification shall match the termination diameter of the pin

It is advisable to control the temperature of the solder iron about 380 degrees (lead-free)

The Soldering time of the single-wire is less than 1 second

After Soldering, each wire shall be covered with a heat shrink tube

During soldering, pay attention to protect pins and insulators

BIX has skilled soldering operators, who have rich experience in soldering connector pins, sockets as well as other types of interfaces and components, thus fully meeting the customer's various soldering requirements.

Assembly Processing and Cable

2. Potting glue



3. Assembly injection



4. Cable

BIX has a strong cable supplier to supply cable with good flexibility, elasticity, flame resistance, abrasion resistance and shielding property. Different types of cable can be customized according to the customer's requirements

Cable Assembly and Cable

5. Assembly cases



Accessories



Color coding ring, Series B and F

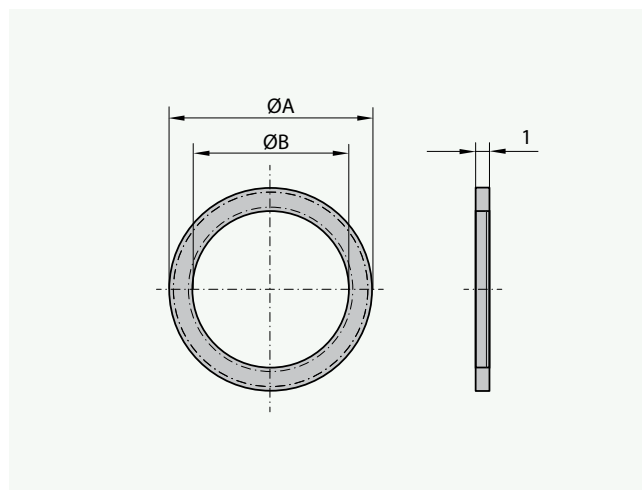
Size

Size	Part number	ØA	ØB
0	800.422._.922.007	13.5	9.1
0	800.422._.922.010	16.5	10.1
1	801.422._.922.012	17.0	12.1
1	801.422._.922.014	20.0	14.1
2	802.422._.922.015	22.0	15.1
2	802.422._.922.016	23.0	16.1
3	803.422._.922.018	25.0	18.1
3	803.422._.922.020	28.0	20.1

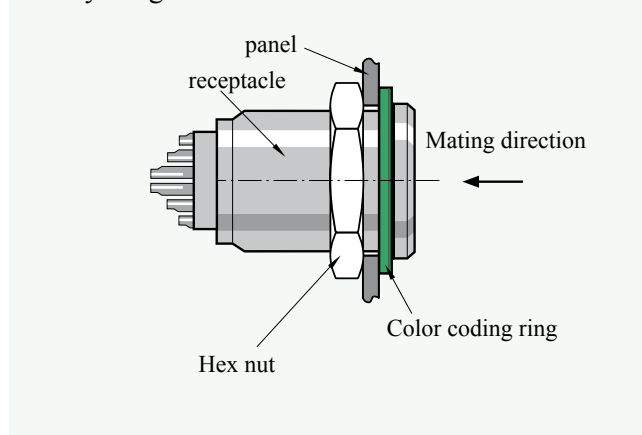
Color

Please fill in the selected color code number

Color code	Color	RAL-No. (similar)
...202...	Red	3020
...203...	White	9010
...204...	Yellow	1016
...205...	Green	6029
...206...	Blue	5002
...207...	Grey	7005
...208...	Black	9005
...209...	Orange	2004
...210...	Purple	4005
...212...	Brown	8016
...215...	Bright green	6018
...216...	Bright blue	5012



Assembly Diagram



Product number example:

800.422.202.922.009

Size 0

Red

Receptacle thread M9

Color coding ring, Series B and F

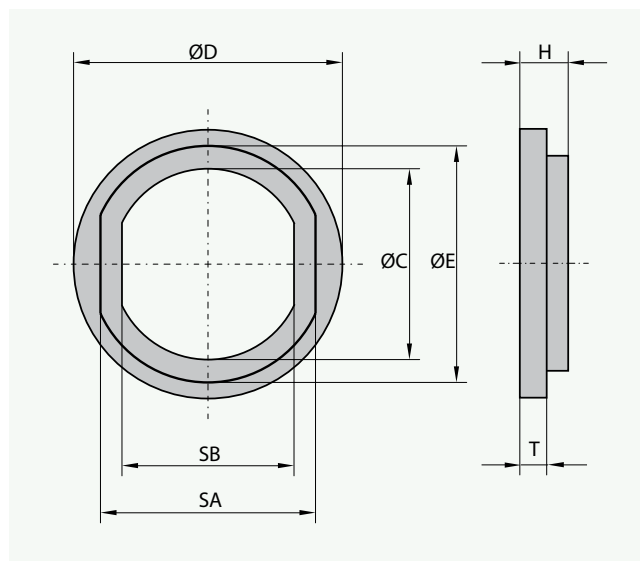
Size

Size	Part No.	SA	SB	ØC	ØD	ØE	H	T	P
0	800.423._.922.007	9.9	8.3	9.1	12.0	10.8	1.8	1.0	6.0
0	800.423._.922.010	10.7	9.1	10.1	16.5	11.8	1.8	1.0	1.5
1	801.423._.922.012	12.2	10.6	12.1	16.0	13.8	1.8	1.0	6.0
1	801.423._.922.014	13.7	12.1	14.1	21.0	15.8	1.8	1.0	2.0
2	802.423._.922.015	16.2	13.6	15.1	21.0	17.8	2.2	1.2	7.5
2	802.423._.922.016	17.7	15.1	16.1	23.0	18.8	2.2	1.2	0.6
3	803.423._.922.018	20.2	16.6	18.2	25.0	21.8	2.2	1.2	10.5
3	803.423._.922.020	21.7	18.1	20.2	28.0	23.8	2.2	1.2	3.5

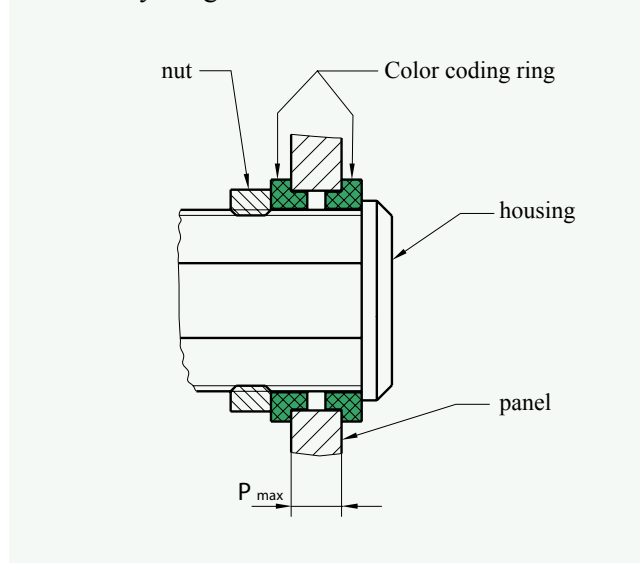
Color

Please fill in the selected color code number

Color code	Color	RAL-No. (similar)
...202...	Red	3020
...203...	White	9010
...204...	Yellow	1016
...205...	Green	6029
...206...	Blue	5002
...207...	Grey	7005
...208...	Black	9005
...209...	Orange	2004
...210...	Purple	4005
...212...	Brown	8016
...215...	Bright green	6018
...216...	Bright blue	5012



Assembly Diagram



Product number example:

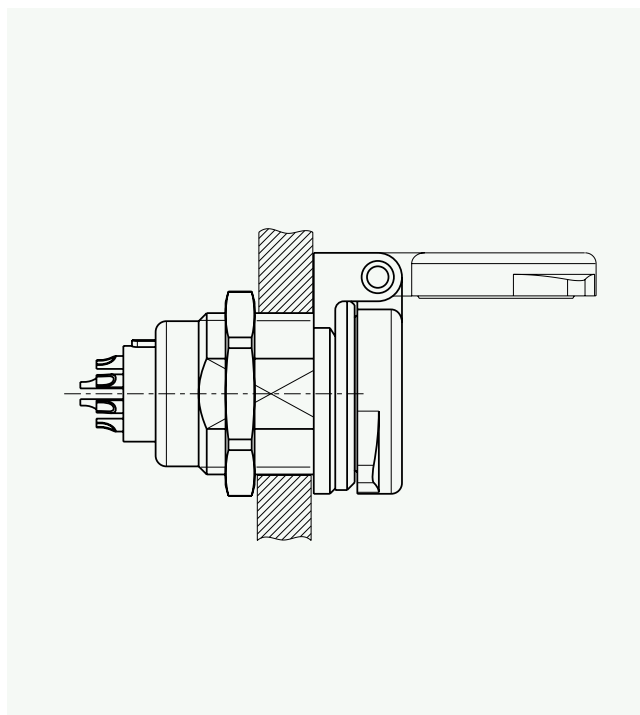
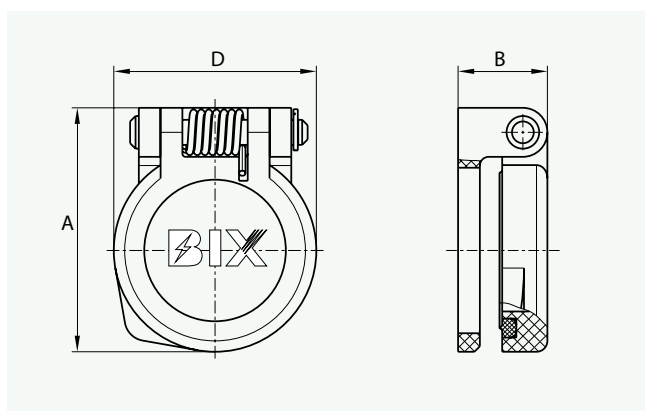
800.423.202.922.009

