西安思博瑞环保科技有限公司

Xi’an Spring Technology CO., LTD.

推拉自锁圆形连接器

Push-pull Self-latching Circular Connector

Company Profile

Xi'an Spring Technology Co., Ltd. is a professional push pull connector manufacturer integrating connector research and development, production and sales,The company has advanced production equipment, high-standard CNC lathes and a rigorous and highstandard R& D team, dedicated to the development, production and sales of high-end optical and electrical connectors,as well as providing a full range of cable harness forming solutions and processing. We produce high-performance connectors independently.

Company Histary

2007: Electrical engineer Mr Lu establish Company. Mainly manufacture push-pull connector.

2009-2015: The product range extend to 12 series, and only focus on high-class push-pull metal connector

2016: The company cooperated with SZ DJI Technology Co., Ltd. (Unmanned Aerial Vehicle), Aviation Industry Corporation of China (AVIC), China north industries group hanglian technology co,. ltd. and supplied the connector to Chinese military. which is a well-known supplier of interconnect technology solutions for high-end manufacturing in china.

2018: In order to expand overseas markets, We establish" Xi'an Spring Technology Co., Ltd" in the hometown of Mr Lu, and Xi'an SPRING Technology Co., Ltd focus on oversea marketing,and promote and supply push-pull connector to global customers.

2019-2025: We have sold our products to more than 50 countries, and customers have given high praise for the quality of our products.

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Factory Tour

R&D

Product Line

OEM/ODM

Warehouse

Quality Control

Our quality goal: "**MAKE EVERY PRODUCT EXTRA QUALITY**"
We attach high important to each production process to make sure every items is first class and meet our requirement from raw material to finished goods.By the end of 2016, the company has successively passed ISO9001 (2008) quality system certification, CE certification, CB certification and other authoritative certifications.

This catalogue gives the complete description of Spring Technology unipole and multipole type connectors. Spring Technology manufactures several product series suitable for the characteristics of indoor and outdoor environments. Each series includes a wide variety of plug, socket, available in contact configurations adapted to several size cables. Watertight and vacuumtight models are also available. Since Spring Technology connectors are perfectly screened and designed to guarantee very low resistance to shell electrical continuity, they are particularly adapted to applications where electromagnetic compatibility (EMC) is important

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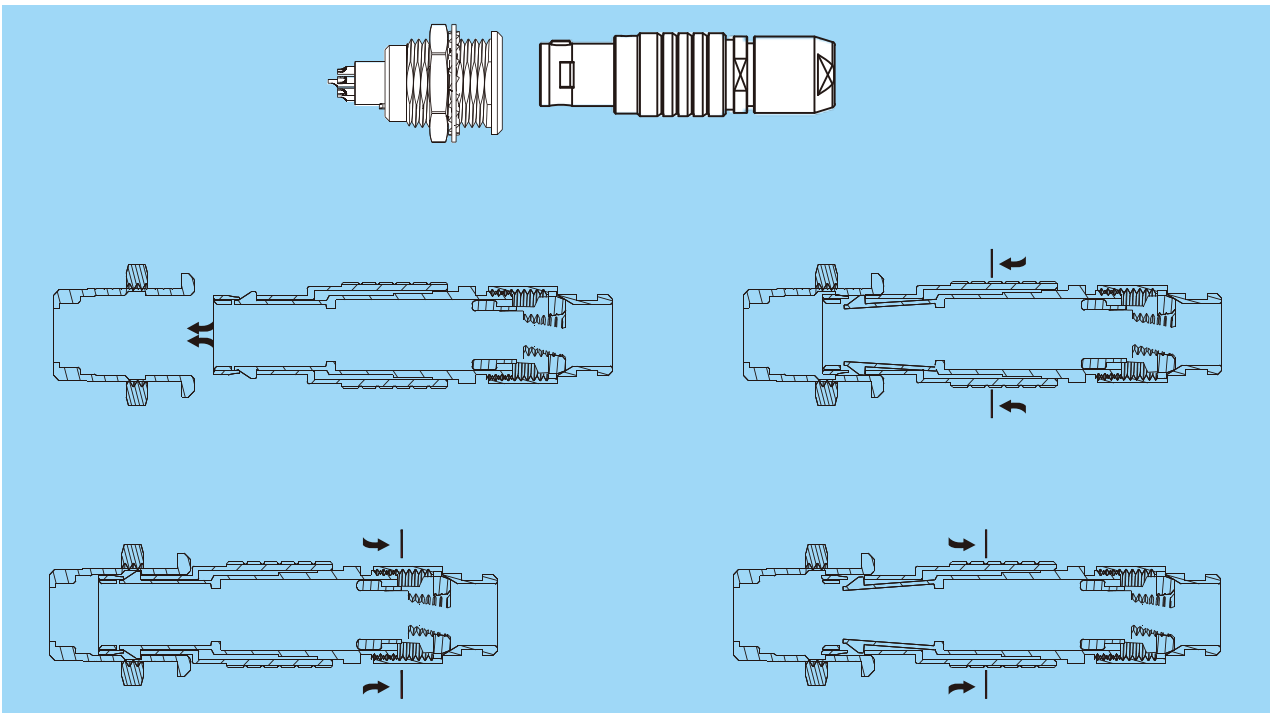
Spring Technology Push-Pull Connector Introduction

The push-pull self-locking system is known for its quick and easy insertion and removal, which can effectively resist vibration and impact, and can prevent the disconnection caused by pulling the cable; this structure is sometimes suitable for high reliability and high quality applications. Where a simple yet fast method to connect/disconnect is required, and are also suitable for high endurance and ease of operation in very limited spaces. The Spring Technology circular connector uses this push-pull self-locking structure, which is widely used in electrical signal connections on electronic, instrumentation, video processing, medical and other equipment. It is especially suitable for electrical signal connections on instruments and equipment that require frequent connection and separation, and that need to be shielded.

Technical Features At A Glance

- Fast and easy to use
- Field installable and free assembled versions
- Wire gauges range from 30 AWG to 12AWG.
- Audible and tactile feedback
- Mechanically keyed: ensures correct polarization and alignment.
- Thousands of mating/unmating endurance
- Contact layouts from 2 to 40 contacts.
- PCB or right angle PCB contacts.
- Space saving
- Excellent performance under harsh environmental conditions in both high temperature and high humidity.
- Robust housings
- 360° electromagnetic shielding
- Fire and smoke compliance
- Environmental level IP50-IP68
- Solder and crimp contacts available

SPRING Push-Pull Connector Appearance Legend



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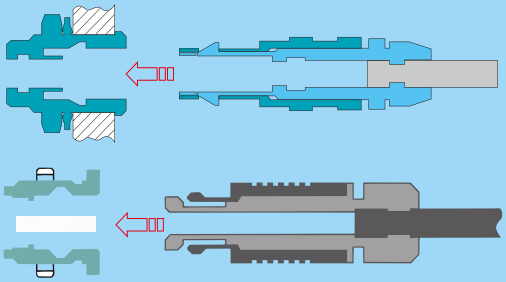
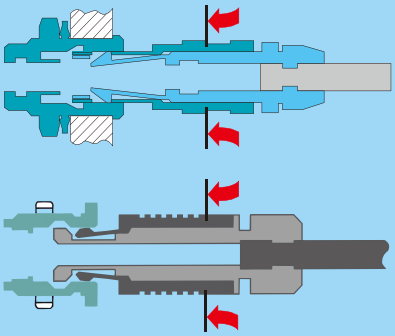
Spring Technology Push-Pull Self-Latching Connection System



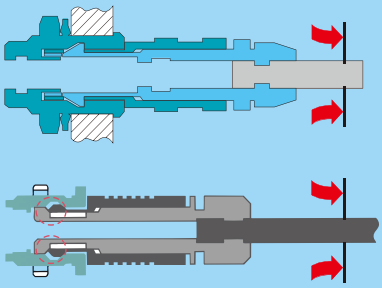
Mating

The push-pull self-latching system allows the connector to be mated by simply pushing the plug axially into the socket



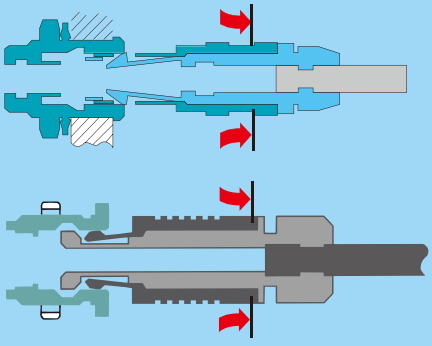
When connected

The plug has an outer sleeve, with flexible fingers,which slides forward and backwards along the plug body.



Pulling the cable

The bevelled edges of the fingers are forced into the groove, securing the connection.Once firmly latched, connection cannot be broken by pulling on the cable or any other component other than the outer release sleeve.



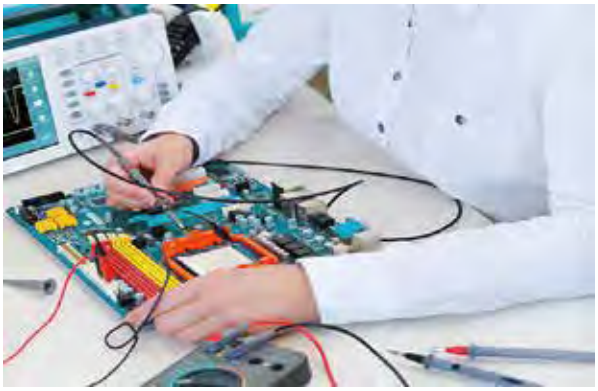
Unmating

Pulling on the outer sleeve of the plug unlocks the latching mechanism.When required, the connector is disengaged by a single axial pull on the outer release sleeve. It firstly disengages the latches and then withdraws the plug from the socket.

Spring Technology Push-Pull Connector Application

Medical

- *Analyzers, Processing Equipment, UL61010*
- *Dental Equipment*
- *Electrosurgical Devices*
- *Pacemakers and Hearing Devices*
- *Surgical instrumentation*
- *Therapy applications*
- *Medical imaging*
- *Cardiac assist devices*
- *Disposable equipment*

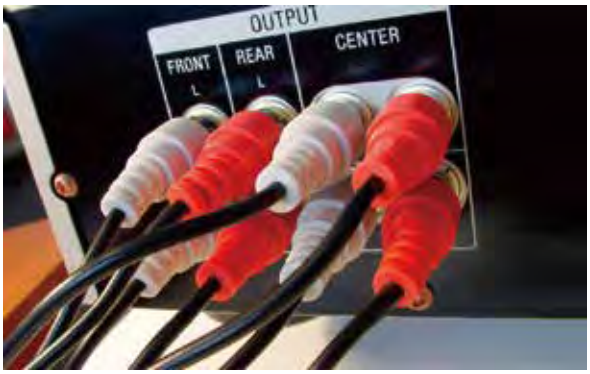


Test & Measurement Connector

- *Sensors*
- *Data acquisition*
- *Automation*
- *Scientific research*
- *Vacuum*
- *GPS (portable or vehicle mounted)*
- *High Voltage Experiments*
- *Meters, Sources, Analyzers*

Broadcast connector

- *Studios and outside broadcasting*
- *TV and motion picture*
- *HD and SD cameras*
- *Remote camera control*
- *Analog Audio/Video*
- *Digital Audio*



Defense & Security

- *Communication systems*
- *Surveillance equipment*
- *Computers*
- *Target acquisition*
- *Airborne Devices (drone)*
- *Land Vehicles*
- *Satellites and Space Vehicles*

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Spring Technology Push-Pull Connector Application

Transport

- *Avionics*
- *Maritime*
- *Automotive*
- *Railways*
- *Crash Dummies*
- *Engine Compartments*
- *Emergency Vehicles*

Machines Connector and Industrial Control

- *Dirty/Hot Environment (e.g., milling)*
- *Process Control (e.g., sensors)*
- *Robot Handling (e.g., assembly line)*
- *Security/ Surveillance Indoors*
- *Security/ Surveillance Outdoors*
- *Networks*

Research Connector

- *Robots*
- *Sub-Atomic Research*
- *Physics Research*
- *Laboratories*
- *Vision and optical systems*
- *Networks*

Energy

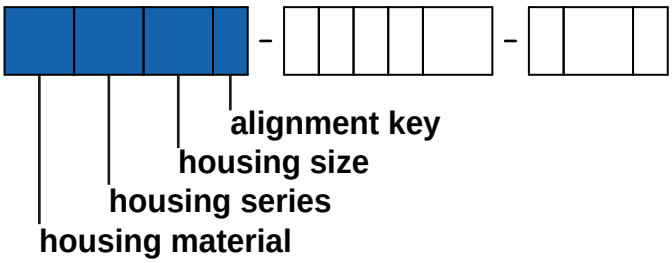
- *Petrol & gas*
- *Nuclear*
- *Renewable energies*
- *Batteries*
- *Fuel cells*

3 Steps to Select the Right Connector

• Step 1: Select Connector Houing(material, series, size, alignment key)

Select the appropriate Spring Technology connector series according to the environmental parameters that will affect your device or cable such as indoor, outdoor, temperature range, ingress protection of the mated connector and of your device. Then, you need to choose the shell material and size of the connector.

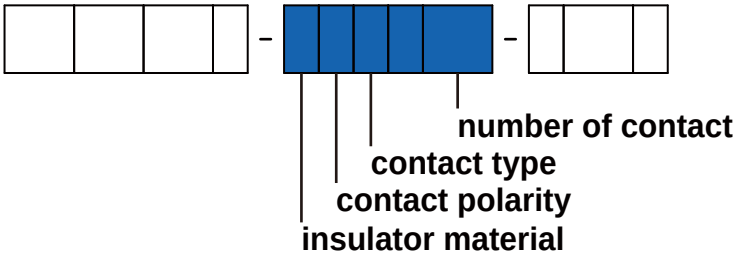
Part number coding



• Step 2: Select Connector Contact(insulator material, contact material, contact polarity, contact type, number of contact)

Use the section (mm²) or the AWG of your cable wire to select the optimal contact diameter (values vary between solder, PCB contact).Use this optimal contact diameter to determine the right connector size as well as the insert configuration.

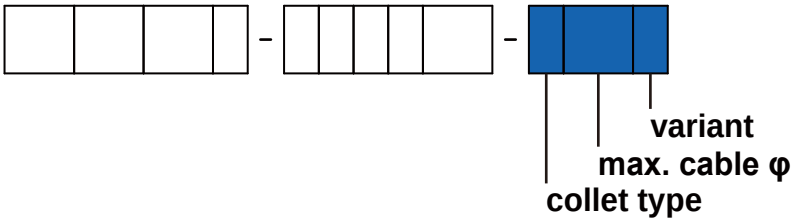
Part number coding



• Step 3: Select the Cable Size

Now that you know the series, as well as the insulator configuration, Furthermore, you need to choose a cable collet that is the correct size for your cable. complete the part numbering system with the help of the following table.

Part number coding



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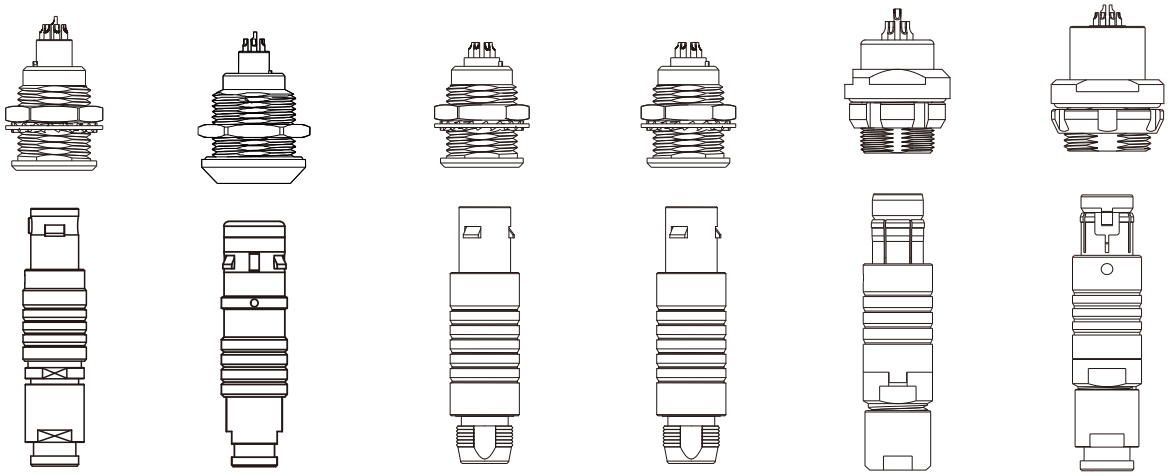
Step 1: Select Connector Housing (metal)

Select the appropriate Spring Technology connector series according to the environmental parameters that will affect your device or cable such as indoor, outdoor, temperature range, ingress protection of the mated connector and of your device. Then, you need to choose the shell material and size of the connector.

Part number coding



Series	B Series	K Series	S Series	E Series	F Series	C Series
	indoor	outdoor or harsh environment	indoor	outdoor or harsh environment	outdoor or harsh environment	
IP 1)	IP50	IP66 - IP68	IP50	IP66 - 68	IP66 - IP68	
IP 2)	IP50-IP68 vacuumtight	IP66-IP68 vacuumtight	IP50-IP68 vacuumtight	IP66-IP68 vacuumtight	IP66-IP68 vacuumtight	
Tem. range	-45 to 125℃	-45 to 125℃	-45 to 125℃	-45 to 125℃	-45 to 125℃	
Latching	Push-pull self-latching					
Shell sizes	6 metal	4 metal	4 metal	4 metal	5 metal	4 metal
Insulator type	multipole / mixed		unipole / multipole / coax (hermaphroditic)		unipole / multipole / coax / mixed	
Contact type	solder or print					
Features	7 keyways	5 keyways	Stepped insert	Stepped insert	3 keyways	5 keyways
Page	18 - 28	29 - 34	102 - 106	107 - 110	52 - 61	35 - 39

Note. 1) Mated connector. See ingress protection code 2) Your device. For selection of connectors for watertight and vacuumtight devices

The standard keyed series(B, K, C): The characteristic feature of these connector series is a keying system which allows higher contact density and prevents all errors in alignment. These standard connector series include the 00B to 3B, Standard waterproof connector series include the 0K to 2K and 0C to 2C, some vacuumtight models are also available.

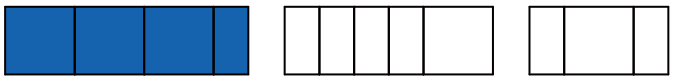
The standard watertight keyed(arc-shape metal guides) Series(F): The characteristic feature of these connector series is used arc-shape metal guides system which allows higher contact density and prevents all errors in alignment. Standard watertight connector series include 2F to 5F, These series are watertight when mated and assembled to an appropriate cable.

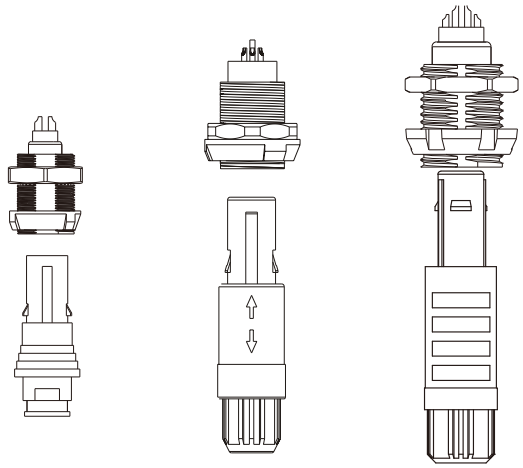
The standard stepped insert series(S, E, F, C): The characteristic feature of these connector series is the hermaphroditic insulator in the multipole version. They include principally the 0S to 2S series, as well as the 00S unipole series, E series(These series are watertight and are available in the same types as the S series).

Step 1: Select Connector Housing (plastic)

Select the appropriate Spring Technology connector series according to the environmental parameters that will affect your device or cable such as indoor, outdoor, temperature range, ingress protection of the mated connector and of your device. Then, you need to choose the shell material and size of the connector.

Part number coding





Series	0P Series(M10)	1P Series(M14)	2P Series(M18)
Environment	indoor	indoor	outdoor
Ingress protection 1)	IP50	IP50	IP66
Ingress protection 2)	IP50-IP68 vacuumtight	IP50-IP68 vacuumtight	IP66-IP68 vacuumtight
Temperature range	-40 to 120℃	-40 to 120℃	-40 to 120℃
Latching	Push-pull self-latching		
Shell sizes	2 Colour	6 Colour	4 Colour
Insulator type	multipole / mixed		
Contact type	solder or print		
Features	1 keyways	4 keyways	1 keyways
Page	123 - 141		

Note. 1) Mated connector. See ingress protection code 2) Your device. For selection of connectors for watertight and vacuumtight devices

The plastic keyed series(0P, 1P, 2P): The characteristic feature of these connector series is a keying system which allows higher contact density and prevents all errors in alignment. Also the tail nut and the socket round nut are color-coded to prevent mis-insertion, These connector series include the 0P and 1P, The watertight connector series include the 2P.

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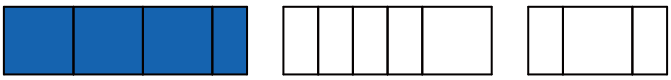
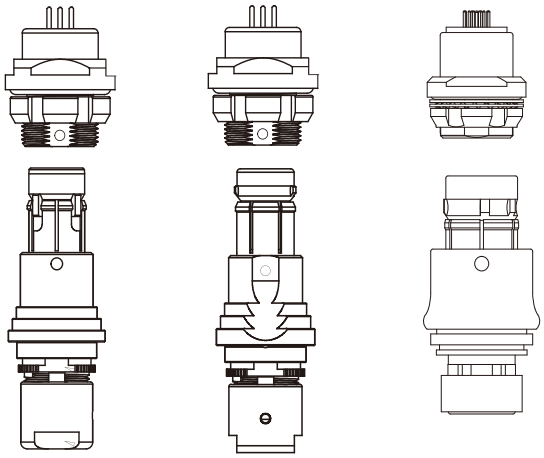
Step 1: Select Connector Housing (metal)

Select the appropriate Spring Technology connector series according to the environmental parameters that will affect your device or cable such as indoor, outdoor, temperature range, ingress protection of the mated connector and of your device. Then, you need to choose the shell material and size of the connector.

Part number coding





Series	T Series	U Series	X Series
Environment	outdoor or harsh environment	outdoor or harsh environment	outdoor or harsh environment
Ingress protection 1)	IP66 - IP68	IP66 - IP68	IP66 - IP68
Ingress protection 2)	IP66-IP68 vacuumtight	IP66-IP68 vacuumtight	IP66-IP68 vacuumtight
Temperature range	-55 to 145℃	-55 to 145℃	-55 to 145℃
Latching	Push-pull self-latching		
Shell sizes	5 metal	5 metal	5 metal
Insulator type	multipole / mixed		
Contact type	solder or print		
Features	6 keyways	5 keyways	4 keyways
Page	62 - 66	67 - 73	84 - 101

Note. 1) Mated connector. See ingress protection code 2) Your device. For selection of connectors for watertight and vacuumtight devices

The watertight keyed series(T, U): The characteristic feature of these connector series is combines multi keying system and multi arc-shape metal guides system which allows higher contact density and prevents all errors in alignment. These connector series include the 2T to 4T and the 2U to 4U.

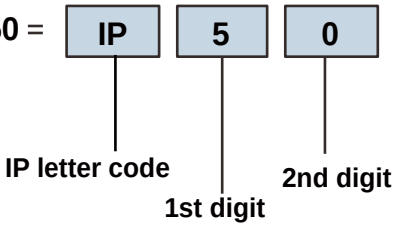
The high-speed signals transmission keyed Series(X): These specific connectors can transmit common data transmission protocols such as USB2.0, USB3.0, Gigabit Ethernet, 10 Gigabit Ethernet, HDMI, SATA, DP, etc. It is used multi arc-shape metal guides system which allows higher contact density and prevents all errors in alignment. These connector series include two version.

Ingress Protection

Definition of Ingress Protection (IP Code)

IEC 60529 outlines an international classification system for the sealing effectiveness of enclosures of electrical equipment against the intrusion into the equipment of foreign bodies (i.e. tools, dust, fingers) and moisture. This classification system utilizes the letters «IP» (Ingress Protection) followed by two digits

Example: IP 50 =



degrees of protection-first digit

The first digit of the IP code indicates the degree to which persons are protected against contact with moving parts and the degree that equipment is protected against solid foreign bodies intruding into an enclosure.

Code	First digit description
0	No special protection
1	Protection from a large part of the body such as hand or from solid objects greater than 50 mm in diameter
2	Protection against objects not greater than 80 mm in length and 12 mm in diameter
3	Protection from entry by tools, wires, etc., with a diameter or thickness greater than 2.5 mm
4	Protection from entry by solid objects with a diameter or thickness greater than 1.0 mm
5	Protection from the amount of dust that would interfere with the operation of the equipment
6	Dust-tight
7	-
8	-

degrees of protection-second digit

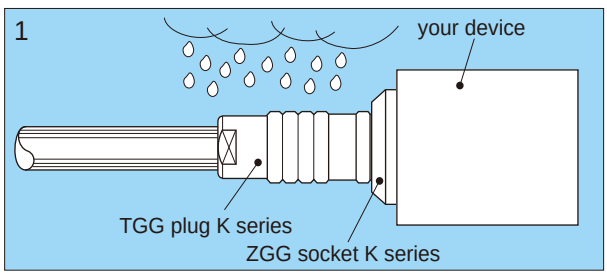
The second digit indicates the degree of protection of the equipment inside the enclosure against the harmful entry of various forms of moisture (e.g. dripping, spraying, submersion, etc.)

Code	Second digit description
0	No special protection
1	Protection from vertically dripping water
2	Protection from dripping water when tilted up to 15°
3	Protection from sprayed water
4	Protection from splashed water
5	Protection from water projected from a nozzle
6	Protection against heavy seas, or powerful jets of water
7	Protection against temporary immersion
8	Protection against complete continuous submersion in water

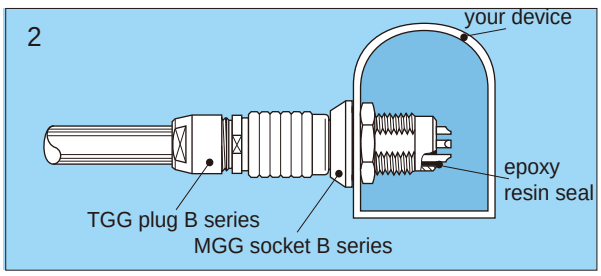
Selection of Connectors for Watertight or Vacuumtight Devices

Spring Technology B and S series are rated IP50 only when mated. Spring Technology F, C, E, K and X series are rated IP66 (and over) only when mated. If a device must be watertight or vacuumtight when the connectors are unmated, it is important to select a water-tight or vacuumtight socket. You can consider the following two situations:

A) Figure 1 shows a typical outdoor device. To ensure this device retains IP66 or above when connectors are unmated, it is important to choose a watertight socket from B, S, E, K or F, X series



B) Figure 2 shows a device which is subjected to pressure difference such as a near vacuum or pressurized gas and must exhibit no leakage.



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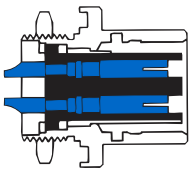
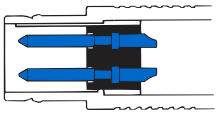
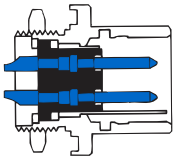
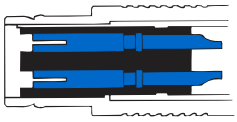
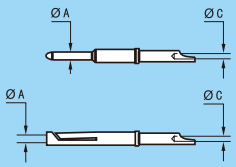
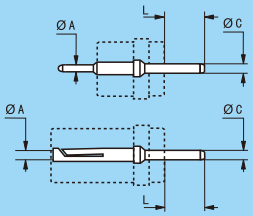
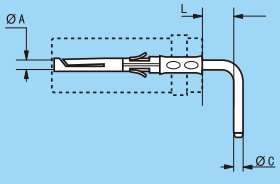
Step 2: Select Connector Contact

Part number coding

The contacts polarity of the plug/socket are protected against accidental touch when voltage is present on the plug/socket

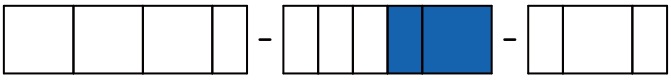
	Socket	Plug
Standard Polarity	 **F:** Female Contact	 **M:** Male Contact
Inverted Polarity	 **M:** Male Contact	 **F:** Female Contact

Verify if the selected contact diameter (ø A) of the Spring Technology connector fits to your cable wire diameter (AWG number or max. available section).

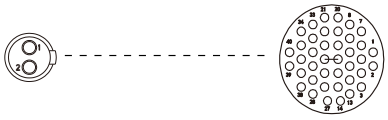
Contact type	Reference	Contact			Conductor					
					Solid		Stranded			
		ΦA (mm)	ΦC (mm)		AWG Max.	Section max. (mm²)	AWG Min.	AWG Max.	Section (mm²) Min.	Section (mm²) Max.
Solder 	S	0.5	0.40	-	28	0.09	-	30	-	0.05
		0.5	0.45	-	28	0.09	-	28	-	0.09
		0.7	0.60	-	24	0.25	-	26	-	0.14
		0.7	0.80	-	22	0.34	-	22	-	0.34
		0.9	0.80	-	22	0.34	-	22	-	0.34
		1.3	1.00	-	20	0.50	-	20	-	0.50
		1.6	1.40	-	16	1.00	-	18	-	1.00
		2.0	1.80	-	14	1.50	-	16	-	1.50
		3.0	2.70	-	10	4.00	-	12	-	4.00
		4.0	3.70	-	10	6.00	-	10	-	6.00
Straight PCB 	P	L dimensions and C are detailed in the section on PCB drilling pattern. also you can customize the L dimensions								
Elbow PCB 	E	L dimensions and C are detailed in the section on PCB drilling pattern.								

Step 2: Select Connector Contact

Part number coding



To be able to select the right connector size (0 to 4), it is important to define the contact diameter (ø A).
Find out the available contact diameter (ø A) of the Spring Technology connector depending on the number of contacts required and depending on the rating required. The following table shows the contact diameter (ø A).

	Number of contacts	Insert configuration	Series													
			 B / K / C Series				 F / X / T / U Series						 S / E Series			
			00B	0B/0K/0C	1B/1K/1C	2B/2K/2C	2F/2 T/2U	21T	3F/3T/3U/3X	31F/31T/31X	4F/4T/4U/4X	5F/5X	00S	0S/0C	1S/1E/1C	2S
			Contact Diameter (ø A)													
Unipole	1	116					0.7							1.6		
	1	120					0.9								2.0	
	1	250											0.7	0.9	1.3	2.0
	1	275													1.6	1.6
	1	401										2.0				
	1	405													1.3	
Multipoles	2	M02	0.5	0.9	1.3	2.0	0.9		1.3		1.6	3.0		0.9	1.3	
	3	M03	0.5	0.9	1.3	1.6	0.9		1.3		1.6	2.0		0.7	0.9	
	4	M04	0.5	0.7	0.9	1.3	0.7		0.9		1.3	2.0		0.7	0.9	
	5	M05		0.7	0.9	1.3	0.7		0.9		1.3				0.7	
	6	M06		0.5	0.7	1.3			0.7		0.9				0.7	
	7	M07		0.5	0.7	1.3	0.5		0.7		0.9	1.3/2.0				
	8	M08			0.7	0.9			0.7		0.9	1.3				
	9	M09		0.5			0.5				0.9/1.3	1.3/2.0				
	10	M10			0.5	0.9	0.5	0.5/0.7	0.5	0.7		1.3				
	11	M11									0.9					
	12	M12				0.7			0.5	0.7		1.3				
	13	M13					0.4	0.5			1.3					
	14	M14			0.5	0.7		0.5	0.5							
	16	M16			0.5	0.7		0.5	0.5		0.7	0.7/1.6				
	18	M18				0.7				0.5		0.9				
	19	M19				0.7		0.4		0.5	0.7	0.9				
	24	M24										0.7				
	26	M26				0.5										
	27	M27										0.7				
	37	M37										0.5/0.7				
	40	M40										0.5				

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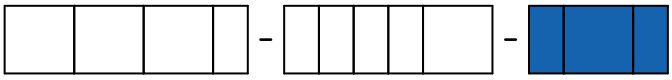
Step 3: Verify the fitting to your cable

Part number coding



Verify if the selected connector size fits to your cable diameter.

Series	Cable diameter range (mm)			
	Collet		Collet for fitting a bend relief	
	Min.	Max.	Min.	Max.
00B	1.1	3.4	1.1	3.4
0B	1.5	5.5	1.5	5.0
1B	2.2	7.5	2.2	7.0
2B	1.5	9.7	1.5	9.0
3B	4.1	11.7	4.1	11.0
4B	5.1	16.0	5.1	15.0
0K	1.0	5.0	1.0	5.0
1K	1.3	8.5	1.3	8.5
2K	1.3	10.5	1.3	10.5

Series	Cable diameter range (mm)			
	Collet		Collet for fitting a bend relief	
	Min.	Max.	Min.	Max.
2F	3.2	5.5	3.5	5.0
3F	2.2	7.5	2.2	7.0
31F	4.5	8.0	5.5	8.0
4F	1.5	9.7	1.5	9.0
5F	5.5	11.5	5.5	11.5

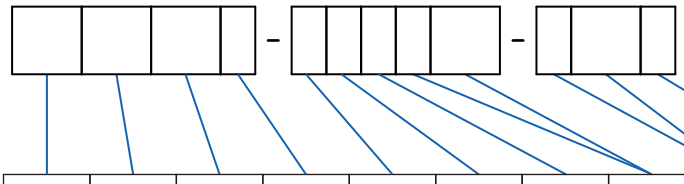
Note: The collet size of T Series, U Series, X Series is the same as that of F series

Series	Cable diameter range (mm)			
	Collet		Collet for fitting a bend relief	
	Min.	Max.	Min.	Max.
00S	1.1	4.1	1.1	4.1
0S	1.3	6.7	1.3	6.1
1S	1.3	8.5	1.3	8.0

Series	Cable diameter range (mm)			
	Collet		Collet for fitting a bend relief	
	Min.	Max.	Min.	Max.
0C	1.5	5.5	1.5	5.0
1C	2.2	7.5	2.2	7.0
2C	1.5	9.7	1.5	9.0

Complete the Part Number

Part number coding



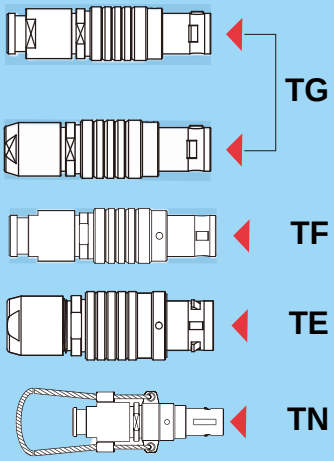
	Housing	Body style	Series	Alignment key	Insulator material	Contact polarity	Contact type	Number of contact	Collet	Variant
B Series(indoor, keyed)	40	21	21	28	41	41	42	43	45	46
K Series(outdoor, keyed)	40	32	32	34	41	41	42	43	45	46
C Series(outdoor, keyed)	40	38	38	39	41	41	42	43	45	46
F Series(outdoor, arc-shape guides)	74	56	56	61	75	75	76	77	82	83
T Series(outdoor, keyed and arc-shape guides)	74	65	65	66	75	75	76	77	82	83
U Series(outdoor, keyed and arc-shape guides)	74	70	70	72	75	75	76	77	82	83
X Series-X(outdoor, multi arc-shape guides)	94	88	88	90	95	95	96	97	101	-
S Series(indoor, stepped insert)	116	105	105	105	117	117	118	119	121	122
E Series(outdoor, stepped insert)	116	110	110	110	117	117	118	119	121	122
Unipole Coaxial Series(indoor/outdoor)	116	114	114	114	117	117	118	120	121	122
0P Series(indoor, keyed, M10)	136	131	131	135	137	137	138	139	141	141
1P Series(indoor, keyed, M14)	136	132	132	135	137	137	138	139	141	141
2P Series(outdoor, keyed, M18)	136	134	134	135	137	137	138	140	141	141

➤➤➤ B Series

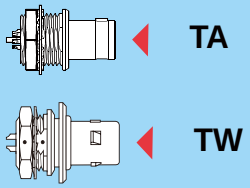
B Series (Indoor, Keyed)

Body Style

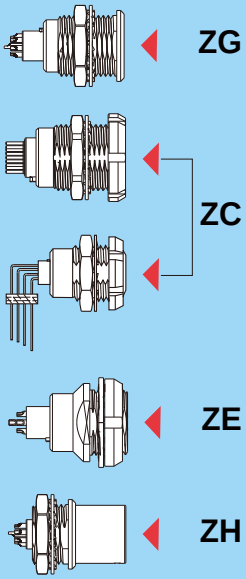
Straight plugs



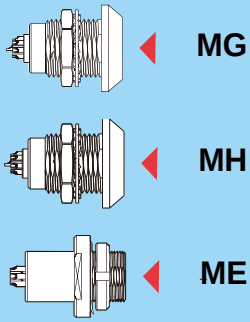
Fixed plugs



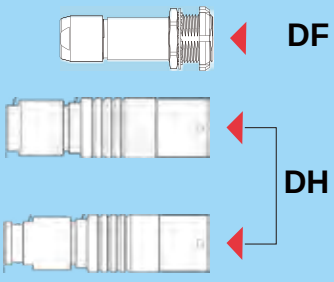
Fixed sockets



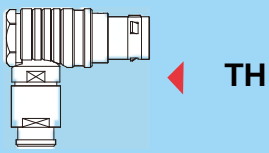
Watertight sockets



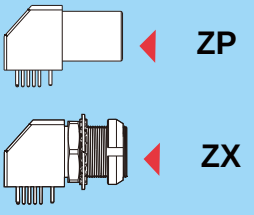
Free sockets



Elbow plugs



Elbow socket



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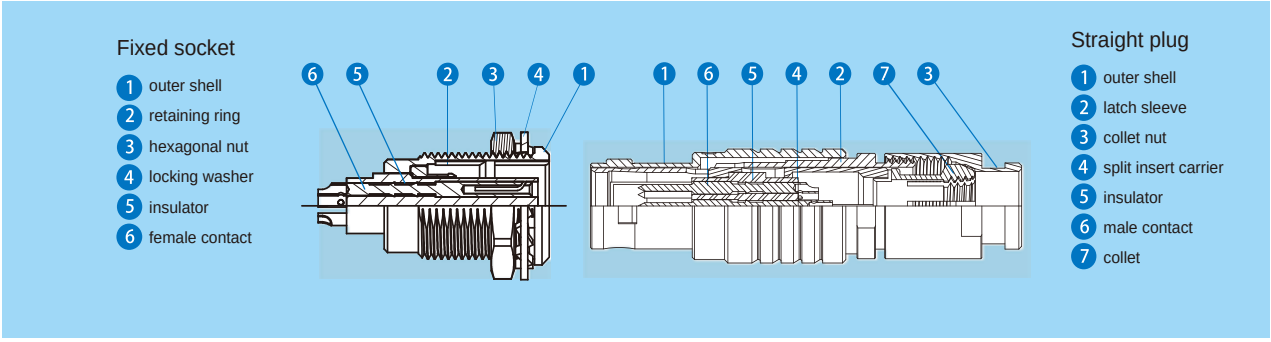
Main Features

- Security of the Push-Pull self-latching system
- Multipole types 2 to 26 contacts
- Solder, crimp or print contacts (straight or elbow)
- High packing density for space savings
- Multiple key options to avoid cross mating of similar connectors
- Keying system («G» key standard) for connector alignment
- 360° screening for full EMC shielding.

Technical Characteristics

- Mating cycles: > 5000
- Humidity: up to 95% at 60° C
- Temperature range: - 45° C, + 125° C
- Resistance to vibrations: 10-2000 Hz, 15g
- Shock resistance: 100 g, 6 ms
- Salt spray corrosion test: > 48h
- Protection index (mated): IP 50

Part Section Showing Internal Components



➤➤➤ B series

B Series Part Numbering System

Plug

C	B	T	G	1	B	G	–	S	M	S	M	0	6	–	D	5	2	0

Free Socket

C	B	D	H	1	B	G	–	S	F	S	M	0	6	–	D	5	2	B

Housing material *(page 40)*	**Variant** *(page 46)*
Body style *(page 21)*	**Cable collet φ** *(page 45)*
Series *(page 21)*	**Collet type** *(page 45)*
Alignment key *(page 28)*	**No. of contact** *(page 43)*
Insulators material *(page 41)*	**Insert configuration** *(page 43)*
Contact polarity *(page 41)*	**Contact type** *(page 42)*

Socket

C	B	Z	G	1	B	G	–	S	F	S	M	0	6	–	0	0	0	0

Housing material *(page 40)*	**0:** Without **E:** With **00:** Solder contact — **Earthing tag**
Body style *(page 21)*	**Length of PCB contact**
Series *(page 21)*	**0:** Without Potting **S:** Potting silicone **R:** Potting resin — **Glue type**
Alignment key *(page 28)*	**No. of contact** *(page 43)*
Insulators material *(page 41)*	**Insert configuration** *(page 43)*
Contact polarity *(page 41)*	**Contact type** *(page 42)*

Part Number Example

Straight Plug with Cable Collet:

CBTG1BG-SMSM06-D520 = TG body style, outer shell in chrome-plated brass, 1B series, straight plug with key (G), PPS insulator, male solder contacts, multipole type with 6 contacts, D type cable collet of 5.2 mm diameter.

Free socket:

CBDH1BG-SFSM06-D52B = DH body style, outer shell in chrome-plated brass, 1B series, free socket with key (G), PPS insulator, female solder contacts, multipole type with 6 contacts, D type cable collet of 5.2 mm diameter and nut for fitting a bend relief.

Fixed Socket:

CBZG1BG-SFSM06-0000 = ZG body style, outer shell in chrome-plated brass, 1B series, fixed socket with key (G), PPS insulator, female solder contacts, multipole type with 6 contacts.
CBME1BG-SFPM06-R300 = ME body style, outer shell in chrome-plated brass, 1B series, fixed watertight socket with key (G), PPS insulator, female straight PCB contacts, multipole type with 6 contacts, potting resin, length of straight print contact with 3.0mm.

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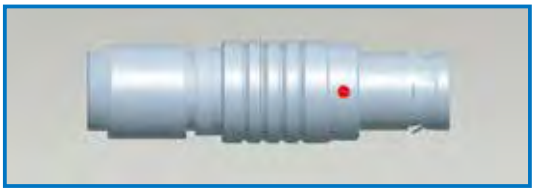
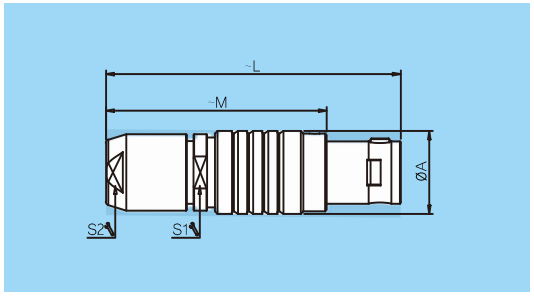
B Series Plug Dimensions

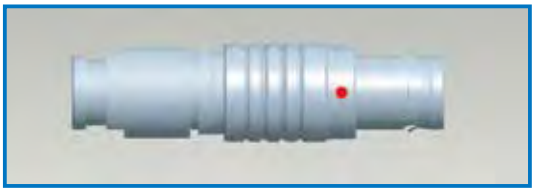


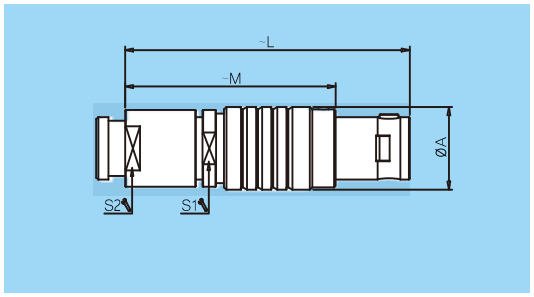


TG body style, Straight plug with key (G) or keys (A…M and R) cable collet

Reference		Dimensions (mm)				
Model	Series	A	L	M	S1	S2
TG	00B	6.4	28.5	20.5	5.5	5.0
TG	0B	9.5	36.0	26.0	8.0	7.0
TG	1B	12.0	43.0	32.0	10.0	9.0
TG	2B	15.0	50.0	38.0	13.0	12.0
TG	3B	18.0	58.0	43.0	15.0	14.0

Cable assembly (page 152)
Plug assembly instructions (page 153)
Injection molding (page 163)
Note: the surface design of the 00 series is different.

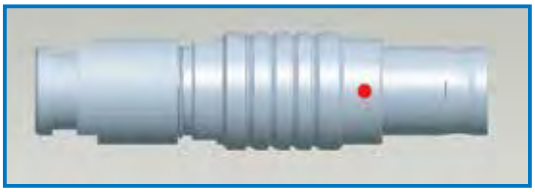


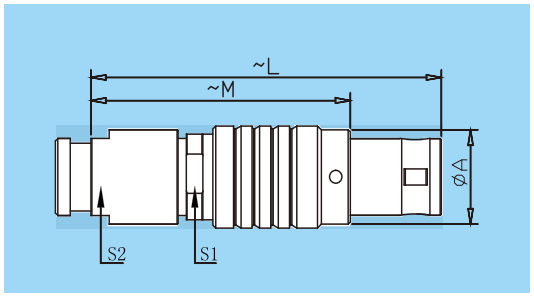


TG body style, Straight plug with key (G) or keys (A...M), cable collet and nut for fitting a bend relief

Reference		Dimensions (mm)				
Model	Series	A	L	M	S1	S2
TG	00B	6.4	28.7	28.5	5.5	6.0
TG	0B	9.5	35.5	25.0	8.0	7.0
TG	1B	12.0	42.0	31.0	10.0	9.0
TG	2B	15.0	49.0	37.0	13.0	13.0
TG	3B	18.0	56.5	42.0	15.0	15.0

Note: To order, add a «B» at the end of the reference. The bend relief must be ordered separately (page 149).



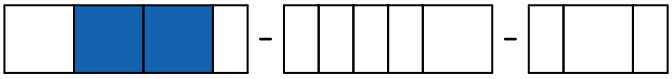


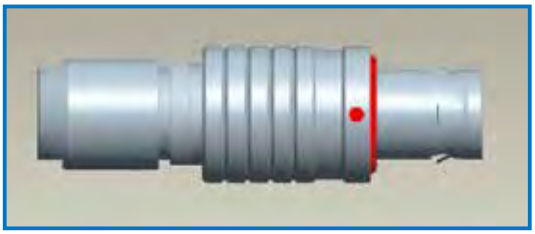
TF body style, Straight plug, key (G) or keys(A …L), cable collet, front seal and nut for fitting a bend relief (IP 54 protection index when mated)

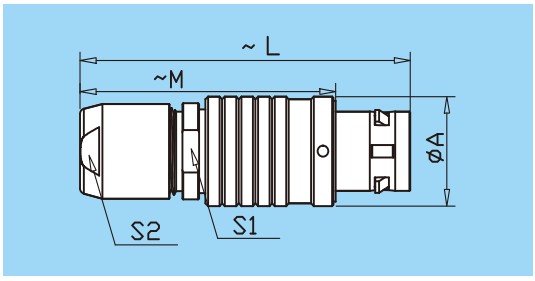
Reference		Dimensions (mm)				
Model	Series	A	L	M	S1	S2
TF	0B	9.5	36.0	26.0	8.0	7.0
TF	1B	12.0	43.0	32.0	10.0	9.0
TF	2B	15.0	50.0	38.0	13.0	12.0
TF	3B	18.0	58.0	43.0	15.0	14.0

Cable assembly (page 152)
Plug assembly instructions (page 153)
Injection molding (page 163)
Note: to order, add a «B» at the end of the reference.The bend relief must be ordered separately (page 149).

➤➤➤ B Series



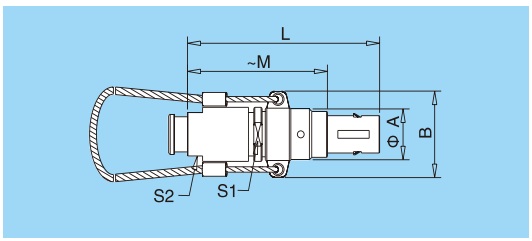




TE body style, Straight plug, key (G) or keys (A …L), cable collet, front seal and nut for fitting a bend relief (IP 54 protection index when mated)

Reference		Dimensions (mm)				
Model	Series	A	L	M	S1	S2
TE	0B	11.0	35.0	25.0	8.0	7.0
TE	1B	13.5	42.0	33.0	10.0	9.0
TE	2B	16.5	48.0	36.0	13.0	12.0
TE	3B	19.0	56.0	41.5	15.0	15.0

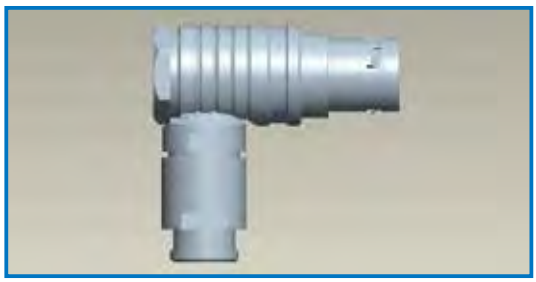
Cable assembly (page 152)
Plug assembly instructions (page 153)
Injection molding (page 163)

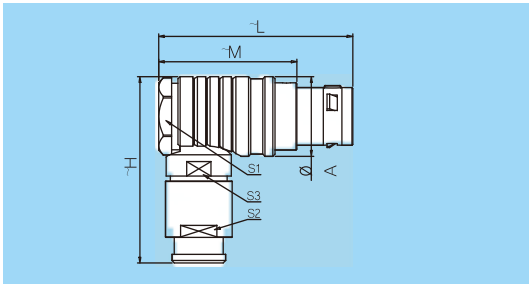


TN body style, Straight plug, key (G) or keys (A…M and R) cable collet and lanyard release

Reference		Dimensions (mm)						
Model	Series	A	B	L	M	N	S1	S2
TN	0B	9.5	15.5	36.0	26.0	140	8.0	7.0
TN	1B	12.0	18.0	43.0	32.0	140	10.0	9.0
TN	2B	15.0	21.0	49.0	37.0	160	13.0	12.0
TN	3B	18.0	25.0	58.0	43.0	190	15.0	14.0

Cable assembly (page 152)
Plug assembly instructions (page 153)
Injection molding (page 163)
Note: to order, add a «B» at the end of the reference.The bend relief must be ordered separately (page 149).





TH body style, Elbow (90°) plug, key (G) or keys (A…M and R), cable collet

Reference		Dimensions (mm)							
Model	Series	A	D	H	L	M	S1	S2	S3
TH	0B	11.0	6.5	26.0	31.6	21.6	10.0	7.0	8.0
TH	1B	13.5	8.0	30.5	36.0	25.0	11.0	9.0	10.0
TH	2B	16.5	9.0	34.0	41.5	29.5	14.0	12.0	13.0
TH	3B	19.0	10.0	37.0	50.0	35.0	17.0	14.0	15.0

Cable assembly (page 152)
Plug assembly instructions (page 153)
Injection molding (page 163)
Note: to order, add a «B» at the end of the reference.The bend relief must be ordered separately (page 149).

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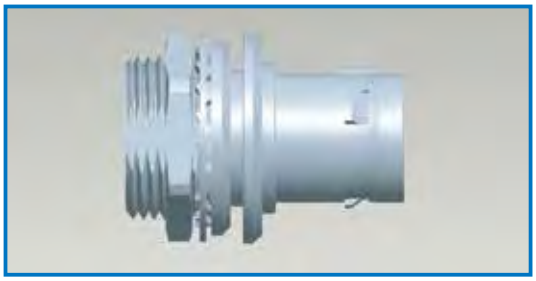
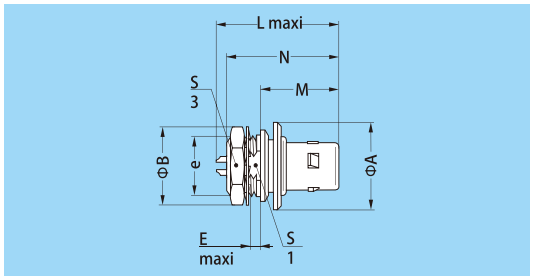
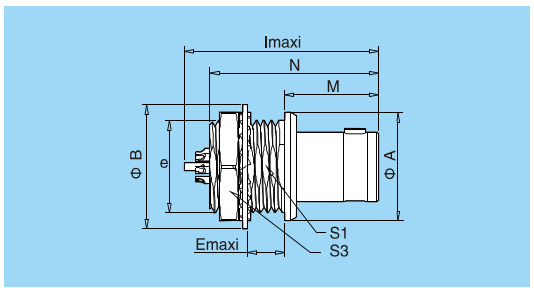




TW body style, Fixed plug, nut fixing, key (G) or keys (A …L)

Reference		Dimensions (mm)							
Model	Series	A	B	e	E	L	M	S1	S3
TW	1B	12.0	12.4	M9x0.6	2.4	2.5	18.3	8.2	11.0
TW	2B	16.0	15.8	M12x1.0	6.0	3.5	20.3	10.5	14.0

Panel cut-out (page 47)



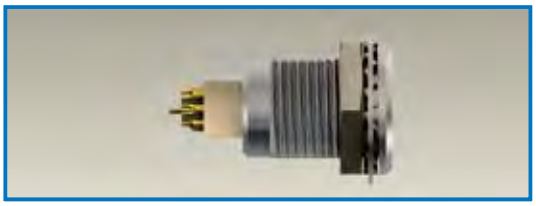
TA body style, Fixed plug, non-latching, nut fixing, key (G) or keys (A…M and R)

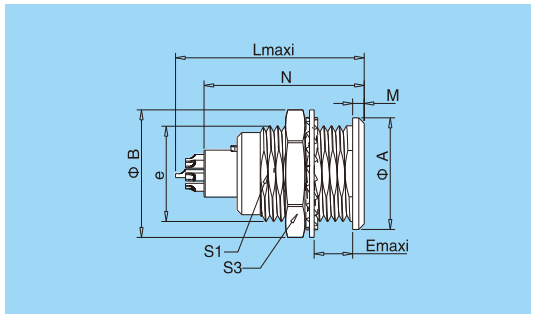
Reference		Dimensions (mm)							
Model	Series	A	B	e	E	L	M	N1)	S1
TA	0B	10.0	12.4	M9x0.6	4.2	10.8	11.2	18.9	8.2
TA	1B	14.0	15.8	M12x1.0	5.4	25.2	12.5	21.6	10.5
TA	2B	18.0	19.2	M15x1.0	6.0	28.7	13.8	23.9	13.5
TA	3B	22.0	25.0	M18x1.0	5.8	32.1	17.0	30.2	16.5

Panel cut-out (page 47)

➤➤➤ B Series

B Series Fixed Socket Dimensions

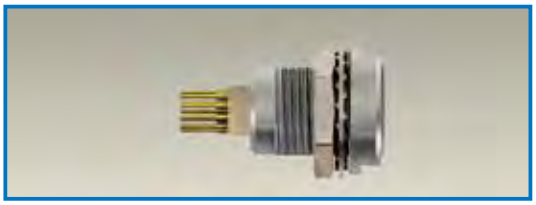


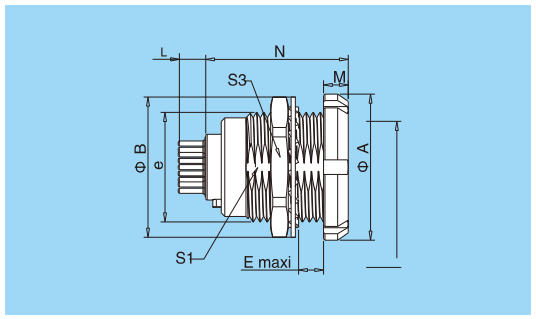


ZG body style, Fixed socket, nut fixing, key (G) or keys (A…M and R)(front panel mounting)

Reference		Dimensions (mm)								
Model	Series	A	B	e	E	L	M	N1)	S1	S3
ZG	00B	8.0	10.0	M7x0.5	6.0	15.5	1.0	13.5	6.3	9.0
ZG	0B	10.0	12.4	M9x0.6	7.0	16.0	1.3	17.8	8.2	11.0
ZG	1B	14.0	16.0	M12x1.0	7.5	24.5	1.5	20.8	10.5	14.0
ZG	2B	18.0	19.0	M15x1.0	8.5	24.5	2.0	20.2	13.5	17.0
ZG	3B	22.0	25.0	M18x1.0	11.5	30.0	2.0	25.2	16.5	22.0
ZG	4B	28.0	34.0	M35x1.0	11.0	43.5	3.1	39.6	33.5	-

Panel cut-out (page 47)

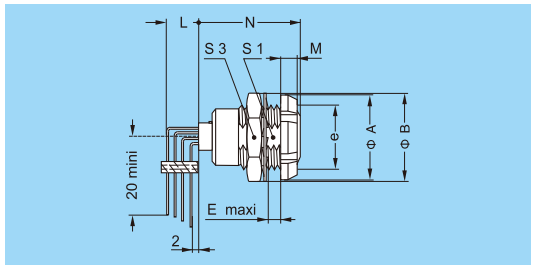




ZC body style, Fixed socket with two nuts, key (G) or keys (A…M and R)and straight contact for printed circuit (back panel mounting)

Reference		Dimensions (mm)								
Model	Series	A	B	e	E	L	M	N1)	S1	S3
ZC	0B	12.0	12.5	M9x0.6	5.5	3.2	2.5	17.8	8.2	11.0
ZC	1B	15.0	16.0	M12x1.0	6.0	3.5	3.5	20.8	10.5	14.0
ZC	2B	20.0	19.2	M15x1.0	6.5	3.9	3.5	20.2	13.5	17.0

Panel cut-out (page 47)
PCB drilling pattern (page 48)
Note: Length «L» depends on the number of contacts



ZC body style, Fixed socket with two nuts, key (G) or keys (A...F) with elbow (90°) contact for printed circuit (back panel mounting)

Reference		Dimensions (mm)							
Model	Series	A	B	e	E	M	N max	S1	S3
ZC	0B	12.0	12.4	M9x0.6	2.4	2.5	18.3	8.2	11.0
ZC	1B	16.0	15.8	M12x1.0	6.0	3.5	20.3	10.5	14.0
ZC	2B	20.0	19.2	M15x1.0	6.5	3.5	22.3	13.5	17.0
ZC	3B	24.0	25.0	M18x1.0	9.0	4.5	25.8	16.5	22.0

Panel cut-out (page 47)
PCB drilling pattern (page 48)
Note: Length «L» depends on the number of contacts

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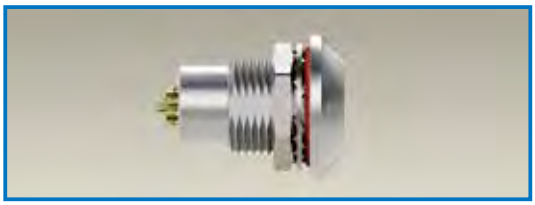
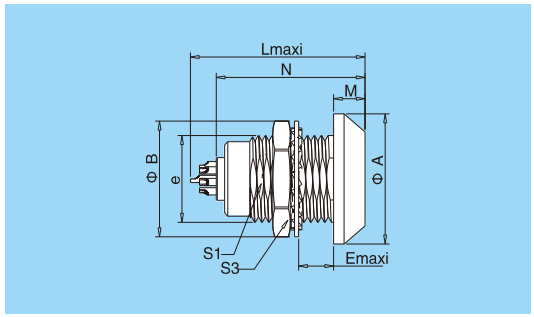
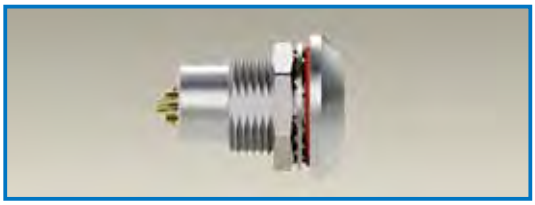


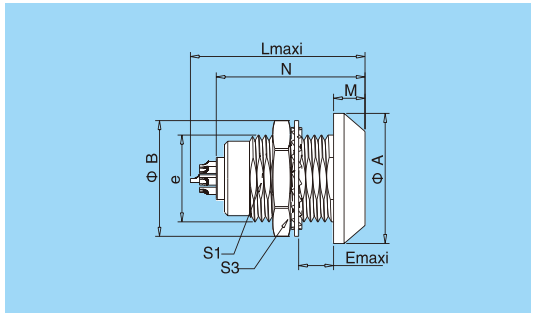


MG body style, Fixed socket, nut fixing, key (G) or keys (A…M and R), watertight or vacuumtight

Reference		Dimensions (mm)								
Model	Series	A	B	e	E	L	M	N1)	S1	S3
MG	0B	13.0	12.4	M9x0.6	7.0	20.8	3.0	17.0	8.2	11.0
MG	1B	18.0	16.0	M12x1.0	7.0	24.3	4.5	21.5	10.5	14.0

Panel cut-out (page 47)

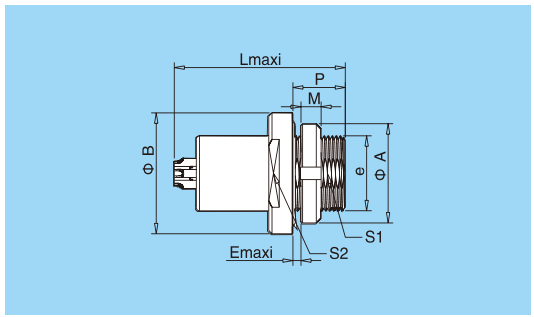




MH body style, Fixed socket, nut fixing, key (G) or keys (A…M), watertight or vacuumtight (watertight when mated)

Reference		Dimensions (mm)								
Model	Series	A	B	e	E	L	M	P	S1	S3
MH	0B	13.0	12.4	M9x0.6	5.0	20.5	2.5	9.0	8.2	-
MH	1B	18.0	16.0	M12x1.0	2.0	24.3	3.2	7.0	10.5	13.0
MH	2B	22.0	19.0	M15x1.0	4.5	24.5	3.5	9.6	13.5	15.0

Panel cut-out (page 47)

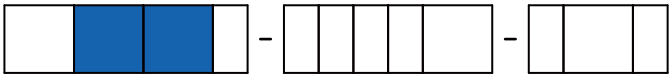


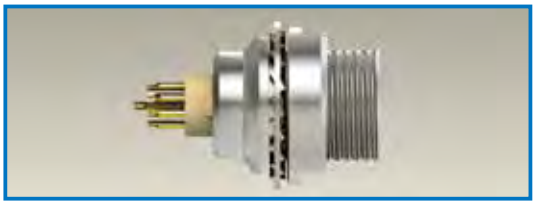
ME body style, Fixed socket, nut fixing, key (G) or keys (A…M), watertight or vacuumtight (back panel mounting)

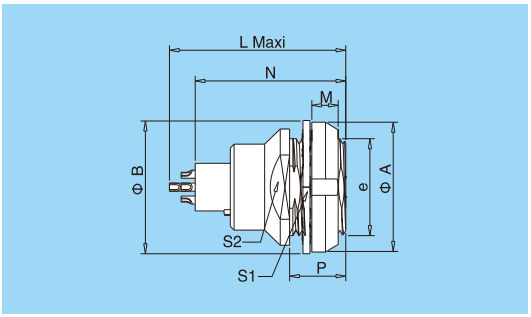
Reference		Dimensions (mm)								
Model	Series	A	B	e	E	L	M	P	S1	S2
ME	0B	12.0	13.0	M9x0.6	5.5	20.2	2.5	9.0	8.2	-
ME	1B	16.0	18.0	M12x1.0	5.5	26.6	3.5	11.0	10.5	-
ME	2B	20.0	20.0	M15x1.0	5.5	31.6	3.5	9.6	13.5	15.0

Panel cut-out (page 47)

➤➤➤ B Series



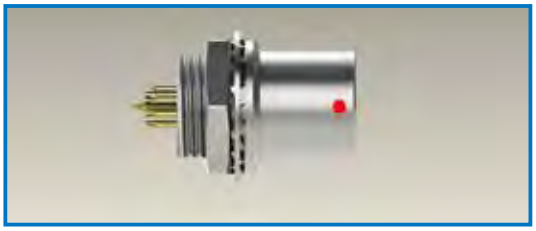


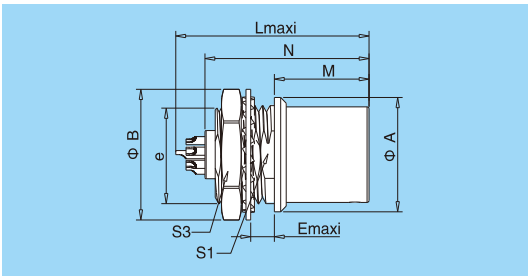


ZE body style, Fixed socket, nut fixing, key (G) or keys (A …M and R) (back panel mounting)

Reference		Dimensions (mm)								
Model	Series	A	B	e	E	L	M	N1)	P	S1
ZE	0B	12.0	12.5	M9x0.6	2.4	20.7	2.5	19.1	6.3	8.2
ZE	1B	16.0	16.0	M12x1.0	6.5	23.0	3.5	21.1	11.0	10.5
ZE	2B	20.0	20.0	M15x1.0	3.0	26.7	3.5	24.6	9.0	13.5
ZE	3B	24.0	25.0	M18x1.0	5.0	30.7	4.5	28.1	12.0	16.5

Panel cut-out (page 47)

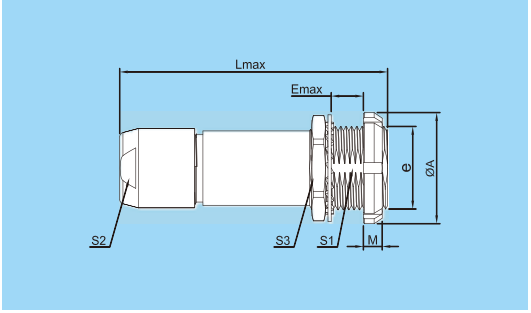




ZH body style, Fixed socket, nut fixing, key (G) or keys (A…M and R), and protruding shel

Reference		Dimensions (mm)								
Model	Series	A	B	e	E	L	M	N	S1	S3
ZH	0B	10.0	12.4	M9x0.6	2.0	12.5	19.5	19.1	8.2	11.0
ZH	1B	14.0	15.8	M12x1.0	4.0	12.0	21.7	21.1	10.5	14.0
ZH	2B	18.0	19.2	M15x1.0	5.1	12.5	22.7	24.6	13.5	17.0
ZH	3B	22.0	25.0	M18x1.0	7.1	13.5	30.7	30.3	16.5	22.0

Panel cut-out (page 47)



DF body style, Fixed socket, with two nuts, key (G) or keys (A…M and R), cable collet (back panel mounting)

Reference		Dimensions (mm)								
Model	Series	A	B	e	E	L	M	S1	S2	S3
DF	0B	10.0	12.4	M9x0.6	7.0	35.5	1.2	8.2	7.0	11.0
DF	1B	14.0	15.8	M12x1.0	7.5	40.5	1.5	10.5	9.0	14.0
DF	2B	18.0	19.2	M15x1.0	8.5	47.0	1.8	13.5	12.0	17.0
DF	3B	22.0	25.0	M18x1.0	11.5	56.0	2.0	16.5	14.0	22.0

Panel cut-out (page 47)
Cable assembly (page 152)
Plug assembly instructions (page 153)
Injection molding (page 163)

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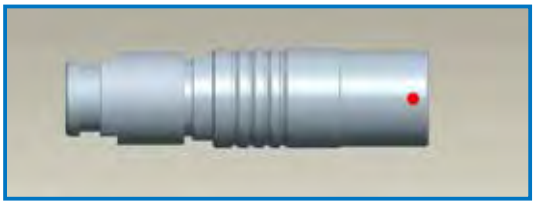
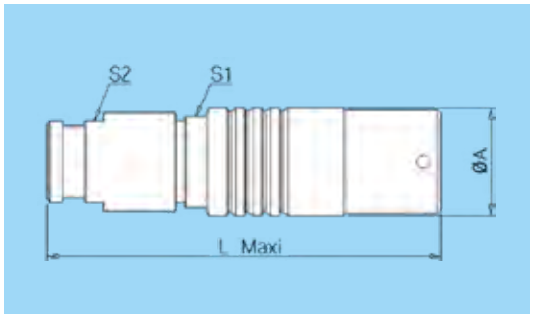
B Series Free Socket Dimensions

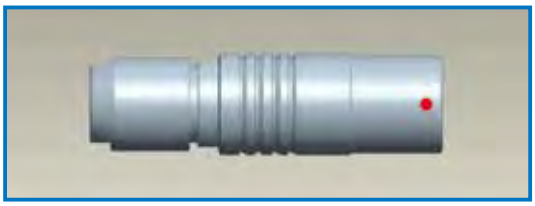


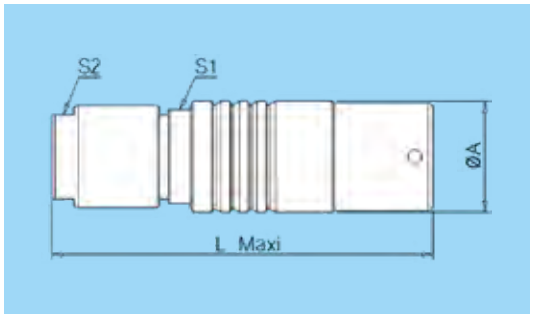


DH body style, Free socket, key (K) or keys (A… M), cable collet and nut for fitting a bend relief

Reference		Dimensions (mm)			
Model	Series	A	L	S1	S2
DH	0B	9.5	35.5	8.0	7.0
DH	1B	12.5	40.5	10.0	9.0
DH	2B	16.5	47.0	13.0	12.0
DH	3B	19.0	56.0	15.0	14.0

Cable assembly (page 152)
Plug assembly instructions (page 153)
Injection molding (page 163)
Note: to order, add a «B» at the end of the reference.The bend relief must be ordered separately (page 149).

