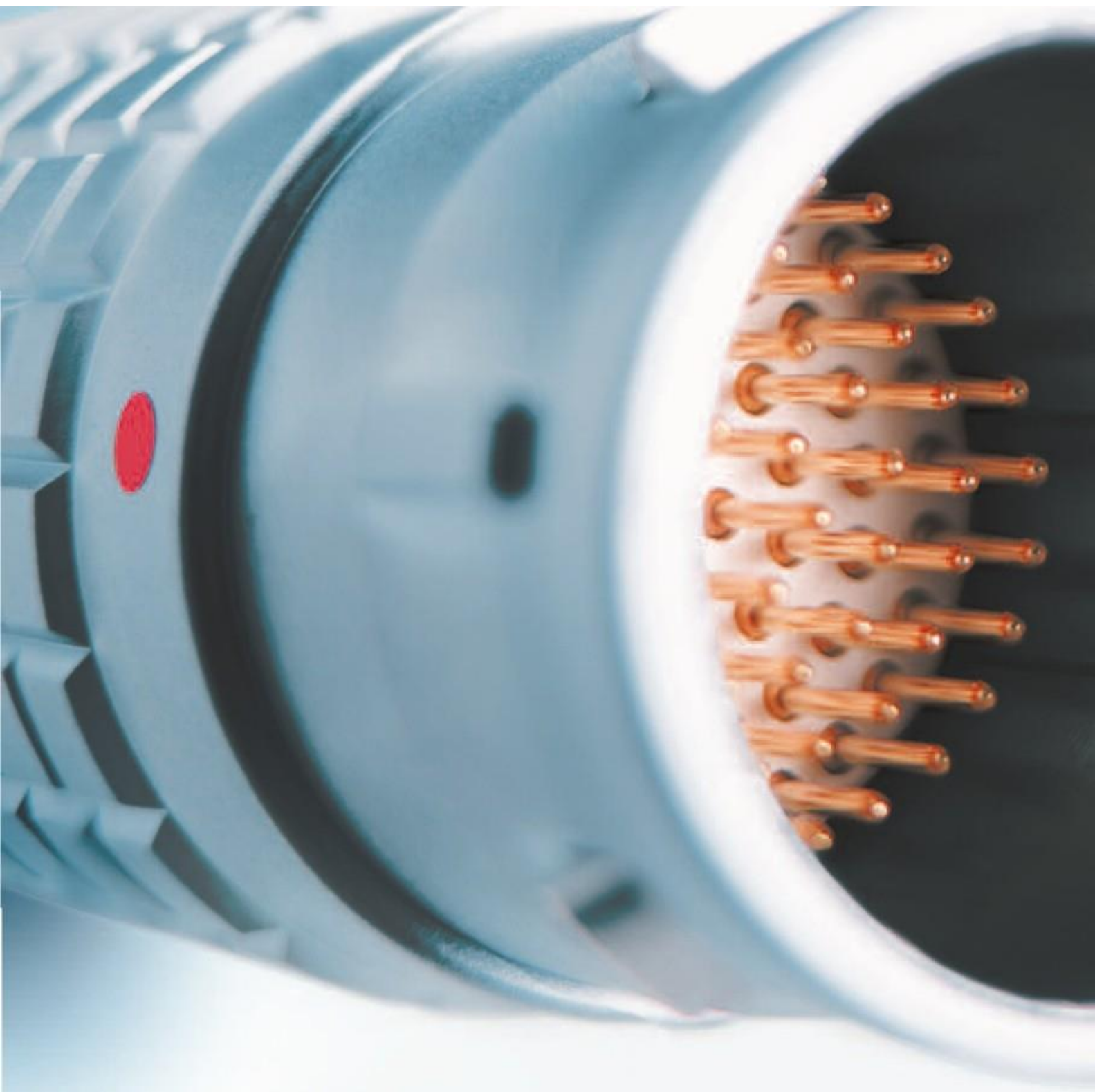


UNIPOLE & MULTIPOLE CONNECTORS





LEMO unipole and multipole connectors

This catalogue gives the complete description of LEMO unipole and multipole type connectors. The LEMO manufacturing programme has been extended to almost 40 series divided into 7 product families with specific mating and environmental characteristics. Each series includes a wide variety of plug, socket, coupler and bridge plug models, available in contact configurations adapted to all round cables, including up to 106 conductors, and a maximum diameter of 30 mm. Watertight and vacuumtight models are also available. Since LEMO connectors are perfectly screened and designed to guarantee very low resistance to shell electrical continuity, they are particularly adapted to applications where electro-magnetic compatibility (EMC) is important.

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Precision modular connectors to suit your application

Since its creation in Switzerland in 1946 the LEMO Group has been recognized as a global leader of circular Push-Pull connectors and connector solutions. Today LEMO and its affiliated companies, REDEL and COELVER, are active in more than 80 countries with the help of over 40 subsidiaries and distributors.

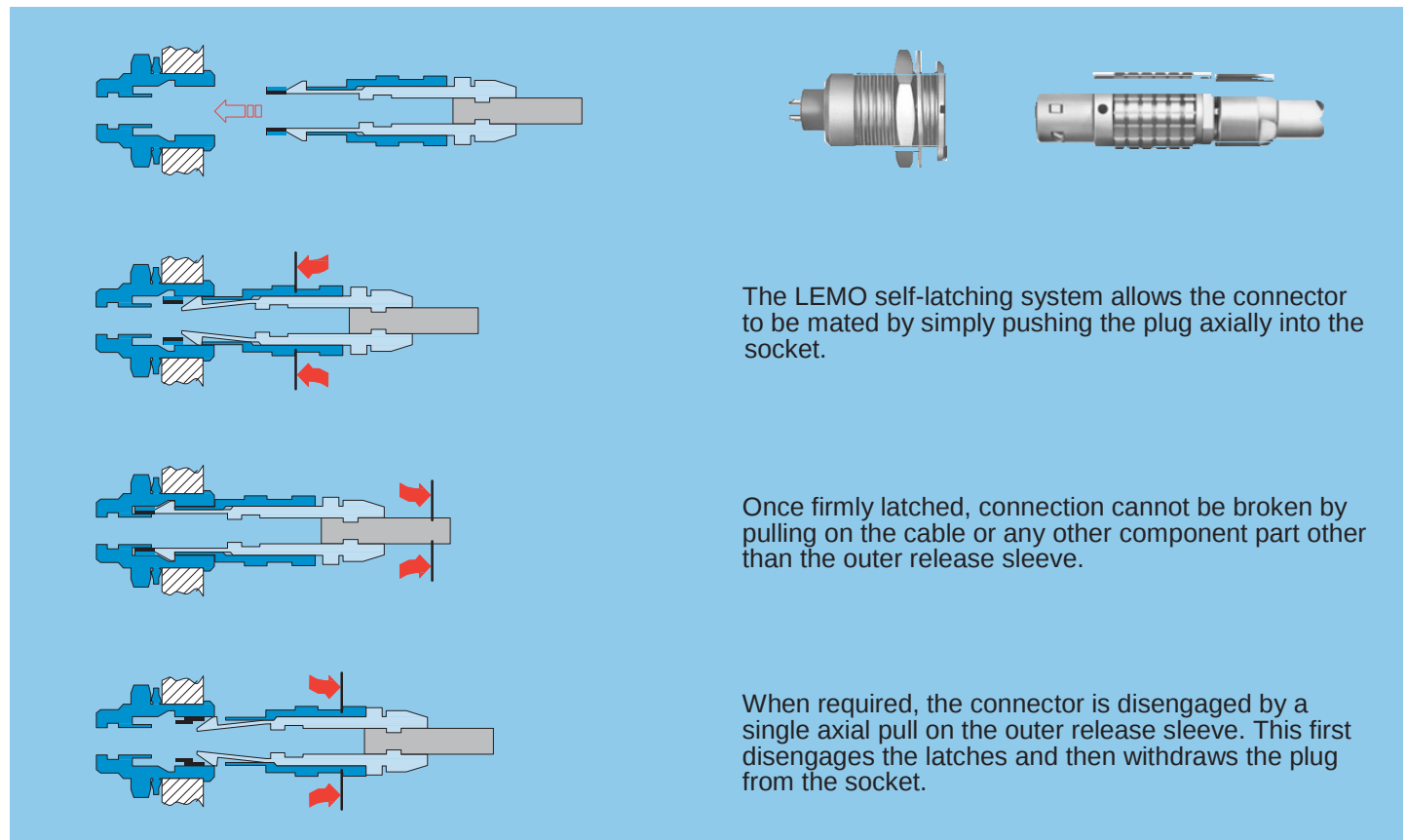
Over 75'000 connectors

The modular design of the LEMO range provides over 75'000 connectors from miniature $\varnothing$ 3 mm to $\varnothing$ 50 mm, capable of handling cable diameters up to 30 mm and for up to 106 contacts.

This vast portfolio enables you to select the ideal connector configuration to suit almost any specific requirement in most markets, including medical devices, test and measurement instruments, machinery, audio video broadcast, telecommunications and military.

LEMO's Push-Pull Self-Latching Connection System

This self-latching system is renowned worldwide for its easy and quick mating and unmating features. It provides absolute security against vibration, shock or pull on the cable, and facilitates operation in a very limited space.



UL Recognition

LEMO connectors are recognized by the Underwriters Laboratories (UL). The approval of the complete system (LEMO connector, cable and your equipment) will be easier because LEMO connectors are recognized.

CE marking

CE marking  means that the appliance or equipment bearing it complies with the protection requirements of one or several European safety directives. CE marking  applies to complete products or equipment, **but not to electromechanical components, such as connectors.**

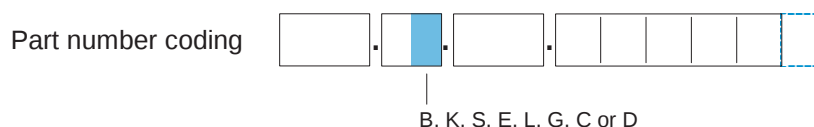
RoHS

LEMO connector specifications conforms the requirements of the RoHS directive (2011/65/EU) of the European Parliament and the latest amendments. This directive specifies the restrictions of the use of hazardous substances in electrical and electronic equipment marketed in Europe.

3 steps to select the right connector

Step 1: Select connector series

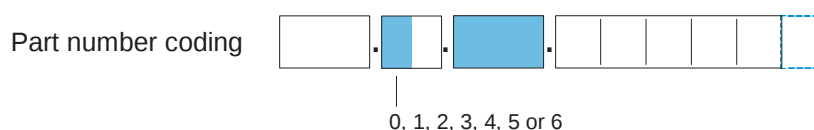
Select the appropriate LEMO connector series according to the environmental parameters that will affect your device or cable such as indoor, outdoor, temperature range, ingress protection of the mated connector and of your device. Use the table shown on page 4.



Step 2: Select connector size

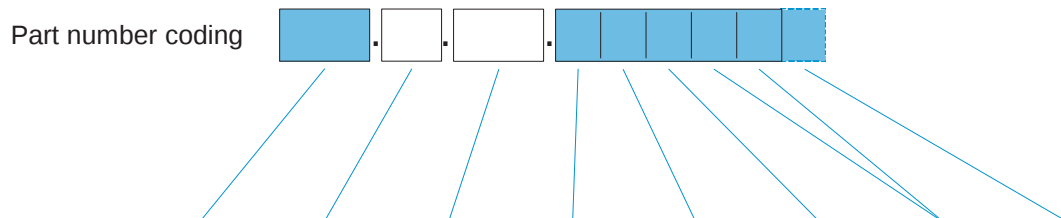
Use the section (mm²) or the AWG of your cable wire to select the optimal contact diameter (values vary between solder, crimp or print contact), see page 7.

Use this optimal contact diameter to determine the right connector size as well as the insert configuration, see page 6.



Step 3: Complete the part number

Now that you know the series, as well as the insulator configuration, complete the part numbering system with the help of the following table.



	Model	Series	Insert configuration	Housing material	Insulator material	Contact	Collet	Variant
B Series (indoor, keyed)	12	12	45	50	50	50	52	54
K Series (outdoor, keyed)	34	34	45	50	50	50	53	54
S Series (indoor, stepped insert)	58	58	91	99	99	99	102	107
E Series (outdoor, stepped insert)	76	76	91	99	99	99	105	107
L Series (outdoor, keyed, stepped insert)	86	86	92	99	99	99	106	107
G Series (indoor, keyed)	111	111	112	112	110	113	113	113
C Series (indoor, stepped insert)	117	117	120	120	116	120	121	121
D Series (indoor, 4 concentric contacts)	125	125	127	127	124	127	127	128

Note: Figures in the above table refer to the catalogue pages.

1

Step 1: Select Connector Series

LEMO unipole and multipole connectors

The standard keyed Series (B, 00, G)

The characteristic feature of these connector series is a keying system which allows higher contact density and prevents all errors in alignment. The various keying alternatives prevent unwanted cross mating of otherwise similar connectors. It is also possible to use crimp contacts to reduce cable assembly time. These connector series, include the 0B to 5B range as well as the 00 multipole and 2G (shortened version of the 2B series), some vacuumtight models are also available.

The watertight keyed Series (K, L)

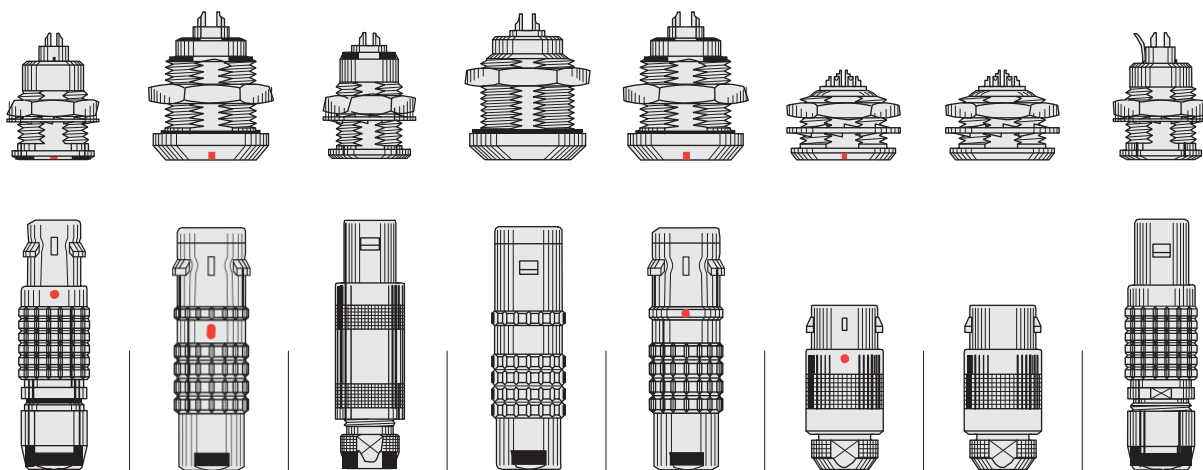
These series are watertight when mated and assembled to an appropriate cable. They include the 0K to 5K series, available in the same types as the 0B to 5B series, and the 0L to 2L series with keying and hermaphroditic insulator.

The standard Series (S, 00, C, D)

The characteristic feature of these connector series is the hermaphroditic insulator in the multipole version. They include principally the 0S to 6S series, as well as the 00 unipole series, the 2C (shortened version) and the 1D quadrax type (with 4 concentric contacts).

The watertight Series (E)

These series are watertight when mated and assembled to an appropriate cable. They include the 0E to 6E series and are available in the same types as the S series.



Series	00 multipole B	K	00 unipole S	E	L	G	C	D
Environment	indoor	outdoor or harsh env.	indoor	outdoor or harsh environment		indoor		
Ingress ¹⁾ protection	IP50	IP66 to IP68	IP50	IP66 to IP68		IP50		
Ingress ²⁾ protection	IP50 to IP68 vacuumtight	IP66 to IP68 vacuumtight	IP50 to IP68 vacuumtight	IP66 to IP68 vacuumtight		IP50	IP50 to IP68 vacuumtight	IP50
Temperature range	- 55 to 250°C	- 55 to 200°C	- 55 to 250°C	- 55 to 200°C		- 55 to 250°C		- 40 to 120°C
Latching	Push-Pull self-latching							
Shell sizes	8 metal and 4 plastic	6 metal	7 metal and 5 plastic	6 metal		3 metal	4 metal	1 metal
Insulator type	Multipole		Unipole or multipole hermaphroditic		Multipole hermaphroditic	Multipole	Multipole hermaphroditic	Quadrax
Contact type	Solder, crimp or print		Solder, crimp or print		Solder, crimp or print	Solder or print		Solder
Features	13 keyways	9 keyways	Stepped insert		Stepped insert	1 keyway	Stepped insert	4 concentric contacts
Page	9 to 31	32 to 44	55 to 73	74 to 83	84 to 90	109 to 115	116 to 122	123 to 128

Note:

¹⁾ Mated connector. See ingress protection code page 5.

²⁾ Your device. For selection of connectors for watertight and vacuumtight devices, see page 5.

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 = IP 5 0

IP letter code
1st digit
2nd digit

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

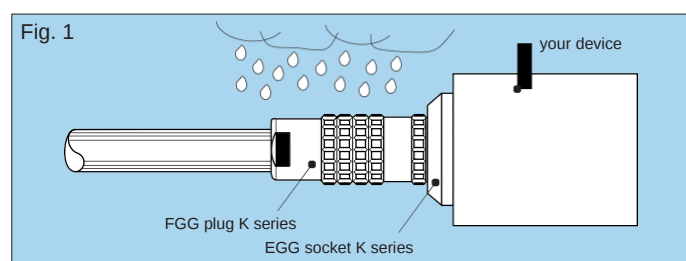
The second digit indicates the degree of protection of the equipment inside the enclosure against the harmful entry of various forms of moisture (e.g. dripping, spraying, submersion, etc.)

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

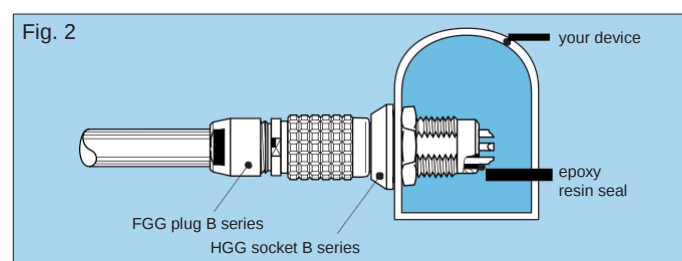
Selection of connectors for watertight or vacuumtight devices

LEMO B and S series are rated IP50 only when mated. LEMO E, K and L 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 watertight 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 L 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. To ensure the device maintains its sealing, the socket is additionally tested for helium leakage (according MIL 1344A).



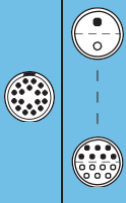
Check temperature range (see section on pages 26, 41, 72, 82 and 89).

Step 2: Select Connector Size

Select the right connector size and insert configuration

To be able to select the right connector size (0 to 6), it is important to define the contact diameter ($\varnothing$ A). Find out the available contact diameter ($\varnothing$ A) of the LEMO connector depending on the number of contacts required and depending on the rating required (see pages 45 to 49 and 91 to 98).

The following table shows the contact diameter ($\varnothing$ A), or the solder pot diameter ($\varnothing$ C) for the 1D series.

	Number of contacts	Insert configuration	Series																		
																					
			00	0B-0K	1B-1K	XB	2B-2K	3B-3K	4B-4K	5B-5K	00	0S-0E-0L ¹⁾	1S-1E-1L ¹⁾	2S-2E-2L ¹⁾	3S-3E	4S-4E	5S-5E	6S-6E	2G	2C	1D (ø C)
Unipole	1	113									1.3										
	1	116										1.6									
	1	120											2.0								
	1	130											3.0	3.0							
	1	140												4.0	4.0	4.0					
	1	160													6.0	6.0					
	1	112															12.0				
Multipole	2	302	0.5	0.9	1.3		2.0	3.0		6.0		0.9	1.3	1.6	2.0	4.0	6.0			1.6	
	3	303	0.5	0.9	1.3		1.6	2.0				0.7	0.9	1.3	2.0	3.0	6.0/4.0	6.0		1.3	
	4	304	0.5	0.7	0.9		1.3	2.0	3.0	4.0		0.7	0.9	1.3	2.0	3.0	4.0	8.0		1.3	0.6
	5	305	0.35	0.7	0.9		1.3	1.6					0.9/0.7	1.3	2.0/1.3	3.0/2.0	4.0/3.0				
	6	306		0.5	0.7		1.3	1.6	2.0				0.7	1.3	1.3	2.0	3.0			1.3	
	7	307		0.5	0.7		1.3	1.6	2.0					1.3/0.9	1.3	2.0/1.3					
	8	308			0.7		0.9	1.3						0.9	1.3	1.3	3.0			0.7	
	9	309		0.5				1.3/2.0								1.3					
	10	310			0.5		0.9	1.3	1.6	3.0				0.9	1.3	1.3	2.0			0.7	
	12	312		0.35		0.7	0.7	0.9	1.3						0.9	1.3	2.0	4.0/5.0		0.7	
	13	313													0.9	1.3					
	14	314			0.5		0.7	0.9		2.0					0.9	1.3	3.0/2.0			0.7	
	16	316			0.5		0.7	0.9	0.9	2.0					0.9	0.9	2.0	3.0			
	18	318					0.7	0.9							0.9	0.9	3.0/1.6	4.0	0.7		
	19	319					0.7														
	20	320						0.7	0.9	1.6						0.9	1.6	3.0			
	22	322				0.5		0.7								0.9	3.0/1.6				
	24	324						0.7	0.9							0.9	1.6	3.0			
	26	326					0.5	0.7													
	30	330						0.7	0.9	1.3							1.3	2.0			
	32	332					0.5											2.0			
	36	336															1.3	2.0 ²⁾			
	40	340							0.7	1.3							1.3	2.0			
	44	344															1.3				
	48	348							0.7	1.3							1.3	2.0			
	50	350								0.9											
	54	354								0.9											
	60	360																1.6			
62	362																1.6				
64	364								0.9								1.3				
72	372																1.3				
106	106																0.9				

Note: ¹⁾ L series not available in unipole version. ²⁾ 2.0 is for 6S series, for 6E the values are 1.3 and 5.0.

Verify the fitting to your wire

Verify if the selected contact diameter ($\varnothing A$) of the LEMO connector fits to your cable wire diameter (AWG number or max. available section).

Contact type			Contact			Conductor				F _r ¹⁾ (N)	Note			
						Solid		Stranded						
			ø A (mm)	ø C (mm)	Form per fig.	AWG max.	Section max. (mm ²)	AWG				Section (mm ²)		
								min.	max.	min.	max.			
Solder ø A ø C ø A ø C			0.35	0.40	—	28	0.09	—	30	—	0.05	—	●	
			0.5 ²⁾	0.40 ²⁾	—	28	0.09	—	30	—	0.05	—		
			0.5	0.45 ⁷⁾	—	28	0.09	—	28	—	0.09	—		
			0.7 ³⁾	0.60 ³⁾	—	24	0.25	—	26	—	0.14	—		
			0.7	0.80	—	22	0.34	—	22 ⁴⁾	—	0.34	—		
			0.9	0.80 ⁶⁾	—	22 ⁶⁾	0.34 ⁶⁾	—	22 ⁴⁾⁶⁾	—	0.34 ⁶⁾	—		
			1.3	1.00	—	20	0.50	—	20 ⁴⁾	—	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	—		
			5.0	5.20	—	—	—	—	8	—	10.00	—		
			6.0	5.20	—	—	—	—	8	—	10.00	—		
			8.0	7.00	—	—	—	—	4	—	21.00	—		
			12.0	11.50	—	—	—	—	0	—	50.00	—		
Crimp ø A ø C ø A ø C ø A ø C ø A ø C ø A ø C ø A ø C ø A ø C ø A ø C ø A ø C ø A ø C ø A ø C ø A ø C ø A ø C ø A ø C			0.5 ⁵⁾	0.45	1	—	—	32	28	0.035	0.09	12	●	
			0.7	0.80	1	—	—	26	22 ⁴⁾	0.140	0.34	22	●	
				0.45	2	—	—	32	28	0.035	0.09		●	
			0.9	1.10	1	—	—	24	20	0.250	0.50	30	●	
				0.80	2	—	—	26	22 ⁴⁾	0.140	0.34		●	
				0.45	2	—	—	32	28	0.035	0.09		●	
			1.3	1.40	1	—	—	20	18	0.500	1.00	40	●	
				1.10	2	—	—	24	20	0.250	0.50		●	
				0.80	2	—	—	26	22 ⁴⁾	0.140	0.34		●	
			1.6	1.90	1	—	—	18	14 ⁴⁾	1.000	1.50	50	●	
				1.40	2	—	—	22	18	0.340	1.00		●	
			2.0	2.40	1	—	—	16	12 ⁴⁾	1.500	2.50	65	●	
				1.90	2	—	—	18	14	1.000	1.50		●	
				3.0	3.20	1	—	—	14	10 ⁴⁾	2.500	4.00	75	●
				4.0	4.00	1	—	—	12	10	4.000	6.00	90	●
Print ø A ø C ø A ø C L Print (elbow) ø A ø C L			L dimensions and C are detailed in the section on PCB drilling pattern. See page 156 and 159.										●	
			L dimensions and C are detailed in the section on PCB drilling pattern. See page 157 and 160.										●	

Note: ¹⁾ contact retention force in the insulator (according to IEC 60512-8 test 15 a).

²⁾ for 00 multipole series.

³⁾ for S, E, 2C, 2G and 1D series.

⁴⁾ for a given AWG, the diameter of some stranded conductor designs is larger than the solder cup diameter. Make sure that the maximum conductor diameter is smaller than $\varnothing C$.

⁵⁾ for 00 multipole series or for 0B and 1B series with male contacts.

⁶⁾ for 0B.302/0B.303 and 0K.302/0K.303 $\varnothing C = 1.0$ mm, AWG max 20, section max (mm²) 0.50.

⁷⁾ for 00 and 1B/1K series, according to manufacturing and plating tolerance $\varnothing C$ min = 0.43 mm.

Verify the fitting to your cable

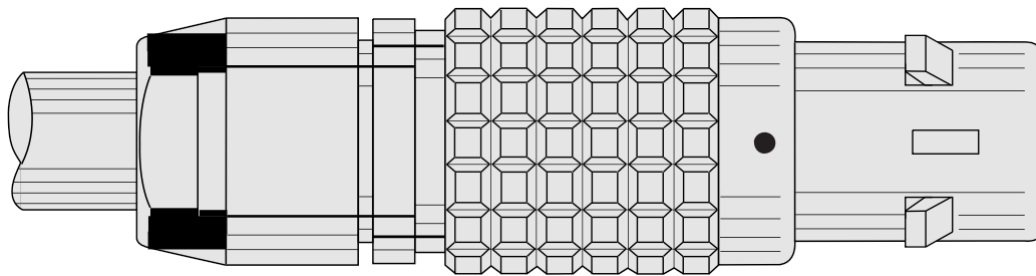
Verify if the selected connector size fits to your cable diameter.

Series	Cable diameter range (mm)			
	Collet		Collet for fitting a bend relief	
	min.	max.	min.	max.
00 ¹⁾	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
XB	4.4	8.0	4.4	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
5B	9.6	25.0	9.6	15.5
0K	1.0	5.0	1.0	5.0
1K	1.3	8.5 ³⁾	1.3	8.5
2K	1.3	10.5 ³⁾	1.3	10.5
3K	2.6	15.0 ³⁾	2.6	15.0
4K	4.6	23.5 ³⁾	4.6	15.0
5K	9.6	23.5	–	–

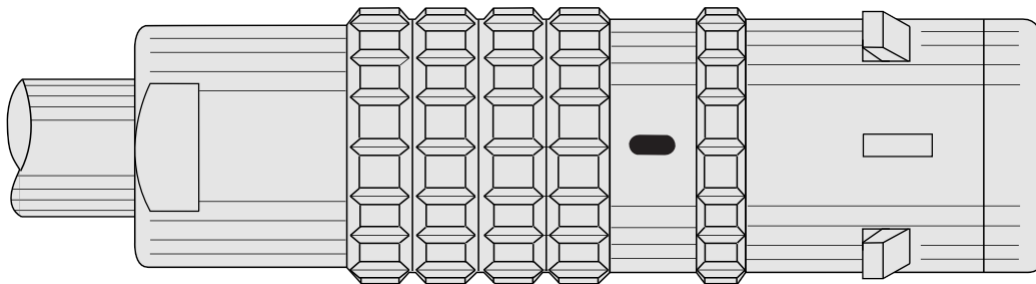
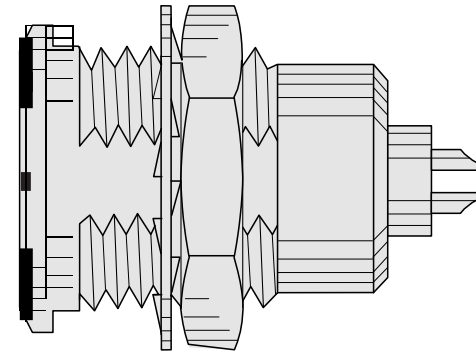
Series	Cable diameter range (mm)			
	Collet		Collet for fitting a bend relief	
	min.	max.	min.	max.
00 ²⁾	1.1	4.1	1.1	4.1
0S	1.3	6.7	1.3	6.1
1S	1.3	8.5	1.3	8.0
2S	1.3	10.5	1.3	10.0
3S	2.5	13.0	2.5	13.0
4S	4.1	22.0	4.1	13.0
5S	6.1	30.0	–	–
6S	11.1	30.0	–	–
0E	1.0	5.0	1.0	5.0
1E	1.3	8.5 ³⁾	1.3	8.5
2E	1.3	10.5 ³⁾	1.3	10.5
3E	2.6	15.0 ³⁾	2.6	15.0
4E	4.6	23.5 ³⁾	4.6	15.0
5E	9.6	23.5	–	–
6E	13.0	30.0	–	–
0L	1.0	5.0	1.0	5.0
1L	1.3	8.5 ³⁾	1.3	8.5
2L	1.3	10.5 ³⁾	1.3	10.5

Series	Cable diameter range (mm)			
	Collet		Collet for fitting a bend relief	
	min.	max.	min.	max.
2C	2.2	8.1	2.2	8.1
2G	4.5	7.9	4.5	7.9
1D	3.1	7.5	3.1	7.0

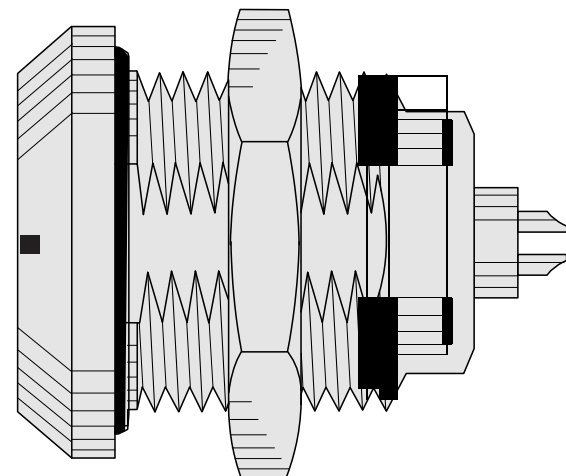
Note:
¹⁾ for multipole only.
²⁾ for unipole only.
³⁾ for these series the maximum cable diameter require models with oversized cable collet (type K).



B SERIES



K SERIES (watertight)



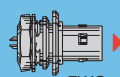
B Series

B series connectors provide the following main features:

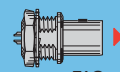
- security of the Push-Pull self-latching system
- solder, crimp or print contacts (straight or elbow)
- multiple key options to avoid cross mating of similar connectors
- 360° screening for full EMC shielding.
- multipole types 2 to 64 contacts
- high packing density for space savings
- keying system («G» key standard) for connector alignment

Metal housing models (page 12)

Fixed plugs

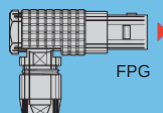


FWG

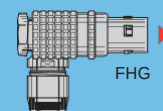


FAG

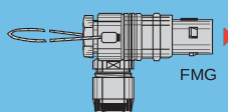
Elbow plugs



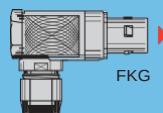
FPG



FHG

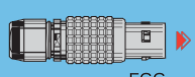


FMG

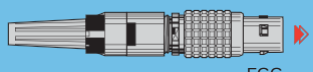


FKG

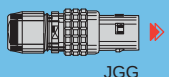
Straight plugs



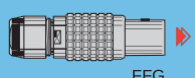
FGG



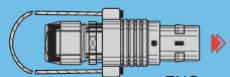
FGG



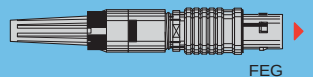
JGG



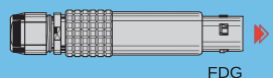
FFG



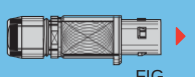
FNG



FEG

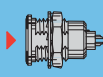


FDG

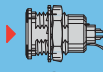


FIG

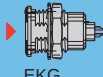
Fixed sockets



EGG



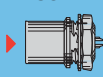
ENG



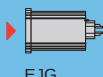
EKG



ESG



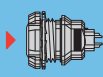
EHG



EJG



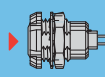
EEG



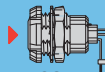
EFG



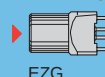
ECG



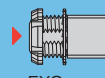
ECG



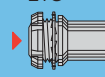
ECG



EZG

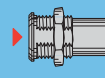


EYG



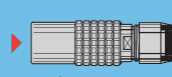
XPF

Fixed coupler

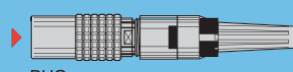


R00

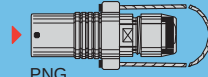
Free sockets



PHG

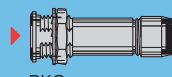


PHG

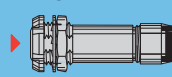


PNG

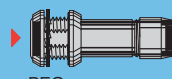
Fixed sockets



PKG



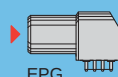
PFG



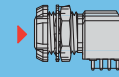
PEG

Elbow socket models (page 22)

Elbow sockets



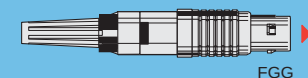
EPG



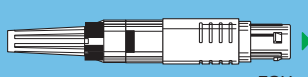
XBG, EXG

Plastic housing models (page 24)

Straight plugs

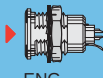


FGG

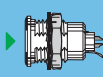


FGY

Fixed sockets



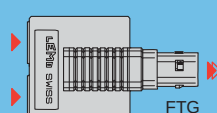
ENG



ENY

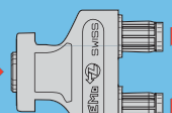
Bridge models (page 29)

Plug with two parallel sockets



FTG

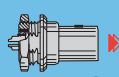
Bridge plugs



CFF, CRG

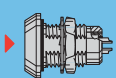
Watertight or vacuumtight models (page 26)

Fixed plug

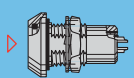


YHG

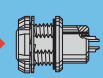
Fixed sockets



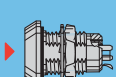
HGG



HHG



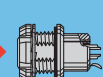
HEG



HNG

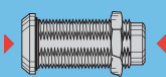


HCG



HMG

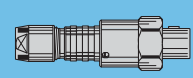
Fixed coupler



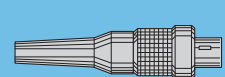
S00

Threaded-latching models (page 30)

Straight plugs

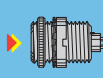


FVG



FVB

Fixed socket



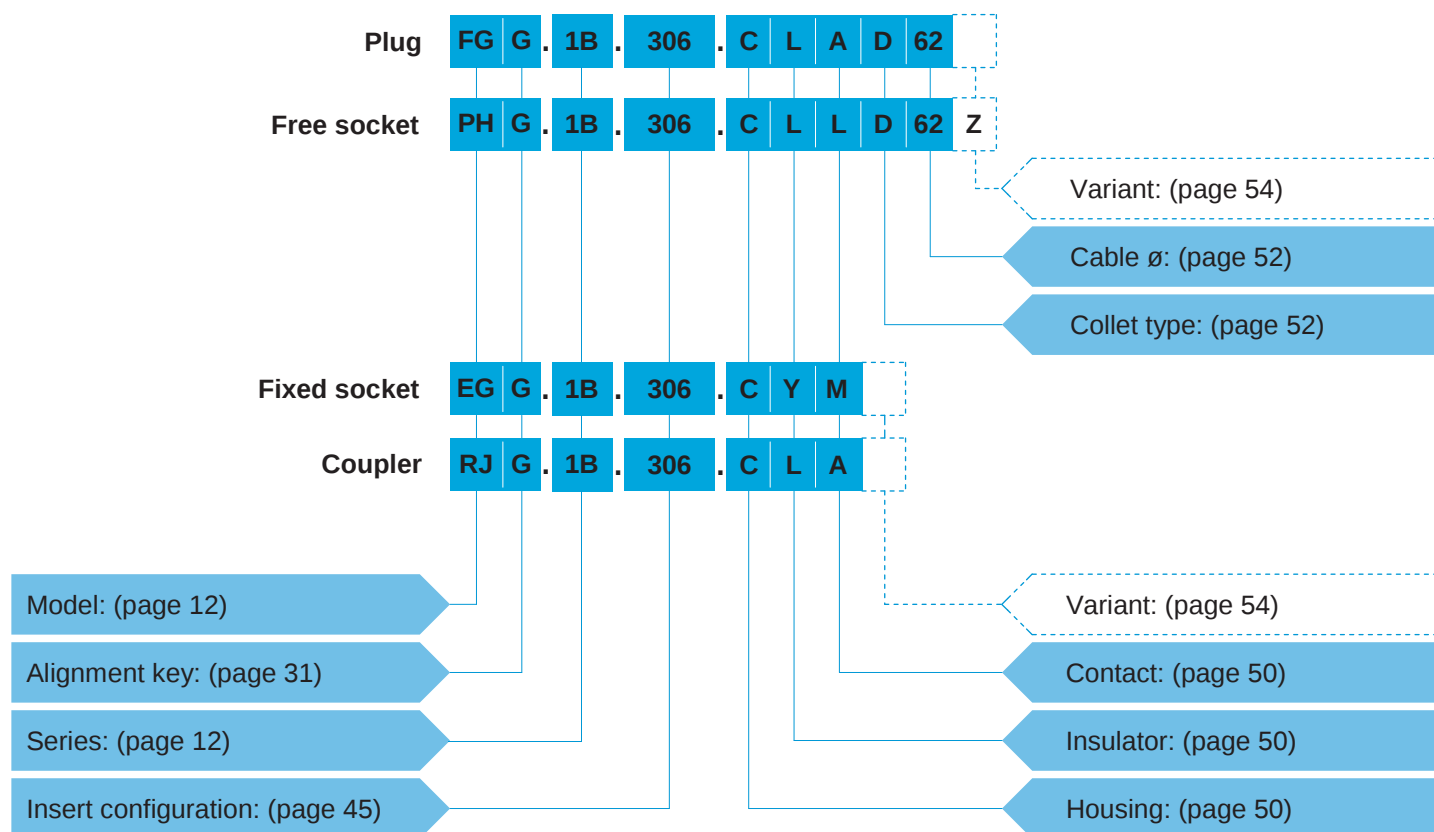
ESG

Elbow socket



XRB

Part Numbering System



Part Number Example

Straight plug with cable collet:

FGG.1B.306.CLAD62 = straight plug with key (G) and cable collet, 1B series, multipole type with 6 contacts, outer shell in chrome-plated brass, PEEK insulator, male solder contacts, D type collet for 6.0 mm diameter cable.