Size 0 Red Receptacle thread M9

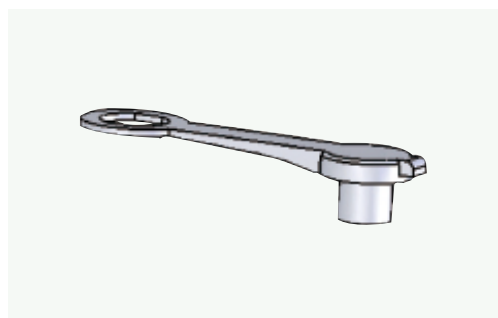
Dust cover, applicable to Series B of Z1 receptacle

Applicable to Series B of Z1 receptacle

Size	Part number	A	B	ØB
0	800.096.001.926.007	13.3	5.5	11.0
1	801.096.001.926.007	17.1	6.3	14.2
2	802.096.001.926.007	22.4	8.2	18.5
3	803.096.001.926.007	26.5	8.2	22.5



Dust cover (applicable to Series B and F of Z8 receptacle)



Size	Part number	Series
0	800 299 097 ... 007	ZH0L
0	800 299 097 ... 008	Z80B/Z80S
0	800 299 097 ... 009	Z80F
1	800 299 097 ... 107	ZH1L
1	800 299 097 ... 108	Z81B
1.5	800 299 097 ... A09	Z8AF
2	800 299 097 ... 20	Z82B

Select the color code at ...

Color code	Color	RAL-No. (similar)
202	Red	3020
203	White	9010
204	Yell	1016
205	Green	6029
206	Blue	5002
207	Grey	7005
208	Black	9005

Receptacle dust cap, IP50, Series B

Size	Part number	A	ØB	C	ØD
0	800.097.003.215._00	10.5	10.0	70.0	8.0
1	801.097.003.215._00	12.5	12.0	75.0	13.0
2	802.097.003.215._00	14.85	15.0	85.0	13.0
3	803.097.003.215._00	16.6	18.0	100.0	16.0
4	804.097.003.215._00	16.9	25.0	110.0	19.5

Surface chrome plating

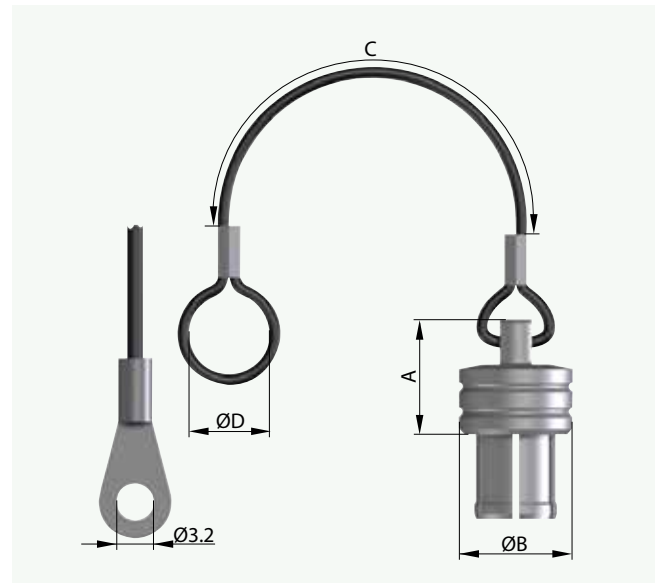
- = Materials, fixed mode

0= Nylon cord, loop

1= Stainless steel wire, loop

2= Nylon cord, Soldering sheet

3= Stainless steel wire, Soldering sheet



Plug dust cap, IP50, Series B

Size	Part number	A	ØB	C	ØD
0	850.097.005.215.-0_	15.5	10.0	70.0	8.0
1	851.097.005.215.-0_	16.5	12.0	75.0	10.0
2	852.097.005.215.-0_	18.0	15.0	85.0	13.0
3	853.097.005.215.-0_	20.5	18.0	100.0	16.0

Chrome plated (215 chrome, 211 black chrome)

- = Materials, fixed mode

0= Nylon cord, loop

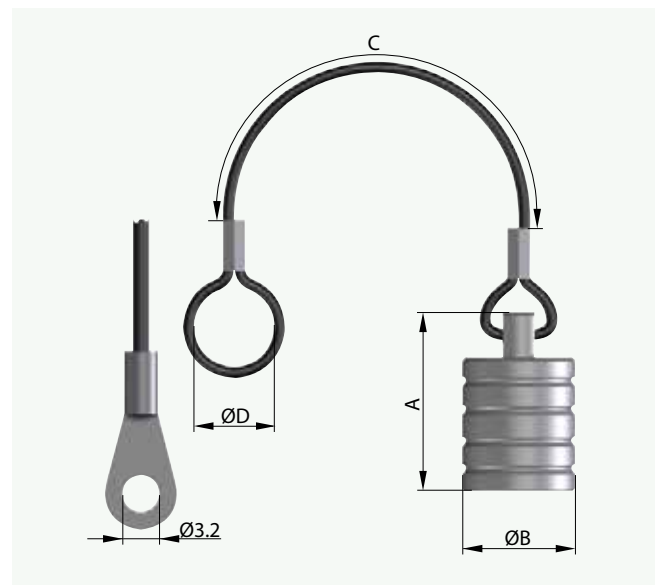
1= Stainless steel wire, loop

2= Nylon cord, Soldering sheet

3= Stainless steel wire, Soldering sheet

The underline _ represents the required coding standard=0

Size	Coding										
	0	A	B	C	F	J	K	Q	V	W	Y
0	●	●		●	●	●					●
1	●	●		●	●	●			●		●
2	●	●	●	●	●		●	●		●	
3	●	●	●	●	●		●	●			



Receptacle dust cap, IP68, Series I

Size	Part number	A	ØB	C	ØD
0	820.097.007.215._00	8.0	15.0	70	6
1	821.097.007.215._00	9.0	18.5	75	8
2	822.097.007.215._00	9.0	21.5	85	10
3	823.097.007.215._00	9.6	24.0	120	12
4	824.097.007.215._00	11.2	31.5	140	16

Chrome plated (215 chrome, 211 black chrome)

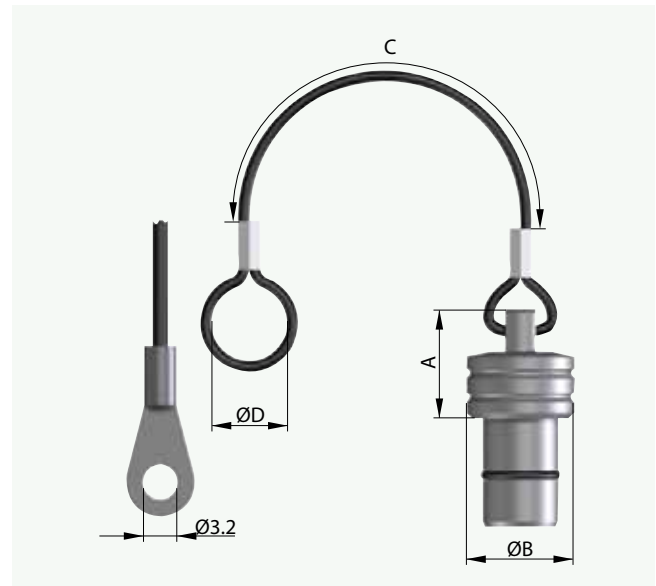
- = Materials, fixed mode

0= Nylon cord, loop

1= Stainless steel wire, loop

2= Nylon cord, Soldering sheet

3= Stainless steel wire, Soldering sheet



Plug dust cap, IP68, Series I

Size	Part number	A	ØB	C	ØD
0	820.097.004.215.-0_	16.0	14	70	6
1	821.097.004.215.-0_	21.0	16	75	8
2	822.097.004.215.-0_	21.5	20	85	10
3	823.097.004.215.-0_	25.5	24	120	12
4	824.097.004.215.-0_	28	30	140	16

Chrome plated (215 chrome, 211 black chrome)