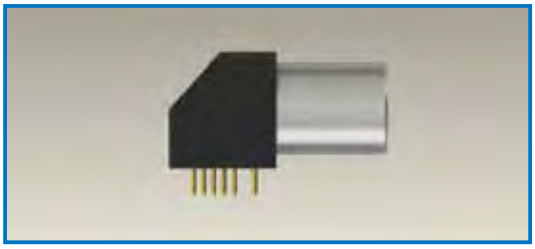


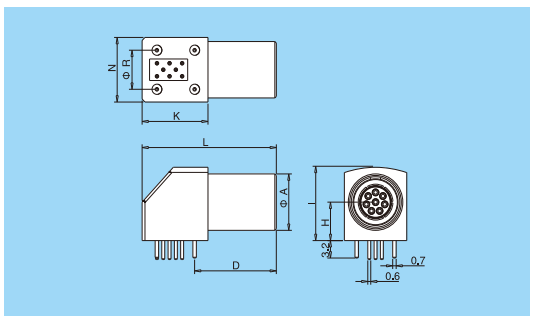


DH body style, Free socket, key (G) or keys (A…M and R), cable collet

Reference		Dimensions (mm)			
Model	Series	A	L	S1	S2
DH	0B	9.5	35.5	8.0	7.0
DH	1B	12.5	40.5	10.0	9.0
DH	2B	16.5	47.0	13.0	12.0
DH	3B	19.0	56.0	15.0	14.0

Cable assembly (page 152)
Plug assembly instructions (page 153)
Injection molding (page 163)



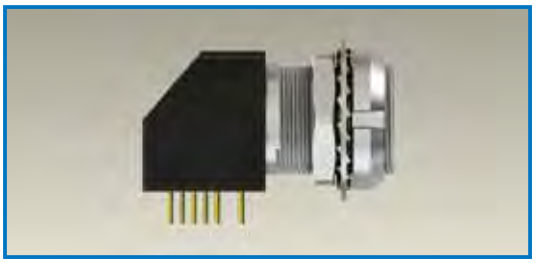


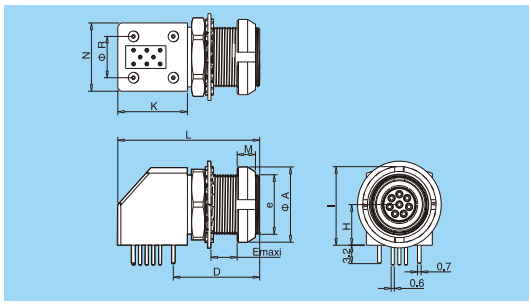
ZP body style, Elbow (90°) socket for printed circuit, key (G) or keys (A…F) (solder or screw fixing)

Reference		Dimensions (mm)							
Model	Series	A	D	H	I	K	L	N	R
ZP	0B	9.0	14.6	6.7	12.7	13.3	25.0	11.7	7.62
ZP	1B	11.0	16.6	7.5	14.0	13.3	27.0	12.6	7.62

PCB drilling pattern (page 48)

➤➤➤ B Series

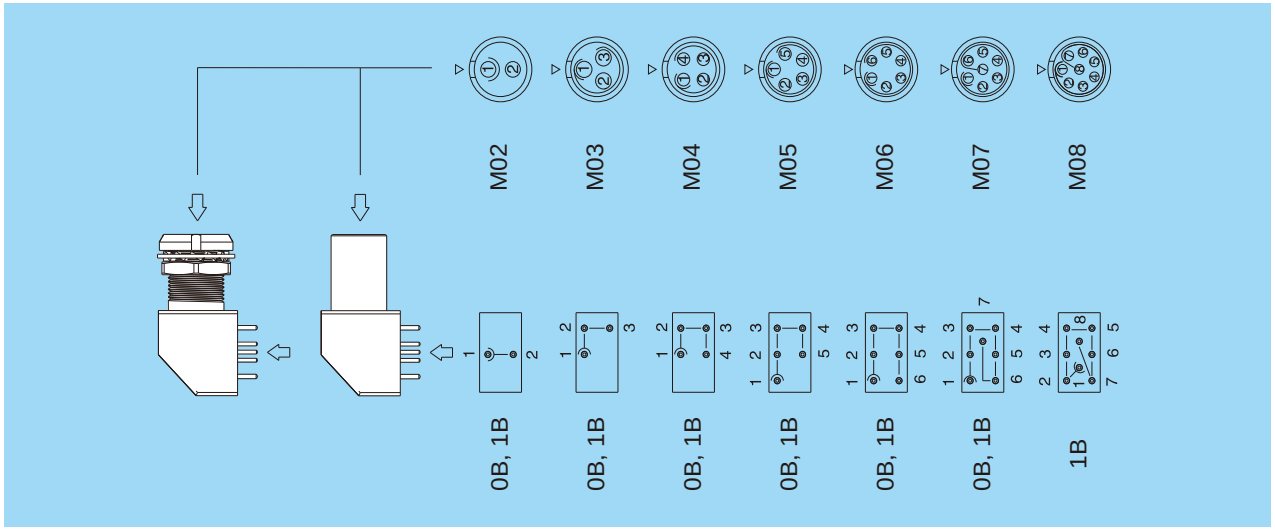




ZX body style, Elbow (90°) socket for printed circuit with two nuts, key (G) or keys (A…F) (solder or screw fixing)(back panel mounting)

Reference		Dimensions (mm)								
Model	Series	A	D	e	E	H	I	L	M	N	R
ZX	0B	12.0	14.6	M9x0.6	6.0	6.7	12.6	25.0	2.5	11.7	7.62
ZX	1B	14.0	16.5	M11x0.5	7.5	7.5	14.0	27.0	3.5	12.6	7.62

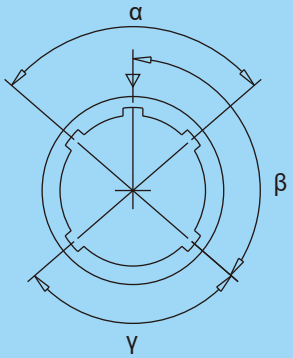
PCB drilling pattern (page 48)



➤➤➤ Alignment Key

B series connector model part numbers are composed of three letters. The LAST LETTER indicates the key position and the contact type (male or female)

Front view of a socket



Ref.	Nb. of keys	Angles	Series		Nb. of keys	Angles	Series		Contact type	
			0B	1B			2B	3B	Plug	Socket
G	1		0°	0°	1		0°	0°	Male	Female
A	2	α	30°	30°	2	α	30°	30°	Male	Female
B	2		60°	60°	2		45°	45°	Male	Female
C	2		90°	90°	2		60°	60°	Male	Female
D	2	β	135°	135°	2	γ	95°	95°	Male	Female
E	2		145°	145°	2	β	120°	120°	Male	Female
F	2		155°	155°	2		145°	145°	Male	Female
J	2	γ	45°	45°	2	α	37.5°	37.5°	Female	Male

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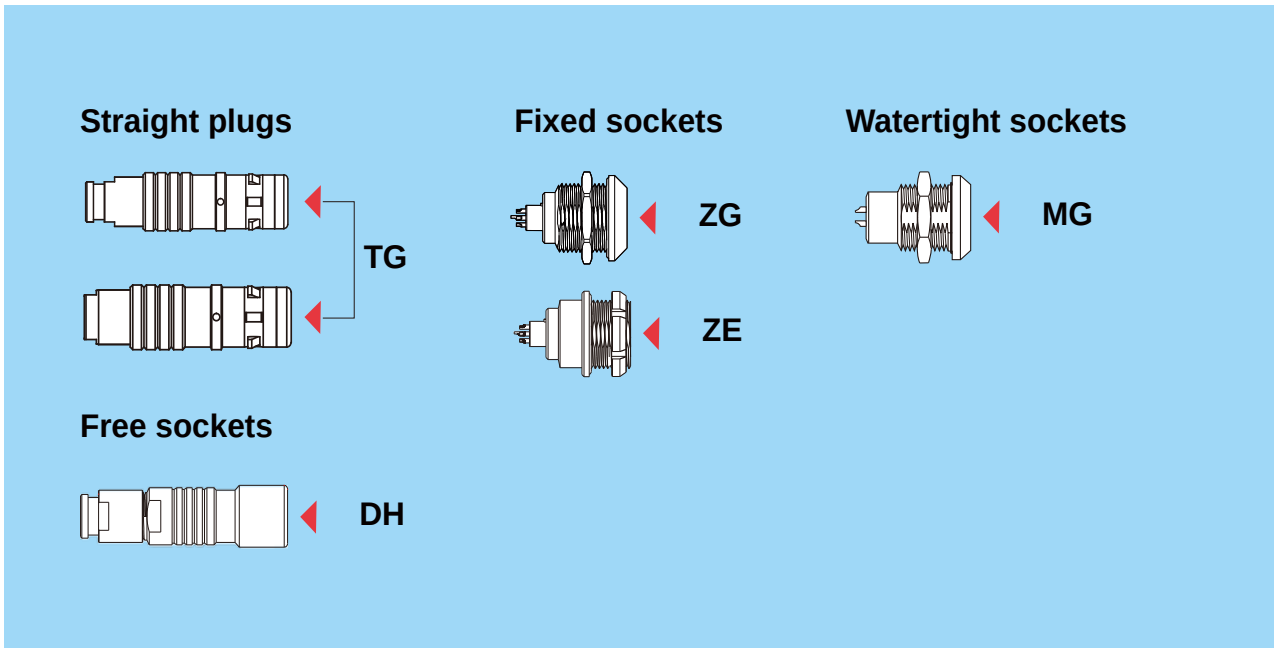
K Series(Outdoor, Keyed)

K series connectors have been specifically designed for outdoor applications.

They include an inner sleeve and two seals to prevent penetration of solids or liquids into the housing formed by the plug,free socket, fixed socket. All models of this series are watertight when mated to give a protection index of IP68 (in mated condition) when correctly assembled to an appropriate cable (IP66 otherwise).

Body style



➤➤➤ K Series

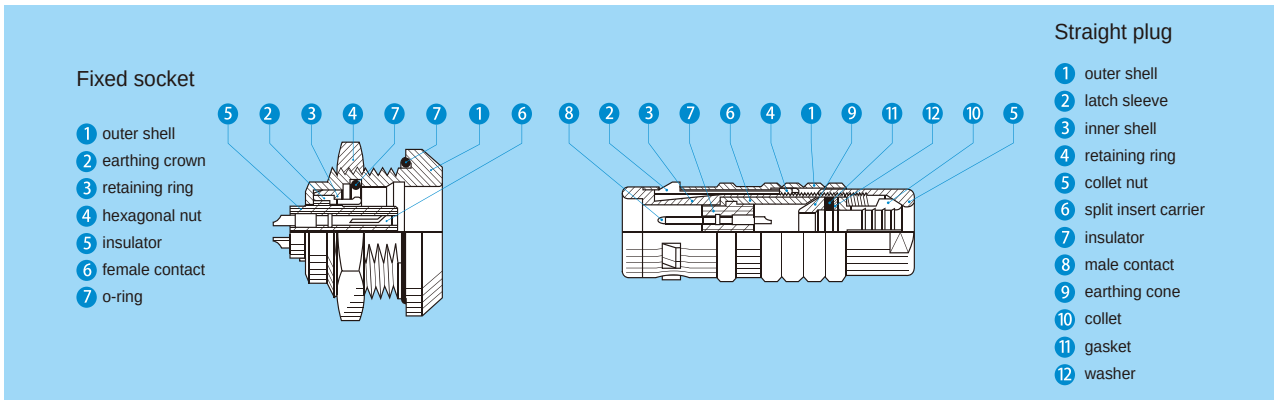
Main Features

- security of the Push-Pull self-latching system
- rugged housing for extreme working conditions.
- multipole types 2 to 26 contacts
- solder, crimp or print contacts (straight or elbow)
- watertight connection (IP 68/IP 66)
- high packing density for space savings
- multiple key options to avoid cross mating of similar connectors
- keying system («G» key standard) for connector alignment
- 360° screening for full EMC shielding.

Technical Characteristics

- Mating cycles: > 5000
- Humidity: up to 95% at 60° C
- Temperature range: - 45° C, + 125° C
- Resistance to vibrations: 10-2000 Hz, 15g
- Shock resistance: 100 g, 6 ms
- Salt spray corrosion test: > 48h
- Protection index (mated): IP 68/IP 66

Part Section Showing Internal Components



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K Series Part Numbering System

Plug

C	B	T	G	1	K	G	–	S	M	S	M	0	6	–	D	5	2	0

Free Socket

C	B	D	H	1	K	G	–	S	F	S	M	0	6	–	D	5	2	B

Housing material *(page 40)*	**Variant** *(page 46)*
Body style *(page 32)*	**Cable collet φ** *(page 45)*
Series *(page 32)*	**Collet type** *(page 45)*
Alignment key *(page 34)*	**No. of contact** *(page 43)*
Insulators material *(page 41)*	**Insert configuration** *(page 43)*
Contact polarity *(page 41)*	**Contact type** *(page 42)*

Socket

C	B	Z	G	1	K	G	–	S	F	S	M	0	6	–	0	0	0	0

Housing material *(page 40)*	**0:** Without **E:** With — **Earthing tag**
Body style *(page 32)*	**00:** Solder contact — **Length of PCB contact**
Series *(page 32)*	**0:** Without Potting **S:** Potting silicone **R:** Potting resin — **Glue type**
Alignment key *(page 34)*	**No. of contact** *(page 43)*
Insulators material *(page 41)*	**Insert configuration** *(page 43)*
Contact polarity *(page 41)*	**Contact type** *(page 42)*

Part Number Example

Straight Plug with Cable Collet:

CBTG1KG-SMSM06-D520 = TG body style, outer shell in chrome-plated brass, 1K series, straight plug with key (G), PPS insulator, male solder contacts, multipole type with 6 contacts, D type cable collet of 5.2 mm diameter.

Free socket:

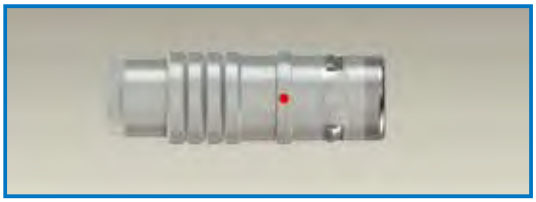
CBDH1KG-SFSM06-D52B = DH body style, outer shell in chrome-plated brass, 1K series, free socket with key (G), PPS insulator, female solder contacts, multipole type with 6 contacts, D type cable collet of 5.2 mm diameter and nut for fitting a bend relief.

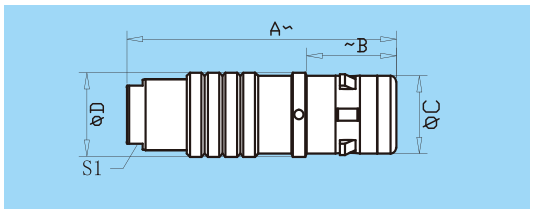
Fixed Socket:

CBZG1KG-SFSM06-0000 = ZG body style, outer shell in chrome-plated brass, 1K series, fixed socket with key (G), PPS insulator, female solder contacts, multipole type with 6 contacts.

➤➤➤ K Series

K Series Plug and Free Socket Dimensions

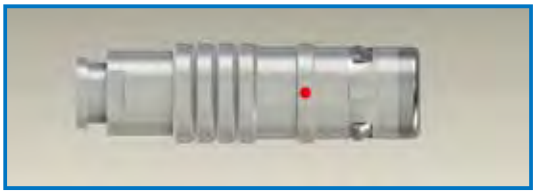


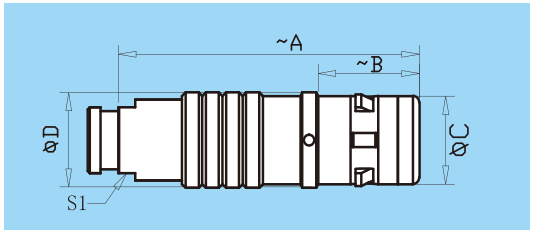


TG body style, Straight plug, key (G) or keys (A to F, L and R), cable collet

Reference		Dimensions (mm)				
Model	Series	A	B	C	D	S1
TG	0K	34.0	11.4	10.0	11.0	8.0
TG	1K	42.0	14.3	12.0	13.0	9.0
TG	2K	52.0	16.0	15.0	16.0	12.0
TG	3K	61.0	20.4	18.0	19.0	15.0

Cable assembly (page 152)
Plug assembly instructions (page 153)
Injection molding (page 163)

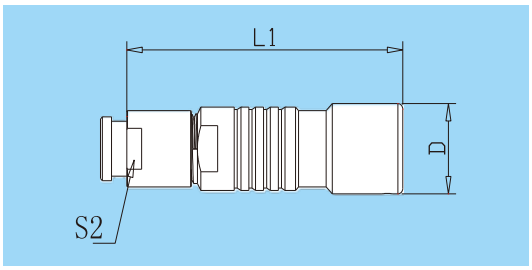




TG body style, Straight plug, key (G) or keys (A to F, L and R), cable collet and nut for fitting a bend relief

Reference		Dimensions (mm)				
Model	Series	A	B	C	D	S1
TG	0K	34.0	11.4	10.0	11.0	8.0
TG	1K	42.0	14.3	12.0	13.0	9.0
TG	2K	52.0	16.0	15.0	16.0	12.0
TG	3K	61.0	20.4	18.0	19.0	15.0

Cable assembly (page 152)
Plug assembly instructions (page 153)
Injection molding (page 163)
Note: to order, add a «B» at the end of the reference.The bend relief must be ordered separately (page 149).



DH body style, Free socket, key (G) or keys (A to F, L and R), cable collet and nut for fitting a bend relief

Reference		Dimensions (mm)		
Model	Series	D	L	S2
DH	0K	13.0	34.0	7.0
DH	1K	15.0	45.0	9.0
DH	2K	19.0	54.0	12.0

Cable assembly (page 152)
Injection molding (page 163)
Note: to order, add a «B» at the end of the reference.The bend relief must be ordered separately (page 149).

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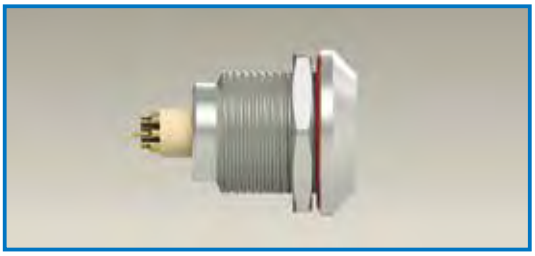
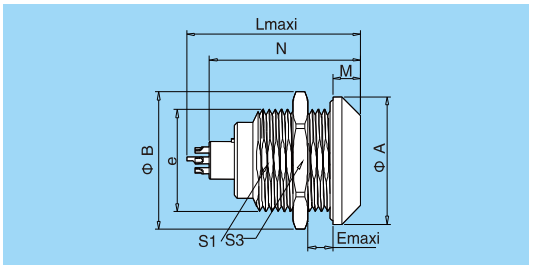
K Series Fixed Socket Dimensions

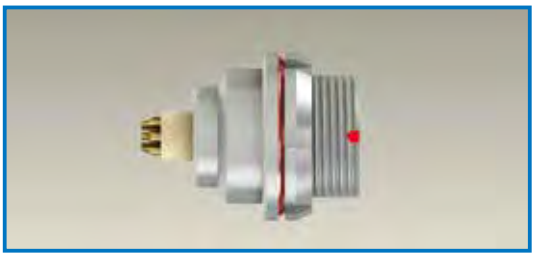


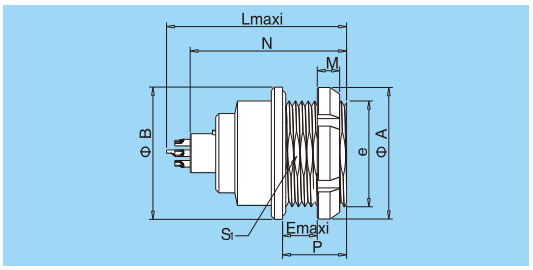


ZG body style, Fixed socket, nut fixing, key (G) or keys (A to F, L and R)

Reference		Dimensions (mm)								
Model	Series	A	B	e	E	L	M	N1)	S1	S3
ZG	0K	18.0	19.2	M14x1.0	6.0	21.7	4.0	20.1	12.5	17.0
ZG	1K	20.0	21.5	M16x1.0	9.0	27.0	4.5	25.1	14.5	19.0
ZG	2K	25.0	27.0	M20x1.0	9.0	30.7	5.0	28.6	18.5	24.0
ZG	3K	31.0	30.0	M24x1.0	11.0	36.8	6.0	30.6	22.0	30.0

Panel cut-out (page 47)

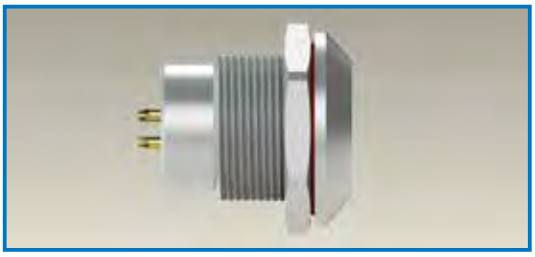


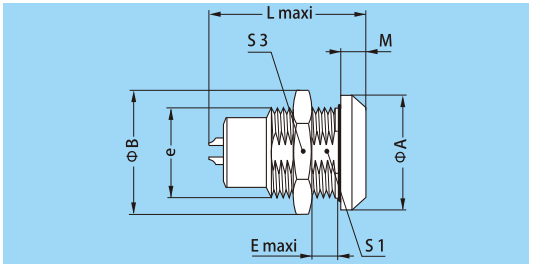


ZE body style, Fixed socket, nut fixing, key (G) or keys (A to F, L and R) (back panel mounting)

Reference		Dimensions (mm)								
Model	Series	A	B	e	E	L	M	N1)	P	S1
ZE	0K	18.0	18.0	M14x1.0	3.4	21.7	3.5	20.1	7.0	12.5
ZE	1K	20.0	20.0	M16x1.0	6.2	27.0	3.5	25.1	10.0	14.5
ZE	2K	25.0	25.0	M20x1.0	5.0	30.7	3.5	28.6	10.0	18.5

Panel cut-out (page 47)



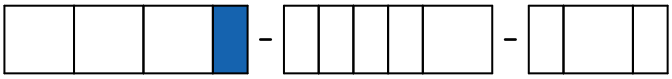


MG body style, Fixed socket, nut fixing, key (G) or keys (A to F and L), watertight or vacuumtight

Reference		Dimensions (mm)							
Model	Series	A	B	e	E	L	M	S1	S3
MG	0K	18.0	19.2	M14x1.0	5.5	21.7	4.0	12.5	17.0
MG	1K	20.0	21.5	M16x1.0	9.0	30.0	4.5	14.5	19.0
MG	2K	25.0	27.0	M20x1.0	13.0	33.7	5.0	18.5	24.0

Panel cut-out (page 47)

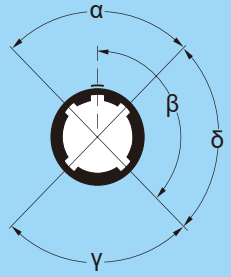
➤➤➤ Alignment Key



Alignment Key and Polarized Keying System

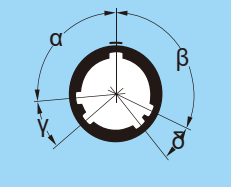
K series connector model part numbers are composed of three letters. The LAST LETTER indicates the key position and the contact type (male or female).

Front view of a socket



Ref.	Nb. of keys	Angles	Series 0K	1K	2K	3K	4K	5K	Contact type: Plug	Socket
G	1		0°	0°	0°	0°	0°	0°	Male	Female
A	2	α	30°	30°	30°	30°	30°	30°	Male	Female
B	2		45°	45°	45°	45°	45°	45°	Male	Female
C	2		60°	60°	60°	60°	60°	60°	Male	Female
D	2	γ	95°	95°	95°	95°	95°	95°	Male	Female
E	2	β	120°	120°	120°	120°	120°	120°	Male	Female
F	2		145°	145°	145°	145°	145°	145°	Male	Female
L	2	γ	75°	75°	75°	75°	75°	75°	Female	Male

Front view of a socket



Ref.	Nb. of keys	Angles	Series 0K	1K	2K	3K	4K	5K	Contact type: Plug	Socket
R	5	α	-	-	-	95°	-	-	Male	Female
		β	-	-	-	115°	-	-		
		γ	-	-	-	35°	-	-		
		δ	-	-	-	25°	-	-		

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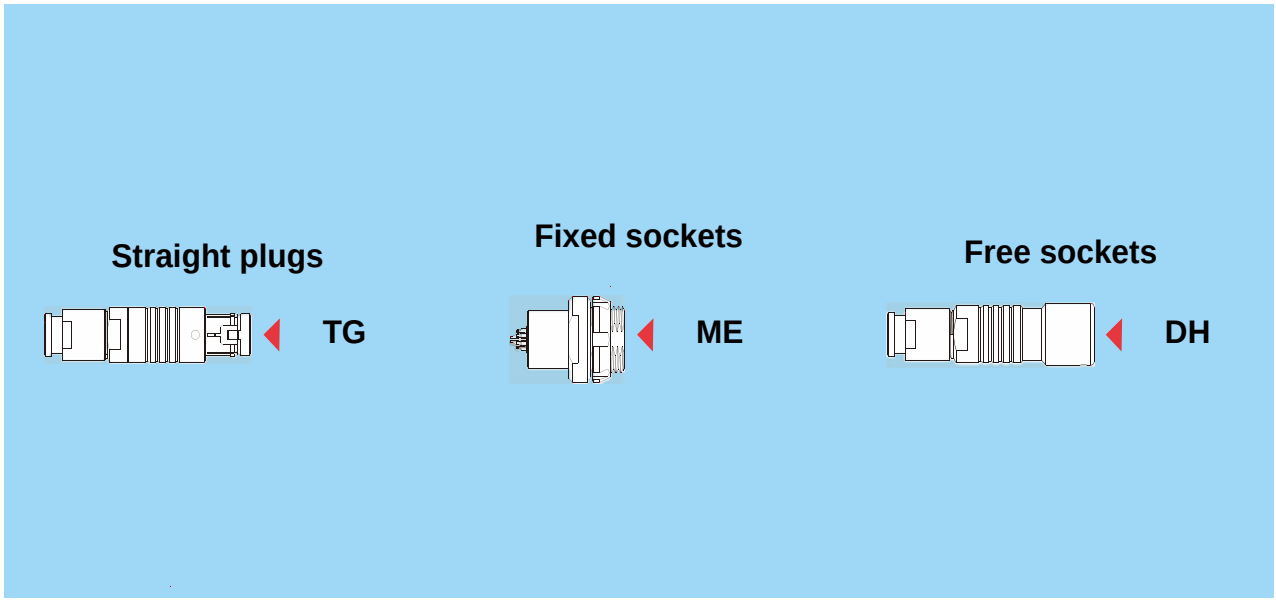
C Series (Outdoor, arc-shape metal guides)

Body style



➤➤➤ C Series

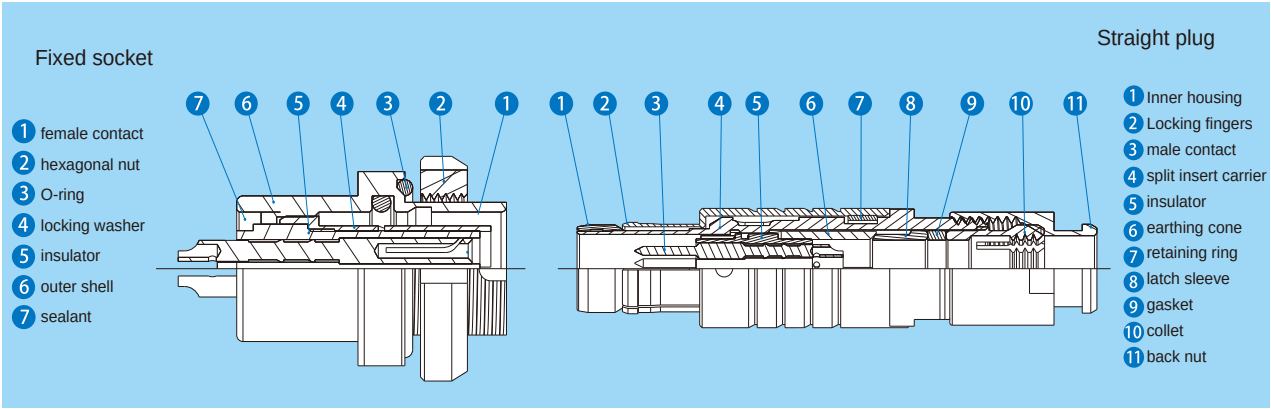
Main Features

- security of the Push-Pull self-latching system
- multipole types 2 to 19 contacts
- Easy mating, can be blind-mated (guiding mechanism ensures precise alignment)
- high packing density for space savings
- solder, print (straight or elbow) contacts
- keying system («G» key standard for connector alignment)
- multiple key options to avoid cross mating of similar connectors
- 360° screening for full EMC shielding

Technical Characteristics

- Mating cycles: > 5000
- Humidity: up to 95% at 60° C
- Temperature range: - 45° C, + 125° C
- Resistance to vibrations: 10-2000 Hz, 15g
- Shock resistance: 100 g, 6 ms
- Salt spray corrosion test: > 48h
- Protection index (mated): IP 68/IP 66

Part Section Showing Internal Components



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C Series Part Numbering System

Plug

C	B	T	G	1	C	G	–	S	M	S	M	0	6	–	D	5	2	0

Free Socket

C	B	D	H	1	C	G	–	S	F	S	M	0	6	–	D	5	2	B

Housing material *(page 40)*	**Variant** *(page 46)*
Body style *(page 38)*	**Cable collet φ** *(page 45)*
Series *(page 38)*	**Collet type** *(page 45)*
Alignment key *(page 39)*	**No. of contact** *(page 43)*
Insulators material *(page 41)*	**Insert configuration** *(page 43)*
Contact polarity *(page 41)*	**Contact type** *(page 42)*

Socket

C	B	M	E	1	C	G	–	S	F	S	M	0	6	–	0	0	0	0

Housing material *(page 40)*	**0:** Without **E:** With — **Earthing tag**
Body style *(page 38)*	**00:** Solder contact — **Length of PCB contact**
Series *(page 38)*	**0:** Without Potting **S:** Potting silicone **R:** Potting resin — **Glue type**
Alignment key *(page 39)*	**No. of contact** *(page 43)*
Insulators material *(page 41)*	**Insert configuration** *(page 43)*
Contact polarity *(page 41)*	**Contact type** *(page 42)*

Part Number Example

Straight Plug with Cable Collet:

CBTG1CG-SMSM06-D520 = TG body style, outer shell in chrome-plated brass, 1C series, straight plug with key (G), PPS insulator, male solder contacts, multipole type with 6 contacts, D type cable collet of 5.2 mm diameter.

Free socket:

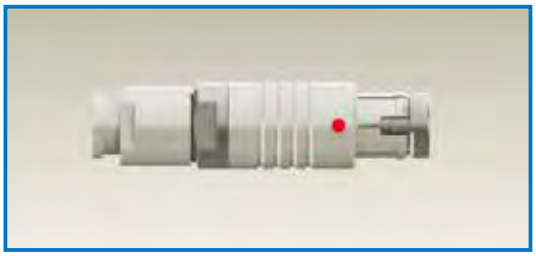
CBDH1CG-SFSM06-D52B = DH body style, outer shell in chrome-plated brass, 1C series, free socket with key (G), PPS insulator, female solder contacts, multipole type with 6 contacts, D type cable collet of 5.2 mm diameter and nut for fitting a bend relief.

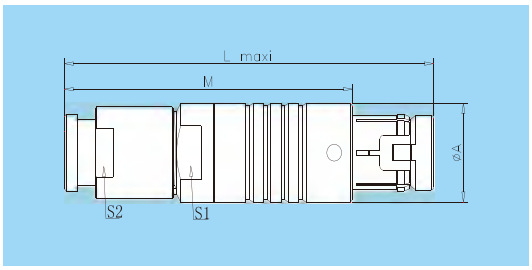
Fixed Socket:

CBME1CG-SFPM06-0000 = ME body style, outer shell in chrome-plated brass, 1C series, fixed watertight socket with key (G), PPS insulator, female straight PCB contacts, multipole type with 6 contacts

➤➤➤ C Series

C Series Plug and Socket Dimensions

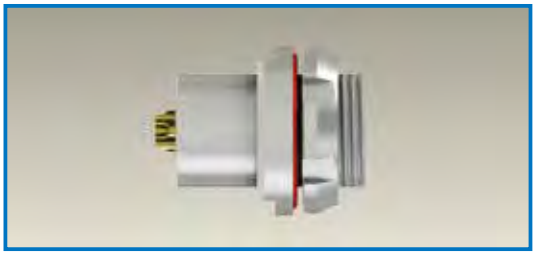


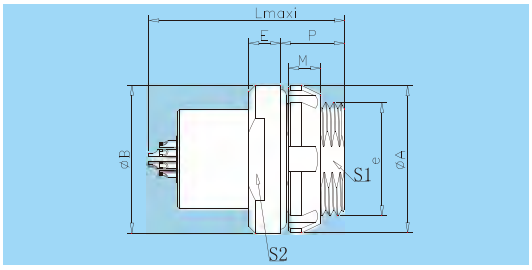


TG body style, Straight plug, key (G) or keys (A, B),cable collet and nut for fitting a bend relief

Reference		Dimensions (mm)				
Model	Series	A	L	M	S1	S2
TG	0C	9.4	37.0	28.0	8.0	7.0
TG	1C	12.0	47.0	35.0	10.0	10.0
TG	2C	15.0	50.0	38.0	13.0	12.0
TG	3C	18.0	61.0	40.0	16.0	15.0

Cable assembly (page 152)
Plug assembly instructions (page 154)
Note: To order, add a «B» at the end of the reference. The bend relief must be ordered separately (page 149).

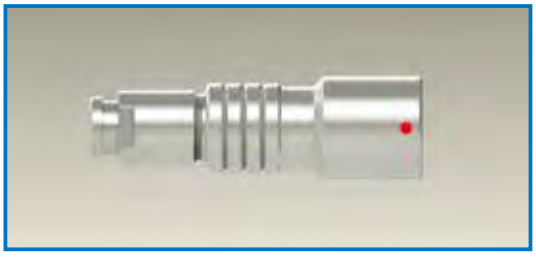


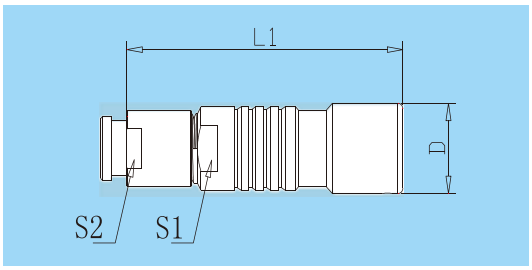


ME body style, Fixed socket, nut fixing, key (G) or keys (A, B), watertight or vacuumtight

Reference		Dimensions (mm)								
Model	Series	A	B	e	L	E	M	P	S1	S2
ME	0C	14.0	14.5	M9x0.5	21.0	3.0	3.0	6.5	8.2	12.0
ME	1C	16.0	18.0	M14x1.0	26.0	4.0	4.0	8.0	12.0	15.0
ME	2C	22.0	21.0	M16x1.0	29.0	4.0	4.0	7.0	14.8	18.0
ME	3C	25.0	26.0	M20x1.0	33.0	4.0	3.5	8.0	18.0	22.0

Panel cut-out (page 47)





DH body style, Free socket, key (G) or keys (A, B), cable collet and nut for fitting a bend relief

Reference		Dimensions (mm)			
Model	Series	D	L	S1	S2
DH	0C	9.5	35.5	8.0	7.0
DH	1C	12.5	40.5	10.0	9.0
DH	2C	16.5	47.0	13.0	12.0
DH	3C	19.0	56.0	15.0	15.0

Cable assembly (page 152)
Note: To order, add a «B» at the end of the reference. The bend relief must be ordered separately (page 149).

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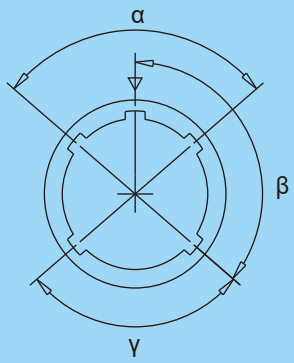
C Series Alignment Key

C series connector model part numbers are composed of three letters. The LAST LETTER indicates the key position and the contact type (male or female)

Front view of a socket



Ref.	Nb. of keys	Angles	Series		Nb. of keys	Angles	Series		Contact type	
			0C	1C			2C	3C	Plug	Socket
G	1		0°	0°	1		0°	0°	Male	Female
A	2	α	30°	30°	2	α	30°	30°	Male	Female
B	2		60°	60°	2		45°	45°	Male	Female
C	2		90°	90°	2		60°	60°	Male	Female
D	2	β	135°	135°	2	γ	95°	95°	Male	Female
E	2		145°	145°	2	β	120°	120°	Male	Female
F	2		155°	155°	2		145°	145°	Male	Female
J	2	γ	45°	45°	2	α	37.5°	37.5°	Female	Male

➤➤➤ Housing

Components Material

Ref.	Outer shell and collet nut		Latch sleeve + earthing crown		Other metallic components		Note
	Material	Surf. treatment	Material	Surf. treatment	Material	Surf. treatment	
CB	Brass	Chrome	Brass/bronze	Nickel	Brass	Nickel	First choice alternative
NB	Brass	Nickel	Brass/bronze	Nickel	Brass	Nickel	
BB	Brass	Black chrome	Brass/bronze	Nickel	Brass	Nickel	
S4	Stainless steel 304	Anodized	Brass/bronze	-	Brass	Nickel	
S6	Stainless steel 316L	Anodized	Stainless steel 316L	-	Stainless steel 316L	-	
SB	Brass	Satin nickel	Brass/bronze	Nickel	Brass	Nickel	
HB	Brass	High phosphorus chemical nickel	Brass/bronze	Nickel	Brass	Nickel	
HA	Aluminium alloy	High phosphorus chemical nickel	Brass/bronze	Nickel	Brass	Nickel	
GB	Brass	Golden yellow	Brass/bronze	Nickel	Brass	Nickel	
RA	Aluminium AlMgSiSn1Bi	Ruthenium over electroless nickel	Brass/bronze	Nickel	Brass	Nickel	

Brass

Connectors are mostly brass case, which can meet most military or civil application requirements. The white surface of brass shell has nickel-chromium protective layer, which has remarkable effect in resisting industrial waste, salt spray and most corrosives.
In addition, we also have nickel plating, nickel-gold plating, nickel-black chromium plating and other options for application in specific environments of the anti-corrosion coatings.

Aluminium alloy

In the aviation, aerospace industry, portable mobile devices and so on. It is suitable for the connector with aluminium alloy shell.
In addition to its high mechanical lightness and excellent corrosion resistance, the surface of aluminium alloys can be protected by anodic plating, with a variety of colors to choose from.

Stainless steel

For the use of harsh environment, the surface coating is easy to be damaged. We recommend the use of stainless steel materials. AISI304 stainless steel and AISI316L stainless steel are usually used.
AISI304 stainless steel is recommended for special fields such as nuclear industry. It can resist radiation and nitric acid corrosion.
AISI316L stainless steel is recommended for medical and shipping industries. It has no surface treatment and strong corrosion resistance.

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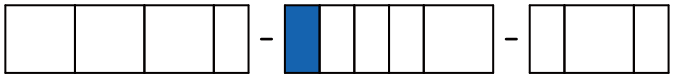


➤➤➤ Insulators

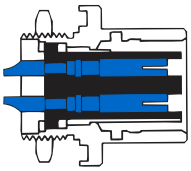
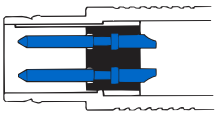
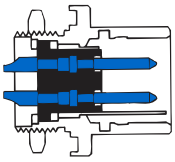
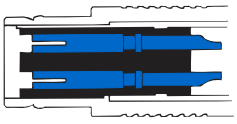
Material of Insulators

Reference	Material	Contact type	Note
S	PPS	Solder or print	First choice alternative
K	PEEK	Solder or print	Special order alternative

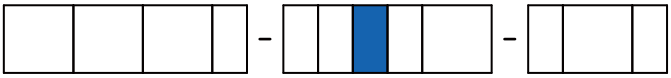
➤➤➤ Contact Polarity

Protect users from contact with dangerous voltages

Standard Polarity:
The contacts of the socket are protected against accidental touch.
This version is recommended when voltage is present on the socket
Inverted Polarity:
The contacts of the plug are protected against accidental touch.
This version is recommended when voltage is present on the plug.

	Socket	Plug
Standard Polarity	 **F:** Female Contact	 **M:** Male Contact
Inverted Polarity	 **M:** Male Contact	 **F:** Female Contact

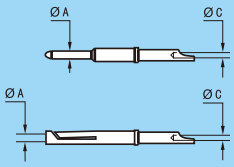
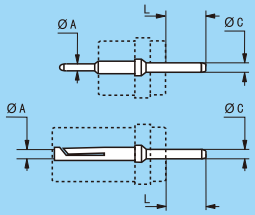
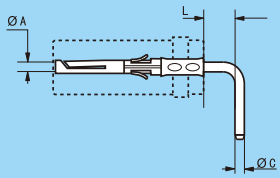
➤➤➤ Contacts Type



Soldering characteristics

No need to order specific tools, a simple soldering iron is sufficient
Ideal for very small and fragile conductors
Contacts with solder cups to allow the solder to flow

Contacts type reference for plugs, free or fixed sockets

Contact type	Reference	Contact			Conductor					
					Solid		Stranded			
		ΦA (mm)	ΦC (mm)		AWG Max.	Section max. (mm²)	AWG		Section (mm²)	
							Min.	Max.	Min.	Max.
Solder 	S	0.5	0.40	-	28	0.09	-	30	-	0.05
		0.5	0.45	-	28	0.09	-	28	-	0.09
		0.7	0.60	-	24	0.25	-	26	-	0.14
		0.7	0.80	-	22	0.34	-	22	-	0.34
		0.9	0.80	-	22	0.34	-	22	-	0.34
		1.3	1.00	-	20	0.50	-	20	-	0.50
		1.6	1.40	-	16	1.00	-	18	-	1.00
		2.0	1.80	-	14	1.50	-	16	-	1.50
		3.0	2.70	-	10	4.00	-	12	-	4.00
		4.0	3.70	-	10	6.00	-	10	-	6.00
Straight PCB 	P	L dimensions and C are detailed in the section on PCB drilling pattern. also you can customize the L dimensions								
Elbow PCB 	E	L dimensions and C are detailed in the section on PCB drilling pattern.								

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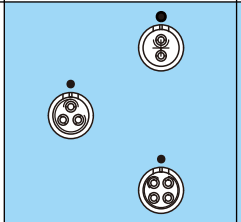
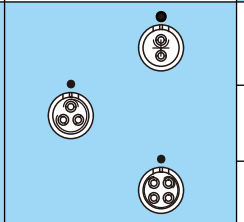
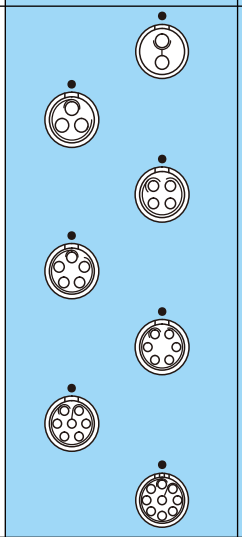
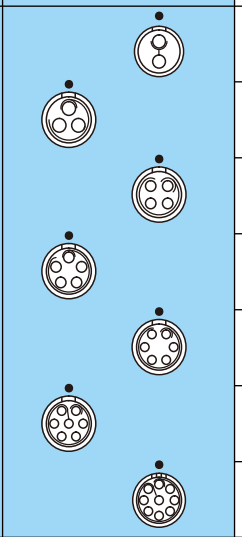
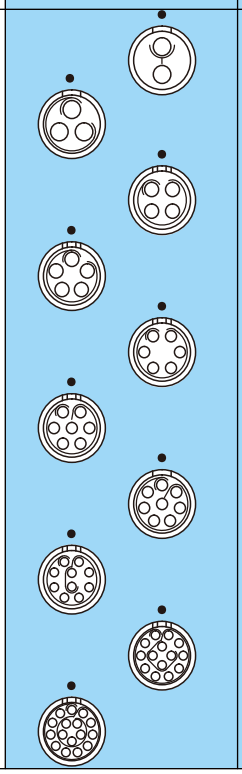
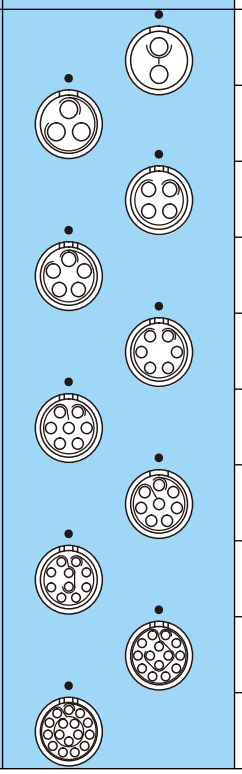
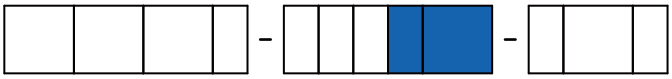
➤➤➤ Insert Configuration

B Series, K Series, C Series

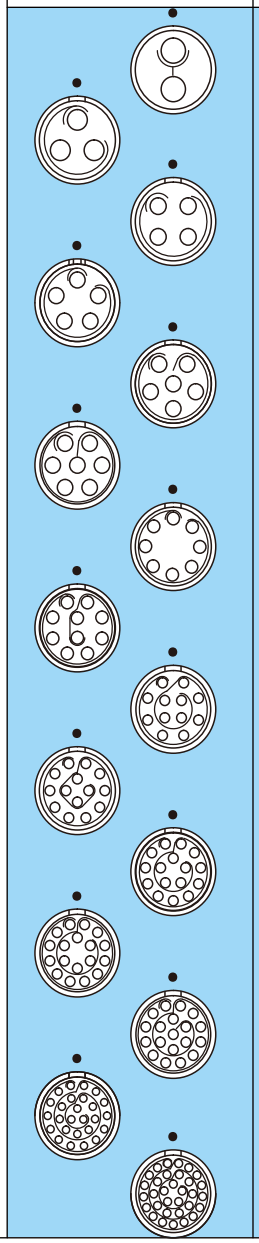
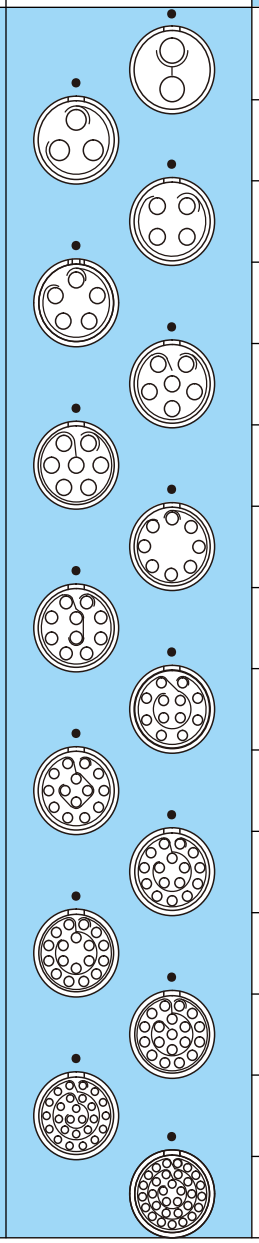
	Solder male contact	Solder female contact	Reference	Number of contacts	Contact øA (mm)	Contact type			level		Rated current (A)	Resistance(mΩ)
						Solder	Print(straight)	Print (elbow)	Rated Voltage(V)	Withstanding voltage(V)		
00B Series			M02	2	0.5	√	√	√	500	500	2.0	≤15.0
			M03	3	0.5	√	√	√	400	400	2.0	≤15.0
			M04	4	0.5	√	√	√	400	400	2.0	≤15.0
0B, 0K, 0C Series			M02	2	0.9	√	√	√	875	875	10.0[1)]	≤5.0
			M03	3	0.9	√	√	√	750	750	8.0[1)]	≤5.0
			M04	4	0.7	√	√	√	750	750	7.0[1)]	≤12.5
			M05	5	0.7	√	√	√	750	750	6.5[1)]	≤12.5
			M06	6	0.5	√	√	√	750	750	2.5	≤15.0
			M07	7	0.5	√	√	√	750	750	2.5	≤15.0
			M09	9	0.5	√	√	√	500	500	2.0	≤15.0
1B, 1K, 1C Series			M02	2	1.3	√	√	√	1000	1000	12.0	≤5.0
			M03	3	1.3	√	√	√	1000	1000	12.0	≤5.0
			M04	4	0.9	√	√	√	875	875	10.0[1)]	≤5.0
			M05	5	0.9	√	√	√	875	875	9.0[1)]	≤5.0
			M06	6	0.7	√	√	√	875	875	7.0[1)]	≤12.5
			M07	7	0.7	√	√	√	875	875	7.0[1)]	≤12.5
			M08	8	0.7	√	√	√	750	750	5.0	≤12.5
			M10	10	0.5	√	√	√	400	400	2.5	≤15.0
			M14	14	0.5	√	√	√	400	400	2.0	≤15.0
			M16	16	0.5	√	√	√	250	250	1.5	≤15.0

√: First choice alternative, 1): rated current = 6A for elbow (90°) contact for printed circuit.

➤➤➤ Insert Configuration



B Series, K Series, C Series

2B, 2K, 2C Series	Solder male contact	Solder female contact	Reference	Number of contacts	Contact øA (mm)	Contact type			level		Rated current (A)	Resistance(mΩ)
						Solder	Print(straight)	Print (elbow)	Rated Voltage(V)	Withstanding voltage(V)		
			M02	2	2.0	√	√	√	1000	1000	25.0	≤3.0
			M03	3	1.6	√	√	√	875	875	17.0	≤3.0
			M04	4	1.3	√	√	√	875	875	15.0	≤5.0
			M05	5	1.3	√	√	√	875	875	14.0	≤5.0
			M06	6	1.3	√	√	√	875	875	12.0	≤5.0
			M07	7	1.3	√	√	√	875	875	11.0	≤5.0
			M08	8	0.9	√	√	√	875	875	10.0 1)	≤5.0
			M10	10	0.9	√	√	√	875	875	8.0 1)	≤5.0
			M12	12	0.7	√	√	√	750	750	7.0 1)	≤12.5
			M14	14	0.7	√	√	√	750	750	6.5 1)	≤12.5
			M16	16	0.7	√	√	√	750	750	6.0	≤12.5
			M18	18	0.7	√	√	√	750	750	5.5	≤12.5
			M19	19	0.7	√	√	√	750	750	5.0	≤12.5
			M26	26	0.5	√	√	√	500	500	2.0	≤15.0
			M32	32	0.5	√	√	☆	500	500	1.5	≤15.0

√: First choice alternative, 1): rated current = 6A for elbow (90°) contact for printed circuit.
☆:Special order alternative

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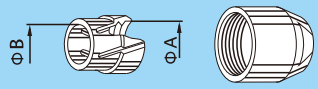
D type collets for B, C series

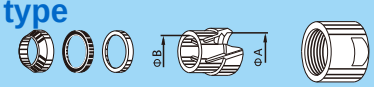
D type



	Reference		Collet Φ		Cable Φ	
	Type	Code	ΦA	ΦB	Max.	Min.
00B	D	27	2.7	-	3.0	2.0
0B	D	32	3.2	-	3.5	2.5
0C	D	42	4.2	-	4.5	3.5
	D	52	5.2	4.7	5.5	4.5
1B	D	42	4.2	-	4.5	3.5
1C	D	52	5.2	-	5.5	4.5
	D	62	6.2	-	6.5	5.5
	D	72	7.2	6.7	7.5	6.5
2B	D	52	5.2	-	5.5	4.5
2C	D	62	6.2	-	6.5	5.5
	D	72	7.2	-	7.5	6.5
	D	82	8.2	-	8.5	7.5
	D	92	9.2	8.6	9.5	8.5
	D	99	9.9	8.6	10.2	9.2

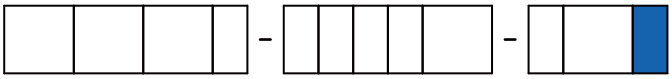
D type collets for K series

D type



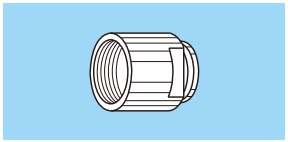
	Reference		Collet Φ		Cable Φ	
	Type	Code	ΦA	ΦB	Max.	Min.
0K	D	32	3.2	-	3.5	2.5
	D	42	4.2	-	4.5	3.5
	D	52	5.2	4.7	5.5	4.5
1K	D	42	4.2	-	4.5	3.5
	D	52	5.2	-	5.5	4.5
	D	62	6.2	-	6.5	5.5
	D	72	7.2	6.7	7.5	6.5
2K	D	52	5.2	-	5.5	4.5
	D	62	6.2	-	6.5	5.5
	D	72	7.2	-	7.5	6.5
	D	82	8.2	-	8.5	7.5
	D	92	9.2	8.6	9.5	8.5
	D	99	9.9	8.6	10.2	9.2

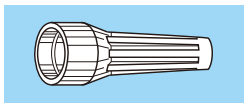
➤➤➤ Variant



To order a model with cable collet and nut for fitting a bend relief, you should write a "B" in the variant position.
Bend reliefs to be ordered separately on *page 149*

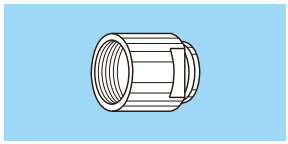
Bend Relief for B Series Plug with Collet

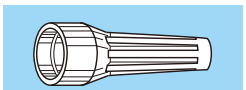




	Ref.	Collet		*Need to be ordered separately (page 149)*
		Type	Code	
00	B	D	17 to 35	GMA.00.●●●.●●
0B	B	D	21 to 52	GMA.0B.●●●.●●
1B	B	M	27 to 31	GMA.1B.●●●.●●
		D	42 to 72	
2B	B	M	21 to 31	GMA.0B.●●●.●●
		D	42	GMA.2B.●●●.●●
		D	52 to 92	

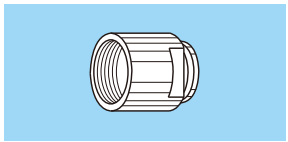
Bend Relief for K Series Plug with Collet

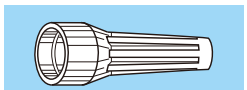




	Ref.	Collet		*Need to be ordered separately (page 149)*
		Type	Code	
0K	B	C	10 to 50	GMA.0B.●●●.●●
1K	B	C	15 to 65	GMA.1B.●●●.●●
		K	70 to 85	GMA.2B.●●●.●●
2K	B	C	15 to 85	GMA.2B.●●●.●●
		K	90 to 100	GMA.3B.●●●.●●

Bend Relief for C Series Plug with Collet





	Ref.	Collet		*Need to be ordered separately (page 149)*
		Type	Code	
0C	B	D	21 to 52	GMA.0B.●●●.●●
1C	B	M	27 to 31	GMA.1B.●●●.●●
		D	42 to 72	
2C	B	M	21 to 31	GMA.0B.●●●.●●
		D	42	GMA.2B.●●●.●●
		D	52 to 92	

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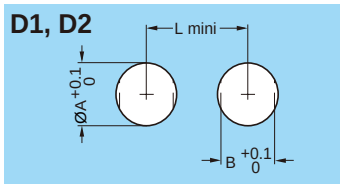
B Series



Cut-out types

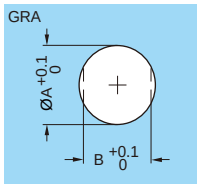
Series	D1			D2		
	ØA	B	L	ØA	B	L
00B	7.1	6.4	12.5	7.1	-	12.0
0B	9.1	8.3	14.5	9.1	8.3	15.0
1B	12.1	10.6	18.5	12.1	10.6	19.0
2B	15.1	13.6	22.5	15.1	13.6	23.0
Model	**ZC, ZE, ZG ZH, TA, DP**			**ME, MG, MH TW**		

Note: when using the tapered washer a round hole apply 00S: Ø7.6 mm / 0S: Ø9.6 mm / 1S: Ø12.6 mm / 2S: Ø15.7 mm

Mouting nut torque

Series	Torque(Nm)
00B	1.0
0B	2.5
1B	4.5
2B	6.0

Note: 1N=0.102 kg

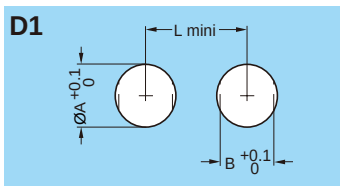


Panel cut-out for mounting with insulating washer

Series	Dim.(mm)	
	ØA	B
00B	8.9	8.1
0B	10.9	10.1
1B	13.9	12.3
2B	18.0	16.3

Note: these values apply when shell are mounted with insulating washer.