Free socket:

PHG.1B.306.CLLD62Z = free socket with key (G) and cable collet, 1B series, multipole type with 6 contacts, outer shell in chrome-plated brass, PEEK insulator, female solder contacts, D type collet for 6.0 mm diameter cable and nut for fitting a bend relief.

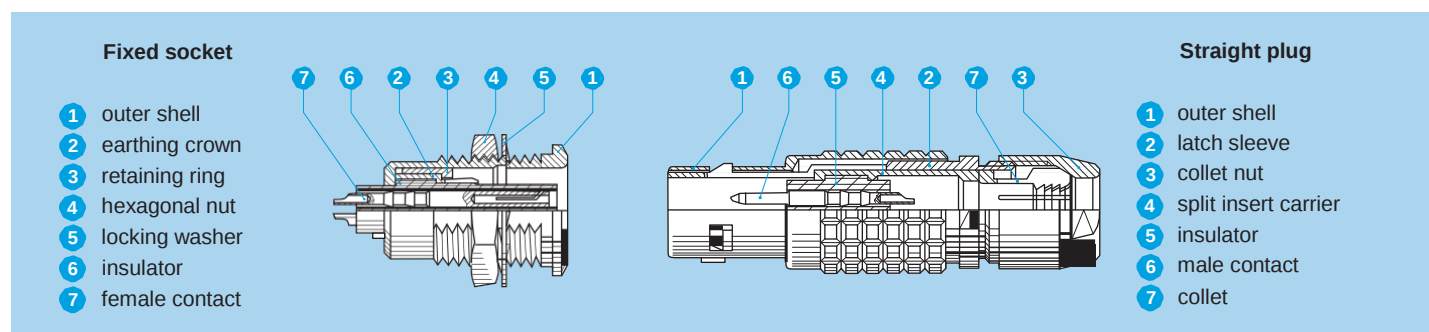
Fixed socket:

EGG.1B.306.CYM = fixed socket, nut fixing, with key (G), 1B series, multipole type with 6 contacts, outer shell in chrome-plated brass, PEEK extended insulator, female crimp contacts.

Fixed coupler:

RJG.1B.306.CLA = straight fixed coupler with keys (J) at the flange end and key (G) at the other end, 1B series, multipole type with 6 contacts, outer shell in chrome-plated brass, PEEK insulator, male-female contacts.

Part Section Showing Internal Components



Technical Characteristics

Mechanical and Climatical

Characteristics	Value	Standard
Endurance	> 5000 cycles	IEC 60512-5 test 9a
Humidity	up to 95% at 60° C	
Temperature range	- 55° C, +250° C	
Resistance to vibration	10-2000 Hz, 15 g	IEC 60512-4 test 6d
Shock resistance	100 g, 6 ms	IEC 60512-4 test 6c
Salt spray corrosion test	> 1000h	IEC 60512-6 test 11f
Protection index (mated)	IP50	IEC 60529
Climatical category	55/175/21	IEC 60068-1

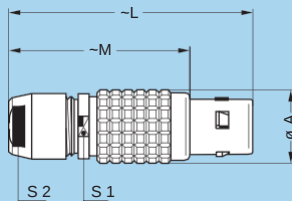
Metal housing models

Electrical

Characteristics	Value	Standard
Shielding efficiency	at 10 MHz	> 75 dB
	at 1 GHz	> 40 dB
		IEC 60169-1-3
		IEC 60169-1-3

Note:

the various tests have been carried out with FGG and EGG connector pairs, with chrome-plated brass shell and PEEK insulator. Detailed electrical characteristics, as well as materials and treatment are presented in the chapter Technical Characteristics on page 171.



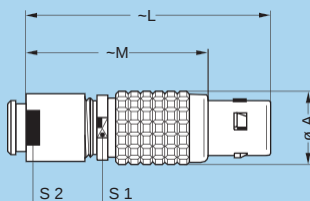
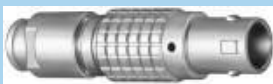
FGG Straight plug, key (G) or keys (A...M and R), cable collet

Reference		Dimensions (mm)				
Model	Series	A	L	M	S1	S2
FGG	00 ¹⁾	6.4	28.5	20.5	5.5	5
FGG	0B	9.5	36.0	26.0	8.0	7
FGG	1B	12.0	43.0	32.0	10.0	9
FGG	XB	13.0	44.0	33.5	11.0	10
FGG	2B	15.0	50.0	38.0	13.0	12
FGG	3B	18.0	58.0	43.0	15.0	14
FGG	4B	25.0	75.0	57.0	21.0	20
FGG	5B	35.0	103.0	78.0	31.0	30

M1

Cable assembly (page 161)

Note: 1) the surface design of the 00 series is different.



FGG Straight plug, key (G) or keys (A...M), cable collet and nut for fitting a bend relief ²⁾

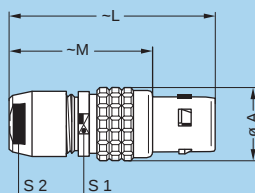
Reference		Dimensions (mm)				
Model	Series	A	L	M	S1	S2
FGG	00 ¹⁾	6.4	28.7	20.7	5.5	6
FGG	0B	9.5	35.0	25.0	8.0	7
FGG	1B	12.0	42.0	31.0	10.0	9
FGG	XB	13.0	47.5	37.0	11.0	10
FGG	2B	15.0	49.0	37.0	13.0	12
FGG	3B	18.0	56.5	41.5	15.0	15
FGG	4B	25.0	71.0	53.0	21.0	20

M1

Cable assembly (page 161)

Note: 1) the surface design of the 00 series is different.

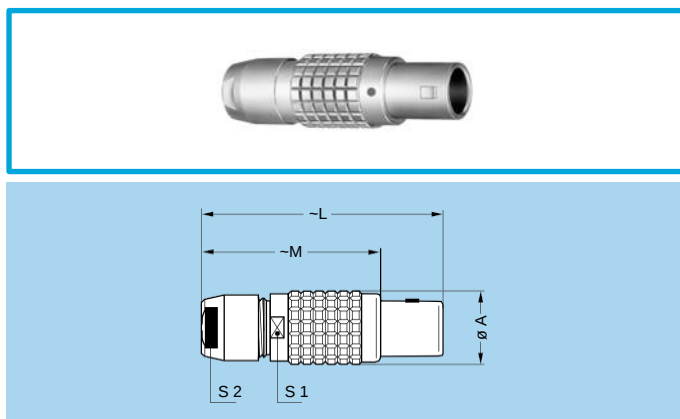
²⁾ to order, add a «Z» at the end of the reference. The bend relief must be ordered separately (see page 141).



JGG Straight plug, short version, key (G), cable collet

Reference		Dimensions (mm)				
Model	Series	A	L	M	S1	S2
JGG	0B	9.5	32.0	22.0	8.0	7

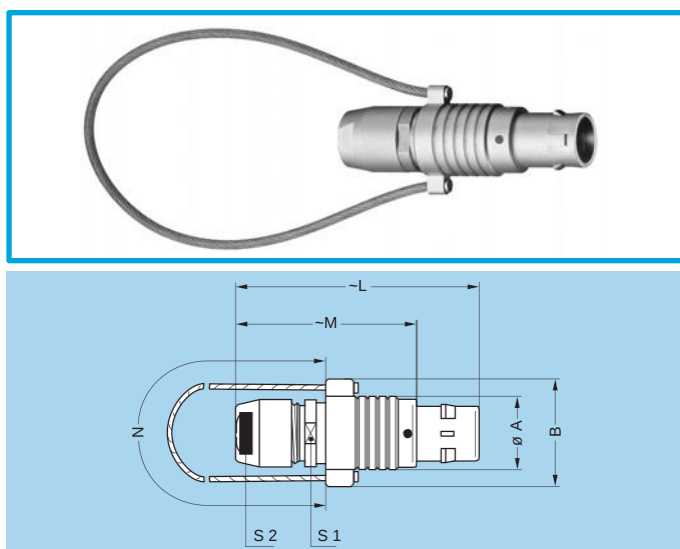
M4 Cable assembly (page 161)



FFG Straight plug, non-latching, key (G) or keys (A...M), cable collet

Reference		Dimensions (mm)				
Model	Series	A	L	M	S1	S2
FFG	0B	9.5	36	26	8	7
FFG	1B	12.0	43	32	10	9
FFG	2B	15.0	50	38	13	12
FFG	3B	18.0	58	43	15	14
FFG	4B	25.0	75	57	21	20

M1 Cable assembly (page 161)

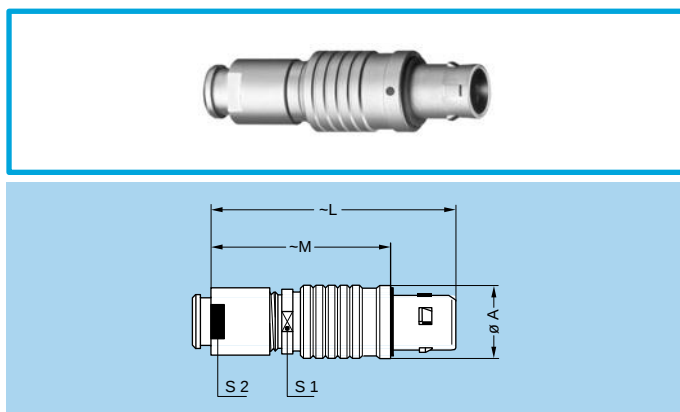


FNG Straight plug, key (G) or keys (A...M and R), cable collet and lanyard release

Reference		Dimensions (mm)						
Model	Series	A	B	L	M	N	S1	S2
FNG	0B	9.5	15.5	36.0	26.0	140	8	7
FNG	1B	12.0	18.0	43.0	32.0	140	10	9
FNG	2B	15.0	21.0	49.0	37.0	160	13	12
FNG	3B	18.0	25.0	58.0	43.0	190	15	14
FNG	4B	25.0	32.0	75.0	57.0	230	21	20
FNG	5B	35.0	42.0	103.0	78.0	300	31	30

M1 Cable assembly (page 161)

Note: cable material: stainless steel with Polyamide sheath.

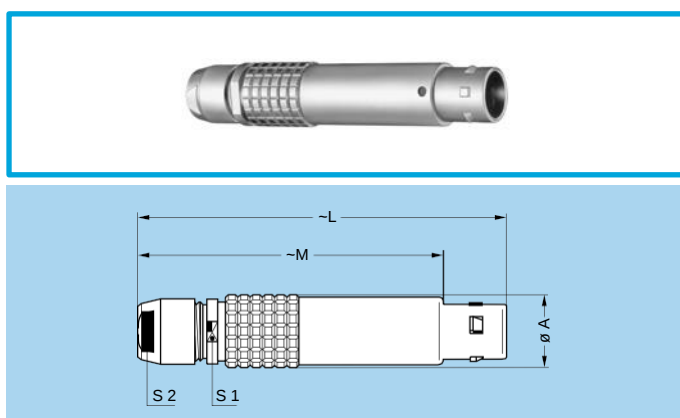


FEG Straight plug, key (G) or keys (A...L), cable collet, front seal and nut for fitting a bend relief ¹⁾ (IP 54 protection index when mated)

Reference		Dimensions (mm)				
Model	Series	A	L	M	S1	S2
FEG	0B	11.0	35.0	25.0	8	7
FEG	1B	13.5	42.0	33.0	10	9
FEG	2B	16.5	48.0	36.0	13	12
FEG	3B	19.0	56.5	41.5	15	15

M1 Cable assembly (page 161)

Note: ¹⁾ to order, add a «Z» at the end of the reference. The bend relief must be ordered separately (see page 141).



FDG Straight plug, long version, key (G) or keys (A...L), cable collet

Reference		Dimensions (mm)				
Model	Series	A	L	M	S1	S2
FDG	1B	12	68	57	10	9
FDG	2B	15	79	67	13	12

M2 Cable assembly (page 162)

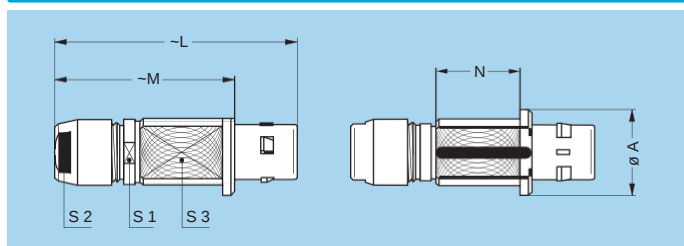
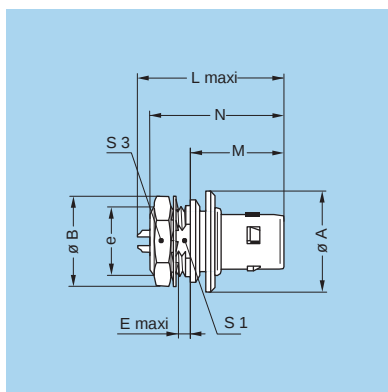


FIG Straight plug for remote handling, key (G) or keys (A...L and R), special alignment mark, knurled handling surface, cable collet

Reference		Dimensions (mm)						
Model	Series	A	L	M	N	S1	S2	S3
FIG	2B	20	49	37	17.5	13	12	15
FIG	3B	22	58	43	21.5	15	14	18
FIG	4B	30	75	57	28.5	21	20	25
FIG	5B	40	103	78	41.0	31	30	35

M1 Cable assembly (page 161)

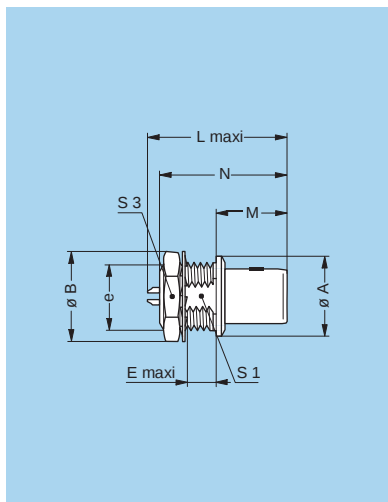


FWG Fixed plug, nut fixing, key (G) or keys (A...L)

Reference		Dimensions (mm)								
Model	Series	A	B	e	E	L	M	N ¹⁾	S1	S3
FWG	0B	14.0	12.4	M9x0.6	1.8	22.5	14.5	19.5	8.2	11
FWG	1B	18.0	15.8	M12x1.0	2.9	24.9	17.0	24.8	10.5	14
FWG	2B	19.5	19.2	M15x1.0	4.1	28.6	18.0	27.3	13.5	17
FWG	3B	25.0	25.0	M18x1.0	4.2	32.1	23.0	31.5	16.5	22

P9 Panel cut-out (page 152)

Note: ¹⁾ maximum length with crimp contacts

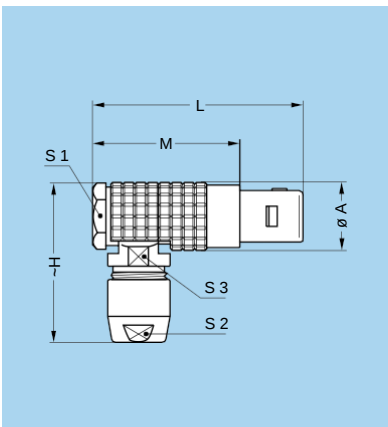


FAG Fixed plug, non-latching, nut fixing, key (G) or keys (A...M and R)

Reference		Dimensions (mm)								
Model	Series	A	B	e	E	L	M	N ¹⁾	S1	S3
FAG	00	8	10.2	M7x0.5	2.9	18.1	9.0	15.0	6.3	9
FAG	0B	10	12.4	M9x0.6	4.2	20.8	11.5	18.9	8.2	11
FAG	1B	14	15.8	M12x1.0	5.4	25.2	12.5	21.6	10.5	14
FAG	2B	18	19.2	M15x1.0	6.0	28.7	13.8	23.9	13.5	17
FAG	3B	22	25.0	M18x1.0	5.8	32.1	17.0	30.2	16.5	22
FAG	4B	29	34.0	M25x1.0	6.8	37.1	20.5	34.7	23.5	30
FAG	5B	40	40.0	M35x1.0	6.8	47.1	28.0	42.8	33.5	—

P1 Panel cut-out (page 152)

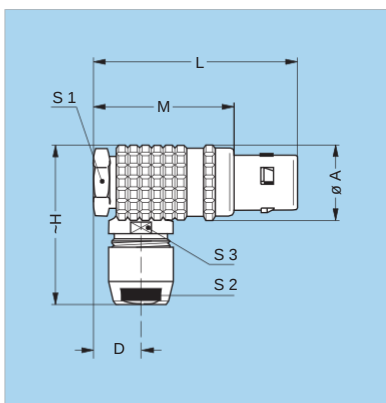
Note: ¹⁾ maximum length with crimp contacts. The 5B series is delivered without locking washer or tapered washer and with a round nut.



FPG Elbow (90°) plug, key (G) or keys (A...M and R), cable collet

Reference		Dimensions (mm)						
Model	Series	A	H	L	M	S1	S2	S3
FPG	00	7.5	18.0	24.5	16.5	6.5	5	5.3
FPG	0B	9.5	23.0	30.0	20.0	8.0	7	8.0
FPG	1B	12.0	29.0	36.0	25.0	11.0	9	10.0
FPG	2B	15.0	35.0	41.5	29.5	13.5	12	13.0

M3 Cable assembly (page 161)



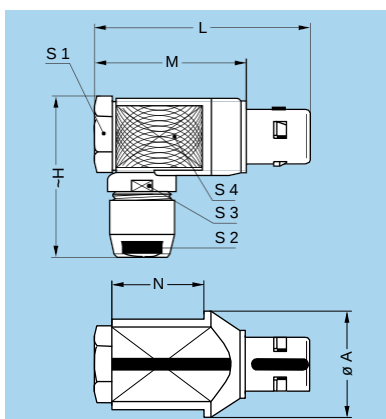
Reference		Dimensions (mm)							
Model	Series	A	D	H	L	M	S1	S2	S3
FHG	3B	19.0	10.0	37.0	50.0	35.0	17	14	15.0
FHG	4B	26.0	15.0	52.0	67.0	49.0	22	20	21.0
FHG	5B	36.0	21.0	74.0	90.0	65.0	32	30	31.0

Technical drawing of the SMC 2500 series solenoid valve, showing front and side views with dimensions:

- L**: Total length of the valve assembly.
- M**: Distance from the front flange to the start of the solenoid coil.
- ØA**: Outer diameter of the valve body.
- H**: Height of the valve body from the base to the top flange.
- S1**: Port for the pilot air supply.
- S2**: Port for the main air supply.
- S3**: Port for the exhaust air.
- N**: Distance from the front flange to the start of the solenoid coil (side view).
- B**: Total height of the valve assembly (side view).

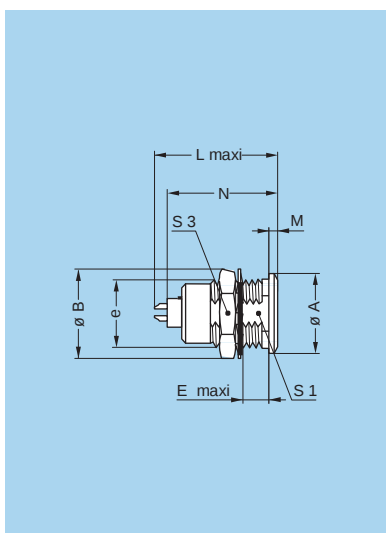
Reference		Dimensions (mm)								
Model	Series	A	B	H	L	M	N	S1	S2	S3
FMG	0B	11	17	26	31.6	21.6	140	10	7	8
FMG	3B	19	26	39	50.0	35.0	190	17	14	15

Note: ¹⁾ long key: only in 0B series and with key (G).
Cable material: stainless steel with Polyamide sheath.



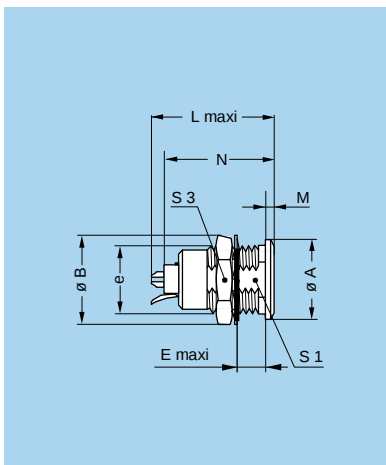
Reference		Dimensions (mm)								
Model	Series	A	H	L	M	N	S1	S2	S3	S4
FKG	3B	25	37.0	50.0	35.0	21.0	17	14	15	21
FKG	4B	32	52.0	67.0	49.0	28.5	22	20	21	26
FKG	5B	46	74.2	89.5	64.5	40.0	32	30	31	38

Note: dimension D is the same as for the FHG model.



Reference		Dimensions (mm)								
Model	Series	A	B	e	E	L	M	N ¹	S1	S3
EGG	00	8	10.2	M7x0.5	6.0	15.5	1.0	13.7	6.3	9
EGG	0B	10	12.4	M9x0.6	7.0	20.7	1.2	19.1	8.2	11
EGG	1B	14	15.8	M12x1.0	7.5	23.0	1.5	21.1	10.5	14
EGG	XB	16	19.0	M14x1.0	7.0	23.5	1.5	20.0	12.5	17
EGG	2B	18	19.2	M15x1.0	8.5	26.7	1.8	24.6	13.5	17
EGG	3B	22	25.0	M18x1.0	11.5	30.7	2.0	28.1	16.5	22
EGG	4B	28	34.0	M25x1.0	12.0	35.7	2.5	34.1	23.5	30
EGG	5B	40	40.0	M35x1.0	11.0	43.5	3.0	39.6	33.5	

Note: 1) maximum length with crimp contacts.
The 5B series is delivered with a tapered washer and a round nut.

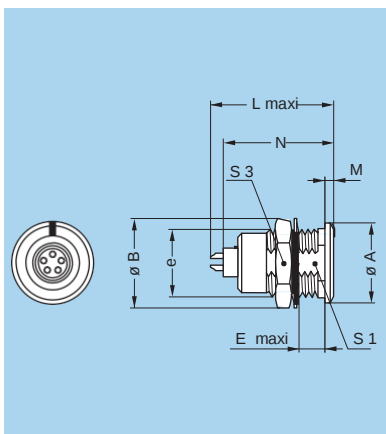


ENG Fixed socket with earthing tag, nut fixing, key (G) or keys (A...M)

Reference		Dimensions (mm)								
Model	Series	A	B	e	E	L	M	N ¹⁾	S1	S3
ENG	00	8	10.2	M7x0.5	6.0	15.5	1.0	13.7	6.3	9
ENG	0B	10	12.4	M9x0.6	7.0	20.7	1.2	19.1	8.2	11
ENG	1B ²⁾	14	15.8	M12x1.0	7.5	23.0	1.5	21.1	10.5	14
ENG	2B	18	19.2	M15x1.0	8.5	26.7	1.8	24.6	13.5	17
ENG	3B	22	25.0	M18x1.0	11.5	30.7	2.0	28.1	16.5	22
ENG	4B	28	34.0	M25x1.0	12.0	35.7	2.5	34.1	23.5	30

P1 Panel cut-out (page 152)

Note: ¹⁾ maximum length with crimp contacts.
²⁾ for the 1B series the earthing tag is on the same side of the key.

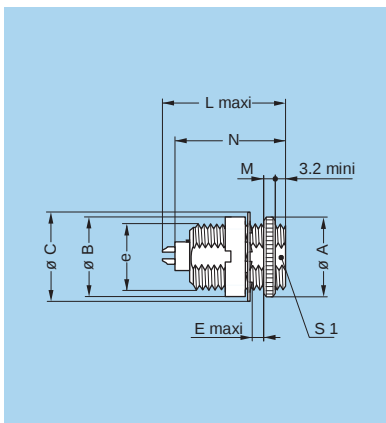


EKG Fixed socket, nut fixing, key (G) or keys (A...L and R), special alignment mark on the front

Reference		Dimensions (mm)								
Model	Series	A	B	e	E	L	M	N ¹⁾	S1	S3
EKG	2B	18	19.2	M15x1.0	8.5	26.7	1.8	24.6	13.5	17
EKG	3B	22	25.0	M18x1.0	11.5	30.7	2.0	28.1	16.5	22
EKG	4B	28	34.0	M25x1.0	12.0	35.7	2.5	34.1	23.5	30
EKG	5B	40	40.0	M35x1.0	11.0	43.5	3.0	39.6	33.5	—

P1 Panel cut-out (page 152)

Note: ¹⁾ maximum length with crimp contacts.
The 5B series is delivered with a tapered washer and a round nut.



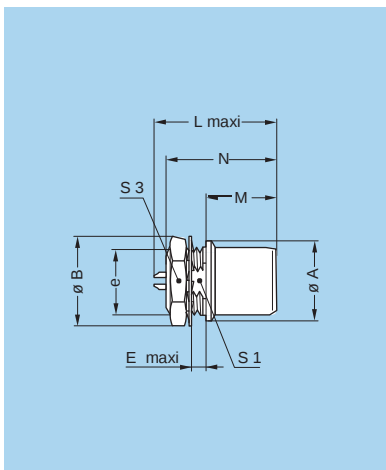
ESG Fixed socket with two round nuts, key (G) or keys (A...L), long threaded shell (back panel mounting)

Reference		Dimensions (mm)								
Model	Series	A	B	C	e	E	L	M	N ¹⁾	S1
ESG	00	9	9	9.5	M7x0.5	3.2	15.5	2	13.7	—
ESG	1B	14	14	16.0	M12x1.0	8.0	23.0	2	21.1	10.5

P1 Panel cut-out 1B series (page 152)

P2 Panel cut-out 00 series (page 152)

Note: ¹⁾ maximum length with crimp contacts.

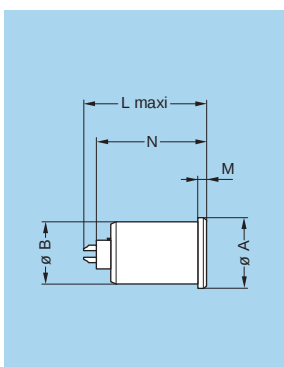


EHG Fixed socket, nut fixing, key (G) or keys (A...M and R), and protruding shell

Reference		Dimensions (mm)								
Model	Series	A	B	e	E	L	M	N ¹⁾	S1	S3
EHG	00	8.0	10.2	M7x0.5	2.0	15.5	8.5	13.7	6.3	9
EHG	0B	10.0	12.4	M9x0.6	2.0	19.5	12.5	19.1	8.2	11
EHG	1B	14.0	15.8	M12x1.0	4.0	21.7	12.0	21.1	10.5	14
EHG	2B	18.0	19.2	M15x1.0	5.1	22.7	12.5	24.6	13.5	17
EHG	3B	22.0	25.0	M18x1.0	7.1	30.7	13.5	30.3	16.5	22
EHG	5B	40.0	40.0	M35x1.0	2.5	43.5	28.0	38.5	33.5	—

P1 Panel cut-out (page 152)

Note: ¹⁾ maximum length with crimp contacts. The 5B series is delivered without locking washer or tapered washer and with a round nut.

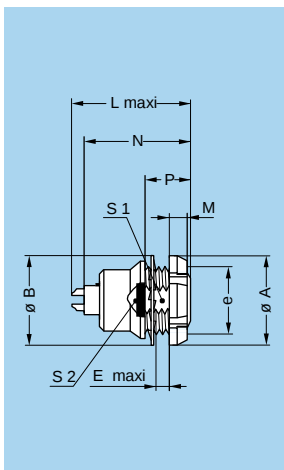


EJG Fixed socket, press or adhesive fit, key (G) or keys (A...M)

Reference		Dimensions (mm)				
Model	Series	A	B	L	M	N ¹⁾
EJG	0B	9.2	8.35	20.7	1.5	19.1
EJG	1B	12.5	11.20	23.0	1.5	21.1
EJG	2B	16.5	14.00	26.7	1.5	24.6

P5 Panel cut-out (page 152)

Note: ¹⁾ maximum length with crimp contacts.

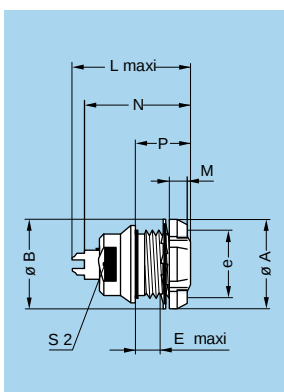


EEG Fixed socket, nut fixing, key (G) or keys (A...M and R) (back panel mounting)

Reference		Dimensions (mm)									
Model	Series	A	B	e	E	L	M	N ¹⁾	P	S1	S2
EEG	00	10	9.5	M7x0.5	2.3	15.5	2.5	13.7	6.0	6.3	7.5
EEG	0B	12	12.5	M9x0.6	2.4	20.7	2.5	19.1	6.3	8.2	9.0
EEG	1B	16	16.0	M12x1.0	6.5	23.0	3.5	21.1	11.0	10.5	13.0
EEG	2B	20	20.0	M15x1.0	4.3	26.7	3.5	24.6	9.0	13.5	15.0
EEG	3B	24	25.0	M18x1.0	6.1	30.7	4.5	28.1	12.0	16.5	20.0
EEG	5B	41	40.0	M35x1.0	13.5	43.5	5.0	39.6	19.5	33.5	38.0

P1 Panel cut-out (page 152)

Note: ¹⁾ maximum length with crimp contacts. The 3B and 5B series are delivered with a conical nut. The 5B series is delivered without locking washer or tapered washer.

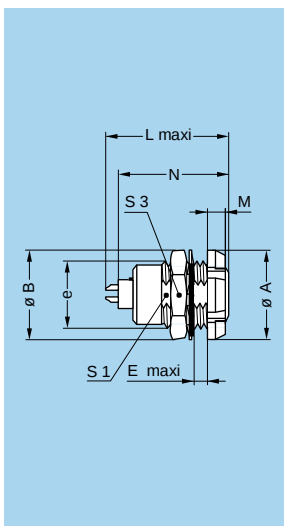


EFG Fixed socket, nut fixing, key (G) or keys (A...M), with two flats on the shell and O-ring (back panel mounting)

Reference		Dimensions (mm)								
Model	Series	A	B	e	E	L	M	N ¹⁾	P	S2
EFG	0B	12	12.5	M9x0.6	5.5	20.7	2.5	19.1	9	8

P2 Panel cut-out (page 152)

Note: ¹⁾ maximum length with crimp contacts.

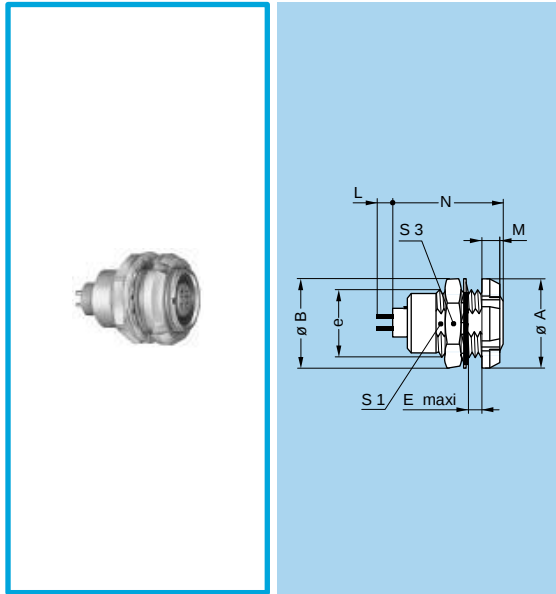


ECG Fixed socket with two nuts, key (G) or keys (A...M and R) (back panel mounting)

Reference		Dimensions (mm)								
Model	Series	A	B	e	E	L	M	N ¹⁾	S1	S3
ECG	00	10	10.2	M7x0.5	4.3	13.7	2.5	13.7	6.3	9
ECG	0B	12	12.4	M9x0.6	5.5	20.7	2.5	19.1	8.2	11
ECG	1B	16	15.8	M12x1.0	6.0	23.0	3.5	21.1	10.5	14
ECG	XB	18	19.0	M14x1.0	6.0	23.5	3.5	20.0	12.5	17
ECG	2B	20	19.2	M15x1.0	6.5	26.7	3.5	24.6	13.5	17
ECG	3B	24	25.0	M18x1.0	9.0	30.7	4.5	28.1	16.5	22
ECG	4B	30	34.0	M25x1.0	10.0	35.7	4.5	32.6	23.5	30
ECG	5B	41	40.0	M35x1.0	9.0	43.5	5.0	39.6	33.5	

P1 Panel cut-out (page 152)

Note: ¹⁾ maximum length with crimp contacts. The 3B, 4B and 5B series are delivered with a conical nut. The 5B series is delivered with a tapered washer and a round nut.



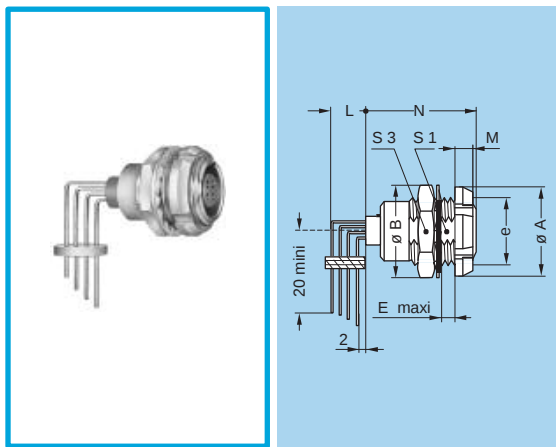
ECG Fixed socket with two nuts, key (G) or keys (A...F and R) and straight contact for printed circuit (back panel mounting)

Reference		Dimensions (mm)							
Model	Series	A	B	e	E	M	N	S1	S3
ECG	00	10	10.2	M7x0.5	4.3	2.5	13.7	6.3	9
ECG	0B	12	12.4	M9x0.6	5.5	2.5	16.1	8.2	11
ECG	1B	16	15.8	M12x1.0	6.0	3.5	19.8	10.5	14
ECG	XB	18	19.0	M14x1.0	6.0	3.5	20.0	12.5	17
ECG	2B	20	19.2	M15x1.0	6.5	3.5	21.8	13.5	17
ECG	3B	24	25.0	M18x1.0	9.0	4.5	25.8	16.5	22
ECG	4B	30	34.0	M25x1.0	10.0	4.5	29.8	23.5	30
ECG	5B	41	40.0	M35x1.0	9.0	5.0	36.8	33.5	—

P1 Panel cut-out (page 152)

P15 PCB drilling pattern (page 154)

Note: this contact type is available for E●● socket models fitted with female contacts. Length «L» depends on the number of contacts, see table on page 156. The 5B series is delivered with a tapered washer and a round nut. The 3B, 4B and 5B series are delivered with a conical nut.