- = Materials, fixed mode

0= Nylon cord, loop

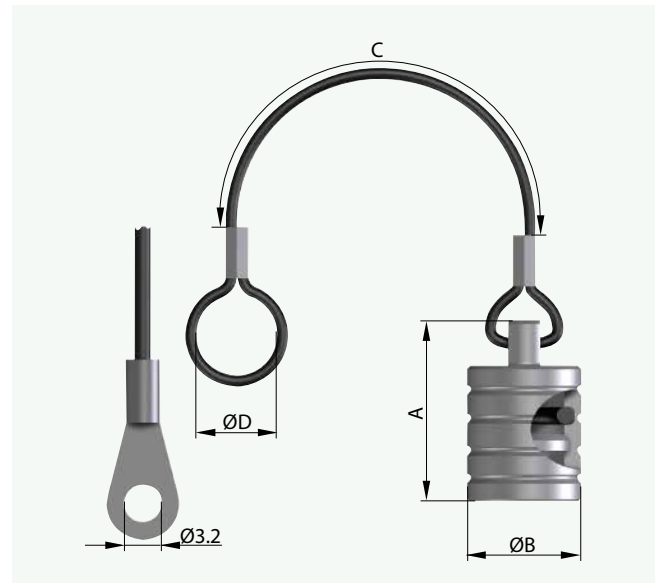
1= Stainless steel wire, loop

2= Nylon cord, Soldering sheet

3= Stainless steel wire, Soldering sheet

The underline _ represents the required coding standard=0

Size	Coding							
	0	A	C	F	H	K	Q	W
0	●	●	●	●				
1	●	●	●	●				
2	●	●	●	●				
3	●							
4	●							



Receptacle dust cap, IP68, Series B and F

Size	Part number	A	ØB	C	ØD
0	800.097.007.215._00	10	10	70	8
1	801.097.007.215._00	12	12	75	10
1.5	815.097.007.215._00	13.3	13	80	11
2	802.097.007.215._00	15	15	85	13
3	803.097.007.215._00	17	18	100	16

Chrome plated (215 chrome, 211 black chrome)

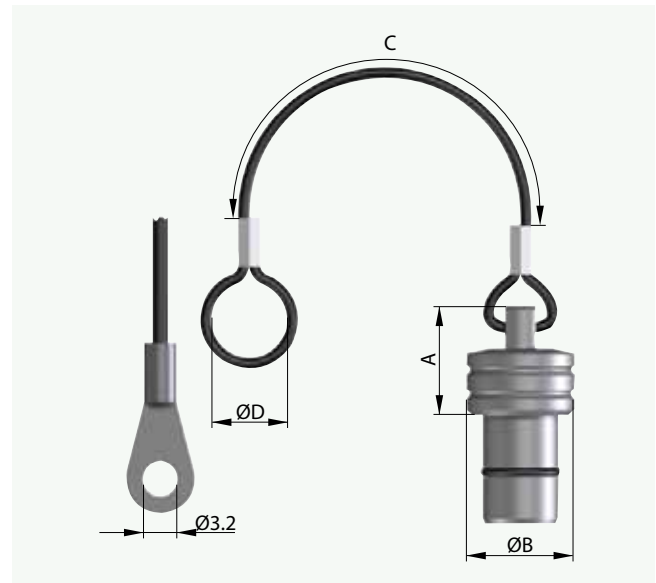
- = Materials, fixed mode

0= Nylon cord, loop

1= Stainless steel wire, loop

2= Nylon cord, Soldering sheet

3= Stainless steel wire, soldering terminal



Plug dust cap, IP68, Series B and F

Size	Part number	A	ØB	C	ØD
0	800.097.004.215._00	15.5	10.5	70	8
1	801.097.004.215._00	16.5	13	75	10
1.5	815.097.004.215._00	16.0	13.5	80	11
2	802.097.004.215._00	18.5	16	85	13
3	803.097.004.215._00	21	19	100	16

Chrome plated (215 chrome, 211 black chrome)

- = Materials, fixed mode

0= Nylon cord, loop

1= Stainless steel wire, loop

2= Nylon cord, Soldering sheet

3= Stainless steel wire, Soldering sheet



Receptacle dust cap, IP50, Series B and F

Size	Part number	A	ØB	C	ØD
0	800.097.003.215._00	10.5	10	70	8
1	801.097.003.215._00	12.5	12	75	10
1.5	815.097.003.215._00	13.3	13	80	11
2	802.097.003.215._00	14.85	15	85	13
3	803.097.003.215._00	16.6	18	100	16

Chrome plated (215 chrome, 211 black chrome)

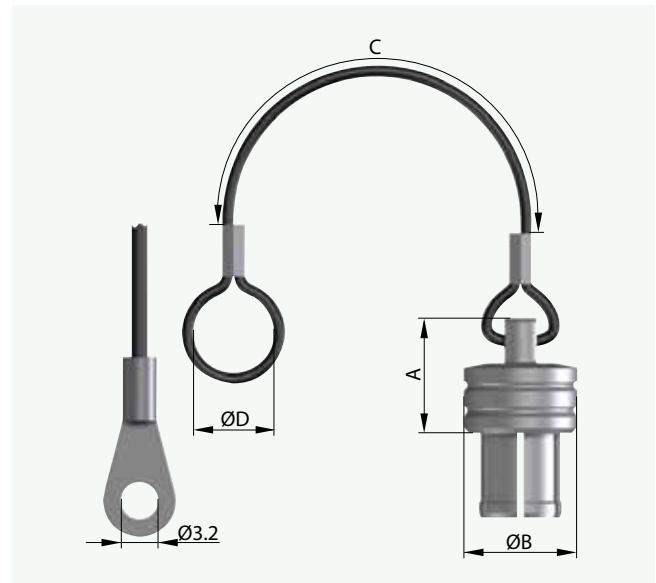
- = Materials, fixed mode

0= Nylon cord, loop

1= Stainless steel wire, loop

2= Nylon cord, Soldering sheet

3= Stainless steel wire, Soldering sheet



Plug dust cap, IP50, Series B and F

Size	Part number	A	ØB	C	ØD
0	800.097.005.215._00	15.5	10	70	8
1	801.097.005.215._00	16.5	12	75	10
1.5	815.097.005.215._00	15.5	13	80	11
2	802.097.005.215._00	18	15	85	13
3	803.097.005.215._00	21	18	100	16

Chrome plated (215 chrome, 211 black chrome)

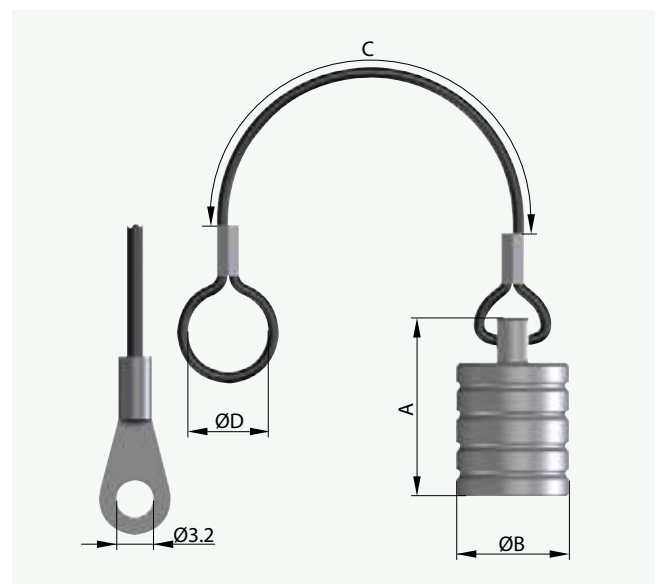
- = Materials, fixed mode

0= Nylon cord, loop

1= Stainless steel wire, loop

2= Nylon cord, Soldering sheet

3= Stainless steel wire, Soldering sheet

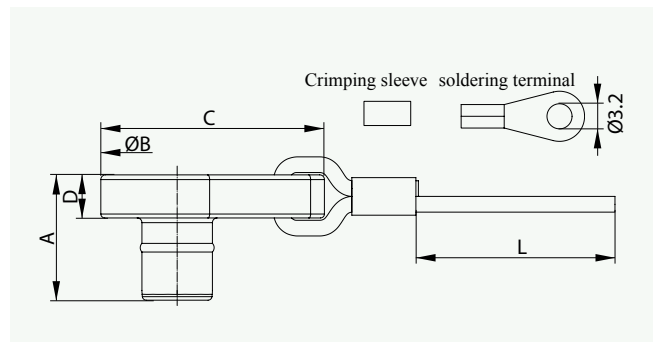


Waterproof cap, Series X, A and Y

Z8 receptacle

Size	Part number	Unit (mm)				
		A	B	C	D	L
0	800.645.097.002.945	15.5	12.0	20.0	5.5	200
1	801.645.097.002.945	16.0	14.0	22.0	5.5	200
1.5	815.645.097.002.945	15.3	15.0	23.0	5.5	200
2	802.645.097.002.945	17.5	17.0	25.0	5.5	200
3	803.645.097.002.945	20.5	20.0	28.0	5.5	200
4.5	845.645.097.002.945	24.0	30.0	40.0	5.5	200