K Series



Cut-out types

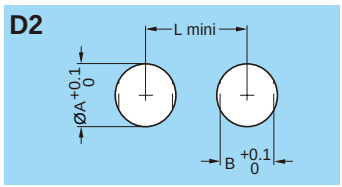
Series	D1		
	ØA	B	L
0K	14.1	12.6	20.5
1K	16.1	14.6	22.5
2K	20.2	18.6	29.3
Model	**ZE, MG**		

Mouting nut torque

Series	Torque(Nm)
0K	5.0
1K	7.0
2K	9.0

Note: 1N=0.102 kg

C Series

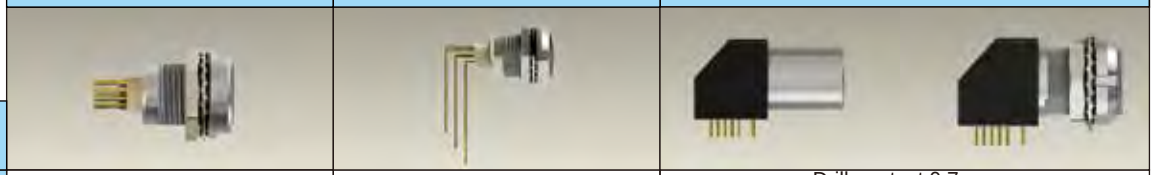
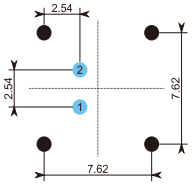
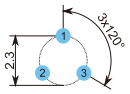
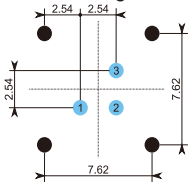
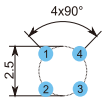
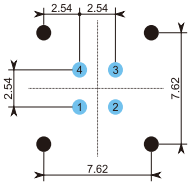
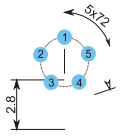
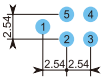
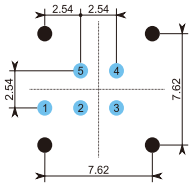
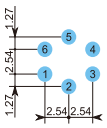
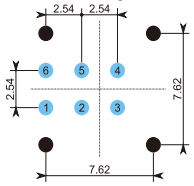
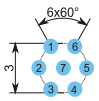
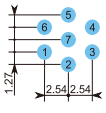
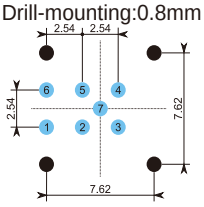


Series	D2		
	ØA	B	L
0C	9.1	-	15.0
1C	12.1	10.6	19.0
2C	15.1	13.6	12.0
Model	**ME**		

Note: when using the tapered washer a round hole apply 0C: Ø9.6 mm / 1C: Ø12.6 mm / 2C: Ø15.7 mm

➤➤➤ PCB Drilling Pattern

0B Series, 0K Series, 0C Series

Contacts	PCB(Straight Contact)	PCB(Elbow Contact)	PCB(ZPG/ZXG Elbow Socket)
			
2	Drill:0.8mm 	Drill:0.7mm 	Drill-contact:0.7mm Drill-mounting:0.8mm 
3	Drill:0.8mm 	Drill:0.7mm 	Drill-contact:0.7mm Drill-mounting:0.8mm 
4	Drill:0.6mm 	Drill:0.7mm 	Drill-contact:0.7mm Drill-mounting:0.8mm 
5	Drill:0.6mm 	Drill:0.7mm 	Drill-contact:0.7mm Drill-mounting:0.8mm 
6	Drill:0.6mm 	Drill:0.7mm 	Drill-contact:0.7mm Drill-mounting:0.8mm 
7	Drill:0.6mm 	Drill:0.7mm 	Drill-contact:0.7mm Drill-mounting:0.8mm 

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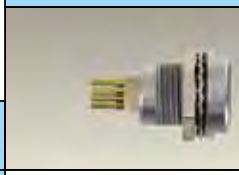
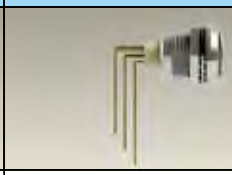
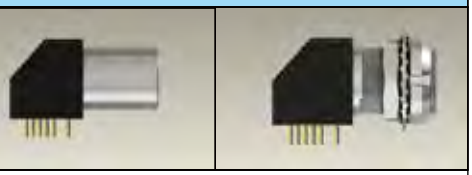
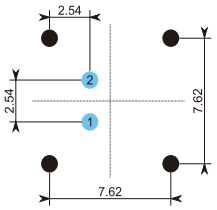
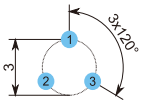
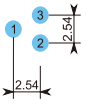
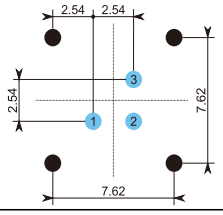
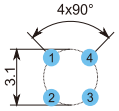
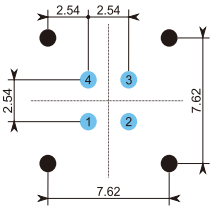
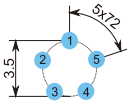
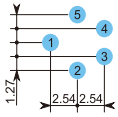
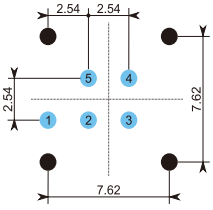
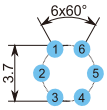
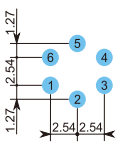
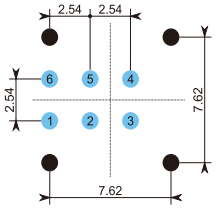
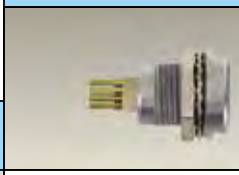
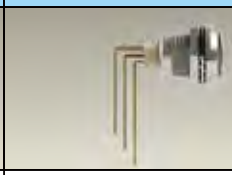
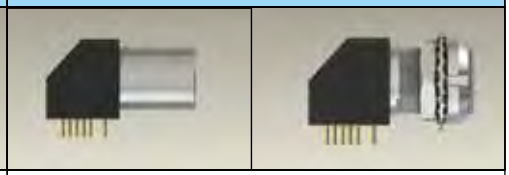
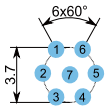
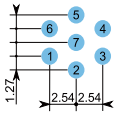
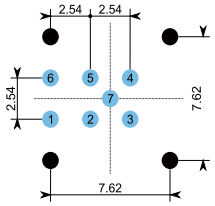
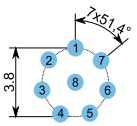
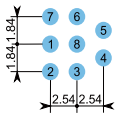
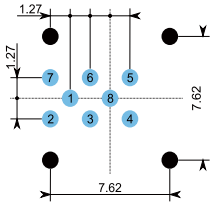
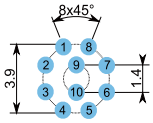
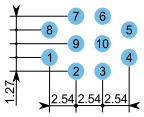
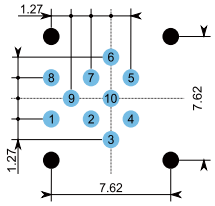
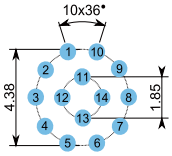
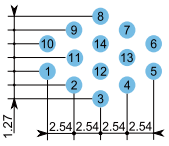
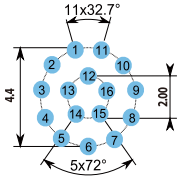
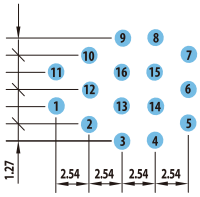
➤➤➤ PCB Drilling Pattern

1B Series, 1K Series, 1C Series

Contacts	PCB(Straight Contact)	PCB(Elbow Contact)	PCB(ZPG/ZXG Elbow Socket)
			
2	Drill:0.8mm 	Drill:0.7mm 	Drill-contact:0.7mm Drill-mounting:0.8mm 
3	Drill:0.8mm 	Drill:0.7mm 	Drill-contact:0.7mm Drill-mounting:0.8mm 
4	Drill:0.6mm 	Drill:0.7mm 	Drill-contact:0.7mm Drill-mounting:0.8mm 
5	Drill:0.8mm 	Drill:0.7mm 	Drill-contact:0.7mm Drill-mounting:0.8mm 
6	Drill:0.8mm 	Drill:0.7mm 	Drill-contact:0.7mm Drill-mounting:0.8mm 

➤➤➤ PCB Drilling Pattern

1B Series, 1K Series, 1C Series

Contacts	PCB(Straight Contact)	PCB(Elbow Contact)	PCB(ZPG/ZXG Elbow Socket)
			
7	Drill:0.8mm 	Drill:0.7mm 	Drill-contact:0.7mm Drill-mounting:0.8mm 
8	Drill:0.8mm 	Drill:0.7mm 	Drill-contact:0.7mm Drill-mounting:0.8mm 
10	Drill:0.6mm 	Drill:0.7mm 	Drill-contact:0.7mm Drill-mounting:0.8mm 
14	Drill:0.6mm 	Drill:0.7mm 	
16	Drill:0.6mm 	Drill:0.7mm 	

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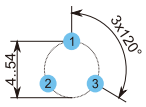
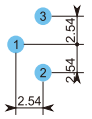
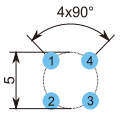
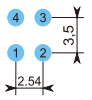
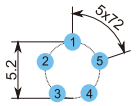
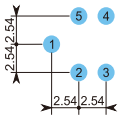
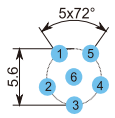
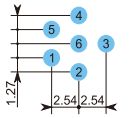
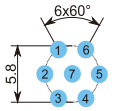
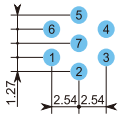
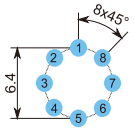
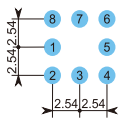
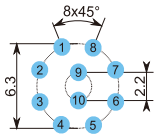
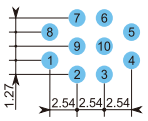
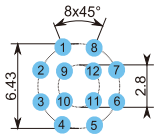
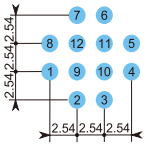
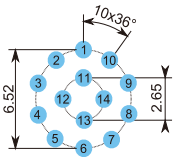
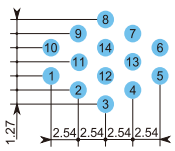
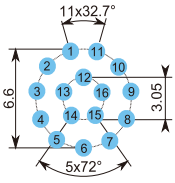
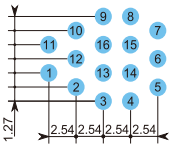
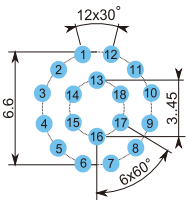
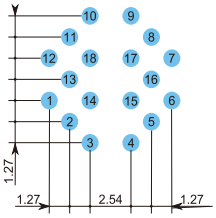
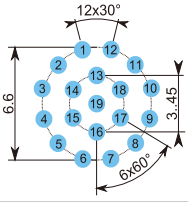
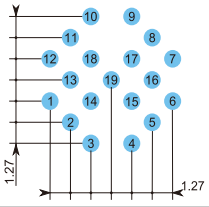
2B Series, 2K Series, 2C Series

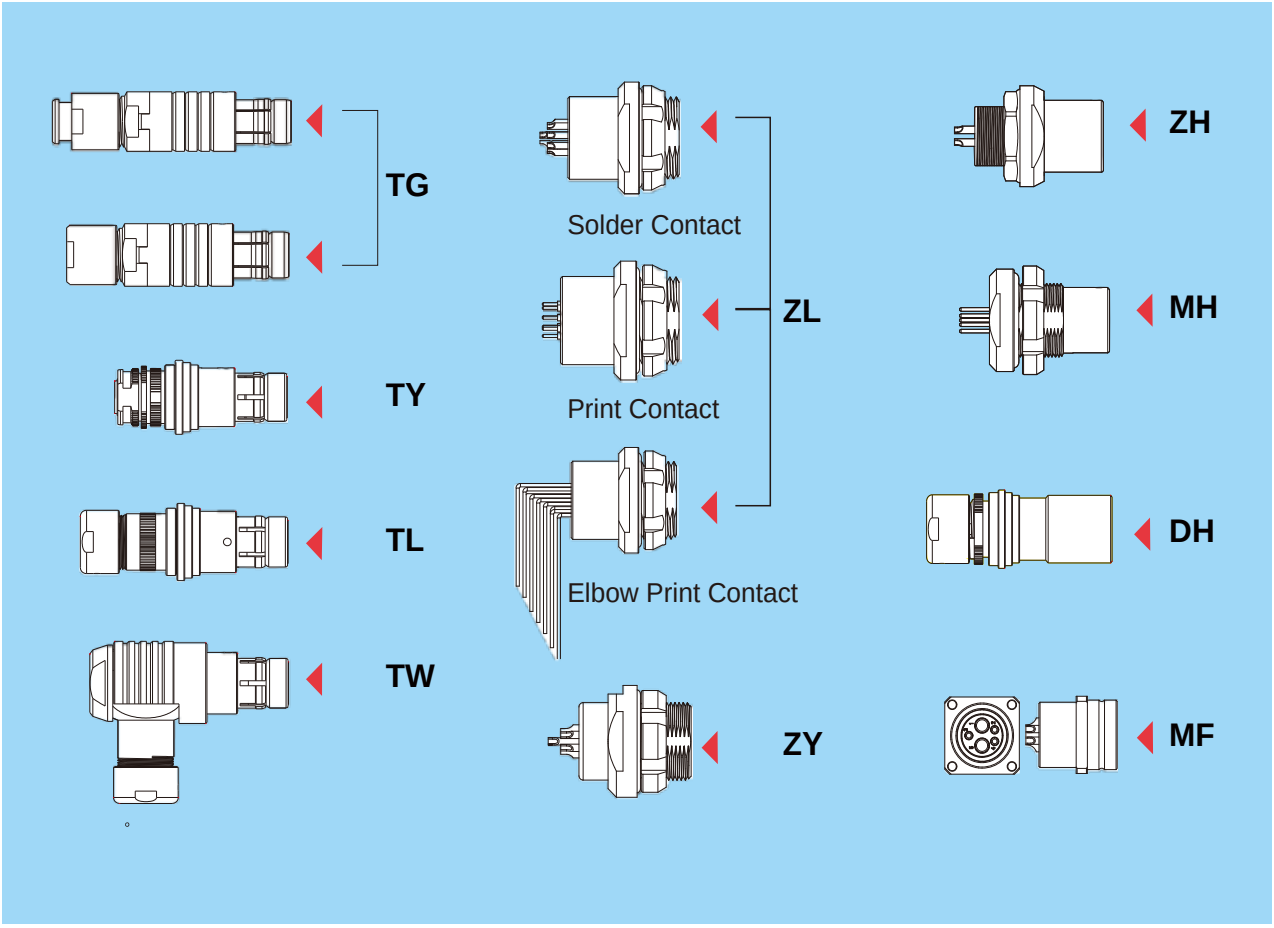
Contacts	PCB (Straight Contact)	PCB (Elbow Contact)
		
3	Drill:0.8mm Bohrung:0.8mm 	Drill:0.9mm 
4	Drill:0.8mm 	Drill:0.7mm 
5	Drill:0.8mm 	Drill:0.7mm 
6	Drill:0.8mm 	Drill:0.7mm 
7	Drill:0.8mm 	Drill:0.7mm 
8	Drill:0.8mm 	Drill:0.7mm 

Contacts	PCB (Straight Contact)	PCB (Elbow Contact)
		
10	Drill:0.8mm 	Drill:0.7mm 
12	Drill:0.8mm 	Drill:0.7mm 
14	Drill:0.8mm 	Drill:0.7mm 
16	Drill:0.8mm 	Drill:0.7mm 
18	Drill:0.8mm 	Drill:0.7mm 
19	Drill:0.8mm 	Drill:0.7mm 

➤➤➤ F Series

F Series (Outdoor, Arc-shape Metal Guides)

Body style



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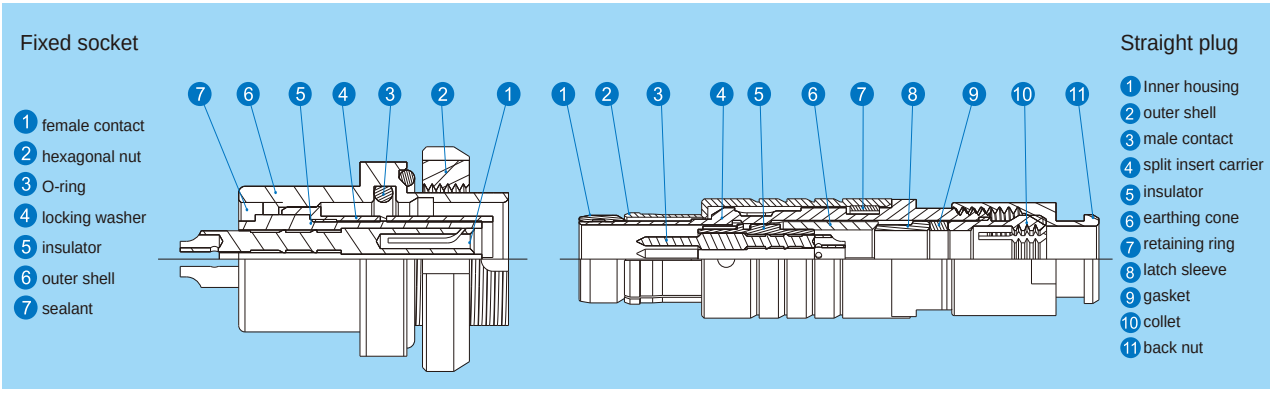
Main Features

- security of the Push-Pull self-latching system
- multipole types 2 to 40 contacts
- Easy mating, can be blind-mated (guiding mechanism ensures precise alignment)
- Increased equipment life span (guiding mechanism optimally protects the contacts)
- Robust and shock resistant (designs ideal for equipment used in the field)
- watertight connection (IP 68/IP 66),waterproof and sandproof
- solder, print (straight or elbow) contacts
- high packing density for space savings
- 360°screening for full EMC shielding

Technical Characteristics

- Mating cycles: > 3000
- Humidity: up to 95% at 40° C
- Temperature range: - 55° C, + 145° C
- Vibration: frequency 10-20000HZ, acceleration 147m/s², ≤1um instantaneous break
- Impact: acceleration 490m/s², ≤1um instantaneous break
- Protection index (mated): IP 68

Part Section Showing Internal Components



➤➤➤ F Series

Electrical Properties

Contact diameter, Resistance, Solder cup diameter, Max. cable specification, Rated current

Contact Φ mm	Resistance mΩ	Solder Cup Dia. mm	Max. Cable Specification		Rated Current A
			mm²	AWG	
Φ0.5	15	Φ0.5	0.06	30	Insert configuration for details.
Φ0.7	12.5	Φ0.75	0.15	26	
Φ0.9	5	Φ0.8	0.38	22	
Φ1.3	3	Φ1.2	0.62	20	
Φ1.6	2.5	Φ1.8	2.0	14	
Φ2.0	2	Φ2.0	2.0	14	
Φ2.3	1.5	Φ2.1	3.0	12	
Φ3.0	1	Φ3.1	5.0	10	

1) Insulation resistance: 5000MΩ at normal temperature
100MΩ at 200℃
Damp heat 100MΩ

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F Series Part Numbering System

Plug

C	B	T	G	2	F	N	–	S	M	S	M	0	6	–	D	5	2	0

Free Socket

C	B	D	H	2	F	N	–	S	F	S	M	0	6	–	D	5	2	B

Housing material *(page 74)*	**Variant** *(page 83)*
Body style *(page 56)*	**Cable collet φ** *(page 82)*
Series *(page 56)*	**Collet type** *(page 82)*
Alignment key *(page 61)*	**No. of contact** *(page 77)*
Insulators material *(page 75)*	**Insert configuration** *(page 77)*
Contact polarity *(page 75)*	**Contact type** *(page 76)*

Socket

C	B	Z	L	2	F	N	–	S	F	S	M	0	6	–	0	0	0	0

	0: Without **E:** With → **Earthing tag**
Housing material *(page 74)*	
Body style *(page 58)*	**00:** Solder contact → **Length of PCB contact**
Series *(page 58)*	
Alignment key *(page 61)*	**0:** Without Potting **S:** Potting silicone **R:** Potting resin → **Glue type**
Insulators material *(page 75)*	**No. of contact** *(page 77)*
Contact polarity *(page 75)*	**Insert configuration** *(page 77)*
	Contact type *(page 76)*

Part Number Example

Straight Plug with Cable Collet:

CBTG2FN-SMSM06-D520 = TG body style, outer shell in chrome-plated brass, 2F series, straight plug with key (N), PPS insulator, male solder contacts, multipole type with 6 contacts, D type cable collet of 5.2 mm diameter.

Free socket:

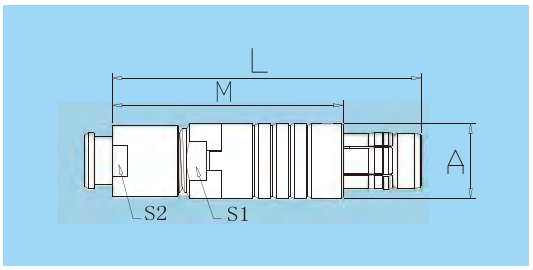
CBDH2FN-SFSM06-D52B = DH body style, outer shell in chrome-plated brass, 2F series, free socket with key (N), PPS insulator, female solder contacts, multipole type with 6 contacts, D type cable collet of 5.2 mm diameter and nut for fitting a bend relief.

Fixed Socket:

CBZL2FN-SFSM06-0000 = ZL body style, outer shell in chrome-plated brass, 2F series, fixed socket with key (N), PPS insulator, female solder contacts, multipole type with 6 contacts.
CBZL2FN-SFPM06-R300 = ZL body style, outer shell in chrome-plated brass, 2F series, fixed watertight socket with key (N), PPS insulator, female straight PCB contacts, multipole type with 6 contacts, potting resin, length of straight print contact with 3.0mm.

➤➤➤ F Series

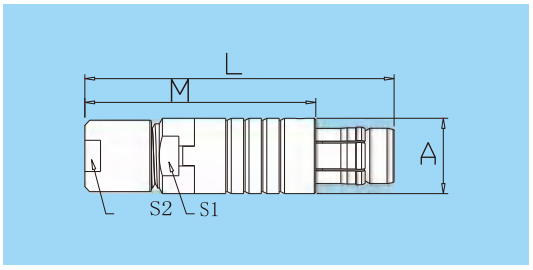
F Series Plug Dimensions



TG body style, straight long plug, cable collet and nut for fitting a bend relief, with arc-shape metal guides, collet style clamp system for cable.

Reference		Dimensions (mm)				
Model	Series	A	L	M	S1	S2
TG	2F	9.0	36.0	26.0	7.0	7.0
TG	3F	12.0	46.0	35.0	10.0	10.0
TG	31F	13.0	48.0	38.0	12.0	11.0
TG	4F	15.0	50.0	38.0	12.0	13.0
TG	5F	18.0	62.0	47.0	15.0	16.0

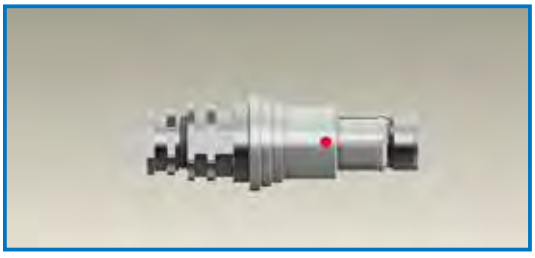
Cable assembly (page 152)
Plug assembly instructions (page 155)
Injection molding (page 163)
Note: To order, add a «B» at the end of the reference. The bend relief must be ordered separately (page 149).

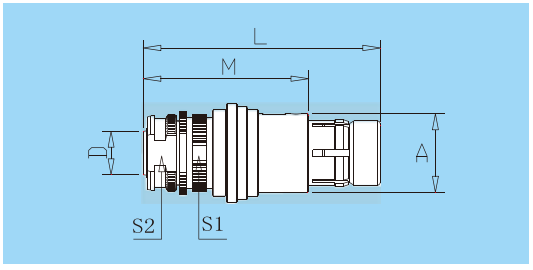


TG body style, straight long plug, cable collet, with arc-shape metal guides, collet style clamp system for cable.

Reference		Dimensions (mm)				
Model	Series	A	L	M	S1	S2
TG	2F	9.0	36.0	26.0	7.0	7.0
TG	3F	12.0	46.0	35.0	10.0	10.0
TG	31F	13.0	48.0	38.0	12.0	11.0
TG	4F	15.0	50.0	38.0	12.0	13.0
TG	5F	18.0	62.0	47.0	15.0	16.0

Cable assembly (page 152)
Plug assembly instructions (page 155)
Injection molding (page 163)





TY body style, straight short plug, with arc-shape metal guides,back nut with threaded.

Reference		Dimensions (mm)					
Model	Series	A	L	M	S1	S2	D(max)
TY	2F	9.0	30.0	20.0	8.0	7.0	3.8
TY	3F	12.0	33.0	22.0	11.0	10.0	6.0
TY	31F	12.4	33.0	23.0	11.0	10.0	6.2
TY	4F	15.0	38.0	26.0	13.0	12.0	8.0
TY	5F	18.0	44.0	29.0	16.0	15.0	10.0

Cable assembly (page 152)
Plug assembly instructions (page 155)
Injection molding (page 163)

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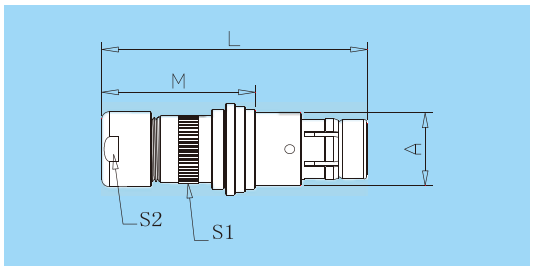
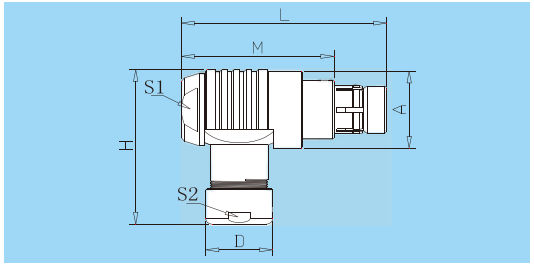
F Series Plug Dimensions



TL body style, straight short plug, with arc-shape metal guides,back nut with threaded.

Reference		Dimensions (mm)				
Model	Series	A	L	M	S1	S2
TL	2F	9.0	33.0	20.0	8.0	7.0
TL	3F	12.0	37.0	22.0	11.0	10.0
TL	31F	12.4	40.0	23.0	11.0	10.0
TL	4F	15.0	46.0	26.0	13.0	12.0
TL	5F	18.0	53.0	29.0	16.5	16.0

Cable assembly (page 152)
Plug assembly instructions (page 155)
Injection molding (page 163)



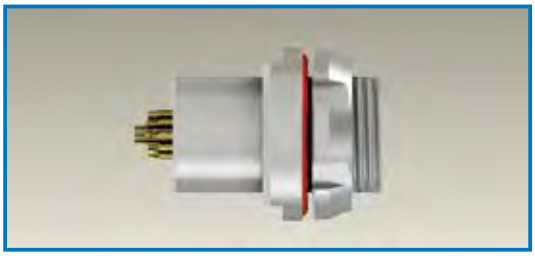
TW body style, Elbow(90°) plug, with arc-shape metal guides, collet style clamp system for cable.

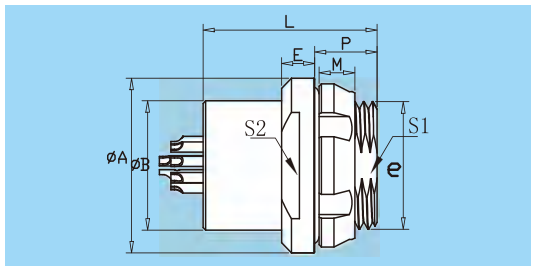
Reference		Dimensions (mm)					
Model	Series	A	L	M	H	S1	S2
TW	2F	11.2	33.0	23.0	25.0	8.0	7.0
TW	3F	15.0	38.0	27.0	31.0	11.0	10.0
TW	31F	17.0	39.0	29.0	33.0	12.0	12.0
TW	4F	19.0	45.0	32.0	37.0	14.0	12.0
TW	5F	23.0	53.0	38.0	45.0	17.0	15.0

Cable assembly (page 152)
Plug assembly instructions (page 155)
Injection molding (page 163)

➤➤➤ F Series

F Series Socket Dimensions

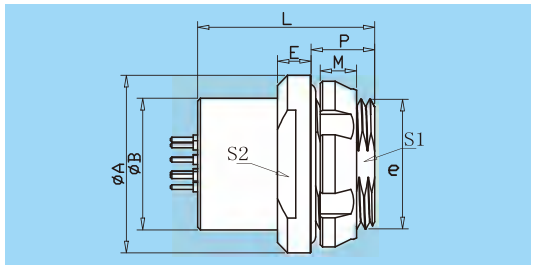




ZL body style, hermetic Socket, back panel mounting, with arc-shape metal guides, (solder contacts)

Reference		Dimensions (mm)								
Model	Series	A	B	e	L	E	M	P	S1	S2
ZL	2F	13.0	9.0	M9x0.5	17.0	3.5	3.0	6.5	8.2	12.0
ZL	3F	18.0	12.0	M14x1.0	21.0	4.0	4.0	8.0	12.0	15.0
ZL	31F	19.0	14.0	M14x1.0	19.5	4.0	4.0	7.0	12.0	15.0
ZL	4F	22.0	16.0	M16x1.0	21.5	3.7	3.5	8.0	14.5	18.0
ZL	5F	27.0	21.0	M20x1.0	26.5	4.5	5.0	10.0	18.0	22.0

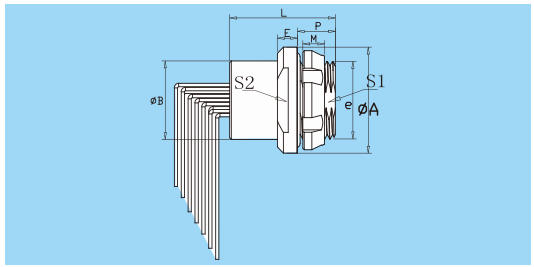
Panel cut-out (page 82)



ZL body style, hermetic Socket, back panel mounting, with arc-shape metal guides, (print contacts)

Reference		Dimensions (mm)								
Model	Series	A	B	e	L	E	M	P	S1	S2
ZL	2F	13.0	9.0	M9x0.5	17.0	3.5	3.0	6.5	8.2	12.0
ZL	3F	18.0	12.0	M14x1.0	21.0	4.0	4.0	8.0	12.0	15.0
ZL	31F	19.0	14.0	M14x1.0	19.5	4.0	4.0	7.0	12.0	15.0
ZL	4F	22.0	16.0	M16x1.0	21.5	3.7	3.5	8.0	14.5	18.0
ZL	5F	27.0	21.0	M20x1.0	26.5	4.5	5.0	10.0	18.0	22.0

Panel cut-out (page 82)



ZL body style, hermetic Socket, back panel mounting, with arc-shape metal guides, (elbow print contacts)

Reference		Dimensions (mm)								
Model	Series	A	B	e	L	E	M	P	S1	S2
ZL	2F	13.0	9.0	M9x0.5	17.0	3.5	3.0	6.5	8.2	12.0
ZL	3F	18.0	12.0	M14x1.0	21.0	4.0	4.0	8.0	12.0	15.0
ZL	31F	19.0	14.0	M14x1.0	19.5	4.0	4.0	7.0	12.0	15.0
ZL	4F	22.0	16.0	M16x1.0	21.5	3.7	3.5	8.0	14.5	18.0
ZL	5F	27.0	21.0	M20x1.0	26.5	4.5	5.0	10.0	18.0	22.0

Panel cut-out (page 82)

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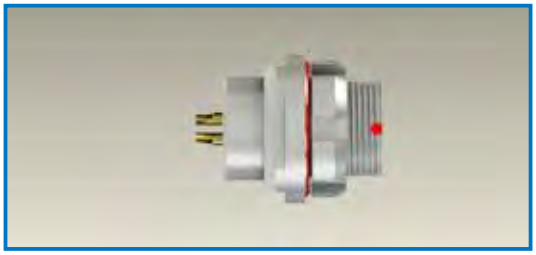
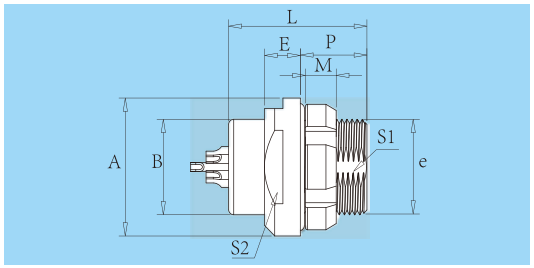
F Series Socket Dimensions

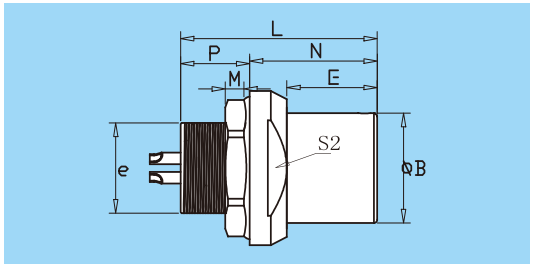




ZY body style, hermetic short socket, back panel mounting,with arc-shape metal guides. waterproof(IP68)

Reference		Dimensions (mm)								
Model	Series	A	B	e	L	E	M	P	S1	S2
ZY	2F	13.0	9.0	M9x0.5	13.5	3.5	3.0	6.5	8.2	11.0
ZY	3F	18.0	12.0	M14x1.0	17.0	4.0	4.0	6.5	12.0	15.0

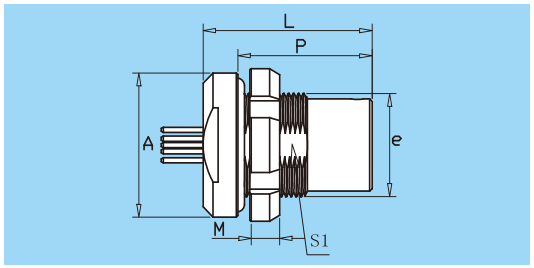
Panel cut-out (page 82)



ZH body style, front projecting socket, front panel mounting,with arc-shape metal guides. waterproof (IP68)

Reference		Dimensions (mm)								
Model	Series	A	B	e	L	E	M	P	S1	S2
ZH	2F	14.0	10.0	M9x0.5	18.5	3.5	2.0	6.5	8.2	11.0
ZH	3F	18.0	14.0	M14x1.0	21.0	3.5	2.5	6.5	12.5	15.0

Panel cut-out (page 82)

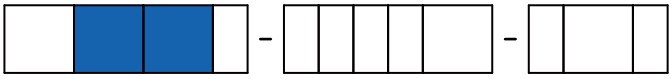


MH body style, front projecting socket, back panel mounting, with arc-shape metal guides. waterproof (IP68)

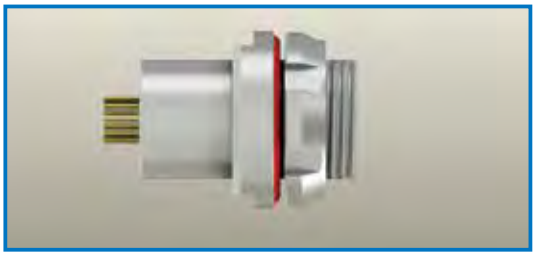
Reference		Dimensions (mm)					
Model	Series	A	e	E	M	P	S1
MH	2F	14.0	M10x0.5	3.5	3.0	13.5	9.0
MH	3F	18.0	M14x1.0	2.0	4.0	19.0	12.5

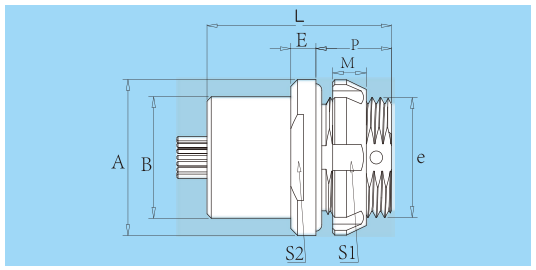
Panel cut-out (page 82)

➤➤➤ F Series



F Series Socket Dimensions

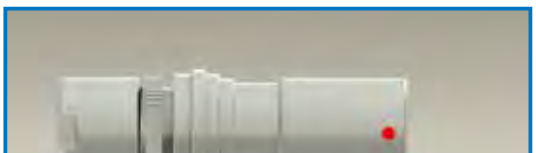


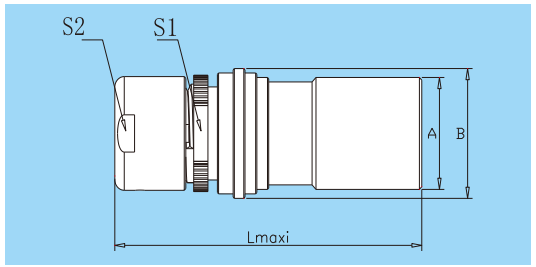


G8 body style, hermetic socket, back panel mounting, with arc-shape metal guides

Reference		Dimensions (mm)								
Model	Series	A	B	e	L	E	M	P	S1	S2
G8	2F	14.0	9.0	M9x0.5	21.0	3.5	3.0	6.5	8.0	11.0
G8	3F	18.0	14.0	M14x1.0	22.0	3.0	4.0	9.0	12.0	15.0
G8	31F	19.0	14.0	M14x1.0	19.5	4.0	4.0	7.0	12.0	15.0
G8	4F	21.0	14.5	M16x1.0	23.0	4.0	3.5	8.0	14.4	18.0
G8	5F	27.0	21.0	M20x1.0	26.5	4.5	5.0	10.0	18.0	22.0

Panel cut-out (page 82)

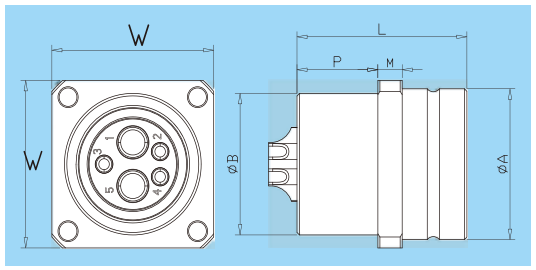




DH body style, free socket, with arc-shape metal guides, collet style clamp system for cable.

Reference		Dimensions (mm)				
Model	Series	A	B	L	S1	S2
DH	2F	10.0	12.0	32.0	8.0	7.0
DH	3F	12.5	14.5	39.0	11.0	12.0
DH	31F	13.5	15.5	40.0	11.5	12.0
DH	4F	16.0	18.0	45.5	14.0	14.0
DH	5F	19.0	21.0	51.0	16.5	11.0

Cable assembly (page 152)
Plug assembly instructions (page 155)
Injection molding (page 163)



MF body style, front projecting flange square corner screw socket, front panel mounting, with arc-shape metal guides. waterproof (IP68)

Reference		Dimensions (mm)					
Model	Series	A	B	M	P	L	W
MF	3F	10.6	11.6	2.5	10.0	21.0	18.0
MF	31F	13.0	13.0	3.0	9.5	19.5	19.0
MF	5F	18.0	17.0	3.0	10.0	21.0	20.0

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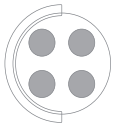
Alignment Key and Polarized Keying System

For Easy Connect / Disconnect Operations

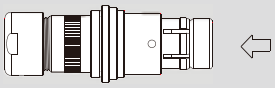
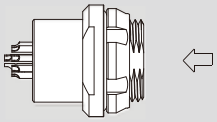
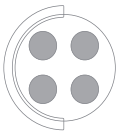
Our contact blocks are engineered with arc-shape metal guides, which ensure precise alignement of connectors during the mating process.
This guiding mechanism provides:



- Increased safety and user friendliness (by preventing misconnection).
- Easy mating cycles, can be blind-mated.
- Increased equipment life span by optimally (protecting the contacts).

Keying Codes Options

All Multipole body styles are mechanically coded. F series connector model part numbers are composed of three letters. The LAST LETTER indicates the key position and the contact type (male or female).
Code 1 is the standard, but other codes can be requested (See table below).

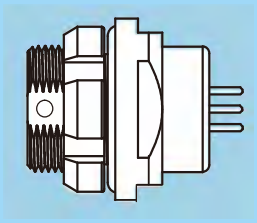
Plug/Socket			
	Code 1	Code 2	Code 3
			
			
Reference	N	A	B

➤➤➤ T Series

T Series (Outdoor, Keying System and Arc-shape Metal Guides)

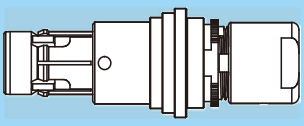
Body Style

Straight short socket



▶ ZY

Straight short plug



▶ TL

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Description

The T series connector is a push-pull self-locking connector that combines the multi-key position and multi-positioning structure derived from the B-series positioning pin structure and the F-series semi-circular positioning structure. The connector is mainly used for low-frequency signal transmission in electronic equipment. Easy operation, good shielding effect, good sealing, three-key positioning and semi-circular positioning double anti-misinsertion, solid shell, anti-electromagnetic interference, good environmental resistance, long service life and other characteristics. Widely used in medical machinery, communication systems, computers, small communications and other equipment.

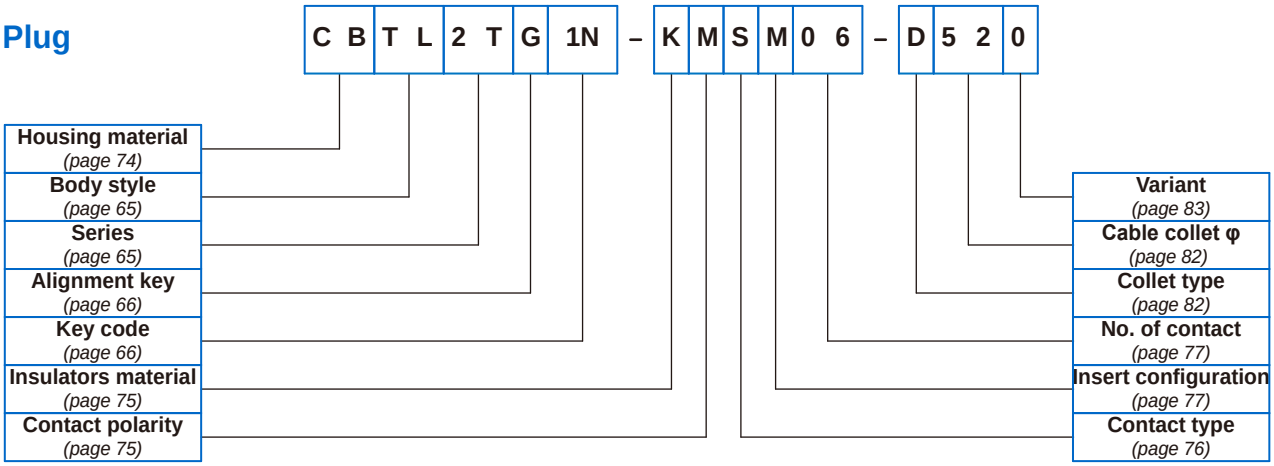
Technical Characteristics

- Mating:5000
- Vibration: frequency 10~2000Hz, acceleration 147m/s², ≤1μm momentary break
- Shock: Acceleration 490m/s², ≤1μm instantaneous break
- Temp:-55℃~+145℃
- Relative humidity: 95% at 40°C Working air pressure: 4.39KPa～101.33Kpa;
- Sealing: socket: pressure difference 1.01×105Pa, no bubble leakage for 1 min (0.2×105Pa at flange); Head seat insertion: 1.5m water depth, no water seepage for 24h (the tail of the plug needs to be sealed and protected);
- Salt spray: 96 hours in 5% NaCl fog;
- Insulation resistance: 5000MΩ (normal state)

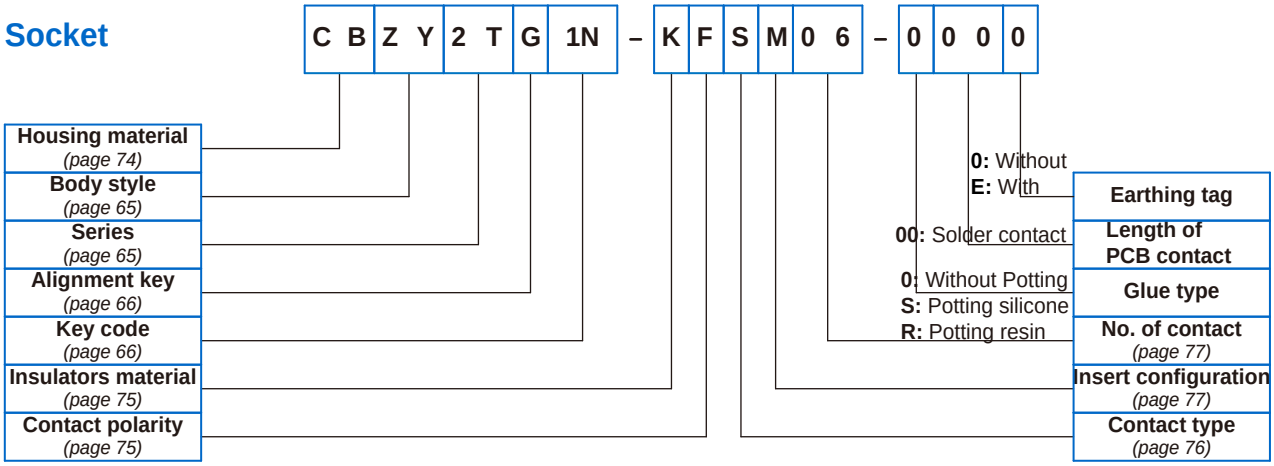
➤➤➤ T Series

T Series Part Numbering System

Plug



Socket



Part Number Example

Straight Plug with Cable Collet:

CBTL2TG1N-KMSM06-D520 = TL body style, outer shell in chrome-plated brass, 2T series, straight plug with alignment key with G and mechanical coding with down single metal guides(1N), PEEK insulator, male solder contacts, multipole type with 6 contacts, D type cable collet of 5.2 mm diameter.

Fixed Socket:

CBZY2TG1N-KFSM06-S000 = ZY body style, outer shell in chrome-plated brass, 2T series, fixed socket with key (G) and mechanical coding with up single metal guides(1N), PEEK insulator, female solder contacts, multipole type with 6 contacts, potting silicone (S).

CBZY2TG1N-KFPM06-R250 = ZY body style, outer shell in chrome-plated brass, 2T series, fixed socket with key (G) and mechanical coding with up single metal guides(1N), PEEK insulator, female straight PCB contacts, multipole type with 6 contacts, potting resin (R), length of straight print contact with 2.5mm.

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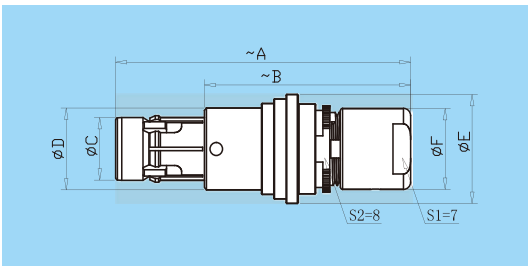
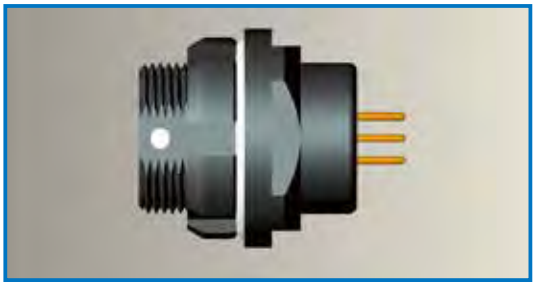
T Series Plug and Socket Dimensions

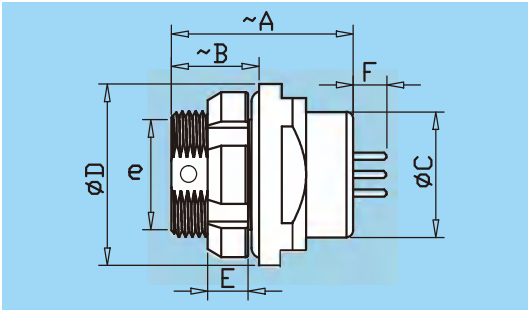


TL body style, straight short plug, alignment key and arc-shape metal guides, Miniature precision push-pull self-latching plug

Reference		Dimensions (mm)							
Model	Series	A	B	C	D	E	F	S1	S2
TL	2T	34.0	24.0	6.95	9.0	12.0	8.9	8.0	7.0
TL	21T	34.0	25.8	7.95	10.5	13.0	9.9	9.0	8.0
TL	3T	38.0	26.8	8.95	11.9	15.0	12.7	11.0	12.0
TL	31T	40.0	30.0	10.0	12.3	15.5	12.7	11.0	12.0
TL	4T	46.0	33.7	11.95	15.0	18.0	15.8	14.0	14.0
TL	5T	50.0	37.8	14.95	11.55	21.0	18.0	16.5	16.0

Cable assembly (page 152)
Plug assembly instructions (page 155)
Injection molding (page 163)





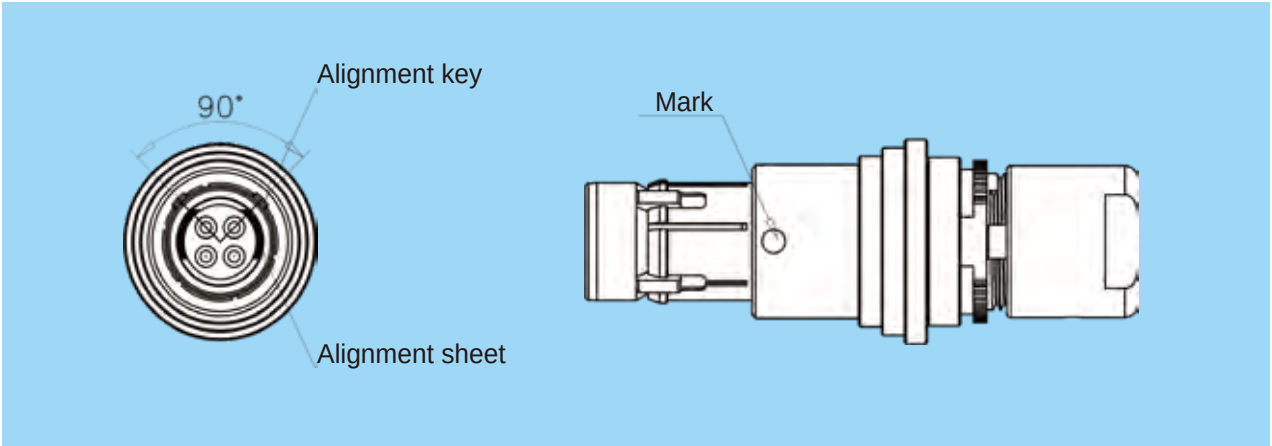
ZY body style, straight short socket, alignment key and arc-shape metal guides, Micro vacuum sealed receptacle

Protection level: IP68
360° shielding
High corrosion resistance

Reference		Dimensions (mm)				
Model	Series	A	B	C	D	e
ZY	2T	13.5	6.5	9.0	13.0	M9x0.5
ZY	21T	13.5	6.5	11.0	13.0	M10x0.5
ZY	3T	18.2	8.0	12.0	18.0	M14x1.0
ZY	31T	17.5	7.0	14.0	19.0	M14x1.0
ZY	4T	22.5	8.0	14.5	22.9	M16x1.0

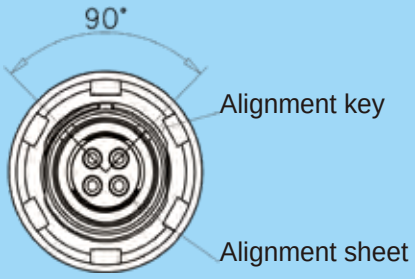
Panel cut-out (page 82)

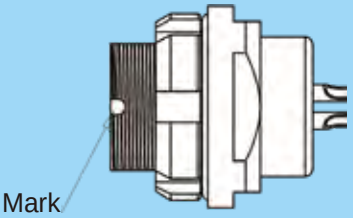
Schematic diagram of T series alignment key and alignment sheet (Plug)



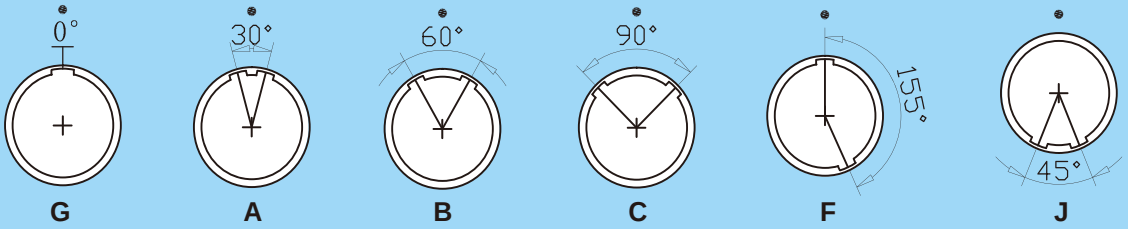
➤➤➤ T Series

Schematic diagram of T series alignment key and alignment sheet (Socket)

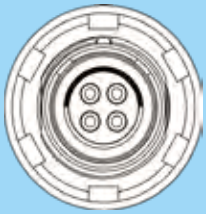




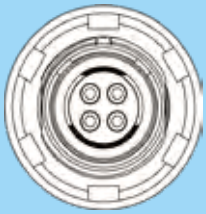
T series alignment key



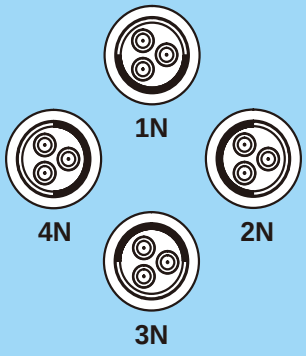
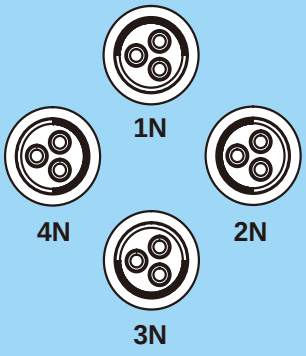
T series alignment sheet



N: single metal guides



A: double metal guides

	plug direction of alignment sheet	socket direction of alignment sheet
Diagram of alignment		

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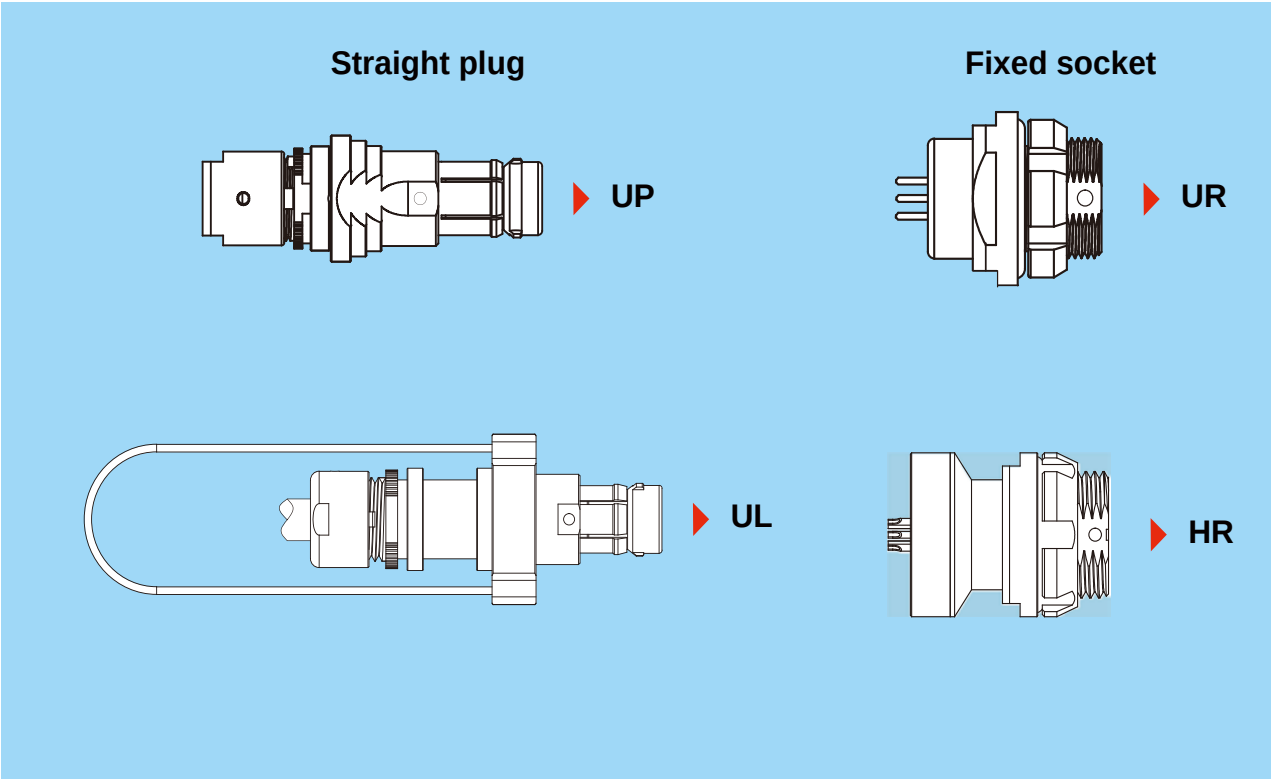
U Series (Outdoor, Keyed and Arc-shape Guides)

Body style



➤➤➤ U Series

Description

The U series connector is a push-pull self-locking connector that combines the multi-key position and multi-positioning structure derived from the B-series positioning pin structure and the F-series semi-circular positioning structure. The connector is mainly used for low-frequency signal transmission in electronic equipment. Easy operation, good shielding effect, good sealing, three-key positioning and semi-circular positioning double anti-misinsertion, solid shell, anti-electromagnetic interference, good environmental resistance, long service life and other characteristics. Widely used in medical machinery, communication systems, computers, small communications and other equipment.

Technical Characteristics

- Mating:5000
- Vibration: frequency 10~2000Hz, acceleration 147m/s², ≤1μm momentary break
- Shock: Acceleration 490m/s², ≤1μm instantaneous break
- Temp:-55℃~+145℃
- Relative humidity: 95% at 40°C Working air pressure: 4.39KPa～101.33Kpa;
- Sealing: socket: pressure difference 1.01×105Pa, no bubble leakage for 1 min (0.2×105Pa at flange); Head seat insertion: 1.5m water depth, no water seepage for 24h (the tail of the plug needs to be sealed and protected);
- Salt spray: 96 hours in 5% NaCl fog;
- Insulation resistance: 5000MΩ (normal state)

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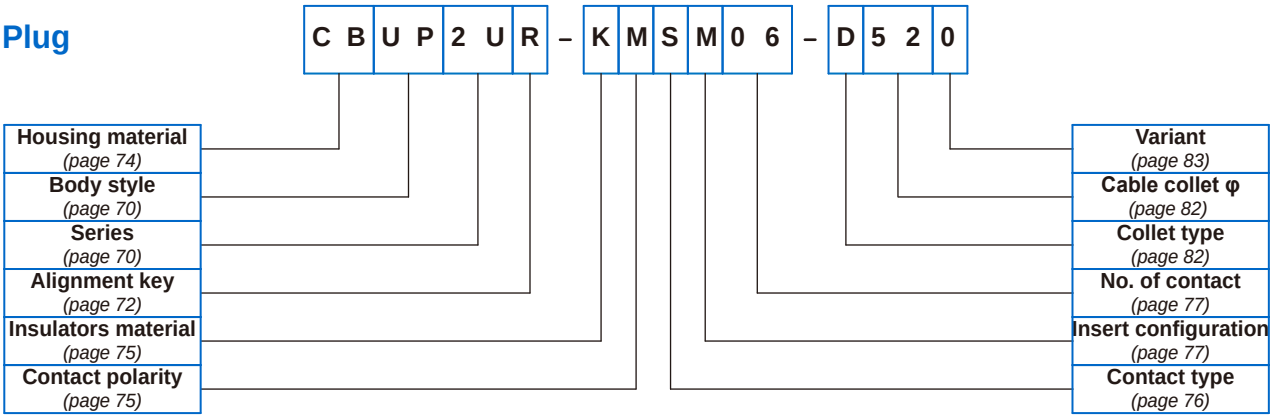
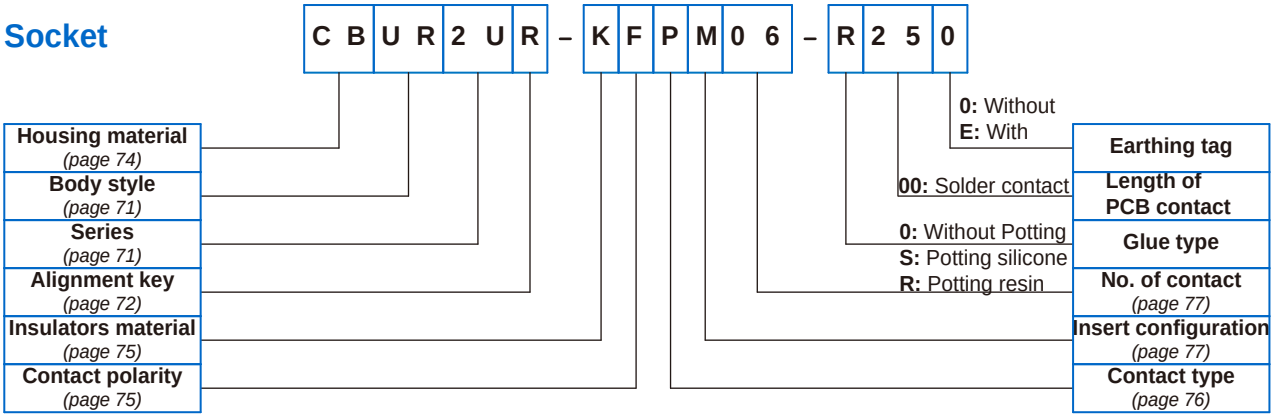
U Series Part Numbering System

Plug



Socket



Part Number Example

Straight Plug with Cable Collet:

CBUP2UR-KMSM06-D520 = UP body style, outer shell in chrome-plated brass, 2U series, straight plug with key (R), PEEK insulator, male solder contacts, multipole type with 6 contacts, D type cable collet of 5.2 mm diameter.

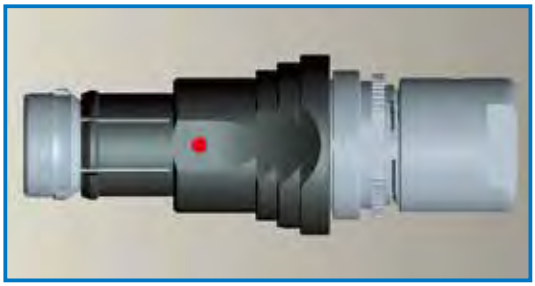
Fixed Socket:

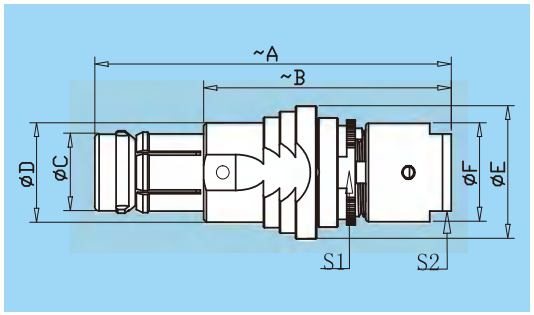
CBHR2UR-KFSM06-S000 = HR body style, outer shell in chrome-plated brass, 2U series, fixed socket with key (R), PEEK insulator, female solder contacts, multipole type with 6 contacts, potting silicone.

CBUR2UR-KFPM06-R250 = UR body style, outer shell in chrome-plated brass, 2U series, fixed watertight socket with key (R), PEEK insulator, female straight PCB contacts, multipole type with 6 contacts, potting resin, length of straight print contact with 2.5mm.

➤➤➤ U Series

U Series Plug Dimensions



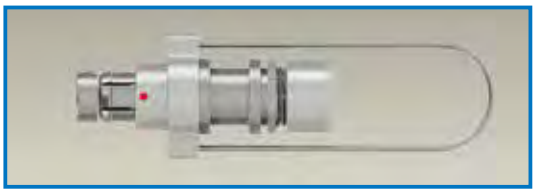


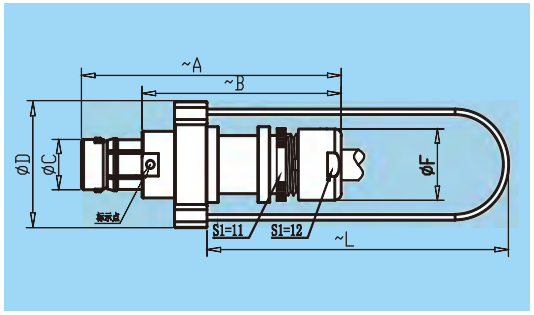
UP body style, straight short plug, alignment key and arc-shape metal guides, prevent vibration.

Protection level: IP68
360° shielding
High corrosion resistance

Reference		Dimensions (mm)							
Model	Series	A	B	C	D	E	F	S1	S2
UP	2U	34.0	24.0	6.95	9.0	12.0	8.9	8.0	7.0
UP	3U	38.0	26.8	8.95	11.55	15.0	12.7	11.0	12.0
UP	4U	47.0	34.5	12.0	15.1	18.0	15.8	14.0	14.0

Cable assembly (page 152)
Plug assembly instructions (page 155)
Injection molding (page 163)





UL body style, straight plug with lanyard release, alignment key and arc-shape metal guides, prevent vibration.

Protection level: IP68
360° shielding
High corrosion resistance

Reference		Dimensions (mm)							
Model	Series	A	B	C	D	E	L	S1	S2
UL	2U	40.0	30.0	6.95	19.1	8.9	55.0	8.0	7.0
UL	3U	48.0	36.8	8.95	22.5	12.7	60.0	11.0	12.0

Cable assembly (page 152)
Plug assembly instructions (page 155)
Injection molding (page 163)

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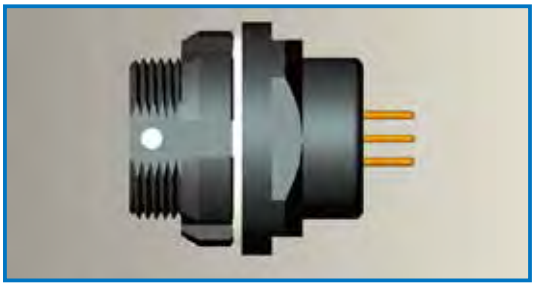
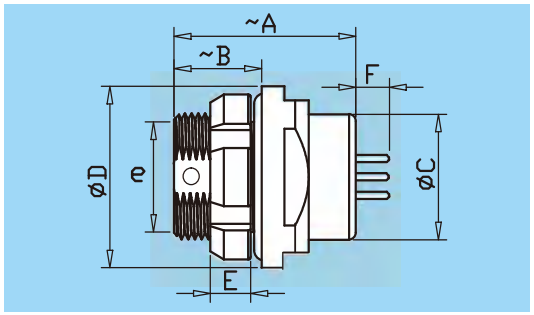
U Series Socket Dimensions



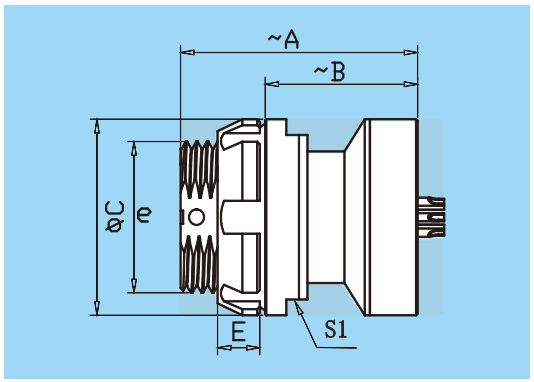


UR body style, straight short socket, alignment key and arc-shape metal guides, prevent vibration, Micro Vacuum Sealed Receptacle

Protection level: IP68
360° shielding
High corrosion resistance

Reference		Dimensions (mm)					
Model	Series	A	B	C	D	E	M
UR	2U	13.5	6.5	9.0	13.0	3.0	M9x0.5
UR	3U	17.0	6.5	12.0	16.4	3.5	M12x1.0

Panel cut-out (page 82)



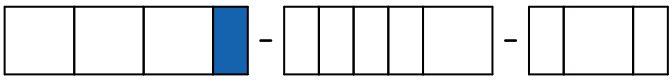
HR body style, fixed socket, alignment key and arc-shape metal guides, prevent vibration, Micro Vacuum Sealed Receptacle

Protection level: IP68
360° shielding
High corrosion resistance

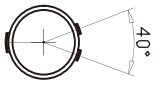
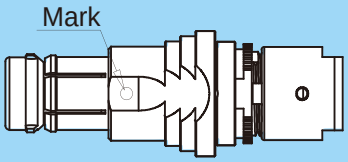
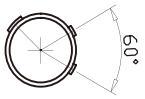
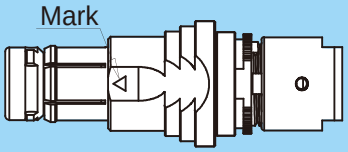
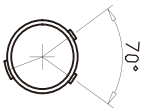
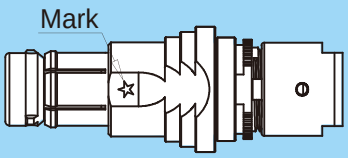
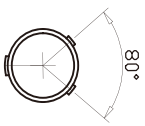
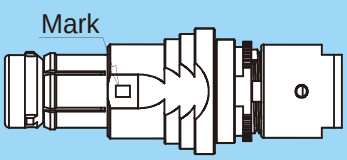
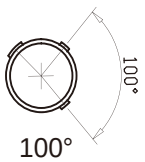
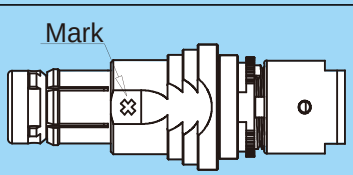
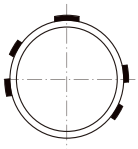
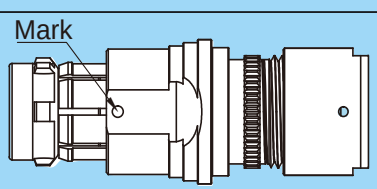
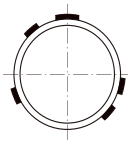
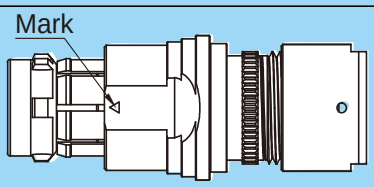
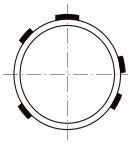
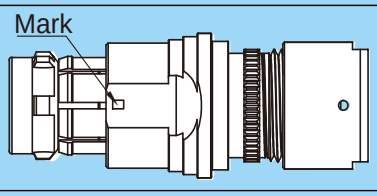
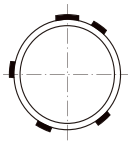
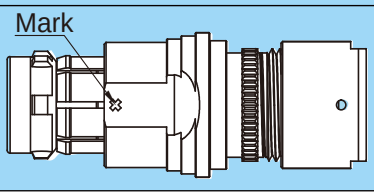
Reference		Dimensions (mm)					
Model	Series	A	B	C	E	S1	M
HR	2U	17.2	10.7	14.0	3.0	11.0	M9x0.5
HR	3U	22.5	14.5	17.9	4.0	15.0	M14x1.0
HR	4U	22.5	14.5	22.0	3.5	17.0	M16x1.0

Panel cut-out (page 82)

➤➤➤ Alignment Key



U Series Plug Alignment Key and Polarized Keying System

Shell size	Alignment key	Keying code reference	Appearance and Mark shape
2U and 3U	R	 40°	
	U	 60°	
	X	 70°	
	V	 80°	
	W	 100°	
4U	R		
	U		
	V		
	W		

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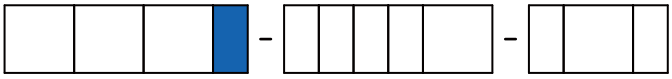
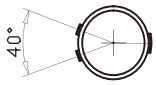
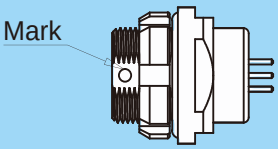
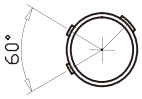
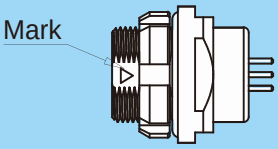
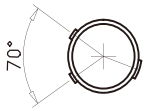
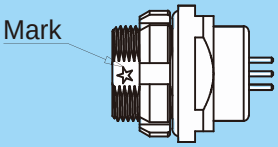
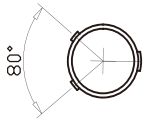
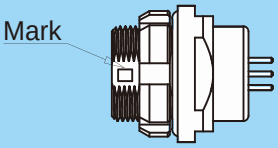
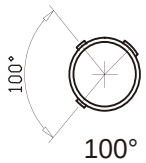
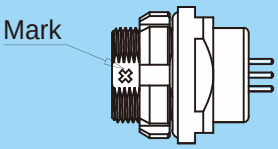
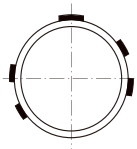
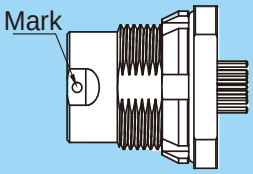
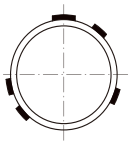
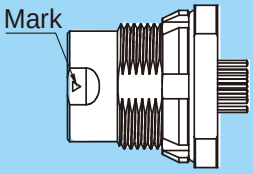
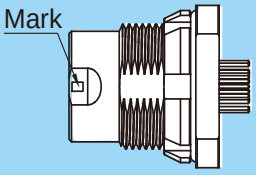
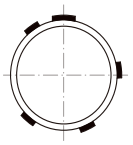
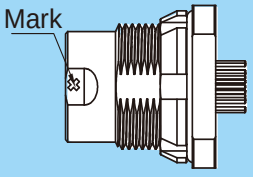


➤➤➤ Alignment Key

U Series Socket Alignment Key and Polarized Keying System

Shell size	Alignment key	Keying code reference	Appearance and Mark shape
2U and 3U	R	 40°	
	U	 60°	
	X	 70°	
	V	 80°	
	W	 100°	
4U	R		
	U		
	V		
	W		

➤➤➤ Housing

Components Material

Ref.	Outer shell and collet nut		Latch sleeve + earthing crown		Other metallic components		Note
	Material	Surf. treatment	Material	Surf. treatment	Material	Surf. treatment	
CB	Brass	Chrome	Brass/bronze	Nickel	Brass	Nickel	First choice alternative
NB	Brass	Nickel	Brass/bronze	Nickel	Brass	Nickel	
BB	Brass	Black chrome	Brass/bronze	Nickel	Brass	Nickel	
S4	Stainless steel 304	Anodized	Brass/bronze	-	Brass	Nickel	
S6	Stainless steel 316L	Anodized	Stainless steel 316L	-	Stainless steel 316L	-	
SB	Brass	Satin nickel	Brass/bronze	Nickel	Brass	Nickel	
HB	Brass	High phosphorus chemical nickel	Brass/bronze	Nickel	Brass	Nickel	
HA	Aluminium alloy	High phosphorus chemical nickel	Brass/bronze	Nickel	Brass	Nickel	
GB	Brass	Golden yellow	Brass/bronze	Nickel	Brass	Nickel	
RA	Aluminium AlMgSiSn1Bi	Ruthenium over electroless nickel	Brass/bronze	Nickel	Brass	Nickel	

Brass

Connectors are mostly brass case, which can meet most military or civil application requirements. The white surface of brass shell has nickel-chromium protective layer, which has remarkable effect in resisting industrial waste, salt spray and most corrosives.
In addition, we also have nickel plating, nickel-gold plating, nickel-black chromium plating and other options for application in specific environments of the anti-corrosion coatings.