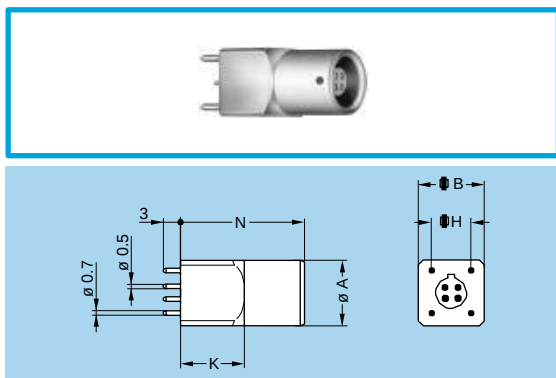
ECG Fixed socket with two nuts, key (G) or keys (A...F) with elbow (90°) contact for printed circuit (back panel mounting)

Reference		Dimensions (mm)							
Model	Series	A	B	e	E	M	N max	S1	S3
ECG	0B	12	12.4	M9x0.6	5.5	2.5	18.3	8.2	11
ECG	1B	16	15.8	M12x1.0	6.0	3.5	20.3	10.5	14
ECG	2B	20	19.2	M15x1.0	6.5	3.5	22.3	13.5	17
ECG	3B	24	25.0	M18x1.0	9.0	4.5	25.8	16.5	22

P1 Panel cut-out (page 152)

P17 PCB drilling pattern (page 157)

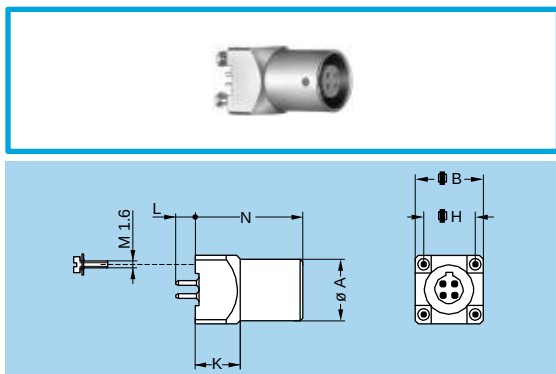
Note: this female contact type is available for all back panel mounting socket models. Length «L» depends on the number of contacts, see PCB drilling pattern on page 157. For male contacts, sockets are available upon request, with J, K or L keys. The 3B series is delivered with a conical nut.



EZG Straight socket for printed circuit, key (G) or keys (A, B)

Reference		Dimensions (mm)				
Model	Series	A	B	H	K	N
EZG	00	6.8	7	5.08	7	14

P15 + **P16** PCB drilling pattern (pages 154 and 156)

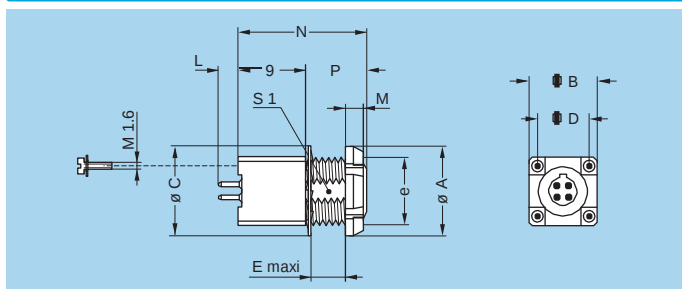


EZG Straight socket for printed circuit, key (G) or keys (A...F)

Reference		Dimensions (mm)				
Model	Series	A	B	H	K	N
EZG	0B	9	10	7.62	8	15.0
EZG	1B	11	12	7.62	8	19.0
EZG	2B	14	15	10.16	9	22.5

P15 + **P16** PCB drilling pattern (pages 154 and 156)

Note: Length «L» depends on the number of contacts, see table on page 156.



EYG Fixed socket for printed circuit, nut fixing, key (G) or keys (A...F) (back panel mounting)

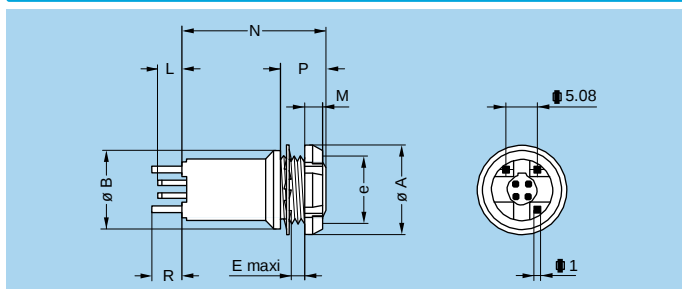
Reference		Dimensions (mm)									
Model	Series	A	B	C	D	e	E	M	N	P	S1
EYG	0B	12	10	12.5	7.62	M9x0.6	2.6	2.5	15.0	6.0	8.2
EYG	1B	14	12	16.0	7.62	M11x0.5	5.0	3.5	19.0	10.0	—
EYG	2B	20	15	19.5	10.16	M15x1.0	7.5	3.5	22.5	13.5	13.5

P1 Panel cut-out 0B and 2B series (page 152)

P10 Panel cut-out 1B series (page 152)

P15 + **P16** PCB drilling pattern (pages 154 and 156)

Note: Length «L» depends on the number of contacts, see page 156.



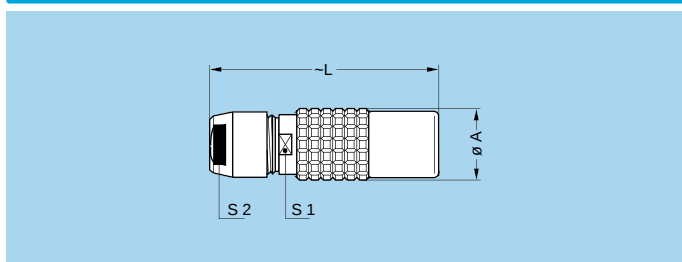
XPF Fixed socket, nut fixing, long shell, keys (F) for printed circuit (back panel mounting)

Reference		Dimensions (mm)							
Model	Series	A	B	e	E	M	N	P	R
XPF	0B	12	11	M9x0.6	1.5	2.5	19	5	4

P2 Panel cut-out (page 152)

P15 + **P16** PCB drilling pattern (pages 154 and 156)

Note:
Length «L» depends on the number of contacts, see table on page 156.

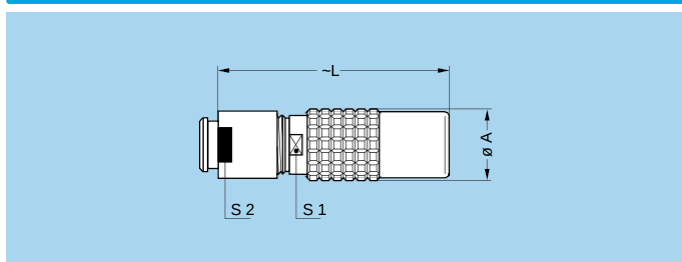
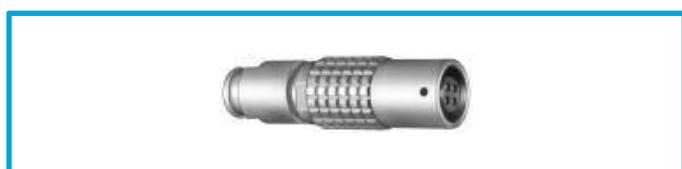


PHG Free socket, key (G) or keys (A...M and R), cable collet

Reference		Dimensions (mm)			
Model	Series	A	L	S1	S2
PHG	00 ¹⁾	6.8	26.0	5.5	5
PHG	0B	9.5	35.5	8.0	7
PHG	1B	12.5	40.5	10.0	9
PHG	XB	13.0	46.0	11.0	10
PHG	2B	16.5	47.0	13.0	12
PHG	3B	19.0	56.0	15.0	14
PHG	4B	26.0	73.0	21.0	20
PHG	5B	36.0	99.0	31.0	30

M1
Cable assembly
(page 161)

Note:
¹⁾ the surface design of the 00 series is different.



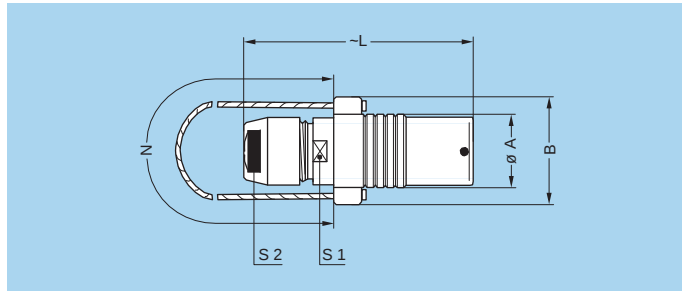
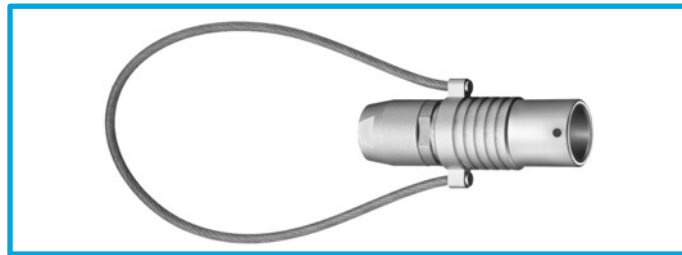
PHG Free socket, key (G) or keys (A...M), cable collet and nut for fitting a bend relief ²⁾

Reference		Dimensions (mm)			
Model	Series	A	L	S1	S2
PHG	00 ¹⁾	6.8	34.0	5.5	6
PHG	0B	9.5	34.5	8.0	7
PHG	1B	12.5	39.5	10.0	9
PHG	XB	13.0	49.5	11.0	10
PHG	2B	16.5	46.0	13.0	12
PHG	3B	19.0	54.5	15.0	15
PHG	4B	26.0	69.0	21.0	20

M1
Cable assembly
(page 161)

Note:
¹⁾ the surface design of the 00 series is different.
²⁾ to order, add a «Z» at the end of the reference.

Note: The bend relief must be ordered separately (see page 141).

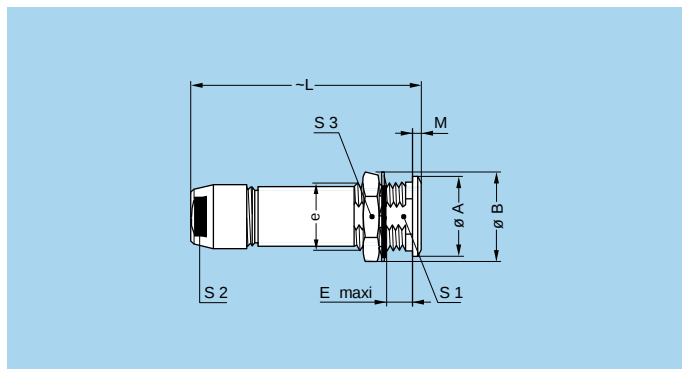
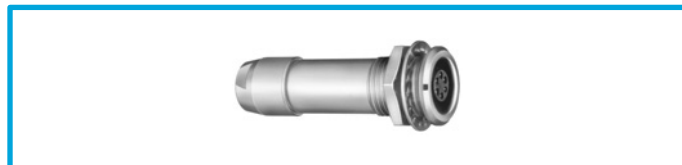


PNG Free socket, nut fixing, key (G) or keys (A...L and R), cable collet with lanyard release

Reference		Dimensions (mm)					
Model	Series	A	B	L	N	S1	S2
PNG	1B	12.4	18.4	40.5	140	10	9
PNG	2B	16.5	22.5	47.0	160	13	12
PNG	3B	19.0	26.0	56.0	190	15	14
PNG	4B	26.0	33.0	73.0	230	21	20
PNG	5B	36.0	43.0	99.0	300	31	30

M1 Cable assembly (page 161)

Note: cable material: stainless steel with Polyamide sheath



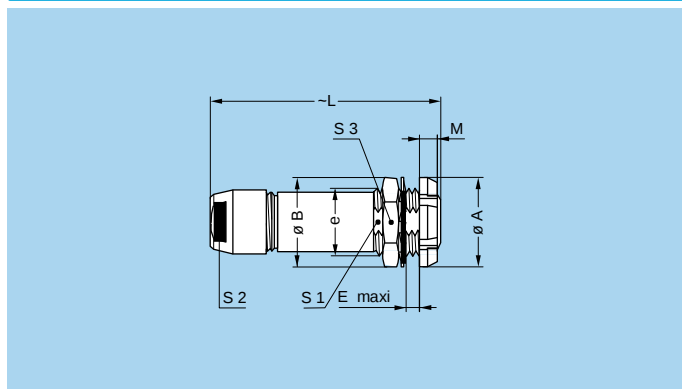
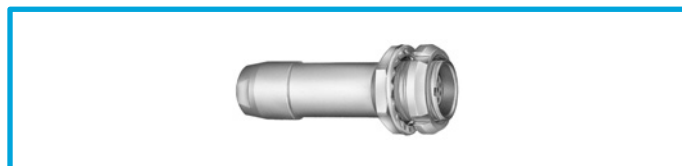
PKG Fixed socket, nut fixing, key (G) or keys (A...M and R), cable collet

Reference		Dimensions (mm)								
Model	Series	A	B	e	E	L	M	S1	S2	S3
PKG	00	8	10.2	M7x0.5	6.5	26.0	1.0	6.3	5	9
PKG	0B	10	12.4	M9x0.6	7.0	35.5	1.2	8.2	7	11
PKG	1B	14	15.8	M12x1.0	7.5	40.5	1.5	10.5	9	14
PKG	2B	18	19.2	M15x1.0	8.5	47.0	1.8	13.5	12	17
PKG	3B	22	25.0	M18x1.0	11.5	56.0	2.0	16.5	14	22
PKG	4B	28	34.0	M25x1.0	12.0	73.0	2.5	23.5	20	30
PKG	5B	40	40.0	M35x1.0	11.0	99.0	3.0	33.5	30	—

P1 Panel cut-out (page 152)

M1 Cable assembly (page 161)

Note: the 5B series is delivered with a tapered washer and a round nut.



PFG 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
PFG	00	10	10.2	M7x0.5	5.3	26.0	2.5	6.3	5	9
PFG	0B	12	12.4	M9x0.6	5.0	35.5	2.5	8.2	7	11
PFG	1B	16	15.8	M12x1.0	5.0	40.5	3.5	10.5	9	14
PFG	2B	20	19.2	M15x1.0	6.5	47.0	3.5	13.5	12	17
PFG	3B	24	25.0	M18x1.0	9.0	56.0	4.5	16.5	14	22
PFG	4B	30	34.0	M25x1.0	11.0	73.0	4.5	23.5	20	30
PFG	5B	41	40.0	M35x1.0	10.0	99.0	5.0	33.5	30	–

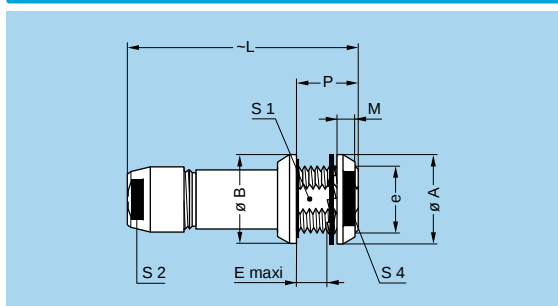
P1 Panel cut-out (page 152)

M1 Cable assembly (page 161)

Note: the 3B, 4B and 5B series are delivered with a conical nut. The 5B series is delivered with a tapered washer and a round nut.



PEG Fixed socket, nut fixing, key (G) or keys (A...L), cable collet (back panel mounting)



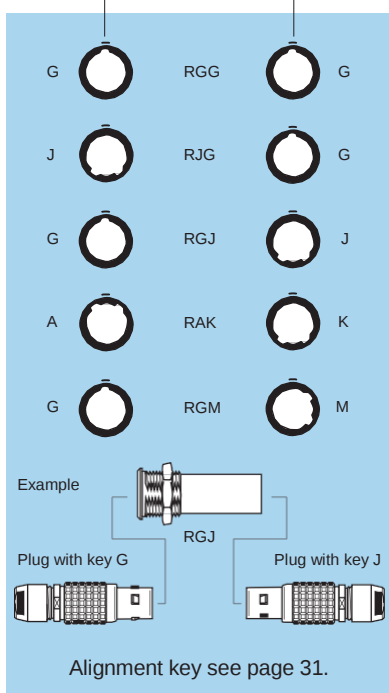
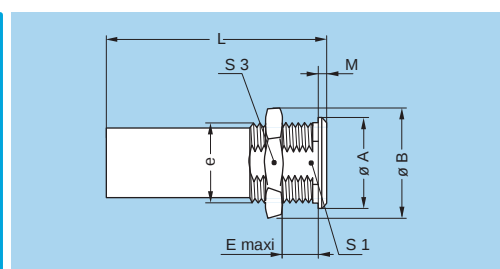
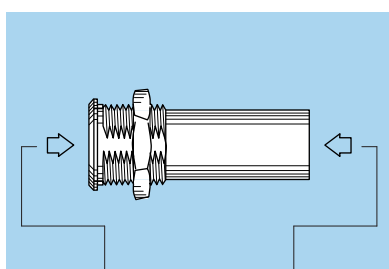
Reference		Dimensions (mm)									
Model	Series	A	B	e	E	L	M	S1	S2	S4	P
PEG	3B	24	25	M18x1.0	5.0	56	4.5	16.5	14	20	12
PEG	4B	32	34	M25x1.0	12.5	73	5.0	23.5	20	27	20

P1 Panel cut-out (page 152)

M1 Cable assembly (page 161)

Note: the 4B series has an o-ring on the flange.

R Fixed coupler, nut fixing, key (G) or keys (A and J) at the flange end and keys (J, K or M) at the other end



Reference		Contacts	Dimensions (mm)							
Model	Series	Type	A	B	e	E	L	M	S1	S3
RGG ¹⁾	0B	female – female	12	13.8	M10x0.75	8.0	34	2.0	9.0	12
RGG ²⁾	0B	female – female	12	13.8	M10x0.75	8.0	43	2.0	9.0	12
RJG	0B	male – female	12	13.8	M10x0.75	8.0	34	2.0	9.0	12
RGJ		female – male								
RAK		female – male								
RGM		female – male								
RGG ³⁾	1B	female – female	16	19.2	M14x1.00	8.5	47	2.5	12.5	17
RJG	1B	male – female	16	19.2	M14x1.00	8.5	39	2.5	12.5	17
RGJ		female – male								
RJG	2B	male – female	20	21.5	M16x1.00	12.0	44	4.0	15.0	19
RGJ		female – male								
RGJ	3B	female – male	25	27.0	M20x1.00	32.0	53	4.0	18.5	24
RGJ	4B	female – male	34	34.0	M25x1.00	50.0	65	4.0	23.5	30

P4 Panel cut-out (page 152)

Note:

¹⁾ only available with two contacts.

²⁾ RGG.0B only available from 3 till 5 contacts.

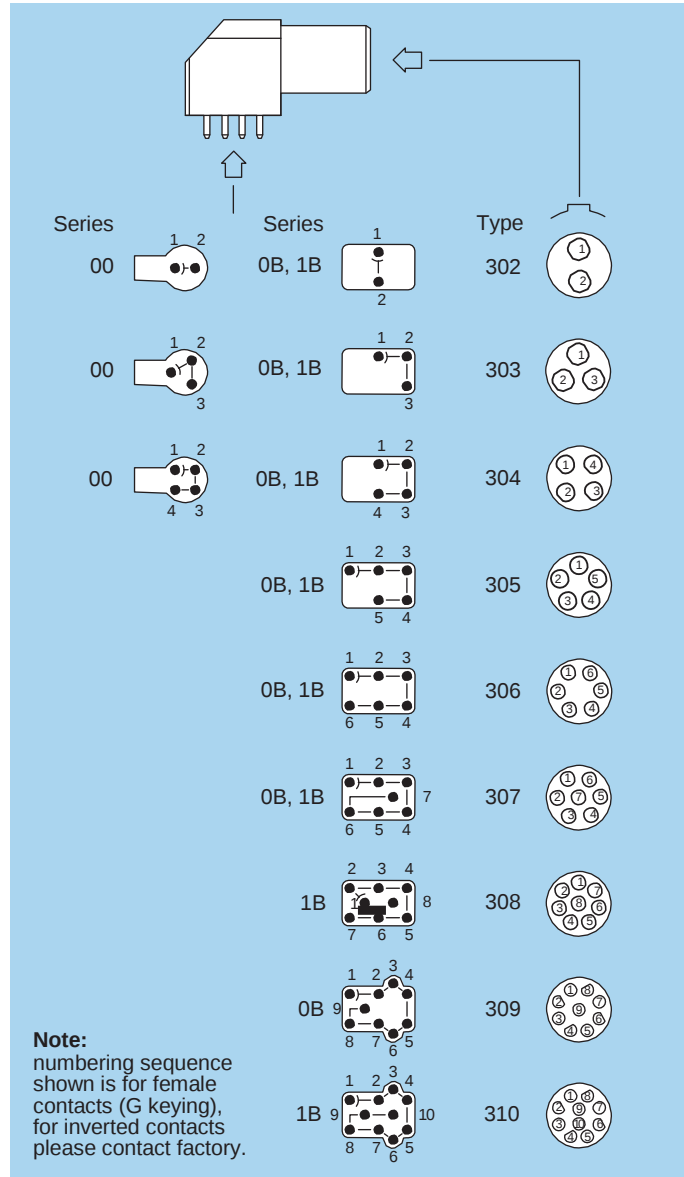
³⁾ RGG.1B only available till 7 contacts.

For this fixed coupler, the first contact type mentioned is always the one at the flange end. On request, these couplers can be produced in other series, with other keys.

Elbow socket models

Technical Characteristics

Types



Materials and Treatment

Component	Material	Surface treat. (µm)		
		Cu	Ni	Au
Housing	PPS	–		
	Brass	0.5	3	–
Metallic parts	Brass	0.5	3	–
Earthing crown	Bronze	0.5	3	–
Insulator	PEEK	–		
Female contact	Bronze	0.5	3	1.5

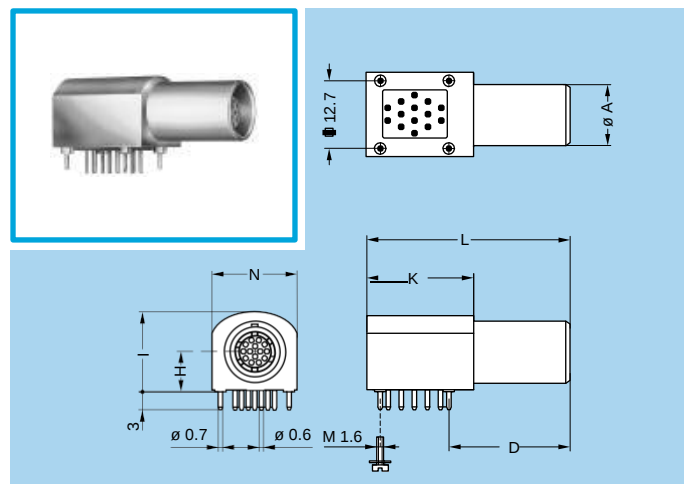
Note:

The surface treatment standards are as follows:

– Nickel: SAE AMS QQ N 290. – Gold: ISO 27874

Electrical

Model	Series	Types	Test voltage (kV rms) ¹⁾ Contact-contact	Test voltage (kV rms) ¹⁾ Contact-shell	Rated current (A) ¹⁾
EPG-XBG	00	302-303-304	1.00	1.00	2.0
EPG-EXG	0B	302	1.45	1.20	4.5
EPG-EXG	0B	303	1.70	1.60	4.5
EPG-EXG	0B	304	1.30	1.10	4.5
EPG-EXG	0B	305	1.25	1.20	4.5
EPG-EXG	0B	306	1.25	1.20	2.5
EPG-EXG	0B	307	1.00	1.00	2.0
EPG-EXG	0B	309	1.00	1.10	1.5
EPG-EXG	1B	302	1.70	1.45	4.5
EPG-EXG	1B	303	1.60	1.85	4.5
EPG-EXG	1B	304	1.70	1.80	4.5
EPG-EXG	1B	305	1.30	1.55	4.5
EPG-EXG	1B	306	1.35	1.45	4.5
EPG-EXG	1B	307	1.45	1.45	2.0
EPG-EXG	1B	308	1.30	1.30	2.0
EPG-EXG	1B	310	1.00	1.00	1.5
EPG	1B	314	1.00	1.30	1.0

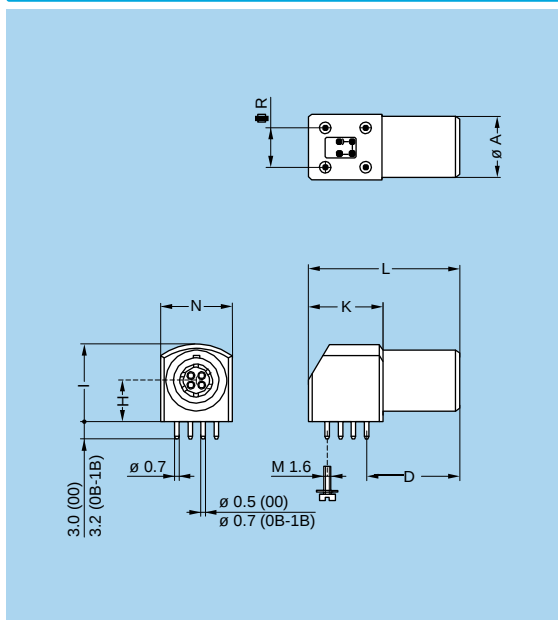


EPG Elbow (90°) socket for printed circuit, key (G) or keys (A...F) (solder or screw fixing)

Reference	Dimensions (mm)						
	A	D	H	I	K	L	N
EPG.1B.314.NLN	11	21	7.7	14.3	19	36	15.4

P20 PCB drilling pattern (page 158)

Note: to replace the 4 ground pins by 4 screws (M1.6) add an «S» to the end of the part number. (e.g.: EPG.1B.314.NLNS)



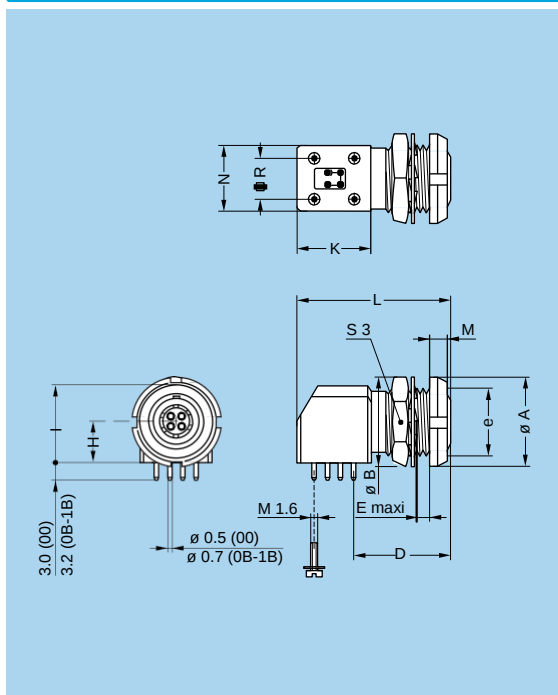
EPG Elbow (90°) socket for printed circuit, key (G) or keys (A...F) (solder or screw fixing)

Reference	Dimensions (mm)							
	A	D	H	I	K	L	N	R
EPG.00.302.HLN								
EPG.00.303.HLN	6.8	11.5	3.5	7.0	8.7	19	7.1	5.08
EPG.00.304.HLN								
EPG.0B.302.HLN								
EPG.0B.303.HLN								
EPG.0B.304.HLN								
EPG.0B.305.HLN	9.0	14.6	6.7	12.6	13.3	25	11.7	7.62
EPG.0B.306.HLN								
EPG.0B.307.HLN								
EPG.0B.309.HLN								
EPG.1B.302.HLN								
EPG.1B.303.HLN								
EPG.1B.304.HLN								
EPG.1B.305.HLN	11.0	16.6	7.5	14.0	13.3	27	12.6	7.62
EPG.1B.306.HLN								
EPG.1B.307.HLN								
EPG.1B.308.HLN								
EPG.1B.310.HLN								

P18 PCB drilling pattern 00 series (page 158)

P19 PCB drilling pattern 0B, 1B series (page 158)

Note: In the 0B and 1B series, it is possible to replace the 4 ground pins by 4 screws (M1.6) add an «S» to the end of the part number. (e.g.: EPG.0B.307.HLNS)



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

XBG Elbow (90°) socket fixing nut for printed circuit, key (G) or keys (A, B) (back panel mounting)

Reference	Dimensions (mm)												
	A	B	D	e	E	H	I	K	L	M	N	R	S3
XBG.00.302.HLN													
XBG.00.303.HLN	10	10.2	11.5	M7x0.5	2.1	3.5	7.0	8.7	19	2.5	7.1	5.08	9
XBG.00.304.HLN													
EXG.0B.302.HLN													
EXG.0B.303.HLN													
EXG.0B.304.HLN													
EXG.0B.305.HLN	12	12.4	14.6	M9x0.6	4.5	6.7	12.6	13.3	25	2.5	11.7	7.62	11
EXG.0B.306.HLN													
EXG.0B.307.HLN													
EXG.0B.309.HLN													
EXG.1B.302.HLN													
EXG.1B.303.HLN													
EXG.1B.304.HLN													
EXG.1B.305.HLN	14	15.0	16.6	M11x0.5	7.5	7.5	14.0	13.3	27	3.5	12.6	7.62	13
EXG.1B.306.HLN													
EXG.1B.307.HLN													
EXG.1B.308.HLN													
EXG.1B.310.HLN													

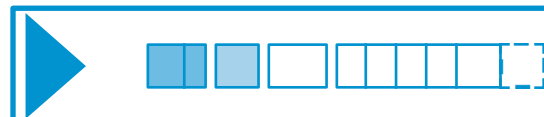
P2 Panel cut-out 00, 0B series (page 152)

P10 Panel cut-out 1B series (page 152)

P18 PCB drilling pattern 00 series (page 158)

P19 PCB drilling pattern 0B, 1B series (page 158)

Note: In the 0B and 1B series, it is possible to replace the 4 ground pins by 4 screws (M1.6) add an «S» to the end of the part number. (e.g.: EXG.0B.307.HLNS).



Plastic housing models

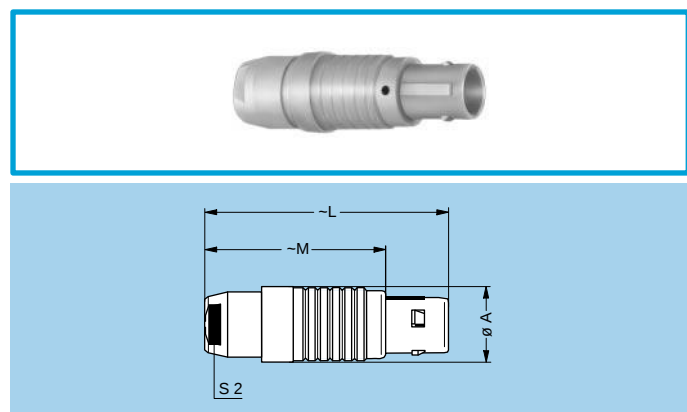
These connectors are particularly recommended for all applications requiring maximum electrical insulation when mated. The design, including a latch sleeve and a metal earthing crown, guarantees EMC screening efficiency to meet most requirements.

Technical Characteristics

Mechanical and Climatical

Characteristics	Value			Standard
	PEEK	PSU	PPSU	
Colour	natural (beige)	white or grey	cream	—
Endurance	> 5000 cycles	> 5000 cycles	> 5000 cycles	IEC 60512-5 test 9a
Humidity	up to 95% at 60° C			—
Temperature range	- 50° C/+250° C	- 50° C/+150° C	- 50° C/+180° C	—
Sterilization resistance ¹⁾	> 200 cycles	~20 cycles	> 100 cycles	IEC 60601-1 § 44.7
Resistance to solvents	very good	limited	good	—

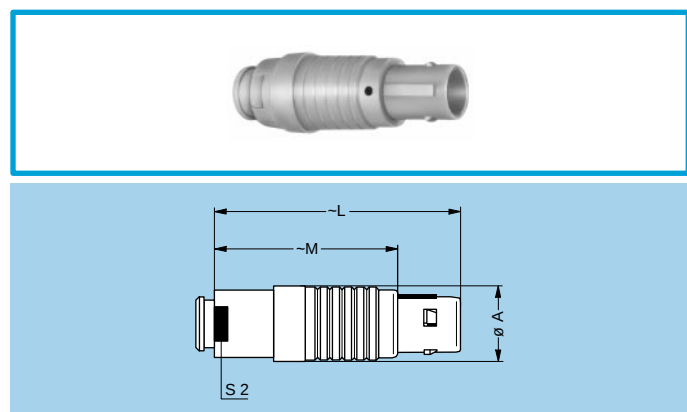
Note: ¹⁾ Steam sterilization



FGG Straight plug, key (G or J), cable collet, PEEK outer shell

Reference		Dimensions (mm)			
Model	Series	A	L	M	S2
FGG	1B	13.5	43.0	32.0	10
FGG	3B	19.0	62.0	47.0	15
FGG	4B	26.0	78.5	60.5	20

M1 Cable assembly (page 161)



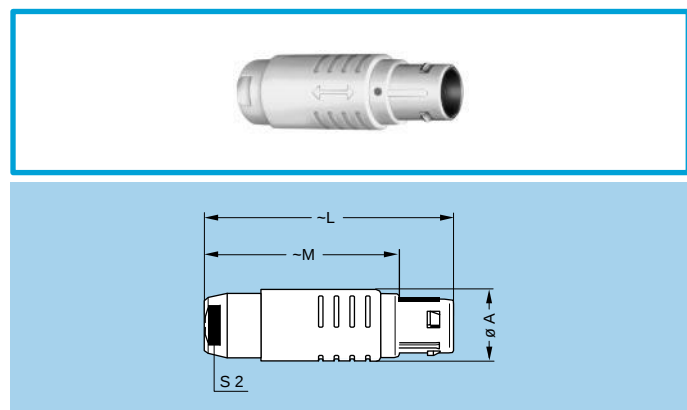
FGG Straight plug, key (G or J), cable collet, PEEK outer shell and nut for fitting a bend relief ¹⁾

Reference		Dimensions (mm)				Note on availability
Model	Series	A	L	M	S2	
FGG	1B	13.5	42.2	31.2	10	for all collet type
FGG	4B	26.0	83.2	65.2	20	only from collet M82 and up

M1 Cable assembly (page 161)

Note: ¹⁾ to order, add a «Z» at the end of the reference.

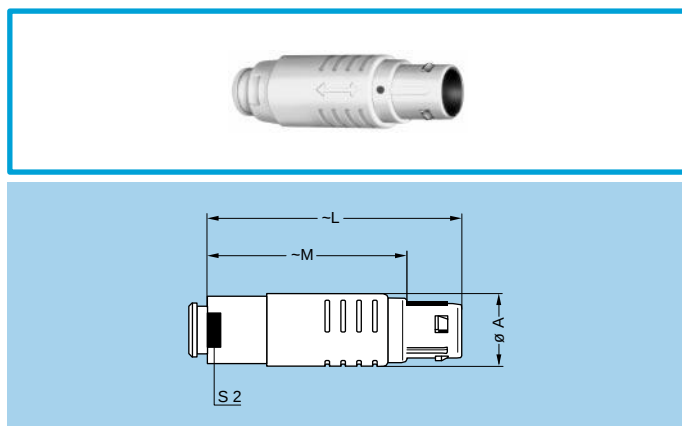
The bend relief must be ordered separately (see page 141).



FGY Straight plug, keys (Y), cable collet and PSU or PPSU outer shell

Reference		Dimensions (mm)			
Model	Series	A	L	M	S2
FGY	2B	16.5	50.5	39.5	13
FGY	3B	19.0	58.0	43.0	15
FGY	4B	26.0	76.2	58.2	20

M1 Cable assembly (page 161)



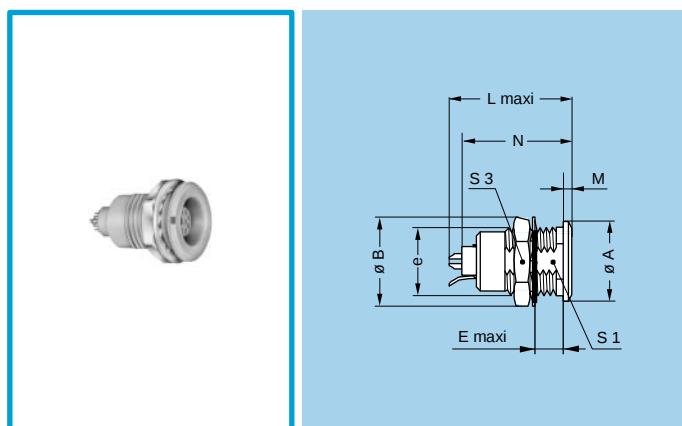
FGY Straight plug, keys (Y), cable collet and PSU or PPSU outer shell and nut for fitting a bend relief ¹⁾

Reference		Dimensions (mm)				Note on availability
Model	Series	A	L	M	S2	
FGY	2B	16.5	49.5	38.5	13	only for collet M42 and up
FGY	3B	19.0	56.5	41.5	15	only for collet D62 and up
FGY	4B	26.0	74.4	56.4	20	only for collet M82 and up

M1 Cable assembly (page 161)

Note: ¹⁾ to order, add a «Z» at the end of the reference.

The bend relief must be ordered separately (see page 141).