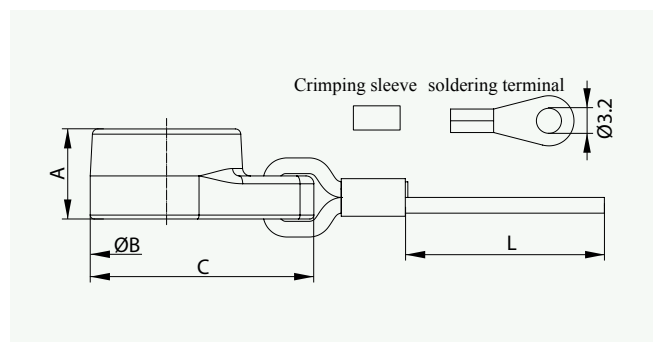
The above part number includes the crimping sleeve and the soldering terminal



ZK receptacle

Size	Part number	Unit (mm)			
		A	B	C	L
0	800.645.097.003.945	8.0	14.0	21.0	200
1	801.645.097.003.945	8.5	16.0	23.0	200
1.5	801.645.097.003.945	8.5	16.0	23.0	200
2	815.645.097.003.945	11.5	19.5	25.8	200
3	802.645.097.003.945	12.0	20.6	29.3	200

The above part number includes the crimping sleeve and the soldering terminal

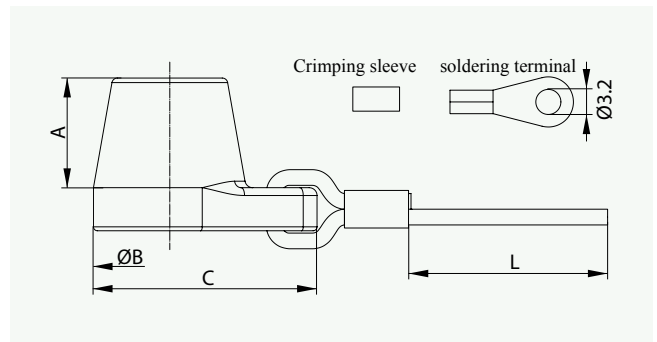


Waterproof cap, Series X, A and Y

Push-pull plug and Break away plug

Size	Part number	Unit (mm)			
		A	B	C	L
0	800.645.097.001.945	16.5	15.0	21.5	200
1	801.645.097.001.945	17.8	17.0	23.5	200
1.5	815.645.097.001.945	17.0	18.0	24.0	200
2	802.645.097.001.945	19.5	21.0	28.0	200
3	803.645.097.001.945	22.6	25.0	32.5	200
4.5	845.645.097.001.945	27.5	33.5	42.0	200

The above part number includes the crimping sleeve and the soldering terminal



Environmental and electrical parameters

Type	Performance	Standard
Protection class	IP67	IEC60529
Operating temperature	-51° C—+125° C	IEC60512-6-11i+j
Shielding property	> 55db	VG95214-11

Materials

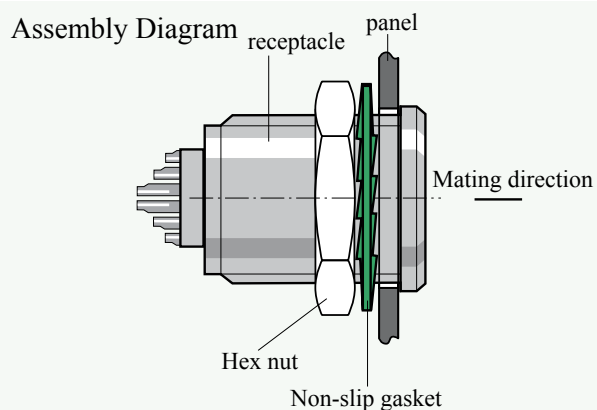
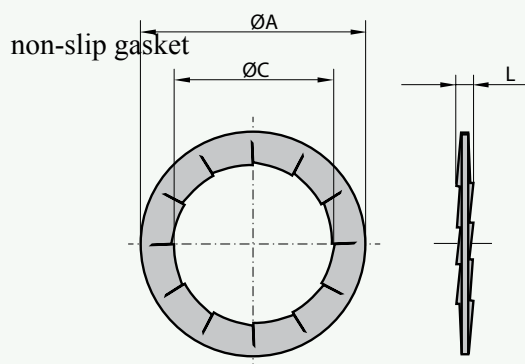
Type	Performance	Standard
Part	Materials	Flame retardant rating
Cap	Electrically conductive silicone	UL94(V1)
Rope	Aramid	UL94(V0)
Crimping sleeve, soldering terminal	Copper alloy, copper	
shrinking tube	FPO(RNF-100)	ASTM D876(30s)

Non-slip gasket, Series B and F

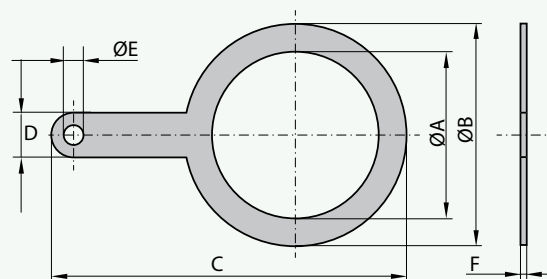
Size	Part number	ØA	ØC	L
M7	845.000.001.000.057	9.5	7.1	1.0
M9	845.000.001.000.046	12.5	9.1	1.0
M12	845.000.001.000.047	16.0	12.1	1.1
M14	845.000.001.000.070	19.5	14.2	1.1
M15	845.000.001.000.048	19.3	15.1	1.1
M16	845.000.001.000.072	21.5	16.1	1.1
M18	845.000.001.000.049	25.5	18.1	1.1
M20	845.000.001.000.121	25.5	20.1	1.1
M25	845.000.001.000.086	32.0	25.1	1.4
M35	845.000.001.000.084	41.0	35.5	1.4

Grounding plate, Series B and F

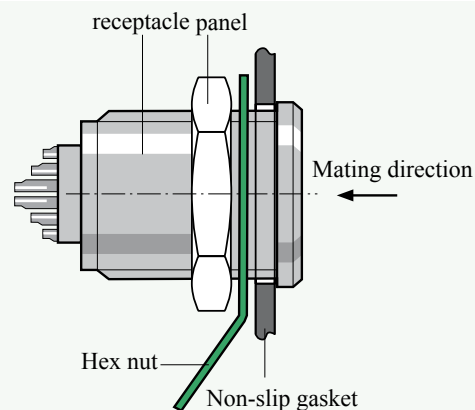
Size	Part number	ØA	ØB	C	D	ØE	F
M7	813.140.246.301.000	7.4	10.0	17.0	4.0	1.8	0.3
M9	800.140.246.301.000	9.7	13.2	21.6	4.0	1.6	0.5
M12	801.140.246.301.000	12.2	17.0	27.5	4.0	1.6	0.5
M14	815.140.246.301.000	14.1	18.0	27.0	4.0	2.0	0.5
M15	802.140.246.301.000	15.2	20.0	32.0	4.0	1.6	0.5
M16	821.140.246.301.000	16.2	20.0	32.0	4.0	1.6	0.5
M18	803.140.246.301.000	18.2	25.0	39.0	4.0	1.6	0.5
M20	822.140.246.301.000	20.2	25.0	39.0	4.0	1.6	0.5
M25	804.140.246.301.000	25.6	35.0	51.0	5.0	2.1	0.6
M35	805.140.246.301.000	35.5	41.0	57.0	5.0	2.1	0.6



Grounding lug



Assembly Diagram



Thickness adjusting ring, Series B and F, Z2 receptacle

Size	Part number	D1	D2	L	T
0	800.123.102.304.000	13.0	10.3	7.0	1-6
1	801.123.102.304.000	17.0	14.3	12.0	0.5-6
1	801.123.102.304.001	17.0	14.3	6.0	6-16
2	802.123.102.304.000	21.0	16.3	8.0	1-9
3	803.123.102.304.000	25.0	20.3	11.5	0.5-7

Material: Copper alloy, surface nickel plating

Back nuts for cable bend reliefs

Size	Part number	Unit mm			B	I
		A	B	SA		
0	800.022.117.3_002	8.0	8.9	7	●	●
1	801.022.117.3_002	10.0	10.9	10	●	●
2	802.022.117.3_002	11.5	13.9	13	●	●
3	803.022.117.3_002	11.5	16.9	15	●	
3	853.022.117.3_002	11.5	16.5	15		●