Aluminium alloy

In the aviation, aerospace industry, portable mobile devices and so on. It is suitable for the connector with aluminium alloy shell.
In addition to its high mechanical lightness and excellent corrosion resistance, the surface of aluminium alloys can be protected by anodic plating, with a variety of colors to choose from.

Stainless steel

For the use of harsh environment, the surface coating is easy to be damaged. We recommend the use of stainless steel materials. AISI304 stainless steel and AISI316L stainless steel are usually used.
AISI304 stainless steel is recommended for special fields such as nuclear industry. It can resist radiation and nitric acid corrosion.
AISI316L stainless steel is recommended for medical and shipping industries. It has no surface treatment and strong corrosion resistance.

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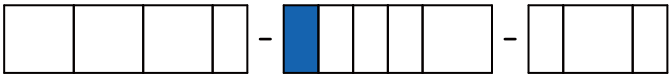
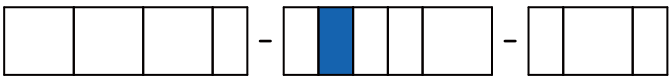


➤➤➤ Insulators

Material of Insulators

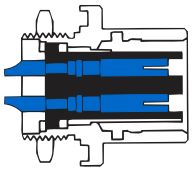
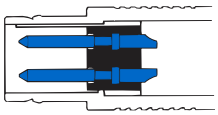
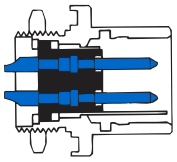
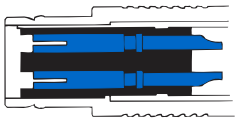
Reference	Material	Contact type	Note
S	PPS	Solder or print	Special order alternative
K	PEEK	Solder or print	First choice alternative



➤➤➤ Contact Polarity

Protect users from contact with dangerous voltages

Standard Polarity:
The contacts of the socket are protected against accidental touch.
This version is recommended when voltage is present on the socket
Inverted Polarity:
The contacts of the plug are protected against accidental touch.
This version is recommended when voltage is present on the plug.

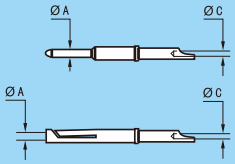
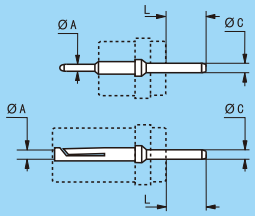
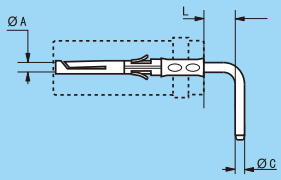
	Socket	Plug
Standard Polarity	 **F:** Female Contact	 **M:** Male Contact
Inverted Polarity	 **M:** Male Contact	 **F:** Female Contact

➤➤➤ Contacts Type

Soldering characteristics

No need to order specific tools, a simple soldering iron is sufficient
Ideal for very small and fragile conductors
Contacts with solder cups to allow the solder to flow

Contacts type reference for plugs, free or fixed sockets

Contact type	Reference	Contact			Conductor					
					Solid		Stranded			
		ΦA (mm)	ΦC (mm)		AWG Max.	Section max. (mm²)	AWG Min.	AWG Max.	Section (mm²) Min.	Section (mm²) Max.
Solder 	S	0.5	0.40	-	28	0.09	-	30	-	0.05
		0.5	0.45	-	28	0.09	-	28	-	0.09
		0.7	0.60	-	24	0.25	-	26	-	0.14
		0.7	0.80	-	22	0.34	-	22	-	0.34
		0.9	0.80	-	22	0.34	-	22	-	0.34
		1.3	1.00	-	20	0.50	-	20	-	0.50
		1.6	1.40	-	16	1.00	-	18	-	1.00
		2.0	1.80	-	14	1.50	-	16	-	1.50
		3.0	2.70	-	10	4.00	-	12	-	4.00
		4.0	3.70	-	10	6.00	-	10	-	6.00
Straight PCB 	P	L dimensions and C are detailed in the section on PCB drilling pattern. also you can customize the L dimensions								
Elbow PCB 	E	L dimensions and C are detailed in the section on PCB drilling pattern.								

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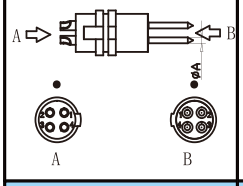
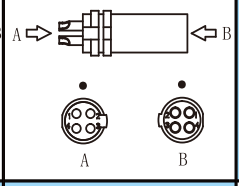
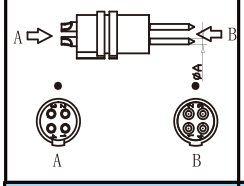
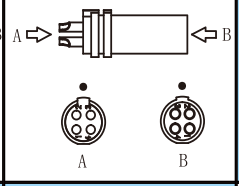
➤➤➤ Insert Configuration

F Series, T Series, U Series

	Solder male contact	Solder female contact	Reference	Number of contacts	Contact øA (mm)	Contact type			level		Rated current (A)	Resistance(mΩ)
						Solder	Print(straight)	Print (elbow)	Rated Voltage(V)	Withstanding voltage(V)		
2F Series			M02	2	0.9	√	√	√	875	875	5.0	≤5.0
			M03	3	0.9	√	√	√	750	750	5.0	≤5.0
			M04	4	0.7	√	√	√	750	750	3.0	≤12.5
			M05	5	0.7	√	√	√	750	750	3.0	≤12.5
			M07	7	0.5	√	√	√	500	500	1.0	≤15.0
			M09	9	0.5	√	√	√	500	500	1.0	≤15.0
			M10	10	0.5	√	√	√	500	500	1.0	≤15.0

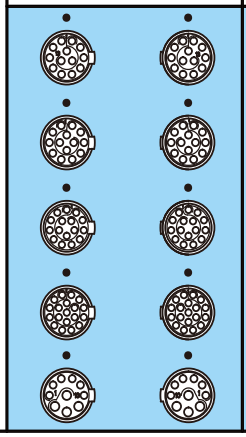
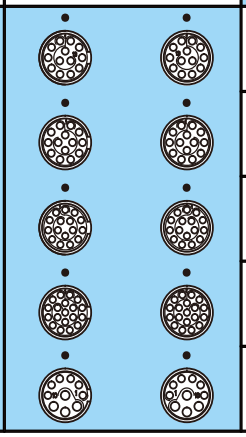
√: First choice alternative
☆:Special order alternative

	Solder male contact	Solder female contact	Reference	Number of contacts	Contact øA (mm)	Contact type			level		Rated current (A)	Resistance(mΩ)
						Solder	Print(straight)	Print (elbow)	Rated Voltage(V)	Withstanding voltage(V)		
2T and 2U Series			M02	2	0.9	√	√	√	875	875	5.0	≤5.0
			M03	3	0.9	√	√	√	750	750	5.0	≤5.0
			M04	4	0.7	√	√	√	750	750	3.0	≤12.5
			M05	5	0.7	√	√	√	750	750	3.0	≤12.5
			M07	7	0.5	√	√	√	500	500	1.0	≤15.0
			M09	9	0.5	√	√	√	500	500	1.0	≤15.0
			M10	10	0.5	√	√	√	500	500	1.0	≤15.0

√: First choice alternative
☆:Special order alternative

➤➤➤ Insert Configuration

F Series, T Series, U Series

	Solder male contact	Solder female contact	Reference	Number of contacts	Contact øA (mm)	Contact type			level		Rated current (A)	Resistance(mΩ)
						Solder	Print(straight)	Print (elbow)	Rated Voltage(V)	Withstanding voltage(V)		
21F, 21T Series			M13	13	0.5	√	√	√	500	500	1.0	≤15.0
			M14	14	0.5	√	√	√	500	500	1.0	≤15.0
			M16	16	0.5	√	√	√	500	500	1.0	≤20.0
			M19	19	0.4	√	√	√	500	500	1.0	≤20.0
			864	6+4	0.5	√	☆	☆	500	500	1.0	≤15.0
					0.7	√	☆	☆	750	750	3.0	≤12.5

√: First choice alternative
☆:Special order alternative

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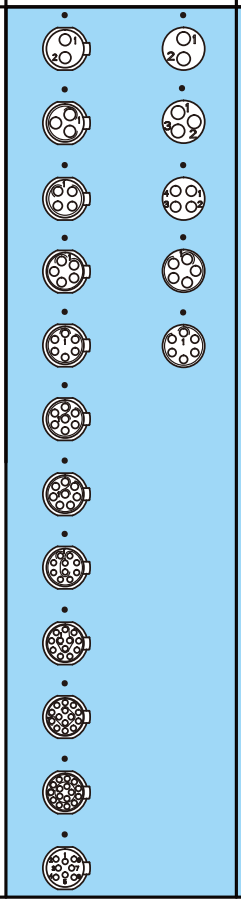
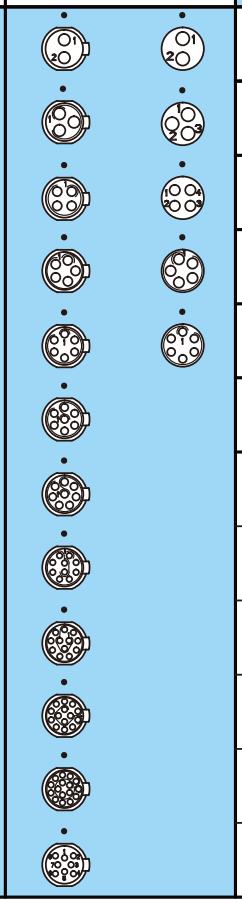
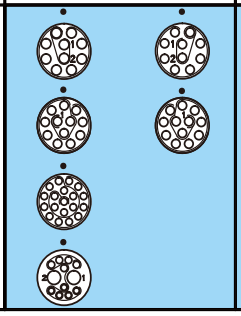
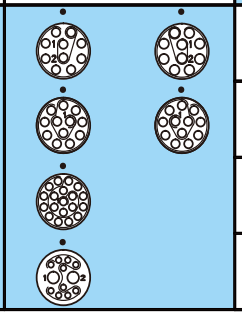
➤➤➤ Insert Configuration

F Series, T Series, U Series

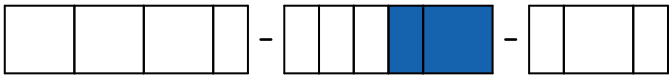
	Solder male contact	Solder female contact	Reference	Number of contacts	Contact øA (mm)	Contact type			level		Rated current (A)	Resistance(mΩ)
						Solder	Print(straight)	Print (elbow)	Rated Voltage(V)	Withstanding voltage(V)		
3F, 3T, 3U Series			M02	2	1.3	√	√	√	1000	1000	10.0	≤5.0
			M03	3	1.3	√	√	√	1000	1000	10.0	≤5.0
			M04	4	0.9	√	√	√	875	875	5.0	≤5.0
			M05	5	0.9	√	√	√	875	875	5.0	≤5.0
			M06	6	0.7	√	√	√	875	875	3.0	≤12.5
			M07	7	0.7	√	√	√	875	875	3.0	≤12.5
			M08	8	0.7	√	√	√	500	500	3.0	≤12.5
			M10	10	0.5	√	√	√	400	400	1.0	≤15.0
			M12	12	0.5	√	√	√	400	400	1.0	≤15.0
			M14	14	0.5	√	√	√	400	400	1.0	≤15.0
			M16	16	0.5	√	√	√	400	400	1.0	≤15.0
			H58	8	0.5	√	√	√	400	400	1.0	≤15.0

√: First choice alternative
☆:Special order alternative

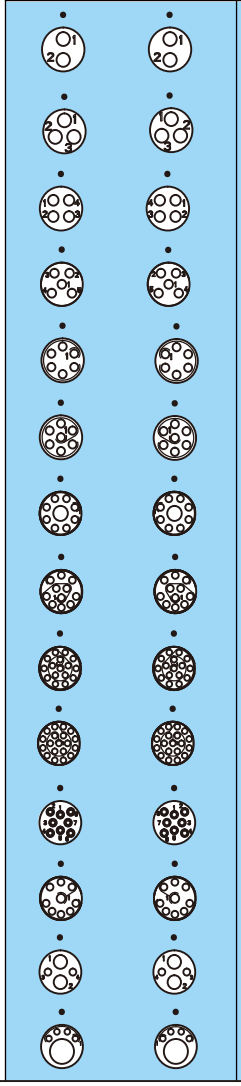
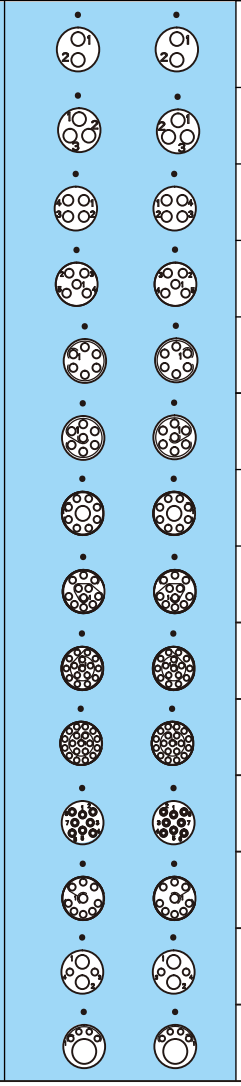
	Solder male contact	Solder female contact	Reference	Number of contacts	Contact øA (mm)	Contact type			level		Rated current (A)	Resistance(mΩ)
						Solder	Print(straight)	Print (elbow)	Rated Voltage(V)	Withstanding voltage(V)		
31F, 31T Series			M10	10	0.7	√	√	√	875	875	6.0	≤12.5
			M12	12	0.7	√	√	√	875	875	6.0	≤12.5
			M19	19	0.5	√	√	√	500	500	2.5	≤15.0
			812	10+2	0.5	√	☆	☆	400	400	1.0	≤15.0
					1.3	√	☆	☆	500	500	10.0	≤5.0

√: First choice alternative
☆:Special order alternative

➤➤➤ Insert Configuration



F Series, T Series, U Series

4F, 4T, 4U Series	Solder male contact	Solder female contact	Reference	Number of contacts	Contact øA (mm)	Contact type			level		Rated current (A)	Resistance(mΩ)
						Solder	Print(straight)	Print (elbow)	Rated Voltage(V)	Withstanding voltage(V)		
			M02	2	1.6	√	√	√	1000	1000	12.0	≤3.0
			M03	3	1.6	√	√	√	1000	1000	12.0	≤3.0
			M04	4	1.3	√	√	√	875	875	10.0	≤5.0
			M05	5	1.3	√	√	√	875	875	10.0	≤5.0
			M06	6	0.9	√	√	√	875	875	5.0	≤5.0
			M07	7	0.9	√	√	√	875	875	5.0	≤5.0
			M08	8	0.9	√	√	√	875	875	5.0	≤5.0
			M11	11	0.9	√	√	√	875	875	5.0	≤5.0
			M16	16	0.7	√	√	√	750	750	3.0	≤12.5
			M19	19	0.7	√	√	√	750	750	3.0	≤12.5
			H08	8	0.9	√	√	√	750	750	3.0	≤12.5
			881	8+1	0.9	√	√	√	875	875	0.9	≤5.0
					1.3	√	√	√	875	875	1.3	≤3.0
			822	2+2	0.9	√	√	√	875	875	2.0	≤5.0
					2.3	√	√	√	1000	1000	20.0	≤2.0
			841	4+1	0.7	√	√	√	1000	1000	5.0	≤12.5
				Coax	≤50Ω	√	√	√	1000	1000		

√: First choice alternative
☆:Special order alternative

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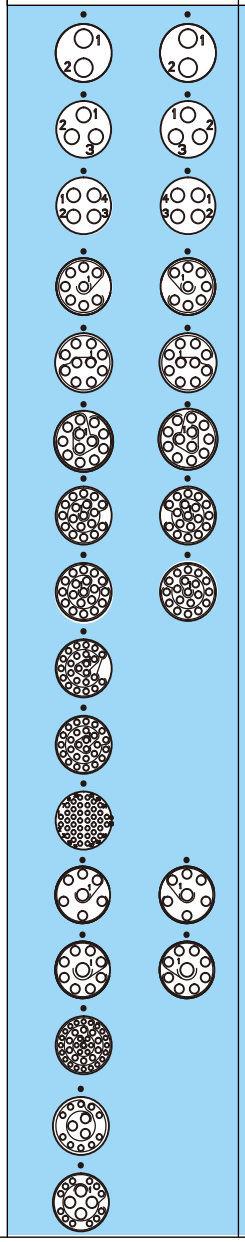
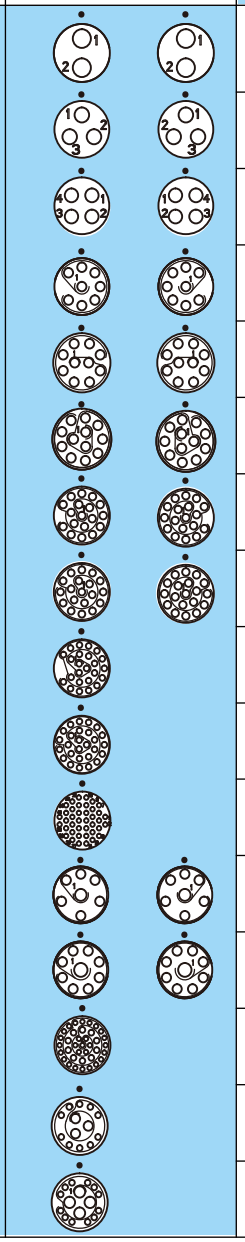
➤➤➤ Insert Configuration

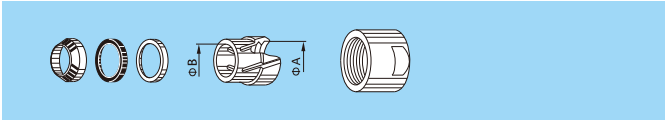
F Series, T Series, U Series

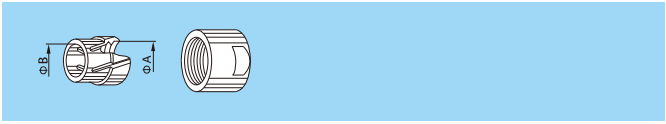
5F Series	Solder male contact	Solder female contact	Reference	Number of contacts	Contact øA (mm)	Contact type			level		Rated current (A)	Resistance(mΩ)
						Solder	Print(straight)	Print (elbow)	Rated Voltage(V)	Withstanding voltage(V)		
			M02	2	3.0	√	√	√	1000	1000	20.0 2)	≤1.0
			M03	3	2.0	√	√	√	1000	1000	15.0 2)	≤2.0
			M04	4	2.0	√	√	√	875	875	15.0 2)	≤2.0
			M08	6	1.3	√	√	√	875	875	10.0	≤5.0
			M10	10	1.3	√	√	√	875	875	10.0 1)	≤5.0
			M12	12	1.3	√	√	√	875	875	10.0 1)	≤5.0
			M18	18	0.9	√	√	√	875	875	5.0	≤5.0
			M19	19	0.9	√	√	√	875	875	5.0	≤5.0
			M24	24	0.7	√	√	√	750	750	3.0	≤12.5
			M27	27	0.7	√	√	√	750	750	3.0	≤12.5
			M40	40	0.5	√	√	√	400	400	1.0	15.0
			861	6+1	1.3	√	√	√	875	875	10.0	≤5.0
					2.0	√	√	√	875	875	18.0 2)	≤3.0
			881	8+1	1.3	√	√	√	875	875	10.0	≤5.0
					2.0	√	√	√	875	875	15.0 2)	≤3.0
			837	27+10	0.5	√	√	√	400	400	1.0	≤15.0
					0.7	√	√	√	500	500	3.0	≤12.5
			813	10+3	0.7	√	√	√	500	500	3.0	≤12.5
					1.3	√	√	√	875	875	10.0	≤5.0
			816	12+4	0.7	√	√	√	500	500	3.0	≤12.5
					1.6	√	√	√	875	875	12.0	≤3.0

√: First choice alternative， 1): rated current = 6A for elbow (90°) contact for printed circuit.
☆:Special order alternative, 2):rated current = 12A for socket with elbow (90°) contacts for printed circuit.

➤➤➤ Collets

D type collets for F, T, U series





	Reference		Collet Φ		Cable Φ	
	Type	Code	ΦA	ΦB	Max.	Min.
2F	D	32	3.2	-	3.5	2.5
2T	D	42	4.2	-	4.5	3.5
2U	D	52	5.2	-	5.5	4.5
3F	D	42	4.2	-	4.5	3.5
3T	D	52	5.2	-	5.5	4.5
3U	D	62	6.2	6.2	6.5	5.5
	D	72	7.2	-	7.5	6.5
31F	D	52	5.2	-	5.5	4.5
31T	D	62	6.2	-	6.5	5.5
	D	82	8.2	-	8.5	7.5
4F	D	52	5.2	-	5.5	4.5
4T	D	62	6.2	-	6.5	5.5
4U	D	72	7.2	-	7.5	6.5
	D	82	8.2	-	8.5	7.5
	D	92	9.2	8.6	9.5	8.5
	D	99	9.9	8.6	10.2	9.2
5F	D	52	5.2	-	5.5	4.5
	D	9.5	9.5	-	9.5	8.5
	D	11.5	11.5	-	11.5	9.2

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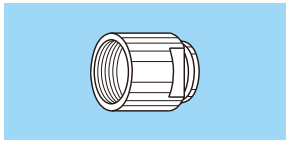
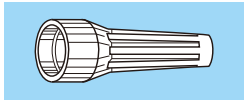
➤➤➤ Variant

To order a model with cable collet and nut for fitting a bend relief, you should write a "B" in the variant position.
Bend reliefs to be ordered separately on *page 146*

Bend Relief for F Series Plug with Collet

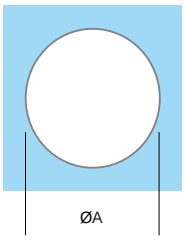




	Ref.	Collet		*Need to be ordered separately (see page 146)*
		Type	Code	
2F	B	D	17 to 35	GMA.00.●●●.●●
3F	B	D	21 to 52	GMA.0B.●●●.●●
4F	B	M	21 and 31	GMA.0B.●●●.●●
		D	24	GMA.2B.●●●.●●
		D	52 to 92	

➤➤➤ Panel Cut-out

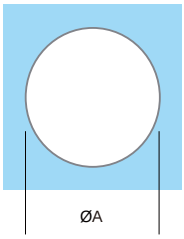
F, T Series



Cut-out types

Series	ØA
2F, 2T	9.1
3F, 3T	12.1
31F, 31T	14.1
4F, 4T	15.1
5F	18.1
Model	**ZL, ZY, ZH, MH G8, DH, ZY**

U Series



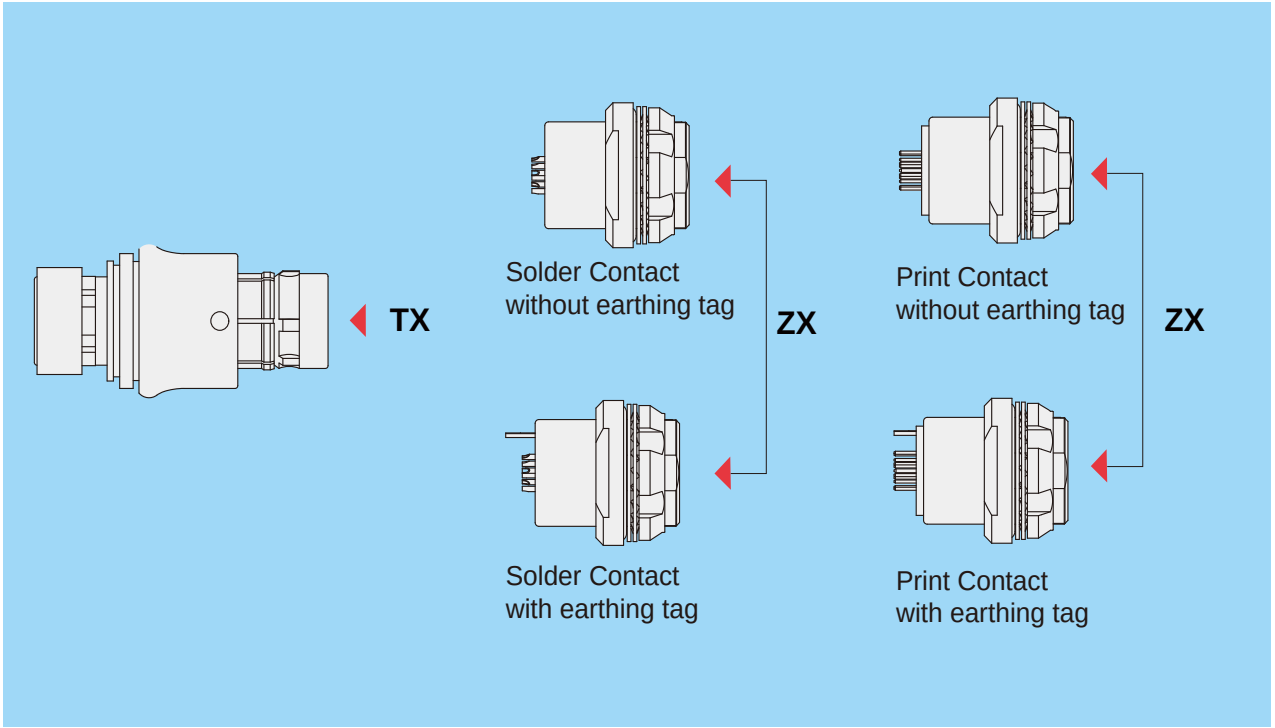
Cut-out types

Series	ØA	ØA
2U	9.1	9.1
3U	12.1	14.1
4U		16.1
Model	**UR**	**HR**

➤➤➤ X Series

X Series(Outdoor, Multi Arc-shape Metal Guides)

Body style



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Description

X series straight push-pull connectors are used in high-density installations, relatively narrow spaces, and where it is difficult to insert and separate by rotation. Widely used in the military and civilian fields of radio equipment, infantry equipment, reinforced computers, medical equipment, testing equipment, audio and video equipment, data acquisition, industrial control and other occasions for AC and DC, high-speed, radio frequency, optical fiber and other signal connection transmission.

Main features

• High-Speed Capabilities: Supports direct transmission of high-speed signals for various standard protocols (USB2.0, USB3.0, Gigabit Ethernet, 10 Gigabit Ethernet, HDMI, SATA, DP, etc.).
• Single Connector: Integrates the transmission of multiple signals including low-frequency, power, high-speed, RF, and optical fiber through a single connector.
• Straight Push-Pull Locking Structure for Plugs and Sockets: Enables blind mating and allows for quick connections and disconnections.
• Nut-Fastened Socket Installation: Equipped with a conductive O-ring, providing shielding and sealing functions.
• Multi-Key Positioning: dual error-prevention methods with aliginment key structure error-proofing and visual color cues to prevent incorrect insertion.
• Socket Leakage Rate: With a pressure differential of 1×10^5 Pa, the leakage rate should be less than 1.0 Pa·cm³/s (excluding optical fiber and RF products).
• Water Pressure Resistance: After mating, the plug and socket can withstand water pressure at a depth of 2 meters for 24 hours (excluding optical fiber and RF products).
• Pin and Socket Compatibility: Both plugs and sockets can be fitted with either pins or sockets (excluding optical fiber and RF products).
• High-Speed and Low-Frequency Electrical Contacts Termination: Plugs use wire soldering, and sockets are available in wire soldering and straight PCB soldering types.

➤➤➤ X Series

Mechanical Performance

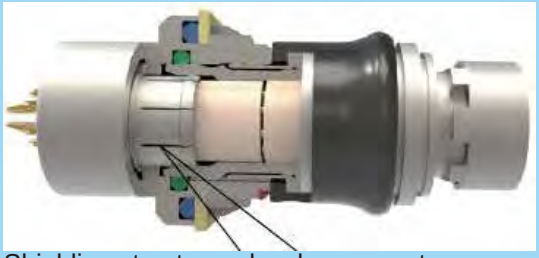
• Mechanical Life: 5000 cycles

• Vibration:

• 2X Shells: Sine Vibration: Frequency 10 ~ 2000Hz, Acceleration 147m/s², ≤1μs interruption

• 3X, 31X, 4X, 5X Shells: Random Vibration: Power Spectral Density 1.0g²/Hz, Root Mean Square Value 36.6g, ≤1μs interruption

• Shock: Acceleration 2940m/s², ≤1μs interruption



Shielding structure: closely cooperate with the plug to realize the shielding function

Shielding effectiveness: >55dB (1GHz)

Environmental Performance

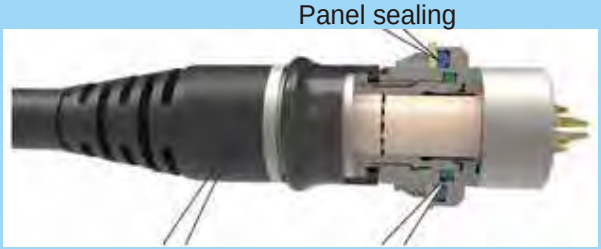
• Operating Temperature: -55℃ ~ +125℃

• Relative Humidity: Up to 95% at 40℃

• Socket Leakage Rate: With a pressure differential of 1×10^5 Pa, the leakage rate should be no greater than 1.0 Pa·cm³/s (fiber optic and RF products are not hermetic)

• Salt Spray: 96 hours for aluminum alloy, 500 hours for copper alloy

• Water Pressure Resistance: After mating, the plug and socket can withstand water pressure at a depth of 2 meters for 24 hours (excluding fiber optic and RF products)



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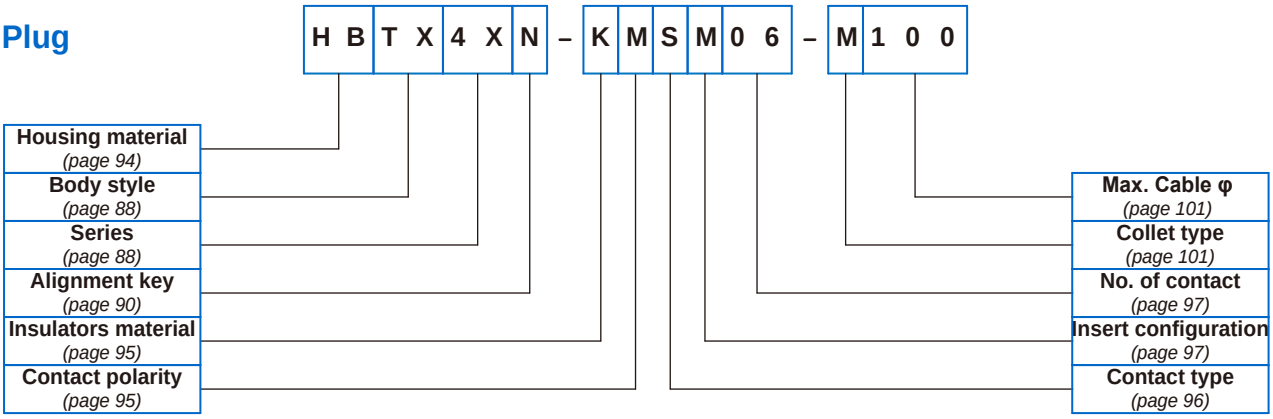
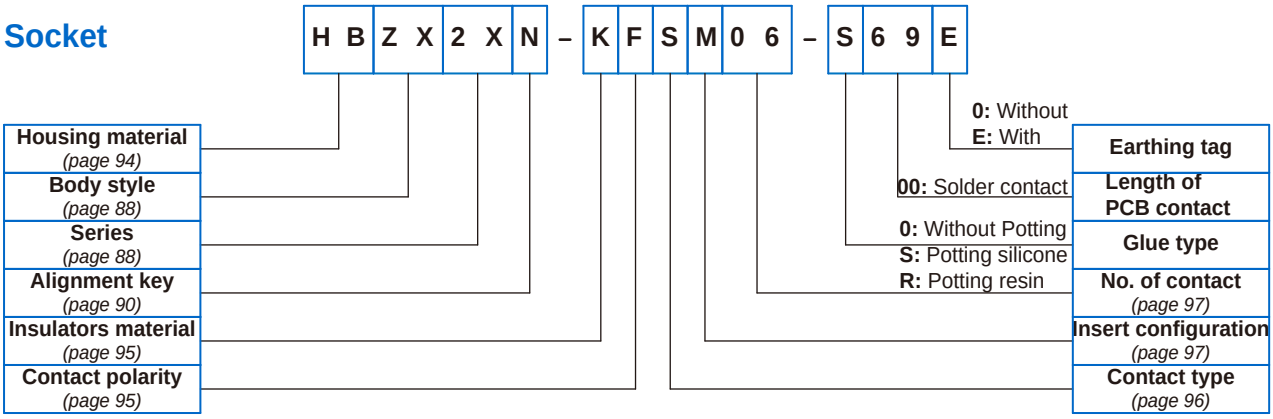
X Series Part Numbering System

Plug



Socket



Part Number Example

Straight Plug with Cable Collet:

HBTX4XN-KMSM06-M100 = TX body style, outer shell in high-phosphorus electroless nickel-plated brass, 4X series, straight plug with key (N), PEEK insulator, male solder contacts, multipole type with 6 contacts, M type crimp cable collet for Max. 10.0 mm diameter cable

Fixed Socket:

HBZX31XN-KFSH52-S000 = ZX body style, outer shell in high-phosphorus electroless nickel-plated brass, 31X series, fixed socket with key (N), PEEK insulator, female solder contacts, high-speed needle contact. potting silicone.

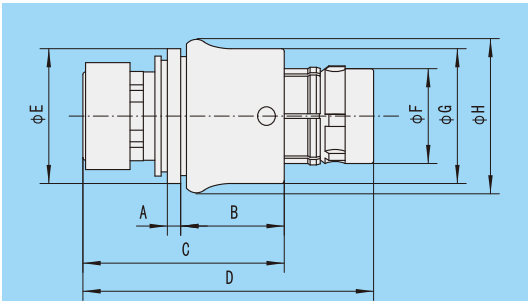
HBZX3XN-KFPM12-R690 = ZX body style, outer shell in high-phosphorus electroless nickel-plated brass, 3X series, fixed socket with key (N), PEEK insulator, female straight PCB contacts, multipole type with 12 contacts, potting resin, length of straight print contact with 6.9mm.

HBZX31XN-KFSM19-R00E = ZX body style, outer shell in high-phosphorus electroless nickel-plated brass, 31X series, fixed socket with key (N), PEEK insulator, female solder contacts, multipole type with 19 contacts, potting resin. with earthing tag.

HBZX4XA-KFP822-S69E = ZX body style, outer shell in high-phosphorus electroless nickel-plated brass, 4X series, fixed socket with key (A), PEEK insulator, female straight PCB contacts, mixed contacts, potting silicone, length of straight print contact with 6.9mm. with earthing tag.

➤➤➤ X Series(Standard)

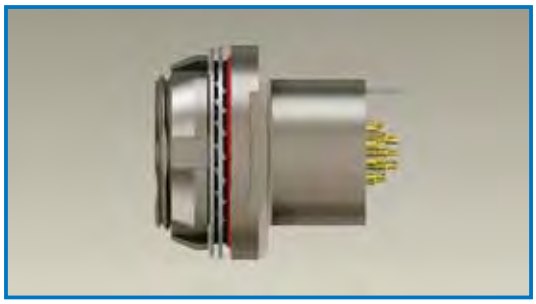
X Series Plug and Socket Dimensions

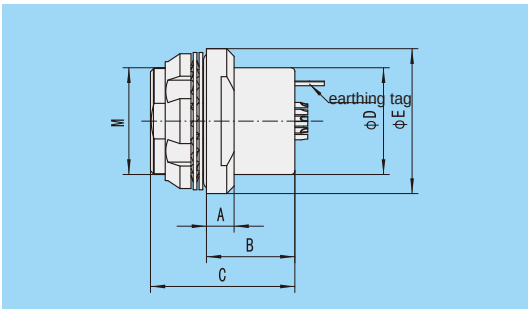


TX body style, Straight short plug, multi-keying and arc-shape metal guides, injection collet style clamp system for cable.

Model	Series	Dimensions (mm)							
		A	B	C	D	E	F	G	H
TX	2X	1.5	10.5	22.3	32.3	11.9	7.0	11.9	13.9
TX	3X	1.5	11.3	23.1	34.1	13.9	9.0	13.9	15.9
TX	31X	1.5	11.8	23.3	33.3	14.5	10.1	14.5	16.5
TX	4X	1.5	12.2	24.0	36.0	17.6	12.0	17.6	19.6
TX	5X	1.5	12.2	23.2	38.3	21.9	15.0	22.0	23.9

Cable assembly (page 152)
Plug assembly instructions(page 156)
Plug injection molding (page 163)

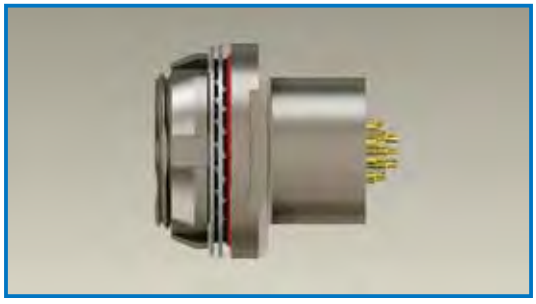


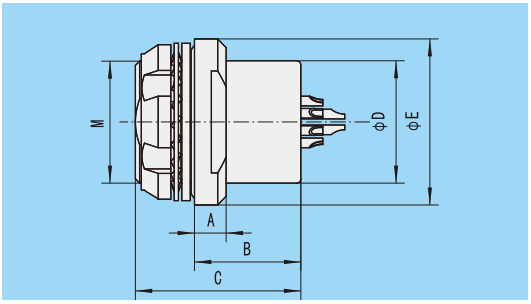


ZX body style, short socket, multi-keying and arc-shape metal guides, solder contact (with earthing tag)

Model	Series	Dimensions (mm)					
		A	B	C	D	E	M
ZX	31X	3.75	12.0	19.6	14.0	19.0	M14x0.75
ZX	4X	4.0	14.5	22.5	15.0	22.0	M16x1.0

Socket Panel cut-out(page 101)





ZX body style, short socket, multi-keying and arc-shape metal guides, solder contact (without earthing tag)

Model	Series	Dimensions (mm)					
		A	B	C	D	E	M
ZX	2X	3.5	8.7	16.7	10.0	15.5	M11x0.75
ZX	3X	3.6	13.1	21.1	12.0	18.8	M14x0.75
ZX	31X	3.75	12.0	19.6	14.0	19.0	M14x0.75
ZX	4X	4.0	14.5	22.5	15.0	22.0	M16x1.0
ZX	5X	4.55	16.1	26.6	21.05	27.1	M20x1.0

Socket Panel cut-out(page 101)

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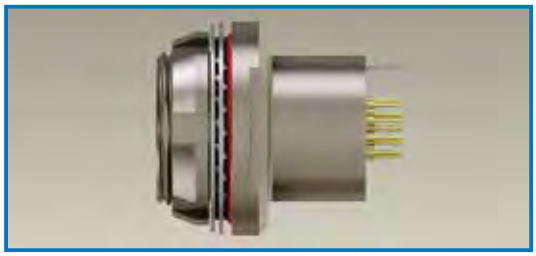
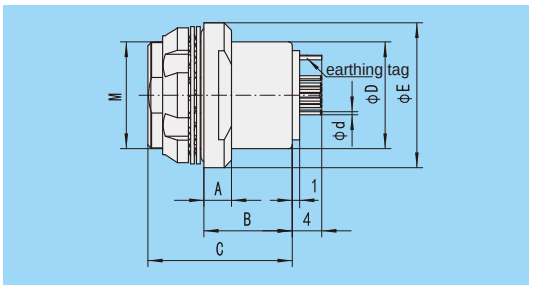
X Series Plug and Socket Dimensions

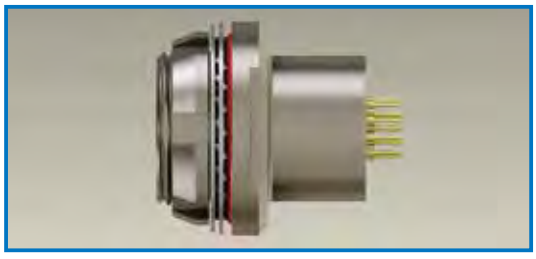


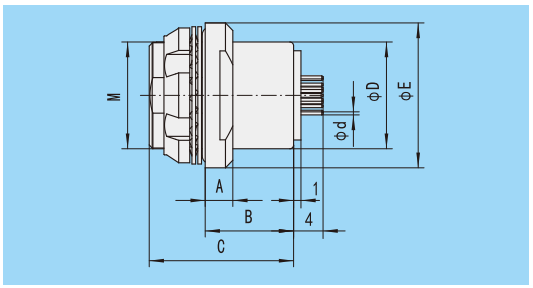


ZX body style, short socket, multi-keying and arc-shape metal guides, print contact (with earthing tag)

Model	Series	Dimensions (mm)					
		A	B	C	D	E	M
ZX	31X	3.75	12.0	19.6	14.0	19.0	M14x0.75
ZX	4X	4.0	14.5	22.5	15.0	22.0	M16x1.0

Socket Panel cut-out(page 101)



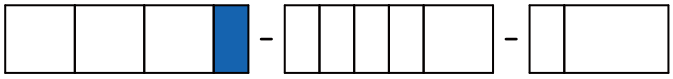


ZX body style, short socket, multi-keying and arc-shape metal guides, print contact (without earthing tag)

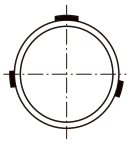
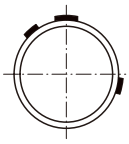
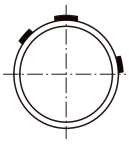
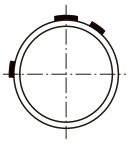
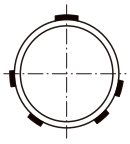
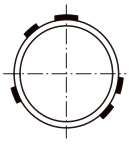
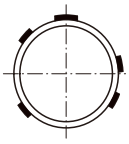
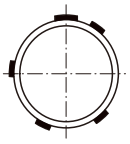
Model	Series	Dimensions (mm)					
		A	B	C	D	E	M
ZX	2X	3.5	8.7	16.7	10.0	15.5	M11x0.75
ZX	3X	3.6	13.1	21.1	12.0	18.8	M14x0.75
ZX	31X	3.75	12.0	19.6	14.0	19.0	M14x0.75
ZX	4X	4.0	14.5	22.5	15.0	22.0	M16x1.0
ZX	5X	4.55	16.1	26.6	21.05	27.1	M20x1.0

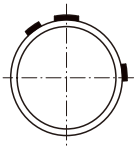
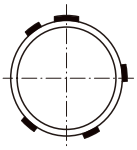
Socket Panel cut-out(page 101)

➤➤➤ Alignment Key (Standard)



Alignment Key and Polarized Keying System

		Shell size	Alignment key			
			N	A	B	C
Plug	Shell Keying	2X				
		3X 31X 4X 5X				
	Colour Keying		Red	White	Blue	Green
						

		Shell size	Alignment key			
			N	A	B	C
Socket	Shell Keying	2X				
		3X 31X 4X 5X				
	Colour Keying		Red	White	Blue	Green
						

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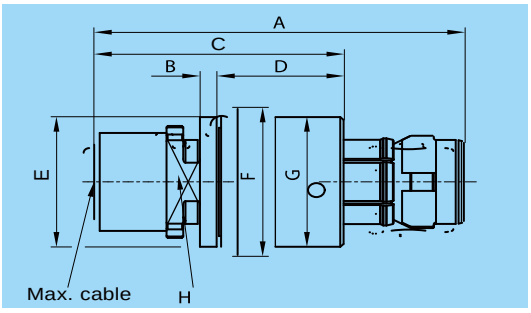
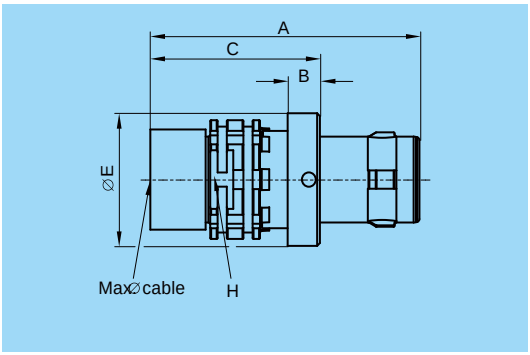
X Series(Customized) Plug Dimensions



S1 body style, straight push-pull plug, multi-keying and arc-shape metal guides, injection collet style clamp system for cable.

Series	Dimensions (mm)								
	A	B	C	D	E	F	G	H	Max. Cable Φ
2X	31.4	1.5	21.4	10.4	11.9	14.0	12.0	7.0	5.8
3X	33.2	1.5	22.4	11.4	13.9	15.9	13.9	8.0	7.2
31X	32.7	1.5	22.7	11.7	14.5	16.5	14.5	10.0	8.0
4X	35.2	1.5	23.2	12.2	17.6	19.6	17.6	12.0	10.0
5X	38.3	1.5	23.2	12.2	21.9	23.9	22.0	14.0	11.5

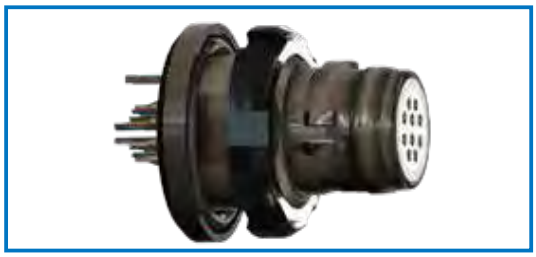
Note: There are several models below, We can also customize connectors of other sizes according to your requirements.
RAS14XA-KMSH08-M100, RAS131XA-KMSM10-M80
RAS131XB-KMSM10-M80, RAS131XD-KMSM10-M80

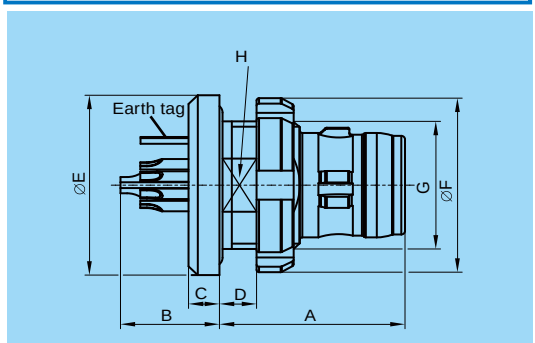


A1 body style, straight Break-Away plug, multi-keying and arc-shape metal guides, injection collet style clamp system for cable.

Series	Dimensions (mm)					
	A	B	C	E	H	Max. Cable Φ
2X	25.0	3.0	15.0	11.9	9.0	5.8
3X	29.2	3.5	18.4	13.9	11.0	7.2
31X	28.5	3.5	18.4	15.9	12.0	8.0
4X	31.0	4.0	19.0	17.6	14.0	10.0
5X	37.5	4.0	22.4	21.9	18.0	11.5

Note: There are several models below, We can also customize connectors of other sizes according to your requirements.
RAA12XB-KMSM07-M58





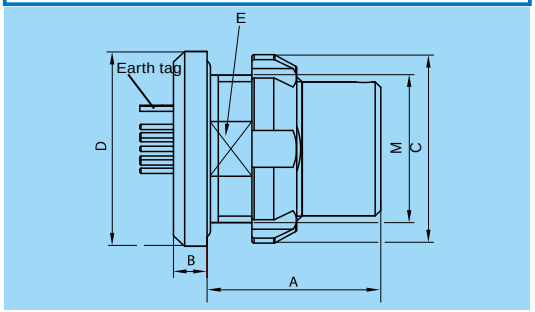
GW body style, Panel plug rear mount, multi-keying and arc-shape metal guides

Series	Dimensions (mm)							
	A	B	C	D max	E	F	H	M
2X	15.0	6.4	2.5	3.0	13.2	12.8	9.2	10X0.5
3X	15.0	8.0	2.5	3.5	15.5	15.0	10.0	11X0.75
31X	16.5	9.7	4.0	3.5	17.5	17.9	13.0	14X0.75

Note: There are several models below, We can also customize connectors of other sizes according to your requirements.
RAGW3XA-KFPM10-R30E

➤➤➤ X Series(Customized)

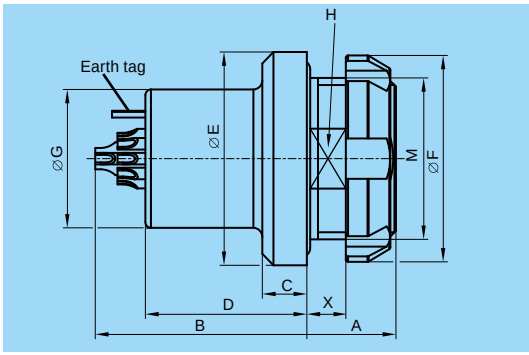
X Series(Customized) Socket Dimensions



GK body style, socket, multi-keying and arc-shape metal guides, solder contact (with earthing tag) For installation from rear of panel – low profile inside the device

Series	Dimensions (mm)					
	A	B	C	D	E	M
2X	13.0	2.5	15.0	15.5	10.0	M11x0.75
3X	15.5	3.0	17.9	18.5	13.0	M14x1.0
31X	14.2	3.0	17.9	18.9	13.0	M14x1.0
4X	17.5	3.0	21.9	20.8	15.0	M16x1.0

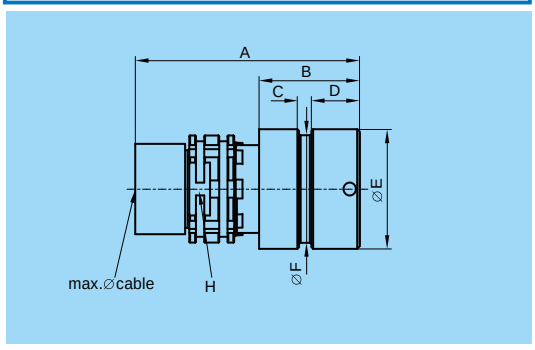
Note: There are several models below, We can also customize connectors of other sizes according to your requirements.
RAGK4XA-KFSH08-R00E



G8 body style, socket, multi-keying and arc-shape metal guides, solder contact (with earthing tag) For installation from rear of panel – low profile inside the device

Series	Dimensions (mm)									
	A	B	C	D	E	F	G	H	X Max	M
2X	6.5	15.5	3.0	11.5	15.5	15.0	10.0	10.0	3.0	M11x0.75
3X	8.0	19.0	4.0	14.5	18.5	17.9	12.0	13.0	3.5	M14x1.0
31X	7.0	17.7	2.5	12.5	18.9	17.9	14.0	13.0	3.0	M14x1.0
4X	8.0	21.5	4.0	15.0	20.8	21.9	14.5	15.0	3.0	M16x1.0
5X	11.0	22.5	4.0	15.5	26.0	25.0	18.0	18.0	5.5	M20x1.0

Note: There are several models below, We can also customize connectors of other sizes according to your requirements.
RAG82XB-KFSM07-R00E, RAG831XA-KFSM10-R00E
RAG831XB-KFSM10-R00E, RAG831XD-KFSM10-R00E



K1 body style, In-line Socket, multi-keying and arc-shape metal guides

Series	Dimensions (mm)							
	A	B	C	D	E	F	H	Max.Cable Φ
2X	25.0	13.0	1.5	5.8	11.9	10.5	9.0	5.8
3X	27.0	12.1	1.5	5.8	13.9	12.5	11.0	7.2
31X	27.0	12.0	1.5	5.8	15.9	14.5	12.0	8.0

Note: There are several models below, We can also customize connectors of other sizes according to your requirements.
RAK13XA-KMSM10-M72

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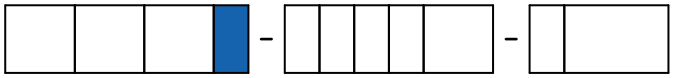
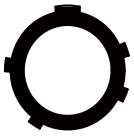
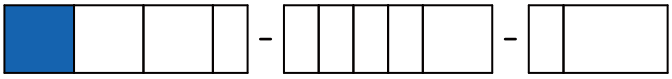
➤➤➤ Alignment Key (Customized)



Alignment Key and Polarized Keying System

	Alignment key			
	A	B	C	D
Plug Front View				
Colour Keying	Light brown	Red	Blue	Green
				

➤➤➤ Housing



Components Material

Ref.	Outer shell and collet nut		Latch sleeve + earthing crown		Other metallic components		Note
	Material	Surf. treatment	Material	Surf. treatment	Material	Surf. treatment	
CB	Brass	Chrome	Brass/bronze	Nickel	Brass	Nickel	
NB	Brass	Nickel	Brass/bronze	Nickel	Brass	Nickel	
BB	Brass	Black chrome	Brass/bronze	Nickel	Brass	Nickel	
S4	Stainless steel 304	Anodized	Brass/bronze	-	Brass	Nickel	
S6	Stainless steel 316L	Anodized	Stainless steel 316L	-	Stainless steel 316L	-	
SB	Brass	Satin nickel	Brass/bronze	Nickel	Brass	Nickel	
HB	Brass	High phosphorus chemical nickel	Brass/bronze	Nickel	Brass	Nickel	First choice alternative
HA	Aluminium alloy	High phosphorus chemical nickel	Brass/bronze	Nickel	Brass	Nickel	
GB	Brass	Golden yellow	Brass/bronze	Nickel	Brass	Nickel	
RA	Aluminium AlMgSiSn1Bi	Ruthenium over electroless nickel	Brass/bronze	Nickel	Brass	Nickel	Only for X series Customized

Brass

Connectors are mostly brass case, which can meet most military or civil application requirements. The white surface of brass shell has nickel-chromium protective layer, which has remarkable effect in resisting industrial waste, salt spray and most corrosives.
In addition, we also have nickel plating, nickel-gold plating, nickel-black chromium plating and other options for application in specific environments of the anti-corrosion coatings.

Aluminium alloy

In the aviation, aerospace industry, portable mobile devices and so on. It is suitable for the connector with aluminium alloy shell.
In addition to its high mechanical lightness and excellent corrosion resistance, the surface of aluminium alloys can be protected by anodic plating, with a variety of colors to choose from.

Stainless steel

For the use of harsh environment, the surface coating is easy to be damaged. We recommend the use of stainless steel materials. AISI304 stainless steel and AISI316L stainless steel are usually used.
AISI304 stainless steel is recommended for special fields such as nuclear industry. It can resist radiation and nitric acid corrosion.
AISI316L stainless steel is recommended for medical and shipping industries. It has no surface treatment and strong corrosion resistance.

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➤➤➤ Insulators

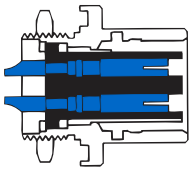
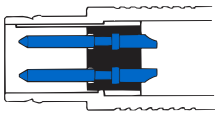
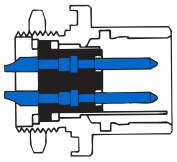
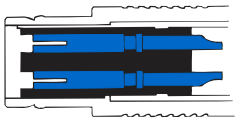
Material of Insulators

Reference	Material	Contact type	Note
K	PEEK	Solder or print	Special order alternative

➤➤➤ Contact Polarity

Protect users from contact with dangerous voltages

Standard Polarity:
The contacts of the socket are protected against accidental touch.
This version is recommended when voltage is present on the socket
Inverted Polarity:
The contacts of the plug are protected against accidental touch.
This version is recommended when voltage is present on the plug.

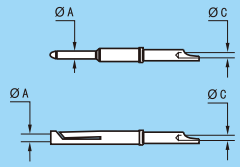
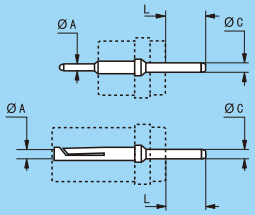
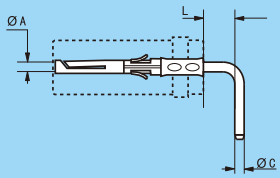
	Socket	Plug
Standard Polarity	 **F:** Female Contact	 **M:** Male Contact
Inverted Polarity	 **M:** Male Contact	 **F:** Female Contact

➤➤➤ Contacts Type

Soldering characteristics

No need to order specific tools, a simple soldering iron is sufficient
Ideal for very small and fragile conductors
Contacts with solder cups to allow the solder to flow

Contacts type reference for plugs, free or fixed sockets

Contact type	Reference	Contact			Conductor					
					Solid		Stranded			
		ΦA (mm)	ΦC (mm)		AWG Max.	Section max. (mm²)	AWG Min.	AWG Max.	Section (mm²) Min.	Section (mm²) Max.
Solder 	S	0.5	0.40	-	28	0.09	-	30	-	0.05
		0.5	0.45	-	28	0.09	-	28	-	0.09
		0.7	0.60	-	24	0.25	-	26	-	0.14
		0.7	0.80	-	22	0.34	-	22	-	0.34
		0.9	0.80	-	22	0.34	-	22	-	0.34
		1.3	1.00	-	20	0.50	-	20	-	0.50
		1.6	1.40	-	16	1.00	-	18	-	1.00
		2.0	1.80	-	14	1.50	-	16	-	1.50
		3.0	2.70	-	10	4.00	-	12	-	4.00
		4.0	3.70	-	10	6.00	-	10	-	6.00
Straight PCB 	P	L dimensions and C are detailed in the section on PCB drilling pattern. also you can customize the L dimensions								
Elbow PCB 	E	L dimensions and C are detailed in the section on PCB drilling pattern.								

When Multiple Contacts are Working Simultaneously, the Derating Factor for the Rated Operating Current of Individual Contacts Should Comply with the Specifications in the Table Below.

No. of Contact	1~10	11~20	21~30	31~40
Derating Factor for the Rated Operating Current	0	10%	20%	30%

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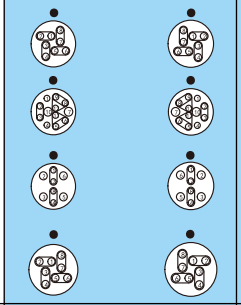
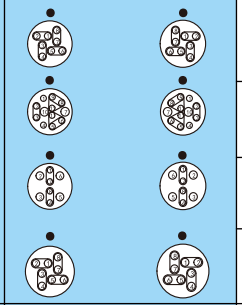
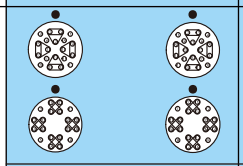
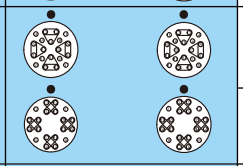
➤➤➤ Insert Configuration

X Series High-speed Needle Contact Reference

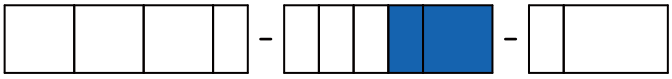
These specific connectors can transmit common data transmission protocols such as Ethernet CAT5(up to 10 Gigabit), USB 2.0, USB 3.0 and HDMI/DP/DVI standard connectors, but they are not Ethernet, USB 2.0, USB 3.0 and HDMI/DP/DVI standard connectors.

	Solder male contact A / B	Solder female contact A / B	Reference	Number of contacts	Contact øA (mm)	Contact type: Solder	Contact type: Print(straight)	Withstanding Voltage(V)	Interface Type	Differential transmission rate
31X Series			H51	8	0.5	√	√	500	10 Gigabit Network	2.5Gbps
			H52	10+2	0.5 0.7	√	√	500	USB3.0 + Power	5Gbps
			H54	4+4	0.5 0.7	√	√	500	USB2.0*2	480Mbps
			H56	8	0.5	√	√	500	Gigabit Network	250Mbps
4X Series			H38	20	0.5	√	√	500	HDMI/DP /DVI	3.4Gbps
			H39	20	0.5	√	√	500	Gigabit Network*2	250Mbps
			H08 1)	8	0.9	√	☆	500	10 Gigabit Network	/

√: First choice alternative, 1).These contact type only for S1N plug and GKN socket
☆:Special order alternative need to ask

High-speed Needle Contact Definition															
1031-H51		1031-H52		1031-H54		1031-H56		104-H38				104-H39			
No.	Definition	No.	Definition	No.	Definition	No.	Definition	No.	Definition	No.	Definition	No.	Definition	No.	Definition
1	DATA1+	1	VBUS	1	DATA+	1	DATA1+	2	DATA1+	1	Signal or Power	1	1-DATA1+	9	2-DATA3+
2	DATA1-	4	GND	7	DATA-	2	DATA1-	7	Shield	8	Signal or Power	13	1-DATA1-	20	2-DATA3-
3	DATA2+	2	DATA+	2	VCC	3	DATA2+	3	DATA1-	15	Signal or Power	12	1-DATA2+	10	2-DATA4+
4	DATA2-	3	DATA-	6	GND	4	DATA2-	5	DATA2+	17	Signal or Power	14	1-DATA2-	19	2-DATA4-
5	DATA3+	5	SSTX+	8	DATA+	5	DATA3+	11	Shield	13	Signal or Power	3	1-DATA3+	2	Signal or Power
6	DATA3-	11	GND DRAIN	4	DATA-	6	DATA3-	12	DATA2-	20	Signal or Power	16	1-DATA3-	5	Signal or Power
7	DATA4+	6	SSTX-	3	VCC	7	DATA4+	18	DATA3+	4	Signal or Power	4	1-DATA4+	8	Signal or Power
8	DATA4-	8	SSRX+	5	GND	8	DATA4-	14	Shield	6	Signal or Power	15	1-DATA4-	11	Signal or Power
		12	GND DRAIN					19	DATA3-			6	2-DATA1+		
		9	SSRX-					9	DATA4+			18	2-DATA1-		
		7	POWER					10	Shield			7	2-DATA2+		
		10	GND					16	DATA4-			17	2-DATA2-		

➤➤➤ Insert Configuration



X Series Multipole Contact Reference

	Solder male contact		Solder female contact		Reference	Number of contacts	Contact øA (mm)	Contact type		level	Rated current (A)	Resistance(mΩ)
	A	B	A	B				Solder	Print(straight)	Withstanding voltage(V)		
2X Series					M02	2	0.9	√	√	875	6.3	≤5.0
					M03	3	0.9	√	√	875	6.3	≤5.0
					M04	4	0.7	√	√	750	3.8	≤12.5
					M05	5	0.7	√	√	750	3.8	≤12.5
					M07	7	0.5	√	√	750	1.8	≤15.0
					M09	9	0.5	√	√	750	1.8	≤15.0
3X Series					M02	2	1.3	√	√	1000	9.0	≤3.0
					M03	3	1.3	√	√	1000	9.0	≤3.0
					M04	4	0.9	√	√	875	6.3	≤5.0
					M05	5	0.9	√	√	875	6.3	≤5.0
					M06	6	0.7	√	√	875	3.8	≤12.5
					M07	7	0.7	√	√	875	3.8	≤12.5
					M08	8	0.7	√	√	750	3.8	≤12.5
					M12	12	0.5	√	√	750	1.8	≤15.0

√: First choice alternative,
☆:Special order alternative need to ask

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➤➤➤ Insert Configuration

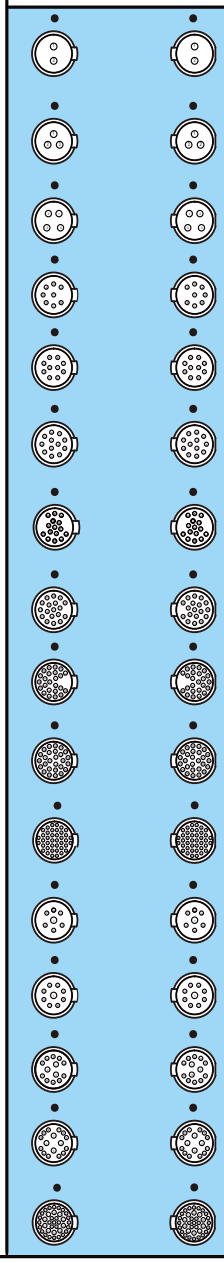
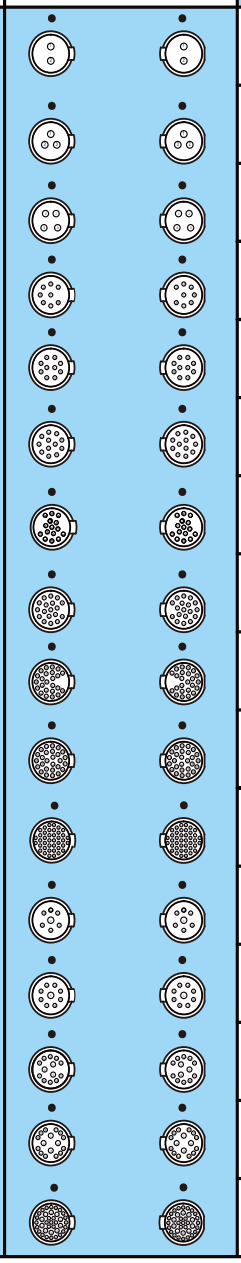
X Series Multipole Contact Reference

	Solder male contact	Solder female contact	Reference	Number of contacts	Contact øA (mm)	Contact type		level	Rated current (A)	Resistance(mΩ)
	A B	A B				Solder	Print(straight)	Withstanding voltage(V)		
31X Series			M10	10	0.7	√	√	875	3.8	≤12.5
			M12	12	0.7	√	√	875	3.8	≤12.5
			M19	19	0.5	√	√	750	1.8	≤15.0
4X Series			M02	2	1.6	√	√	1000	15.0	≤2.5
			M03	3	1.6	√	√	1000	15.0	≤2.5
			M04	4	1.3	√	√	875	9.0	≤3.0
			M05	5	1.3	√	√	875	9.0	≤3.0
			M06	6	0.9	√	√	875	6.3	≤5.0
			M07	7	0.9	√	√	875	6.3	≤5.0
			M08	8	0.9	√	√	875	6.3	≤5.0
			M11	11	0.9	√	√	875	6.3	≤5.0
			M16	16	0.7	√	√	750	3.8	≤12.5
			M19	19	0.7	√	√	750	3.8	≤12.5
			822	2+2	0.9	√	☆	875	6.3	≤5.0
					2.3	√	☆	875	20.0	≤1.5
			881	8+1	0.9	√	☆	875	6.3	≤5.0
					1.3	√	☆	875	9.0	≤3.0

√: First choice alternative,
☆:Special order alternative need to ask

➤➤➤ Insert Configuration

X Series Multipole Contact Reference

	Solder male contact	Solder female contact	Reference	Number of contacts	Contact øA (mm)	Contact type		level	Rated current (A)	Resistance(mΩ)
						Solder	Print(straight)	Withstanding voltage(V)		
5X Series			M02	2	2.0	√	√	1000	19.0	≤2.0
			M03	3	2.0	√	√	1000	19.0	≤2.0
			M04	4	2.0	√	√	875	19.0	≤2.0
			M08	8	1.3	√	√	875	9.0	≤3.0
			M10	10	1.3	√	√	875	9.0	≤3.0
			M12	12	1.3	√	√	875	9.0	≤3.0
			M15	15	0.9	√	√	875	6.3	≤5.0
			M18	18	0.9	√	√	750	6.3	≤5.0
			M24	24	0.7	√	√	750	3.8	≤12.5
			M27	27	0.7	√	√	750	3.8	≤12.5
			M40	40	0.5	√	√	750	1.8	≤15.0
			861	6+1	1.3	√	☆	875	9.0	≤3.0
					2.0	√	☆	875	19.0	≤2.0
			881	8+1	1.3	√	☆	875	9.0	≤3.0
					2.0	√	☆	875	19.0	≤2.0
			813	10+3	0.7	√	☆	875	3.8	≤12.5
					1.3	√	☆	875	9.0	≤3.0
			816	12+4	0.7	√	☆	875	3.8	≤12.5
					1.6	√	☆	875	15.0	≤2.5
			837	27+10	0.5	√	☆	750	1.8	≤15.0
					0.7	√	☆	750	3.8	≤12.5

√: First choice alternative,
☆:Special order alternative need to ask

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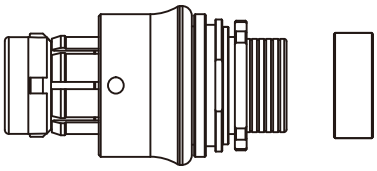
➤➤➤ Collets

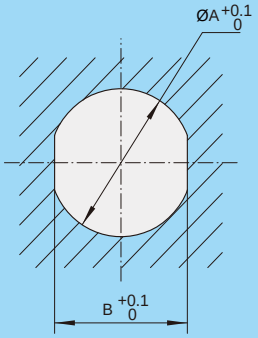
X Series



Series	Reference	Collets Type	Max. Cable Φ
2X	M58	M	5.8
3X	M72	M	7.2
31X	M80	M	8.0
4X	M100	M	10.0
5X	M115	M	11.5

➤➤➤ Panel Cut-out

X Series

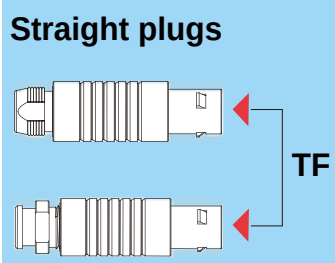


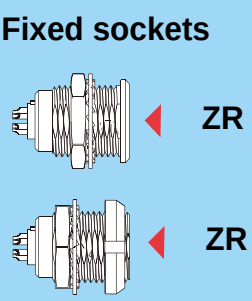
Series	A	B	panel max. thickness
2X	11.1	10.1	3
3X	14.1	13.1	3
31X	14.1	13.3	2
4X	16.1	15.1	2
5X	20.1	18.1	3

➤➤➤ S Series

S Series (Indoor, Stepped Insert)

Body style





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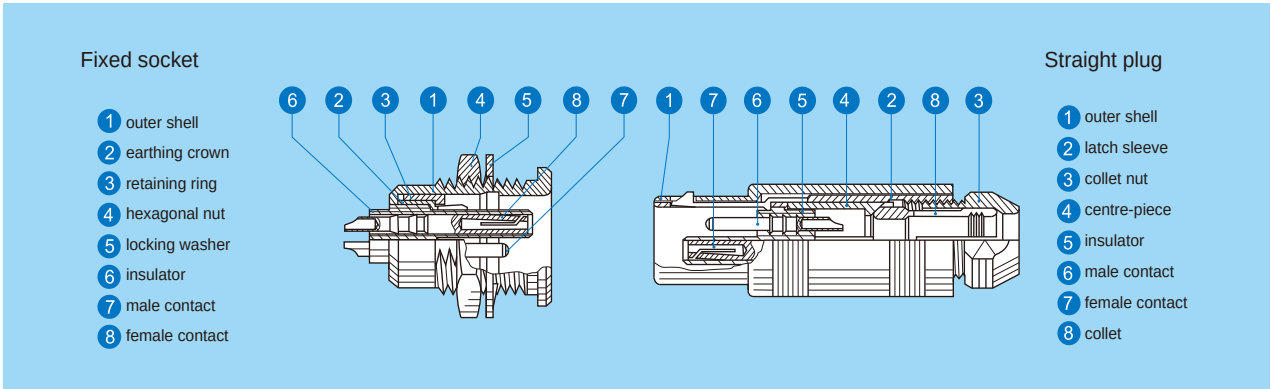
Main Features

- security of the Push-Pull self-latching system
- multipole types 2 to 6 contacts
- solder contacts
- high packing density for space savings
- polarisation by stepped insert (half-moon) fitted with male and female contacts
- 360°screening for full EMC shielding.