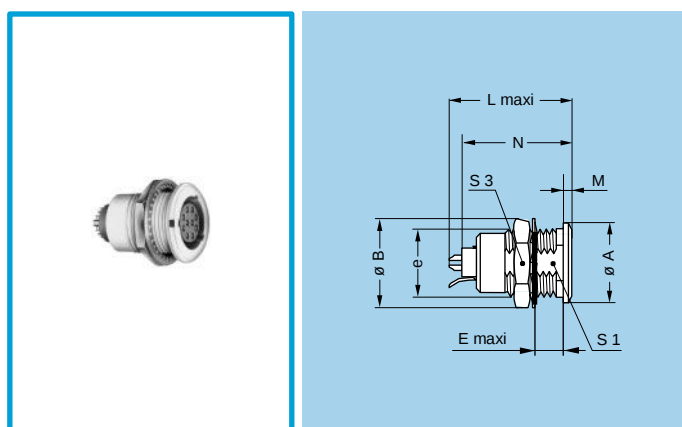


ENG Fixed socket with earthing tag, nut fixing, key (G or J), PEEK outer shell

Reference		Dimensions (mm)								
Model	Series	A	B	e	E	L	M	N ¹⁾	S1	S3
ENG	1B	14	15.8	M12x1.0	7.5	23.0	1.5	21.1	10.5	14
ENG	3B	22	25.0	M18x1.0	11.5	30.7	2.0	28.1	16.5	22
ENG	4B	28	34.0	M25x1.0	12.0	35.7	2.5	32.6	23.5	30

P1 Panel cut-out (page 152)

Note: ¹⁾ maximum length with crimp contacts.



ENY Fixed socket with earthing tag, nut fixing, keys (Y), PSU or PPSU outer shell

Reference		Dimensions (mm)								
Model	Series	A	B	e	E	L	M	N ¹⁾	S1	S3
ENY	2B	18	19.2	M15x1.0	8.5	26.7	1.8	24.6	13.5	17
ENY	3B	22	25.0	M18x1.0	11.5	30.7	2.0	28.1	16.5	22
ENY	4B	28	34.0	M25x1.0	12.0	35.7	2.5	32.6	23.5	30

P1 Panel cut-out (page 152)

Note: ¹⁾ maximum length with crimp contacts.

Note: other models with plastic outer shell are available on request.

Watertight or vacuumtight models

These plug, socket and coupler models allow the device on which they are fitted to reach a protection index of IP68 as per IEC 60529. They are fully compatible with plugs of the same series and are widely used for portable radios, military, laboratory equipment, aviation, etc.

These models are identified by a letter «P» at the end of the reference.

Most of these models are also available in a vacuumtight version. Such models are identified by an additional letter «V» at the end of the part number (certificate on request).

Epoxy resin is used to seal these models.

Technical Characteristics

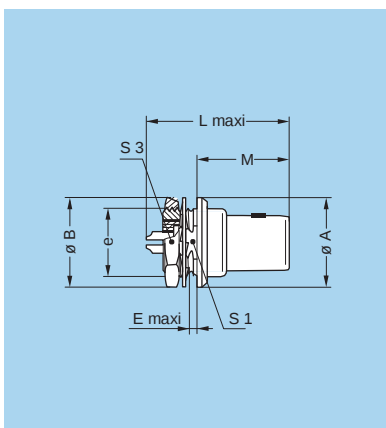
Mechanical and Climatical

Characteristics	Value	Standard
Endurance	> 5000 cycles	IEC 60512-5 test 9a
Humidity	up to 95% at 60° C	
Temperature range (00 to 1B)	- 20° C/+100° C	
Temperature range (2B to 5B)	- 20° C/+80° C	
Salt spray corrosion test	> 1000h	IEC 60512-6 test 11f
Climatical category	20/80/21	IEC 60068-1
Leakage rate (He) ¹⁾	< 10 ⁻⁷ mbar.l.s ⁻¹	IEC 60512-7 test 14b

Note: ¹⁾ only for vacuumtight models.

Characteristics	Value	Standard
Maximum operating pressure ²⁾	00 60 bar	IEC 60512-7 test 14d
	0B 60 bar	
	1B 60 bar	
	2B 40 bar	
	3B 30 bar	
	4B 15 bar	
	5B 5 bar	

Note: ²⁾ this value corresponds to the maximum allowed pressure difference for the assembled socket.

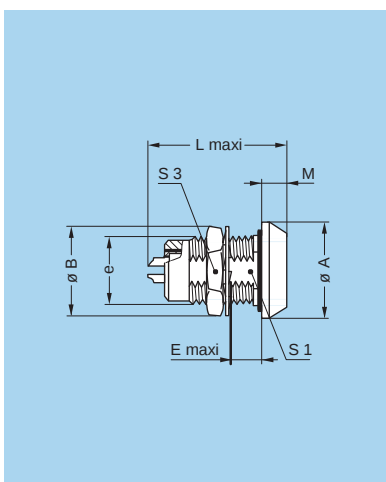


YHG Fixed plug, nut fixing, non-latching, key (G) or keys (A...M)

Reference		Dimensions (mm)							
Model	Series	A	B	e	E	L	M	S1	S3
YHG	0B	13.0	12.4	M9x0.6	2.4	24.1	14.2	8.2	11
YHG	1B	16.0	15.8	M12x1.0	3.9	28.0	16.2	10.5	14
YHG	2B	19.0	19.2	M15x1.0	5.5	33.1	17.8	13.5	17
YHG	3B	22.0	25.0	M18x1.0	5.1	38.2	22.2	16.5	22

P9 Panel cut-out (page 152)

Note: this model does not include an O-ring behind the flange, it ensures only IP61 protection index. Consequently, it is not vacuumtight. Watertightness (when mated) is only ensured with HHG and HCG sockets.



HGG Fixed socket, nut fixing, key (G) or keys (A...M and R), watertight or vacuumtight

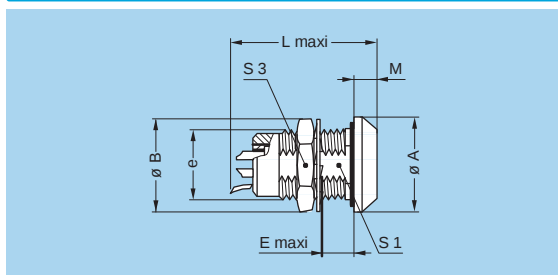
Reference		Dimensions (mm)							
Model	Series	A	B	e	E	L	M	S1	S3
HGG	00	11	10.2	M7x0.5	8.0	18.0	1.5	—	9
HGG	0B	13	12.4	M9x0.6	7.0	21.5	3.0	8.2	11
HGG	1B	18	15.8	M12x1.0	7.0	26.6	4.5	10.5	14
HGG	2B	20	19.2	M15x1.0	8.0	31.6	4.0	13.5	17
HGG	3B	25	25.0	M18x1.0	11.5	36.1	4.0	16.5	22
HGG	4B	34	34.0	M25x1.0	11.0	43.1	4.0	23.5	30
HGG	5B	45	40.0	M35x1.0	11.0	53.6	5.0	33.5	—

P9 Panel cut-out (page 152)

Note: the 5B series is delivered with a tapered washer and a round nut.



HNG Fixed socket, nut fixing, with earthing tag, key (G) or keys (A...M), watertight or vacuumtight

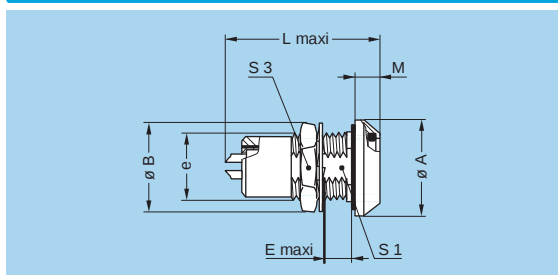


Reference		Dimensions (mm)							
Model	Series	A	B	e	E	L	M	S1	S3
HNG	0B	13	12.4	M9x0.6	7	21.5	3	8.2	11

P9 Panel cut-out (page 152)



HHG Fixed socket, nut fixing, key (G) or keys (A...M), watertight or vacuumtight (watertight when mated)



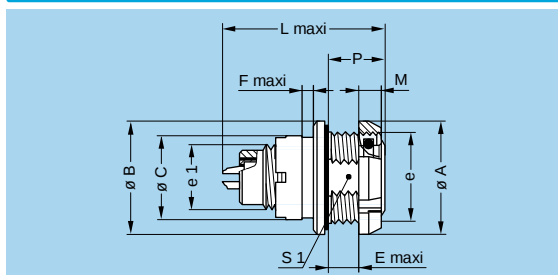
Reference		Dimensions (mm)							
Model	Series	A	B	e	E	L	M	S1	S3
HHG	0B	13	12.4	M9x0.6	7.0	24.5	4.8	8.2	11
HHG	1B	18	15.8	M12x1.0	7.0	30.3	5.2	10.5	14
HHG	2B	22	19.2	M15x1.0	8.0	35.6	6.0	13.5	17
HHG	3B	25	25.0	M18x1.0	11.5	41.3	7.2	16.5	22

P9 Panel cut-out (page 152)

Note: this model ensures watertightness (IP66) in the mating area when mated with FGG or similar plug.



HCG Fixed socket, nut fixing, key (G) or keys (A...M), watertight or vacuumtight (watertight when mated) (back panel mounting)



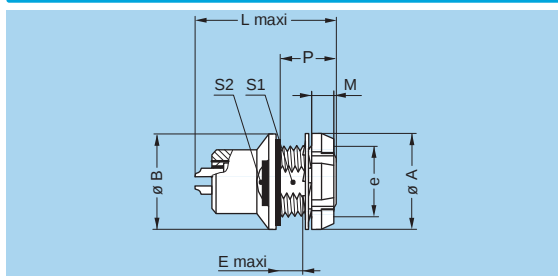
Reference		Dimensions (mm)										
Model	Series	A	B	C	e	e1	E	F	L	M	P	S1
HCG	0B	18	18	12.0	M14x1.0	M9x0.6	3.9	1.0	24.5	3.5	7.5	12.5
HCG	1B	20	20	14.5	M16x1.0	M12x1.0	6.2	2.0	30.3	3.5	10.0	14.5
HCG	2B	24	24	17.5	M19x1.0	M14x1.0	6.7	1.5	35.6	3.5	11.3	17.0

P3 Panel cut-out (page 152)

Note: this model ensures watertightness (IP66) in the mating area when mated with FGG or similar plug.

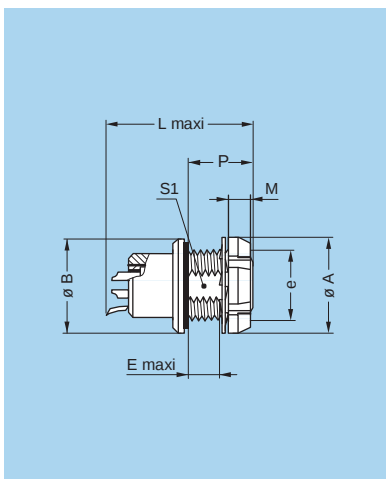


HEG Fixed socket, nut fixing, key (G) or keys (A...M), watertight or vacuumtight (back panel mounting)



Reference		Dimensions (mm)								
Model	Series	A	B	e	E	L	M	P	S1	S2
HEG	00	10	11	M7x0.5	2.5	18.2	2.5	6.0	6.3	–
HEG	0B	12	13	M9x0.6	5.5	21.5	2.5	9.0	8.2	–
HEG	1B	16	18	M12x1.0	6.5	26.6	3.5	11.0	10.5	–
HEG	2B	20	20	M15x1.0	5.0	31.6	3.5	9.6	13.5	15

P9 Panel cut-out (page 152)



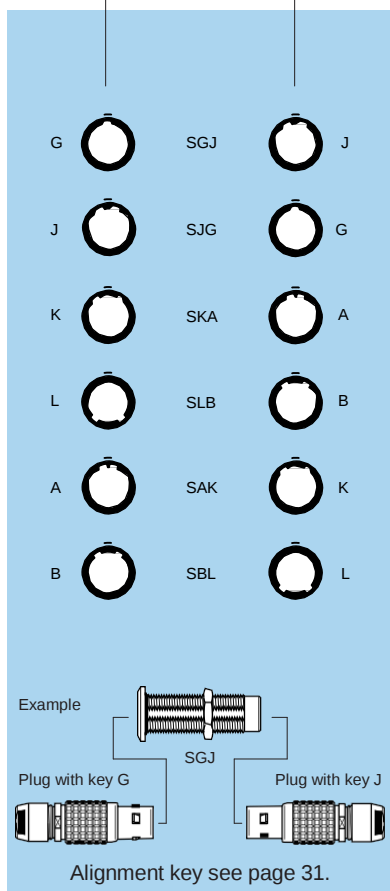
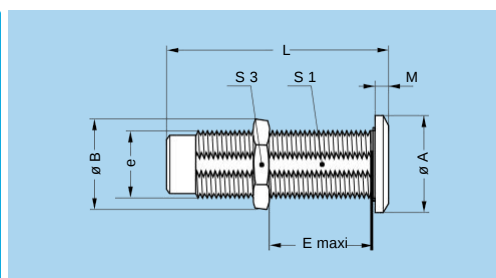
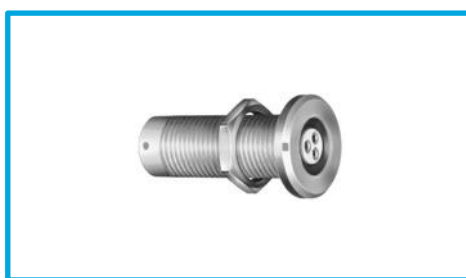
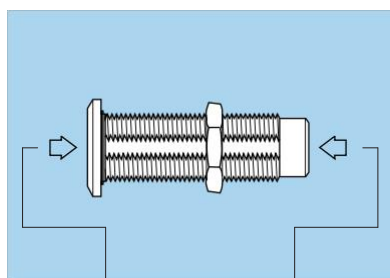
HMG Fixed socket with earthing tag, nut fixing, key (G) or keys (A...M), watertight or vacuumtight (back panel mounting)

Reference		Dimensions (mm)							
Model	Series	A	B	e	E	L	M	P	S1
HMG	00	10	11	M7x0.5	2.5	18.0	2.5	6.0	6.3
HMG	0B	12	13	M9x0.6	5.5	21.5	2.5	9.0	8.2
HMG	1B	16	18	M12x1.0	5.5	26.6	3.5	11.0	10.5
HMG	2B ¹⁾	20	20	M15x1.0	5.5	31.6	3.5	9.6	13.5
HMG	3B	24	25	M18x1.0	7.5	36.1	4.5	14.0	16.5

P9 Panel cut-out (page 152)

Note: ¹⁾ the surface design of the 2B series is different.
The 3B series is delivered with a conical nut.

S Fixed coupler, nut fixing, key (G) or keys (A, B, J, K and L) at the flange end and key (G) or keys (A, B, J, K and L) at the other end, watertight or vacuumtight



Reference		Contacts	Dimensions (mm)							
Model	Series	Type	A	B	e	E	L	M	S1	S3
SGJ	0B	female – male	14	13.8	M10x0.75	17	34	2.0	9.0	12
SJG		male – female								
SGJ	1B	female – male	17	15.8	M12x1.00	28	39	2.5	10.5	14
SJG		male – female								
SGJ	2B	female – male	20	21.5	M16x1.00	25	44	4.0	15.0	19
SJG		male – female								
SGJ	3B	female – male	25	27.0	M20x1.00	30	53	4.0	18.5	24
SJG		male – female								
SAK		female – male								
SBL		female – male								
SGJ	4B	female – male	34	34.0	M25x1.00	50	65	4.0	23.5	30
SJG		female – male								
SJG		male – female								
SGJ		female – male								
SGJ	5B	female – male	45	40.0	M35x1.00	58	80	5.0	33.5	–
SJG		male – female								
SKA		male – female								
SLB		male – female								
SAK		female – male								
SBL		female – male								

P4 Panel cut-out (page 152)

P9 Panel cut-out 1B series (page 152)

Note: for this fixed coupler, the first contact type mentioned is always the one at the flange end.
On request these couplers can be produced in other series, with other keys.
The 5B series is delivered with a round nut.

Bridge models

Technical Characteristics

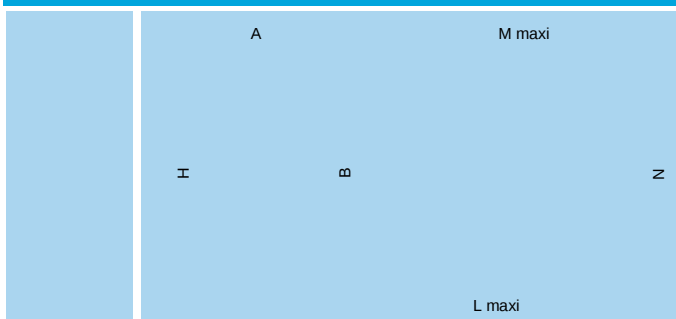
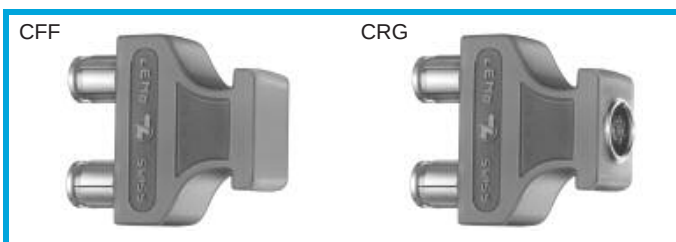
Mechanical and Climatical

Characteristics	Value	Standard
Endurance	> 1000 cycles	IEC 60512-5 test 9a
Working temperature	maximum 90° C	

Materials and Treatment

Component	Material	Surface treat. (µm)			
		Cu	Ni	Cr	Au
Plastic housing	Polyamide	–			
Metallic parts	Brass	0.5	3	–	–
	Brass	0.5	3	0.3	–
Insulator	PEEK	–			
Male contact	Brass	0.5	3	–	1.0
Female contact	Bronze	0.5	3	–	1.5

Note: the surface treatment standards are as follows:
– Nickel: SAE AMS QQ N 290, chrome: SAE AMS 2460, gold: ISO 27874



Electrical

Characteristics	Value	Standard
Contact resistance	< 6 mΩ	IEC 60512-2 test 2a

Reference	Series	Audio-Mono	Audio-Stereo	Test voltage (kV rms) ^{1) 2)}	Rated current (A)
CFF.0B.302.PLCG	0B	●	–	1.05	4
CRG.0B.302.PLEG	0B	●	–	1.05	4
CFF.0B.303.PLCG	0B	●	–	0.80	4
CRG.0B.303.PLEG	0B	●	–	0.80	4
CRG.0B.306.PLEG	0B	–	●	0.40	2
CFF.1B.303.PLCG	1B	●	–	1.25	5
CRG.1B.303.PLEG	1B	●	–	1.25	5
CFF.1B.306.PLCG	1B	–	●	0.80	3
CRG.1B.306.PLEG	1B	–	●	0.80	3

Note: the last letter of the part number indicates the colour of the housing. Ex. G (standard) is grey. To obtain another colour, replace this letter by the letter corresponding to the selected colour (see table on page 54).
1) see calculation method, caution and suggested standard on page 178.
2) lowest measured value; contact to contact or contact to shell.

CFF Bridge plug with two non-latching plugs

CRG Bridge plug with two non-latching plugs, and monitoring socket, key (G) or keys (A...M)

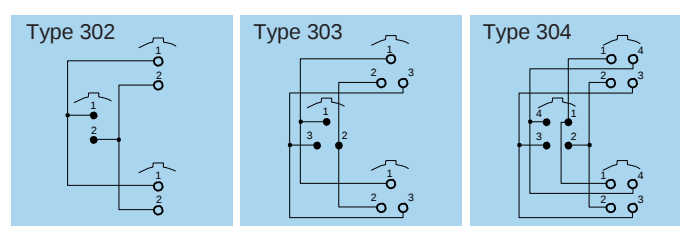
Reference		Dimensions (mm)					
Model	Series	A	B	H	L	M	N
CFF-CRG	0B	13.5	14	27.5	37.2	27.2	22.5
CFF-CRG	1B	15.0	20	35.0	42.0	31.0	22.0

Note: in order to provide the user with a coding system, the bridge plug housing, the double panel washers and the bend reliefs are available in nine colours.

FTG Straight plug, key (G) and two parallel sockets

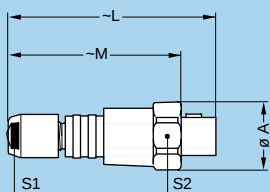
Reference	Number of contacts	Test voltage (kV rms) ¹⁾	Rated current (A)
FTG.0B.302.PLFG	2	1.05	4
FTG.0B.303.PLFG	3	0.80	4
FTG.0B.304.PLFG	4	0.80	3

Note:
1) see calculation method, caution and suggested standard on page 178.

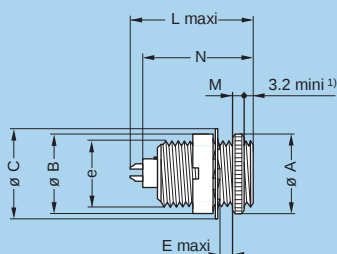




FVG Straight plug, key (G) or keys (B), cable collet

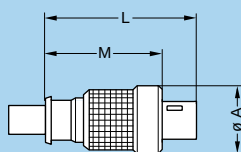


Note: to be ordered with nut for fitting a bend relief to obtain the rating IP 64.



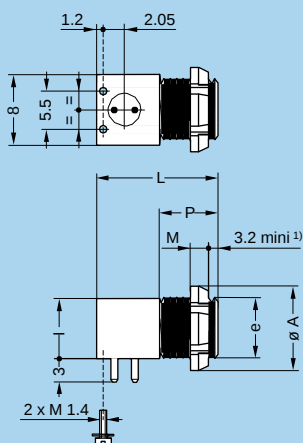
P2 Panel cut-out (page 152)

Note: 1) minimum length of free thread to ensure mating.



Note: after assembly the special bend relief GMF.00.018.D● (to be ordered separately) is to be fitted.

XRB Elbow (90°) socket for printed circuit, keys (B), short shell with one nut, screw fixing (back panel mounting)



P2 Panel cut-out (page 152)

P18 PCB drilling pattern for contact only (page 158)

Note: 1) minimum length of free thread to ensure mating.

Alignment Key (B series)

Alignment Key and Polarized Keying System

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	Reference	Nb of keys	Angles	Series			Reference	Nb of keys	Angles	Series					Contact type		Note
				00	0B	1B				XB	2B	3B	4B	5B	Plug	Socket	
	G	1		0°	0°	0°	G	1		0°	0°	0°	0°	0°	male	female	●
	A	2		30°	30°	30°	A	2		30°	30°	30°	30°	30°	male	female	●
	B	2	α	60°	60°	60°	B	2	α	—	45°	45°	45°	45°	male	female	●
	C	2		—	90°	90°	C	2		—	60°	60°	60°	60°	male	female	●
	D	2	β	—	135°	135°	D	2	γ	—	95°	95°	95°	95°	male	female	
	E	2		—	145°	145°	E	2		120°	120°	120°	120°	120°	male	female	
	F	2		—	155°	155°	F	2		—	145°	145°	145°	145°	male	female	
	J	2	γ	45°	45°	45°	J	2	α	—	37.5°	37.5°	37.5°	37.5°	female	male	●
	K	2		—	70°	70°	K	2		—	52.5°	52.5°	52.5°	52.5°	female	male	
	L	2		—	80°	80°	L	2		—	70°	70°	70°	70°	female	male	
	M	2	δ	—	110°	—	M	2	—	—	—	—	—	—	female	male	
	Y	3	—	—	—	—	Y	3	β	—	112.5°	126°	112.5°	—	male	female	● ¹⁾
			—	—	—	—			γ	—	100°	102°	147.5°	—			

Front view of a socket	Reference	Nb of keys	Angles	Series			Reference	Nb of keys	Angles	Series					Contact type		Note
				00	0B	1B				XB	2B	3B	4B	5B	Plug	Socket	
	R	5	α	—	—	—	R	5	α	—	—	—	—	95°	male	female	●
			β	—	—	—			β	—	—	—	—	115°			
			γ	—	—	—			γ	—	—	—	—	20°			
			δ	—	—	—			δ	—	—	—	—	30°			

Note:

FTG, FGY, ENY models are not available with all the keys. Please consult pages corresponding to these models.

For R●● models see explanation on page 21 and for S●● models see explanation on page 28.

¹⁾ only FGY and ENY models are available.

- First choice alternative
- Special order alternative

K Series

K series connectors have been specifically designed for outdoor applications.

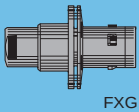
They include an inner sleeve and two seals to prevent penetration of solids or liquids into the housing formed by the plug, free socket, fixed socket or coupler. All models of this series are watertight when mated to give a protection index of IP68 as per IEC 60529 standard (in mated condition) when correctly assembled to an appropriate cable (IP66 otherwise).

K series connectors have the same insulators as the B series and have the following main features:

- security of the Push-Pull latching system
- multipole types 2 to 64 contacts
- keying system («G» key standard)
- 360° screening for full EMC shielding
- rugged housing for extreme working conditions.
- watertight connection (IP 68/IP 66)
- solder, crimp or print (straight or elbow) contacts
- multiple key options to avoid cross mating of similar connectors
- high packing density for space savings

Metal housing models (page 34)

Fixed plugs

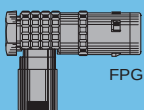


FXG

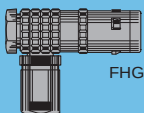


FAG

Elbow plug

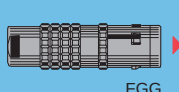


FPG

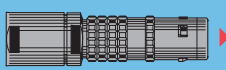


FHG

Straight plugs



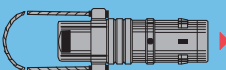
FGG



FGG

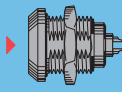


FGG



FNG

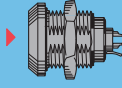
Fixed sockets



EGG



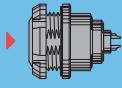
EBG



ENG



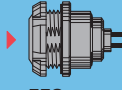
EDG



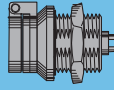
EEG



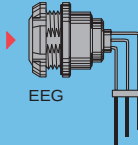
EHG



EEG

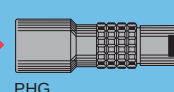


EVG

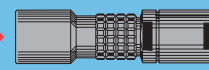


EEG

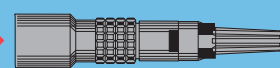
Free sockets



PHG

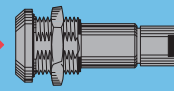


PHG

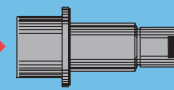


PHG

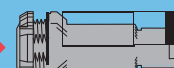
Fixed sockets



PKG

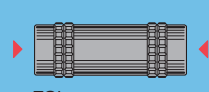


PBG



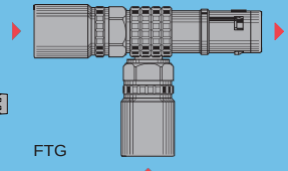
PEG

Free coupler



TGL

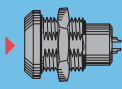
T-plug with sockets (90°)



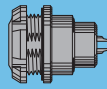
FTG

Watertight or vacuumtight models (page 41)

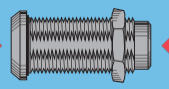
Fixed sockets



HGG

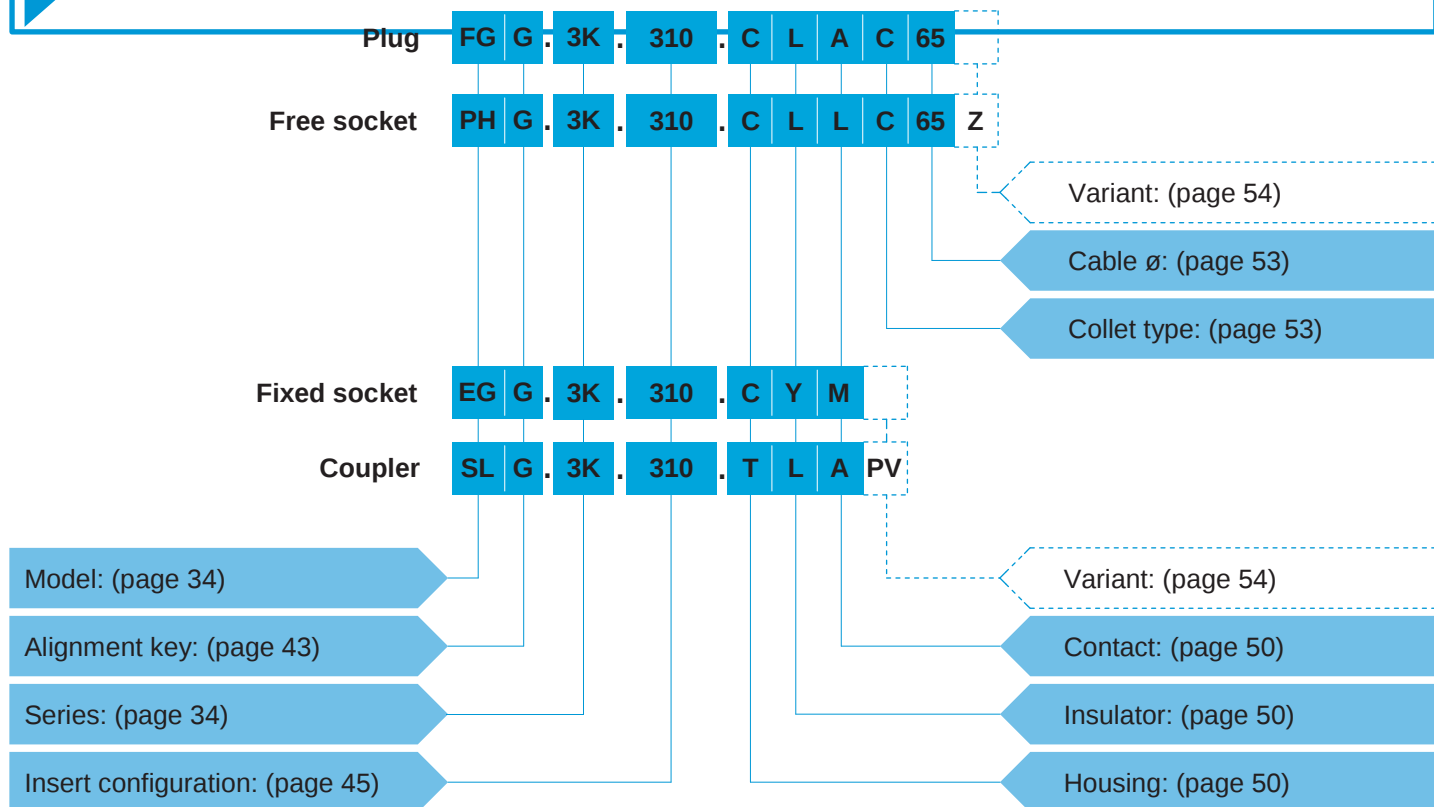


HEG



S..

Part Numbering System



Part Number Example

Straight plug with cable collet:

FGG.3K.310.CLAC65 = straight plug with key (G) and cable collet, 3K series, multipole type with 10 contacts, outer shell in chrome-plated brass, PEEK insulator, male solder contacts, C type collet for 6.5 mm diameter cable.

Free socket:

PHG.3K.310.CLLC65Z = free socket with key (G) and cable collet, 3K series, multipole type with 10 contacts, outer shell in chrome-plated brass, PEEK insulator, female solder contacts, C type collet for 6.5 mm diameter cable and nut for fitting a bend relief.

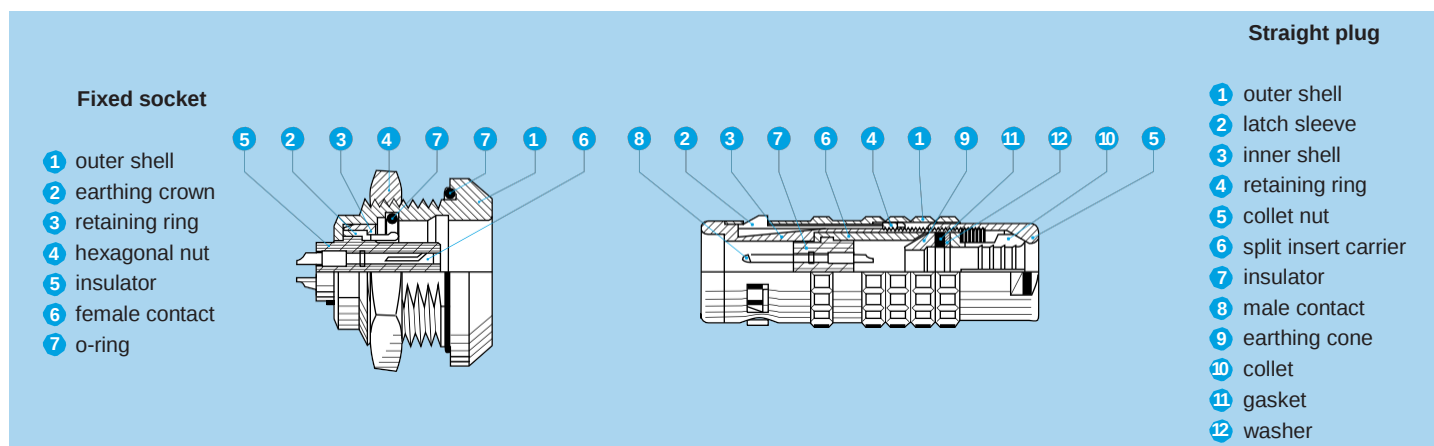
Fixed socket:

EGG.3K.310.CYM = fixed socket, nut fixing, with key (G), 3K series, multipole type with 10 contacts, outer shell in chrome-plated brass, PEEK extended insulator, female crimp contacts.

Fixed coupler:

SLG.3K.310.TLAPV = fixed coupler, nut fixing, keys (L) on the flange end and key (G) at the other end, 3K series, multipole type with 10 contacts, outer shell in stainless steel, PEEK insulator, male-female contacts, vacuumtight.

Part Section Showing Internal Components



Technical Characteristics

Mechanical and Climatical

Characteristics	Value	Standard
Endurance	> 5000 cycles	IEC 60512-5 test 9a
Humidity	up to 95% at 60° C	
Temperature range ¹⁾	- 55° C, +200° C	
Resistance to vibrations	10-2000 Hz, 15 g	IEC 60512-4 test 6d
Shock resistance	100 g, 6 ms	IEC 60512-4 test 6c
Salt spray corrosion test	> 1000h	IEC 60512-6 test 11f
Protection index (mated) ²⁾	IP 68/IP 66	IEC 60529
Climatical category	50/175/21	IEC 60068-1

Metal housing models

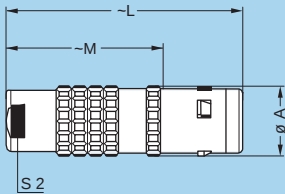
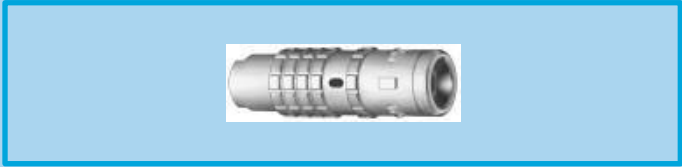
Electrical

Characteristics		Value	Standard
Shielding efficiency	at 10 MHz	> 95 dB	IEC 60169-1-3
	at 1 GHz	> 80 dB	IEC 60169-1-3

Note:
the various tests have been carried out with FGG and EGG connector pairs, with chrome-plated brass shell, PEEK insulator and silicone O-ring. Detailed electrical characteristics, as well as materials and treatment are presented in the chapter Technical Characteristics on page 171.

¹⁾ minimum operating temperature is -20°C for sockets fitted with an FPM (Viton®) O-ring.

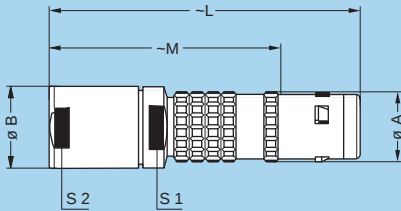
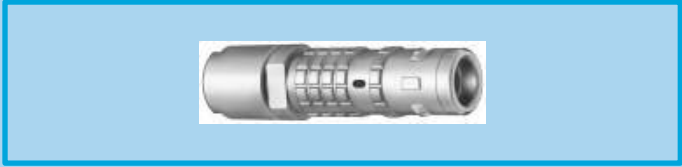
²⁾ IP68 achieved providing that the cable is perfectly circular and that assembly process ensures a high integrity seal.



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

Reference		Dimensions (mm)			
Model	Series	A	L	M	S2
FGG	0K	11	34	23.0	8
FGG	1K	13	42	28.0	9
FGG	2K	16	52	36.0	12
FGG	3K	19	61	41.0	15
FGG	4K	25	71	50.5	19
FGG	5K	38	92	67.0	30

M1 Cable assembly (page 162)

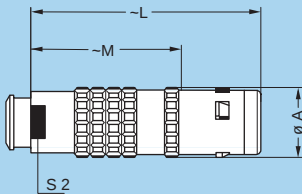
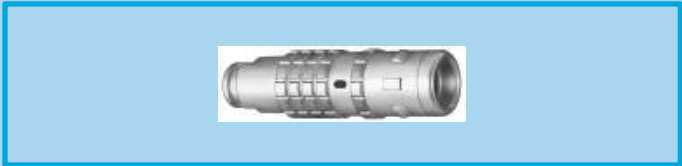


FGG Straight plug, key (G) or keys (A to F, L and R), cable collet and oversized cable collet ¹⁾

Reference		Dimensions (mm)					
Model	Series	A	B	L	M	S1	S2
FGG	1K	13	14.5	60.0	46	12	12
FGG	2K	16	17.0	68.0	52	15	15
FGG	3K	19	22.0	85.0	65	19	19
FGG	4K	25	36.0	119.5	99	30	32

M2 Cable assembly (page 163)

Note: ¹⁾ correspond to K type of collet, the fitting of oversized collets onto this model allows them to be fitted to the cables that can be accommodated by the next housing size up (see page 53).