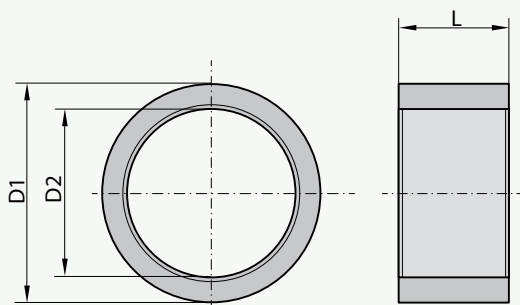
Surface plating at “_”

15= Surface chrome plating

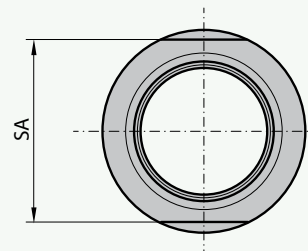
11= Surface black black chrome plating

04= Surface nickel plating

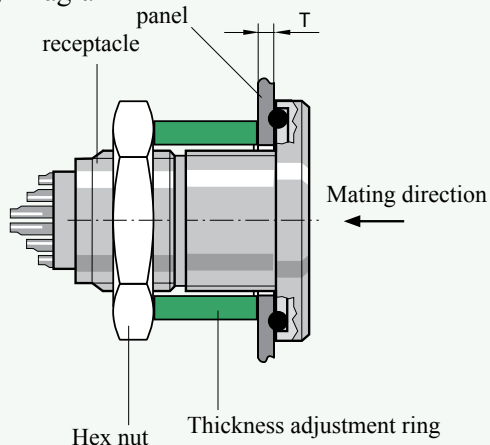
Thickness adjusting ring



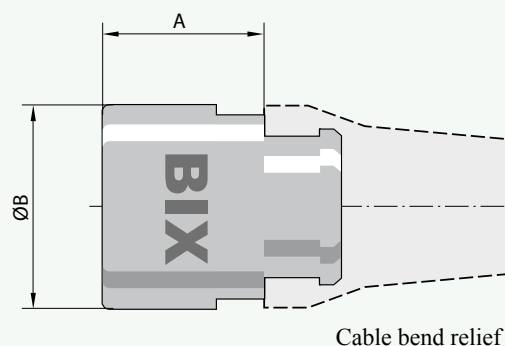
back nut



Assembly Diagram



Assembly Diagram



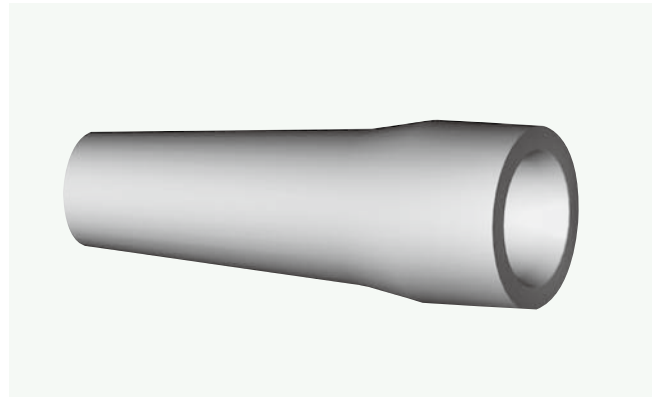
Cable bend relief

Color	RAL No. (similar)	Color
Red	3020	A
White	9010	B
Yellow	1016	C
Green	6029	C
Blue	5002	E
Grey	7005	F
Black	9005	G
Without bend relief		0