Technical Characteristics

- Mating cycles: > 5000
- Humidity: up to 95% at 60° C
- Temperature range: - 45° C, + 125° C
- Resistance to vibrations: 10-2000 Hz, 15g
- Shock resistance: 100 g, 6 ms
- Salt spray corrosion test: > 48h
- Protection index (mated): IP 50

Part Section Showing Internal Components



➤➤➤ S Series

S Series Part Numbering System

Plug

C	B	T	F	1	S	A	–	S	M	S	M	0	2	–	D	5	2	0

Free Socket

C	B	D	C	1	S	A	–	S	F	S	M	0	2	–	D	5	2	B

Housing material *(page 116)*	**Variant** *(page 122)*
Body style *(page 105)*	**Cable collet φ** *(page 121)*
Series *(page 105)*	**Collet type** *(page 121)*
Alignment key *(page 105)*	**No. of contact** *(page 119)*
Insulators material *(page 117)*	**Insert configuration** *(page 119)*
Contact polarity *(page 117)*	**Contact type** *(page 118)*

Socket

C	B	Z	R	1	S	A	–	S	F	S	M	0	2	–	0	0	0	0

Housing material *(page 116)*	**0:** Without **E:** With — **Earthing tag**
Body style *(page 105)*	**00:** Solder contact — **Length of PCB contact**
Series *(page 105)*	**0:** Without Potting **S:** Potting silicone **R:** Potting resin — **Glue type**
Alignment key *(page 105)*	**No. of contact** *(page 119)*
Insulators material *(page 117)*	**Insert configuration** *(page 119)*
Contact polarity *(page 117)*	**Contact type** *(page 118)*

Part Number Example

Straight Plug with Cable Collet:

CBTF1SA-SMSM02-D520 = TF body style, outer shell in chrome-plated brass, 1S series, straight plug with stepped insert, PPS insulator, 1 male and 1 female solder contacts, D type cable collet of 5.2 mm diamete

Free socket:

CBDC1SA-SFSM02-D52B = DC body style, outer shell in chrome-plated brass, 1S series, free socket with stepped insert, PPS insulator, 1 female and 1 male solder contacts, D type cable collet of 5.2 mm diameter and nut for fitting a bend relief.

Fixed Socket:

CBZR1SA-SFSM02-0000 = ZR body style, outer shell in chrome-plated brass, 1S series, fixed socket with stepped insert, PPS insulator, 1 female and 1 male solder contacts.

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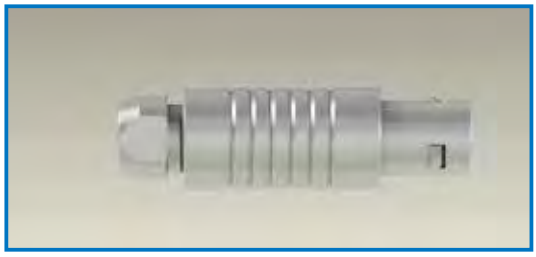
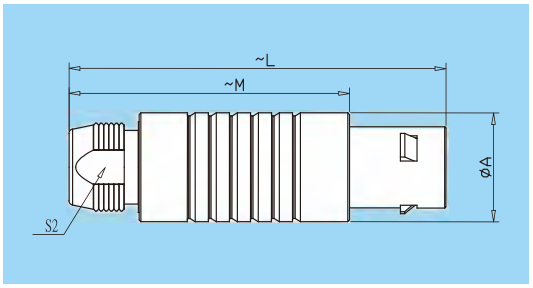
S Series Plug and Socket Dimensions

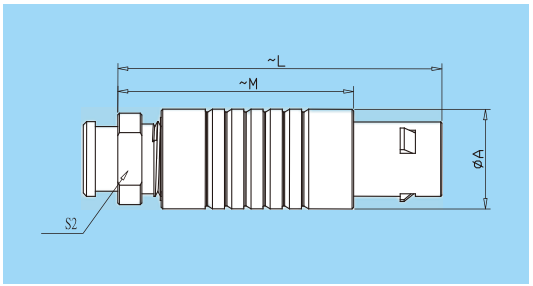




TF body style, Straight plug, cable collet

Reference			Dimensions (mm)			
Model	Series	Key	A	L	M	S2
TF	0S	A	8.8	34.5	24.5	6.5
TF	1S	A	11.8	42.5	31.5	8.5
TF	2S	A	14.8	52.0	40.0	11.0

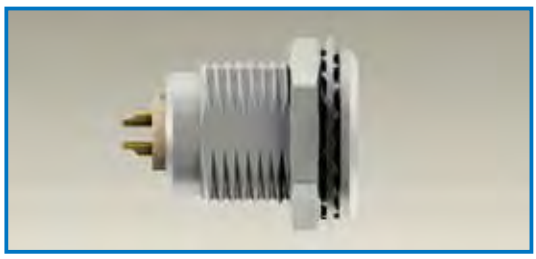
Cable assembly (page 152)
Plug assembly instructions (page 157)
Injection molding (page 163)

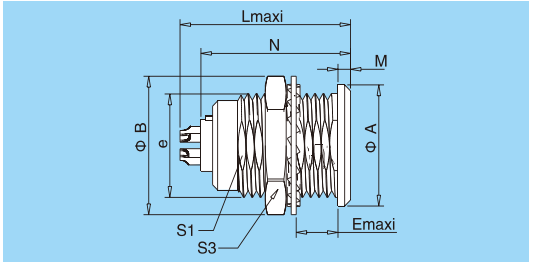


TF body style, Straight plug, cable collet and nut for fitting a bend relief

Reference			Dimensions (mm)			
Model	Series	Key	A	L	M	S2
TF	00S	A	6.4	26.0	18.0	6.0
TF	0S	A	8.8	34.5	24.5	7.0
TF	1S	A	11.8	42.5	31.5	9.0
TF	2S	A	14.8	52.0	40.0	12.0

Cable assembly (page 152)
Plug assembly instructions (page 157)
Injection molding (page 163)
Note: To order, add a «B» at the end of the reference. The bend relief must be ordered separately (page 149)





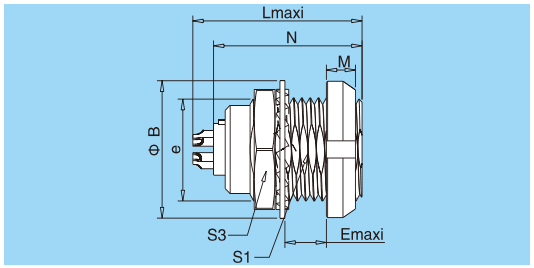
ZR body style, Fixed socket, nut fixing

Reference			Dimensions (mm)							
Model	Series	Key	A	B	e	E	L	M	S1	S3
ZR	00S	A	8.0	10.2	M7x0.5	5.5	14.5	1.0	6.3	9.0
ZR	0S	A	10.0	12.5	M9x0.6	7.0	21.3	1.2	8.2	11.0
ZR	1S	A	14.0	16.0	M12x1.0	7.5	23.2	1.5	10.5	14.0
ZR	2S	A	18.0	20.0	M15x1.0	8.0	24.8	2.0	13.5	17.0

Panel cut-out (page 123)

➤➤➤ S Series

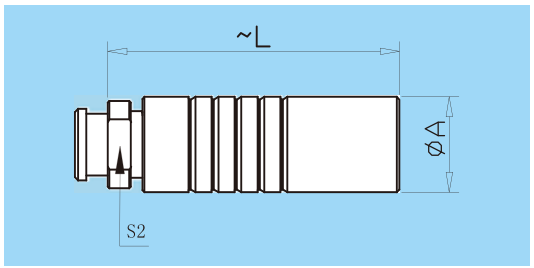
S Series Socket Dimensions



ZR body style, Fixed socket with two nuts (back panel mounting)

Reference			Dimensions (mm)							
Model	Series	Key	B	e	E	L	M	N	S1	S3
ZR	0S	D	12.5	M9x0.6	5.5	21.3	5.5	19.0	8.2	11.0
ZR	1S	D	16.0	M12x1.0	6.0	23.2	3.2	20.1	10.5	14.0
ZR	2S	D	20.0	M15x1.0	6.5	24.8	3.5	24.5	13.5	17.0

Panel cut-out (page 123)



DC body style, Free socket, cable collet and nut for fitting a bend relief

Reference			Dimensions (mm)		
Mode	Series	Key	A	L	S2
DC	0S	A	8.9	33.5	7.0
DC	1S	A	11.9	40.5	9.0
DC	2S	A	14.8	50.0	12.0

Cable assembly (page 152)
Plug assembly instructions (page 157)
Injection molding (page 163)
Note: To order, add a «B» at the end of the reference. The bend relief must be ordered separately (page 149)

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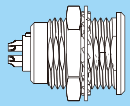
E Series (Outdoor, Stepped Insert)

Metal housing models

Straight plugs

TF

Fixed sockets



ZR

➤➤➤ E Series

Main Features

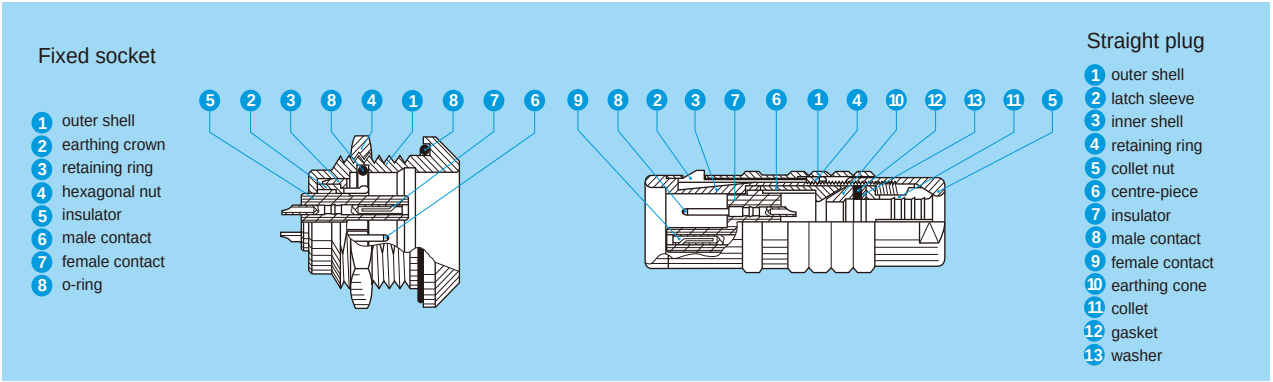
E series connectors have been specifically designed for outdoor applications.
They include an inner sleeve and two seals to prevent penetration of solids or liquids into the housing formed by the plug, fixed socket. All models of these series are watertight when mated and give a protection index of IP 68 (in mated condition) when correctly assembled to an appropriate cable (IP 66 other wise).

- security of the Push-Pull self-latching system
- multipole types 2 to 6 contacts
- solder contacts
- high packing density for space savings
- polarisation by stepped insert (half-moon) fitted with male and female contacts
- 360° screening for full EMC shielding.
- watertight connection (IP 68/IP 66)

Technical Characteristics

- Mating cycles: > 5000
- Humidity: up to 95% at 60° C
- Temperature range: - 45° C, + 125° C
- Resistance to vibrations: 10-2000 Hz, 15g
- Shock resistance: 100 g, 6 ms
- Salt spray corrosion test: > 48h
- Protection index (mated): IP 68/IP 66

Part Section Showing Internal Components



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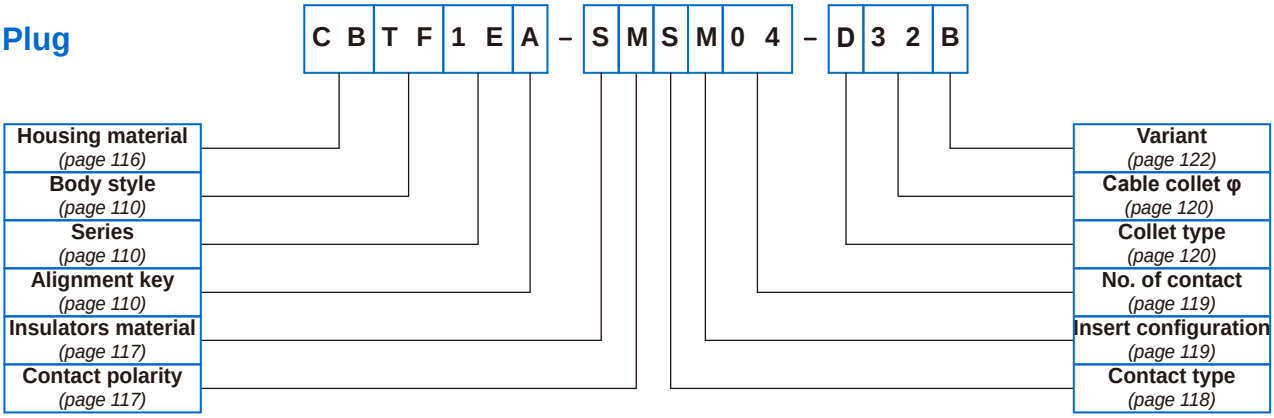
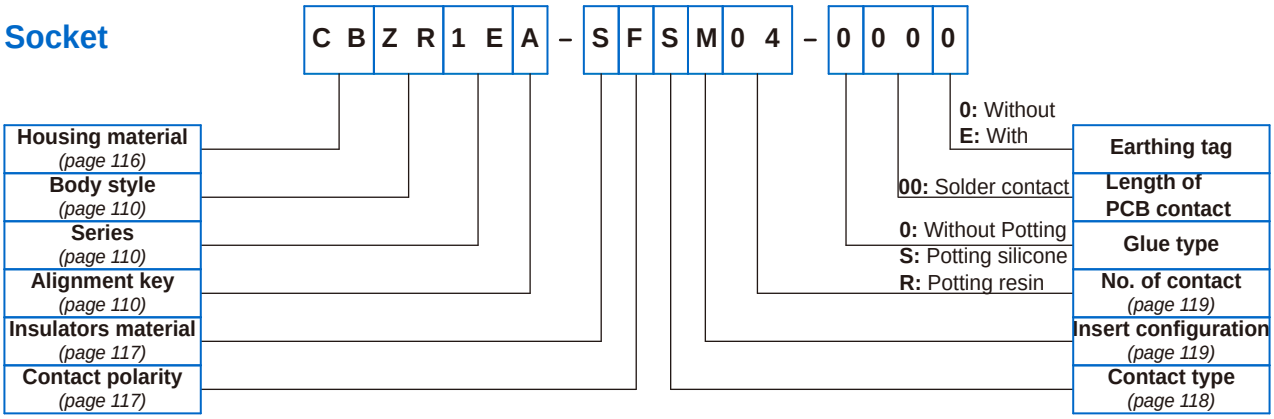
E Series Part Numbering System

Plug



Socket



Part Number Example

Straight Plug with Cable Collet:

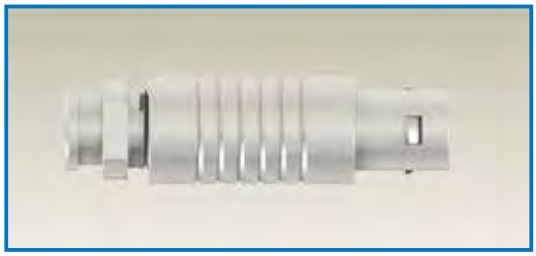
CBTF1EA-SMSM04-D32B= TF body style, outer shell in chrome-plated brass, 1E series, straight plug, PPS insulator, 2 male and 2 female solder contacts, D type cable collet of 3.2 mm diameter and nut for fitting a bend relief.

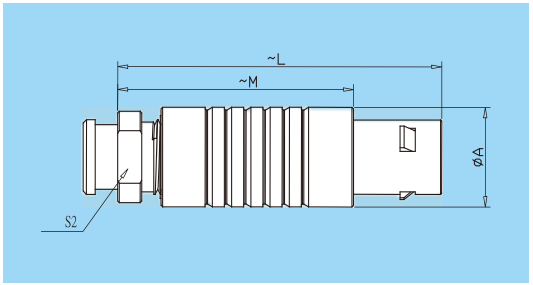
Fixed Socket:

CBZR1EA-SFSM04-0000 = ZR body style, outer shell in chrome-plated brass, 1E series, fixed socket, PPS insulator, 2 female and 2 male solder contacts

➤➤➤ E Series

E Series Plug and Socket Dimensions

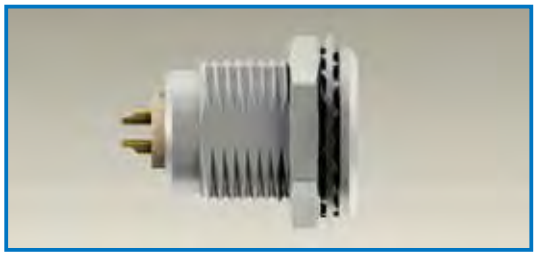


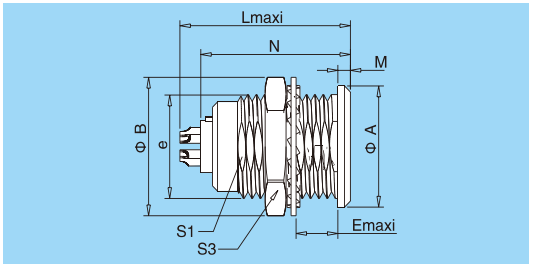


TF body style, Straight plug, cable collet and nut for fitting a bend relief

Reference			Dimensions (mm)			
Model	Series	Key	A	L	M	S2
TF	0E	A	11.0	34.0	23.0	7.0
TF	1E	A	13.0	42.0	28.0	9.0

Cable assembly (page 152)
Plug assembly instructions (page 157)
Injection molding (page 163)
Note: To order, add a «B» at the end of the reference. The bend relief must be ordered separately (page 149)





ZR body style, Fixed socket, nut fixing

Reference			Dimensions (mm)							
Model	Series	Key	A	B	e	E	L	M	S1	S3
ZR	0E	A	18.0	19.2	M14x1.0	5.5	19.5	4.0	12.5	17.0
ZR	1E	A	20.0	21.5	M16x1.0	9.0	24.0	4.5	14.5	19.0

Panel cut-out (page 123)

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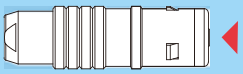
Unipole Coaxial Series

Metal housing models

Straight plugs

TF

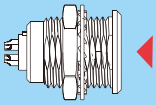


TF1E

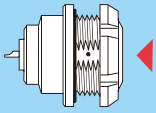
TG2F

TG0C

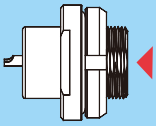
Fixed sockets



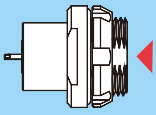
ZR



ZR1E

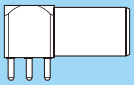


ME2F



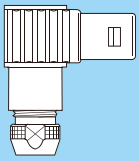
ME0C

Elbow PCB sockets



ZP

Elbow Plug



TL

➤➤➤ Unipole Coaxial Series

Main Features

A unipole coaxial connector is generally considered to be an element attached to a cable or mounted on an instrument as an electrical connection or separate component of the transmission line.

Technical Characteristics

• Small size, quick insertion and security of the Push-Pull self-latching system
• There are straight type, elbow (90°) type and other different types of plugs;
• High frequency: transmission frequency is 3MHZ ∽ 30MHZ;
• Many functions: in addition to the role of the bridge, it also has the function of processing signals, such as filtering, phase adjustment, mixing, attenuation, detection, limiting, etc.
• Low standing wave, low loss: meeting the needs of weapon systems and precision measurement;
• Large capacity, high power: mainly to meet the development needs of the information superhighway.

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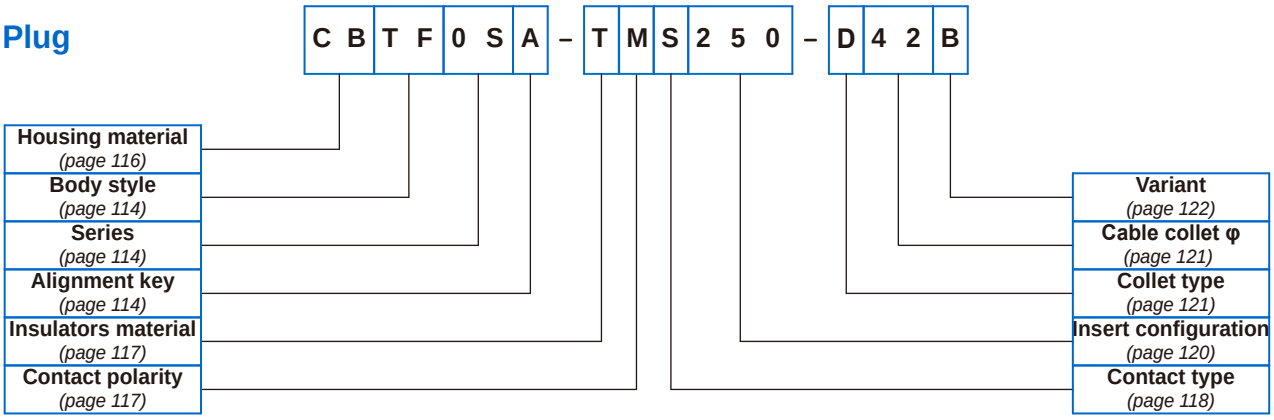
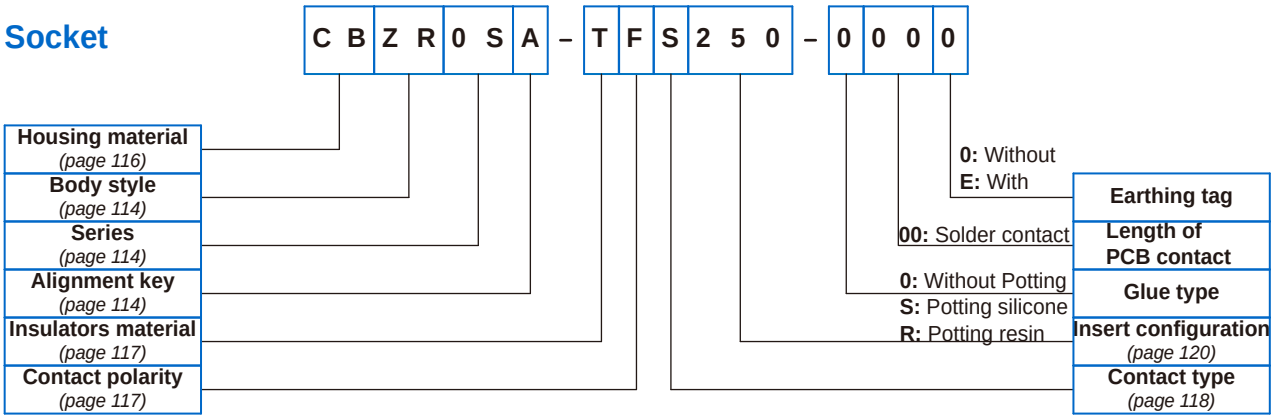
Unipole Coaxial Series Part Numbering System

Plug



Socket



Part Number Example

Straight Plug with Cable Collet:

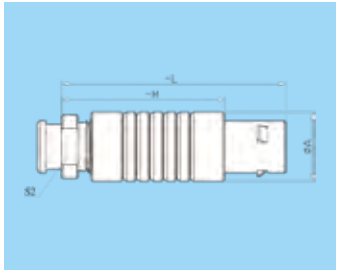
CBTF0SA-TMS250-D42B = TF body style, outer shell in chrome-plated brass, 0S series, straight plug, PTFE insulator, unipole coaxial male solder contact(50 Ω), D type cable collet of 4.2 mm diameter and nut for fitting a bend relief.

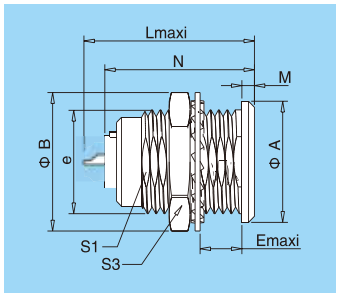
Fixed Socket:

CBZR0SA-TFS250-0000 = ZR body style, outer shell in chrome-plated brass, 0S series, fixed socket, PTFE insulator, unipole coaxial female solder contact(50 Ω).

➤➤➤ Unipole Coaxial Series

Unipole Coaxial Series Plug and Socket Dimensions



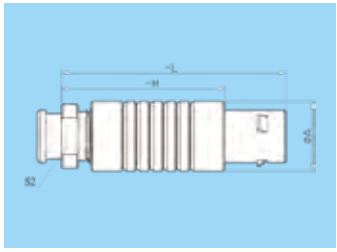


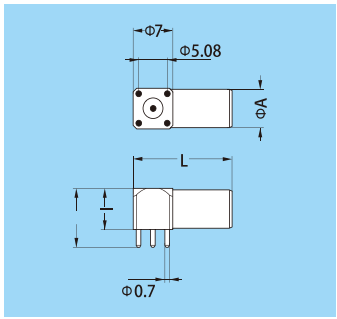
TF body style, Straight plug, cable collet and nut for fitting a bend relief

Model	Series	Key	Dimensions (mm)			
			A	L	M	S2
TF	00S	A	6.4	26.0	18.0	4.5
TF	0S	A	8.8	34.5	24.5	6.5
TF	1S	A	11.8	42.5	31.5	8.5

ZR body style, Fixed socket, nut fixing

Model	Series	Key	Dimensions (mm)							
			A	B	e	E	L	M	S1	S2
ZR	00S	A	8.0	10.2	M7x0.5	5.5	14.5	1.0	10.0	14.5
ZR	0S	A	10.0	12.4	M9x0.6	7.0	17.5	1.2	8.2	11.0
ZR	1S	A	14.0	15.8	M12x1.0	7.5	20.2	1.5	10.5	14.0



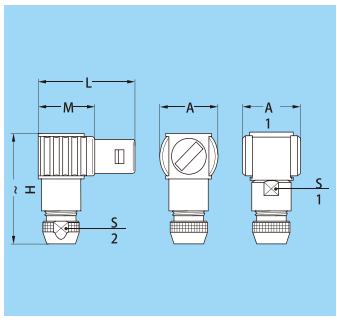


TF body style, Straight plug, cable collet and nut for fitting a bend relief

Model	Series	Key	Dimensions (mm)			
			A	L	M	S2
TF	00S	A	6.4	26.0	18.0	4.5

ZP body style, Elbow (90°) socket for printed circuit with two nuts

Model	Series	Key	Dimensions (mm)		
			A	H	I
ZP	00S	L	6.5	10.0	7.0



TL body style, Elbow (90°) plug, cable collet

Model	Series	Key	Dimensions (mm)						
			A	A1	H	L	M	S1	S2
TL	1S	A	16.0	16.0	28.5	26.5	15.5	10.0	8.5
TL	2S	A	20.0	20.0	37.0	31.0	19.0	13.0	11.0

Cable assembly (page 152)
Plug assembly instructions (page 157)
Injection molding (page 163)
Panel cut-out (page 123)
Note: To order, add a «B» at the end of the reference. The bend relief must be ordered separately (page 149)

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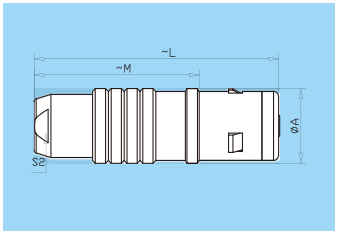
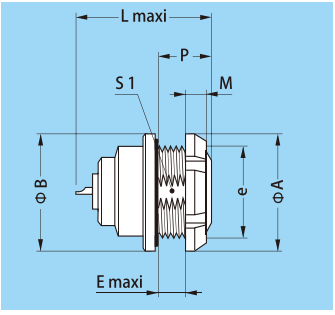
Unipole Coaxial Series

Unipole Coaxial Series Plug and Socket Dimensions



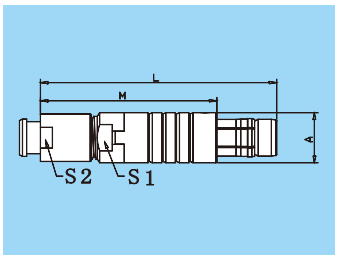


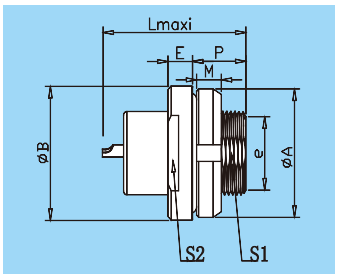
TF body style, Straight plug, cable collet and nut for fitting a bend relief, watertight

Model	Series	Key	Dimensions (mm)			
			A	L	M	S2
TF	1E	A	13.0	42.0	28.0	9.0

ZR body style, Fixed socket, nut fixing

Model	Series	Key	Dimensions (mm)							
			A	B	e	E	L	M	N	P	S1
ZR	1E	A	20.0	20.0	M16x1.0	6.2	27.0	3.5	25.0	10.0	15.0



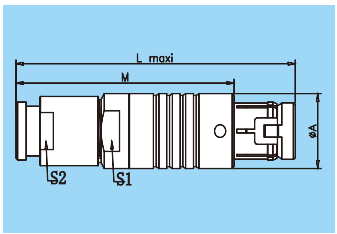


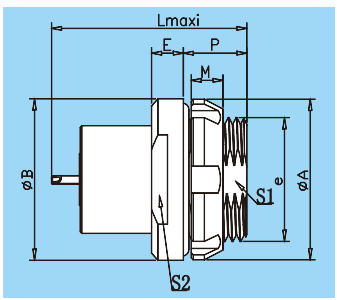
TG body style, Straight plug, cable collet and nut for fitting a bend relief

Model	Series	Key	Dimensions (mm)			
			A	L	M	S2
TG	2F	N	9.0	36.0	26.0	7.0

ME body style, Fixed socket, nut fixing

Model	Series	Key	Dimensions (mm)								
			A	B	e	E	L	M	P	S1	S2
ME	2F	N	11.5	13.0	M9x1.0	3.0	21.0	3.0	6.5	8.2	12.0





TG body style, Straight plug, cable collet and nut for fitting a bend relief

Model	Series	Key	Dimensions (mm)			
			A	L	M	S2
TG	0C	G	9.0	36.0	26.0	7.0

ME body style, Fixed socket, nut fixing

Model	Series	Key	Dimensions (mm)								
			A	B	e	E	L	M	P	S1	S2
ME	0C	G	11.5	13.0	M9x1.0	3.0	21.0	3.0	6.5	8.2	12.0

➤➤➤ Housing

S Series, E Series, Unipole Coaxial Series Components Material

Ref.	Outer shell and collet nut		Latch sleeve + earthing crown		Other metallic components		Note
	Material	Surf. treatment	Material	Surf. treatment	Material	Surf. treatment	
CB	Brass	Chrome	Brass/bronze	Nickel	Brass	Nickel	First choice alternative
NB	Brass	Nickel	Brass/bronze	Nickel	Brass	Nickel	
BB	Brass	Black chrome	Brass/bronze	Nickel	Brass	Nickel	
S4	Stainless steel 304	Anodized	Brass/bronze	-	Brass	Nickel	
S6	Stainless steel 316L	Anodized	Stainless steel 316L	-	Stainless steel 316L	-	
SB	Brass	Satin nickel	Brass/bronze	Nickel	Brass	Nickel	
HB	Brass	High phosphorus chemical nickel	Brass/bronze	Nickel	Brass	Nickel	
HA	Aluminium alloy	High phosphorus chemical nickel	Brass/bronze	Nickel	Brass	Nickel	
GB	Brass	Golden yellow	Brass/bronze	Nickel	Brass	Nickel	
RA	Aluminium AlMgSiSn1Bi	Ruthenium over electroless nickel	Brass/bronze	Nickel	Brass	Nickel	

Brass

Connectors are mostly brass case, which can meet most military or civil application requirements. The white surface of brass shell has nickel-chromium protective layer, which has remarkable effect in resisting industrial waste, salt spray and most corrosives.
In addition, we also have nickel plating, nickel-gold plating, nickel-black chromium plating and other options for application in specific environments of the anti-corrosion coatings.

Aluminium alloy

In the aviation, aerospace industry, portable mobile devices and so on. It is suitable for the connector with aluminium alloy shell.
In addition to its high mechanical lightness and excellent corrosion resistance, the surface of aluminium alloys can be protected by anodic plating, with a variety of colors to choose from.

Stainless steel

For the use of harsh environment, the surface coating is easy to be damaged. We recommend the use of stainless steel materials. AISI304 stainless steel and AISI316L stainless steel are usually used.
AISI304 stainless steel is recommended for special fields such as nuclear industry. It can resist radiation and nitric acid corrosion.
AISI316L stainless steel is recommended for medical and shipping industries. It has no surface treatment and strong corrosion resistance.

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➤➤➤ Insulators

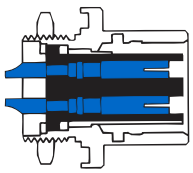
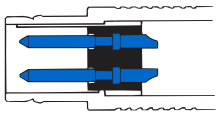
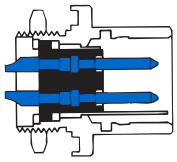
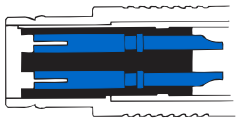
S Series, E Series, Unipole Coaxial Series Material of Insulators

Reference	Material	Contact type	Note
L	PPS	Solder or print	First choice alternative
P	PEEK	Solder or print	Special order alternative
T	PTFE	Solder or print	Only for Unipole type

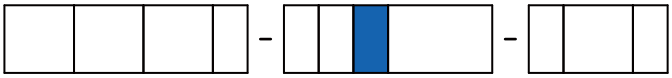
➤➤➤ Contact Polarity

Protect users from contact with dangerous voltages

Standard Polarity:
The contacts of the socket are protected against accidental touch.
This version is recommended when voltage is present on the socket.
Inverted Polarity:
The contacts of the plug are protected against accidental touch.
This version is recommended when voltage is present on the plug.

	Socket	Plug
Standard Polarity	 **F:** Female Contact	 **M:** Male Contact
Inverted Polarity	 **M:** Male Contact	 **F:** Female Contact

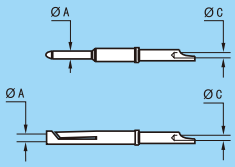
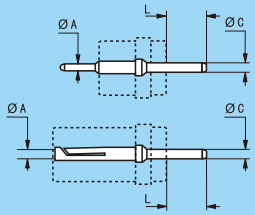
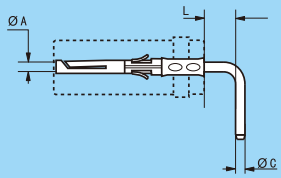
➤➤➤ Contacts Type



Soldering characteristics

No need to order specific tools, a simple soldering iron is sufficient
Ideal for very small and fragile conductors
Contacts with solder cups to allow the solder to flow

Contacts type reference for plugs, free or fixed sockets

Contact type	Reference	Contact			Conductor					
					Solid		Stranded			
		ΦA (mm)	ΦC (mm)		AWG Max.	Section max. (mm²)	AWG Min.	AWG Max.	Section (mm²) Min.	Section (mm²) Max.
Solder 	S	0.5	0.40	-	28	0.09	-	30	-	0.05
		0.5	0.45	-	28	0.09	-	28	-	0.09
		0.7	0.60	-	24	0.25	-	26	-	0.14
		0.7	0.80	-	22	0.34	-	22	-	0.34
		0.9	0.80	-	22	0.34	-	22	-	0.34
		1.3	1.00	-	20	0.50	-	20	-	0.50
		1.6	1.40	-	16	1.00	-	18	-	1.00
		2.0	1.80	-	14	1.50	-	16	-	1.50
		3.0	2.70	-	10	4.00	-	12	-	4.00
		4.0	3.70	-	10	6.00	-	10	-	6.00
Straight PCB 	P	L dimensions and C are detailed in the section on PCB drilling pattern. also you can customize the L dimensions								
Elbow PCB 	E	L dimensions and C are detailed in the section on PCB drilling pattern.								

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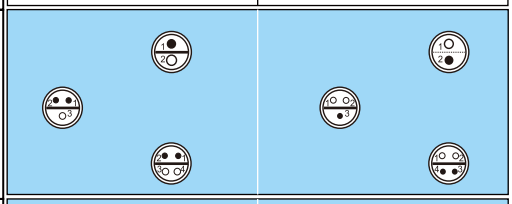
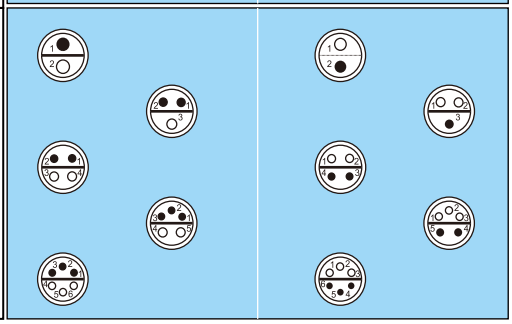
➤➤➤ Insert Configuration

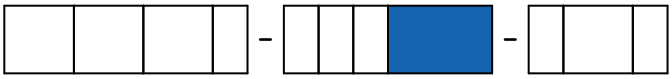
S series, E series

	Solder male contact	Solder female contact
0S, 0E Series		
1S, 1E Series		

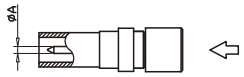
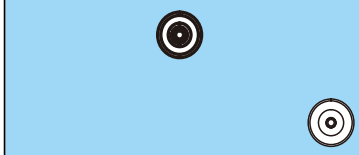
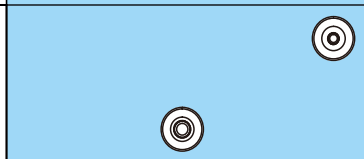
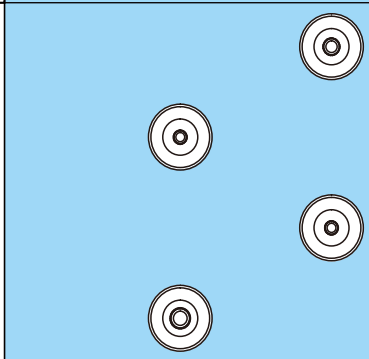
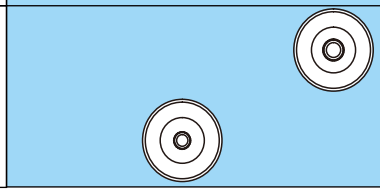
Reference	Series		Number of contacts	Contact øA (mm)	Contact type			Test Voltage(V rms)	Test voltage(V DC)	Rated current (A)
	Standard	Watertight			Solder	Print(straight)	Print (elbow)			
M02	0S	0E	2	0.9	√	☆	☆	1500	2100	10.0
M03	0S	0E	3	0.7	√	☆	☆	1000	1500	7.0
M04	0S	0E	4	0.7	√	☆	☆	1000	1500	7.0
M02	1S	1E	2	1.3	√	☆	☆	1200	1800	15.0
M03	1S	1E	3	0.9	√	☆	☆	1200	1800	10.0
M04	1S	1E	4	0.9	√	☆	☆	1200	1800	10.0
M05	1S	1E	2	0.9	√	☆	☆	1500	2100	10.0
			3	0.7				1500	2100	7.0
M06	1S	1E	6	0.7	√	☆	☆	1500	2100	7.0

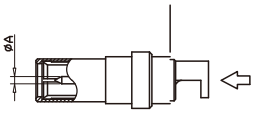
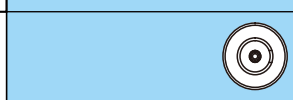
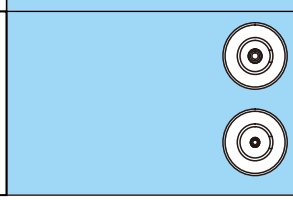
√: First choice alternative
☆:Special order alternative

➤➤➤ Insert Configuration



Unipole Coaxial Series

		Reference	Contact type	Impedance(Ω)	Contact øA (mm)	Test voltage(V DC)	Rated current (A)	Resistance(mΩ)
00S Series		250	Solder	50	0.7	1200	4.0	≤12.5
		113	Solder	-	1.3	1200	8.0	≤5.0
0S, 0C, 2F, 0E Series		250	Solder	50	0.9	1500	5.0	≤5.0
		116	Solder	75	1.6	1500	10.0	≤5.0
1S, 1E Series		250	Solder	50	1.6	3000	12.0	≤5.0
		275	Solder	75	1.3	2400	10.0	≤5.0
		405	Solder	75	1.3	5000	10.0	≤5.0
		120	Solder	-	2.0	1700	18.0	≤5.0
2S Series		250	Solder	50	2.0	1000	15.0	≤3.0
		275	Solder	75	1.6	1000	15.0	≤3.0

		Reference	Contact type	Impedance(Ω)	Contact øA (mm)	Test voltage(V DC)	Rated current (A)	Resistance(mΩ)
0S Series		650	Solder	50	0.9	1000	5.0	≤5.0
1S Series		650	Solder	50	0.9	1000	6.0	≤10.0
2S Series		650	Solder	50	1.6	1000	10.0	≤5.0
		675	Solder	75	0.9	1000	5.0	≤10.0

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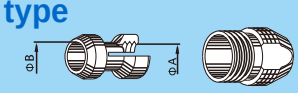
D type collets for S series and Unipole Coaxial Series

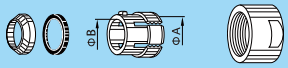
D type



	Reference		Collet Φ		Cable Φ	
	Type	Code	ΦA	ΦB	Max.	Min.
00S	D	27	2.7	-	3.0	2.0
0S	D	27	2.7	-	3.0	2.0
2F	D	32	3.2	-	3.5	2.5
0C	D	42	4.2	3.7	4.5	3.5
1S	D	32	3.2	-	3.5	2.5
	D	42	4.2	-	4.5	3.5
	D	52	5.2	-	5.5	4.5

D type collets for E series

D type

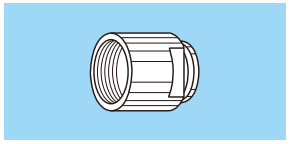
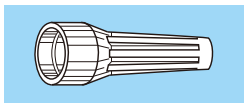


	Reference		Collet Φ		Cable Φ	
	Type	Code	ΦA	ΦB	Max.	Min.
0E	D	27	2.7	-	3.0	2.0
	D	32	3.2	-	3.5	2.5
	D	42	4.2	3.7	4.5	3.5
1E	D	32	3.2	-	3.5	2.5
	D	42	4.2	-	4.5	3.5
	D	52	5.2	-	5.5	4.5

➤➤➤ Variant

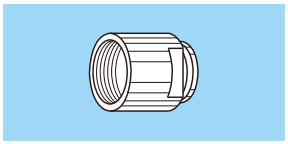
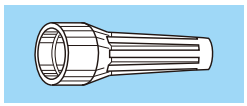
To order a model with cable collet and nut for fitting a bend relief, you should write a "B" in the variant position.
Bend reliefs to be ordered separately on *page 149*

Bend relief for S series and Unipole Coaxial Series

	Ref.	Collet		*Need to be ordered separately (page 149)*
		Type	Code	
00S	B	C K	17 to 37	GMA.00.●●●.●●
0S	B	C K	32 to 47	GMA.0B.●●●.●●
1S	B	C	32 to 52	GMA.1B.●●●.●●

Bend relief for E series models with collet

	Ref.	Collet		*Need to be ordered separately (page 149)*
		Type	Code	
0E	B	C	30 to 45	GMA.0B.●●●.●●
1E	B	C	30 to 50	GMA.1B.●●●.●●

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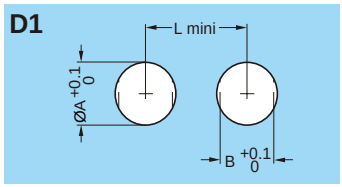
S Series



Cut-out types

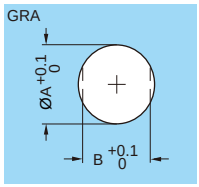
Series	D1		
	ØA	B	L
00S	7.1	6.4	12.5
0S	9.1	8.3	14.5
1S	12.1	10.6	18.5
2S	15.1	13.6	22.5
Model	ZR, ZR		

Note: when using the tapered washer a round hole apply 00S: Ø7.6 mm / 0S: Ø9.6 mm / 1S: Ø12.6 mm / 2S: Ø15.7 mm

Mouting nut torque

Series	Torque(Nm)
00S	1.0
0S	2.5
1S	4.5
2S	6.0

Note: 1N=0.102 kg

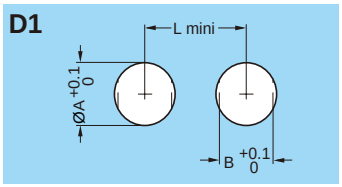


Panel cut-out for mounting with insulating washer

Series	Dim.(mm)	
	ØA	B
00S	8.9	8.1
0S	10.9	10.1
1S	13.9	12.3
2S	18.0	16.3

Note: these values apply when shell are mounted with insulating washer.

E Series



Cut-out types

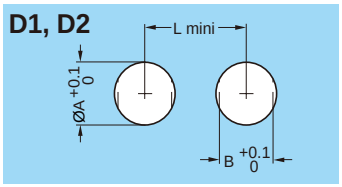
Series	D1		
	ØA	B	L
0E	14.1	12.6	20.5
1E	16.1	14.6	22.5
2E	20.2	18.6	29.3
Model	ZR		

Mouting nut torque

Series	Torque(Nm)
0E	5.0
1E	7.0
2E	9.0

Note: 1N=0.102 kg

Unipole Coaxial Series



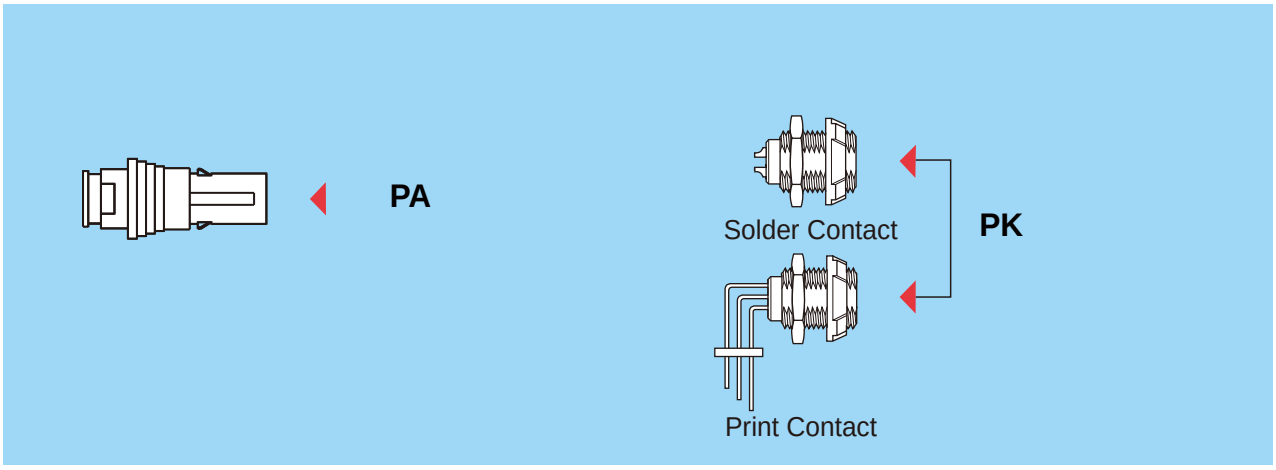
Series	D1		
	ØA	B	L
00S	7.1	6.4	12.5
0S	9.1	8.3	14.5
1S	12.1	10.6	18.5
2S	15.1	13.6	22.5
Model	ZR		

Series	D2		
	ØA	B	L
1E	16.1	14.6	22.5
0C	9.1	8.3	15.0
102F	9.1	8.3	15.0
Model	ZR, ME		

➤➤➤ 0P series

0P Series (Indoor, Plastic Shell M10)

Body style



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Main Features

- Safe push-pull self-locking system
- 2 contacts - 9 contacts
- Soldering and printed circuit board pins
- High-density installation saves space
- The tail nut and the socket round nut are color-coded to prevent mis-insertion
- Plastic housing, waterproof rating ip50, double reed lock, keyway prevents rotation

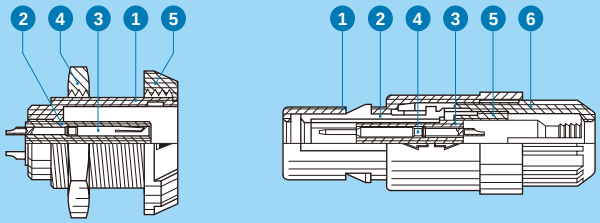
Technical Characteristics

- Mating cycles: > 1000
- Humidity: up to 95% at 60° C
- Temperature range: - 40° C, + 120° C
- Rated Voltage: 200~450V
- Working Current: 2~10A
- Resistance: ≤10mohm
- Insulation Resistance: ＞$10^8\Omega$
- Protection index (mated): IP 50

Part Section Showing Internal Components

Fixed socket

1 Outershell
2 Insulator
3 Female contact
4 Hexagonal nut
5 Front nut



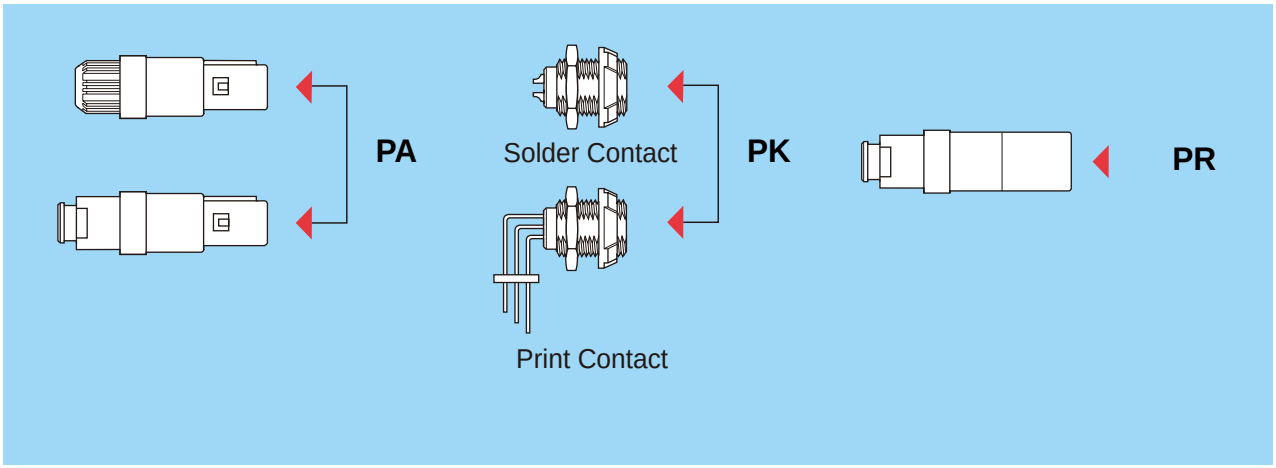
Straight plug

1 Outershell
2 Latch sleeve
3 Insulator
4 Male contact
5 Collet
6 Collet nut

➤➤➤ 1P Series

1P Series (Indoor, Plastic Shell, M14)

Body style



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Main Features

- Safe push-pull self-locking system
- 2 contacts - 14 contacts
- Soldering and printed circuit board pins
- High-density installation saves space
- The tail nut and the socket round nut are color-coded to prevent mis-insertion
- Plastic housing, waterproof rating ip50, double reed lock, keyway prevents rotation

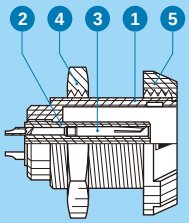
Technical Characteristics

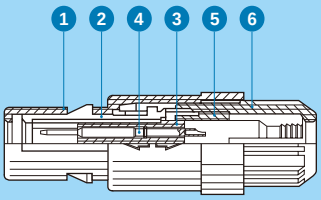
- Mating cycles: > 1000
- Humidity: up to 95% at 60° C
- Temperature range: - 40° C, + 120° C
- Rated Voltage: 200~400V
- Working Current: 2~10A
- Resistance: ≤10mohm
- Insulation Resistance: ＞$10^8\Omega$
- Protection index (mated): IP 50

Part Section Showing Internal Components

Fixed socket

1 Outershell
2 Insulator
3 Female contact
4 Hexagonal nut
5 Front nut





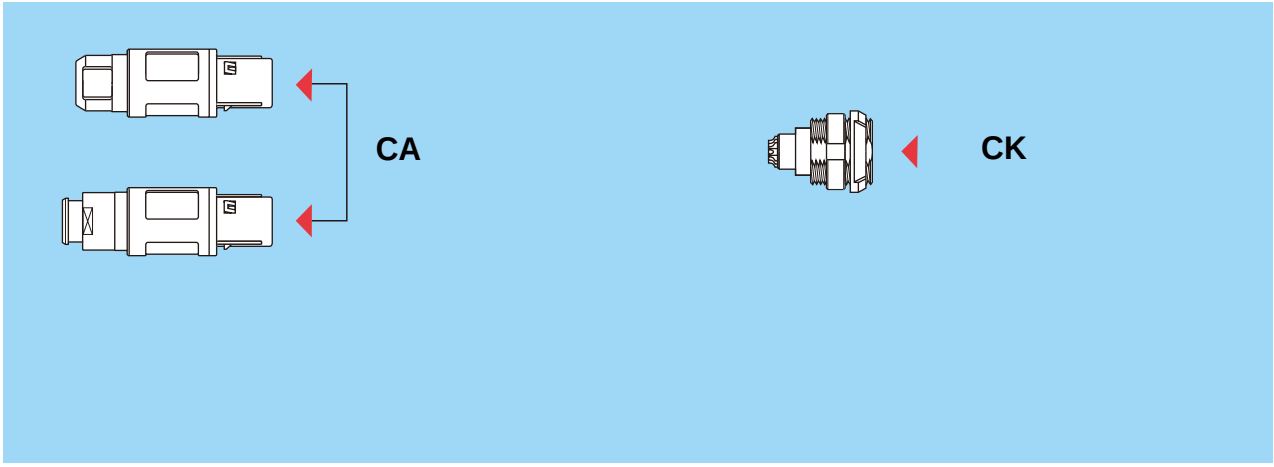
Straight plug

1 Outershell
2 Latch sleeve
3 Insulator
4 Male contact
5 Collet
6 Collet nut

➤➤➤ 2P Series

2P Series (Outdoor, Plastic Shell, M18)

Body style



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Main Features

- Safe push-pull self-locking system
- 2 contacts - 26 contacts
- Soldering and printed circuit board pins
- High-density installation saves space
- The tail nut and the socket round nut are color-coded to prevent mis-insertion
- Plastic housing, waterproof rating ip50, double reed lock, keyway prevents rotation

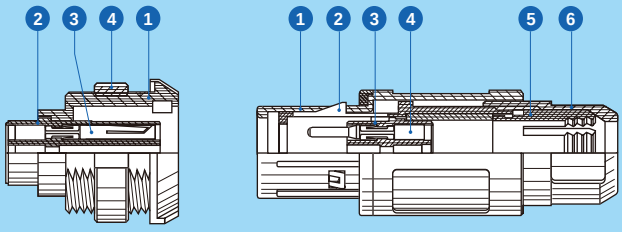
Technical Characteristics

- Mating cycles: > 1000
- Humidity: up to 95% at 60° C
- Temperature range: - 40° C, + 120° C
- Rated Voltage: 200~600V
- Working Current: 2~30A
- Resistance: ≤10mohm
- Insulation Resistance: ＞$10^8\Omega$
- Protection index (mated): IP 65

Part Section Showing Internal Components

Fixed socket

1 Outershell
2 Insulator
3 Female crimp contact
4 Nut



Straight plug

1 Outershell
2 Latch sleeve
3 Insulator
4 Male crimp contact
5 Collet + mid piece
6 Collet nut

P Series

P Series Part Numbering System

Plug: G P P A 1 P G – S M S M 0 6 – C 5 2 0 G

Free Socket: G P P R 1 P G – S F S M 0 6 – C 5 2 B G

- Housing material (page 136)
- Body style (page 131)
- Series (page 131)
- Alignment key (page 135)
- Insulators material (page 137)
- Contact polarity (page 137)
- Contact type (page 138)
- Insert configuration (page 139)
- No. of contact (page 139)
- Collet type (page 141)
- Cable collet φ (page 141)
- Variant (page 141)
- Collet nut Colour (page 141)

Socket: G P P K 1 P G – S F S M 0 6 – 0 0 0 G

- Housing material (page 136)
- Body style (page 131)
- Series (page 131)
- Alignment key (page 135)
- Insulators material (page 137)
- Contact polarity (page 137)
- Contact type (page 138)
- Insert configuration (page 139)
- No. of contact (page 139)
- Glue type: **0:** Without Potting, **S:** Potting silicone, **R:** Potting resin
- Length of PCB contact: **00:** Solder contact
- Earthing tag: **0:** Without, **E:** With
- Front nut Colour (page 141)

Part Number Example

Straight Plug with Cable Collet:

GPPA0PG-SMSM06-C42BG = PA body style, outer shell in Grey PSU, 0P series, straight plug with key (G), PPS insulator, male solder contacts, multipole type with 6 contacts, C type cable collet of 4.2 mm diameter and nut for fitting a bend relief, grey collet nut.

GPPA1PG-SMSM06-C520G = PA body style, outer shell in Grey PSU, 1P series, straight plug with key (G), PPS insulator, male solder contacts, multipole type with 6 contacts, C type cable collet of 5.2 mm diameter, grey collet nut.

GPCA2PB-SMSM06-C520G = CA body style, outer shell in Grey PSU, 2P series, straight plug with key (B), PPS insulator, male solder contacts, multipole type with 6 contacts, C type cable collet of 5.2 mm diameter, grey collet nut.

Free socket:

GPPR1PG-SFSM06-C52BG = PR body style, outer shell in Grey PSU, 1P series, straight plug with key (G), PPS insulator, male solder contacts, multipole type with 6 contacts, C type cable collet of 5.2 mm diameter and nut for fitting a bend relief, grey collet nut.