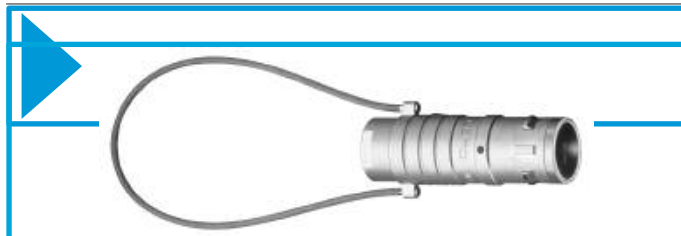


FGG Straight plug, key (G) or keys (A to F, L and R), cable collet and nut for fitting a bend relief ¹⁾

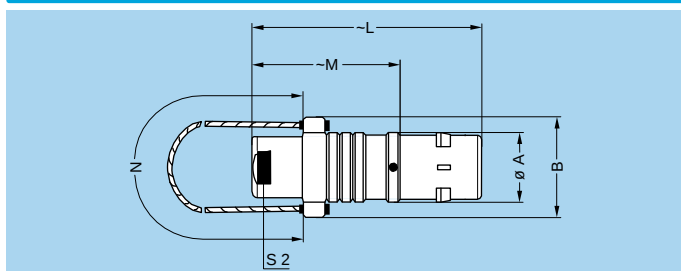
Reference		Dimensions (mm)			
Model	Series	A	L	M	S2
FGG	0K	11	34	23.0	7
FGG	1K	13	42	28.0	9
FGG	2K	16	52	36.0	12
FGG	3K	19	60	40.0	15
FGG	4K	25	71	50.5	19

M1
Cable assembly
(page 162)

Note: ¹⁾ to order, add a «Z» at the end of the reference. The bend relief must be ordered separately (see page 141).



FNG Straight plug, key (G) or keys (A to F and L), cable collet and lanyard release



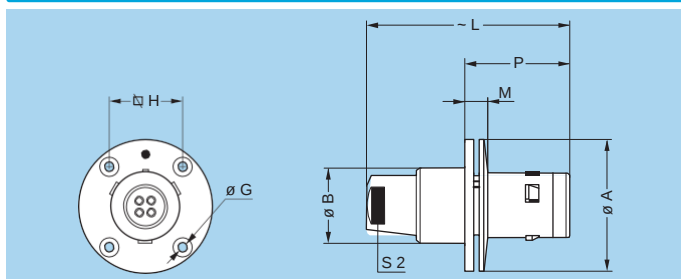
Reference		Dimensions (mm)						
Model	Series	A	B	L	M	N	S2	
FNG	2K	16	22	52	36.0	160	12	
FNG	4K	25	32	71	50.5	230	19	

M1 Cable assembly (page 162)

Note: cable material: stainless steel with Polyamide sheath



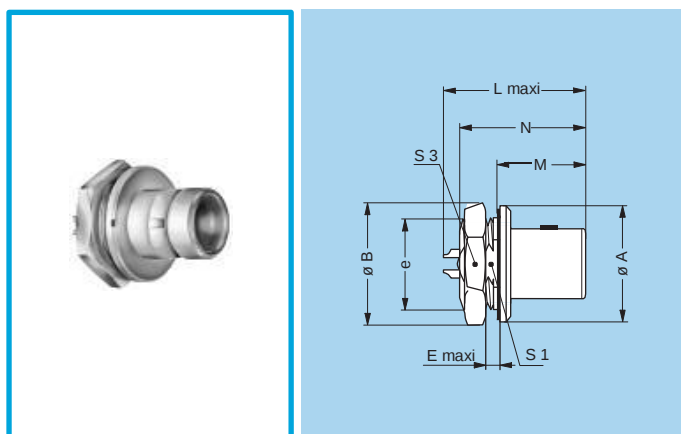
FXG Fixed plug with round flange, key (G) or keys (A to F, L and R) and screw fixing



Reference		Dimensions (mm)								
Model	Series	A	B	G	H	L	M	P	S2	
FXG	3K	38	22.5	3.4	20.6	61	10.0	30.0	15	
FXG	4K	47	28.5	3.4	27.0	71	11.0	32.0	19	
FXG	5K	65	42.5	4.4	38.0	100	12.5	38.5	30	

P6 Panel cut-out (page 153)

Note: this model does not include an O-ring behind the flange, it allows the device on which it is fitted to reach only IP50 protection index. It does not have a cable collet.

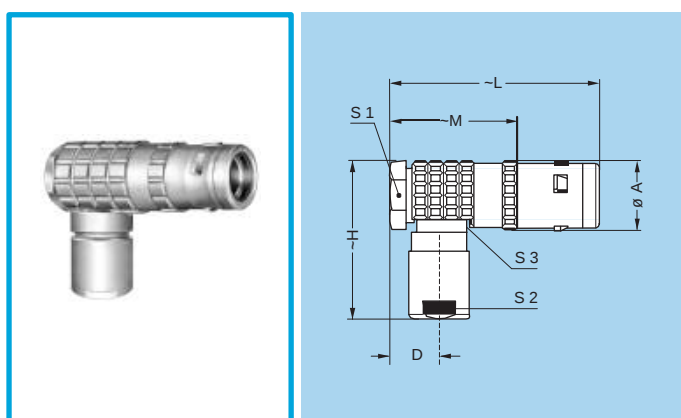


FAG Fixed plug, nut fixing, non-latching, key (G) or keys (A to F, L and R)

Reference		Dimensions (mm)									
Model	Series	A	B	e	E	L	M	N ¹⁾	S1	S3	
FAG	1K	20	21.5	M16x1.0	2.3	22.6	16.0	22.5	14.5	19	
FAG	2K	25	27.0	M20x1.0	4.5	33.6	18.0	28.3	18.5	24	
FAG	3K	31	34.0	M24x1.0	4.0	34.3	22.5	33.8	22.5	30	
FAG	4K	37	40.5	M30x1.0	4.0	35.3	23.0	36.3	28.5	36	
FAG	5K	55	54.0	M45x1.5	4.0	43.5	28.5	42.3	42.5	—	

P1 Panel cut-out (page 153)

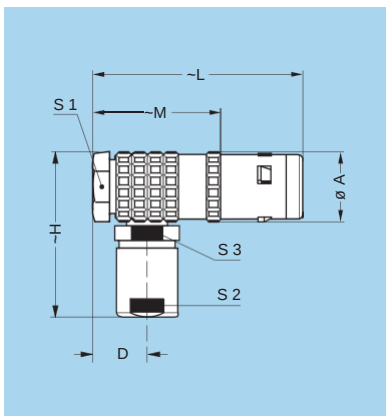
Note: ¹⁾ maximum length with crimp contacts. The 1K series is delivered with a locking washer. The 5K series is delivered with a round nut.



FPG Elbow (90°) plug, key (G) or keys (A to F, L and R), cable collet

Reference		Dimensions (mm)								
Model	Series	A	D	H	L	M	S1	S2	S3	
FPG	0K	11	7.3	25	36	25	9	8	8	
FPG	1K	13	8.7	33	42	28	11	9	10	
FPG	2K	16	10.2	40	51	35	14	12	13	

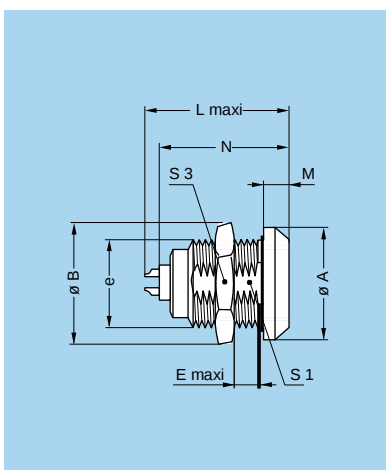
M3 Cable assembly (page 162)



FHG Elbow (90°) plug, key (G) or keys (A to F, L and R), cable collet

Reference		Dimensions (mm)							
Model	Series	A	D	H	L	M	S1	S2	S3
FHG	3K	21.0	11.5	47	60	40.0	18	15	15
FHG	4K	27.5	15.5	57	72	51.5	24	19	20

M3 Cable assembly (page 162)

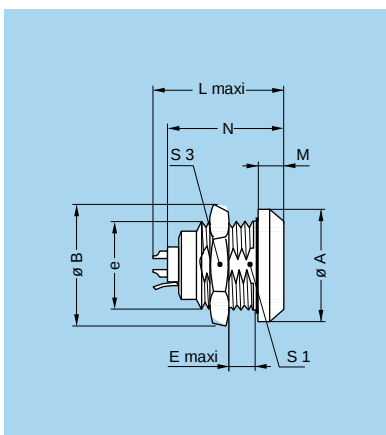


EGG Fixed socket, nut fixing, key (G) or keys (A to F, L and R)

Reference		Dimensions (mm)								
Model	Series	A	B	e	E	L	M	N ¹⁾	S1	S3
EGG	0K	18	19.2	M14x1.0	6	21.7	4.0	20.1	12.5	17
EGG	1K	20	21.5	M16x1.0	9	27.0	4.5	25.1	14.5	19
EGG	2K	25	27.0	M20x1.0	9	30.7	5.0	28.6	18.5	24
EGG	3K	31	34.0	M24x1.0	11	36.2	6.0	33.6	22.5	30
EGG	4K	37	40.5	M30x1.0	9	40.2	6.5	38.6	28.5	36
EGG	5K	55	54.0	M45x1.5	10	47.5	9.0	43.6	42.5	—

P1 Panel cut-out (page 153)

Note: ¹⁾ maximum length with crimp contacts.
The 5K series is delivered with a round nut.

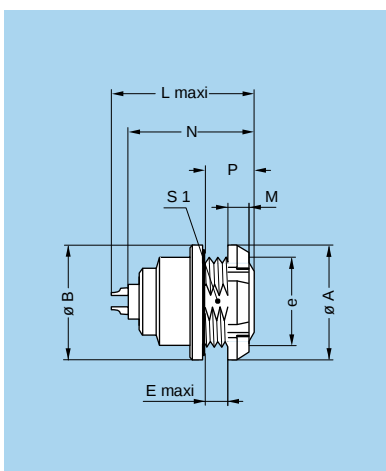


ENG Fixed socket, nut fixing, key (G) or keys (A to F, L and R) and earthing tag

Reference		Dimensions (mm)								
Model	Series	A	B	e	E	L	M	N ¹⁾	S1	S3
ENG	3K	31	34	M24x1.0	11.3	36.2	6	33.6	22.5	30

P1 Panel cut-out (page 153)

Note: ¹⁾ maximum length with crimp contacts.

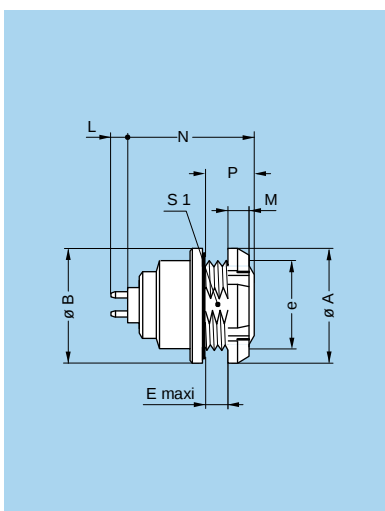


EEG Fixed socket, nut fixing, key (G) or keys (A to F, L and R) (back panel mounting)

Reference		Dimensions (mm)								
Model	Series	A	B	e	E	L	M	N ¹⁾	P	S1
EEG	0K	18.0	18	M14x1.0	3.4	21.7	3.5	20.1	7.0	12.5
EEG	1K	20.0	20	M16x1.0	6.2	27.0	3.5	25.1	10.0	14.5
EEG	2K	25.0	25	M20x1.0	5.0	30.7	3.5	28.6	10.0	18.5
EEG	3K	30.0	31	M24x1.0	7.5	36.2	4.5	33.6	12.0	22.5
EEG	4K	41.5	37	M30x1.0	6.0	40.2	7.0	38.6	13.5	28.5

P1 Panel cut-out (page 153)

Note: ¹⁾ maximum length with crimp contacts.
The 3K and 4K series are delivered with a conical nut.



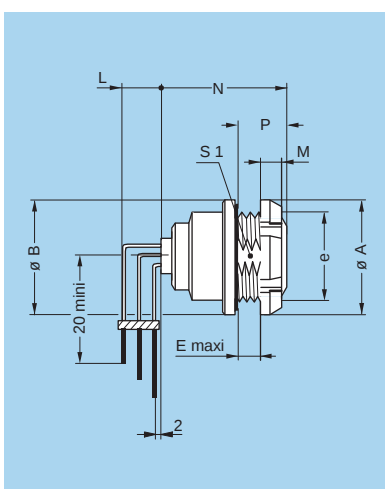
EEG Fixed socket, nut fixing, key (G) or keys (A to F and R) with straight print contacts for printed circuit (back panel mounting)

Reference		Dimensions (mm)								
Model	Series	A	B	e	E	M	N	P	S1	
EEG	0K	18.0	18	M14x1.0	3.4	3.5	17.6	7.0	12.5	
EEG	1K	20.0	20	M16x1.0	6.2	3.5	23.8	10.0	14.5	
EEG	2K	25.0	25	M20x1.0	5.0	3.5	25.8	10.0	18.5	
EEG	3K	30.0	31	M24x1.0	7.5	4.5	31.3	12.0	22.5	
EEG	4K	41.5	37	M30x1.0	6.0	7.0	34.3	13.5	28.5	

P1 Panel cut-out (page 153) **P15** PCB drilling pattern (page 154)

Note: this contact type is available for E● socket models fitted with female contact.

Length «L» depends on the number of contacts, see table page 156.
The 3K and 4K series are delivered with a conical nut.

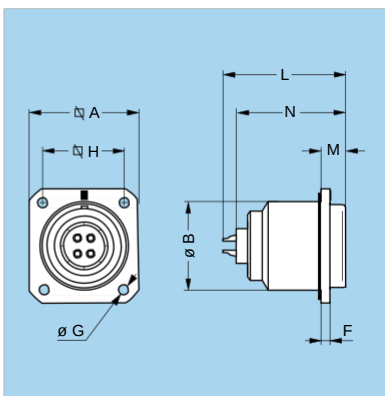


EEG Fixed socket, nut fixing, key (G) or keys (A to F and R) with elbow (90°) contacts for printed circuit (back panel mounting)

Reference		Dimensions (mm)								
Model	Series	A	B	e	E	M	N	P	S1	
EEG	0K	18	18	M14x1.0	3.4	3.5	19.3	7	12.5	
EEG	1K	20	20	M16x1.0	6.2	3.5	24.3	10	14.5	
EEG	2K	25	25	M20x1.0	5.0	3.5	26.6	10	18.5	
EEG	3K	30	31	M24x1.0	7.5	4.5	31.3	12	22.5	

P1 Panel cut-out (page 153) **P17** PCB drilling pattern (page 157)

Note: length «L» depends on the number of contacts, see PCB drilling pattern page 157. The 3K series is delivered with a conical nut.

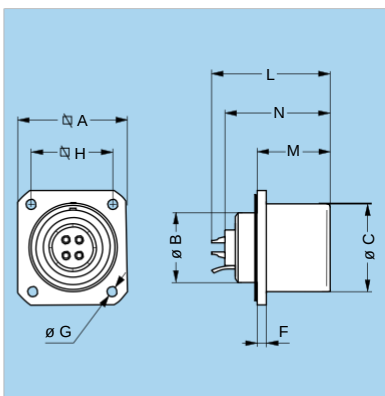


EBG Fixed socket with square flange, key (G) or keys (A to F, L and R) and screw fixing

Reference		Dimensions (mm)							
Model	Series	A	B	F	G	H	L	M	N ¹⁾
EBG	3K	29	23	3	3.4	23	36.2	6.0	32.6
EBG	4K	37	30	3	3.4	29	40.2	6.5	36.6
EBG	5K	54	45	4	4.4	44	47.5	8.0	42.1

P7 Panel cut-out (page 153)

Note: ¹⁾ maximum length with crimp contacts.

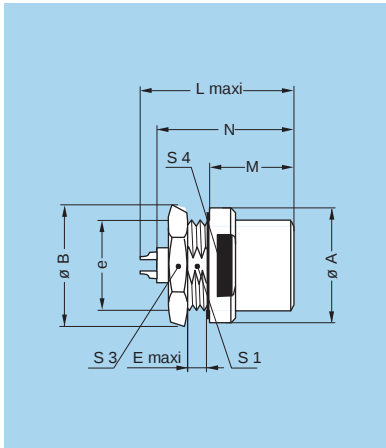


EDG Fixed socket with square flange, key (G) or keys (A to F, L and R), protruding shell and earthing tag, screw fixing

Reference		Dimensions (mm)								
Model	Series	A	B	C	F	G	H	L	M	N ¹⁾
EDG	3K	29	18	23	3	3.4	23	36.2	22.5	32.6

P7 Panel cut-out (page 153)

Note: ¹⁾ maximum length with crimp contacts.

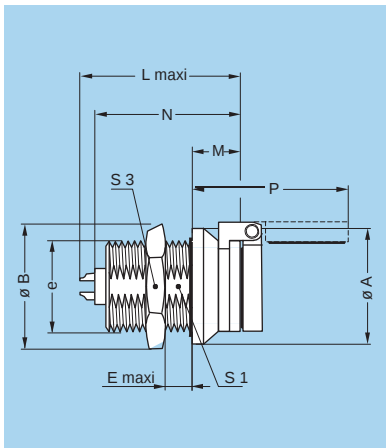


EHG Fixed socket, nut fixing, key (G) or keys (A to F and L), protruding shell

Reference		Dimensions (mm)									
Model	Series	A	B	e	E	L	M	N ¹⁾	S1	S3	S4
EHG	0K	18	19.2	M14x1.0	1.5	21.7	10.5	20.1	12.5	17	15
EHG	1K	20	21.5	M16x1.0	1.5	27.0	15.5	25.1	14.5	19	17
EHG	2K	25	27.0	M20x1.0	1.5	30.7	17.0	27.1	18.5	24	20

P1 Panel cut-out (page 153)

Note: ¹⁾ maximum length with crimp contacts.

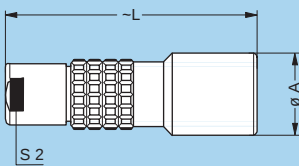
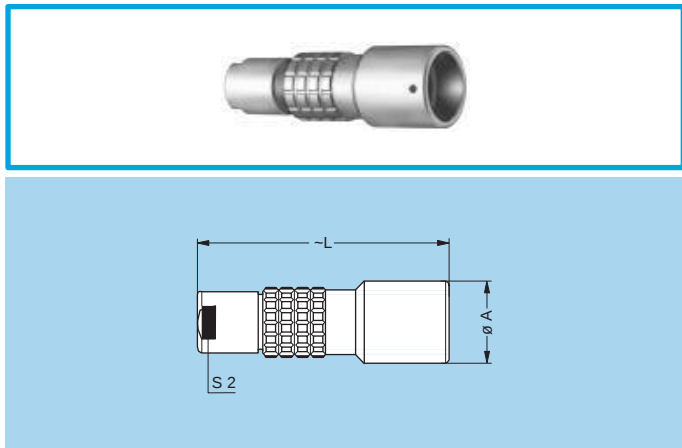


EVG Fixed socket, nut fixing, key (G) or keys (A to F and L) and dust cap (spring loaded)

Reference		Dimensions (mm)									
Model	Series	A	B	e	E	L	M	N ¹⁾	P	S1	S3
EVG	0K	18	19.2	M14x1.0	6.5	24.8	6.3	23.3	23.3	12.5	17

P1 Panel cut-out (page 153)

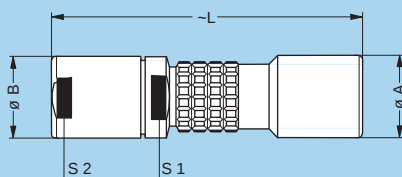
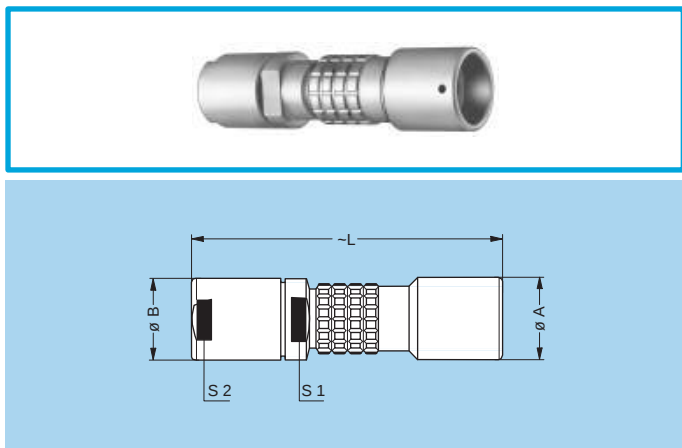
Note: ¹⁾ maximum length with crimp contacts.



PHG Free socket, key (G) or keys (A to F, L and R), cable collet

Reference		Dimensions (mm)		
Model	Series	A	L	S2
PHG	0K	13	34.0	8
PHG	1K	15	45.0	9
PHG	2K	19	54.0	12
PHG	3K	23	65.0	15
PHG	4K	29	75.5	19
PHG	5K	42	95.0	30

M1 Cable assembly (page 162)

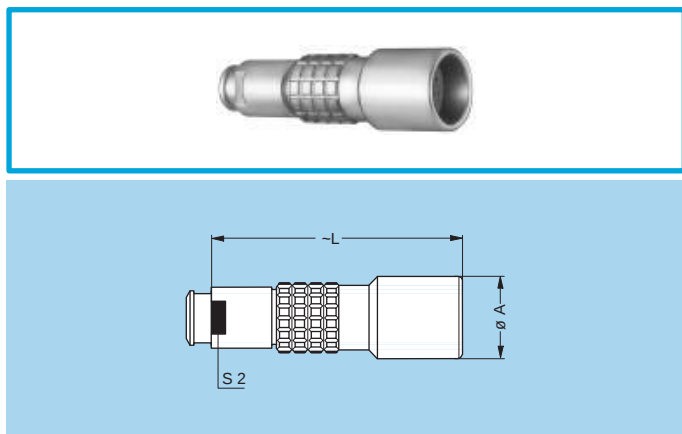


PHG Free socket, key (G) or keys (A to F, L and R), cable collet and oversize cable collet ¹⁾

Reference		Dimensions (mm)				
Model	Series	A	B	L	S1	S2
PHG	1K	15	14.5	63	12	12
PHG	2K	19	17.0	70	15	15
PHG	3K	23	22.0	89	19	19
PHG	4K	29	36.0	124	30	32

M2 Cable assembly (page 163)

Note: ¹⁾ correspond to K type of collet, the fitting of oversize collets onto this model allows them to be fitted to the cables that can be accommodated by the next housing size up (see page 53).



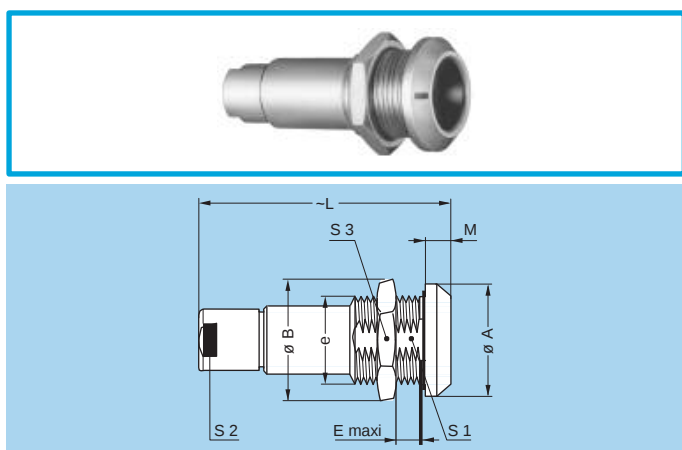
PHG Free socket, key (G) or keys (A to F, L and R), cable collet and nut for fitting a bend relief ¹⁾

Reference		Dimensions (mm)		
Model	Series	A	L	S2
PHG	0K	13	34.0	7
PHG	1K	15	45.0	9
PHG	2K	19	54.0	12
PHG	3K	23	64.0	15
PHG	4K	29	75.5	19

Note: ¹⁾ to order, add a «Z» at the end of the reference.

M1 Cable assembly (page 162)

Note: The bend relief must be ordered separately (see page 141).



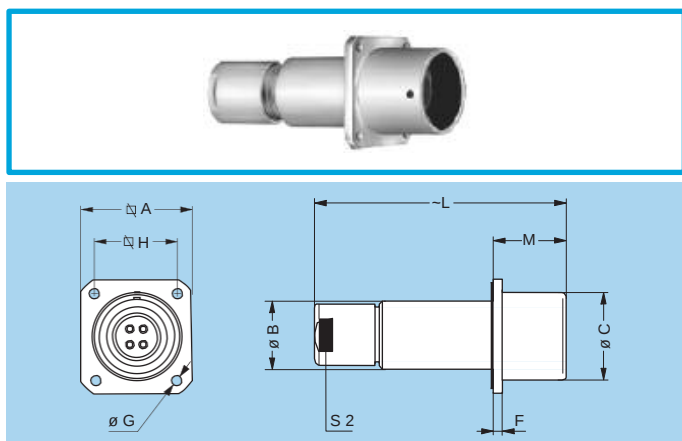
PKG Fixed socket, nut fixing, key (G) or keys (A to F, L and R), cable collet

Reference		Dimensions (mm)								
Model	Series	A	B	e	E	L	M	S1	S2	S3
PKG	0K	18	19.2	M14x1.0	6.0	34.0	4.0	12.5	8	17
PKG	1K	20	21.5	M16x1.0	9.0	45.0	4.5	14.5	9	19
PKG	2K	25	27.0	M20x1.0	9.0	54.0	5.0	18.5	12	24
PKG	3K	31	34.0	M24x1.0	11.5	65.0	6.0	22.5	15	30
PKG	4K	37	40.5	M30x1.0	9.0	75.5	6.5	28.5	19	36
PKG	5K	55	54.0	M45x1.0	15.0	98.0	9.0	42.5	30	—

P1 Panel cut-out (page 153)

M1 Cable assembly (page 162)

Note: the 5K series is delivered with a round nut.

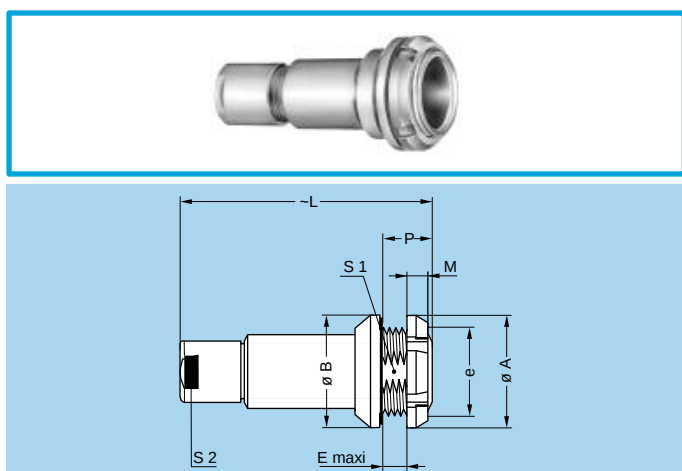


PBG Fixed socket, key (G) with square flange, cable collet and screw fixing

Reference		Dimensions (mm)								
Model	Series	A	B	C	F	G	H	L	M	S2
PBG	3K	29	19	23	3	3.4	23	65	22.5	15

P7 Panel cut-out (page 153)

M1 Cable assembly (page 162)



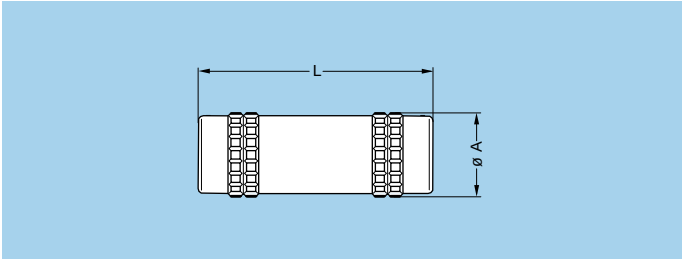
PEG Fixed socket, nut fixing, key (G) or keys (A to F, L and R), cable collet (back panel mounting)

Reference		Dimensions (mm)								
Model	Series	A	B	e	E	L	M	P	S1	S2
PEG	0K	18	18	M14x1.0	5.0	34	3.5	8.5	12.5	8
PEG	1K	20	20	M16x1.0	6.5	45	3.5	10.0	14.5	9
PEG	2K	25	25	M20x1.0	4.0	54	3.5	7.5	18.5	12
PEG	3K	30	31	M24x1.0	7.5	65	4.5	12.0	22.5	15

P1 Panel cut-out (page 153)

M1 Cable assembly (page 162)

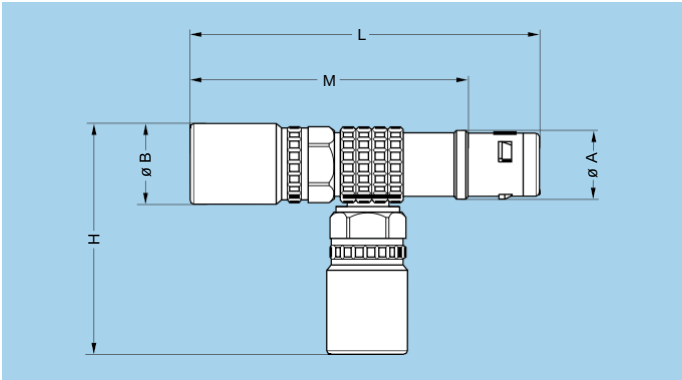
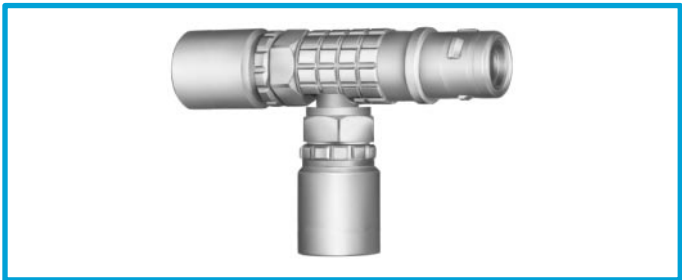
Note: the 3K series is delivered with a conical nut.



TGL Free coupler, key (G) on one side and keys (L) on the other

Reference	Dim. (mm)	
	A	L
TGL.3K.3●●.CLLP	24	64.2

Note: this model is only available in type 308, 310, 316, 318, 320, 324 and 330.



FTG T-plug, key (G) with sockets (90°), key (G)

Reference	Dimensions (mm)				
	A	B	H	L	M
FTG.2K.304.CLF	16	19	48	77	60
FTG.2K.308.CLF	16	19	48	77	60



Watertight or vacuumtight models

These socket and coupler models allow the device on which they are fitted to reach a protection index of IP68 as per IEC 60529. They are fully compatible with plugs of the same series and are widely used for portable radios, military, laboratory equipment, aviation, etc.

These models are identified by a letter «P» at the end of the reference.

Most of these models are also available in a vacuumtight version. Such models are identified by an additional letter «V» at the end of the part number (certificate on request).

Epoxy resin is used to seal these models.

Technical Characteristics

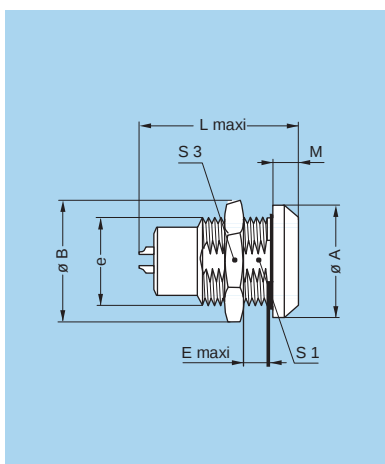
Mechanical and Climatical

Characteristics	Value	Standard
Endurance	> 5000 cycles	IEC 60512-5 test 9a
Humidity	up to 95% at 60° C	
Temperature range (0K-1K)	- 20° C/+100° C	
Temperature range (2K to 5K)	- 20° C/+80° C	
Salt spray corrosion test	> 1000h	IEC 60512-6 test 11f
Climatical category	20/80/21	IEC 60068-1
Leakage rate (He) ¹⁾	< 10 ⁻⁷ mbar.l.s ⁻¹	IEC 60512-7 test 14b

Note: ¹⁾ only for vacuumtight models.

Characteristics	Value	Standard
Maximum operating pressure ²⁾	0K 60 bar	IEC 60512-7 test 14d
	1K 60 bar	
	2K 40 bar	
	3K 30 bar	
	4K 15 bar	
	5K 5 bar	

Note: ²⁾ this value corresponds to the maximum allowed pressure difference for the assembled socket.

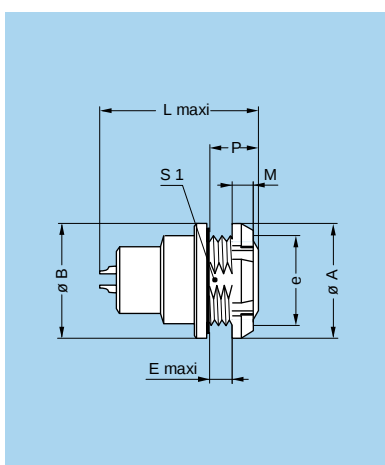


HGG Fixed socket, nut fixing, key (G) or keys (A to F and L), watertight or vacuumtight

Reference		Dimensions (mm)							
Model	Series	A	B	e	E	L	M	S1	S3
HGG	0K	18	19.2	M14x1.0	5.5	23.0	4.0	12.5	17
HGG	1K	20	21.5	M16x1.0	9.0	30.0	4.5	14.5	19
HGG	2K	25	27.0	M20x1.0	13.0	33.7	5.0	18.5	24
HGG	3K	31	34.0	M24x1.0	16.0	41.7	6.0	22.5	30
HGG	4K	37	40.5	M30x1.0	14.0	49.2	6.5	28.5	36
HGG	5K	55	54.0	M45x1.5	10.0	55.7	9.0	42.5	—

P1 Panel cut-out (page 153)

Note: the 5K series is delivered with a round nut.

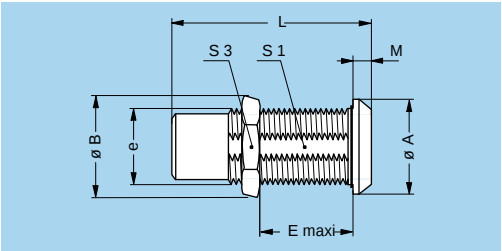
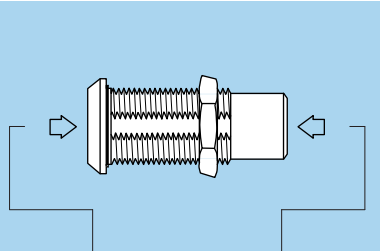


HEG Fixed socket, nut fixing, key (G) or keys (A to F and L), watertight or vacuumtight (back panel mounting)

Reference		Dimensions (mm)							
Model	Series	A	B	e	E	L	M	P	S1
HEG	0K	18	18	M14x1.0	3.4	23.0	3.5	7	12.5
HEG	1K	20	20	M16x1.0	6.2	30.0	3.5	10	14.5
HEG	2K	25	25	M20x1.0	5.0	33.7	3.5	10	18.5

P1 Panel cut-out (page 153)

S Fixed coupler, nut fixing, key (G) or keys (L) at the flange end, and key (G) or keys (C or L) at the other end, watertight or vacuumtight



G

SLG

L

L

SLG

G

L

SLC

C

Example

Plug with key G

Plug with key L

Alignment key see page 43.

Reference		Contacts	Dimensions (mm)							
Model	Series	Type	A	B	e	E	L	M	S1	S3
SGL	2K	female – male	25	27.0	M20x1.0	25	52.4	5.0	18.5	24
SLG		male – female								
SLG	3K	male – female	31	34.0	M24x1.0	33	64.0	6.0	22.5	30
SLG	4K	male – female	37	40.5	M30x1.0	48	74.0	6.5	28.5	36
SLC										
SLG	5K	male – female	55	54.0	M45x1.5	58	88.0	9.0	42.5	–
SLC										

P1 Panel cut-out (page 153)

Note: for this fixed coupler, the first contact type mentioned is always the one at the flange end. On request, these couplers can be produced in other series, with other keys. The 5K series is delivered with a round nut.

Alignment Key (K series)

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	Reference	Nb of keys	Angles	Series						Contact type		Note
				0K	1K	2K	3K	4K	5K	Plug	Socket	
				0°	0°	0°	0°	0°	0°	male	female	
	G	1	α	30°	30°	30°	30°	30°	30°	male	female	●
	A	2		45°	45°	45°	45°	45°	45°	male	female	●
	B	2		60°	60°	60°	60°	60°	60°	male	female	●
	C	2		95°	95°	95°	95°	95°	95°	male	female	
	D	2	γ	120°	120°	120°	120°	120°	120°	male	female	
	E	2	β	145°	145°	145°	145°	145°	145°	male	female	
	F	2		75°	75°	75°	75°	75°	75°	female	male	●
	L	2	γ									

Front view of a socket	Reference	Nb of keys	Angles	Series						Contact type		Note
				0K	1K	2K	3K	4K	5K	Plug	Socket	
				0°	0°	0°	0°	0°	0°	male	female	
	R	5	α	—	—	—	95°	—	—	male	female	●
			β	—	—	—	115°	—	—			
			γ	—	—	—	35°	—	—			
			δ	—	—	—	25°	—	—			

Note: S●● and TGL models are not available with all the keys. For S●● models see explanation on page 42. Please consult the pages corresponding to these models.