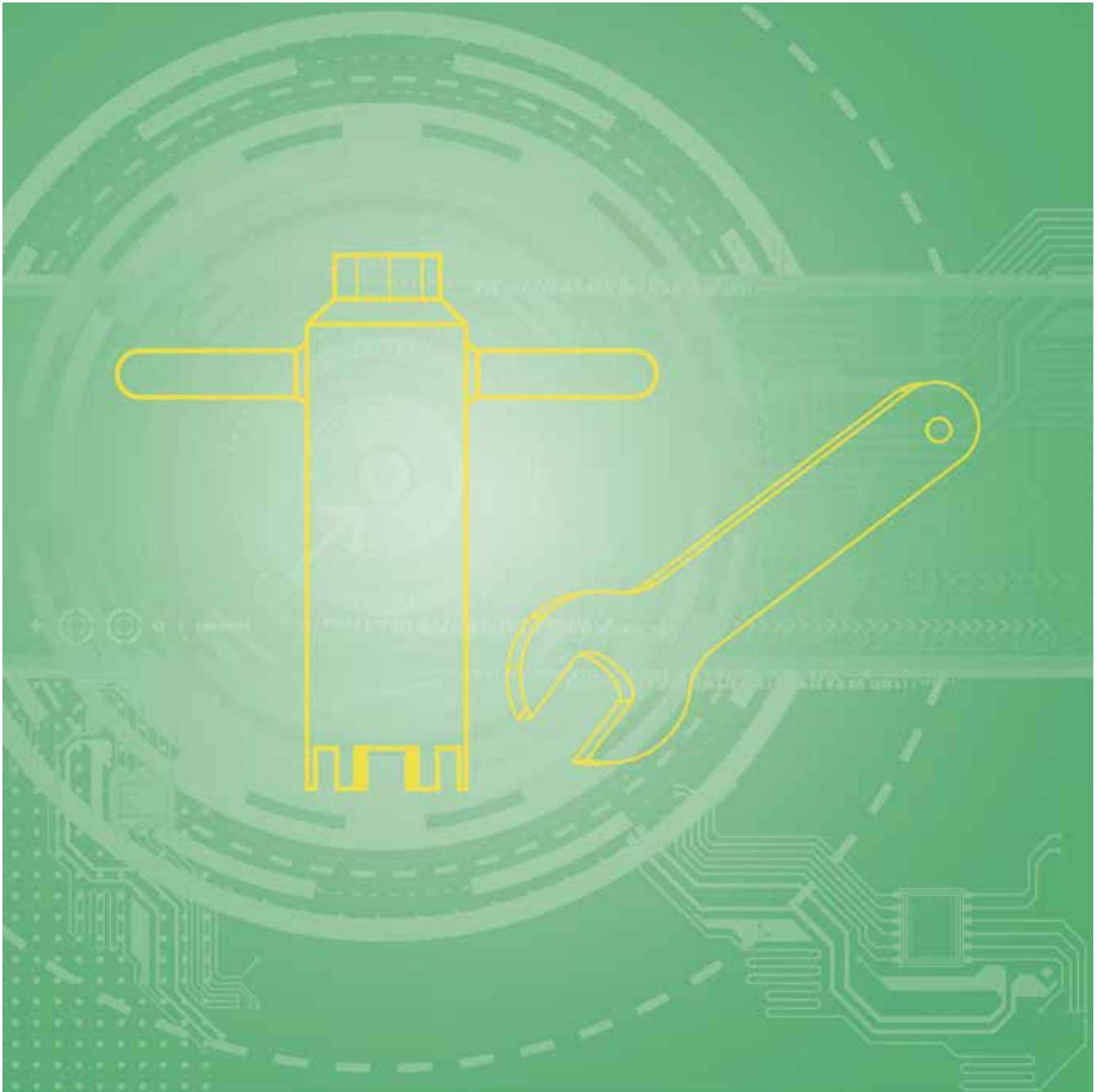
Material: Silicon rubber

Operating range: -50°C ~ 200°C

Up to 230°C within a short time

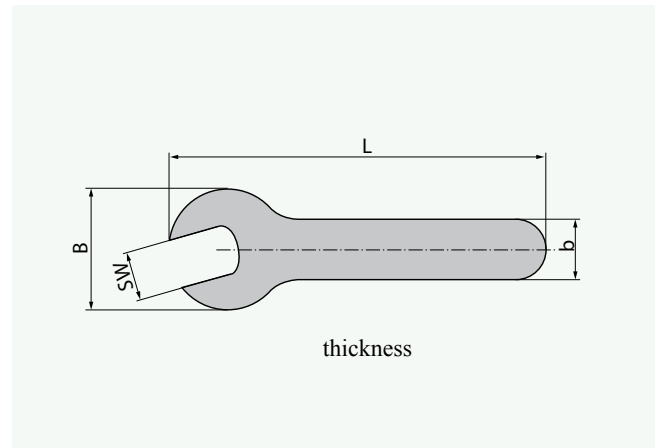


Tools



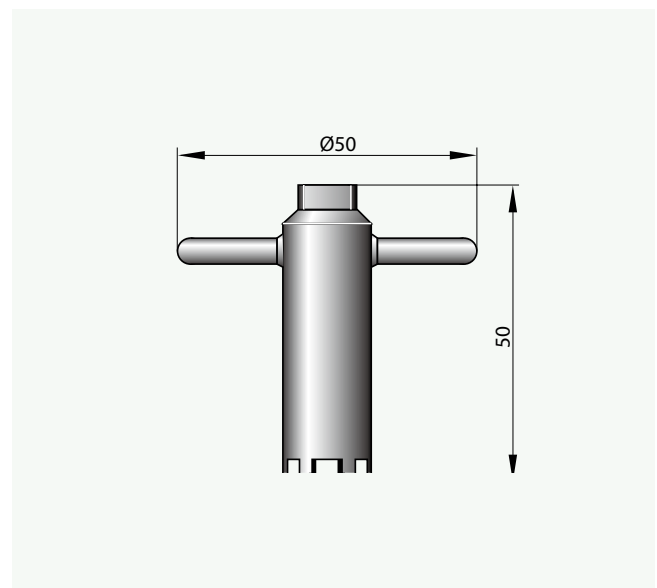
Wrench

Part number	SW	t	B	L	b
998.700.001.016.000	5	1.5	18.5	92	8
998.700.001.015.000	5.5	1.5	18.5	92	8
998.700.001.021.000	6	2	18.5	92	8
998.700.001.011.000	7	2	18.5	92	8
998.700.001.001.000	8	2	18.5	92	8
998.700.001.022.000	9	2	21.5	102	9
998.700.001.002.000	10	2	21.5	102	9
998.700.001.012.000	11	2	24.5	115	10
998.700.001.003.000	12	2.5	24.5	115	10
998.700.001.017.000	12.5	4	24.5	115	10
998.700.001.004.000	13	2.5	30.5	98	16.5
998.700.001.005.000	14	2.5	30.5	98	16.5
998.700.001.006.000	15	3	35.5	145	15
998.700.001.007.000	16	3	35.5	145	15
998.700.001.008.000	17	3	35.5	145	15
998.700.001.023.000	18	3	42	172	16
998.700.001.013.000	19	3	42	172	16
998.700.001.009.000	20	3	42	172	16
998.700.001.018.000	21	3	42	172	16
998.700.001.010.000	22	3	47	119	23.5
998.700.001.014.000	24	3	54	119	23.5
998.700.001.024.000	27	3	55	150	25
998.700.001.019.000	30	3	50	150	25
998.700.001.020.000	31	3	50	150	25

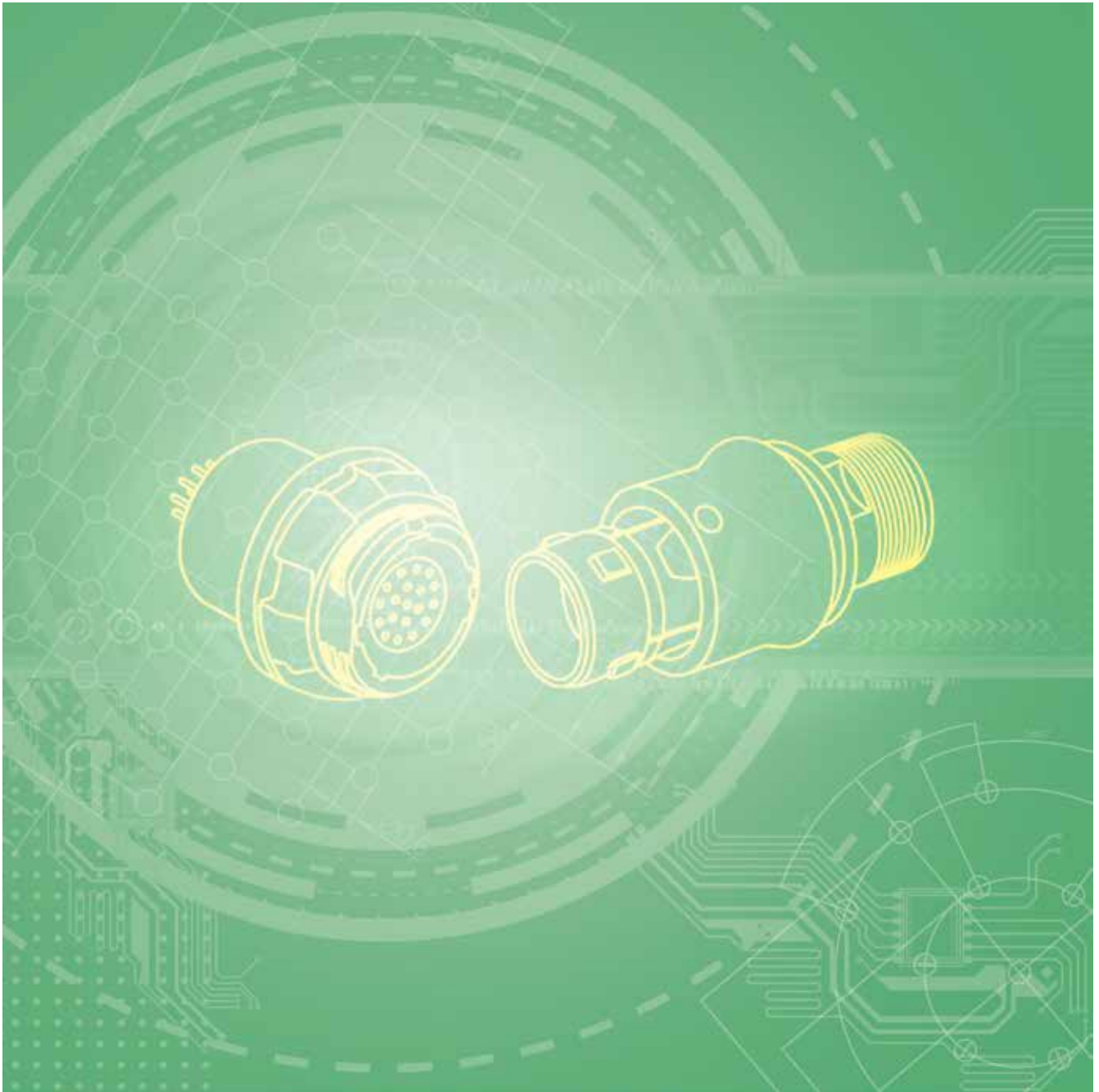


Nut driver (for mounting slotted nuts)

Part No.	Part No.
Applicable to Series B and F	
900.098.002.000.000	M 9*0.5
900.098.001.000.000	M 10*0.5
900.098.001.000.000	M 12*1
901.098.002.000.000	M 14*1
901.098.001.000.000	M 15*1
902.098.001.000.000	M 16*1
902.098.001.000.000	M 18*1
903.098.001.000.000	M 20*1
Applicable to Series I	
901.098.002.000.000	M 14*1
921.098.001.000.000	M 16*1
903.098.001.000.000	M 20*1
924.098.001.000.000	M 30*1



Technical Data



Operating voltage acc. to SAE AS 13441-Method 3001.1

SAE AS 13441-method 3001.1 is complied with MIL-Std, 1344-method 3001.

Data listed in the table is acc. to IEC 60512. The test voltage is applied to the pin side, and it is tested in the mating condition. 75% of the measured breakdown voltage is regarded as the basis for calculation. 1/3 of this value is the operating voltage. All the tests are performed in the standard environment (room temperature), which are also applicable to the environment at 2,000m. If any test condition varies, correct it in accordance with the related standards.

Test voltage = breakdown voltage $\times$ 0.75 operating voltage = breakdown voltage $\times$ 0.75 $\times$ 0.33

Note: For various electrical equipment, the safety factor regarding the operating voltage will be stricter. In such applications, the most important related factors are clearance and creepage distance.

Insulation class, operating voltage and test voltage of Series X, A and Y

The insulation resistance complies with DIN VDE 0110T1/2.79

The class division depends on external environmental and operational conditions

Example:

When to be used in the workshop or lab, please see the operating environment B and A respectively

Class A0: Constant-temperature , dry, weak current operating environment

Class A: Constant-temperature and dry operating environment

Class B: General office and living environment

Class C: General natural environment.

Class D:

For the harsh natural environment, such as dust, water, rain, snow, etc., there is no protection. The operating voltage is calculated from the test voltage in accordance with VDE0627

The following description explains how to calculate the operating voltage from the test voltage

Voltage value: (In actual use, the nominal voltage, rated voltage and reference voltage refer to the same concept)

The actual operating voltage is usually less than the nominal voltage

Example:

When the connector is used in a clean workshop (namely, the environmental Class B), its test voltage is 1,000VAC. The operating voltage of the connector is 150VDC (the bold part below) according to Table 3 below.