Fixed Socket:

GPPK0PG-SFSM06-0000G = PK body style, outer shell in Grey PSU, 0P series, fixed socket with key (G), PPS insulator, female solder contacts, multipole type with 6 contacts. grey nut

GPPK1PG-SFEM06-0320G = PK body style, outer shell in Grey PSU, 1P series, fixed socket with key (G), PPS insulator, female elbow PCB contacts, multipole type with 6 contacts. grey nut

GPCK2PB-SFSM06-0000G = CK body style, outer shell in Grey PSU, 2P series, fixed socket with key (B), PPS insulator, female solder contacts, multipole type with 6 contacts. grey nut

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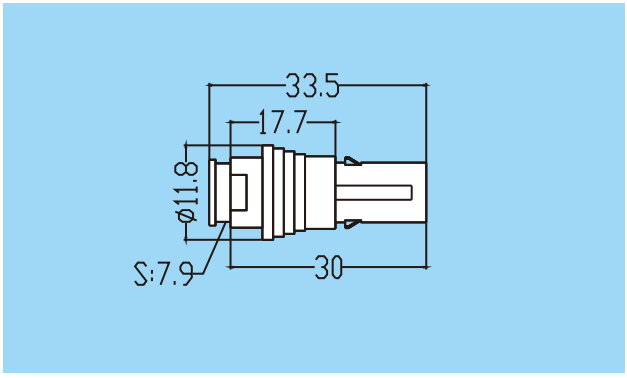
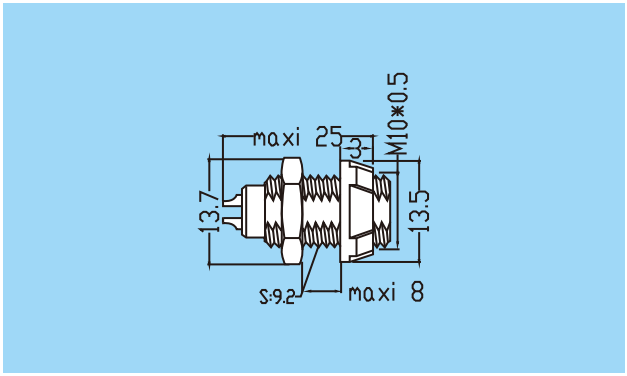
0P Series Plug and Socket Dimensions

PA body style, straight plug with cable collet and nut for fitting a bend relief



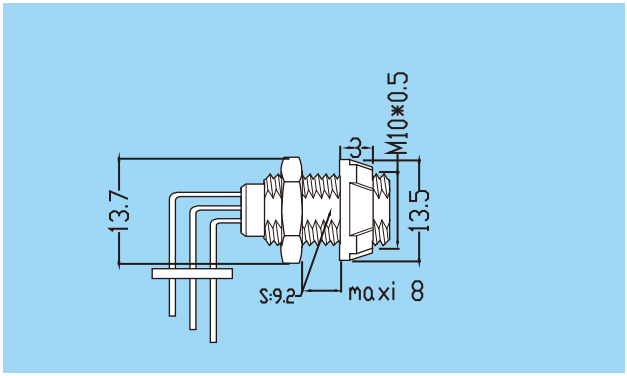
Cable assembly (page 152)
Plug assembly instructions (page 157)
Note: To order, add a «B» at the end of the reference. The bend relief must be ordered separately (page 149)

PK body style, fixed socket with two nuts (back panel mounting)



Panel cut-out (page 142)

PK body style, fixed socket with elbow PCB contact(back panel mounting)

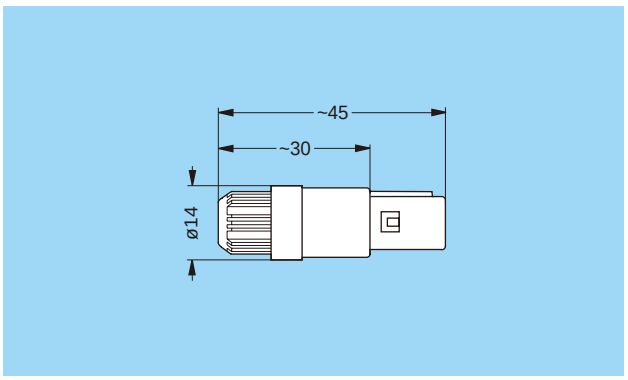


Panel cut-out (page 142)

➤➤➤ 1P Series

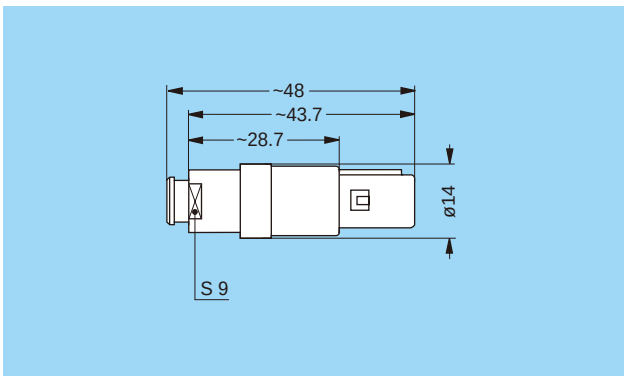
1P Series Plug and Socket Dimensions

PA body style, straight plug with cable collet



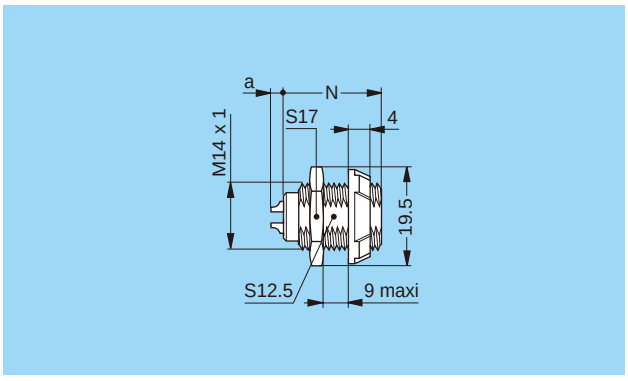
Cable assembly (page 152)
Plug assembly instructions (page 158)

PA body style, straight plug with cable collet and nut for fitting a bend relief



Cable assembly (page 152)
Plug assembly instructions (page 158)
Note: To order, add a «B» at the end of the reference. The bend relief must be ordered separately (page 149)

PK body style, fixed socket with two nuts (back panel mounting)



Panel cut-out (page 142)

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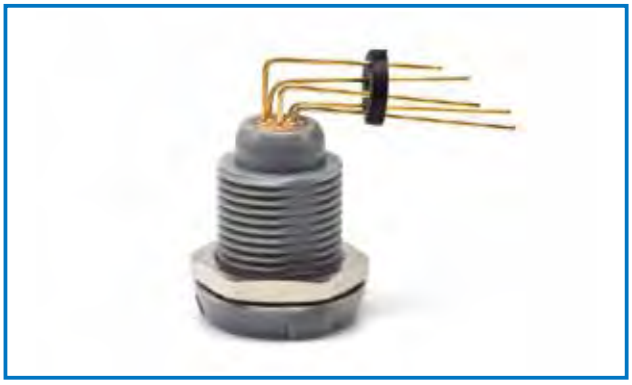
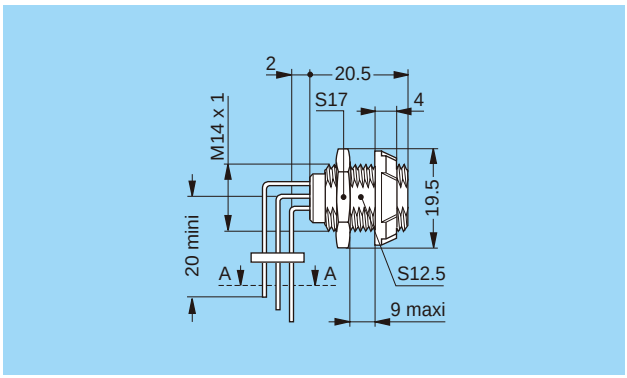
1P Series Plug and Socket Dimensions

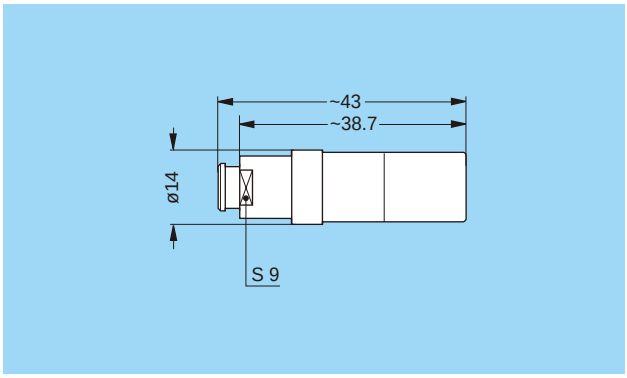
PK body style, fixed socket with elbow PCB contact(back panel mounting)





Panel cut-out (page 142)

PR body style, Free socket with cable collet and nut for fitting a bend relief

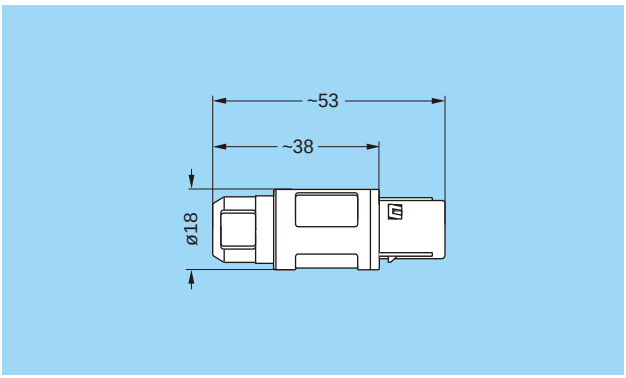


Cable assembly (page 152)
Plug assembly instructions (page 158)
Note: To order, add a «B» at the end of the reference. The bend relief must be ordered separately (page 149)

➤➤➤ 2P Series

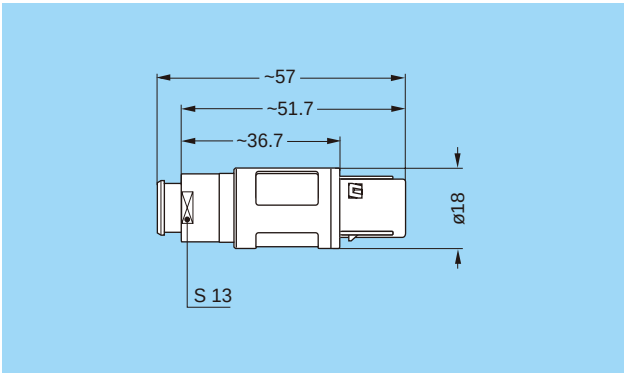
2P Series Plug and Socket Dimensions

CA body style, Straight plug with cable collet



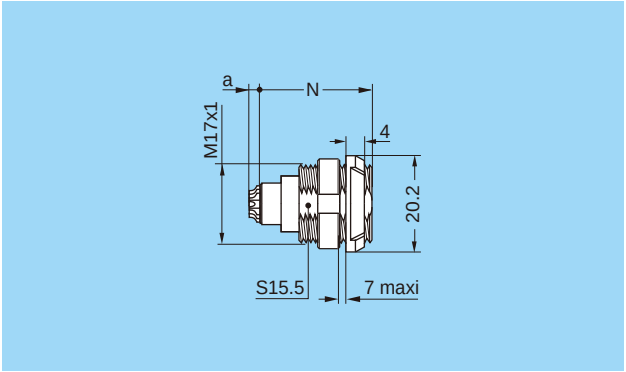
Cable assembly (page 152)
Plug assembly instructions (page 158)

CA body style, Straight plug with cable collet and nut for fitting a bend relief



Cable assembly (page 152)
Plug assembly instructions (page 158)
Note: To order, add a «B» at the end of the reference. The bend relief must be ordered separately (page 149)

CK body style, Fixed socket with two nuts (back panel mounting)



Panel cut-out (page 142)

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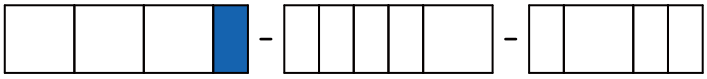


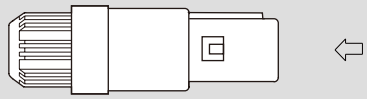
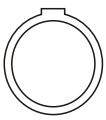
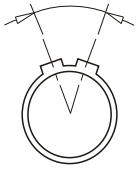
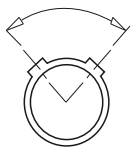
➤➤➤ Alignment Key

P Sereis Alignment Key and Polarized Keying System

P series connector model part numbers are composed of three letters. The LAST LETTER indicates the key position and the contact type (male or female).

Note: 0P series only have alignment key with **G**

2P series only have alignment key with **B**

	Graphical			
Series	0P, 1P	1P	1P, 2P	1P
Reference	G	A	B	C
	**0°** 	**40°** 	**60°** 	**80°** 

➤➤➤ Housing

P Series Components Material

Ref.	Outer shell and collet nut Material	Note
GP	Grey PSU	First choice alternative
BP	Black PSU	Olny for 1P Series
RP	Red PSU	Olny for 1P Series

PSU

Polysulfone (PSU) - A family of sulfur-containing thermoplastics, closely related to poly-ethersulfone (PES). The structure of the polysulfones is aromatic groups, generally with more than one benzene ring, joined by a sulfone group. Generally, polysulfone is a high cost, rigid, amorphous material with low moisture absorption. Reinforcement improves toughness and further enhances dimensional stability, but turns materials opaque. In addition, polysulfones are characterized by high strength, very high surface-temperature limits, low creep, good electrical characteristics, transparency, selfextinguishing ability, and resistance to greases, many solvents, and chemicals. Polysufones may be processed by extrusion, injection molding, and blow molding.

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➤➤➤ Insulators

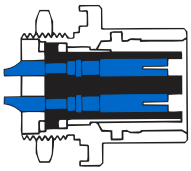
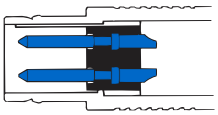
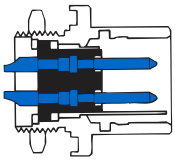
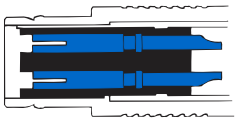
Material of Insulators

Reference	Material	Contact type	Note
S	PPS	Solder or print	First choice alternative
K	PEEK	Solder or print	Special order alternative

➤➤➤ Contact Polarity

Protect users from contact with dangerous voltages

Standard Polarity:
The contacts of the socket are protected against accidental touch.
This version is recommended when voltage is present on the socket
Inverted Polarity:
The contacts of the plug are protected against accidental touch.
This version is recommended when voltage is present on the plug.

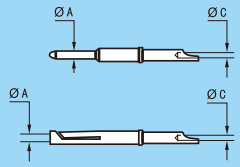
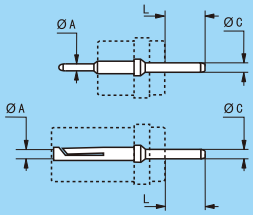
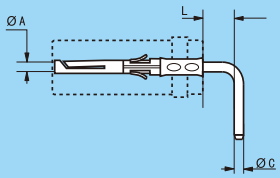
	Socket	Plug
Standard Polarity	 **F:** Female Contact	 **M:** Male Contact
Inverted Polarity	 **M:** Male Contact	 **F:** Female Contact

➤➤➤ Contacts Type

Soldering characteristics

No need to order specific tools, a simple soldering iron is sufficient
Ideal for very small and fragile conductors
Contacts with solder cups to allow the solder to flow

Contacts type reference for plugs, free or fixed sockets

Contact type	Reference	Contact			Conductor					
					Solid		Stranded			
		ΦA (mm)	ΦC (mm)		AWG Max.	Section max. (mm²)	AWG Min.	AWG Max.	Section (mm²) Min.	Section (mm²) Max.
Solder 	S	0.5	0.40	-	28	0.09	-	30	-	0.05
		0.5	0.45	-	28	0.09	-	28	-	0.09
		0.7	0.60	-	24	0.25	-	26	-	0.14
		0.7	0.80	-	22	0.34	-	22	-	0.34
		0.9	0.80	-	22	0.34	-	22	-	0.34
		1.3	1.00	-	20	0.50	-	20	-	0.50
		1.6	1.40	-	16	1.00	-	18	-	1.00
		2.0	1.80	-	14	1.50	-	16	-	1.50
		3.0	2.70	-	10	4.00	-	12	-	4.00
		4.0	3.70	-	10	6.00	-	10	-	6.00
Straight PCB 	P	L dimensions and C are detailed in the section on PCB drilling pattern. also you can customize the L dimensions								
Elbow PCB 	E	L dimensions and C are detailed in the section on PCB drilling pattern.								

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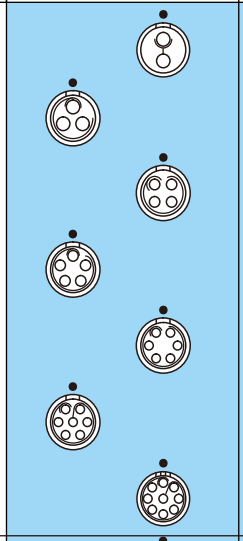
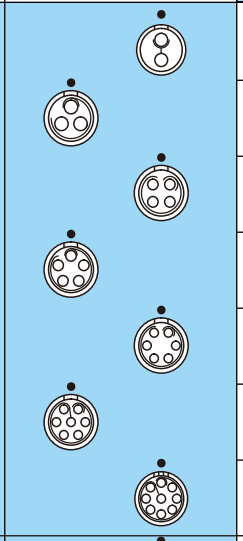
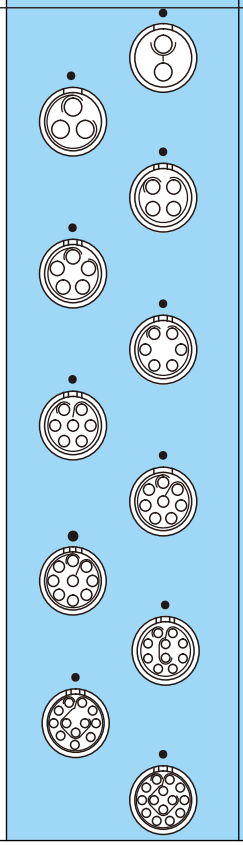
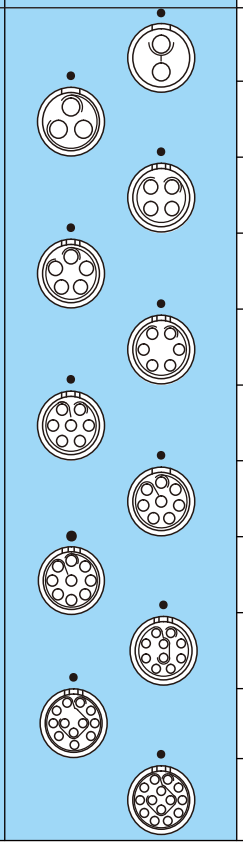
Insert Configuration

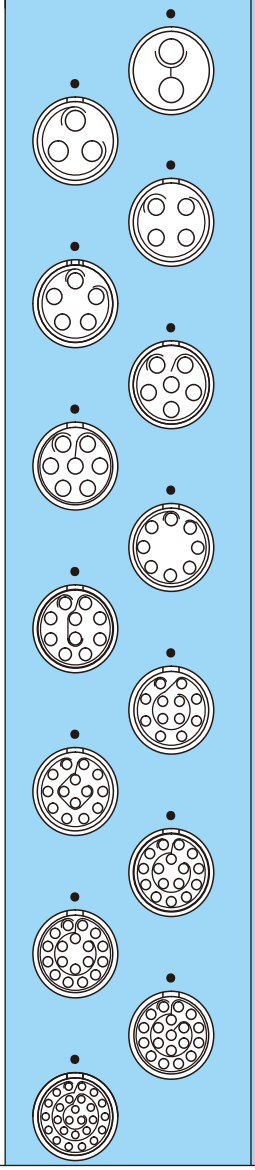
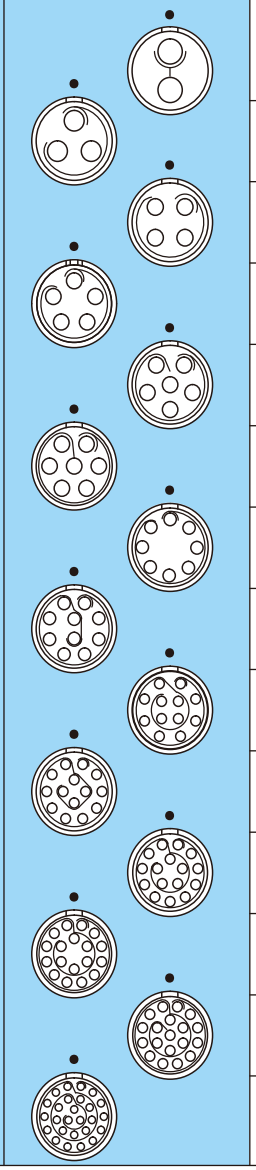
0P Series, 1P Series

	Solder male contact	Solder female contact	Reference	Number of contacts	Contact øA (mm)	Contact type			AWG Max.	Rated current (A)	Operating voltage(V)
						Solder	Print(straight)	Print (elbow)			
0P Series			M02	2	0.9	√	√	√	20	10.0	450
			M03	3	0.9	√	√	√	20	8.0	400
			M04	4	0.7	√	√	√	24	7.0	350
			M05	5	0.7	√	√	√	24	6.5	350
			M06	6	0.5	√	√	√	28	2.5	300
			M07	7	0.5	√	√	√	28	2.5	250
			M09	9	0.5	√	√	√	28	2.0	200
1P Series			M02	2	1.3	√	√	√	20	10.0	400
			M03	3	1.3	√	√	√	20	9.0	400
			M04	4	0.9	√	√	√	22	8.0	400
			M05	5	0.9	√	√	√	22	7.0	350
			M06	6	0.7	√	√	√	22	6.0	350
			M07	7	0.7	√	√	√	22	5.0	350
			M08	8	0.7	√	√	√	22	5.0	350
			M09	9	0.5	√	√	√	28	3.0	300
			M10	10	0.5	√	√	√	28	3.0	300
			M12	12	0.5	√	√	√	28	2.5	250
			M14	14	0.5	√	√	√	28	2.0	200

√: First choice alternative,
☆:Special order alternative

➤➤➤ Insert Configuration

2P Series

2P Series	Solder male contact	Solder female contact	Reference	Number of contacts	Contact øA (mm)	Contact type			AWG Max.	Rated current (A)	Operating voltage(V)
						Solder	Print(straight)	Print (elbow)			
			M02	2	2.0	√	☆	☆	14	30.0	550
			M03	3	1.6	√	☆	☆	16	17.0	600
			M04	4	1.3	√	☆	☆	20	15.0	600
			M05	5	1.3	√	☆	☆	20	14.0	500
			M06	6	1.3	√	☆	☆	20	12.0	500
			M07	7	1.3	√	☆	☆	20	11.0	550
			M08	8	0.9	√	☆	☆	22	10.0	400
			M10	10	0.9	√	☆	☆	22	8.0	400
			M12	12	0.7	√	☆	☆	22	7.0	450
			M14	14	0.7	√	☆	☆	22	6.5	450
			M16	16	0.7	√	☆	☆	22	6.0	400
			M18	18	0.7	√	☆	☆	22	5.5	400
			M19	19	0.7	√	☆	☆	22	5.0	400
			M26	26	0.5	√	☆	☆	28	2.0	400

√: First choice alternative,
☆:Special order alternative

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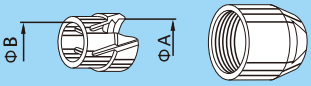
➤➤➤ Collets

C Type Collets for 0P, 1P, 2P Series

C type

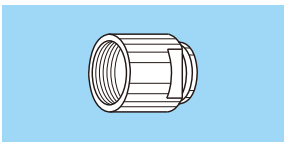


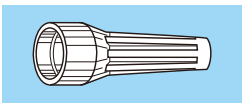
Reference		Cable Φ	
Type	Code	Min.	Max.
C	42	3.5	4.5
C	52	4.5	5.5
C	62	5.5	6.5
C	72	6.5	7.5

➤➤➤ Variant

Bend Relief

To order a model with cable collet and nut for fitting a bend relief, you should write a "B" in the variant position.
Bend reliefs to be ordered separately on *(page 149)*





	Ref.	Collet		*Need to be ordered separately (page 149)*
		Type	Code	
0P	B	C	42	GMA.0B.●●●.●●
1P	B	C	42 to 62	GMA.1B.●●●.●●
2P	B	C	52 to 72	GMA.2B.●●●.●●

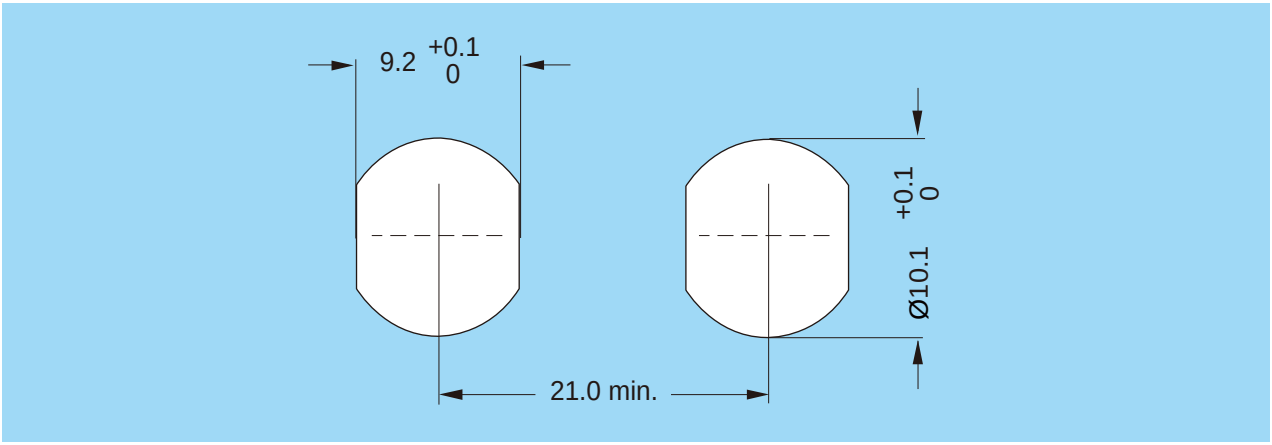
➤➤➤ Colour

Plug Collet nut and Socket Front nut Colour Table

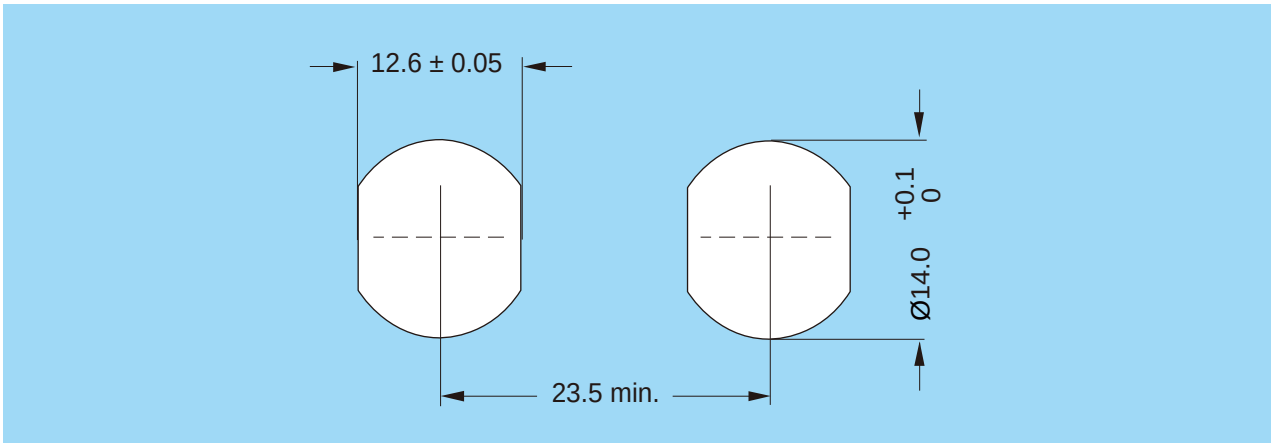
Colours	Blue	Grey	Yellow	White	Red	Green
Reference	A	G	J	B	R	V

➤➤➤ Panel cut-out

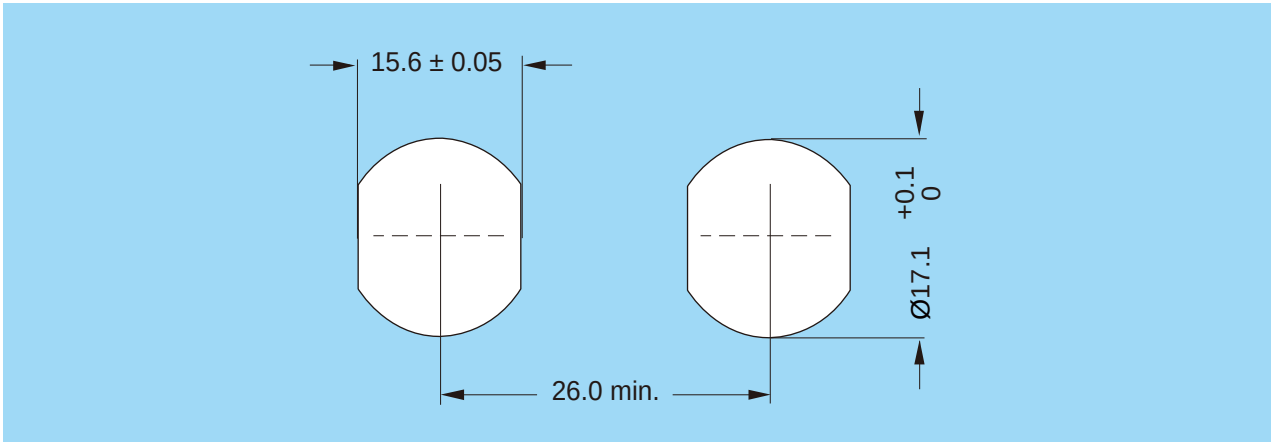
0P Series



1P Series



2P Series



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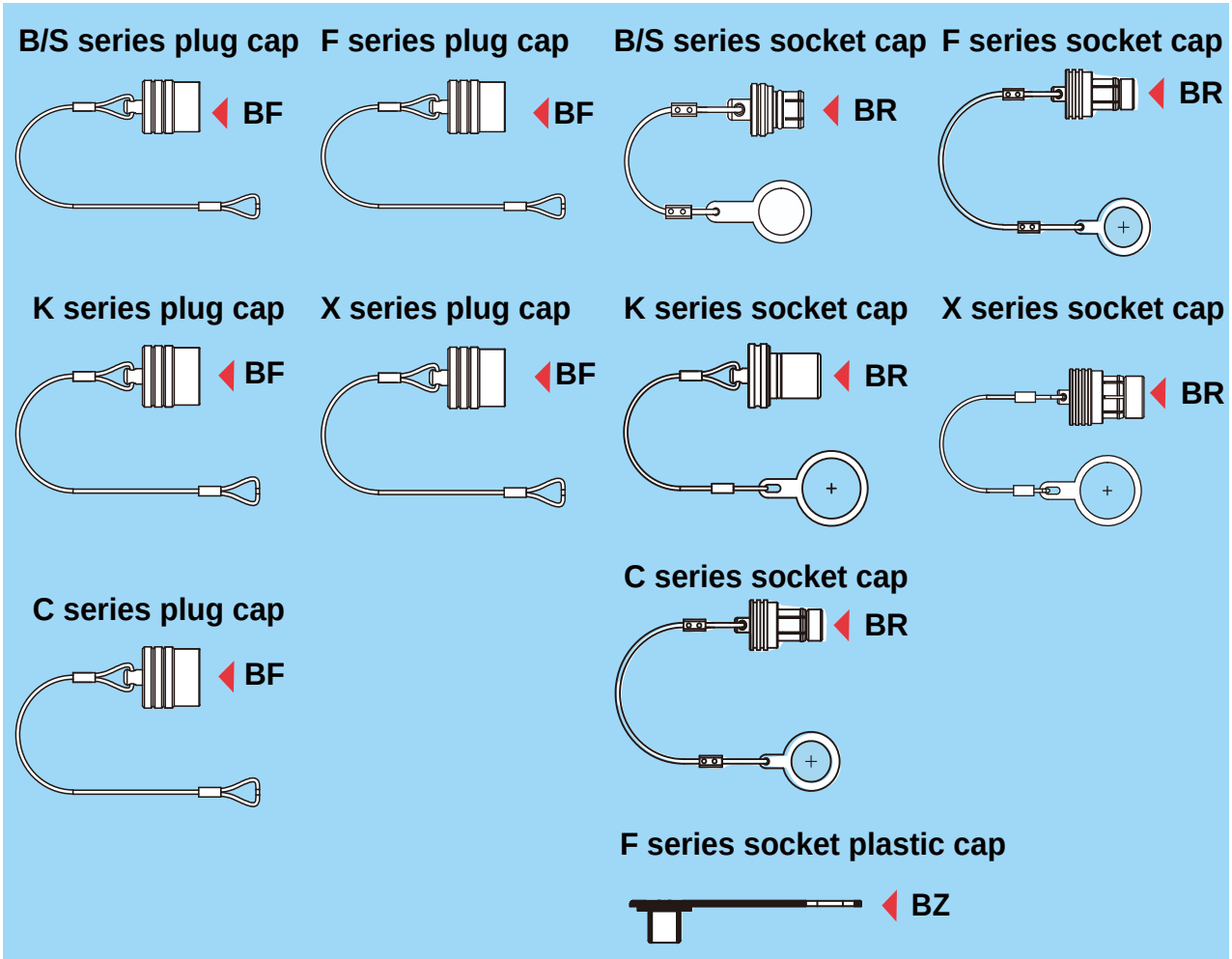
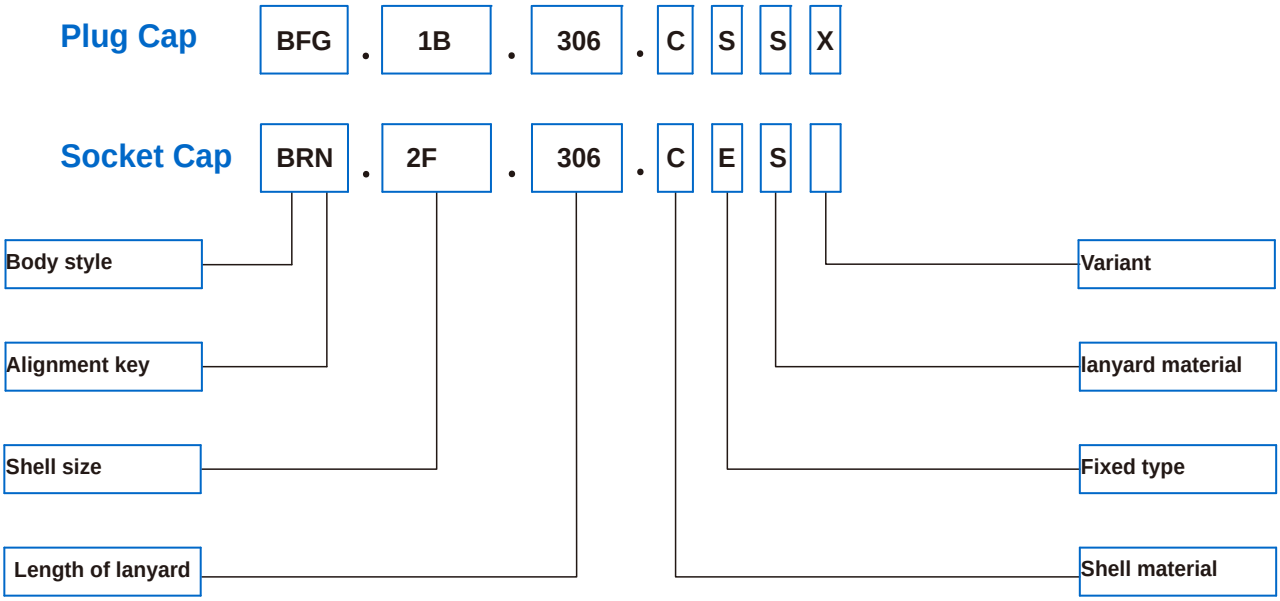
Caps

Body Stypes



➤➤➤ Accessories

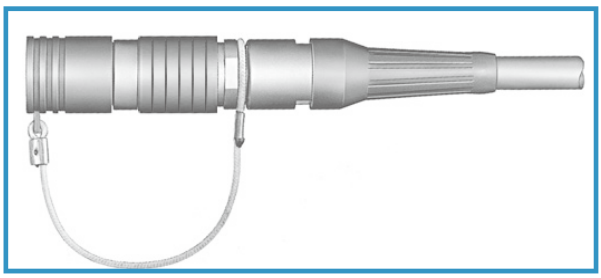
Caps Part Numbering System



Part Number Direction

Model: BF: Plug caps**, BR:** socket caps
Alignment key: According to the key code, **G:** 0°**, A:** 30.....(B, K series) **;N:** any alignment key configu-ra-tion(F series)
Shell size: 00B, 0B, 1B, 2B(B series); 2F, 3F, 31F...(F series) etc.
Length of lanyard: The last three digits indicate the center length of the lanyard, **e.g.: 0750**= length of the lanyard 75mm
Shell surface material:C: pearl chrome, **H:** black chrome, **F:** aluminum alloy chemical nickel etc.
Fixed type: E: washer, **T:** terminal, **S:** tie the lanyard into a loop, **X:** lanyard without treatment
lanyard material: L: 316L Stainless steel, **S:** 304 painted stainless steel, **N:** nylon, **P:** without lanyard
Variant: used to distinguish other types, can not write

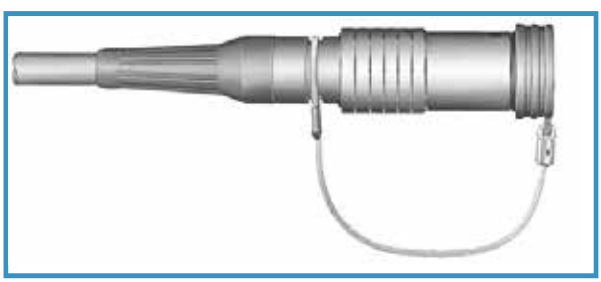
Plug fitting the cord



Fitting the cord

Slide the plug into the loop of the cord.
Place the loop into the groove in front of the collet nut and tighten the loop.

Socket fitting the cord



Fitting the cord

Slide the socket into the loop of the cord.
Place the loop into the groove in front of the collet nut.
Tighten the loop.

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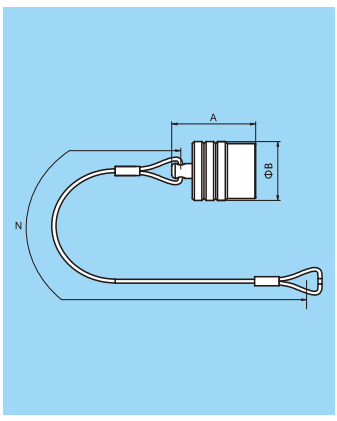
Plug Caps

BF body style, Caps for B series plug and S series plug

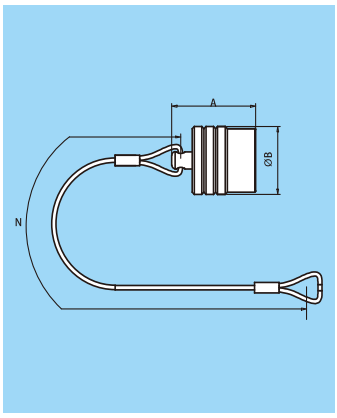


Model	Dimensions (mm)		
	A	B	N
BFG.0B.0750.CSS	16.0	9.5	75.0
BFG.1B.0850.CSS	17.0	12.0	85.0
BFG.2B.1000.CSS	18.0	15.0	100.0
BFG.3B.1000.CSS	26.0	21.7	100.0

Note: this cap is available only with an alignment key (G).

- *Body material: chrome-plated brass*
- *Lanyard material: 304 painted stainless steel*
- *Gasket material: Silicone rubber*
- *Maximum operating temperature: -40~125°C*
- *Watertightness: IP50*

BF body style, Caps for K series plug

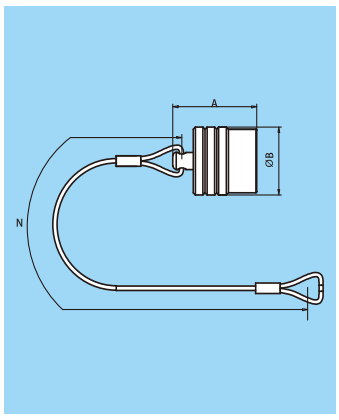


Model	Dimensions (mm)		
	A	B	N
BFG.0K.0750.CSL	17.5	14.0	75.0
BFG.1K.0850.CSL	20.5	16.0	85.0
BFG.2K.1000.CSL	22.5	19.5	100.0

Note: this cap is available only with an alignment key (G).

- *Body material: chrome-plated brass*
- *Lanyard material: 316L stainless steel*
- *Gasket material: Silicone rubber*
- *Maximum operating temperature: -40~125°C*
- *Watertightness: IP67*

BF body style, Caps C series plug



Model	Dimensions (mm)				
	A	B	C	D	N
BFG.0C.0750.CSS	20.0	11.0	18.3	10.0	75.0
BFG.1C.0850.CSS	23.2	13.0	27.5	14.0	85.0
BFG.2C.1000.CSS	25.6	16.0	30.0	16.0	100.0
BFG.3C.1000.CSS	30.0	19.0	35.5	20.0	100.0

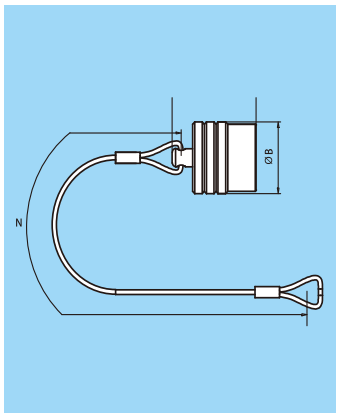
Note: this cap is available only with an alignment key (G).

- *Body material: chrome-plated brass*
- *Lanyard material: 304 painted stainless steel*
- *Gasket material: Silicone rubber*
- *Maximum operating temperature: -40~125°C*
- *Watertightness: IP67*

➤➤➤ Accessories

Plug Caps

BF body style, Caps for F series plug

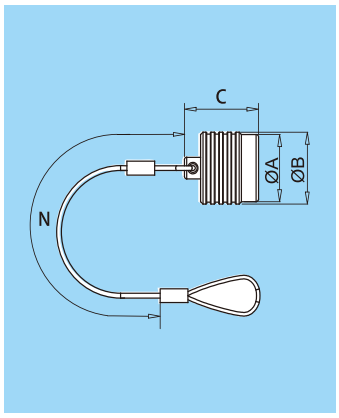


Model	Dimensions (mm)		
	A	B	N
BFN.2F.0750.CSS	15.0	11.0	75.0
BFN.3F.0850.CSS	16.0	13.0	85.0
BFN.31F.0850.CSS	15.4	14.5	85.0
BFN.4F.1000.CSS	17.5	16.5	100.0
BFN.5F.1000.CSS	21.5	19.8	100.0

Note: these caps are suitable for use with any alignment key configura-tion.

- *Body material: chrome-plated brass*
- *Lanyard material: 304 painted stainless steel*
- *Gasket material: Silicone rubber*
- *Maximum operating temperature: -40~125°C*
- *Watertightness: IP67*

BF body style, Caps for X series plug



Model	Dimensions (mm)			
	A	B	C	N
BFN.2X.0850.FSS	11.0	12.0	14.7	85.0
BFN.3X.0850.FSS	14.0	15.0	16.0	85.0
BFN.31X.0850.FSS	15.0	16.0	19.0	85.0
BFN.4X.1350.FSS	16.0	17.0	16.8	135.0

Note: these caps are suitable for use with any alignment key configura-tion.

- *Body material: Nickel-plated brass*
- *Lanyard material: 304 painted stainless steel*
- *Gasket material: Silicone rubber*
- *Maximum operating temperature: -40~125°C*
- *Watertightness: IP67*

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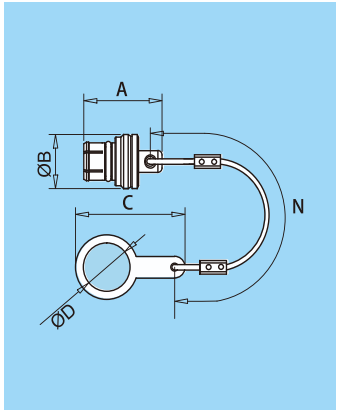
Socket Caps

BR body style, Blanking caps for B series sockets and S series sockets

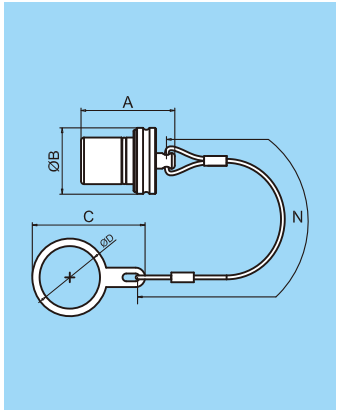


Model	Dimensions (mm)				
	A	B	C	D	N
BRN.00.0600.CSS	12.3	8.0	-	-	60.0
BRN.0B.0750.CES	15.0	10.0	21.0	9.0	75.0
BRN.1B.0850.CES	17.0	14.0	25.5	12.0	85.0
BRN.2B.1000.CES	20.0	18.0	27.5	15.0	100.0

Note: these caps are suitable for use with any alignment key configura-tion.

- *Body material: chrome-plated brass*
- *Lanyard material: 316L stainless steel*
- *Gasket material: Silicone rubber*
- *Maximum operating temperature: -40~125°C*
- *Watertightness: IP50*

BR body style, Blanking caps for K series sockets

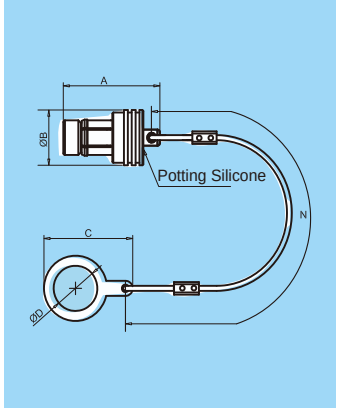


Model	Dimensions (mm)				
	A	B	C	D	N
BRN.0K.0750.CSL	20.0	15.0	27.5	14.0	75.0
BRN.1K.0850.CSL	25.0	17.0	30.0	16.0	85.0
BRN.2K.1000.CSL	25.0	20.0	35.5	20.0	100.0
BRN.3K.1000.CSL	34.0	24.0	45.0	24.0	100.0

Note: these caps are suitable for use with any alignment key configura-tion.

- *Body material: chrome-plated brass*
- *Lanyard material: 316L stainless steel*
- *Gasket material: Silicone rubber*
- *Maximum operating temperature: -40~125°C*
- *Watertightness: IP67*

BR body style, Blanking caps for C series sockets



Model	Dimensions (mm)				
	A	B	C	D	N
BRN.0C.0750.CES	20.0	11.0	18.3	10.0	75.0
BRN.1C.0850.CES	23.2	13.0	27.5	14.0	85.0
BRN.2C.1000.CES	25.6	16.0	30.0	16.0	100.0
BRN.3C.1000.CES	30.0	19.0	35.5	20.0	100.0

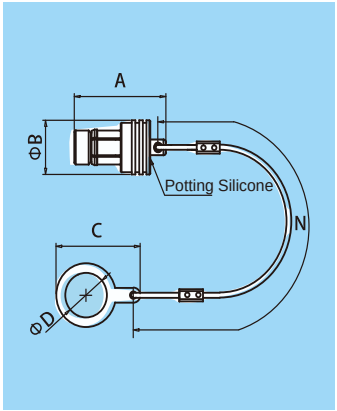
Note: these caps are suitable for use with any alignment key configura-tion.

- *Body material: chrome-plated brass*
- *Lanyard material: 304 painted stainless steel*
- *Gasket material: Silicone rubber*
- *Maximum operating temperature: -40~125°C*
- *Watertightness: IP67*

➤➤➤ Accessories

Socket Caps

BR body style, Blanking caps for F series sockets

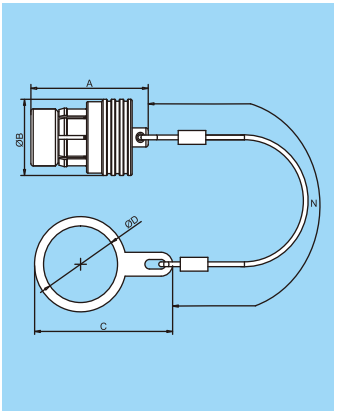


Model	Dimensions (mm)				
	A	B	C	D	N
BRN.2F.0750.CES	20.0	11.0	18.3	9.0	75.0
BRN.3F.0850.CES	23.2	13.0	27.5	14.0	85.0
BRN.31F.0850.CES	21.8	14.5	27.5	14.0	85.0
BRN.4F.1000.CES	25.6	16.0	30.0	16.0	100.0
BRN.5F.1000.CES	30.0	19.0	35.5	20.0	100.0

Note: these caps are suitable for use with any alignment key configura-tion.

- *Body material: chrome-plated brass*
- *Lanyard material: 304 painted stainless steel*
- *Gasket material: Silicone rubber*
- *Maximum operating temperature: -40~125°C*
- *Watertightness: IP67*

BR body style, Blanking caps for X series sockets

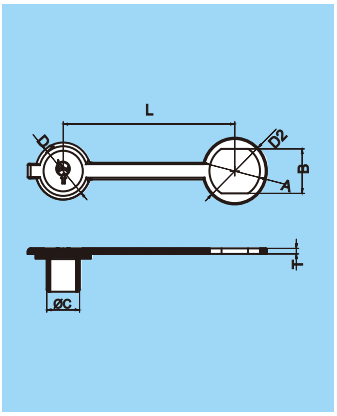


Model	Dimensions (mm)				
	A	B	C	D	N
BRN.2X.0800.FES	23.5	11.0	23.0	11.2	80.0
BRN.3X.0800.FES	24.5	14.0	27.5	14.0	80.0
BRN.31X.0850.FES	23.5	14.0	27.5	14.0	80.0
BRN.4X.1000.FES	25.5	16.0	30.0	16.0	100.0

Note: these caps are suitable for use with any alignment key configura-tion.

- *Body material: Nickel-plated brass*
- *Lanyard material: 304 painted stainless steel*
- *Gasket material: Silicone rubber*
- *Maximum operating temperature: -40~125°C*
- *Watertightness: IP67*

BZ body style, Plastic caps for F series sockets



Model	Dimensions (mm)						
	A	B	C	D1	D2	T	L
BZF.2F.0365.PSS	9.0	8.2	7.2	13.5	13.5	1.5	36.5
BZF.3F.0480.PSS	14.0	12.0	9.2	15.5	18.0	1.5	48.0
BZF.31F.0480.PSS	14.0	12.0	10.4	15.5	18.0	1.5	48.0
BZF.4F.0520.PSS	16.0	14.5	12.2	18.0	20.0	1.5	52.0

Note: these caps are suitable for use with any alignment key configura-tion.

- *Body material: Nitrile rubber*
- *Maximum operating temperature: -40~125°C*
- *Watertightness: IP67*

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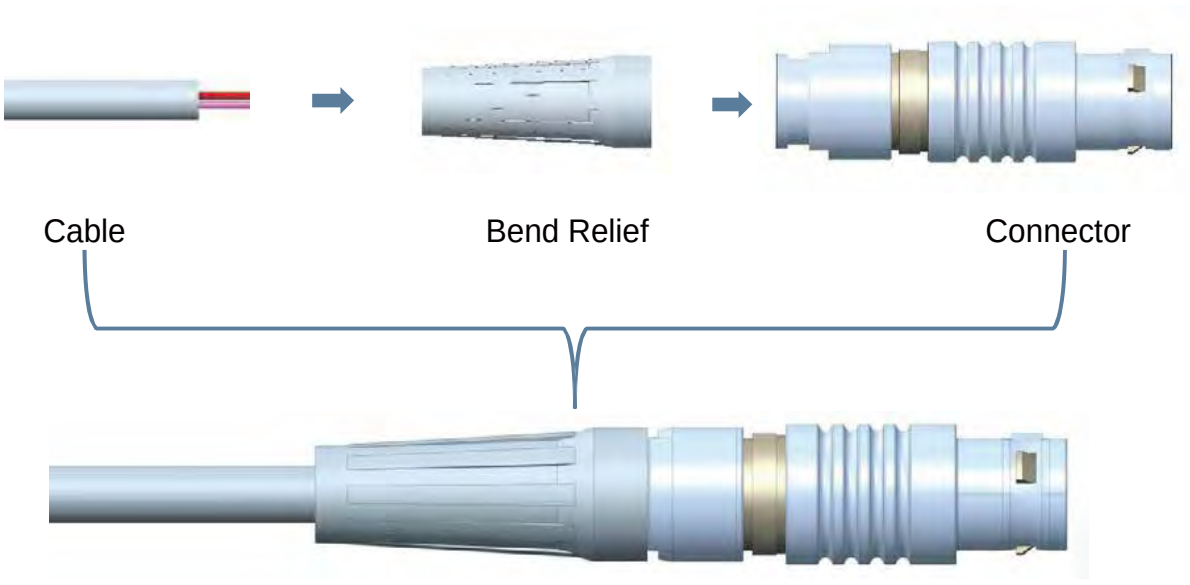
Bend Relief



Assembly Drawing

Bend relief made from thermoplastic polyurethane elas-tomer. Can be fitted over plug and sockets that are supplied with nut for fitting such bend relief. They are available different colours that match with the insulating washers.

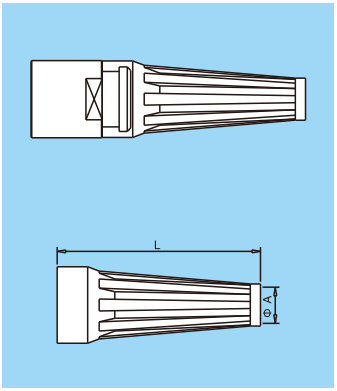
Main Characteristics

The bend relief is made of polyurethane material, because PU contains a highly polar urethane group, is insoluble in non-polar groups, has good oil resistance, toughness, wear resistance, aging resistance and stickiness. Synergy. It can be installed on the plugs and sockets of our company's products to protect the cable.

Temperature range in dry air: -40 ° C + 80 ° C

➤➤➤ Accessories

Bend Relief



Model	Dimensions (mm)			
	Bend relief		Cable Φ	
	A	L	Max.	Min.
GMA.00.028.DG	2.8	22.0	3.1	2.8
GMA.0B.030.DG	3.0	24.0	3.4	3.0
GMA.0B.040.DG	4.0	24.0	4.4	4.0
GMA.0B.045.DG	4.5	24.0	5.2	4.5
GMA.0B.052.DG	5.2	24.0	5.6	4.5
GMA.1B.040.DG	4.0	30.0	4.4	4.0
GMA.1B.045.DG	4.5	30.0	4.9	4.5
GMA.1B.054.DG	5.4	30.0	6.0	5.4
GMA.1B.065.DG	6.5	30.0	7.0	6.5
GMA.2B.050.DG	5.0	36.0	5.5	5.0
GMA.2B.060.DG	6.0	36.0	6.5	6.0
GMA.2B.070.DG	7.0	36.0	7.7	7.0
GMA.2B.080.DG	7.8	36.0	8.8	7.8

Ref.	Colour	Ref.	Colour
A	Blue	N	Black
B	White	R	Red
G	Gray	S	Orange
J	Yellow	V	Green

Note: The last letter ((G)) of the part number indicates the grey color of the bend relief.
For ordering a bend relief with another color, see table on page below and replace the letter ((G)) by the letter of the required color.

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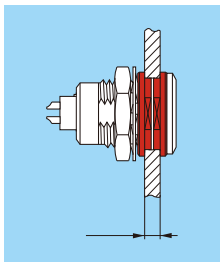
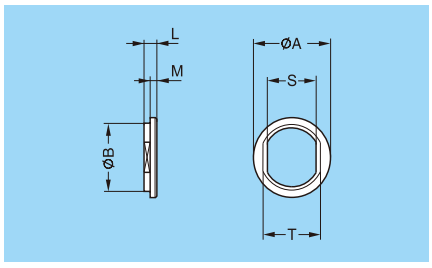
Insulating Washers



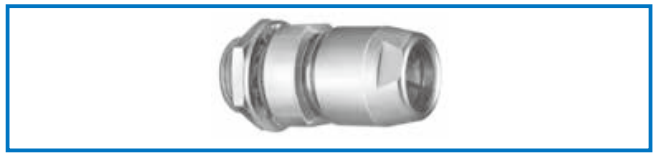


Model	Dimensions (mm)						
	A	B	E	L	M	S	T
GRA.00.269.GG	10.0	8.8	4.5	1.8	1.0	6.4	8.0
GRA.0B.269.GG	12.0	10.8	6.0	1.8	1.0	8.3	9.9
GRA.1B.269.GG	16.0	13.8	6.5	1.8	1.0	10.6	12.2
GRA.2B.269.GG	21.1	17.9	7.3	2.3	1.3	13.6	16.2

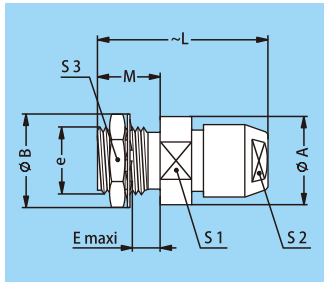
Ref.	Colour	Ref.	Colour
A	Blue	N	Black
B	White	R	Red
G	Gray	S	Orange
J	Yellow	V	Green

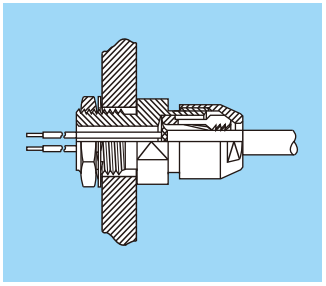
Note: The last letter "G" of the model indicates that the color of the insulating washers is gray. If you need to order other colors of insulating washers, please refer to the above table and replace "G" with the letter of the corresponding color

Lead-through



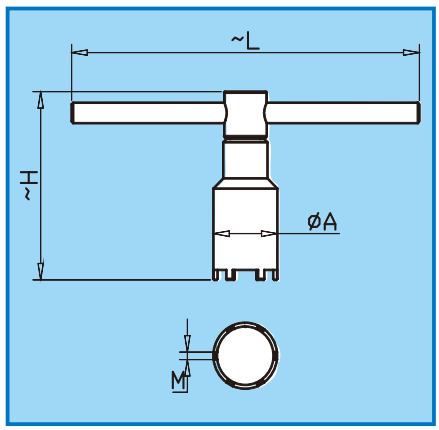
GSC Lead-through with cable collet





Model	Dimensions (mm)								
	A	B	e	E	L	M	S1	S2	S3
GSC.00S.290.CD••	6.5	8.1	M5x0.5	1.5	16.0	4.0	5.0	6.0	7.0
GSC.0S.290.ND••	12.0	12.5	M9x0.6	5.0	26.0	7.5	11.0	9.0	11.0
GSC.0S.290.ND••	17.0	19.5	M15x1.0	8.1	30.0	12.0	-	14.0	17.0

Tooling



GB6 Spanners for hexagonal nuts

Material: Stainless steel

Model	Dimensions (mm)				
	L	H	A	M	Used for series
GB6.102F.LM9	110	47.0	13.0	1.8	2F, 2T, 2U, 2X
GB6.103F.LM14	110	58.0	19.0	2.8	0K, 3F, 31F, 3X, 31X
GB6.104F.LM16	110	58.0	20.2	2.3	1K, 4F, 4X
GB6.105F.LM20	110	58.0	25.2	2.8	2K, 5F, 5X

➤➤➤ Cable Assembly

Each connection needs its individual cable. Make no compromises when it comes to the quality of the com-plete connection system. Spring Technology gives you the complete system solution from one source, with no intermediary suppliers. Cable assembly is a very complex subject. It requires equal measures of expertise in the areas of connectors, cables and assembly. Spring Technology meets all these requirements in full.

Our competent assembly team tests the complete system according your specifications. Our assembly service prom-ises you the same quality found in our connectors – without compromises.

Spring Technology offers you all from one source
- 100 % final inspections
- Automatic processes (cutting, stripping, attaching)
- Extrusion possible with a hot-melt and high pressure/temperature process
- Ultrasound welding
- EMC-compatible assembly
- Application specific labeling
- Widest range of potting possibilities for sealed systems
- Extruded cable crossovers.
- Products with durability and functional reliability
- Inspections, such as crimp force monitoring, during production

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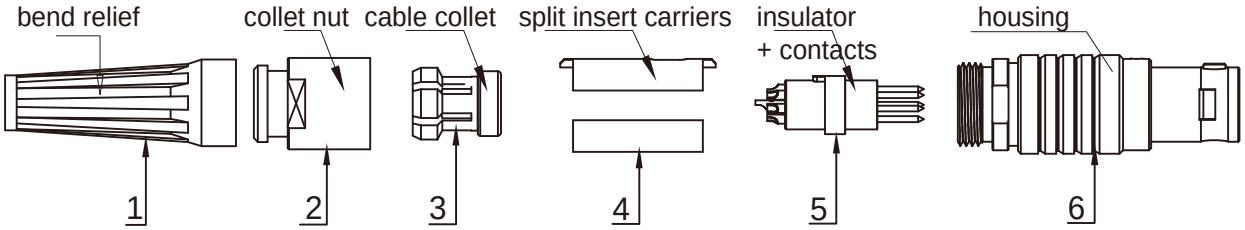
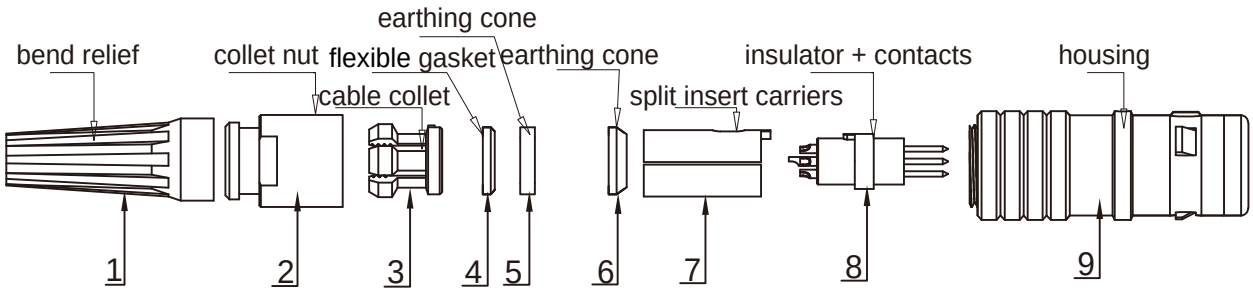
Plug Assembly Instructions for B Series



1. Pass the cable through the bend relief ①, the collet nut ②, the cable collet ③, and solder to the insulator with contacts ⑤ in order.
2. Attach two pieces of split insert carriers ④ to the welded insulator with contacts ⑤, noting that the window on the split insert carriers ④ corresponds to the protrusion on the insulator with contacts ⑤.
3. Install the cable collet ③ in the proper position of the cable. Note that the protrusion on the cable collet ③ corresponds to the groove on the split insert carriers ④.
4. Push the insulator with contacts ⑤. the split insert carriers ④ and the cable collet ③ into the plug assembly in turn, and note that the protrusions on the split insert carriers ④ are correspondingly inserted into the notches in the plug assembly.
5. Screw the collet nut ② onto the housing subassy ⑥
6. Insert the bend relief ① into the corresponding step of the collet nut ②.

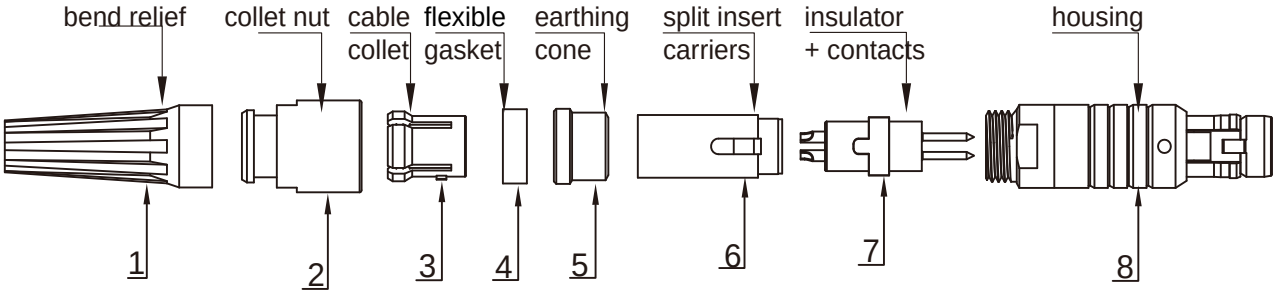
Plug Assembly Instructions for K Series



1. The cable is sequentially passed through the bend relief ①, the collet nut ②, the cable collet ③, the flexible gasket ④, the earthing cone ⑤, the earthing cone ⑥, and soldered to the corresponding pins of the split insert carriers ⑦ in order.
2. Attach the split insert carriers ⑦ to the insulator with contacts ⑧. Note that the protrusion of the split insert carriers ⑦ corresponds to the notch of the insulator with contacts ⑧, and the earthing cone ⑥ is sequentially replaced, the earthing cone ⑤, the flexible gasket ④, and the cable collet ③ Push it into the proper position and ensure that the complete outer skin of the cable is inserted into the earthing cone ⑥.
3. Install the mounted the insulator with contacts ⑧ into the housing subassy ⑨, noting that the notch in the split insert carriers ⑦ corresponds to the protrusion in the housing subassy⑨.
4. Screw the collet nut ② onto the housing subassy ⑨.
5. Attach the bend relief ① to the collet nut ②.

➤➤➤ Cable Assembly

Plug Assembly Instructions for C Series



1. The cable is sequentially passed through the bend relief ①, the collet nut ②, the cable collet ③, the flexible gasket ④, the earthing cone ⑤, and soldered to the corresponding pins of the split insert carriers ⑥ in order.
2. Attach the split insert carriers ⑥ to the insulator with contacts ⑦. Note that the protrusion of the split insert carriers ⑥ corresponds to the notch of the insulator with contacts ⑦, and the earthing cone ⑤ is sequentially replaced, the flexible gasket ④, and the cable collet ③ Push it into the proper position and ensure that the complete outer skin of the cable is inserted into the earthing cone ⑤.
3. Install the mounted the insulator with contacts ⑦ into the housing subassy ⑧, noting that the notch in the split insert carriers ⑥ corresponds to the protrusion in the housing subassy ⑧.
4. Screw the collet nut ② onto the housing subassy ⑧.
5. Attach the bend relief ① to the collet nut ②.

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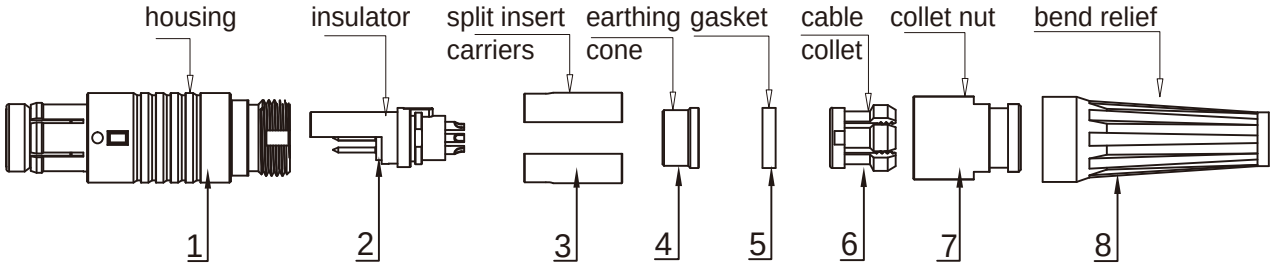
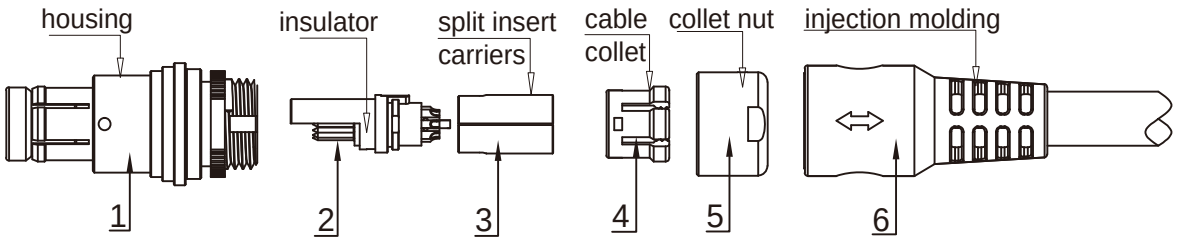
Plug Assembly Instructions for F Series Long Plug



1. The cable is sequentially passed through the bend relief ⑧, the collet nut ⑦, the cable collet ⑥, the flexible gasket ⑤, the earthing cone ④, and soldered to the corresponding pins of the split insert carriers ③ in order.
2. Attach the split insert carriers ③ to the insulator with contacts ②. Note that the protrusion of the split insert carriers ③ corresponds to the notch of the insulator with contacts ②, and the earthing cone ④ is sequentially replaced, the flexible gasket ⑤, and the cable collet ⑥ P ush it into the proper position and ensure that the complete outer skin of the cable is inserted into the earthing cone ④.
3. Install the mounted the insulator with contacts ② into the housing subassy ①, noting that the notch in the split insert carriers ③ corresponds to the protrusion in the housing subassy①.
4. Screw the collet nut ⑦ onto the housing subassy ①.
5. Attach the bend relief ⑧ to the collet nut ⑦.

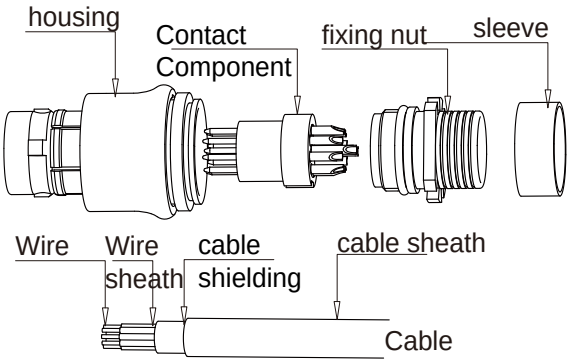
Plug Assembly Instructions for F, T, U Series Short Plug

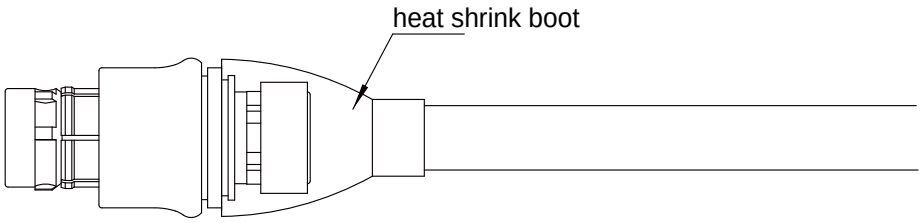


1. The cable is sequentially passed through the collet nut ⑤, the cable collet ④, and soldered to the corresponding pins of the split insert carriers ③ in order.
2. Attach the split insert carriers ③ to the insulator with contacts ②. Note that the protrusion of the split insert carriers ③ corresponds to the notch of the insulator with contacts ②.
3. Install the mounted the insulator with contacts ② into the housing subassy ①, noting that the notch in the split insert carriers ③ corresponds to the protrusion in the housing subassy ①.
4. Screw the collet nut ⑤ onto the housing subassy ⑤.
5. Put the assembled plug collet nut ⑤ on the injection molding machine for injection molding ⑥

➤➤➤ Cable Assembly

Plug Assembly Instructions for X Series Plug





Cable assembly

1. Strip the Cable: Strip the cable to the length required for the core wires.
2. Remove the Plug's Fixing Nut: Unscrew the fixing nut from the plug and remove the contact component from inside the plug.
3. Prepare the Cable End:
   Slide on the heat shrink boot (if applicable).
   Slide on the crimp sleeve and the fixing nut in sequence.
   Place an appropriately sized heat shrink tube on each core wire.
4. Heat Shrink Tube Application: After soldering the wires, slide the heat shrink tubes over the solder joints. Heat them to shrink and protect the soldered connections.
5. Install the Contact Component:
   Insert the contact component into the plug, aligning the slots on the contact component with the keys on the plug housing.
6. Secure the Contact Component: Tighten the fixing nut. After tightening, ensure the contact component does not move along the central axis of the plug.
7. Shielding Layer Preparation: Spread the cable shielding layer evenly and wrap it 360° around the end of the fixing nut.
8. Crimp the Sleeve:
   Slide the crimp sleeve over the end of the fixing nut.
   Use a crimping tool to crimp the sleeve into a hexagonal shape and remove any excess shielding material.
9. Apply Heat Shrink Boot: Slide the heat shrink boot up to the shoulder of the plug housing and heat it until it shrinks securely.