- First choice alternative
- Special order alternative

Insert configuration (B and K series)

Multipole

	Male solder contacts	Female solder contacts	Reference	Number of contacts	ø A (mm)	Contact type				Solder contact		Crimp contact		Rated current (A) ¹⁾
						Solder	Crimp	Print (straight)	Print (elbow)	Test voltage (kV rms) ¹⁾ Contact-contact	Test voltage (kV rms) ¹⁾ ⁵⁾ Contact-shell	Test voltage (kV rms) ¹⁾ Contact-contact	Test voltage (kV rms) ¹⁾ ⁵⁾ Contact-shell	
00			302	2	0.5	●	●	●	●	1.00	0.95	1.15	1.20	3.5
			303	3	0.5	●	●	●	●	0.80	0.95	1.35	1.10	3.0
			304	4	0.5	●	●	●	●	0.80	0.65	1.05	1.05	2.0
			305	5	0.35	●	—	—	—	0.70	1.00	—	—	1.7
			306	6	0.35	●	—	—	—	0.60	0.75	—	—	1.5
0B 0K			302	2	0.9	●	●	●	●	1.00	1.05	1.45	1.20	10.0 ²⁾
			303	3	0.9	●	●	●	●	1.20	0.90	1.70	1.60	8.0 ²⁾
			304	4	0.7	●	●	●	●	0.85	0.70	1.35	1.10	7.0 ²⁾
			305	5	0.7	●	●	●	●	1.00	0.70	1.25	1.20	6.5 ²⁾
			306	6	0.5	●	4)	●	●	0.85	0.65	1.40	1.20	2.5
			307	7	0.5	●	4)	●	●	0.80	0.70	1.40	1.20	2.5
			309	9	0.5	●	4)	●	—	0.60	0.50	1.00	0.85	2.0
			312	12	0.35	●	—	—	—	0.80	1.00	—	—	1.5
1B 1K			302	2	1.3	●	●	●	●	1.50	1.35	1.70	1.45	15.0 ³⁾
			303	3	1.3	●	●	●	●	1.30	1.55	1.60	1.85	12.0
			304	4	0.9	●	●	●	●	1.35	1.45	1.70	1.80	10.0 ²⁾
			305	5	0.9	●	●	●	●	1.25	1.15	1.30	1.55	9.0 ²⁾
			306	6	0.7	●	●	●	●	1.05	1.20	1.35	1.45	7.0 ²⁾
			307	7	0.7	●	●	●	●	0.95	1.05	1.45	1.45	7.0 ²⁾
			308	8	0.7	●	●	●	●	0.95	1.15	1.30	1.30	5.0
			310	10	0.5	●	4)	●	●	0.90	1.50	1.20	1.80	2.5
			314	14	0.5	●	4)	●	●	0.80	1.20	0.95	1.60	2.0
			316	16	0.5	●	4)	●	—	0.80	1.25	0.95	1.60	1.5

● First choice alternative
 Special order alternative

Note: 1) see calculation method, caution and suggested standard on page 178.
 2) rated current = 6A for socket with elbow (90°) contact for printed circuit.
 3) rated current = 12A for socket with elbow (90°) contact for printed circuit.
 4) available only for connectors fitted with male contacts.
 5) test voltage (kV) contact-shell is slightly lower for K series (values here are for B series).

Multipole

	Male solder contacts		Female solder contacts		Reference	Number of contacts	ø A (mm)	Contact type				Solder contact		Crimp contact		Rated current (A) ¹⁾
								Solder	Crimp	Print (straight)	Print (elbow)	Test voltage (kV rms) ¹⁾ Contact-contact	Test voltage (kV rms) ¹⁾ Contact-shell	Test voltage (kV rms) ¹⁾ Contact-contact	Test voltage (kV rms) ¹⁾ Contact-shell	
XB					312	12	0.7	●	—	●	—	1.35	1.65	—	—	5.0
					322	22	0.5	●	—	●	—	0.50	0.90	—	—	1.5
2B 2K					302	2	2.0	●	●	●	●	2.10	1.75	2.85	2.70	25.0 ³⁾
					303	3	1.6	●	●	●	●	2.40	1.85	1.90	1.90	17.0 ³⁾
					304	4	1.3	●	●	●	●	1.85	1.85	2.20	2.20	15.0 ³⁾
					305	5	1.3	●	●	●	●	1.75	1.60	2.15	2.15	14.0 ³⁾
					306	6	1.3	●	●	●	●	1.35	1.45	2.00	2.35	12.0
					307	7	1.3	●	●	●	●	1.75	1.60	1.95	2.15	11.0
					308	8	0.9	●	●	●	●	1.50	1.25	1.95	1.95	10.0 ²⁾
					310	10	0.9	●	●	●	●	1.45	1.30	1.80	2.10	8.0 ²⁾
					312	12	0.7	●	●	●	●	1.25	1.35	1.65	2.00	7.0 ²⁾
					314	14	0.7	●	●	●	●	1.15	1.35	1.55	1.55	6.5 ²⁾
					316	16	0.7	●	●	●	●	0.95	1.25	1.55	1.75	6.0
					318	18	0.7	●	●	●	●	0.85	1.20	1.45	2.10	5.5
					319	19	0.7	●	●	●	●	0.95	1.25	1.55	1.65	5.0
					326	26	0.5	●	—	●		0.95	1.30	1.20	1.80	2.0
					332	32	0.5	●	—	●		0.80	1.2	0.95	1.60	1.5

● First choice alternative
Special order alternative

Note: 1) see calculation method, caution and suggested standard on page 178.
2) rated current = 6A for socket with elbow (90°) contact for printed circuit.
3) rated current = 12A for socket with elbow (90°) contact for printed circuit.
4) test voltage (kV) contact-shell is slightly lower for K series (values here are for B series).



Multipole

	Male solder contacts		Female solder contacts		Reference	Number of contacts	ø A (mm)	Contact type				Solder contact		Crimp contact		Rated current (A) ¹⁾
								Solder	Crimp	Print (straight)	Print (elbow)	Test voltage (kV rms) ¹⁾ Contact-contact	Test voltage (kV rms) ¹⁾ ³⁾ Contact-shell	Test voltage (kV rms) ¹⁾ Contact-contact	Test voltage (kV rms) ¹⁾ ³⁾ Contact-shell	
3B 3K					302	2	3.0	●	●		—	2.10	1.55	2.30	1.80	35.0
					303	3	2.0	●	●	●		1.90	1.50	3.20	2.65	25.0
					304	4	2.0	●	●	●	●	1.45	1.25	2.50	2.20	19.0
					305	5	1.6	●	●	●		1.90	1.25	2.40	1.75	19.0
					306	6	1.6	●	●	●	●	1.60	1.15	1.90	1.80	17.0
					307	7	1.6	●	●	●		1.70	1.25	2.00	2.05	15.0
					308	8	1.3	●	●	●	●	1.65	1.15	1.85	1.75	13.0
					309	8 1	1.3 2.0	●	●	●	—	1.35 1.35	1.05 1.05	1.10 1.10	1.05 1.05	6.0 15.0
					310	10	1.3	●	●	●	●	1.25	0.90	1.50	1.80	12.0
					312	12	0.9	●	●	●	●	1.45	1.00	1.65	1.85	9.0
					314	14	0.9	●	●	●	●	1.20	1.20	1.80	1.65	9.0 ²⁾
					316	16	0.9	●	●	●	●	1.20	0.85	1.80	1.50	8.0
					318	18	0.9	●	●	●	●	1.20	1.05	1.85	1.60	7.0
					320	20	0.7	●	●	●	●	1.00	0.90	1.35	1.55	6.0
					322	22	0.7	●	●	●		1.00	0.90	1.70	1.45	5.5
					324	24	0.7	●	●	●	●	0.95	0.80	1.35	1.35	4.0
					326	26	0.7	●	●	●		0.95	0.70	1.50	1.30	4.0
					330	30	0.7	●	●	●	●	0.80	0.70	1.35	1.20	3.5
					332	32	0.7	●		●		0.75	0.70	—	—	3.0

● First choice alternative
 Special order alternative

Note: ¹⁾ see calculation method, caution and suggested standard on page 178.
²⁾ rated current = 6A for socket with elbow (90°) contact for printed circuit.
³⁾ test voltage (kV) contact-shell is slightly lower for K series (values here are for B series).

Multipole

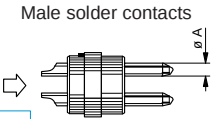
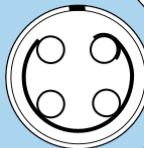
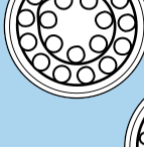
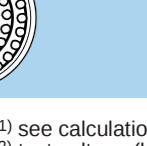
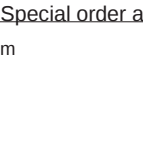
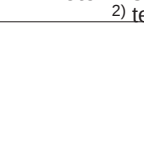
			Male solder contacts	Female solder contacts	Male crimp contacts	Female crimp contacts	Reference	Number of contacts	ø A (mm)	Contact type			Solder contact		Crimp contact		Rated current (A) ¹⁾
										Solder	Crimp	Print (straight)	Test voltage (kV rms) ¹⁾ Contact-contact	Test voltage (kV rms) ^{1) 2)} Contact-shell	Test voltage (kV rms) ¹⁾ Contact-contact	Test voltage (kV rms) ^{1) 2)} Contact-shell	
4B 4K							304	4	3.0	●	●		2.10	1.50	1.80	1.20	30.0
							306	6	2.0	●	●		2.00	1.75	2.75	2.40	24.0
							307	7	2.0	●	●		2.00	1.80	1.50	1.35	20.0
							310	10	1.6	●	●		1.85	1.30	1.90	1.95	17.0
							312	12	1.3	●	●		1.45	1.60	1.90	1.85	12.0
							316	16	0.9	●	●	●	1.35	1.50	2.30	2.10	10.0
							320	20	0.9	●	●	●	1.35	1.00	1.05	0.95	8.0
							324	24	0.9	●	●	●	1.20	1.45	1.80	2.05	7.0
							330	30	0.9	●	●	●	0.95	0.85	1.75	1.45	5.0
							340	40	0.7	●	●	●	0.90	0.90	1.30	1.30	2.0
							348	48	0.7	●	●	●	0.70	0.70	1.00	1.00	1.5

● First choice alternative
 Special order alternative

Note: ¹⁾ see calculation method, caution and suggested standard on page 178.
²⁾ test voltage (kV) contact-shell is slightly lower for K series (values here are for B series).



Multipole

	Male solder contacts		Female solder contacts		Reference	Number of contacts	ø A (mm)	Contact type			Solder contact		Crimp contact		Rated current (A) ¹⁾
								Solder	Crimp	Print (straight)	Test voltage (kV rms) ¹⁾ Contact-contact	Test voltage (kV rms) ¹⁾ 2) Contact-shell	Test voltage (kV rms) ¹⁾ Contact-contact	Test voltage (kV rms) ¹⁾ 2) Contact-shell	
Male crimp contacts			Female crimp contacts												
5B 5K					302	2	6.0	●	—	—	3.60	2.95	—	—	50.0
					304	4	4.0	●	●		2.95	2.65	3.20	2.40	35.0
					310	10	3.0	●	●		2.35	2.30	2.65	3.20	20.0
					314	14	2.0	●	●		2.10	2.00	2.85	2.95	18.0
					316	16	2.0	●	●		1.85	1.95	2.45	3.05	12.0
					320	20	1.6	●	●		1.90	1.70	2.20	2.40	10.0
					330	30	1.3	●	●		1.45	1.60	2.05	2.45	8.0
					340	40	1.3	●	●		1.30	1.45	2.00	1.95	7.0
					348	48	1.3	●	●	●	1.20	1.10	2.00	1.55	6.0
					350	50	0.9	●	●	●	1.30	1.60	1.20	1.45	6.0
					354	54	0.9	●	●	●	1.15	1.55	2.00	2.10	5.0
					364	64	0.9	●	●	●	1.30	1.55	1.35	1.85	3.0

● First choice alternative
 ○ Special order alternative

Note: ¹⁾ see calculation method, caution and suggested standard on page 178.
²⁾ test voltage (kV) contact-shell is slightly lower for K series (values here are for B series).

Housings (B and K series)

Ref.	Outer shell and collet nut		Latch sleeve + earthing crown		Other metallic components		Remarks	Note
	Material	Surf. treatment	Material	Surf. treatment	Material	Surf. treatment		
C	Brass	chrome	brass/bronze	nickel ²⁾	brass	nickel		●
N	Brass	nickel	brass/bronze	nickel ²⁾	brass	nickel		
K	Brass	black chrome	brass/bronze	nickel ²⁾	brass	nickel		●
S	Stainless steel	–	brass/bronze	nickel ²⁾	brass	nickel		●
T	Stainless steel	–	stainless steel	–	brass	nickel		
U	Stainless steel	–	stainless steel	–	stainless steel	–		
L	Aluminium alloy	anodized	brass/bronze	nickel ²⁾	brass	nickel	¹⁾	
X	Aluminium alloy	nickel anthracite	brass/bronze	nickel ²⁾	brass	nickel		
G	PEEK (natural)	–	brass/bronze	nickel ²⁾	brass	nickel	Only for FGG and ENG (B series)	●
P	PSU	–	brass/bronze	nickel ²⁾	brass	nickel	Only for FGY and ENY (B series) ¹⁾	●
R	PPSU	–	brass/bronze	nickel ²⁾	brass	nickel	Only for FGY and ENY (B series) ¹⁾	●
H	PPS/brass	–/nickel	brass/bronze	nickel ²⁾	brass	nickel	Only for elbow sockets (B series)	●
P	PA.6	–	brass/bronze	nickel ²⁾	brass	nickel	Only for CRF and CRG bridge plug ¹⁾	●

Note: detailed characteristics of these materials and treatments are presented on page 171.

¹⁾ see «variant» for the colour.

²⁾ in the K series, the latch sleeve is chrome-plated.

- First choice alternative
- Special order alternative

Insulators (B and K series)

Ref.	Material	Contact type	Remarks	Note
Y	PEEK	Crimp	extended design, with contacts that recess into insulator	●
L	PEEK	Solder or print		●

Note: detailed characteristics of these materials are presented on page 175.

Contacts (B and K series)

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

Crimping characteristics

- practical, quick contact fixing outside the insulator
- possible use at high temperature
- need to order specific tools
- no risk of heating the insulator during the conductor-contact fixing
- high tensile strength
- totally lead-free solution

Note: see page 176 for more information.



Contacts reference for plugs, free or fixed sockets

Contact type			Reference		Contact			Conductor				F _r ¹⁾ (N)	Notes			
			Male	Female				Solid		Stranded						
					AWG max.	Section max. (mm ²)	AWG		Section (mm ²)							
								min.	max.	min.	max.					
fig. 1	Solder	ø A ø C	A	L	0.35	0.40	—	28	0.09	—	30	—	0.05	—	●	
					0.5 ²⁾	0.40 ²⁾	—	28	0.09	—	30	—	0.05	—		
					0.5	0.45 ⁶⁾	—	28	0.09	—	28	—	0.09	—		
					0.7	0.80	—	22	0.34	—	22 ³⁾	—	0.34	—		
					0.9	0.80 ⁵⁾	—	22 ⁵⁾	0.34 ⁵⁾	—	22 ³⁾⁵⁾	—	0.34 ⁵⁾	—		
					1.3	1.00	—	20	0.50	—	20 ³⁾	—	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	—		
fig. 2	Crimp	ø A ø C	C	M	0.5 ⁴⁾	0.45	1	—	—	32	28	0.035	0.09	12	●	
					0.7	0.80	1	—	—	26	22 ³⁾	0.140	0.34	22	●	
			B	P	0.7	0.45	2	—	—	32	28	0.035	0.09			
			C	M	0.9	1.10	1	—	—	24	20	0.250	0.50	30	●	
			B	P		0.80	2	—	—	26	22 ³⁾	0.140	0.34			
			G	U		0.45	2	—	—	32	28	0.035	0.09			
			C	M	1.3	1.40	1	—	—	20	18	0.500	1.00	40	●	
			B	P		1.10	2	—	—	24	20	0.250	0.50			
			G	U		0.80	2	—	—	26	22 ³⁾	0.140	0.34			
			C	M	1.6	1.90	1	—	—	18	14 ³⁾	1.000	1.50	50	●	
			B	P		1.40	2	—	—	22	18	0.340	1.00			
			C	M	2.0	2.40	1	—	—	16	12 ³⁾	1.500	2.50	65	●	
			B	P		1.90	2	—	—	18	14	1.000	1.50			
			C	M	3.0	3.20	1	—	—	14	10 ³⁾	2.500	4.00	75	●	
			C	M	4.0	4.00	1	—	—	12	10	4.000	6.00	90	●	
			Print	ø A ø C	D	N	L dimensions and C are detailed in the section on PCB drilling pattern. See page 156.									●
Print (elbow)	ø A ø C	V	V	L dimensions and C are detailed in the section on PCB drilling pattern. See page 157.									●			

Note: 1) contact retention force in the insulator (according to IEC 60512-8 test 15 a).

2) for 00 multipole series.

3) for a given AWG, the diameter of some stranded conductor designs is larger than the solder cup diameter.

Make sure that the maximum conductor diameter is smaller than ø C.

4) available only for 00 multipole series and connectors fitted with male contacts of the 0B and 1B series.

5) for 0B.302/0B.303 and 0K.302/0K.303 ø C = 1.0 mm, AWG max 20, section max (mm²) 0.50.

6) for 00 and 1B/1K series, according to manufacturing and plating tolerance ø C min = 0.43 mm.

● First choice alternative
● Special order alternative

Contacts reference for couplers R●●, S●● and TGL

Ref.	Contact type	Remarks
A	Male - Female	contact configuration is explained on page 21, 28, 42
L	Female - Male	contact configuration is explained on page 21, 28, 42
M	Female - Female	contact configuration is explained on page 21

Collets (B and K series)

D and M type collets for B series

D type



M type



	Reference		Collet ø		Cable ø		Notes
	Type	Code	ø A	ø B	max.	min.	
00	D	22	2.2	—	2.2	1.4	
	D	27	2.7	—	2.7	> 2.2	
	D	35	3.5	2.8	3.5	> 2.7	
0B	D	21	2.1	—	2.2	1.4	2)
	D	32	3.2	—	3.2	> 2.2	
	D	42	4.2	—	4.2	> 3.2	
	D	52	5.2	4.7	5.2	> 4.2	
1B	D	56	5.6	4.7	5.6	> 5.2	1)
	M	27	2.7	—	2.7	> 2.2	
	M	31	3.1	—	3.1	> 2.7	
	D	42	4.2	—	4.2	3.1	
	D	52	5.2	—	5.2	> 4.2	
	D	62	6.2	—	6.2	> 5.2	
	D	72	7.2	6.2	7.2	> 6.2	
XB	D	76	7.6	6.9	7.6	> 7.2	1)
	D	52	5.2	7.2	5.0	4.4	
	D	62	6.2	7.2	6.0	5.4	
	D	72	7.2	7.2	7.0	6.4	
2B	D	82	8.2	7.2	8.0	7.4	1)
	M	21	2.1	—	2.2	1.4	
	M	32	3.1	—	3.2	> 2.2	
	D	42	4.2	—	4.2	> 3.2	
	D	52	5.2	—	5.2	> 4.2	
	D	62	6.2	—	6.2	> 5.2	
	D	72	7.2	—	7.2	> 6.2	
	D	82	8.2	—	8.2	> 7.2	
	D	92	9.2	8.6	9.2	> 8.2	
	D	99	9.9	8.6	9.9	> 9.2	1)

Note: all dimensions are in millimetres.

¹⁾ these collets cannot be used for connector models with nut for fitting a bend relief.

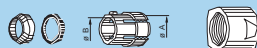
²⁾ the inner diameter of the smallest bend relief available is 2.5 mm.

	Reference		Collet ø		Cable ø		Notes
	Type	Code	ø A	ø B	max.	min.	
3B	M	52	5.2	—	5.2	> 4.2	
	D	62	6.2	—	6.2	4.9	
	D	72	7.2	—	7.7	> 6.2	
	D	92	9.2	—	9.2	> 7.7	
	D	10	10.2	—	10.0	> 9.2	
4B	D	11	11.0	—	11.0	> 10.1	
	D	12	12.0	10.2	11.9	10.8	1)
	M	62	6.2	—	6.2	4.9	
	M	72	7.2	—	7.7	> 6.2	
	M	92	9.2	8.6	9.2	> 7.7	
	D	10	10.8	—	10.5	9.1	
	D	12	12.3	—	12.0	10.6	
5B	D	13	13.8	12.5	13.5	12.1	
	D	15	15.3	12.5	15.0	13.6	
	D	16	16.3	12.5	16.0	15.1	1)
	D	11	11.8	—	11.5	9.6	
	D	13	13.8	—	13.5	11.6	
	D	15	15.8	—	15.5	13.6	
	D	17	17.8	—	17.5	15.6	1)
	D	19	19.8	—	19.5	17.6	1)
	D	21	21.8	—	21.5	19.6	1)
	D	23	23.8	21.8	23.5	21.6	1)
	D	25	25.3	21.8	25.0	23.6	1)



C and K type collets for K series

C type



K type

oversize
cable collet



	Reference		Collet ø		Cable ø		Notes
	Type	Code	ø A	ø B	max.	min.	
0K	C	10	1.6	—	1.2	1.0	1)
	C	15	1.6	—	1.5	1.3	1)
	C	20	2.1	—	2.0	1.6	1)
	C	25	3.1	—	2.5	2.1	
	C	30	3.1	—	3.0	2.6	
1K	C	35	4.2	4.2	3.5	3.1	
	C	40	4.2	4.2	4.0	3.6	
	C	45	5.2	5.2	4.5	4.1	
	C	50	5.2	5.2	5.0	4.6	
	C	15	1.6	—	1.5	1.3	
	C	20	2.2	—	2.0	1.6	
	C	25	3.2	—	2.5	2.1	
	C	30	3.2	—	3.0	2.6	
	C	35	4.2	—	3.5	3.1	
	C	40	4.2	—	4.0	3.6	
	C	45	5.2	—	4.5	4.1	
	C	50	5.2	—	5.0	4.6	
	C	55	6.2	6.2	5.5	5.1	
	C	60	6.2	6.2	6.0	5.6	
	C	65	7.2	6.7	6.5	6.1	
2K	K	70	7.2	—	7.0	6.6	
	K	75	8.2	8.2	7.5	7.1	
	K	80	8.2	8.2	8.0	7.6	
	K	85	9.2	8.6	8.5	8.1	
	C	15	2.2	—	1.5	1.3	
	C	20	2.2	—	2.0	1.6	
	C	25	3.2	—	2.5	2.1	
	C	30	3.2	—	3.0	2.6	
	C	35	4.2	—	3.5	3.1	
	C	40	4.2	—	4.0	3.6	
3K	C	45	5.2	—	4.5	4.1	
	C	50	5.2	—	5.0	4.6	
	C	55	6.2	—	5.5	5.1	
	C	60	6.2	—	6.0	5.6	
	C	65	7.2	—	6.5	6.1	
	C	70	7.2	—	7.0	6.6	
	C	75	8.2	8.2	7.5	7.1	
	C	80	8.2	8.2	8.0	7.6	
	C	85	9.2	8.6	8.5	8.1	
	K	90	9.2	—	9.0	8.6	
	K	95	10.2	10.2	9.5	9.1	
	K	10	10.2	10.2	10.0	9.6	
	K	11	11.2	10.6	10.5	10.1	
	C	30	3.2	—	3.0	2.6	
	C	35	4.2	—	3.5	3.1	
	C	40	4.2	—	4.0	3.6	
	C	45	5.2	—	4.5	4.1	
	C	50	5.2	—	5.0	4.6	
	C	55	6.2	—	5.5	5.1	
	C	60	6.2	—	6.0	5.6	
	C	65	7.2	—	6.5	6.1	

	Reference		Collet ø		Cable ø	
	Type	Code	ø A	ø B	max.	min.
3K	C	70	7.2	—	7.0	6.6
	C	75	8.2	—	7.5	7.1
	C	80	8.2	—	8.0	7.6
	C	85	9.2	—	8.5	8.1
	C	90	9.2	—	9.0	8.6
4K	C	95	10.2	10.2	9.5	9.1
	C	10	10.2	10.2	10.0	9.6
	C	11	11.2	10.6	10.5	10.1
	K	11	12.3	—	12.0	10.6
	K	12	13.8	13.8	12.8	12.1
	K	13	13.8	13.8	13.5	12.9
	K	14	15.3	15.3	14.0	13.6
	K	15	15.3	15.3	15.0	14.1
	C	50	6.3	—	5.0	4.6
	C	55	6.3	—	5.5	5.1
	C	60	6.3	—	6.0	5.6
	C	65	7.3	—	6.5	6.1
	C	70	7.3	—	7.0	6.6
	C	75	8.3	—	7.5	7.1
	C	80	8.3	—	8.0	7.6
5K	C	85	9.3	—	8.5	8.1
	C	90	9.3	—	9.0	8.6
	C	95	10.8	—	9.5	9.1
	C	10	10.8	—	10.5	9.6
	C	11	12.3	—	12.0	10.6
	C	12	13.8	13.8	12.8	12.1
	C	13	13.8	13.8	13.5	12.9
	C	14	15.3	15.3	14.0	13.6
	C	15	15.3	15.3	15.0	14.1
	K	16	17.8	—	16.5	15.6
	K	17	17.8	—	17.5	16.6
	K	18	19.8	—	18.5	17.6
	K	19	19.8	—	19.5	18.6
	K	20	21.8	—	20.5	19.6
	K	21	21.8	—	21.5	20.6
	K	22	23.8	23.8	22.5	21.6
	K	23	23.8	23.8	23.5	22.6
5K	C	10	11.8	—	10.5	9.6
	C	11	11.8	—	11.5	10.6
	C	12	13.8	—	12.5	11.6
	C	13	13.8	—	13.5	12.6
	C	14	15.8	—	14.5	13.6
	C	15	15.8	—	15.5	14.6
	C	16	17.8	—	16.5	15.6
	C	17	17.8	—	17.5	16.6
	C	18	19.8	—	18.5	17.6
	C	19	19.8	—	19.5	18.6
5K	C	20	21.8	—	20.5	19.6
	C	21	21.8	—	21.5	20.6
	C	22	23.8	23.8	22.5	21.6
	C	23	23.8	23.8	23.5	22.6

Note: 1) the inner diameter of the smallest bend relief available is 2.5 mm. All dimensions are in millimetres.

Variant (B and K series)

Bend relief for B series models with collet

		Need to be ordered	
	Ref.	Collet	
		Type	Code
00	Z	D	22 to 35
0B	Z	D	21 to 52
1B	Z	M	27 and 31
		D	42 to 72
XB	Z	D	52 to 72
2B	Z	M	21 and 31
		D	42 to 92
3B	Z	M	52
		D	62 to 10
4B	Z	M	62 and 72
		M	92
		D	10 to 15
5B	Z	D	11 to 15
Need to be ordered separately (see pages 141 and 142)			
GMA.00.●●●.●● GMB.00.●●●.●●			
GMA.0B.●●●.●●			
GMA.1B.●●●.●● GMA.1B.●●●.●●			
GMA.1B.●●●.●●			
GMA.0B.●●●.●● GMA.2B.●●●.●●			
GMA.1B.●●●.●● GMA.3B.●●●.●●			
GMA.2B.●●●.●● GMA.4B.●●●.●● GMA.4B.●●●.●●			
GMA.4B.●●●.●●			

Bend relief for K series models with collet

		Need to be ordered	
	Ref.	Collet	
		Type	Code
0K	Z	C	10 to 50
1K	Z	C	15 to 65
		K	70 to 85
2K	Z	C	15 to 85
		K	90 to 10
3K	Z	C	30 to 10
		K	11 to 15
4K	Z	C	50 to 15
Need to be ordered separately (see pages 141 and 142)			
GMA.0B.●●●.●●			
GMA.1B.●●●.●● GMA.2B.●●●.●●			
GMA.2B.●●●.●● GMA.3B.●●●.●●			
GMA.3B.●●●.●● GMA.4B.●●●.●●			
GMA.4B.●●●.●●			

Note: All dimensions are in millimetres.

Colour of the bridge plug shells and connectors shell made of plastic material and aluminium alloys

Reference	Colour	Bridge plug and plastic shell			Aluminium alloys	
		PSU	PPSU	PA.6	Anodized colour	Anodized colour for bend relief collet nut
A	blue			●	●	
B	white	●		●		
G	grey	●		●		
J	yellow			●	●	
M	brown			●		
N	black			●	●	
R	red			●	●	
S	orange			●		
T	natural				●	
V	green			●	●	
L	black					●
X	natural					●
F	cream		●			

Note: other anodizing colours are available for connectors with collet nut for bend relief. Please consult us.

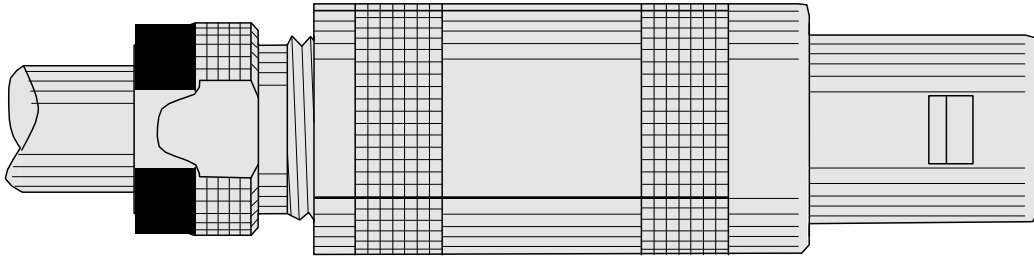
Watertight and vacuumtight socket and coupler models (B and K series)

	Model	Reference	
		Watertight	Vacuumtight
B	YH●, HG●, HN●, HH●, HC●, HE●, HM●, S●●	P	PV
K	HG●, HE●, S●●	P	PV

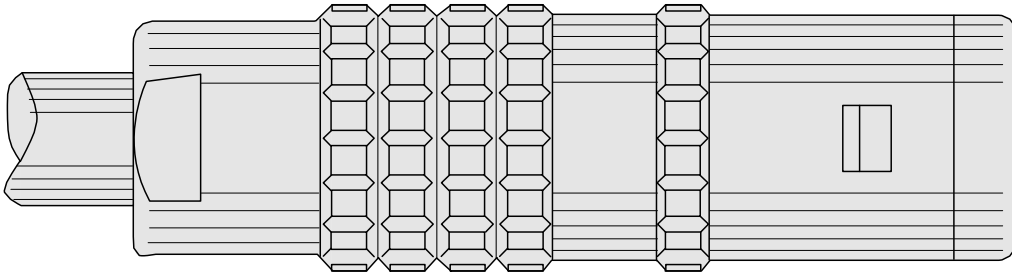
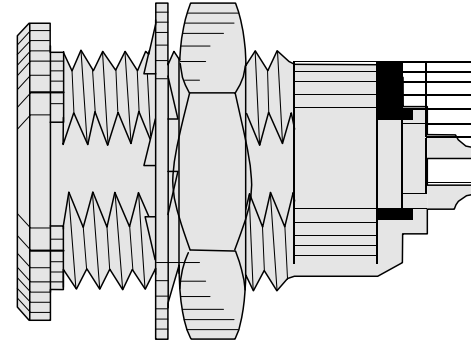
O-ring and gasket material (K series)

Standard connectors are delivered with silicone o-ring and gaskets. The vacuumtight models, identified with the letter «PV», are delivered with Viton® gaskets. Other gaskets material can be delivered upon special request.

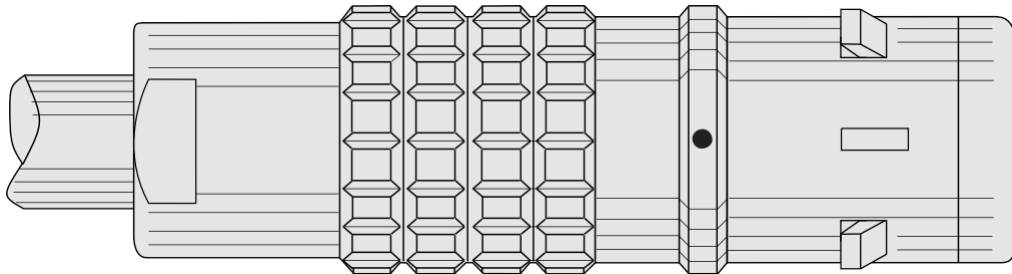
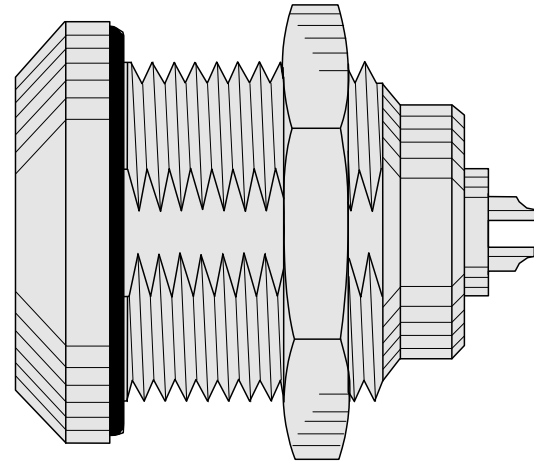
O-ring material	Reference
FPM (Viton®)	H
EPDM	E
FPM (Viton®) and collet nut for bend relief	D



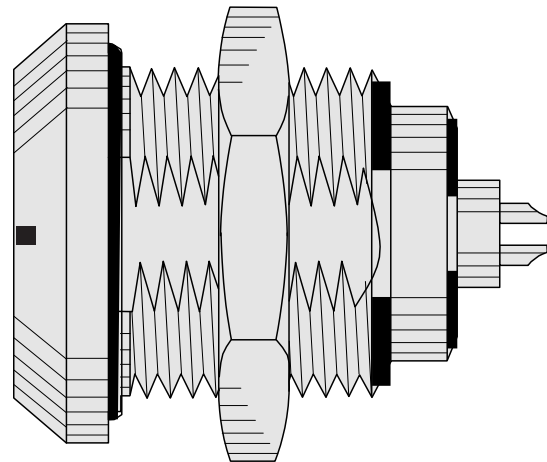
S SERIES



E SERIES (watertight)



L SERIES (watertight keyed)



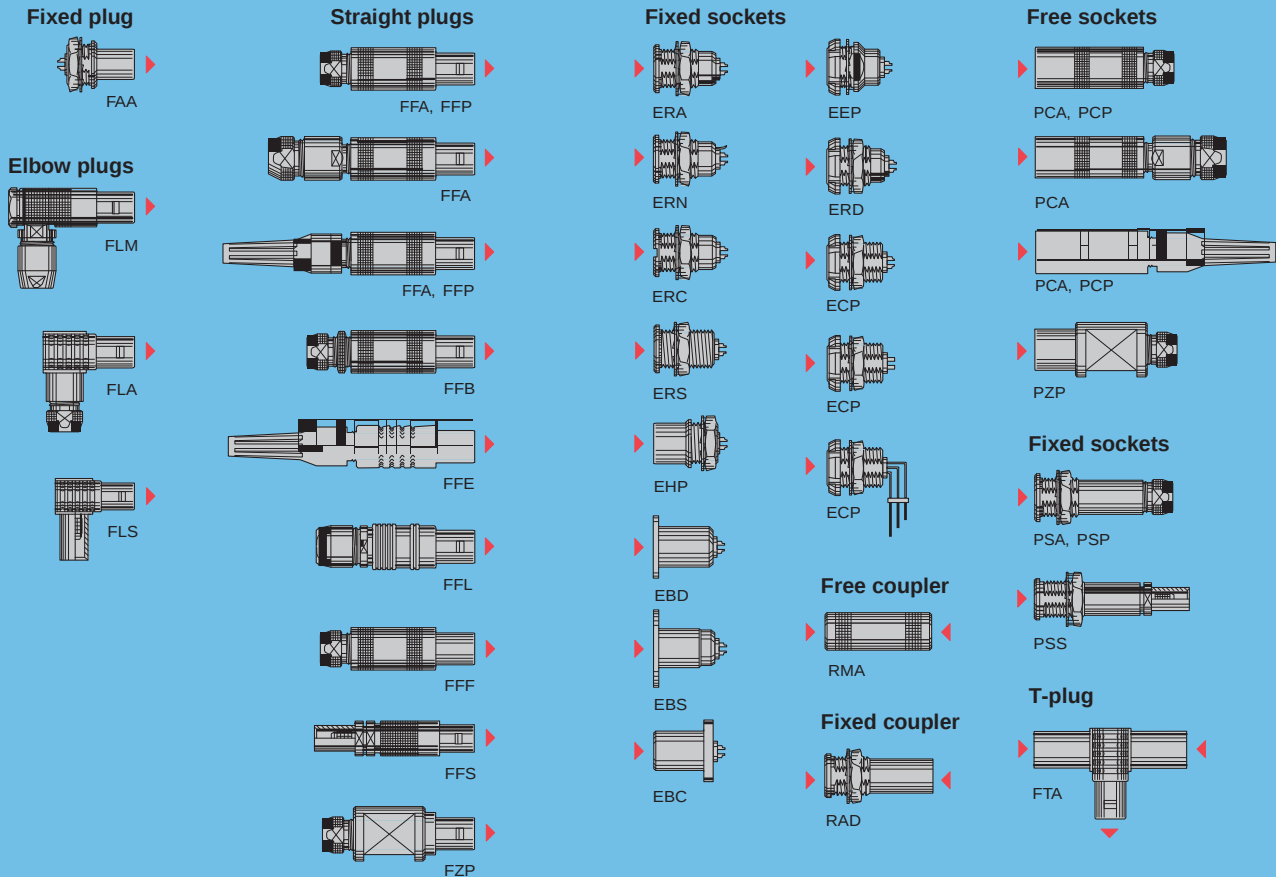
S Series

S series connectors have main features as follows:

- security of the Push-Pull self-latching system
- unipole types transmitting current up to 230 A and multipole types with up to 106 contacts
- 360° screening for full EMC shielding.