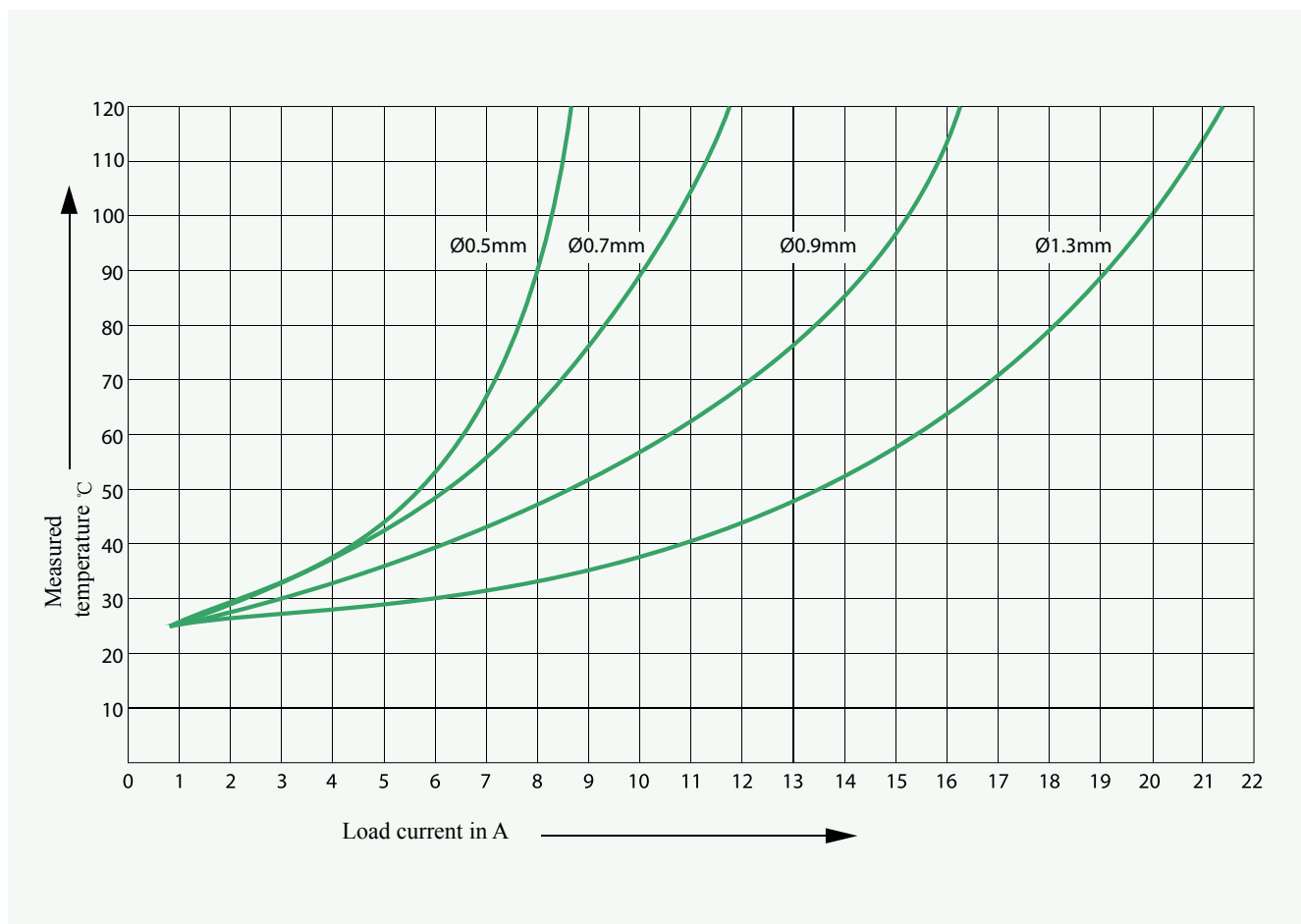
Note: The test voltage can be much higher in accordance with the standard MIL-STD-1344, Method 3001.

Table 3 (extract from DIN VDE 0627)

Reference voltage/operating voltage (V)		Test voltage (V,AC50HZ)				
DC voltage	AC voltage (V)	A0	A	B	C	D
15	12	375	500	750	875	1250
36	30	500	500	750	1000	1500
75	60	500	625	875	1000	1500
150	125	625	750	1000	1250	1750
300	250	750	875	1250	1750	2250
450	380	875	1000	1750	2250	3000
600	500	1000	1250	2000	2750	3500
800	600	1250	1750	2500	3500	4000
900	750	1500	1750	2750	3500	4500
1200	1000	1750	2250	3500	4500	5500

Operating current - pin/socket

Operating current of a single pin/socket (nominal diameter: 0.5mm-1.3mm)



Derating factor

Number of pins	Derating factor
5	0.75
7	0.65
10	0.55
14	0.50
19	0.45
24	0.40

The maximum operating temperature of the pin/socket is 120°C. The tested pin/socket is connected to the wire with the maximum allowed cable cross section. The multi-core cable or connector will generate more heat than the single-pin connector. Therefore, a derating factor must be considered. The derating factor of the connector is defined in accordance with the derating of DIN 57298 part4/VDE 0298 part2; calculate the degradation factor starting from 5-pin (refer to DIN 41640 T3).

Housing material and surface treatment

The housing material of BIX push-pull connector is copper alloy (Brass) with chrome and black chrome plating on the nickel base or can be nickel-plated as required.

Part	Materials	Surface plating
Housing Back nut Slotted nut	Copper alloy	Copper Nickel Matt chrome
Cable clamp EMI ring Half plate Anti-slip gasket Hex nut Thickness adjustment ring	Copper alloy	Matt nickel
Pin (Soldering and PCB) Socket (Soldering and PCB)	Copper alloy	Nickel Gold

Insulator materials

	Standard	Unit	PBT	PTFE	PEEK
Electrical strength	DIN 53481	KV/mm	30	>50	19
Operating temperature	--	°C	-40/+140	-100/+260	-50/+250
Flame retardant rating	UL94	--	V-0	V-0	V-0
Creepage distance	IEC60112	(V)	275	600	175

Test standard, Series F, B and I

Definition	Standard
High temperature	GJB 1217A-2009 / MIL-STD 810F/PV 501
Low temperature	GJB 1217A-2009 / MIL-STD 810F/PV 502
Temperature fluctuation	GJB 1217A-2009 / MIL-STD 810F/PV 503
Humidity	GJB 1217A-2009 / MIL-STD 810F/PV 507
Salt mist	GJB 1217A-2009 / MIL-STD 810F/PV 509 and MIL-STD 810F/PV 5071344A/Methode 1001.1
Impact	GJB 1217A-2009 / MIL-STD 810F/PV 516
Vibration	GJB 1217A-2009 / MIL-STD 1344 A / Methode 2005.1/IV
Water-proof IP68	GJB 1217A-2009 / IEC 60529

Technical parameters of Series X and A

Environmental test

Test type	Performance	Test standard
Waterproof test	IP68 IP69K	IEC 60529 / MIL-STD-810F 5811.4/5 DIN 40050-9
Dust-proof test	Dust (sand) Dust precipitation	MIL-STD-810F 510.4/5 Procedure I / II DIN 40050-9 / IP6kx
Operating temperature test	-51℃ ~ +125℃	IEC 60512-6-11 i+j
Operating temperature test	-65℃ ~ +150℃	EIA 364-32-E IEC 60068-2-14
Humidity cycle test	85 % ~ 95 %, 28 ~ 71℃	MIL-STD-1344A Method 1002.2 Type III IEC 60068-2-38
Low pressure(rapid decompression)	59.1 kPa ~ 18.8 kPa	AECTP 300, 312 Procedure III (STANAG 4370)
Low-pressure test	57.2 kPa -55℃	MIL-STD-810F 500.4/5 IEC 60068-2-40
Low-pressure test	Low-pressure test	MIL-STD-810F 521.2/3
Corrosion resistance test	96h salt mist 5% concentration, 35℃	EIA-364-26B STANAG 4370, AECTP 300-309 MIL-STD-810F 509.4/5
Mould resistance test	European fungus	IEC 60068-2-10
solar radiation proof test		60068-2-5
Chemical resistance test	A number of chemicals	ISO 16750-5

Mechanical test

Test type	Performance	Test standard
Mechanical life	5,000 mating cycles	IEC60512-5-9-a EIA-364-09
Vibration		MIL-STD1344Method2005 EIA-364-28
Impact	300g gravity acceleration 3ms half cosine pulse > 1us, continuous	MIL-STD1344 Method2004 EIA-364-27

Electrical test

Electrical test	Performance	Test
Contact resistance After 5,000 mating cycles	standard Pin diameter/ contact resistance 0.5 mm < 5 mΩ 0.7 mm < 4 mΩ 0.9 mm < 4 mΩ 1.3 mm < 3 mΩ 2.0 mm < 3 mΩ	IEC 60512-2-1
Housing resistance	< 5mΩ	IEC 60512-2-1
Insulation resistance	> 100MΩ	IEC 60512-3-1
Shielding property	> 65 dB	VG 95214-11
Withstand voltage		SAE 13441

Housing material and surface treatment of Series X and A

Part	Materials	Surface plating	Flame retardant rating
Housing (conductive part)	Aluminium AlMgSiSn1Bi	Chrome plating	
Housing/nut (non-conductive part)	Aluminium AlMgSiSn1Bi	Anode oxidation treatment	
Back nut (push-pull plug)	Aluminium AlMgSiSn1Bi	Chemical nickel ruthenium plating	
Back nut (Break away plug and non-fixed receptacle)	Aluminium AlMgSiSn1Bi	Chemical nickel	
EMI ring	CuBe2	Nickel plating	
Crimping sleeve	CuZn38Pb1,5	Nickel plating	
Color ring	PSU		UL94(V0)
Insulator	PEEK		UL94(V0)
Pin	Copper alloy	Nickel plating and gold plating	
Socket	Copper alloy	Nickel plating and gold plating	
O-ring	FVMQ(floursilikon)		
Potting glue	Potting compound		UL94(V0)
Injection material	TPU		UL94(HB)
shrinking tube	Polyester-elastomeer		Acc to.VG95343