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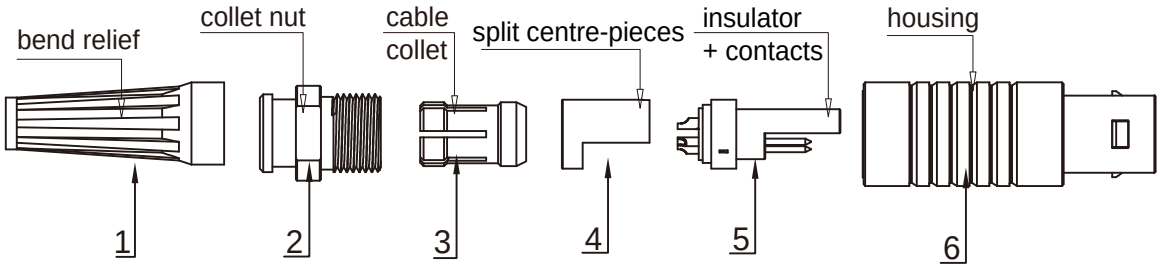
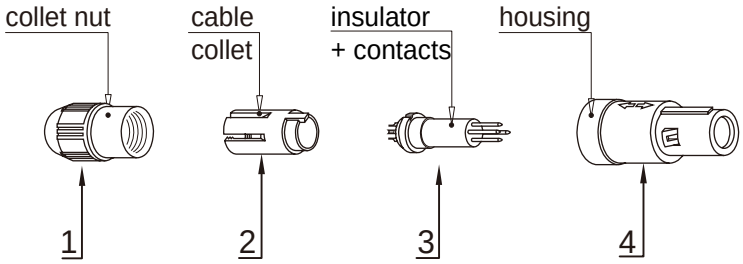
Plug Assembly Instructions for S Series Plug



1. The cable is passed through the bend relief ① in sequence, the collet nut ②, the collet collet ③, the split centre-pieces ④, and soldered to the insulator with contacts ⑤ in order.
2. Attach the split centre-pieces ④ to the insulator with contacts ⑤ , noting that the projection of the split centre-pieces ④ corresponds to the notch of the insulator with contacts ⑤ , pushing the the collet collet③ to the appropriate position of the cable.
3. The assembled cable the collet collet③, the the split centre-pieces ④, and insulator with contacts ⑤ are pushed into the housing subassy ⑥.
4. Screw the collet nut ② into housing subassy ⑥.

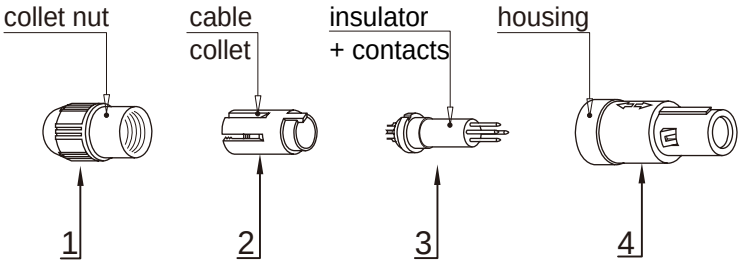
Plug Assembly Instructions for 0P Series Plug



1. The cable is passed through the collet nut ① in sequence, and the cable collet ② is soldered to the corresponding position of the insulator with contacts ③.
2. Attach the cable collet ② to the welded the insulator with contacts ③, paying attention to the projection of the cable collet ② and the groove of the insulator with contacts ③.
3. Insert the insulator with contacts ③ into the housing subassy ④, noting that the projections on the cable collet ② are to be correspondingly fitted to the recesses in the housing subassy ④.
4. Insert the collet nut ① into the housing subassy ④ and tighten the collet nut.

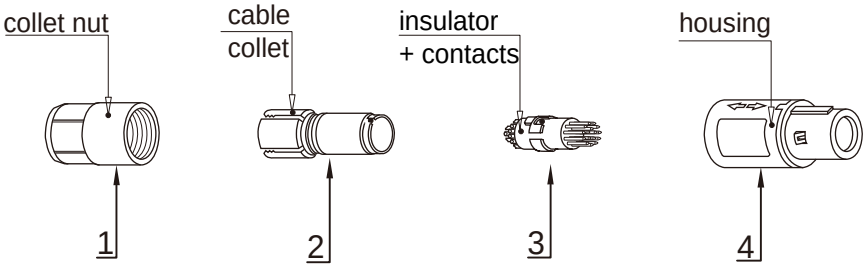
➤➤➤ Cable Assembly

Plug Assembly Instructions for 1P Series Plug



1. The cable is passed through the collet nut ① in sequence, and the cable collet ② is soldered to the corresponding position of the insulator with contacts ③.
2. Attach the cable collet ② to the welded the insulator with contacts ③, paying attention to the projection of the cable collet ② and the groove of the insulator with contacts ③.
3. Insert the insulator with contacts ③ into the housing subassy ④, noting that the projections on the cable collet ② are to be correspondingly fitted to the recesses in the housing subassy ④.
4. Insert the collet nut ① into the housing subassy ④ and tighten the collet nut.

Plug Assembly Instructions for 2P Series Plug



1. The cable is passed through the collet nut ① in sequence, and the cable collet ② is soldered to the corresponding position of the insulator with contacts ③.
2. Attach the cable collet ② to the welded the insulator with contacts ③, paying attention to the projection of the cable collet ② and the groove of the insulator with contacts ③.
3. Insert the insulator with contacts ③ into the housing subassy ④, noting that the projections on the cable collet ② are to be correspondingly fitted to the recesses in the housing subassy ④.
4. Insert the collet nut ① into the housing subassy ④ and tighten the collet nut.

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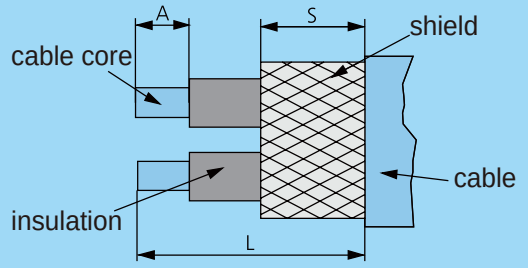
Cable Stripping Lengths(B Series)

T1 straight plugs and sockets with cable collet, clamping type D or M
T2 elbow plugs (90°) with cable collet, clamping type D or M

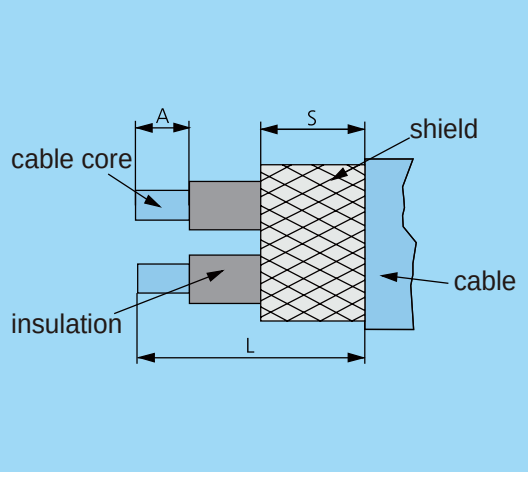


Connector		contact ØA (mm)	Cable stripping lengths (mm)					
			T1			T2		
			Solder			Solder		
Series	Type		L	S	A	L	S	A
00B	302/303/304	0.5	7.0	4	2.5	9.5	4	2.5
0B	302/303	0.9	13.0	7	3.0	18.0	7	3.0
	304/305	0.7	13.0	7	3.0	18.0	7	3.0
	306/307/309	0.5	14.0	7	2.5	19.0	7	2.5
1B	302/303	1.3	14.0	8	3.5	25.0	8	3.5
	304/305	0.9	14.0	8	3.0	25.0	8	3.0
	306/307/308	0.7	14.0	8	3.0	25.0	8	3.0
	310/314/316	0.5	16.5	8	2.5	27.5	8	2.5
2B	302	2.0	19.0	9	4.0	30.0	9	4.0
	303	1.6	19.0	9	3.5	30.0	9	3.5
	304/305/306/307	1.3	18.0	9	3.5	29.0	9	3.5
	308/310	0.9	17.0	9	3.0	28.0	9	3.0
	312/314/316/318/319	0.7	17.0	9	3.0	28.0	9	3.0
	326	0.5	17.0	9	2.5	28.0	9	2.5
3B	302	3.0	24.0	10	4.5	35.0	10	4.5
	303/304	2.0	23.0	10	4.0	34.0	10	4.0
	305/306/307	1.6	23.0	10	3.5	34.0	10	3.5
	308/310	1.3	22.0	10	3.5	33.0	10	3.5
	309	1.3	22.0	10	3.5	33.0	10	3.5
		2.0			4.0			4.0
	314/316/318	0.9	21.0	10	3.0	32.0	10	3.0
	320/322/324/326/330	0.7	21.0	10	3.0	32.0	10	3.0

Note:The tolerances on these dimensions are L ± 0.5mm, S ±0.5mm, A ±0.2mm

Cable Stripping Lengths(K Series)

T1 straight plugs and sockets with cable collet, clamping type C



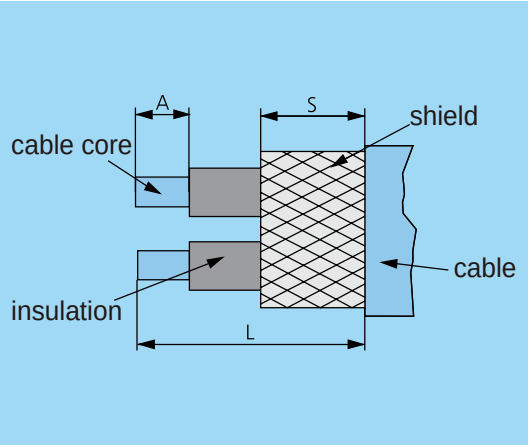
Connector		contact ØA (mm)	Cable stripping lengths (mm)		
			T1		
			Solder		
Series	Type		L	S	A
0K	302/303	0.9	8.0	6	3.0
	304/305	0.7	8.0	6	3.0
	306/307/309	0.5	9.0	6	2.5
1K	302/303	1.3	10.5	7	3.5
	304/305	0.9	10.5	7	3.0
	306/307/308	0.7	10.5	7	3.0
	310/314/316	0.5	13.0	7	2.5
2K	302	2.0	16.5	8	4.0
	303	1.6	16.5	8	3.5
	304/305/306/307	1.3	15.5	8	3.5
	308/310	0.9	14.5	8	3.0
	312/314/316/318/319	0.7	14.5	8	3.0
	326/332	0.5	14.5	8	2.5

Note:The tolerances on these dimensions are L ± 0.5mm, S ±0.5mm, A ±0.2mm

➤➤➤ Cable Stripping Lengths

Cable Stripping Lengths(C Series)

T1 straight plugs and sockets with cable collet, clamping type D

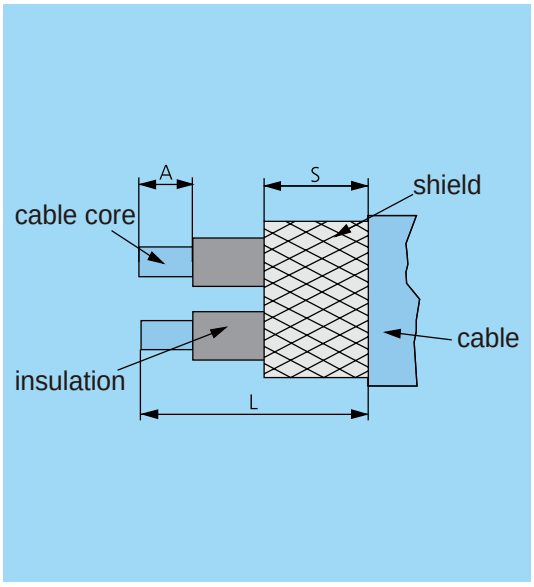


Connector		contact ØA (mm)	Cable stripping lengths (mm) T1 Solder		
Series	Type		L	S	A
0C	302/303	0.9	13.0	7	3.0
	304/305	0.7	13.0	7	3.0
	306/307/309	0.5	14.0	7	2.5
1C	302/303	1.3	14.0	8	3.5
	304/305	0.9	14.0	8	3.0
	306/307/308	0.7	14.0	8	3.0
	310/314/316	0.5	16.5	8	2.5
2C	302	2.0	19.0	9	4.0
	303	1.6	19.0	9	3.5
	304/305/306/307	1.3	18.0	9	3.5
	308/310	0.9	17.0	9	3.0
	312/314/316/318/319	0.7	17.0	9	3.0

Note:The tolerances on these dimensions are L ± 0.5mm, S ±0.5mm, A ±0.2mm

Cable Stripping Lengths(F, T, U Series)

T1 straight plugs and sockets with cable collet, clamping type D or M
T2 elbow plugs (90°) with cable collet, clamping type D or M



Connector		contact ØA (mm)	Cable stripping lengths (mm) T1 Solder			T2 Solder		
Series	Type		L	S	A	L	S	A
2F 2T 2U	302/303	0.9	13.0	7	3.0	18.0	7	3.0
	304/305	0.7	13.0	7	3.0	18.0	7	3.0
	306/307/309	0.5	14.0	7	2.5	19.0	7	2.5
3F 3T 3U	302/303	1.3	14.0	8	3.5	25.0	8	3.5
	304/305	0.9	14.0	8	3.0	25.0	8	3.0
	306/307/308	0.7	14.0	8	3.0	25.0	8	3.0
	310/312/314/316	0.5	16.5	8	2.5	27.5	8	2.5
4F 4T 4U	302	2.0	19.0	9	4.0	30.0	9	4.0
	303	1.6	19.0	9	3.5	30.0	9	3.5
	304/305/306/307	1.3	18.0	9	3.5	29.0	9	3.5
	308/310	0.9	17.0	9	3.0	28.0	9	3.0
	312/314/316/318/319	0.7	17.0	9	3.0	28.0	9	3.0
5F	302	3.0	24.0	10	4.5	35.0	10	4.5
	303/304	2.0	23.0	10	4.0	34.0	10	4.0
	308/310/312	1.3	22.0	10	3.5	33.0	10	3.5
	318/319	0.9	21.0	10	3.0	32.0	10	3.0
	324/327	0.7	21.0	10	3.0	32.0	10	3.0

Note:The tolerances on these dimensions are L ± 0.5mm, S ±0.5mm, A ±0.2mm

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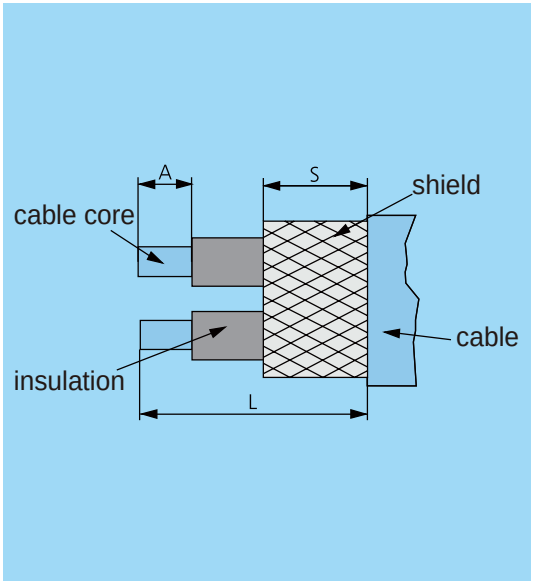
Cable Stripping Lengths(X Series)

T1 straight plugs and sockets with cable collet, clamping type D or M
T2 elbow plugs (90°) with cable collet, clamping type D or M

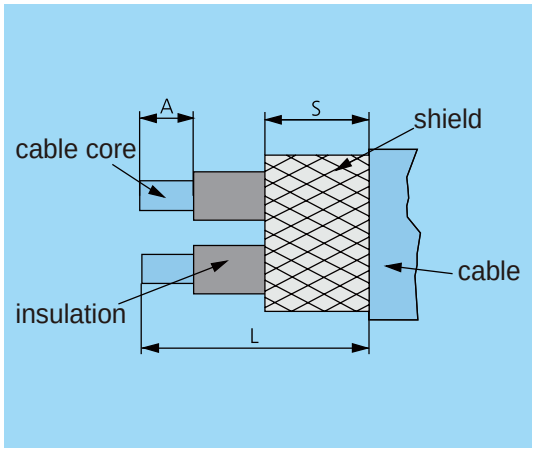


Connector		contact ØA (mm)	Cable stripping lengths (mm)					
			T1			T2		
			Solder			Solder		
Series	Type		L	S	A	L	S	A
2X	302/303	0.9	13.0	7	3.0	18.0	7	3.0
	304/305	0.7	13.0	7	3.0	18.0	7	3.0
	306/307/309	0.5	14.0	7	2.5	19.0	7	2.5
3X	302/303	1.3	14.0	8	3.5	25.0	8	3.5
	304/305	0.9	14.0	8	3.0	25.0	8	3.0
	306/307/308	0.7	14.0	8	3.0	25.0	8	3.0
	310/312/314/316	0.5	16.5	8	2.5	27.5	8	2.5
4X	302	2.0	19.0	9	4.0	30.0	9	4.0
	303	1.6	19.0	9	3.5	30.0	9	3.5
	304/305/306/307	1.3	18.0	9	3.5	29.0	9	3.5
	308/310	0.9	17.0	9	3.0	28.0	9	3.0
	312/314/316/318/319	0.7	17.0	9	3.0	28.0	9	3.0
5X	302	3.0	24.0	10	4.5	35.0	10	4.5
	303/304	2.0	23.0	10	4.0	34.0	10	4.0
	308/310/312	1.3	22.0	10	3.5	33.0	10	3.5
	318/319	0.9	21.0	10	3.0	32.0	10	3.0
	324/327	0.7	21.0	10	3.0	32.0	10	3.0

Note:The tolerances on these dimensions are L ± 0.5mm, S ±0.5mm, A ±0.2mm

Cable Stripping Lengths(S, E Series)

T1 straight plugs and sockets with cable collet, clamping type C



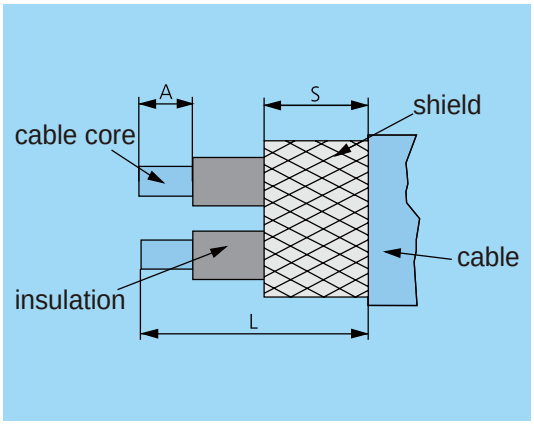
Connector		contact ØA (mm)	Cable stripping lengths (mm)		
			T1		
			Solder		
Series	Type		L	S	A
0S	302	0.9	11.0	5	3.0
	303/304	0.7	11.0	8	2.5
1S	302	1.3	13.0	8	3.0
	303/304	0.9	13.0	8	3.0
	305	0.9	13.0	8	3.0
		0.7	13.0	8	2.5
	306	0.7	13.0	8	2.5
1E	302	1.3	11.0	8	3.0
	303/304	0.9	11.0	8	3.0
	305	0.9	11.0	8	3.0
		0.7	11.0	8	2.5
	306	0.7	11.0	8	2.5

Note:The tolerances on these dimensions are L ± 0.5mm, S ±0.5mm, A ±0.2mm

➤➤➤ Cable Stripping Lengths

Cable Stripping Lengths(P Series)

T1 straight plugs and sockets with cable collet



Connector		contact ØA (mm)	Cable stripping lengths (mm) T1 Solder		
Series	Type		L	S	A
0P	302/303	0.9	13.0	7	3.0
	304/305	0.7	13.0	7	3.0
	306/307/309	0.5	14.0	7	2.5
1P	302	1.3	14.0	8	4.0
	304/305	0.9	13.0	8	3.0
	307/308/309/310/314	0.7	12.5	8	2.5
2P	302	2.0	19.0	9	4.0
	303	1.6	19.0	9	3.5
	304/305/306/307	1.3	18.0	9	3.5
	308/310/312/316/319	0.7	17.0	9	3.0
	326/332/334	0.5	17.0	9	2.5

Note:The tolerances on these dimensions are L ± 0.5mm, S ±0.5mm, A ±0.2mm

Solder Precautions

1. The outer diameter of the cable should match the size of the cable collet
2. The core specification should match the diameter of the core termination
3. The temperature of the soldering iron is controlled at around 380° (lead-free)
4. One-contact solder time is less than 1s
5. After solder, each core should be covered with heat-shrinkable tube insulation
6. Pay attention to the protection of pins and insulators during soldering

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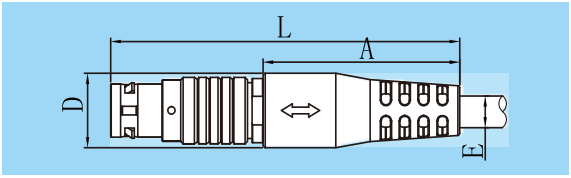
Plug Injection Molding(B, S Series)

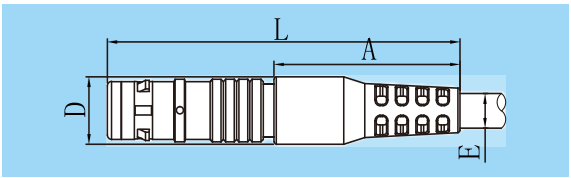


For B series straight long plug(TG) ,for various alignment keys(A~M)

Series	Dimensions(mm)			
	L	A	D	E (Cable Diameter mm)
00B/00S	41.0	20.0	8.5	2.2~3.2
0B/0S	60.0	34.0	11.4	3.2~5.2
1B/1S	69.0	38.5	12.9	3.2~7.2
2B/2S	81.0	46.0	16.8	4.2~9.0

Note: The commonly used injection molding material is black PVC/TPE, and the color can be adjusted according to requirements

Plug Injection Molding(K Series)

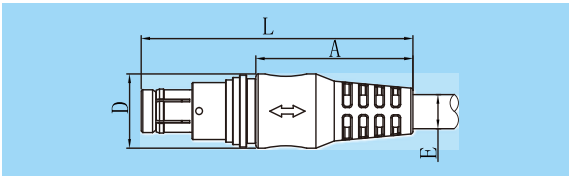


For K series straight long plug(TG) ,for various alignment keys(A~M)

Series	Dimensions(mm)			
	L	A	D	E (Cable Diameter mm)
0K	56.0	27.5	11.5	3.2~5.2
1K	75.0	40.0	14.0	3.2~7.2
2K	82.0	40.0	16.8	5.2~9.2

Note: The commonly used injection molding material is black PVC/TPE, and the color can be adjusted according to requirements

Plug Injection Molding(F Series)

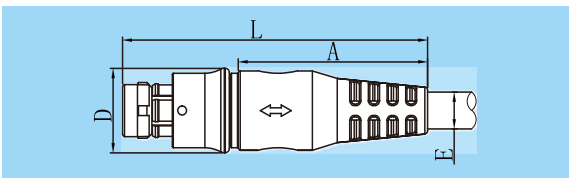


For F series straight short plug(SS) ,for various alignment keys(N, A, B)

Series	Dimensions(mm)			
	L	A	D	E (Cable Diameter mm)
2F	57.0	35.0	12.4	3.2~5.8
3F	58.0	34.0	15.5	3.2~7.2
31F	62.0	38.0	15.5	5.2~9.0
4F	70.0	42.0	18.5	5.2~9.5
5F	77.0	45.0	21.5	5.2~13.5

Note: The commonly used injection molding material is black PVC/TPE, and the color can be adjusted according to requirements

Plug Injection Molding(X Series)



For X series straight long plug(FL) ,for various alignment keys(N, A, B, C)

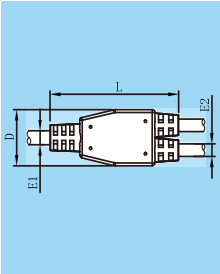
Series	Dimensions(mm)			
	L	A	D	E (Cable Diameter mm)
2X	52.0	30.0	13.5	3.2~5.2
3X	61.0	38.0	15.5	15.5
31X	61.5	38.0	15.5	5.2~9.0
4X	64.0	39.0	18.5	5.2~10.0
5X	70.0	42.0	21.5	5.2~13.5

Note: The commonly used injection molding material is black PVC/TPE, and the color can be adjusted according to requirements

➤➤➤ Optional Cable Other End

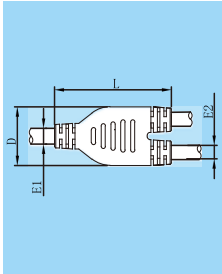
Cable Other End

Y Type 1



Ref.	Dimensions(mm)			
	L	D	E1 Cable Dia. (mm)	E2 Cable Dia. (mm)
Y01	47.0	20.0	5.0	4.5

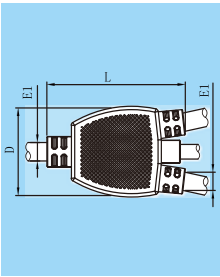
Y Type 2



Ref.	Dimensions(mm)			
	L	D	E1 Cable Dia. (mm)	E2 Cable Dia. (mm)
Y02	50.0	23.0	6.5	6.5

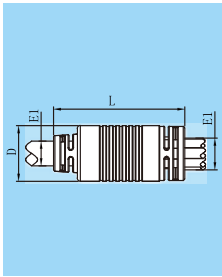
Note: The commonly used injection molding material is black PVC/TPE, and the color can be adjusted according to requirements

Y Type 3 for DB9 VGA15



Ref.	Dimensions(mm)			
	L	D	E1 Cable Dia. (mm)	E2 Cable Dia. (mm)
Y03	50.0	31.0	6.5~8.0	5.2~6.5

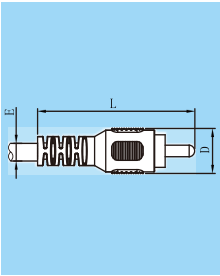
Y Type 4



Ref.	Dimensions(mm)			
	L	D	E1 Cable Dia. (mm)	E2 Cable Dia. (mm)
Y04	44.0	18.0	8.0~10.0	11.0

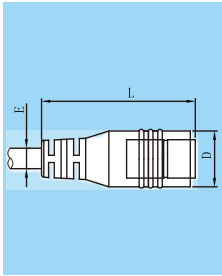
Note: The commonly used injection molding material is black PVC/TPE, and the color can be adjusted according to requirements

RAC



Ref.	Dimensions(mm)		
	L	D	E1 Cable Dia. (mm)
RAC	45.0	12.0	3.0~4.5

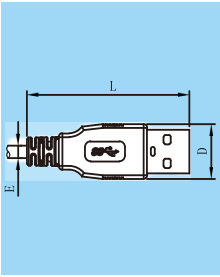
DC



Ref.	Dimensions(mm)		
	L	D	E1 Cable Dia. (mm)
DC	33.0	12.0	4.8

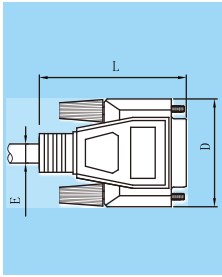
Note: The commonly used injection molding material is black PVC/TPE, and the color can be adjusted according to requirements

USB2.0



Ref.	Dimensions(mm)		
	L	D	E1 Cable Dia. (mm)
USB	46.0	15.0	5.5

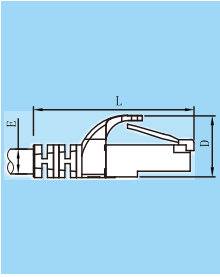
DB9



Ref.	Dimensions(mm)		
	L	D	E1 Cable Dia. (mm)
DB9	57.0	33.5	5.0

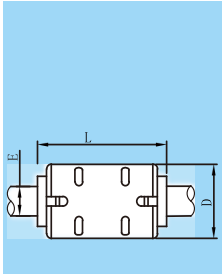
Note: The commonly used injection molding material is black PVC/TPE(USB olny used TPE), and the color can be adjusted according to requirements

RJ45



Ref.	Dimensions(mm)		
	L	D	E1 Cable Dia. (mm)
RJ45	40.0	15.0	6.0

Magnetic Ring



Ref.	Dimensions(mm)		
	L	D	E1 Cable Dia. (mm)
M-Ring	28.0	15.5	5.0~7.5

Note: The commonly used injection molding material is black PVC/TPE, and the color can be adjusted according to requirements

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➤➤➤ Display of Cable Connection Scheme

➤➤➤ Display of Cable Connection Scheme












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Main Features

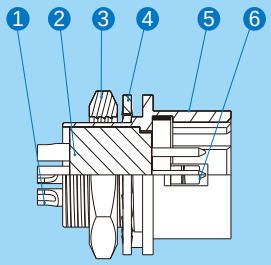
HR-10 series Miniature push-pull self-locking circular electronic connectors are widely used in electronics, instrumentation, video processing, medical equipment, etc.

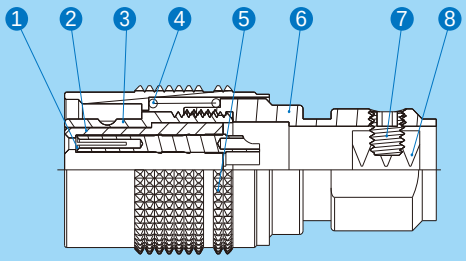
- Push-pull self-locking connection, connection separation is simple and quick (the shell surface is non-slip design, the sound is self-locking)
- Compact self-locking device ensures a firm and reliable connection
- Adopt a reasonable five-key design with complete anti-blind insertion function
- Miniaturized and compact structure design (effectively saves equipment space and realizes micro-mini design of equipment)
- Contact type: solder type, plated PCB type

Part Section Showing Internal Components

Fixed socket

1. contact
2. insulator
3. hexagonal nut
4. outer shell
5. washer
6. locking sleeve



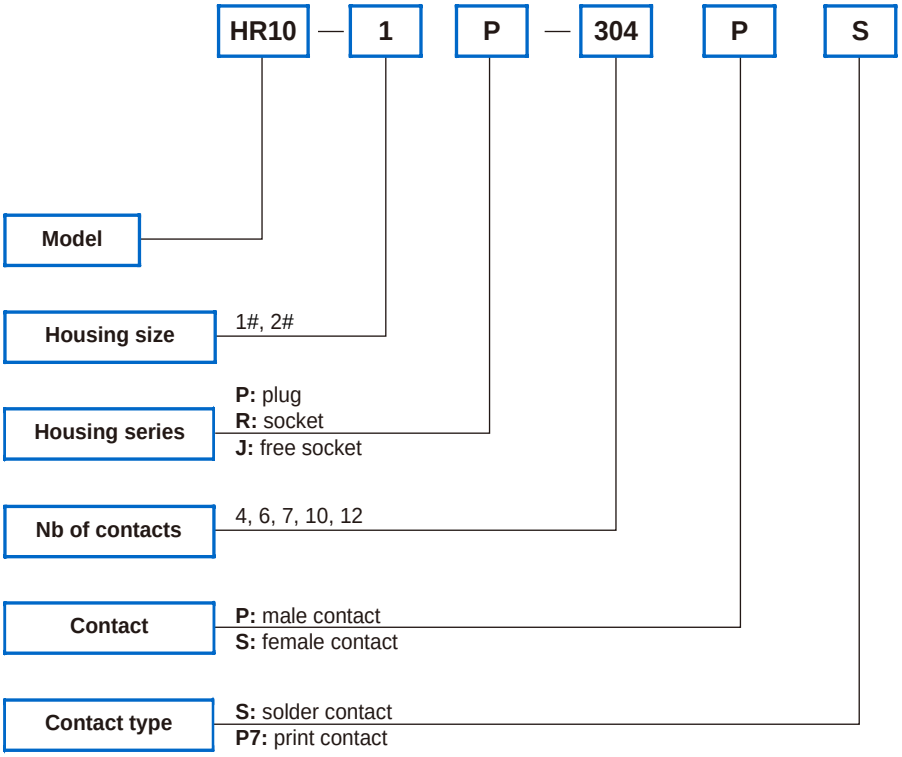


Straight plug

1. contact
2. insulator
3. outer shell
4. cable sleeve
5. locking sleeve
6. gasket
7. machine screw
8. U-clip

➤➤➤ HR-10 Series

HR-10 Series Part Numbering System



Part Number Example

HR10-1P-4PS = HR10 Series, 1# shell plug, 4 male solder contacts.
HR10-1R-4PS = HR10 Series, 1# shell fixed socket, 4 male solder contacts.
HR10-1J-4SS = HR10 Series, 1# shell free socket, 4 female solder contacts.

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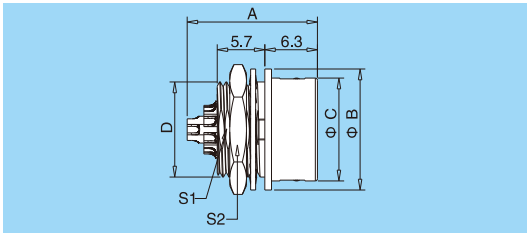
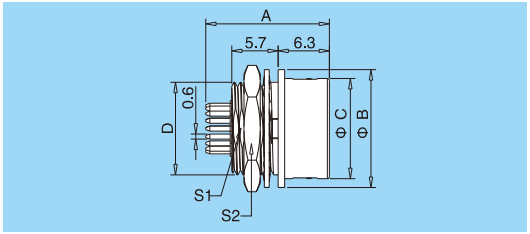
HR-10 Series Plug Dimensions

HR10 socket with solder contact



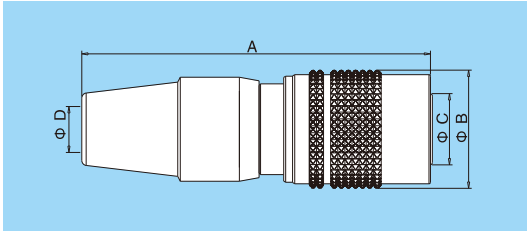
Shell size	A	B	C	D	S1	S2
1#	14.0	11.0	8.8	M8x0.5	7.2	10.0
2#	15.6	14.0	10.9	M11x0.75	10.0	13.0

HR10 socket with print contact



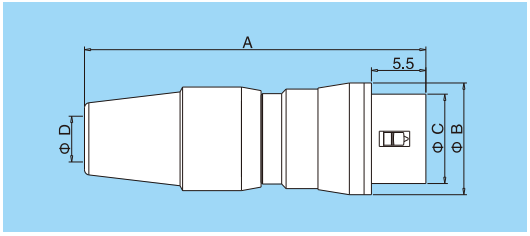
Shell size	A	B	C	D	S1	S2
1#	15.5	11.0	8.85	M8x0.5	7.2	10.0
2#	15.5	14.0	11.9	M11x0.75	10.0	13.0

HR10 plug



Shell size	A	B	C	D
1#	14.0	11.0	8.8	6.0
2#	15.6	14.0	10.9	8.0

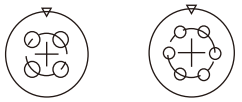
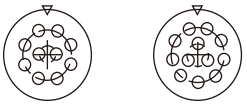
HR10 free socket



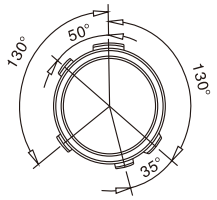
Shell size	A	B	C	D
1#	35.0	11.5	7.5	6.0
2#	43.0	14.5	9.5	8.0

➤➤➤ Technical Information

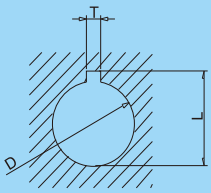
Insert Configuration

No.		Insert configuration	
		1#	2#
			
1	Contact ø(mm)	0.5	
2	Resistance(mΩ)	10	
3	Test voltage(KV/DC)	0.3	
	Test voltage(KV/AC)	0.2	
4	Rated voltage(KV/DC)	0.9	
	Rated voltage(KV/AC)	0.5	
5	Rated current(A)	2	
6	Temperature range(℃)	-50~125	
7	Endurance	1000	

Alignment Key

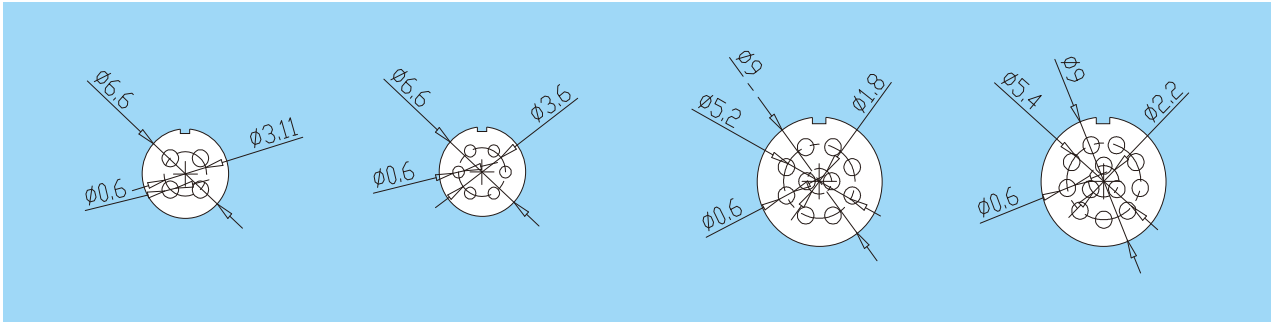
Front view of plug	
Contact type in plug	male/female
Contact type in socket	male/female
Number of contacts	4, 6, 7, 10, 12

Panel Cut-outs



Shell size	D	T	L	B
1#	8.0	1.6	9.0	7.3
2#	11.1	2.5	11.5	11.3

PCB Drilling Pattern



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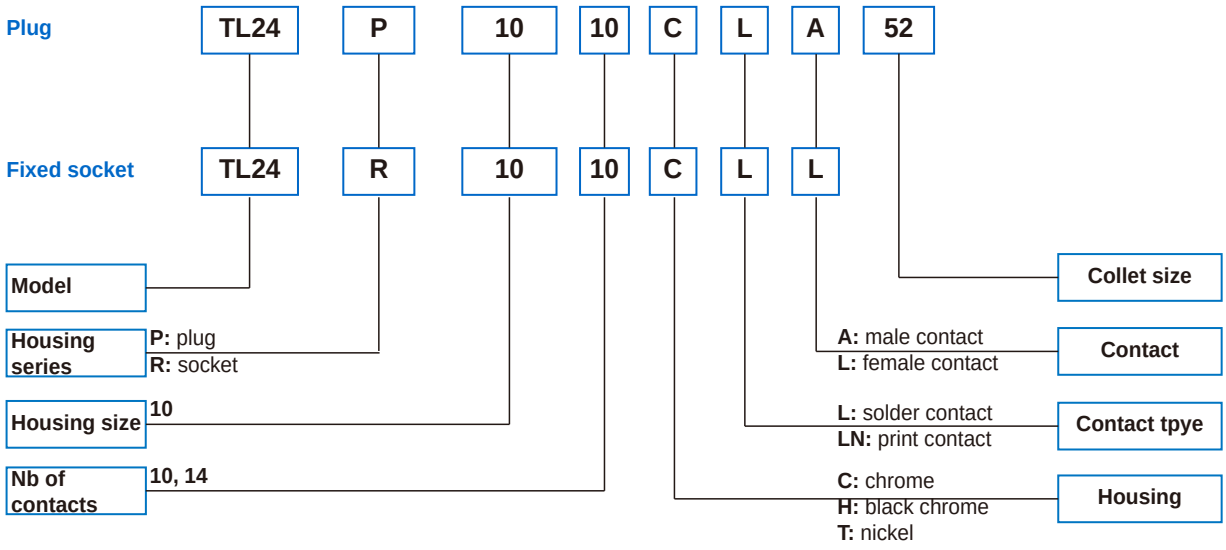
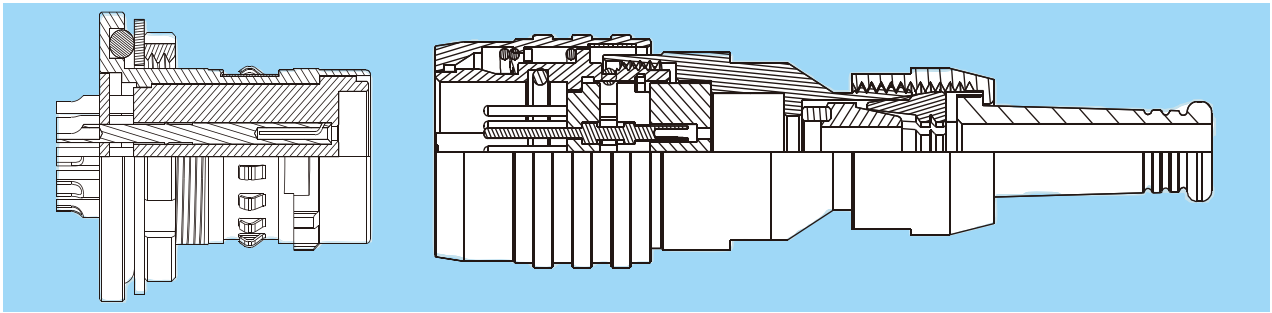
TL24 Series

TL24 series push-pull circular electrical connector, the connection method is push-type block locking. The connector has the characteristics of quick insertion and removal, convenient use, small volume, high density, good environmental resistance, beautiful appearance and good shielding property.

- Operating Temperature: -55℃ to +125℃
- Relative Humidity: 90% to 95% (at 40±2℃)
- Operating Pressure: 4.39 KPa to 101.33 KPa
- Salt Spray Test: 96 hours in 5% NaCl mist
- Sealing: Socket: Pressure differential of 1.01×10^5 Pa, no bubble leakage for 1 minute. Mated Plug and Socket: Waterproof at a depth of 1 meter for 2 hours without leakage.
- Vibration: Frequency: 10Hz to 2000Hz, Acceleration: 147m/s², Interruption: ≤1μs
- Shock:Acceleration: 490m/s², Interruption: ≤1μs
- Mechanical Life: 2000 cycles
- Insulation Resistance: ≥5000MΩ (at normal conditions)
- Operating Current: 3A (for 22# wire gauge)
- Contact Resistance: 12.5 mΩ
- Operating Voltage: 400V (AC)
- Dielectric Withstanding Voltage: 1000V (AC)
- Shell-to-Shell Electrical Continuity: 5 mΩ

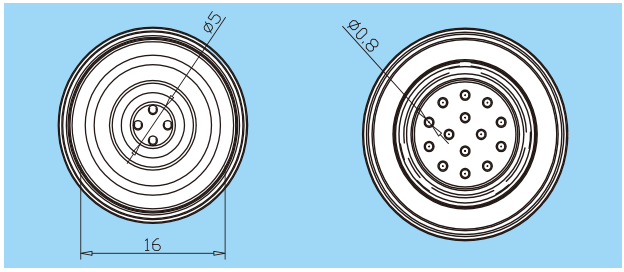
TL24 Series Part Numbering System

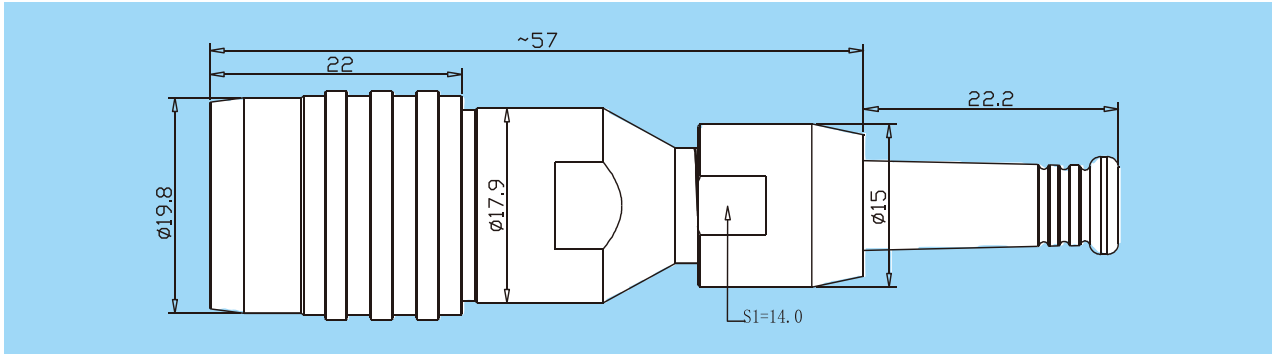




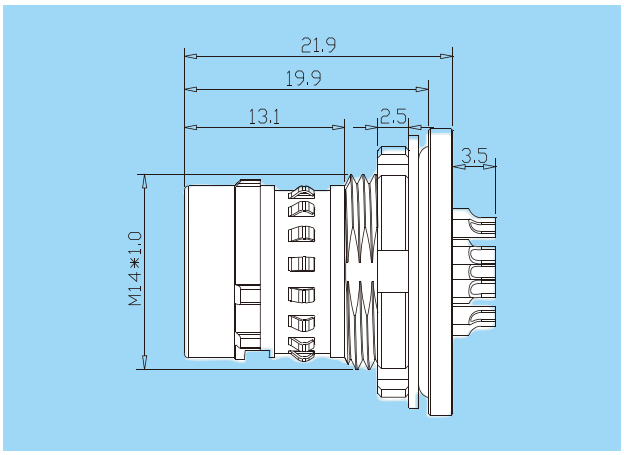
➤➤➤ Customized Series

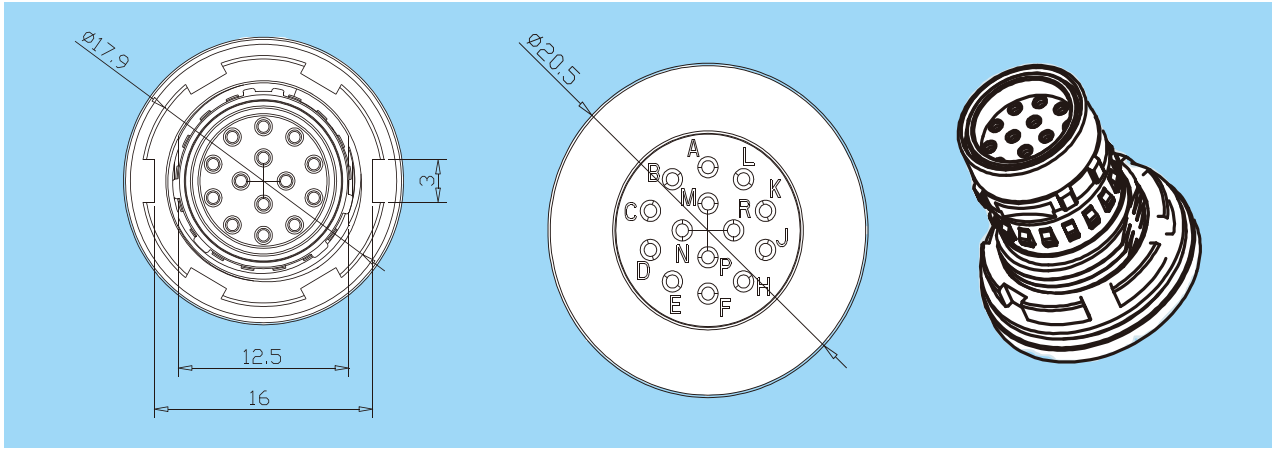
TL24 Series Plug Dimensions





TL24 Series Socket Dimensions





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TL2Y Series

TL2Y series push-pull circular electrical connector, the connection method is push-type block locking. The connector has the characteristics of quick insertion and removal, convenient use, small volume, high density, good environmental resistance, beautiful appearance and good shielding property.

- Operating Temperature: -55℃ to +125℃
- Relative Humidity: 90% to 95% (at 40±2℃)
- Salt Spray Test: 96 hours in 5% NaCl mist
- Plug Housing: Copper alloy with black chrome plating
- Locking Clip: Copper alloy with nickel plating
- Socket Housing: Copper alloy with high-phosphorus electroless nickel plating
- Contact Terminals: Copper alloy plated with 5-8 μm of nickel, then gold-plated
- Vibration: Frequency: 10Hz to 500Hz, Acceleration: 98m/s², Interruption: ≤1μs
- Shock: Acceleration: 490m/s², Interruption: ≤1μs
- Insulation Resistance: ≥5000MΩ (under normal conditions)
- Mechanical Life: 5000 cycles
- Insertion Force: Maximum: 30N, Minimum: 120N (after 10 mating cycles)
- Withdrawal Force: Maximum: 10N, Minimum: 50N (after 10 mating cycles)
- Sealing: Mated Plug and Socket: Waterproof at a depth of 1.5 meters for 24 hours (the plug end requires additional sealing protection)

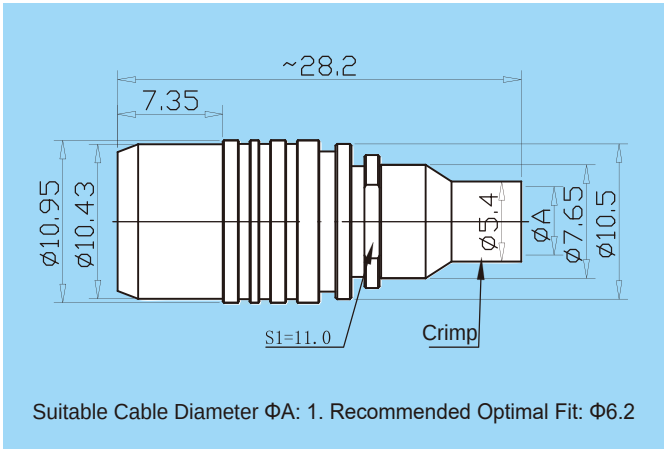
Enclosure: Pressure differential of 0.2×10^5 Pa, no bubble leakage for 1 minute

Voltage Withstanding, Operating Current, Contact Diameter, and Contact Resistance:

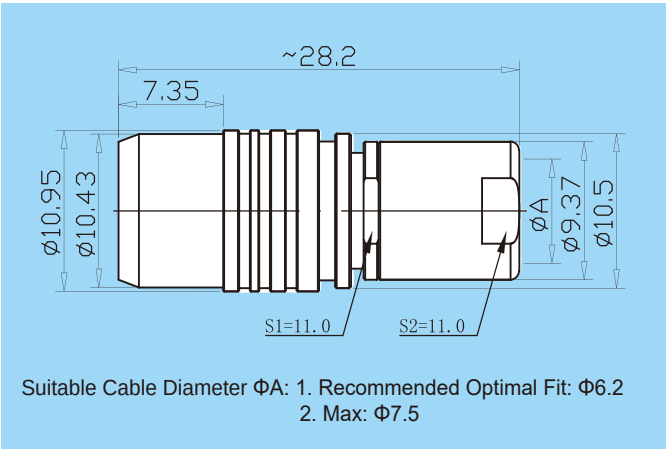
Shell size	Nb of connector	Withstanding voltage	Operating current	Contact diameter(mm)
1	14	500V	2.5A	Φ0.6
1	16	500V	2.5A	Φ0.6

➤➤➤ Customized Series

TL2Y Series Plug Dimensions

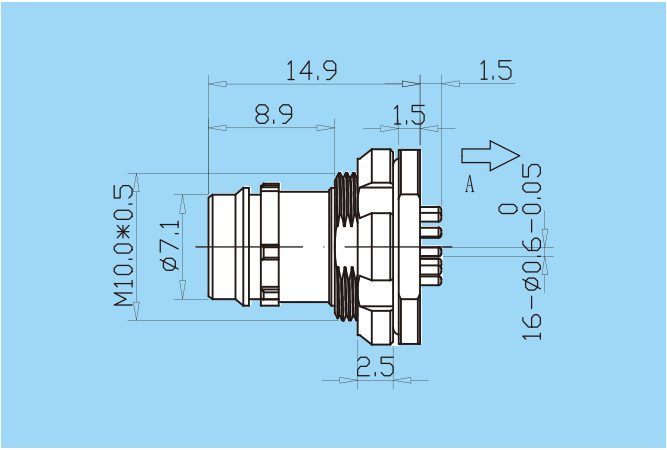


Suitable Cable Diameter ΦA: 1. Recommended Optimal Fit: Φ6.2



Suitable Cable Diameter ΦA: 1. Recommended Optimal Fit: Φ6.2
2. Max: Φ7.5

TL2Y Series Socket Dimensions



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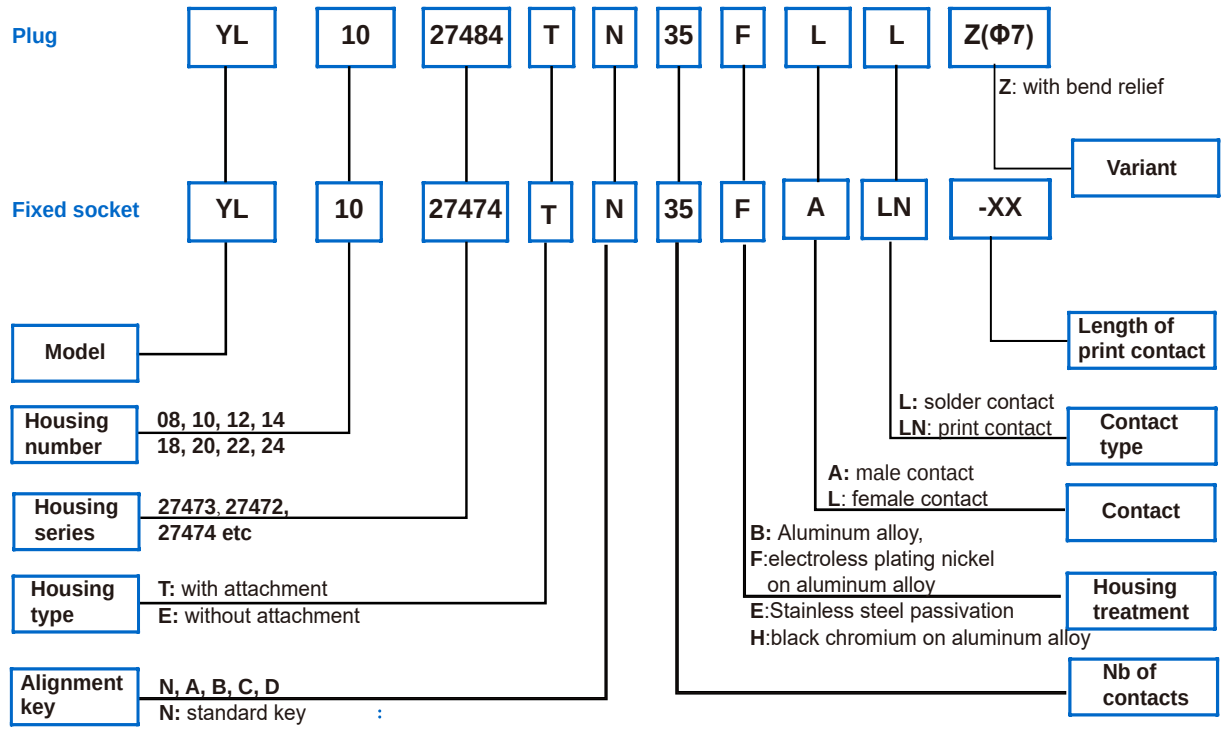
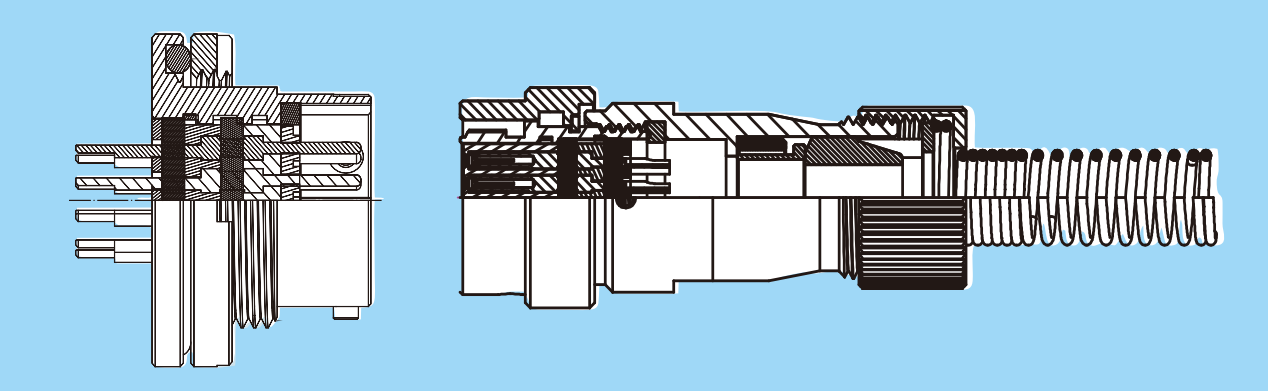
YL Series

- Operating Temperature: -55℃ to +125℃
- Relative Humidity: 90% to 95% (at 40±2℃)
- Operating Pressure: 4.39 KPa to 101.33 KPa
- Salt Spray Test: 96 hours in 5% NaCl mist
- Sealing: Socket: Pressure differential of 1.01×10^5 Pa, no bubble leakage for 1 minute. Mated Plug and Socket: Waterproof at a depth of 1 meter for 2 hours without leakage.
- Vibration: Frequency: 10Hz to 200GHz
- Shock:Acceleration: 490m/s², Interruption: ≤1μs
- Mechanical Life: 500 cycles
- Insulation Resistance: ≥5000MΩ (at normal conditions)
- Contact Resistance: 12.5 mΩ
- Operating Voltage: 1000V (AC)
- Operating Current:3A

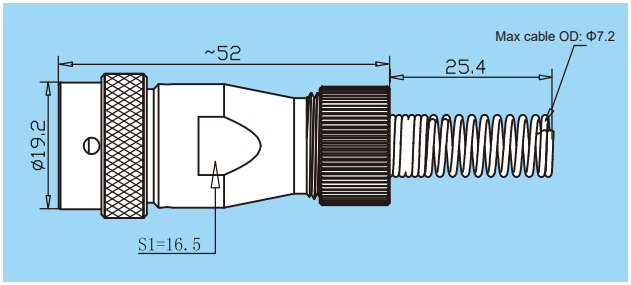
YL Series Part Numbering System

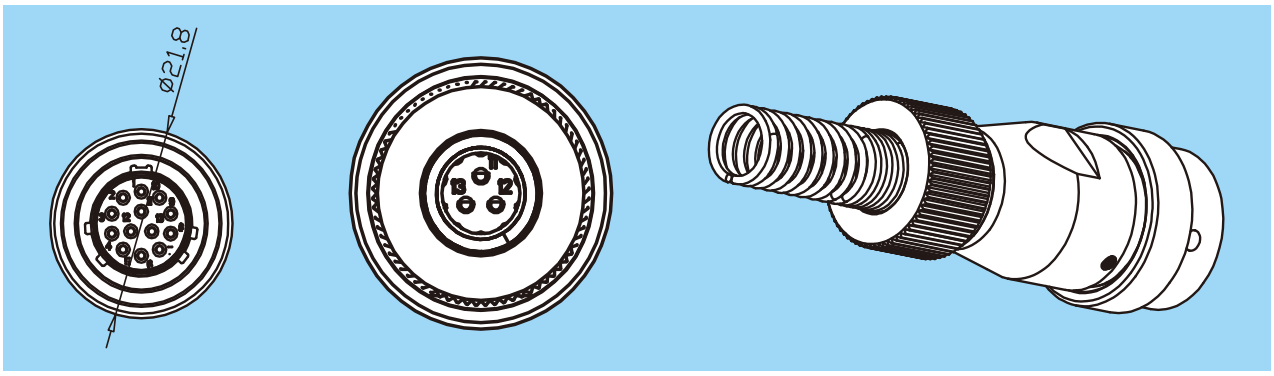




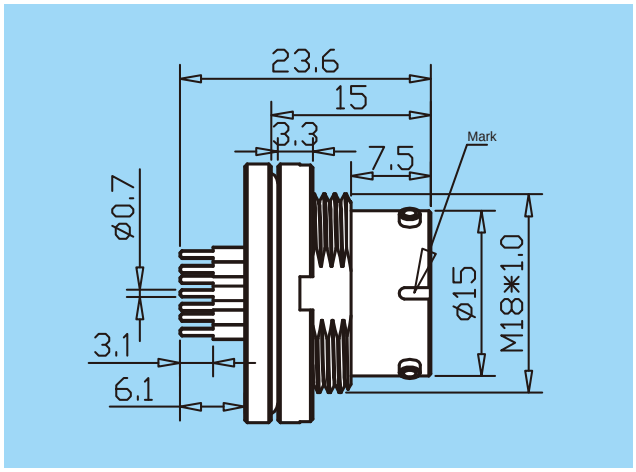
➤➤➤ Customized Series

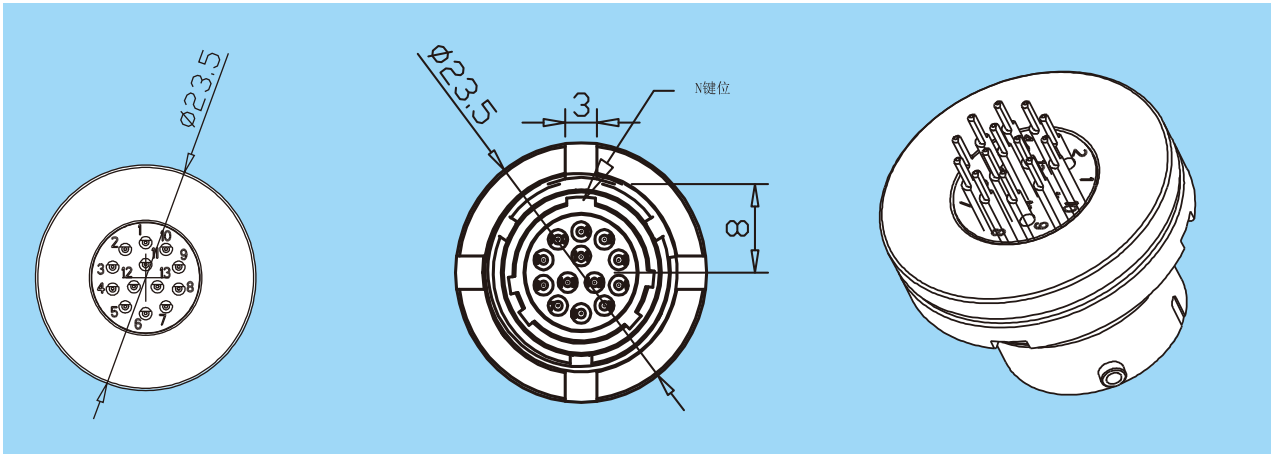
YL Series Plug Dimensions





YL Series Socket Dimensions





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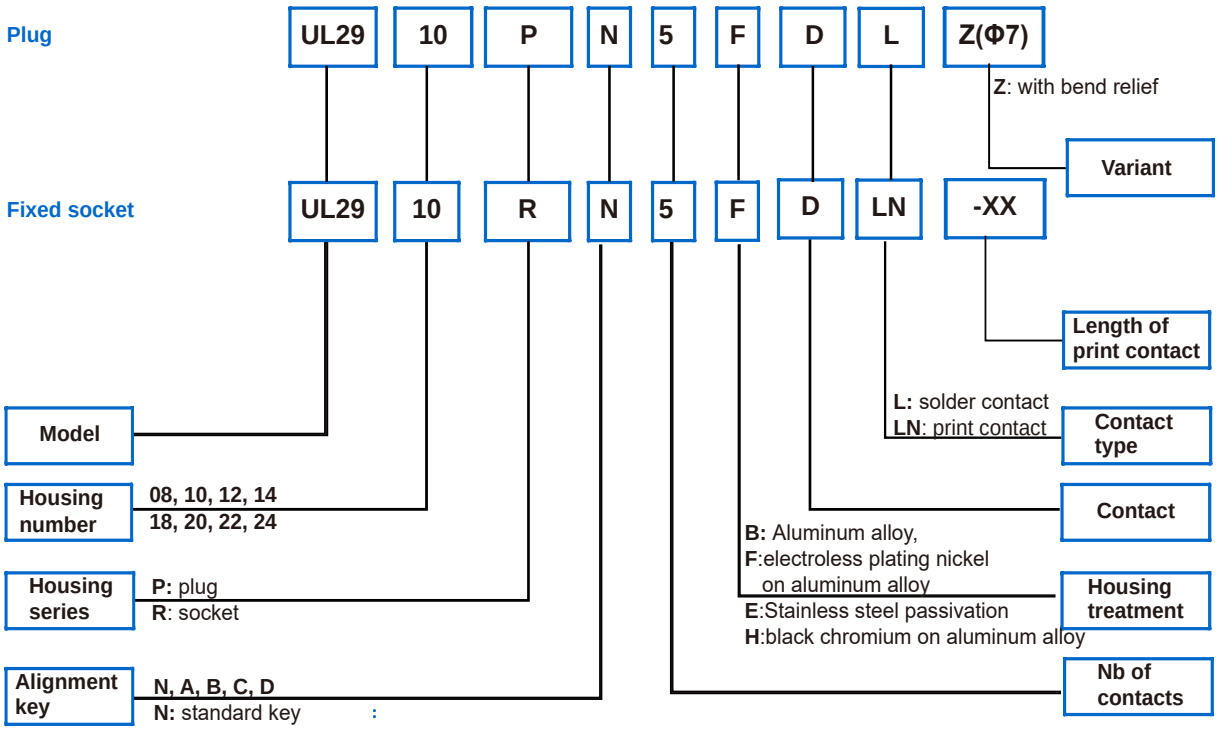
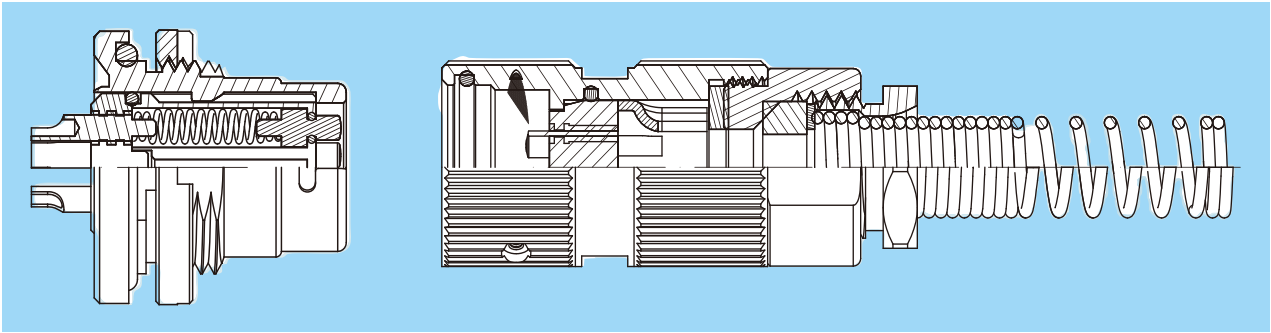
UL29 Series

- Operating Temperature: -55℃ to +125℃
- Relative Humidity: 90% to 95% (at 40±2℃)
- Operating Pressure: 4.39 KPa to 101.33 KPa
- Salt Spray Test: 72 hours in 5% NaCl mist
- Vibration: Frequency: 10Hz to 200GHz
- Shock:Acceleration: 920m/s², Interruption: ≤1μs
- Mechanical Life: 3000 cycles
- Insulation Resistance: ≥5000MΩ (at normal conditions)
- Contact Resistance: ＜10.0 mΩ
- Operating Voltage: 11500V (AC)
- Operating Current:8A

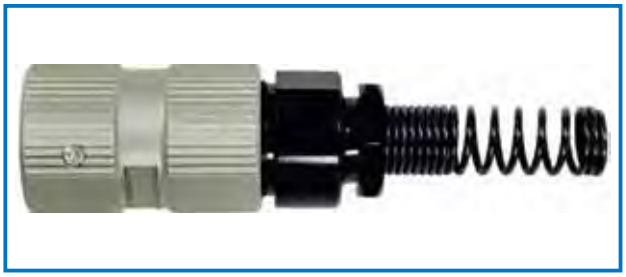
UL29 Series Part Numbering System

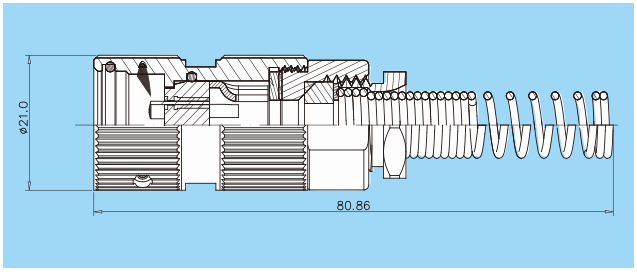


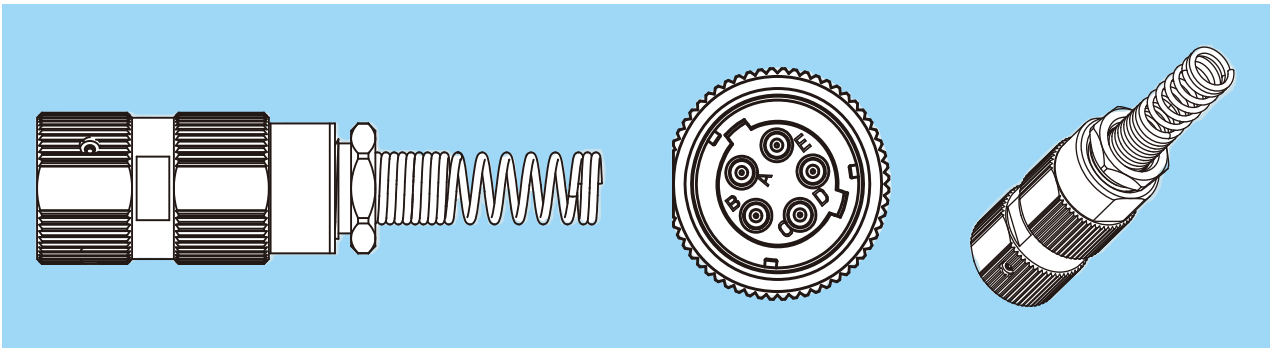


➤➤➤ Customized Series

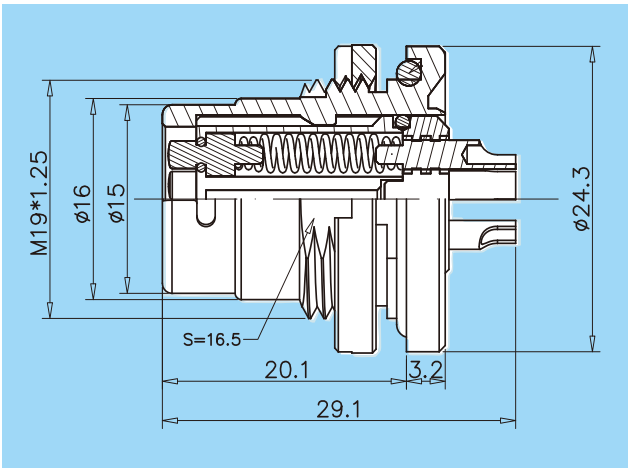
UL29 Series Plug Dimensions

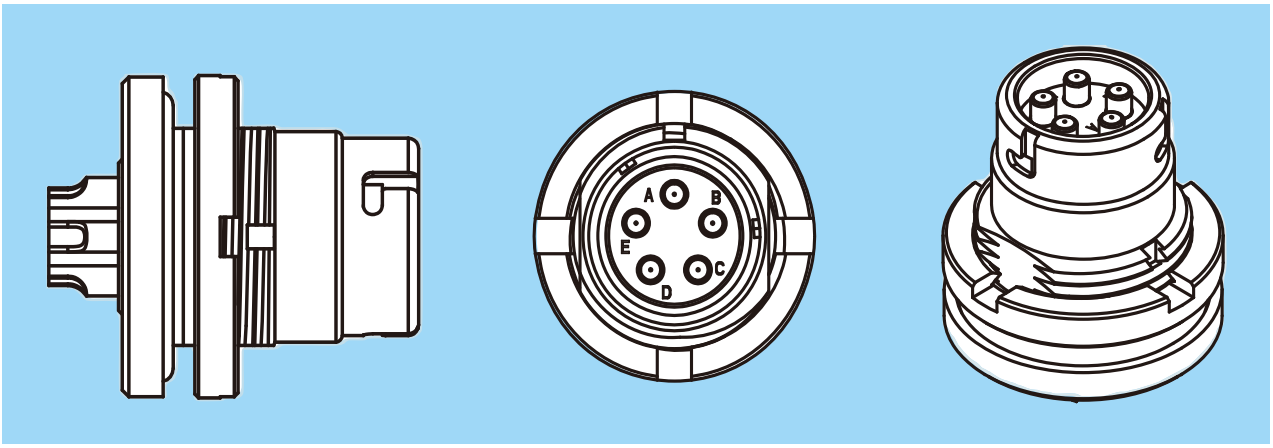






UL29 Series Socket Dimensions





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DJL04 Series

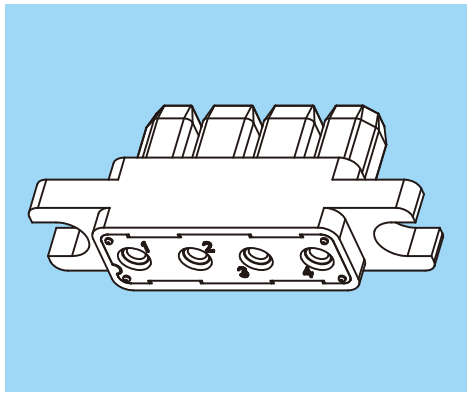
Modular connectors, also known as hot-swappable power terminals or cabinet connectors, are primarily used in module power interfaces, USB power interfaces, servers, battery modules in charging stations, and similar applications.
These connectors have the following key characteristics:
● High-Strength, High-Elasticity Beryllium Copper Contacts: The contacts use beryllium copper for the crown spring sockets and pins, which are either gold or silver plated. This provides high dynamic contact reliability.
● Crimped Plug Pins and PCB Mount Socket Receptacles: The plug uses crimp-style pins, while the socket uses board-mount pins (they can also be crimped if needed).
● Anti-Mating Error Design: Features that prevent incorrect or blind insertion, ensuring secure and accurate connections.
● Smooth and Low-Insertion Force: The connectors are designed for gentle insertion and extraction, minimizing the force required.
● Low Contact Resistance: Ensures excellent electrical conductivity and low energy loss.
High Current Carrying Capacity: Capable of handling high currents efficiently.
● Excellent Conductive Performance: The overall design and materials used ensure superior electrical performance and reliability.
These modular connectors are integral to systems that require robust and reliable power connections with the ability to handle frequent insertions and extractions.