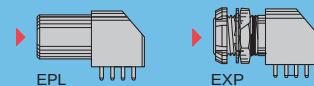
- solder or print contacts (straight or elbow)
- polarisation by stepped insert (half-moon) fitted with male and female contacts

Metal housing models (page 58)

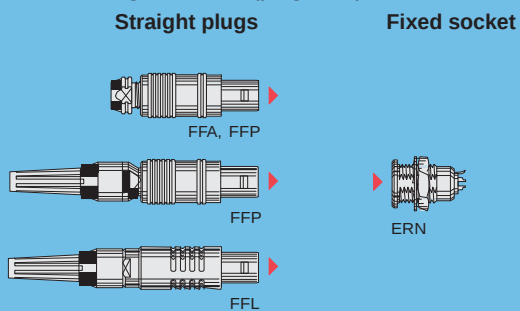


Elbow socket models (page 68)

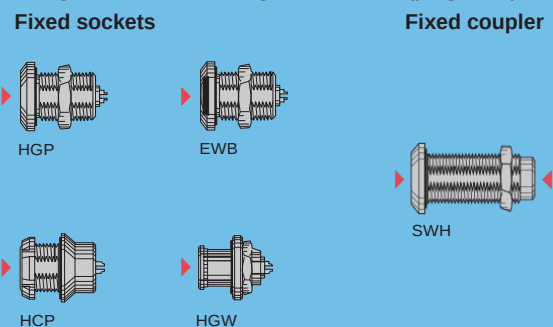
Elbow sockets



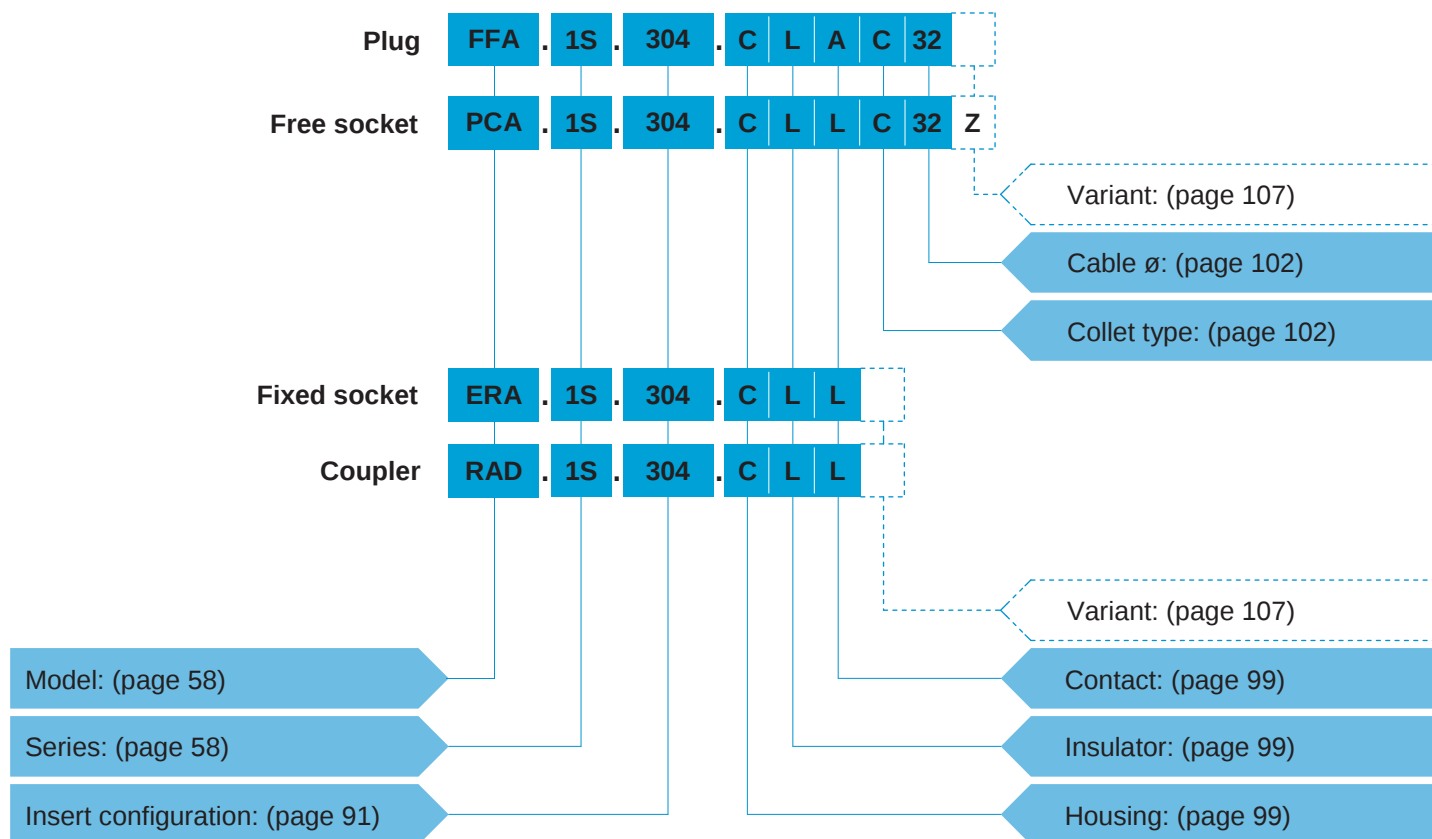
Plastic housing models (page 70)



Watertight or vacuumtight models (page 72)



Part Numbering System



Part Number Example

Straight plug with cable collet:

FFA.1S.304.CLAC32 = straight plug with cable collet, 1S series, multipole type with 4 contacts, outer shell in chrome-plated brass, PEEK insulator, 2 male and 2 female solder contacts, C type collet for a 3.2 mm diameter cable.

Free socket:

PCA.1S.304.CLLC32Z = free socket, with cable collet, 1S series, multipole type with 4 contacts, outer shell in chrome-plated brass, PEEK insulator, 2 female and 2 male solder contacts, C type collet for a 3.2 mm diameter cable and nut for fitting a bend relief.

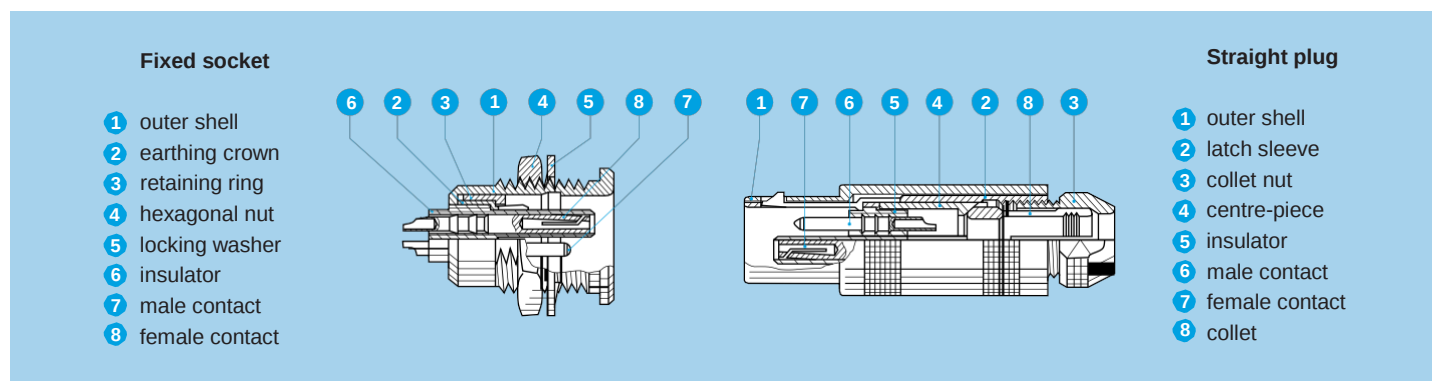
Fixed socket:

ERA.1S.304.CLL = fixed socket, nut fixing, 1S series, multipole type with 4 contacts, outer shell in chrome-plated brass, PEEK insulator, 2 female and 2 male solder contacts.

Fixed coupler:

RAD.1S.304.CLL = straight coupler, nut fixing, 1S series, multipole type with 4 contacts, outer shell in chrome-plated brass, PEEK insulator, 2 female and 2 male contacts each end.

Part Section Showing Internal Components



Technical Characteristics

Mechanical and Climatical

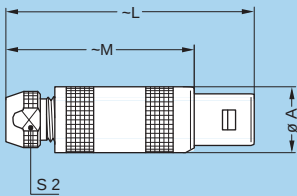
Characteristics	Value	Standard
Endurance	> 5000 cycles	IEC 60512-5 test 9a
Humidity	up to 95% at 60° C	
Temperature range	- 55° C, +250° C	
Resistance to vibrations	10-2000 Hz, 15 g	IEC 60512-4 test 6d
Shock resistance	100 g, 6 ms	IEC 60512-4 test 6c
Salt spray corrosion test	> 1000h	IEC 60512-6 test 11f
Protection index (mated)	IP 50	IEC 60529
Climatical category	55/175/21	IEC 60068-1

Metal housing models

Electrical

Characteristics		Value	Standard
Shielding efficiency	at 10 MHz	> 75 dB	IEC 60169-1-3
	at 1 GHz	> 40 dB	IEC 60169-1-3

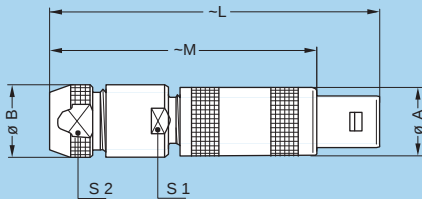
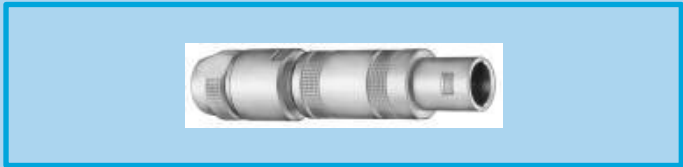
Note:
The various tests have been carried out with FFA and ERA connector pairs, with chrome-plated brass shell and PEEK insulator.
Detailed electrical characteristics, as well as materials and treatment are presented in the chapter Technical Characteristics on page 171.



FFA Straight plug, cable collet

Reference		Dimensions (mm)				
Model	Series	A	L	M	S2	
FFA	00	6.4	26.0	18.0	4.5	
FFA	0S	9.0	34.5	24.5	6.5	
FFA	1S	12.0	42.5	31.5	8.5	
FFA	2S	14.8	52.0	40.0	11.0	
FFA	3S	17.8	61.0	46.0	14.0	
FFA	4S	24.8	77.0	59.0	19.0	
FFA	5S	35.0	103.0	78.0	29.0	
FFA	6S	46.0	106.0	81.0	38.0	

M1
Cable assembly
(pages 163 to 165)

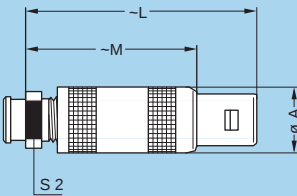
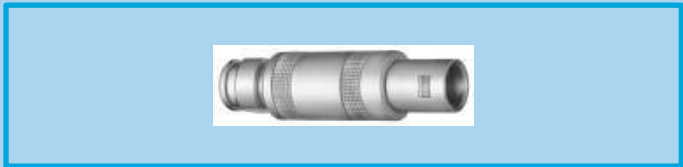


FFA Straight plug with oversize cable collet ¹⁾

Reference		Dimensions (mm)						
Model	Series	A	B	L	M	S1	S2	
FFA	00	6.4	8.0	34.0	26.0	7.0	6.5	
FFA	0S	9.0	10.0	45.5	35.5	9.0	8.5	
FFA	1S	12.0	13.0	57.0	46.0	12.0	11.0	
FFA	2S	14.8	18.0	67.0	55.0	14.0	14.0	
FFA	3S	17.8	21.0	85.0	70.0	19.0	19.0	
FFA	4S	24.8	31.8	107.0	89.0	28.5	29.0	
FFA	5S	35.0	41.8	138.0	113.0	37.5	38.0	

M2 Cable assembly (pages 164 and 166)

Note: ¹⁾ correspond to K type of collet, the fitting of oversize collets onto this model allows them to be fitted to the cables that can be accommodated by the next housing size up (see page 102).

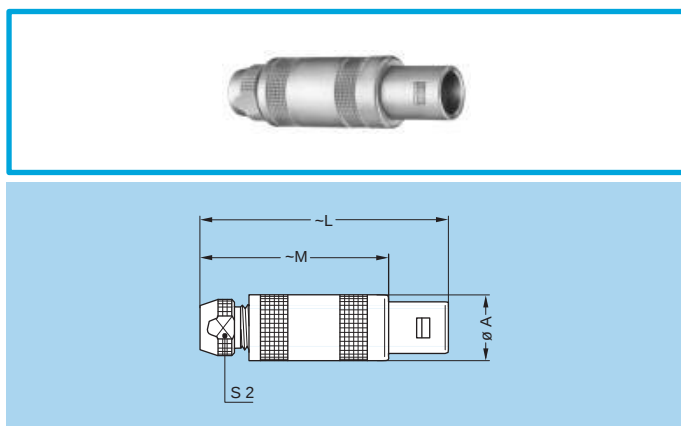


FFA Straight plug, cable collet and nut for fitting a bend relief ¹⁾

Reference		Dimensions (mm)				
Model	Series	A	L	M	S2	
FFA	00	6.4	26.0	18.0	6	
FFA	0S	9.0	34.5	24.5	7	
FFA	1S	12.0	42.5	31.5	9	
FFA	2S	14.8	52.0	40.0	12	
FFA	3S	17.8	61.0	46.0	14	
FFA	4S	24.8	77.0	59.0	20	

M1
Cable assembly
(pages 163 and 164)

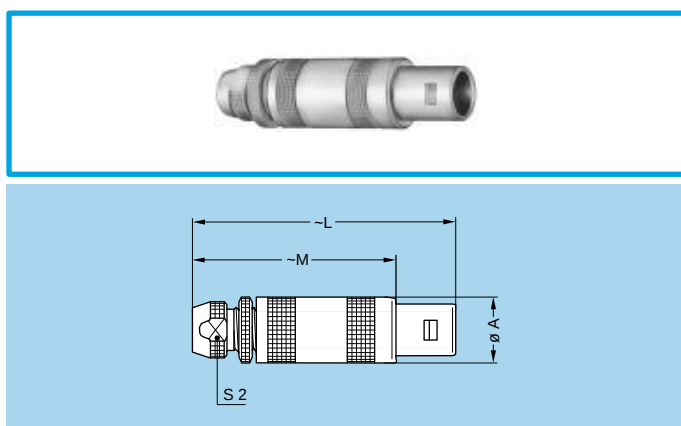
Note:
¹⁾ to order, add a «Z» at the end of the reference. The bend relief must be ordered separately (see page 141).



FFP Straight plug, cable collet and inner anti-rotating device

Reference		Dimensions (mm)			
Model	Series	A	L	M	S2
FFP	1S	12.0	42.5	31.5	8.5
FFP	2S	14.8	52.0	40.0	11.0
FFP	3S	17.8	61.0	46.0	14.0
FFP	4S	24.8	77.0	59.0	19.0

M1 Cable assembly (pages 163 and 164)

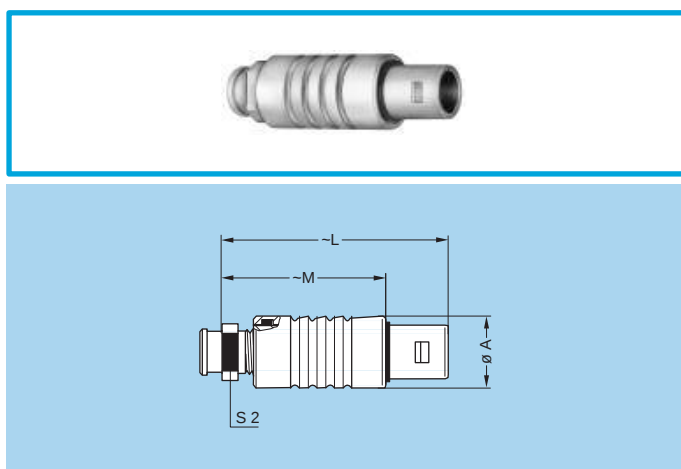


FFB Straight plug, cable collet and safety locking ring

Reference		Dimensions (mm)			
Model	Series	A	L	M	S2
FFB	0S	9.0	36.8	26.8	6.5
FFB	1S	12.0	45.0	34.0	8.5
FFB	2S	14.8	55.5	43.5	11.0
FFB	3S	17.8	65.0	50.0	14.0

M1 Cable assembly (pages 163 and 164)

Note: nut for fitting a bend relief (available only for size 1S).

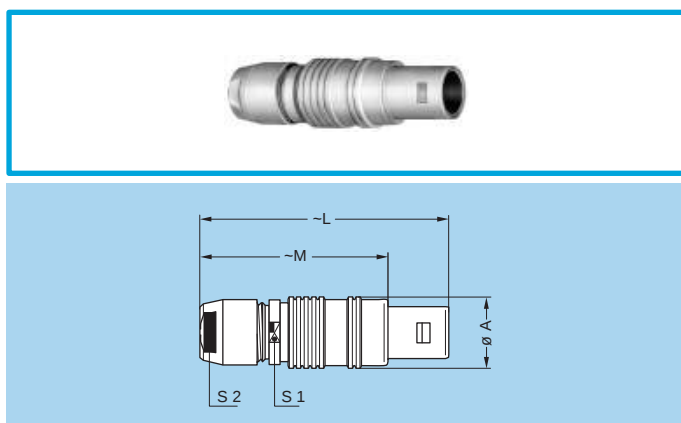


FFE Straight plug, cable collet, front seal and nut for fitting a bend relief ¹⁾ (protected to IP54 when mated)

Reference		Dimensions (mm)			
Model	Series	A	L	M	S2
FFE	00	7.4	26.0	18.0	6
FFE	0S	10.0	34.5	24.5	7
FFE	1S	13.0	42.5	31.5	9
FFE	2S	16.0	52.0	40.0	12
FFE	3S	19.0	61.0	46.0	14

M1 Cable assembly (pages 163 and 164)

Note: ¹⁾ to order, add a «Z» at the end of the reference.
The bend relief must be ordered separately (see page 141).

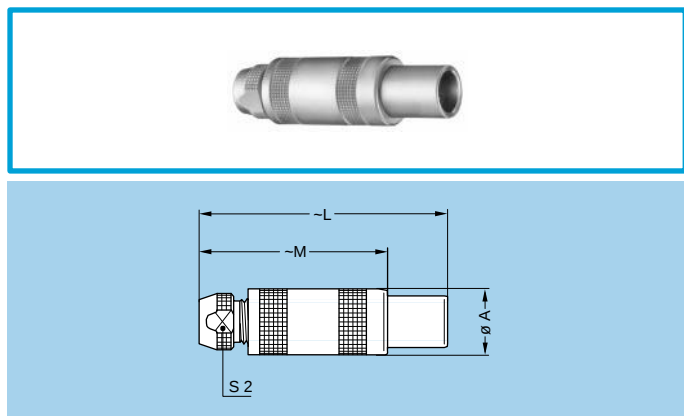


FFL Straight plug, flats on latch sleeve, cable collet and inner anti-rotating device

Reference		Dimensions (mm)				
Model	Series	A	L	M	S1	S2
FFL	2S	15.0	49.0	37.0	13	12

M4 Cable assembly (page 165)

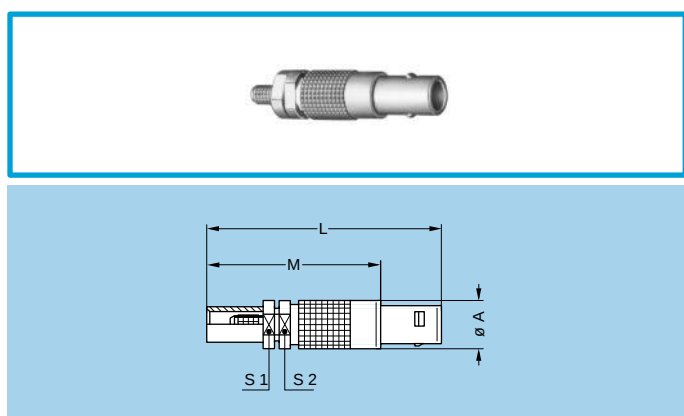
It is also adapted for crimp contacts.
Available only for multipole.



FFF Straight plug, non-latching, cable collet

Reference		Dimensions (mm)			
Model	Series	A	L	M	S2
FFF	00	6.4	26.0	18.0	4.5
FFF	0S	9.0	34.5	24.5	6.5
FFF	1S	12.0	42.5	31.5	8.5
FFF	2S	14.8	52.0	40.0	11.0

M1 Cable assembly (pages 163 and 164)

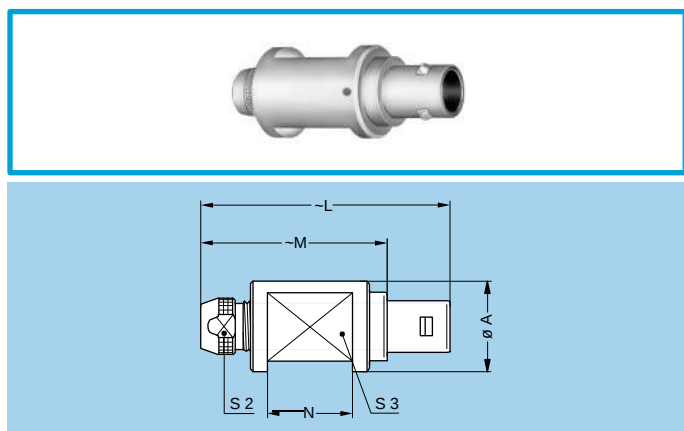


FFS Straight plug for cable crimping

Reference		Dimensions (mm)				
Model	Series	A	L	M	S1	S2
FFS	00	6.4	31	23	5.5	5.5

M5 Cable assembly (page 163)

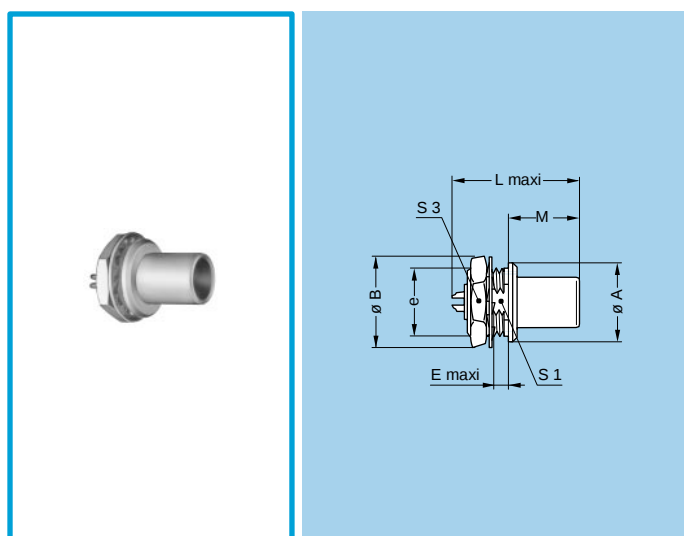
Note: Model available only with crimp backnut E31 similar to 00.250 series.



FZP Straight plug for remote handling, cable collet and inner anti-rotating device

Reference		Dimensions (mm)					
Model	Series	A	L	M	N	S2	S3
FZP	1S	16	42.5	31.5	15	8.5	12
FZP	2S	24	52.0	40.0	21	11.0	18
FZP	3S	24	61.0	46.0	24	14.0	18
FZP	4S	35	77.0	59.0	30	19.0	28
FZP	5S	43	103.0	78.0	44	29.0	35
FZP	6S	60	106.0	81.0	44	38.0	50

M1 Cable assembly (pages 163 to 165)



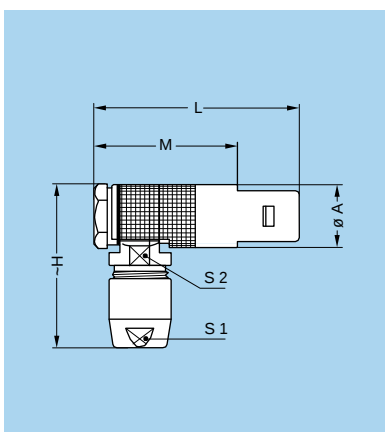
FAA Fixed plug non-latching, nut fixing

Reference		Dimensions (mm)								
Model	Series	A	B	e	E	L	L ¹⁾	M	S1	S3
FAA	00	8	10.2	M7x0.5	2.0	—	15.5	9.0	6.3	9
FAA	0S	10	12.4	M9x0.6	2.0	18.5	18.0	11.2	8.2	11
FAA	1S	14	15.8	M12x1.0	2.5	22.5	21.7	12.5	10.5	14
FAA	2S	18	19.2	M15x1.0	4.0	25.0	25.3	13.8	13.5	17
FAA	3S	22	25.0	M18x1.0	4.0	31.0	29.0	17.0	16.5	22
FAA	4S	28	34.0	M25x1.0	2.5	35.5	39.0	20.5	23.5	30
FAA	5S	40	40.0	M35x1.0	2.5	45.0	—	28.0	33.5	—
FAA	6S	54	54.0	M48x1.5	2.5	45.0	—	28.0	—	—

P1 Panel cut-out (page 152)

P2 Panel cut-out 6S series (page 152)

Note: ¹⁾ unipole model

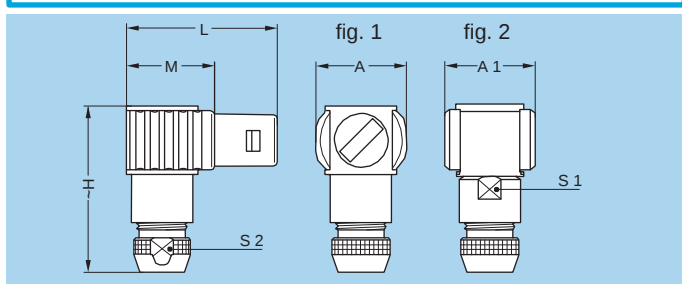


FLC/FLM Elbow (90°) plug, cable collet

Reference		Dimensions (mm)					
Model	Series	A	H	L	M	S1	S2
FLC	00	7.5	16.5	19.5	11.5	4.5	6
FLM	0S	9.5	23.0	30.0	20.0	7.0	8
FLM	1S	12.0	29.0	36.0	25.0	9.0	10
FLM	2S	14.8	35.0	41.5	29.5	12.0	13

M3 Cable assembly (pages 163 to 165)

Note: FLC.00 model is used for the unipole type.
For 0S, 1S and 2S series use «D» type collet, see page 52.



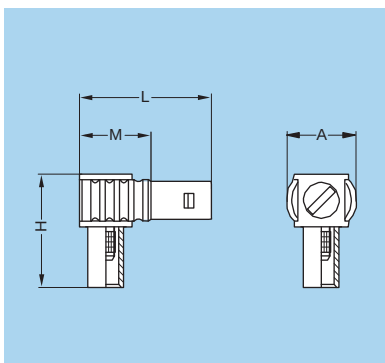
FLA Elbow (90°) plug, cable collet

Reference		Dimensions (mm)						
Model	Series	A	A1	H	L	M	S1	S2
FLA	3S	21	21	44.0	38.5	23.5	15	14.0
FLA	4S	28	28	56.0	49.0	31.0	20	19.0
FLA	5S	–	37	76.5	65.0	40.0	30	29.0
FLA	6S	–	48	94.0	81.0	56.0	40	38.0

M3 Cable assembly (pages 163 to 165)

Note:
fig. 1 is used for the unipole type, fig. 2 is used for the multipole type.

- Maximum operating temperature: 120°C



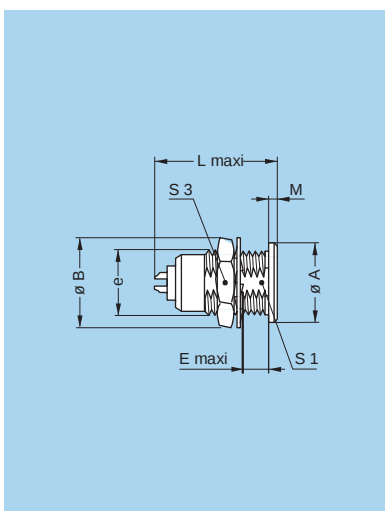
FLS Elbow (90°) plug for cable crimping

Reference		Dimensions (mm)			
Model	Series	A	H	L	M
FLS	00	9	16	17.5	9.5

M6 Cable assembly (page 163)

Note: Model available only with crimp backnut E31 similar to 00.250 series.

- Maximum operating temperature: 120°C



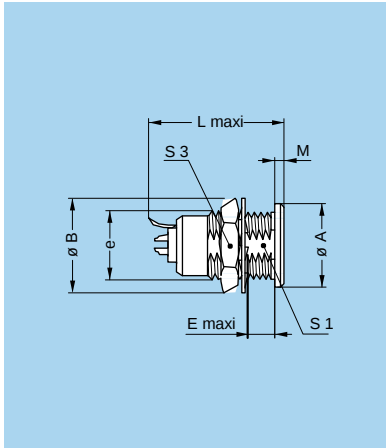
ERA Fixed socket, nut fixing

Reference		Dimensions (mm)								
Model	Series	A	B	e	E	L	L ¹⁾	M	S1	S3
ERA	00	8	10.2	M7x0.5	5.5	–	14.5	1.0	6.3	9
ERA	0S	10	12.4	M9x0.6	7.0	17.5	18.0	1.2	8.2	11
ERA	1S	14	15.8	M12x1.0	7.5	20.2	20.5	1.5	10.5	14
ERA	2S	18	19.2	M15x1.0	8.5	24.5	23.5	1.8	13.5	17
ERA	3S	22	25.0	M18x1.0	11.5	29.0	27.5	2.0	16.5	22
ERA	4S	28	34.0	M25x1.0	12.0	34.0	33.5	2.5	23.5	30
ERA	5S	40	40.0	M35x1.0	15.5	45.0	78.5	3.0	33.5	–
ERA	6S	54	54.0	M48x1.5	16.0	45.0	–	3.5	45.5	–

P1 Panel cut-out (page 152)

Note: ¹⁾ unipole model

Note: the 5S series is delivered with a tapered washer and a round nut.
The 6S series is delivered without a locking washer and with a round nut.

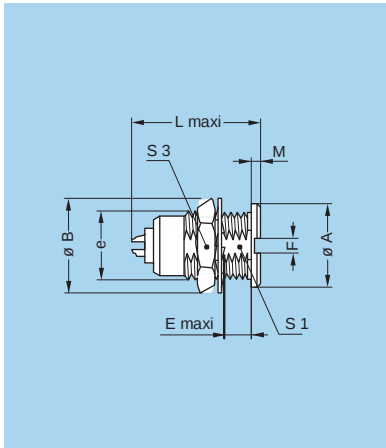


ERN Fixed socket, nut fixing, with earthing tag

Reference		Dimensions (mm)								
Model	Series	A	B	e	E	L	L ¹⁾	M	S1	S3
ERN	0S	10	12.4	M9x0.6	7.0	19.3	19.3	1.2	8.2	11
ERN	1S	14	15.8	M12x1.0	7.5	22.4	22.4	1.5	10.5	14
ERN	2S	18	19.2	M15x1.0	8.5	26.3	26.3	1.8	13.5	17
ERN	3S	22	25.0	M18x1.0	11.5	29.8	29.8	2.0	16.5	22

P1 Panel cut-out (page 152)

Note: ¹⁾ unipole model

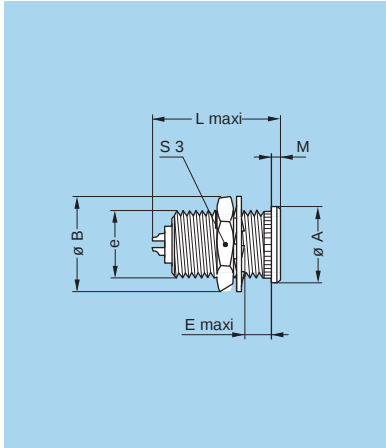


ERC Fixed socket, nut fixing with slot in the flange

Reference		Dimensions (mm)									
Model	Series	A	B	e	E	F	L	L ¹⁾	M	S1	S3
ERC	00	8	10.2	M7x0.5	5.5	1.6	–	14.5	1.0	6.3	9
ERC	0S	10	12.4	M9x0.6	7.0	2.0	17.5	18.0	1.2	8.2	11
ERC	1S	14	15.8	M12x1.0	7.5	2.5	20.2	20.5	1.5	10.5	14

P1 Panel cut-out (page 152)

Note: ¹⁾ unipole model

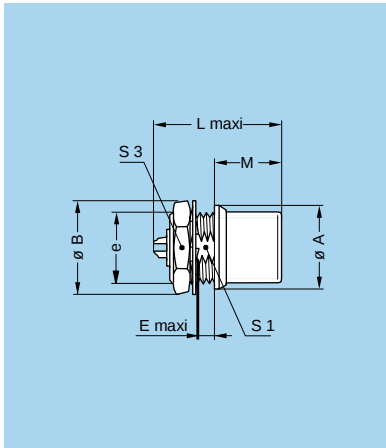


ERS Fixed socket, nut fixing, long threaded shell, without flats

Reference		Dimensions (mm)							
Model	Series	A	B	e	E	L	L ¹⁾	M	S3
ERS	0S	10	12.4	M9x0.6	10.5	17.5	18.0	1.2	11

P2 Panel cut-out (page 152)

Note: ¹⁾ unipole model



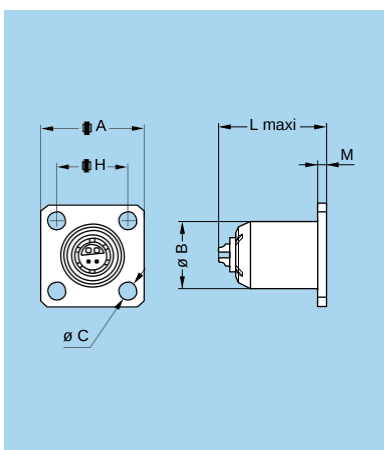
EHP Fixed socket, nut fixing, protruding shell

Reference		Dimensions (mm)								
Model	Series	A	B	e	E	L	L ¹⁾	M	S1	S3
EHP	0S	10	12.4	M9x0.6	2.0	20.5	18.0	12.5	8.2	11
EHP	1S	14	15.8	M12x1.0	3.5	20.2	20.5	12.0	—	14
EHP	3S	22	25.0	M18x1.0	4.0	29.0	29.0	18.7	—	22

P1 Panel cut-out 0S series (page 152)

P2 Panel cut-out (page 152)

Note: ¹⁾ unipole model

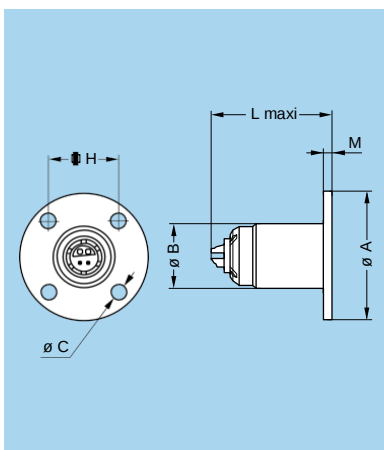


EBD Fixed socket with square flange and screw fixing

Reference		Dimensions (mm)						
Model	Series	A	B	C	H	L	L ¹⁾	M
EBD	2S	22	15	3.2	15.5	24.5	26	2

P6 Panel cut-out (page 152)

Note: ¹⁾ unipole model

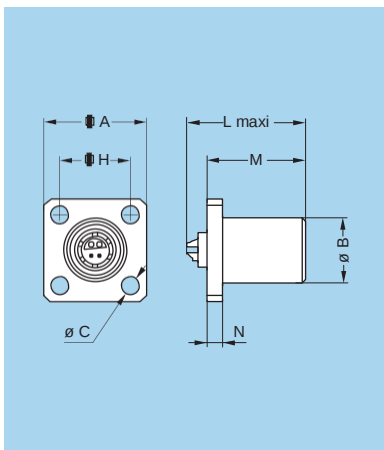


EBS Fixed socket with round flange and screw fixing

Reference		Dimensions (mm)						
Model	Series	A	B	C	H	L	L ¹⁾	M
EBS	1S	22	11	2.5	12.4	20.2	20.5	1.5

P7 Panel cut-out (page 152)

Note: ¹⁾ unipole model

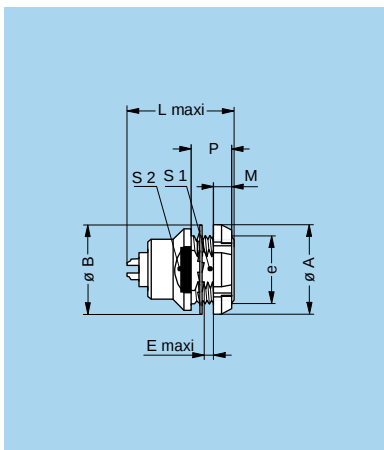


EBC Fixed socket with square flange, protruding shell and screw fixing

Reference		Dimensions (mm)							
Model	Series	A	B	C	H	L	L ¹⁾	M	N
EBC	1S	18	11.5	3.2	12.7	20.2	20.5	16.5	2.8
EBC	2S	22	15.0	3.2	15.5	24.5	23.5	18.5	4.4
EBC	3S	25	18.0	3.2	18.0	29.0	27.5	23.5	3.0
EBC	5S	45	40.0	4.3	36.8	45.0	78.5	15.0	4.0

P6 Panel cut-out (page 152)

Note: ¹⁾ unipole model

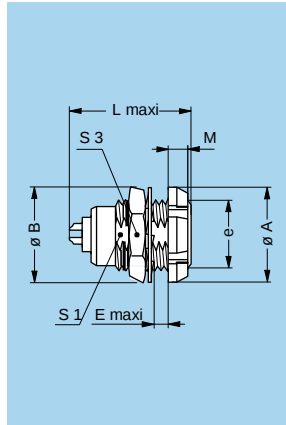


EEP Fixed socket, nut fixing (back panel mounting)

Reference		Dimensions (mm)									
Model	Series	A	B	e	E	L	L ¹⁾	M	P	S1	S2
EEP	1S	16	16.0	M12x1	6.5	20.2	20.5	3.5	11	10.5	13
EEP	2S	20	19.5	M15x1	4.3	24.5	23.5	3.5	9	13.5	15

P1 Panel cut-out (page 152)

Note: ¹⁾ unipole model

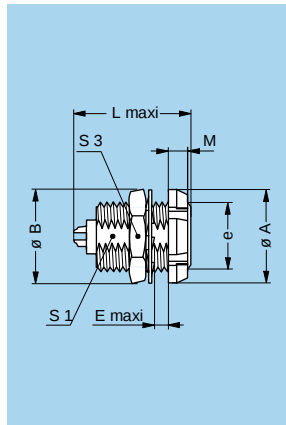


ERD Fixed socket with two nuts (back panel mounting)

Reference		Dimensions (mm)								
Model	Series	A	B	e	E	L	L ¹⁾	M	S1	S3
ERD	0S	12	12.4	M9x0.6	5.5	17.5	18.0	2.5	8.2	11
ERD	1S	16	15.8	M12x1.0	6.0	20.2	20.5	3.5	10.5	14
ERD	2S	20	19.2	M15x1.0	6.5	24.5	23.5	3.5	13.5	17
ERD	3S	24	25.0	M18x1.0	9.0	29.0	27.5	4.5	16.5	22
ERD	4S	30	34.0	M25x1.0	10.0	34.0	33.5	4.5	23.5	30

P1 Panel cut-out (page 152)

Note: ¹⁾ unipole model.
The 3S and 4S series are delivered with a conical nut.