Technical parameters of Series Y

Environmental test

Test type	Performance	Test standard
Waterproof test	IP68 IP69K	IEC 60529 / MIL-STD-810F 5811.4/5 DIN 40050-9
Dust-proof test	Dust (sand) Dust precipitation	MIL-STD-810F 510.4/5 Procedure I / II DIN 40050-9 / IP6kx
Operating temperature test	-51℃ ~ +125℃	IEC 60512-6-11 i+j
Temperature fluctuation	-65℃ ~ +150℃	EIA 364-32-E IEC 60068-2-14
Humidity cycle test	85 % ~ 95 %, 28 ~ 71℃	MIL-STD-1344A Method 1002.2 Type III IEC 60068-2-38
Low pressure(rapid decompression)	59.1 kPa ~ 18.8 kPa	AECTP 300, 312 Procedure III (STANAG 4370)
Low pressure test	57.2 kPa -55℃	MIL-STD-810F 500.4/5 IEC 60068-2-40
Anti-freezing test	6mm ice layer	MIL-STD-810F 521.2/3
Corrosion resistance test	96h salt mist 5 % concentration, 35℃	EIA-364-26B STANAG 4370, AECTP 300-309 MIL-STD-810F 509.4/5
Mould resistance test	European fungus	IEC 60068-2-10
Solar radiation proof test		60068-2-5
Chemical resistance test	A number of chemicals	ISO 16750-5

Mechanical test

Test type	Performance	Test standard
Mechanical life	5,000 mating cycles	IEC60512-5-9-a EIA-364-09
Vibration		MIL-STD1344Method2005 EIA-364-28
Impact	300g gravity acceleration 3ms half cosine pulse, > 1us, continuous	MIL-STD1344 Method2004 EIA-364-27

Electrical test

Test type	Performance	Test standard
Contact resistance (After 5,000 mating cycles)	Pin diameter/contact resistance Ø0.6mm pogo pin < 20mΩ	IEC 60512-2-1
Housing resistance	< 10mΩ	IEC 60512-2-1
Insulation resistance	> 100MΩ	IEC 60512-3-1

Housing material and surface treatment of Series Y

Part	Materials	Surface plating	Flame retardant rating
Housing (conductive part)	Aluminium AlMgSiSn1Bi	Chrome plating	
Nut	Aluminium AlMgSiSn1Bi	Anode oxidation treatment	
Back nut	Aluminium AlMgSiSn1Bi	Chemical nickel	
EMI ring	Stainless steel	Gold plating	
Crimping sleeve	CuZn38Pb1,5	Nickel plating	
Color ring	PSU		UL94(V0)
Insulator	PEEK/PBT/PCT		UL94(V0)
Pin	Copper alloy,Cube,steel	Nickel plating and gold plating	
Socket	Copper alloy	Nickel plating and gold plating	
O-ring	FVMQ(floursilikon)		
Potting glue	Potting compound		UL94(V0)
Injection material	TPU		UL94(HB)
Shrinking tube	Polyester-elastomeer		Acc to.VG95343

AWG and metric conversions

Conversion Table AWG /mm²

AWG	Circular cable				
	Diameter Inch	Diameter mm	Cross- section area mm ²	Weight kg/ km	Maximum impedance Ω/km
10 (1)	0.1020	2.5900	5.2700	47.000	3.45
10 (37/26)	0.1090	2.7500	4.5300	43.600	4.13
12 (1)	0.0808	2.0500	3.3100	29.500	5.45
12 (19/25)	0.0895	2.2500	3.0800	28.600	6.14
12 (37/28)	0.0858	2.1800	2.9700	26.300	6.36
14 (1)	0.0641	1.6300	2.0800	18.500	8.79
14 (19/27)	0.0670	1.7000	1.9400	18.000	9.94
14 (37/30)	0.0673	1.7100	1.8700	17.400	10.50
16 (1)	0.0508	1.2900	1.3100	11.600	13.94
16 (19/26)	0.0551	1.4000	1.2300	11.000	15.70
18 (1)	0.0403	1.0200	0.8200	7.320	22.18
18 (19/30)	0.0480	1.2200	0.9600	8.840	20.40
20 (1)	0.0320	0.8130	0.5200	4.610	35.10
20 (7/28)	0.0366	0.9300	0.5600	5.150	34.10
20 (19/32)	0.0384	0.9800	0.6200	5.450	32.00
22 (1)	0.0252	0.6400	0.3240	2.890	57.70
22 (7/30)	0.0288	0.7310	0.3540	3.240	54.80
22 (19/34)	0.0307	0.7800	0.3820	3.410	51.80
24 (1)	0.0197	0.5000	0.1960	1.830	91.20
24 (7/32)	0.0230	0.5850	0.2270	2.080	86.00
24 (19/36)	0.0252	0.6400	0.2400	2.160	83.30
26 (1)	0.1570	0.4000	0.1220	1.140	147.00
26 (7/34)	0.0189	0.4800	0.1400	1.290	140.00
26 (19/38)	0.0192	0.4870	0.1500	1.400	131.00
28 (1)	0.0126	0.3200	0.0800	0.716	231.00
28 (7/36)	0.0150	0.3810	0.0890	0.813	224.00
28 (19/40)	0.0151	0.3850	0.0950	0.931	207.00
30 (1)	0.0098	0.2500	0.0506	0.451	374.00
30 (7/38)	0.0115	0.2930	0.0550	0.519	354.00
30 (19/42)	0.0123	0.3120	0.0720	0.622	310.00
32 (1)	0.0080	0.2030	0.0320	0.289	561.00
32 (7/40)	0.0094	0.2400	0.0350	0.340	597.10
32 (19/44)	0.0100	0.2540	0.0440	0.356	492.00
34 (1)	0.0063	0.1600	0.0201	0.179	951.00
34 (7/42)	0.0083	0.2110	0.0266	0.113	1,491.00
36 (1)	0.0050	0.1270	0.0127	0.072	1,519.00
36 (7/44)	0.0064	0.1630	0.0161	0.130	1,322.00
38 (1)	0.0040	0.1000	0.0078	0.072	2,402.00
40 (1)	0.0031	0.0800	0.0050	0.043	3,878.60
42 (1)	0.0028	0.0700	0.0038	0.028	5,964.00
44 (1)	0.0021	0.0540	0.0023	0.018	8,660.00

AWG=American Wire Gauge (AWG)

The AWG system is based on the rule that the cross-section of the wire changes by 26% from one to the next. The larger the cable diameter is, the smaller the gauge number is. Namely, the cable size increases while the gauge number decreases. Most of the cable adopts the stranded-conductor structure. Compared with the solid-core cable, the cable with the stranded-conductor structure is connected more durably and firmly with better bending performance and anti-vibration property. Stranded conductors consist of larger cable cores with the smaller diameter (larger gaugeNo.). The stranded-conductor structure cable has the same gauge number as the solid-core cable of the same size. The cross-section area of the stranded-conductor cable equals to the cross-section area sum of the single-stranded cable forming the entire cable.

International protection class (IP) DIN EN60 529, according to IEC 60529, GB 700-86, GB4208

Meaning of the protection class code

IP
Dust-proof Water-proof

Characteristic number	Protection class	Brief description	Characteristic number	Protection class	Description
0		No protection	0		No protection
1		Protect against Large solid bodies with $\varnothing < 50\text{mm}$	1		Vertical water-drips protection
2		Protect against solid bodies with $\varnothing > 12.5\text{mm}$	2		Up to 15-degree water-drips protection
3		Protect against solid bodies with $\varnothing > 2.5\text{mm}$	3		Up to 60-degree water-drips protection
4		As 3 however $\varnothing > 1.0\text{mm}$	4		Protection against splashed water from all directions
5		Full protection against contact. Protection against interior detrimental dust deCoding	5		Protection against water spray from all directions
6		Total protection against contact. Protection against intrusion of dust	6		Protection against temporary flooding
			7		Protection against temporary immersion
			8		Protection against water pressure

IP69K is not covered within EN60529 and IEC60529 standards, but defined in DIN40509

13. Safety use notice

Hot plugging, also called plugging under load, refers to the breakdown arc formed due to current interruption on load, which may cause the contact derating. Generally, BIX prohibits hot plugging of the connector, but we can provide hot-plug connectors.

Shanghai BIX Electronics Co., Ltd.

No. 3525, South Hongmei Road, Minhang District, Shanghai

Tel: +86 21 6220 7338

Fax: +86 21 6220 5896

Post Code: 201100

URL: <http://www.bix-china.com>