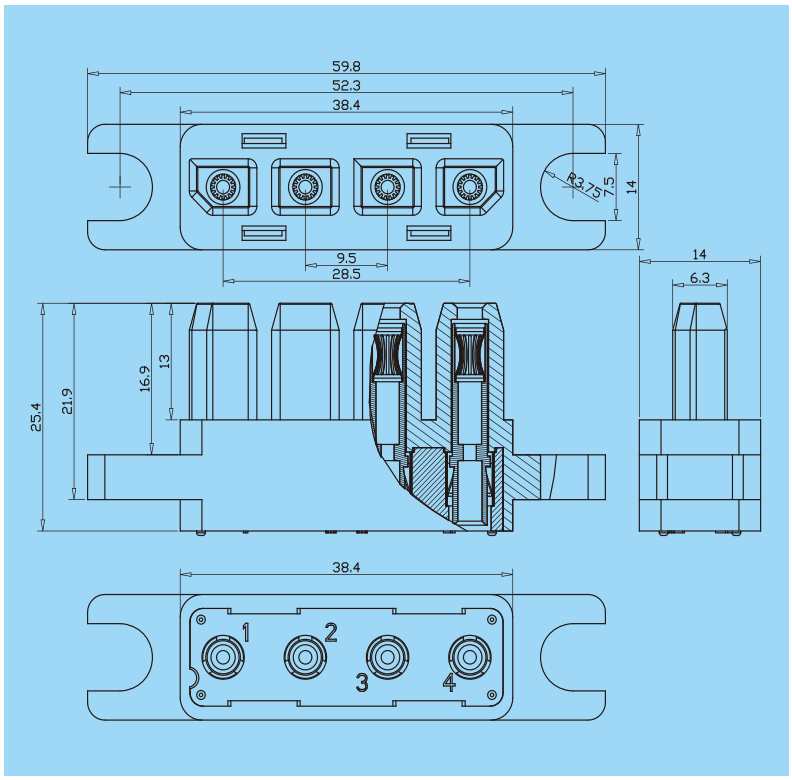
DJL04 Series Technical Parameters

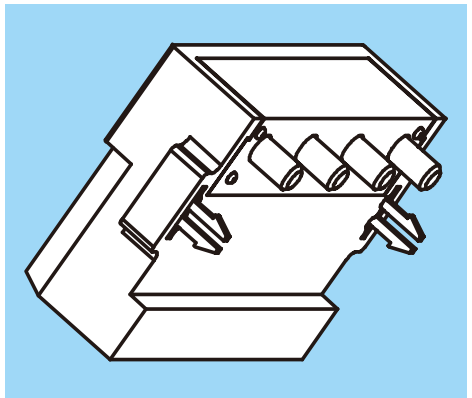
1. Main Performance Indicators:
● Rated Current: 12# Power Pins: 35A
● Rated Voltage: Between Power Contacts (positions 1-4): 3500V (AC)
● Contact Resistance: 12# Power Pins: ≤1.0 mΩ
● Insulation Resistance: ≥3000MΩ
● Mechanical Life: 500 cycles
● Vibration: Frequency Range: 20Hz ~ 500Hz, Acceleration: 98m/s², Interruption: ≤1μs
● Shock:, Peak Acceleration: 147m/s², Interruption: ≤1μs
● Operating Temperature: -40℃ to +125℃
● Operating Humidity: 90% to 95% (at 40±2℃)
2. Main Materials:
● Contact Body:12# Power Sockets: Copper alloy (silver-plated over a nickel base)
● Insulator: Material: PBT (Polybutylene Terephthalate) with 15% Glass Fiber (GF), rated UL94 V-0
● Color: Black Positioning Claws:
● Material: Beryllium copper alloy (natural finish)

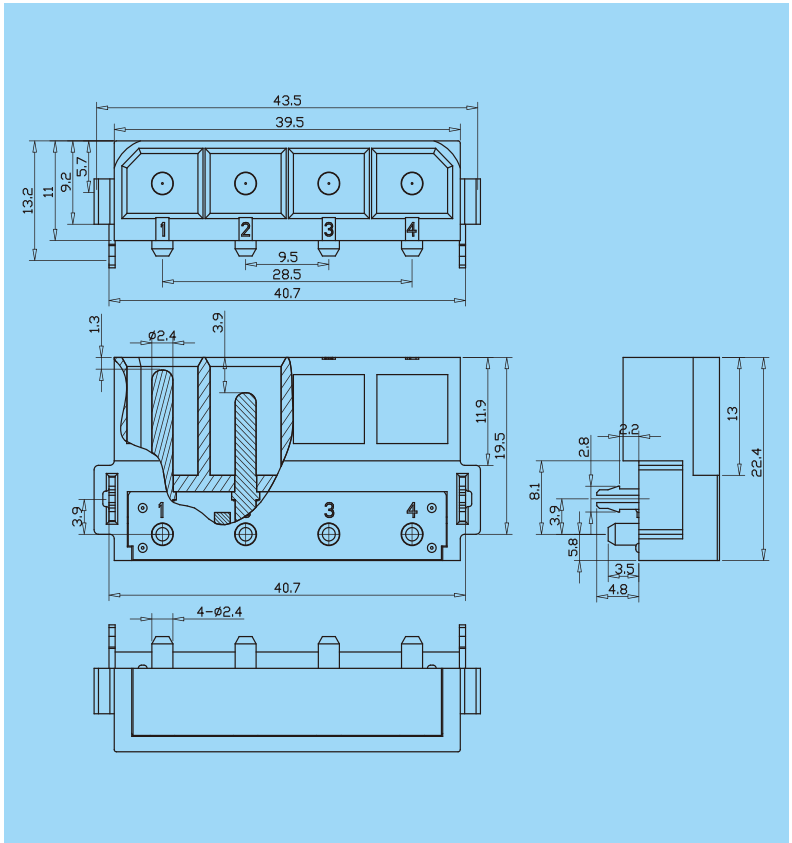
➤➤➤ Module Connector

DJL04 Series Dimensions









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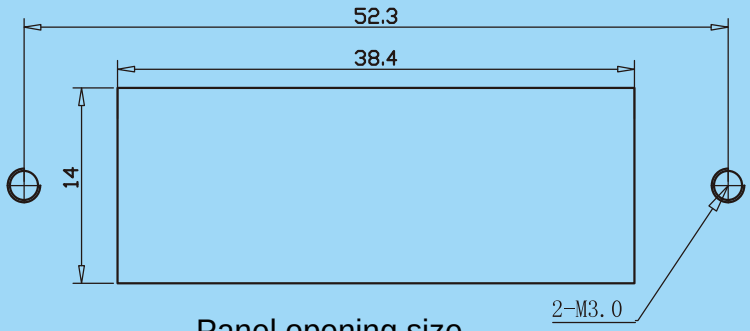
DJL04 Series Packaging and Storage

Packaging: The product is placed into individual compartments of a blister tray. The blister tray is then sealed in a packaging box.
Storage Conditions: The packaged products should be stored in a warehouse environment with the following conditions:

- Temperature Range: -10℃ to +40℃
- Relative Humidity: Below 80%
- Air Quality: The surrounding air must be free from acidic, alkaline, or other corrosive gases.

DJL04 Series Panel Opening Size



Panel opening size

DJL04 Series Detail

Specifications		Power Contact Components
		4 Pins: (Some positions may be unoccupied depending on requirements)
Rated Current		35A
Contact Resistance		1.0 (1.6) mΩ
Dielectric Withstanding Voltage		2000V / 3000V
Surface Treatment		Silver Plating on the Surface, Nickel Plating as the Base Layer
Termination Styles		Pins:PCB Mounting Type (B), Sockets: Crimp Type (Y), PCB Mounting Type (B), Soldering Type (H)
Materials	Pins and Sockets	Brass or Copper Alloy
	Crown Spring	Beryllium Copper
Insulation Resistance		≥1000MΩ
Mechanical Life		1000 cycles
Housing Material		PBT G30 UL94 V-0 Color: Black

➤➤➤ Module Connector

DJL11 Series

Modular connectors, also known as hot-swappable power terminals or cabinet connectors, are primarily used in module power interfaces, USB power interfaces, servers, battery modules in charging stations, and similar applications.
These connectors have the following key characteristics:
● High-Strength, High-Elasticity Beryllium Copper Contacts: The contacts use beryllium copper for the crown spring sockets and pins, which are either gold or silver plated. This provides high dynamic contact reliability.
● Crimped Plug Pins and PCB Mount Socket Receptacles: The plug uses crimp-style pins, while the socket uses board-mount pins (they can also be crimped if needed).
● Anti-Mating Error Design: Features that prevent incorrect or blind insertion, ensuring secure and accurate connections.
● Smooth and Low-Insertion Force: The connectors are designed for gentle insertion and extraction, minimizing the force required.
● Low Contact Resistance: Ensures excellent electrical conductivity and low energy loss.
High Current Carrying Capacity: Capable of handling high currents efficiently.
● Excellent Conductive Performance: The overall design and materials used ensure superior electrical performance and reliability.
These modular connectors are integral to systems that require robust and reliable power connections with the ability to handle frequent insertions and extractions.

DJL11 Series Technical Parameters

1. Main Performance Indicators:
● Rated Current: Power Pins (5#): 75A, Signal Pins (22#): 3A
● Rated Voltage: 750V (AC)
● Dielectric Withstanding Voltage: Between Pins (3, 4, 5, 6): 1200V (AC), Between Pins (1, 2) and Other Pins: 2500V (AC), Between Pins (9, 11): 2500V (AC)
● Contact Resistance: Power Pins (5#): ≤0.5 mΩ, Signal Pins (22#): ≤12 mΩ
● Insulation Resistance: ≥3000MΩ (under normal conditions)
● Mechanical Life: 500 cycles
● Vibration:Frequency Range: 10Hz ~ 500Hz, Acceleration: 98m/s², Interruption: ≤1μs
● Shock: Peak Acceleration: 147m/s², Interruption: ≤1μs
● Operating Temperature:-40℃ to +125℃
● Operating Humidity:90% to 95% (at 40±2℃)
2. Main Materials:
● Contact Body: Power Sockets (12#): Copper alloy with a nickel base layer and a silver surface plating
● Insulator Material: PBT +15%GF (UL94 V-0) Black
● Positioning Claws Material: Beryllium copper alloy (natural finish)

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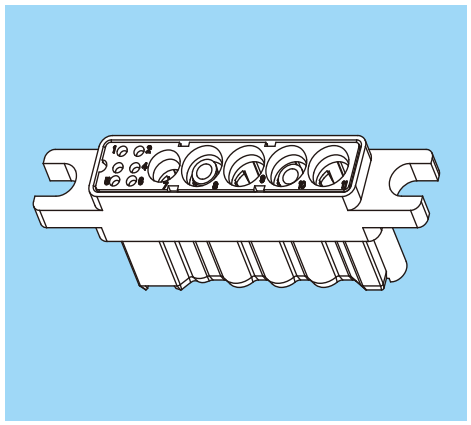
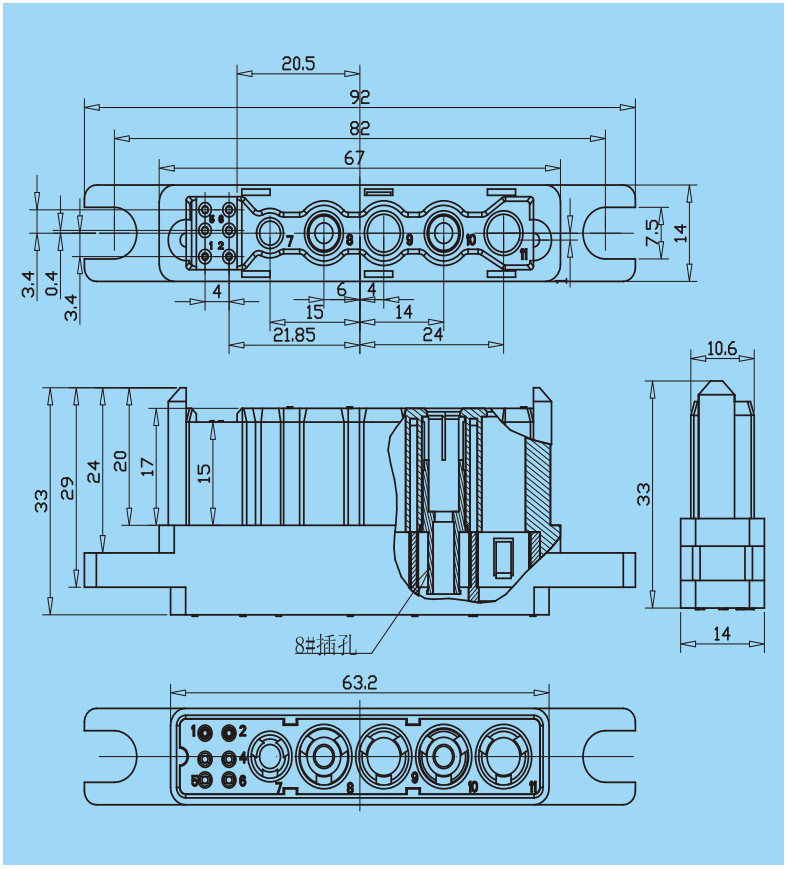
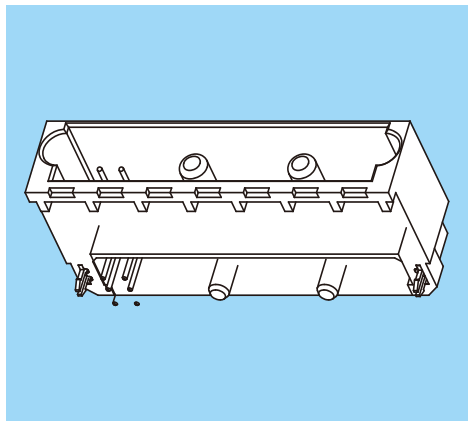
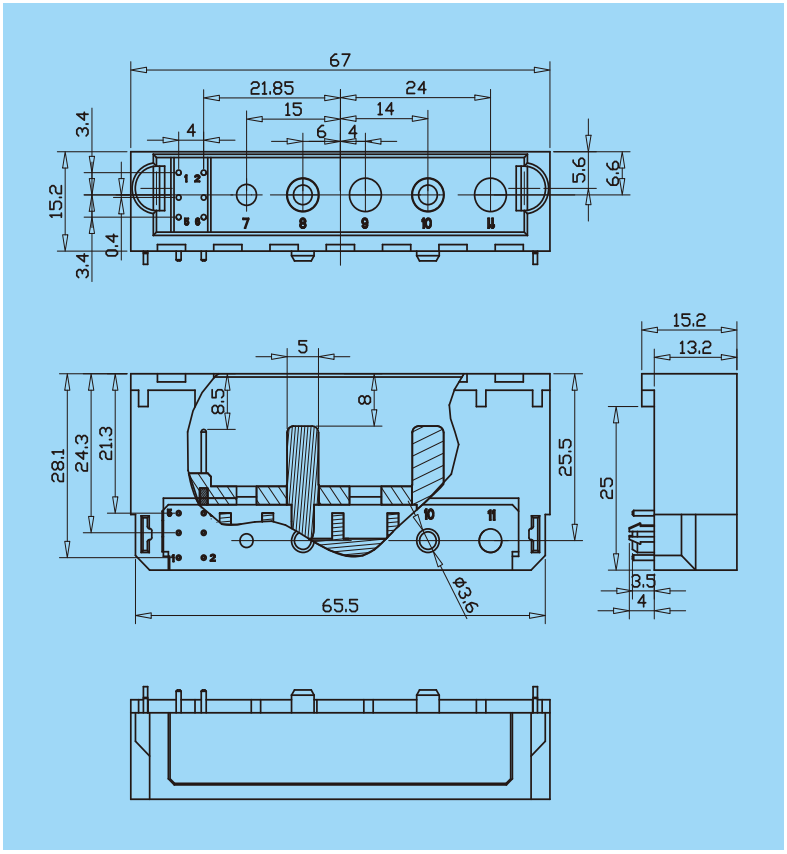
DJL11 Series Dimensions









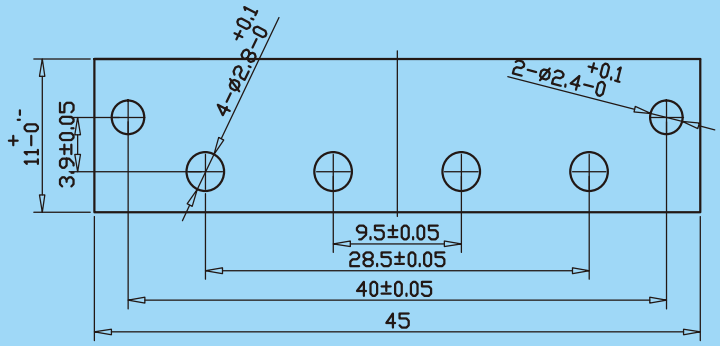
➤➤➤ Module Connector

DJL11 Series Packaging and Storage

Packaging: The product is placed into individual compartments of a blister tray. The blister tray is then sealed in a packaging box.
Storage Conditions: The packaged products should be stored in a warehouse environment with the following conditions:

- Temperature Range: -10℃ to +40℃
- Relative Humidity: Below 80%
- Air Quality: The surrounding air must be free from acidic, alkaline, or other corrosive gases.

DJL11 Series Panel Opening Size



Panel opening size

DJL11 Series Detail

Specifications		Power Contact Components	
		1~6 Pins: (Some positions may be unoccupied depending on requirements)	7~11 Pins
Rated Current		5A	200A
Contact Resistance		5.0 (6.7) mΩ	0.01 (0.013) mΩ
Dielectric Withstanding Voltage		1000V	3000V
Surface Treatment		Silver Plating on the Surface, Nickel Plating as the Base Layer	
Termination Styles		Pins:PCB Mounting Type (B), Sockets: Crimp Type (Y), PCB Mounting Type (B), Soldering Type (H)	
Materials	Pin and Socket	Brass or Copper Alloy	
	Crown Spring	Beryllium Copper	
Insulation Resistance		≥3000MΩ	
Mechanical Life		500 cycles	
Housing Material		PBT +15%GF (UL94 V-0) Color: Black	

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HMC-32 Series

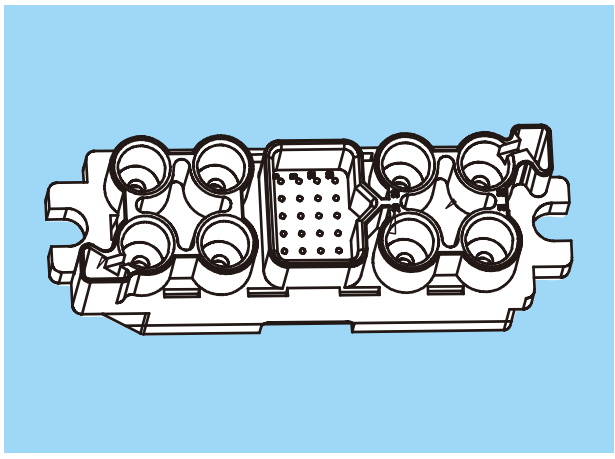
Modular connectors, also known as hot-swappable power terminals or cabinet connectors, are primarily used in module power interfaces, USB power interfaces, servers, battery modules in charging stations, and similar applications.
These connectors have the following key characteristics:
● High-Strength, High-Elasticity Beryllium Copper Contacts: The contacts use beryllium copper for the crown spring sockets and pins, which are either gold or silver plated. This provides high dynamic contact reliability.
● Crimped Plug Pins and PCB Mount Socket Receptacles: The plug uses crimp-style pins, while the socket uses board-mount pins (they can also be crimped if needed).
● Anti-Mating Error Design: Features that prevent incorrect or blind insertion, ensuring secure and accurate connections.
● Smooth and Low-Insertion Force: The connectors are designed for gentle insertion and extraction, minimizing the force required.
● Low Contact Resistance: Ensures excellent electrical conductivity and low energy loss.
High Current Carrying Capacity: Capable of handling high currents efficiently.
● Excellent Conductive Performance: The overall design and materials used ensure superior electrical performance and reliability.
These modular connectors are integral to systems that require robust and reliable power connections with the ability to handle frequent insertions and extractions.

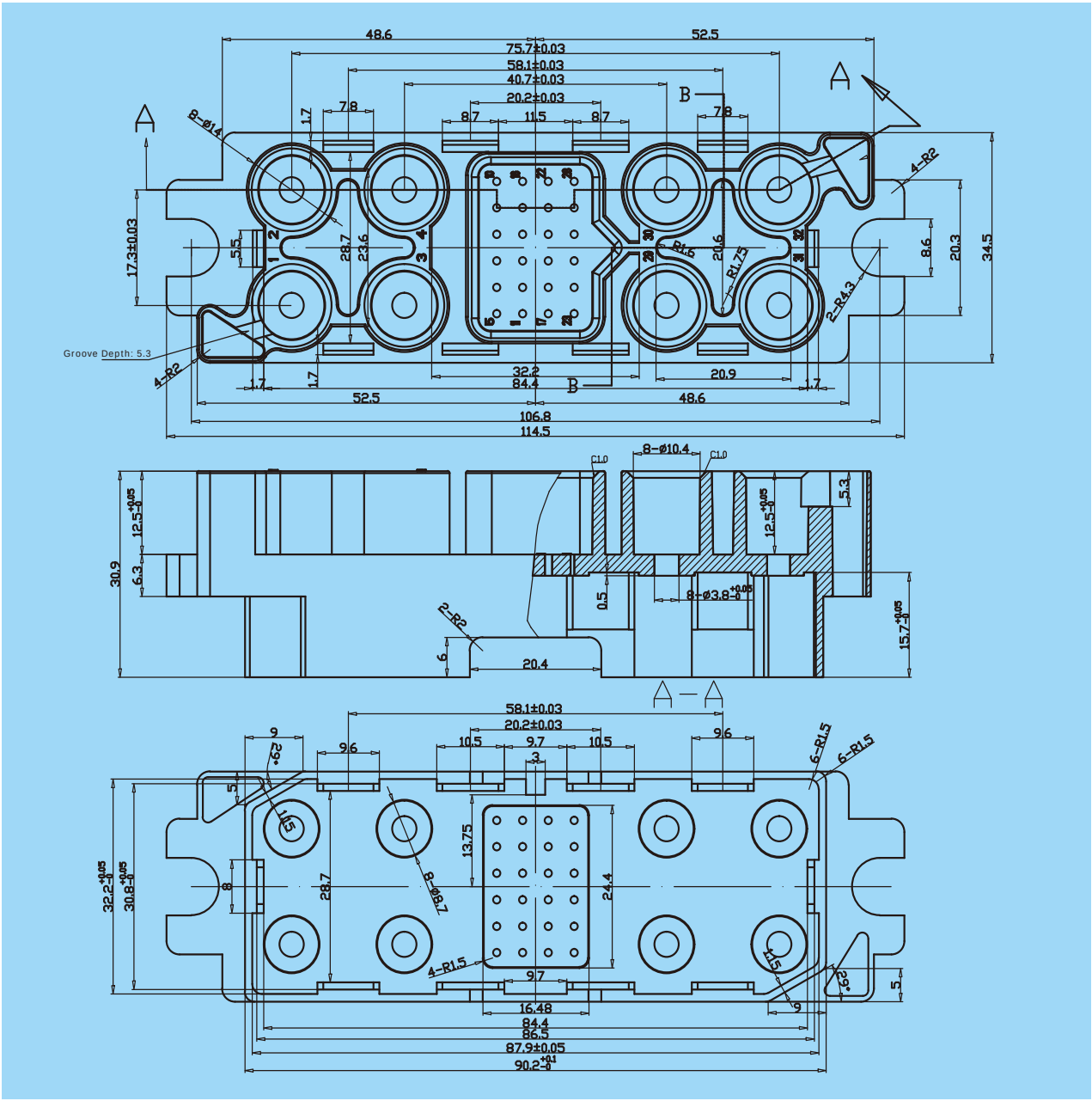
HMC-32 Series Technical Parameters

1. Main Performance Indicators:
● Rated Current: Power Pins (8#): 50A, Signal Pins (22#): 5A
● Rated Voltage: Between Power Pin Positions (1#~4#, 29#~32#): 2500V (AC)
Between Signal Pin Positions (5#~23#): 1500V (AC)
Between Power and Signal Pin Positions: 1500V (AC)
● Contact Resistance: Power Pins (8#): ≤1.0 mΩ, Signal Pins (22#): ≤5.0 mΩ
● Insulation Resistance: ≥3000MΩ (under normal conditions)
● Mechanical Life: 500 cycles
● Vibration:Frequency Range: 10Hz ~ 500Hz, Acceleration: 98m/s², Interruption: ≤1μs
● Shock: Peak Acceleration: 147m/s², Interruption: ≤1μs
● Operating Temperature:-40℃ to +125℃
● Operating Humidity:90% to 95% (at 40±2℃)
2. Main Materials:
● Contact Body: Power Sockets (8#): Copper alloy with a nickel base layer and a silver surface plating, Signal Sockets (22#): Copper alloy with a nickel base layer and a gold surface plating
● Insulator Material: PBT +15%GF (UL94 V-0) Black

➤➤➤ Module Connector

HMC-32 Series Male Dimensions





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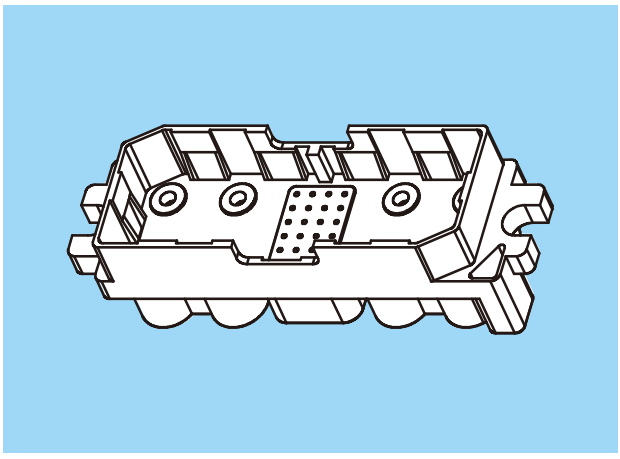
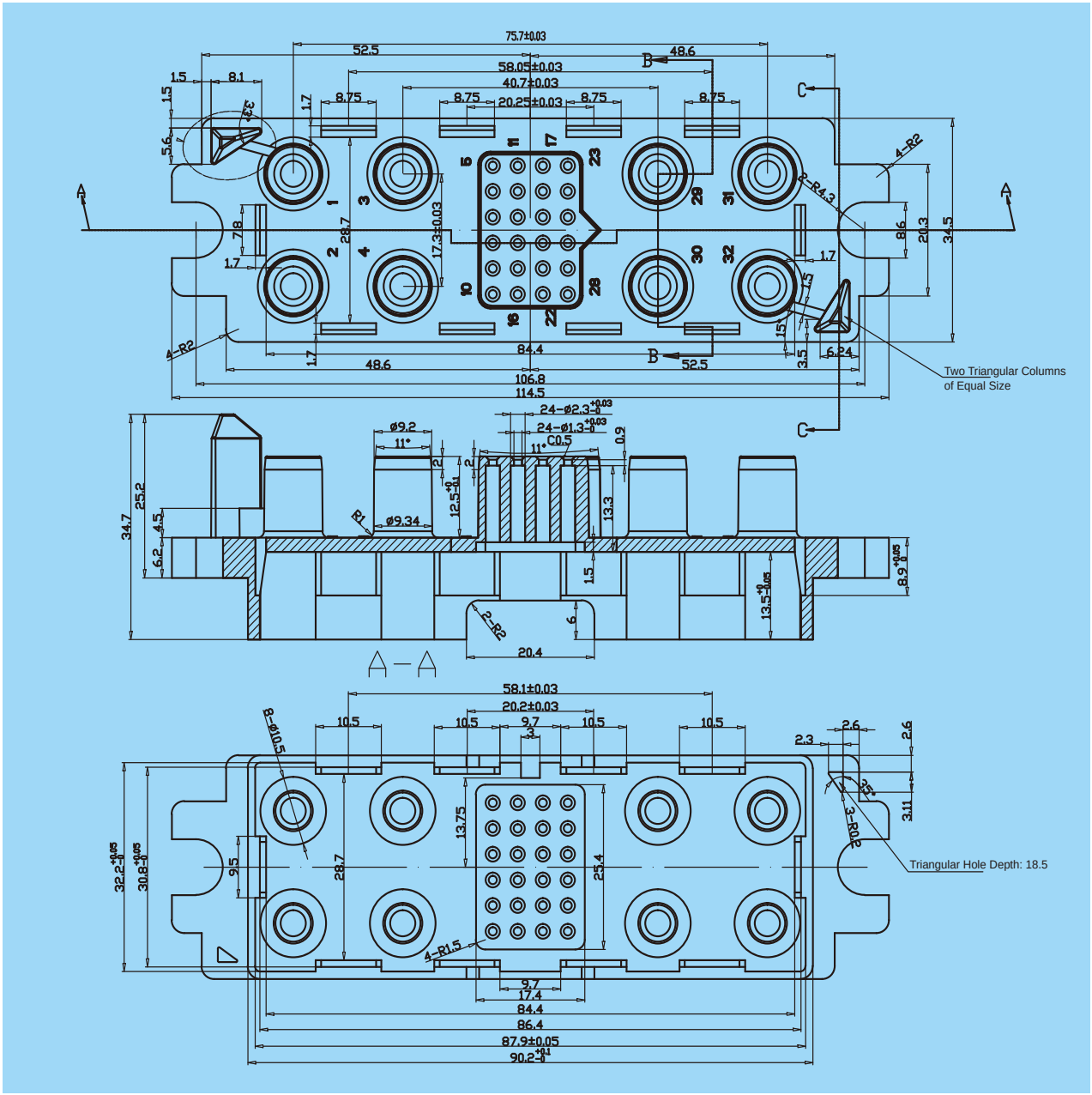
HMC-32 Series Female Dimensions





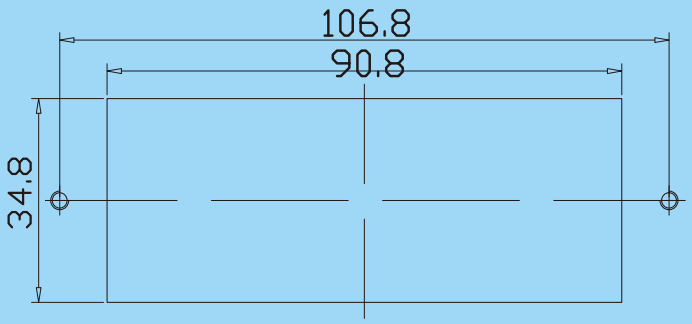
➤➤➤ Module Connector

HMC-32 Series Packaging and Storage

Packaging: The product is placed into individual compartments of a blister tray. The blister tray is then sealed in a packaging box.
Storage Conditions: The packaged products should be stored in a warehouse environment with the following conditions:

- Temperature Range: -10℃ to +40℃
- Relative Humidity: Below 80%
- Air Quality: The surrounding air must be free from acidic, alkaline, or other corrosive gases.

HMC-32 Series Panel Opening Size



Panel opening size

HMC-32 Series Detail

Specifications		Power Contact Components	
		5~27 Pins: (Some positions may be unoccupied depending on requirements)	1~4 Pins, 28~32 Pins
Rated Current		5A	50A
Contact Resistance		5.0 (6.7) mΩ	0.01 (0.013) mΩ
Dielectric Withstanding Voltage		1000V	5000V
Surface Treatment		Silver Plating on the Surface, Nickel Plating as the Base Layer	
Termination Styles		Pins:PCB Mounting Type (B), Sockets: Crimp Type (Y), PCB Mounting Type (B), Soldering Type (H)	
Materials	Pin and Socket	Brass or Copper Alloy	
	Crown Spring	Beryllium Copper	
Insulation Resistance		≥3000MΩ	
Mechanical Life		500 cycles	
Housing Material		PBT +15%GF (UL94 V-0) Color: Black	

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Please read and follow all relevant operating instructions and consult all relevant international safety regulations for your specific application. Incorrect handling, incorrect installation of cable assemblies and incorrect use of connectors can lead to hazards.

1. Danger of electric shock and fire

Incorrect wiring, the use of broken parts, the mixing of foreign objects (e.g. metal fragments) or residues (e.g. cleaning agents) can lead to short circuits, overheating and the risk of electric shock. Never disconnect plugged-in parts when they are energised, otherwise there is a risk of arcing and local overheating, which can damage the product and the equipment.

2. Handling

Before assembly and installation, an external inspection should first be carried out to see if there is any damage to the connector and its components. During installation and assembly, the correct tools must be used to obtain safe and reliable performance

3.Use

Connectors with exposed cores must never be electrically charged (or be the supply end of a circuit). Generally, voltages above 30 VAC or 42 VDC are considered dangerous and all measures should be taken to avoid connecting connectors with exposed cores to these voltage signals.

4. Test and operating voltages

The maximum permissible working voltage depends on the national or international standards that are limited for the specific application. Factors influencing the working voltage are space distance and creepage distance. The voltage reference values listed in the catalogue may be influenced by the design of the printed circuit board or the assembly circuit. The test voltages shown in the catalogue are 75% of the average breakdown voltage. The test voltage is applied at a rate of 500 V/S for a duration of 1 minute.

➤➤➤ Disclaimers

All of the information included in this catalog, including any other illustrations and documentation which may be provided by Spring Technology Connectors, is believed to be accurate at the time of printing. It is recommended, however, that users should independently evaluate the suitability of each product for their intended application. Spring Technology Connectors makes no warranties as to the accuracy or completeness of the information, and disclaims any liability regarding its use.

Spring Technology works constantly to improve the quality of its products; Spring Technology connector continuous improvement products have reached customer satisfaction, the information and illustrations figuring in this document may therefore vary and are not binding.

The values given in this catalogue are measured under test environmental conditions. Applications in non-test environmental conditions may require additional testing and values that may vary from those listed in the catalog.

Every effort has been made to ensure that this catalogue is accurate at the time of printing. Spring Technology Connectors reserves the right to make any modification to its products without notice and without obligation to replace or manufacture obsolete items.

The Spring Technology connector is constantly being improved, so illustration information such as images contained in this directory does not represent the product being produced. It is not legally responsible for the pictures in the catalogue and reserves the right of final interpretation.

The final interpretation of all information in this catalogue belongs to XI'AN SPRING TECHNOLOGY CO.,LTD.

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➤➤➤ Terms and Conditions of Delivery and Sale

Definitions

1. “Spring Technology” means Xi'an Spring Technology Co,.Ltd
2. “Order Confirmation” means the written confirmation by Spring Technology. to the Purchaser of Spring Technology’s acceptance of a Purchase Order received from the Purchaser.
3. “Purchase Order” means any purchase orders received from the Purchaser by Spring Technology. in relation to products and/or services of Spring Technology.
4. “Purchaser” means any legal entity or individual that purchases products and/or services of Xi'an Spring Technology Co,.Ltd

General

1. The comprehensive framework outlined in these General Terms and Conditions extends to encompass every offer tendered by Spring Technology, as well as each Purchase Order and subsequent Order Confirmation, all of which are fundamental components of the contractual relationship between the Purchaser and Spring Technology. The Purchaser solemnly acknowledges having familiarized themselves with the contents of these General Terms and Conditions, whether disseminated directly by Spring Technology or accessed through its official website, prior to engaging in any transaction involving the procurement of products or services from Spring Technology. By the mere act of submitting a Purchase Order, the Purchaser overtly and unreservedly signifies their acceptance of these General Terms and Conditions.
2. It is expressly declared that THESE GENERAL TERMS AND CONDITIONS stand as the exclusive governing principles regulating all transactions involving the sale of goods and/or provision of services by Spring Technology to the Purchaser. These terms and conditions supersede any and all other terms and conditions, unless otherwise explicitly agreed upon in writing by Spring Technology. The Purchaser explicitly waives the application of their own terms and conditions by placing any Purchase Order with Spring Technology, irrespective of whether such terms and conditions have been presented to Spring Technology during the placement of the Purchase Order or at any other juncture.

Offers, Advertising Materials, Leaflets or Catalogues

1. Descriptions, illustrations, and technical data, including but not limited to technical documents, specifications, drawings, and samples, provided by Spring Technology to the Purchaser through various mediums such as offers, advertising materials, leaflets or catalogues, whether in physical or electronic form (including those available on the website www.spring-connectors.com and affiliated platforms), are intended solely for informational purposes. Unless expressly guaranteed by Spring Technology, the company cannot be held accountable or liable for the accuracy, completeness, or errors in such technical data. Spring Technology reserves the right to update or modify this information without prior notice.
2. Unless explicitly stated otherwise, the Purchaser acknowledges that any technical data provided by Spring Technology does not constitute a binding agreement or commitment. Spring Technology shall not be held liable for any consequences arising from the reliance upon such technical data unless explicitly guaranteed by the company.
3. The duration of validity for any offer provided by Spring Technology will be clearly specified within the offer itself, ensuring transparency and clarity in all business transactions.

➤➤➤ Terms and Conditions of Delivery and Sale

Purchase Orders and Prices

1. Every Purchase Order transmitted to Spring Technology by the Purchaser is subject to Spring Technology's approval, granting the company the prerogative to decline any Purchase Order at its discretion.
2. The formalization of the contractual agreement between the Purchaser and Spring Technology occurs only upon Spring Technology's explicit acceptance of the Purchase Order, which is confirmed by the issuance of an Order Confirmation dispatched to the Purchaser. Upon receiving the Order Confirmation, the Purchaser is obligated to promptly review its contents and promptly notify Spring Technology of any discrepancies or inaccuracies. Failure to do so will result in Spring Technology proceeding with the manufacture, delivery, or provision of products and/or services in accordance with the terms outlined in the Order Confirmation, which shall be considered binding upon the Purchaser.
3. Unless otherwise specified in writing, all purchase prices are denoted in United States Dollars (USD) and do not include sales tax or any other applicable taxes.
4. Unless explicitly stipulated otherwise, all prices are quoted Ex-Works (EXW, Incoterms 2010), inclusive of packing expenses, and are devoid of any deductions. Additional expenses, encompassing but not limited to insurance, freight charges, export or import licenses, as well as other mandatory certifications or authorizations, are the sole responsibility of the Purchaser. Furthermore, the Purchaser is liable for the settlement of all taxes, levies, customs duties, and any other related charges.
5. All prices are subject to stability provided there are no escalations in manufacturing expenses, inclusive of material and labor costs.

Conditions of payment

1. All invoices issued by Spring Technology are expected to be settled by the Purchaser within a period of 30 days from the invoice date, unless explicit alternative arrangements have been mutually agreed upon and clearly indicated in both the invoice and the corresponding Order Confirmation.
2. The Purchaser is obligated to remit payments to Spring Technology in their entirety, without any form of offset, deduction, or withholding for counter-claims, taxes, duties, or other charges. Any associated bank charges arising from the transaction shall be the responsibility of the Purchaser.
3. Failure to adhere to the stipulated payment terms outlined above, even after receiving reminders from Spring Technology, will result in Spring Technology exercising its right to claim from the Purchaser a default interest of 9% per annum, accruing on a daily basis. Additionally, the Purchaser will be required to reimburse Spring Technology for all costs incurred in the process of collecting overdue payments, which may include reasonable legal fees. In the event of payment delays by the Purchaser, Spring Technology reserves the prerogative to suspend further product deliveries and/or service provisions.
4. Spring Technology retains the discretion to request the Purchaser to furnish payment guarantees if deemed necessary. Should such guarantees be mandated, they will be explicitly specified by Spring Technology either in its initial offer or prior to the dispatch of the Order Confirmation to the Purchaser.

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Reservation of Title

1. Upon the complete settlement of the purchase price, ownership of the goods dispatched to the Purchaser is duly transferred to the Purchaser. It is incumbent upon the Purchaser to actively collaborate in all endeavors aimed at safeguarding Spring Technology's ownership rights until such time as the entire purchase price has been satisfied. Furthermore, the Purchaser explicitly consents and authorizes Spring Technology, when deemed necessary, to effectuate the registration or entry of title reservation in any pertinent register as required by applicable legislation, with all associated formalities being at the expense of the Purchaser. Throughout the period of title reservation, the Purchaser assumes responsibility for maintaining the delivered goods in optimal condition at their own expense and procuring adequate insurance coverage for the same.
2. The purchaser can sell, use, or include the goods Spring Technology supply in their business operations as usual. This arrangement applies not just to selling our goods, but also to any contracts where the purchaser uses or makes products with our goods.
3. Spring Technology keep ownership rights and security interests in the goods until the purchaser finishes making products with them. If the purchaser combines our goods with those of other suppliers, we share ownership of the final product with those suppliers based on the value of our goods compared to theirs. If the purchaser uses our goods to make a product and loses ownership, they must transfer ownership of that product to us. The purchaser must store these finished products for us without charge.
4. In the event that the full purchase price remains outstanding, Spring Technology reserves the entitlement to rescind the contract and reclaim possession of the goods dispatched to the Purchaser without necessitating prior formalities or the initiation of legal proceedings. The Purchaser undertakes not to contest the exercise of this right by Spring Technology. Any costs incurred as a result of implementing this clause, inclusive of rectifying any damages or wear and tear sustained by the relevant goods, shall be wholly borne by the Purchaser.

Conditions of Delivery

1. Delivery periods will be specified in the Order Confirmation. Unless agreed otherwise, these periods are indicative. They start from the date of the Order Confirmation, provided all necessary formalities, installations, and technical issues are resolved.
2. Spring Technology is not bound by delivery commitments in cases of force majeure, disruptions within the company, or circumstances beyond its control. Delivery periods will be extended proportionately in such situations. Any delays won't entitle the Purchaser to claim damages or terminate the contract. Spring Technology will promptly inform the Purchaser of any delays in writing.
3. Delivery of goods to the Purchaser is considered as complete once the goods have been made available to the Purchaser at Spring Technology's facility (Ex-Works, Incoterms 2010). Delivery is at the Purchaser's risk and expense, unless stated otherwise. If requested, Spring Technology will arrange freight insurance at the Purchaser's cost. Spring Technology selects the forwarding method unless instructed otherwise by the Purchaser.
4. The Purchaser must note any missing or damaged items on the carrier's delivery note before signing it. They must also inspect the delivered goods upon receipt and notify Spring Technology of any defects within eight days, enclosing the delivery note with their complaint. Failure to do so implies acceptance of the goods. Any latent defects must be reported immediately after discovery and within the warranty period. Otherwise, Spring Technology will not be liable.

➤➤➤ Terms and Conditions of Delivery and Sale

Passing of Benefits and Risks

1. The transfer of benefits and risks occurs when the delivery of the goods is finalized, which means when the goods are ready for pickup by the Purchaser at Spring Technology's facility. In cases where delivery is postponed due to the Purchaser's request or any unforeseen circumstances beyond Spring Technology's control, the benefits and risks are transferred to the Purchaser at the originally scheduled delivery time from leaving Spring Technology's factory. Following this transfer, the goods are stored for the Purchaser's account and at their own risk and expense.

Warranty

1. The warranty period for Spring Technology's products and services lasts for 12 months, beginning when the goods leave Spring Technology's factory. If delivery is delayed, the warranty starts from the time the Purchaser is notified that the goods are ready for delivery.
2. The warranty becomes void if the Purchaser or any third party makes modifications or repairs without Spring Technology's prior written consent or fails to take immediate action to prevent further damage and allow Spring Technology to rectify the issue.
3. Upon the Purchaser's written request and if Spring Technology acknowledges a defect due to substandard materials or manufacturing, Spring Technology will repair or replace the defective parts as quickly as possible. Any replaced parts become Spring Technology's property.
4. Only warranties explicitly specified in the Order Confirmation or expressly guaranteed are valid. Spring Technology does not warranty the intended use of its products or services unless expressly agreed otherwise.
5. Spring Technology is only liable for expenses related to repairing or replacing defective parts in its workshops. If repairs cannot be done in its workshops due to reasons beyond its control, the Purchaser covers any additional expenses.
6. The warranty does not cover damages not caused by substandard materials or manufacturing defects, such as wear and tear, improper maintenance, or improper handling. Spring Technology is not liable for damages resulting from assembly, installation, or testing by the Purchaser or third parties, or from the use of incompatible equipment.
7. If the Purchaser provides elements for custom connectors or cable assembly solutions, they must be delivered to Spring Technology's factory at the Purchaser's risk. Spring Technology may refuse to use elements that do not meet its quality standards, and the Purchaser must indemnify Spring Technology for any related costs or damages.
8. The Purchaser is responsible for any breach of intellectual property rights related to provided elements and must indemnify Spring Technology for any damages. The remedies provided here are exclusive, and the Purchaser cannot claim reduction of the purchase price, termination of the contract, or direct, indirect, or consequential damages unless stated otherwise.

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Limitation of Liability

1. To the extent permitted by applicable law, Spring Technology shall only be liable to the Purchaser for wilful misconduct or negligence.
2. Subject to applicable law, Spring Technology's liability is restricted to the purchase price of the products or services ordered by the Purchaser.
3. Under no circumstances shall Spring Technology be held liable for any indirect or consequential losses or damages, such as loss of profits, production, benefits, orders, or increased operational costs, regardless of whether such damages were foreseeable or contemplated by the parties.
4. Spring Technology is not responsible for any failure to fulfill its obligations due to circumstances beyond its reasonable control, including force majeure events or trade and custom requirements, embargoes, or sanctions.
5. These General Terms and Conditions do not limit or exclude either party's liability for death or personal injury resulting from negligence.

Technical Reservation

1. Unless specifically agreed otherwise with the Purchaser, Spring Technology's products and services shall comply exclusively with the rules, regulations and standards in force in China. Spring Technology cannot be held responsible for any breaches of regulations or standards in other jurisdictions, especially in the Purchaser's country or their clients' countries.
2. Unless explicitly stated otherwise in agreement with the Purchaser, Spring Technology retains the discretion to make changes to its products and services, including manufacturing processes, testing procedures, materials, and subcontractors, without prior notification or approval from the Purchaser. Spring Technology is not obligated to comply with or be liable for any laws, rules, or regulations that apply to the Purchaser's use of the supplied products or services for their own purposes.
3. Unless expressly agreed otherwise with the Purchaser, Spring Technology reserves the right to unilaterally modify the technical specifications of the products or services specified in the Order Confirmation. Such modifications will only be made if they do not result in an increase in the purchase price stated in the Order Confirmation, and if the revised products or services maintain a level of design, functionality, and performance that is equal to or greater than the originally ordered items.

Intellectual Property

1. All technical data shared with the Purchaser remains the intellectual property of Spring Technology. It cannot be reproduced, copied, shared with third parties, or utilized in any manner without prior written consent from Spring Technology.

Jurisdiction and Applicable Law

1. Any dispute or controversy arising from a contract between Spring Technology and the Purchaser, including issues related to validity, breach, or termination, must be brought before the courts of China.
2. All contractual dealings between the Purchaser and Spring Technology, including Puchase Orders, are governed by the laws of China. The UN Convention Sales does not apply and is explicitly excluded.

➤➤➤ Overview – All Push-Pull Connector Series

Series Серия				
	B Series Серия B	**S Series Серия S**	**P Series Серия P**	**K Series Серия K**
Description Описание	Indoor connector помещении разъемы	Indoor connector помещении разъемы	Indoor plastic connector пластиковый помещении разъемы	Outdoor connector наружные разъемы
Plug size φ(mm) Размер вилки φ (мм)	6.4 to 18.0 6,4 до 18,0	6.4 to 14.8 6,4 до 14,8	11.8 to 18.0 11,8 до 18,0	11.0 to 16.0 11,0 до 16,0
Keying позиционирование	keyway positioning позиционирование шпоночного паза			
Shell Material Материал оболочки	Brass(Standard) Латунь(Стандарт)	Brass(Standard) Латунь(Стандарт)	PSU	Brass(Standard) Латунь(Стандарт)
Cable Diameter(Plug) Диаметр кабеля (вилка)	2.1 to 9.7 mm 2,1 до 9,7 мм	2.2 to 5.1 mm 2,2 до 5,1 мм	3.5 to 7.5 mm 3,5 до 7,5 мм	2.6 to 10.5 mm 2,6 до 10,5 мм
Panel Size(Socket) Размер панели (розетка)	M9 / M12 / M15 / M18	M9 / M12 / M15	M10 / M14 / M18	M14 / M16 / M20
NB. of contacts Количество контактов	2 to 26 2 до 26	1 to 6 1 до 6	2 to 26 2 до 26	2 to 26 2 до 26
AWG	16 to 28 16 до 28	14 to 28 14 до 28	14 to 28 14 до 28	16 to 28 16 до 28
Contact types Типы контактов	Multipole / Mixed Многополюсные / Смешанные	Coax / Multipole Коаксиальные / Многополюсные	Multipole Многополюсные	Multipole / Mixed Многополюсные / Смешанные
Contact Termination Тип завершения	Solder contact / straight PCB contact / elbow PCB contact Пайка контакт / прямой PCB контакт / локтевой PCB контакт			
Data Protocols Протоколы данных	USB / Ethernet / Eth Cat6a / Single Pair Ethernet / Audio / UHD Video USB / Ethernet / Eth Cat6a / Однопарный Ethernet / Аудио / Видео UHD			
Sealing Level Уровень герметичности	IP50 / hermetic sockets IP50 / герметичные розетки	IP50 / hermetic sockets IP50 / герметичные розетки	IP50 / IP66 / hermetic sockets IP50 / IP66 / герметичные розетки	IP68 / hermetic sockets IP68 / герметичные розетки
Temperature Range Диапазон температур	-45℃ to +125℃ -45℃ до +125℃	-45℃ to +125℃ -45℃ до +125℃	-55℃ to +150℃ -55℃ до +150℃	-45℃ to +125℃ -45℃ до +125℃
Mating Cycles Циклы сопряжения	＞**5000**	＞**5000**	＞**1000**	＞**5000**

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➤➤➤ Overview – All Push-Pull Connector Series

				
F Series Серия F	**T Series Серия T**	**U Series Серия U**	**X Series Серия X**	**C Series Серия C**
Outdoor connector наружные разъемы	Ultra-rugged connector Ультрапрочные разъемы	Ultra-rugged connector Ультрапрочные разъемы	Ultra-rugged connector Ультрапрочные разъемы	Outdoor connector наружные разъемы
9.0 to 18.0 9,0 до 18,0	9.0 to 11.5 9,0 до 11,5	9.0 to 15.1 9,0 до 15,1	11.9 to 22.0 11,9 до 22,0	9.4 to 15.0 9,4 до 15,0
arc-guide positioning позиционирование направляющей дуги	arc-guide and keyway positioning позиционирование направляющей дуги и шпоночного паза			keyway positioning позиционирование шпоночного паза
Brass(Standard) Латунь(Стандарт)	Brass(Standard) Латунь(Стандарт)	Brass(Standard) Латунь(Стандарт)	Ruthenium(Standard) Рутений(Стандарт)	Brass(Standard) Латунь(Стандарт)
3.5 to 11.5 mm 3,5 до 11,5 мм	3.5 to 8.0 mm 3,5 до 8,0 мм	3.5 to 8.0 mm 3,5 до 8,0 мм	3.5 to 11.5 mm 3,5 до 11,5 мм	2.1 to 9.7 mm 2,1 до 9,7 мм
M9 / M14 / M16 / M20	M9 / M10 / M14 / M16	M9 / M10 / M14 / M16	M11 / M14 / M16 / M20	M9 / M14 / M16
1 to 40 1 до 40	2 to 19 2 до 19	2 to 19 2 до 19	2 to 40 2 до 40	1 to 26 1 до 26
10 to 28 10 до 28	16 to 28 16 до 28	16 to 28 16 до 28	10 to 30 10 до 30	16 to 28 16 до 28
Multipole / Coax / Mixed Многополюсные / Коаксиальные / Смешанные	Multipole / Mixed Многополюсные / Смешанные	Multipole / Mixed Многополюсные / Смешанные	Multipole / Mixed Многополюсные / Смешанные	Multipole / Coax / Mixed Многополюсные / Коаксиальные / Смешанные
Solder contact / straight PCB contact / elbow PCB contact Пайка контакт / прямой PCB контакт / локтевой PCB контакт				
USB / Ethernet / Eth Cat6a / Single Pair Ethernet / Audio / UHD Video USB / Ethernet / Eth Cat6a / Однопарный Ethernet / Аудио / Видео UHD				
IP68 / hermetic sockets IP68 / герметичные розетки	IP68 / IP69 / hermetic sockets IP68 / IP69 / герметичные розетки	IP68 / IP69 / hermetic sockets IP68 / IP69 / герметичные розетки	IP68 / IP69 / hermetic sockets IP68 / IP69 / герметичные розетки	IP68 / hermetic sockets IP68 / герметичные розетки
-55℃ to +145℃ -55℃ до +124℃	-55℃ to +145℃ -55℃ до +145℃	-55℃ to +145℃ -55℃ до +145℃	-51℃ to +125℃ -51℃ до +125℃	-45℃ to +125℃ -45℃ до +125℃
>3000	**>3000**	**>3000**	**>5000**	**>5000**

➤➤➤ Summary of Technical Requirements

1) Connector application _____

2) Environment _____

3) Connector type Cable Mounted Plug Cable Mounted Socket Panel Mounted Socket

Panel Mounted Plug Panel Mounted Cable Socket

4) Special version _____

5) Style _____

6) Size 00 0 1 2 3 31 4 5

7) Series don't know B S E P K F T U X C Coaxial

8) Keying _____

9) Number of contacts _____

10) Temnination Solder PCB Elbow PCB

11) Cross section of wire _____mm _____AWG

12) Cable diameter _____mm

13) Cable bend relief(colour) _____

14) IP Protection IP 50 IP 68 other

15) Operating temperature _____°C maX _____°C min

16)Electrical specs:

Operating voltage _____V AC _____V DC

Operating current _____A(constant) _____A(short-term) _____sec.

17) Chemical resistance

against _____

18)Other requirements _____

_____

Required quantity _____

Produdtion quantity _____

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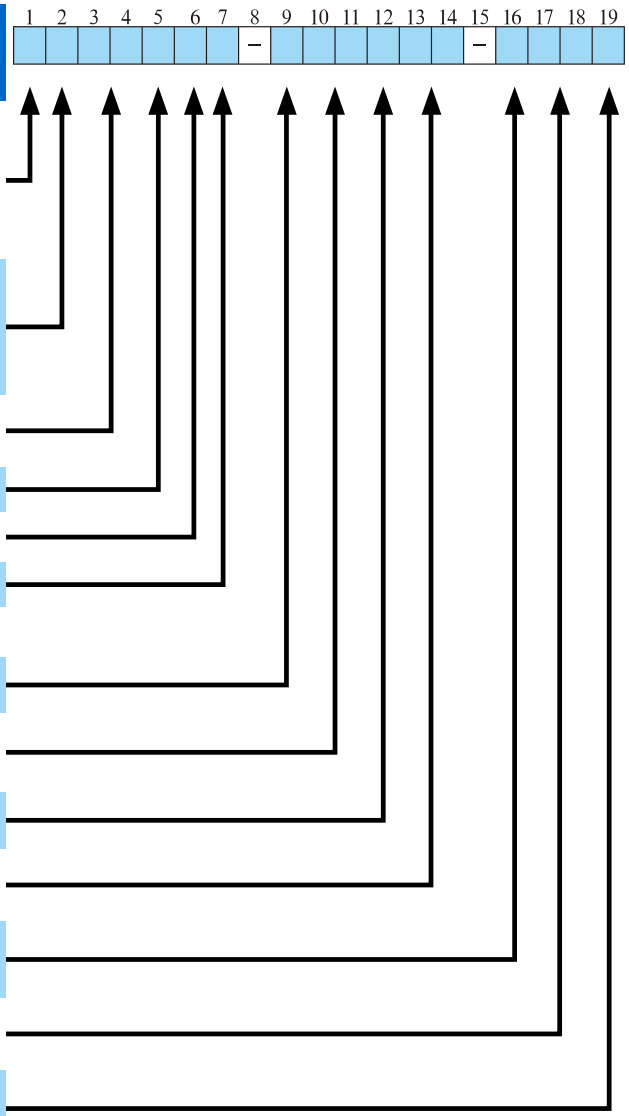
➤➤➤ Part Numbering System

NO.	Description	Coding
1	**Shell Surf. treatment**	**C:** Chrome Plating(standard) **H:** Black Chrome Plating **N:** Nickel Plating **H:** High phosphorus chemical nickel Plating **G:** Golden yellow **R:** Ruthenium over electroless nickel
2	**Shell material**	**B:** Brass(standard) **S4:** 304 stainless steel **S6:** 316L stainless steel **A:** Aluminium alloy **GP:** Grey PSU(only for P series) **BP:** Black PSU(only for P series) **RP:** Red PSU(only for P series)
3 4	**Shell model**	**Different series have different body styles**
5	**Shell Size**	**00, 0, 1, 2, 3, 31, 4, 5**
6	**Series**	**B, S, E, P, K, F, T, U, C, X**
7	**Alignment key**	**G, A, B, C, D, E, F, J, N...**
9	**Insulators material**	**S:** PPS **K:** PEEK **T:** PTFE
10 11	**Contact type**	**MS:** male solder contact, **FS:** female solder contact, **FP:** female straight PCB contact, **FE:** female elbow PCB contact
12	**Insert configuration**	**M:** Multipole contact **8:** Mixed contact **H:** High-speed contact
13 14	**No. of contacts**	**2~40**
16	**Plug: Collet type** **Socket: Glue type**	Plug: **C, D, M...** Socket: **0:** Without Potting **S:** Potting silicone **R:** Potting resin
17 18	**Plug: Cable φ** **Socket: Length of PCB contact**	Plug: **27, 42, 52, 62, 72, 82, 92...** Socket: **00:** Solder contact
19	**Plug: Bend relief** **Socket: Earthing tag**	Plug: **0:** Without bend relief, **B:** With bend relief Socket: **0:** Without Earthing tag **E:** With Earthing tag



Example plug(B series)

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

TG body style, outer shell in chrome-plated brass, 1B series, straight plug with key (G), PPS insulator, male solder contacts, multipole type with 6 contacts, D type cable collet of 5.2 mm diameter

Example socket (B series)

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

ZG body style, outer shell in chrome-plated brass, 1B series, fixed socket with key (G), PPS insulator, female solder contacts, multipole type with 6 contacts.

Example plug(S series)

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

TF body style, outer shell in chrome-plated brass, 0S series, straight plug, PTFE insulator, unipole coaxial male solder contact(50 Ω), D type cable collet of 4.2 mm diameter and nut for fitting a bend relief. (bend relief Need to buy separately)

Example socket (S series)

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

ZR body style, outer shell in chrome-plated brass, 0S series, fixed socket, PTFE insulator, unipole coaxial female solder contact(50 Ω).

Example plug(F series)

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

TG body style, outer shell in chrome-plated brass, 2F series, straight plug with key (N), PPS insulator, male solder contacts, multipole type with 6 contacts, D type cable collet of 5.2 mm diameter and nut for fitting a bend relief. (bend relief Need to buy separately)

Example socket (F series)

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

ZL body style, outer shell in chrome-plated brass, 2F series, fixed watertight socket with key (N), PPS insulator, female straight PCB contacts, multipole type with 6 contacts, potting resin, length of straight print contact with 3.0mm.

Example plug(X series)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
H	B	T	X	4	X	N	–	K	M	S	M	0	6	–	M	1	0	0

TX body style, outer shell in high-phosphorus electroless nickel-plated brass, 4X series, straight plug with key (N), PEEK insulator, male solder contacts, multipole type with 6 contacts, M type crimp cable collet for Max. 10.0 mm diameter cable

Example socket (X series)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
H	B	Z	X	4	X	A	–	K	F	P	8	2	2	–	S	6	9	E

ZX body style, outer shell in high-phosphorus electroless nickel-plated brass, 4X series, fixed socket with key (A), PEEK insulator, female straight PCB contacts, mixed contacts, potting silicone, length of straight print contact with 6.9mm. with earthing tag.

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