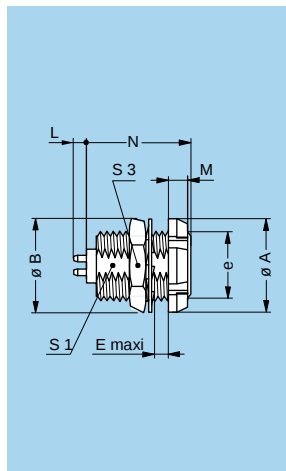


ECP Fixed socket with two nuts, long threaded shell (back panel mounting)

Reference		Dimensions (mm)								
Model	Series	A	B	e	E	L	L ¹⁾	M	S1	S3
ECP	0S	12	12.4	M9x0.6	8.5	17.5	18.5	2.5	8.2	11
ECP	1S	16	15.8	M12x1.0	10.0	20.2	21.5	3.5	10.5	14
ECP	2S	20	19.2	M15x1.0	11.0	24.5	26.0	3.5	13.5	17
ECP	3S	24	25.0	M18x1.0	14.0	29.0	30.0	4.5	16.5	22

P1 Panel cut-out (page 152)

Note: ¹⁾ unipole model.
The 3S series is delivered with a conical nut.



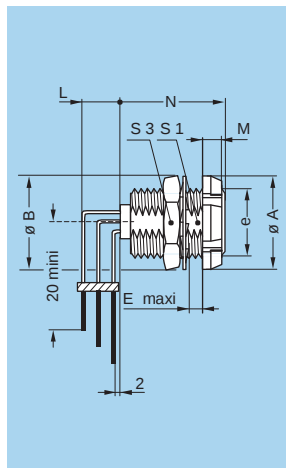
ECP Fixed socket with two nuts, long threaded shell, with straight contact for printed circuit (back panel mounting)

Reference		Dimensions (mm)							
Model	Series	A	B	e	E	M	N	S1	S3
ECP	0S	12	12.4	M9x0.6	8.5	2.5	15.0	8.2	11
ECP	1S	16	15.8	M12x1.0	10.0	3.5	17.5	10.5	14
ECP	2S	20	19.2	M15x1.0	11.0	3.5	20.0	13.5	17
ECP	3S	24	25.0	M18x1.0	14.0	4.5	24.0	16.5	22

P1 Panel cut-out (page 152)

P21 PCB drilling pattern (page 159)

Note: this contact type is available for all E● socket models.
See page 159 for table of available types.
Length «L» depends on the number of contacts, see table on page 159.
The 3S series is delivered with a conical nut.



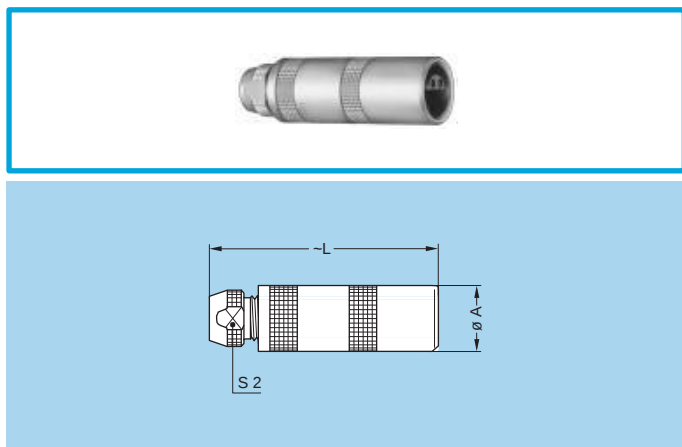
ECP Fixed socket with two nuts, long threaded shell, with elbow (90°) contacts for printed circuit (back panel mounting)

Reference		Dimensions (mm)							
Model	Series	A	B	e	E	M	N	S1	S3
ECP	0S	12	12.4	M9x0.6	8.5	2.5	15.0	8.2	11
ECP	1S	16	15.8	M12x1.0	10.0	3.5	17.5	10.5	14
ECP	2S	20	19.2	M15x1.0	11.0	3.5	20.0	13.5	17
ECP	3S	24	25.0	M18x1.0	14.0	4.5	24.0	16.5	22

P1 Panel cut-out (page 152)

P24 PCB drilling pattern (page 160)

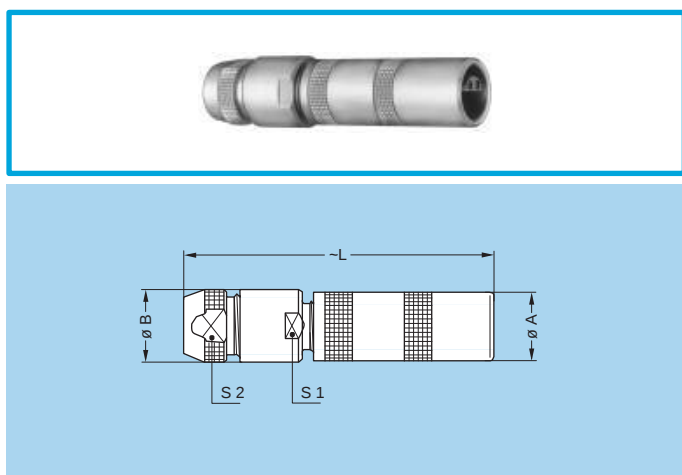
Note: this contact type is available for all back panel mounting socket types.
See page 160 for available types.
Length «L» depends on the number of contacts, see PCB drilling pattern on page 160.
The 3S series is delivered with a conical nut.



PCA Free socket, cable collet

Reference		Dimensions (mm)		
Model	Series	A	L	S2
PCA	00	6.5	25.0	4.5
PCA	0S	8.9	33.5	6.5
PCA	1S	11.9	40.5	8.5
PCA	2S	14.8	50.0	11.0
PCA	3S	17.8	59.0	14.0
PCA	4S	24.8	75.0	19.0
PCA	5S	34.7	99.0	29.0
PCA	6S	46.0	102.0	38.0

M1 Cable assembly (pages 163 to 165)

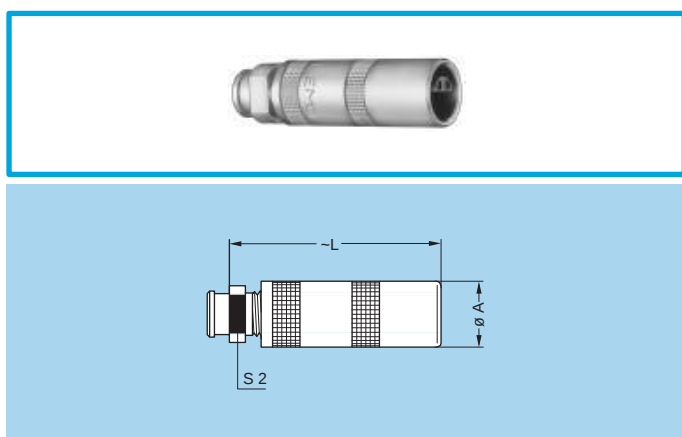


PCA Free socket with oversize cable collet ¹⁾

Reference		Dimensions (mm)				
Model	Series	A	B	L	S1	S2
PCA	00	6.5	8.0	33.0	7.0	6.5
PCA	0S	8.9	10.0	44.5	9.0	8.5
PCA	1S	11.9	13.0	55.0	12.0	11.0
PCA	2S	14.8	18.0	65.0	14.0	14.0
PCA	3S	17.8	21.0	83.0	19.0	19.0
PCA	4S	24.8	31.8	105.0	28.5	29.0

M2 Cable assembly (pages 164 and 166)

Note: ¹⁾ correspond to K type of collet, the fitting of oversize collets onto this model allows them to be fitted to the cables that can be accommodated by the next housing size up (see page 102).

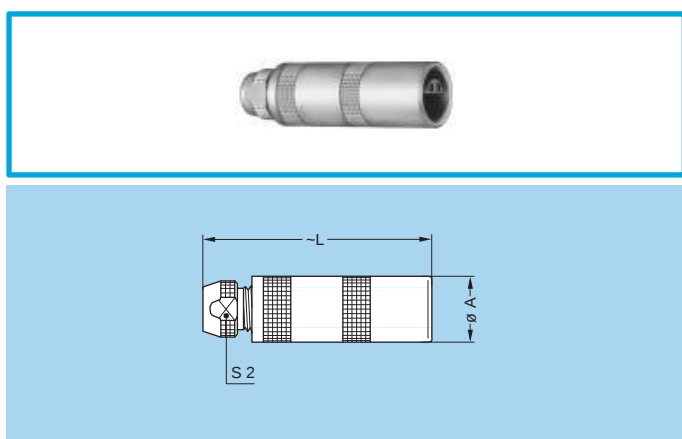


PCA Free socket, cable collet and nut for fitting a bend relief ¹⁾

Reference		Dimensions (mm)		
Model	Series	A	L	S2
PCA	00	6.5	25.0	6
PCA	0S	8.9	33.5	7
PCA	1S	11.9	40.5	9
PCA	2S	14.8	50.0	12
PCA	3S	17.8	59.0	14
PCA	4S	24.8	75.0	20

M1
Cable assembly
(pages 163 and 164)

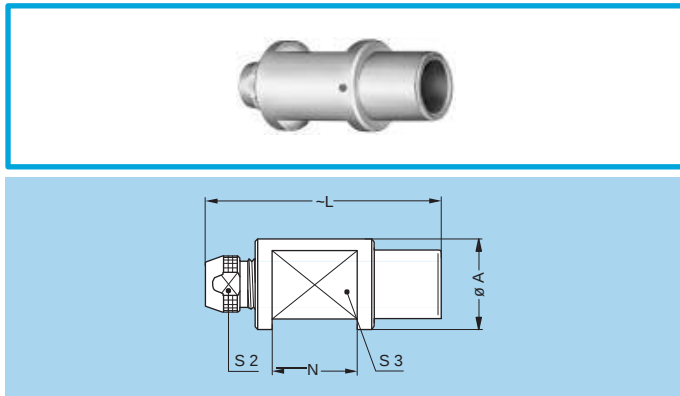
Note: ¹⁾ to order, add a «Z» at the end of the reference. The bend relief must be ordered separately (see page 141).



PCP Free socket, cable collet and inner anti-rotating device

Reference		Dimensions (mm)		
Model	Series	A	L	S2
PCP	1S	11.9	40.5	8.5
PCP	2S	14.8	50.0	11.0
PCP	3S	17.8	59.0	14.0
PCP	4S	24.8	75.0	19.0

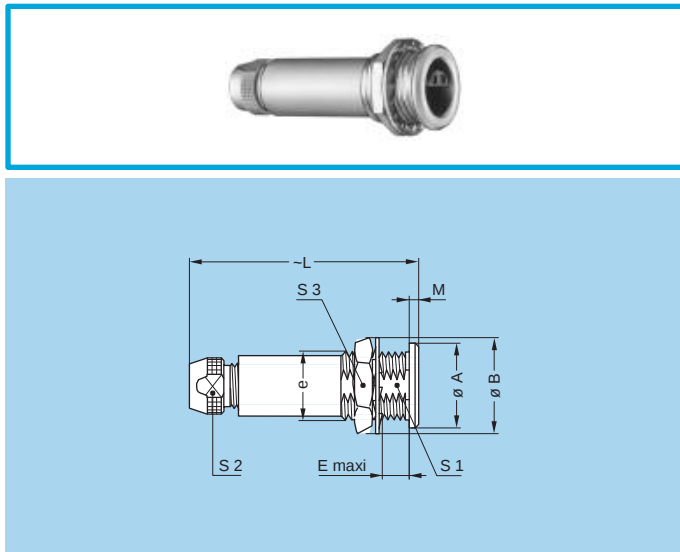
M1 Cable assembly (pages 163 and 164)



PZP Free socket for remote handling with cable collet and inner anti-rotating device

Reference		Dimensions (mm)				
Model	Series	A	L	N	S2	S3
PZP	1S	16	40.5	15	8.5	12
PZP	2S	24	50.0	21	11.0	18
PZP	3S	24	59.0	24	14.0	18

M1 Cable assembly (pages 163 and 164)



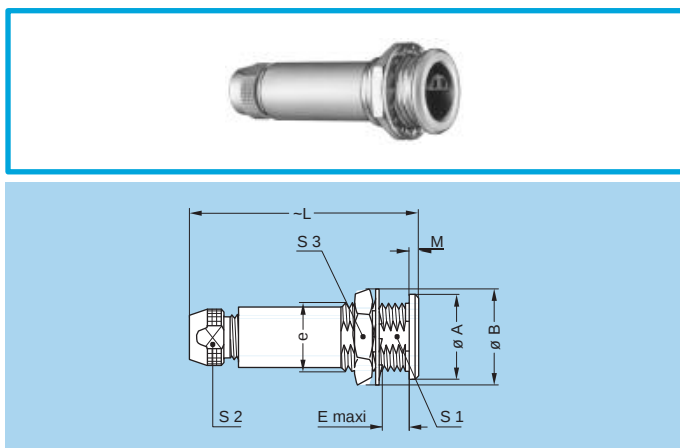
PSA Fixed socket, nut fixing, cable collet

Reference		Dimensions (mm)								
Model	Series	A	B	e	E	L	M	S1	S2	S3
PSA	00	8	10.2	M7x0.5	5.5	25.0	1.0	6.3	4.5	9
PSA	0S	10	12.4	M9x0.6	7.0	33.5	1.2	8.2	6.5	11
PSA	1S	14	15.8	M12x1.0	7.5	40.5	1.5	10.5	8.5	14
PSA	2S	18	19.2	M15x1.0	8.5	50.0	1.8	13.5	11.0	17
PSA	3S	22	25.0	M18x1.0	11.5	59.0	2.0	16.5	14.0	22
PSA	4S	28	34.0	M25x1.0	12.0	75.0	2.5	23.5	19.0	30
PSA	5S	40	40.0	M35x1.0	15.5	99.0	3.0	33.5	29.0	—
PSA	6S	54	54.0	M48x1.5	16.0	102.0	3.5	45.5	38.0	—

M1 Cable assembly (pages 163 to 165)

P1 Panel cut-out (page 152)

Note: the 5S series is delivered with a tapered washer and a round nut. The 6S series is delivered without a locking washer and with a round nut.

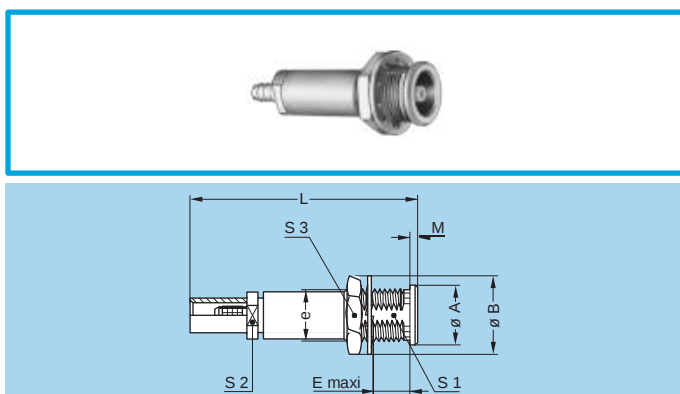


PSP Fixed socket, nut fixing, cable collet and inner anti-rotating device

Reference		Dimensions (mm)								
Model	Series	A	B	e	E	L	M	S1	S2	S3
PSP	1S	14	15.8	M12x1.0	7.5	40.5	1.5	10.5	8.5	14
PSP	2S	18	19.2	M15x1.0	8.5	50.0	1.8	13.5	11.0	17
PSP	3S	22	25.0	M18x1.0	11.5	59.0	2.0	16.5	14.0	22
PSP	4S	28	34.0	M25x1.0	12.0	75.0	2.5	23.5	19.0	30

M1 Cable assembly (pages 163 and 164)

P1 Panel cut-out (page 152)



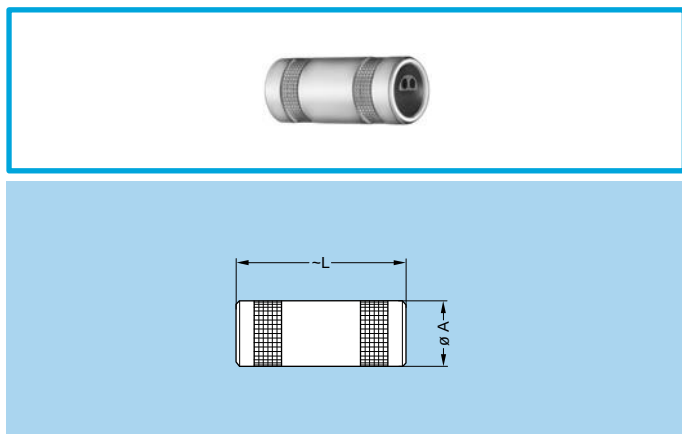
PSS Free socket, nut fixing for cable crimping

Reference		Dimensions (mm)								
Model	Series	A	B	e	E	L	M	S1	S2	S3
PSS	00	8	10.2	M7x0.5	5.5	30	1	6.3	5.5	9

M5 Cable assembly (page 163)

P1 Panel cut-out (page 152)

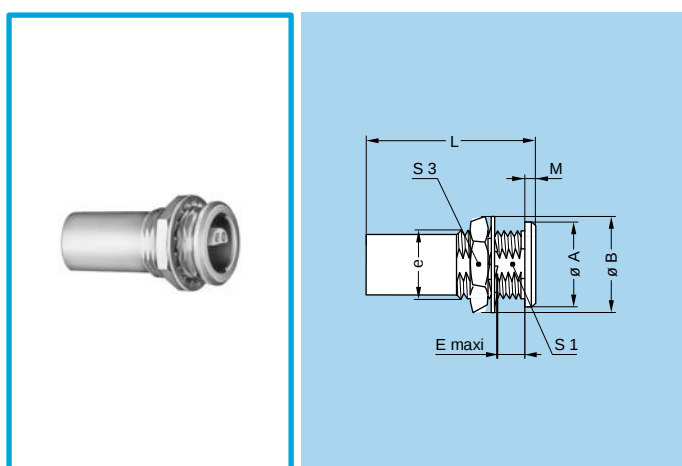
Note: Model available only with crimp backnut E31 similar to 00.250 series.



RMA Free coupler

Reference		Dim. (mm)	
Model	Series	A	L
RMA	00	6.4	22.0
RMA	0S	8.9	25.0
RMA	1S	11.9	28.5
RMA	2S	14.8	31.5
RMA	3S	17.8	38.5
RMA	4S	24.8	46.5
RMA	5S	34.7	60.5

Note: see page 101 for the available plug and contact configurations and in order to ensure correct contact alignment.



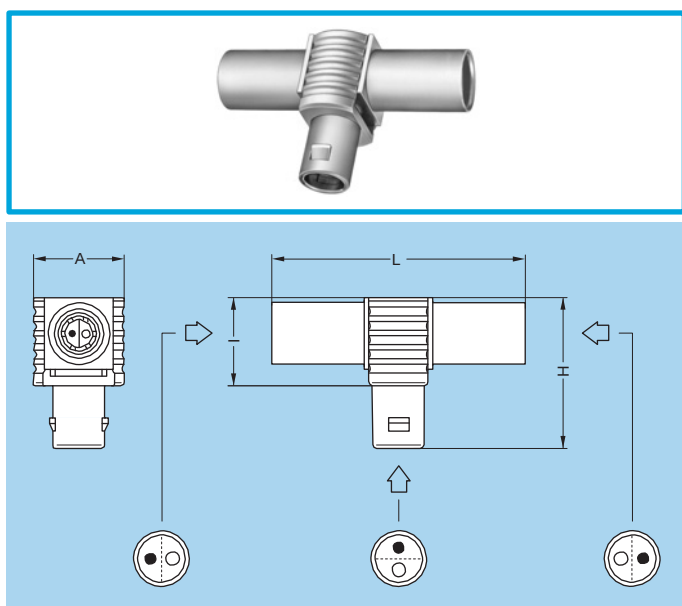
RAD Fixed coupler, nut fixing

Reference		Dimensions (mm)							
Model	Series	A	B	e	E	L	M	S1	S2
RAD	00	8	10.2	M7x0.5	5.5	22.0	1.0	6.3	9
RAD	0S	10	12.4	M9x0.6	7.0	25.0	1.2	8.2	11
RAD	1S	14	15.8	M12x1.0	7.5	28.5	1.5	10.5	14
RAD	2S	18	19.2	M15x1.0	8.5	31.5	1.8	13.5	17
RAD	3S	22	25.0	M18x1.0	11.5	38.5	2.0	16.5	22
RAD	4S	28	34.0	M25x1.0	12.0	46.5	2.5	—	30
RAD	5S	40	40.0	M35x1.0	15.5	60.5	3.0	—	—

P1 Panel cut-out (page 152)

P2 Panel cut-out 4S and 5S series (page 152)

Note: the 5S series is delivered with a tapered washer and a round nut.



FTA T-plug with two in line sockets

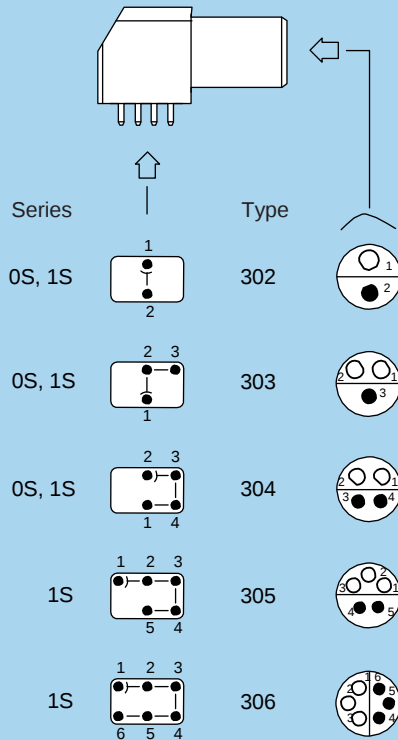
Reference		Dimensions (mm)			
Model	Series	A	H	I	L
FTA	00	9	17.5	9.5	30
FTA	0S	13	23.0	13.0	38
FTA	1S	16	26.5	16.5	45
FTA	3S	21	38.5	23.5	64

Note: multipole version available only with 2 contacts (type 302).

Elbow socket models

Technical Characteristics

Types



Materials and Treatment

Component	Material	Surface Treat. (µm)		
		Cu	Ni	Au
Housing	PPS ¹⁾	–	–	–
	Brass	0.5	3	–
Metallic parts	Brass	0.5	3	–
Earthing crown	Bronze	0.5	3	–
Insulator	PEEK	–	–	–
Female contact	Bronze	0.5	3	1.5

Note: ¹⁾ not used for all sizes.
The surface treatment standards are as follows:
– Nickel SAE AMS QQ N 290
– Gold: ISO 27874

Electrical

Model	Series	Types	Test voltage (kV rms) ¹⁾	Rated current (A)
EPL	0S	302-303-304	1.20	4.5
EXP	0S			
EPL	1S			
EXP	1S			
EPL	1S	305-306	0.70	4.5
EXP	1S			

Note:

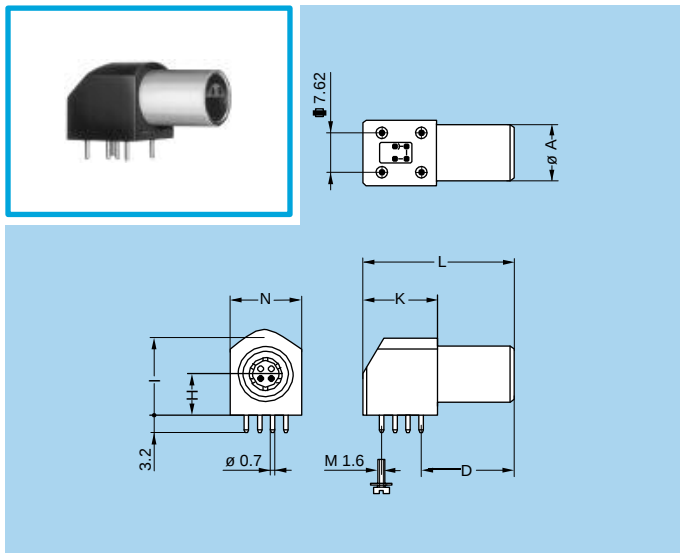
¹⁾ see calculation method, caution and suggested standard on page 178.

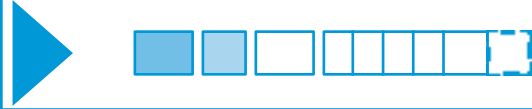
EPL Elbow (90°) socket for printed circuit (solder or screw fixing)

Part Number	Dimensions (mm)						
	A	D	H	I	K	L	N
EPL.0S.302.HLN	9	14.6	6.7	12.6	13.3	25	11.7
EPL.0S.303.HLN							
EPL.0S.304.HLN							
EPL.1S.302.HLN	11	16.6	7.5	14.0	13.3	27	12.6
EPL.1S.303.HLN							
EPL.1S.304.HLN							
EPL.1S.305.HLN							
EPL.1S.306.HLN							

Note: to replace the 4 ground pins by 4 screws (M1.6) add an «S» to the end of the part number. (e.g.: EPL.1S.303.HLNS)

P22 PCB drilling pattern (page 160)





Plastic housing models

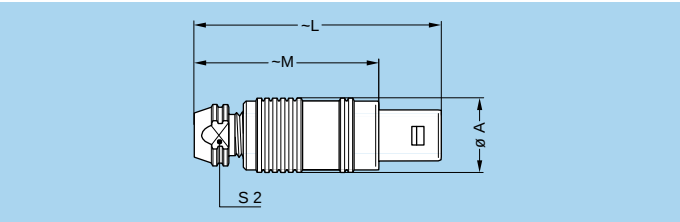
These connectors are particularly recommended for all applications requiring maximum electrical insulation when mated. The design, including a latch sleeve and a metal earthing crown, guarantees EMC screening efficiency to meet most requirements.

Technical Characteristics

Mechanical and Climatical

Characteristics	Value				Standard
	PEEK	POM	PSU	PPSU	
Colour	natural (beige)	black	white or grey	cream	–
Endurance	> 5000 cycles	> 5000 cycles	> 5000 cycles	> 5000 cycles	IEC 60512-5 test 9a
Humidity	up to 95% at 60° C				–
Temperature range	- 50° C/+250° C	- 50° C/+115° C	- 50° C/+150° C	- 50° C/+180° C	–
Sterilization resistance ¹⁾	> 200 cycles	none	~20 cycles	> 100 cycles	IEC 60601-1 § 44.7
Resistance to organic solvents	very good	very good	limited	good	–

Note:
¹⁾ Steam sterilization

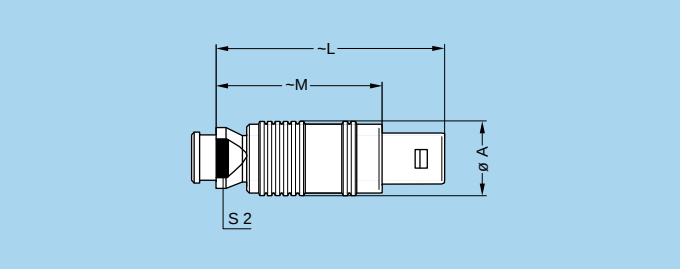


FFA Straight plug, cable collet, PEEK or POM outer shell

FFP Straight plug, cable collet, PEEK or POM outer shell and inner anti-rotating device

Reference		Dimensions (mm)			
Model	Series	A	L	M	S2
FFA	00	7.0	33.5	25.5	6.0
FFP	1S	12.0	42.5	31.5	10.0
FFP	2S	15.0	52.0	40.0	12.0
FFP	3S	18.0	61.0	46.0	14.0

M1
 Cable assembly
 (pages 163 and 164)

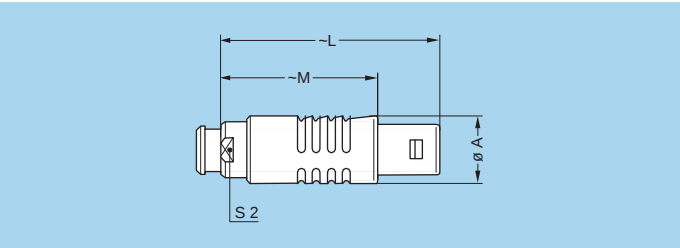


FFP Straight plug, cable collet, PEEK or POM outer shell, inner anti-rotating device and nut for fitting a bend relief ¹⁾

Reference		Dimensions (mm)			
Model	Series	A	L	M	S2
FFP	1S	12.0	41.5	30.5	10.0
FFP	2S	15.0	51.0	39.0	12.0
FFP	3S	18.0	61.0	46.0	14.0

M1 Cable assembly (pages 163 and 164)

Note: ¹⁾ to order, add a «Z» at the end of the reference. The bend relief must be ordered separately (see page 141).

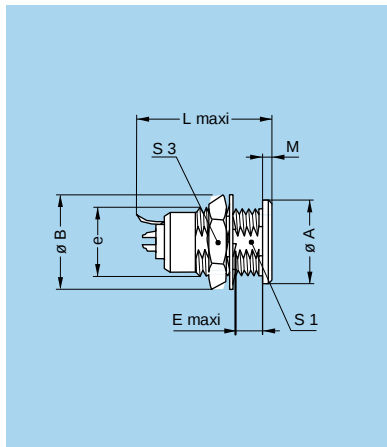


FFL Straight plug, cable collet, with PSU and PPSU outer shell, inner anti-rotating device and nut for fitting a bend relief ¹⁾

Reference		Dimensions (mm)			
Model	Series	A	L	M	S2
FFL	2S	16.5	51.5	39.5	13

M4 Cable assembly (page 165)

Note: ¹⁾ to order, add a «Z» at the end of the reference. The bend relief must be ordered separately (see page 141). This model is fitted with a «D or M» type collet system. It is also adapted for crimp contacts. Available only for multipole.



ERN Fixed socket, nut fixing, with earthing tag, PEEK or POM outer shell

Reference		Dimensions (mm)								
Model	Series	A	B	e	E	L	L ¹⁾	M	S1	S3
ERN	00	9	10.2	M7x0.5	5.5	—	14.5	1.0	6.3	9
ERN	0S	11	12.4	M9x0.6	6.4	19.3	19.3	1.8	8.2	11
ERN	1S	14	15.8	M12x1.0	7.5	22.4	22.4	1.5	10.5	14
ERN	2S	18	19.2	M15x1.0	8.5	26.3	26.3	2.0	13.5	17
ERN	3S	22	25.0	M18x1.0	11.5	29.8	29.8	2.0	16.5	22

P1 Panel cut-out (page 152)

Note: ¹⁾ unipole model



Watertight or vacuumtight models

These socket or coupler models allow the device on which they are fitted to reach a protection index of IP68 as per IEC 60529. They are fully compatible with plugs of the same series and are widely used for portable radios, military, laboratory equipment, aviation, etc.

These models are identified by a letter «P» at the end of the reference.

Most of these models are also available in a vacuumtight version. Such models are identified by an additional letter «V» at the end of the part number (certificate on request).

Epoxy resin is used to seal these models.

Technical Characteristics

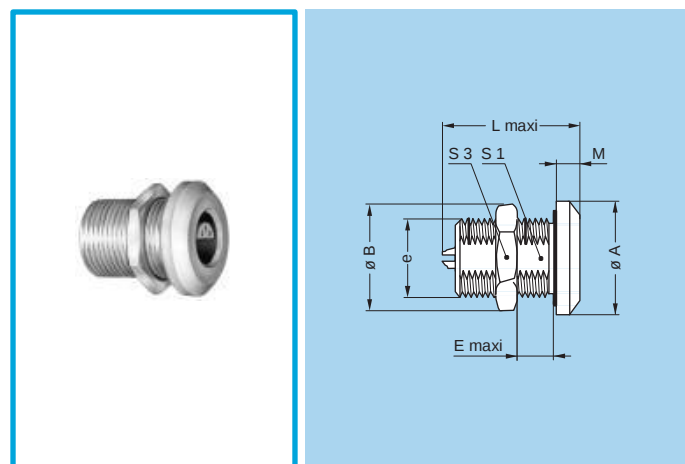
Mechanical and Climatical

Characteristics	Value	Standard
Endurance	> 5000 cycles	IEC 60512-5 test 9a
Humidity	up to 95% at 60° C	
Temperature range (0S-1S)	- 20° C/+100° C	
Temperature range (2S-6S)	- 20° C/+80° C	
Salt spray corrosion test	> 1000h	IEC 60512-6 test 11f
Climatical category	20/80/21	IEC 60068-1
Leakage rate (He) ¹⁾	< 10 ⁻⁷ mbar.l.s ⁻¹	IEC 60512-7 test 14b

Note: ¹⁾ only for vacuumtight models.

Characteristics	Value	Standard
Maximum operating pressure ²⁾	0S 60 bar	IEC 60512-7 test 14d
	1S 60 bar	
	2S 40 bar	
	3S 30 bar	
	4S 15 bar	
	5S 5 bar	
	6S 5 bar	

Note: ²⁾ this value corresponds to the maximum allowed pressure difference for the assembled socket.



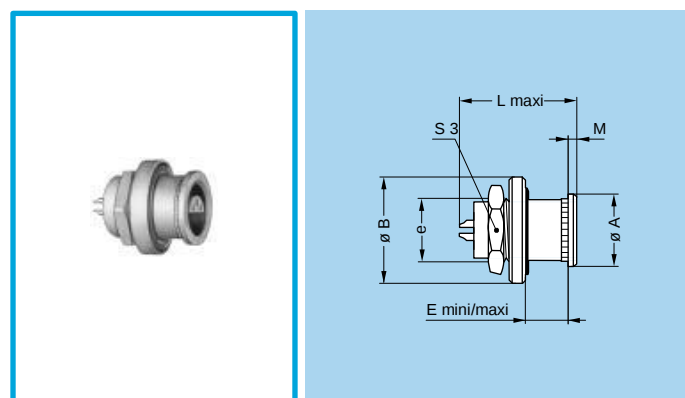
HGP Fixed socket, nut fixing, watertight or vacuumtight

Reference		Dimensions (mm)								
Model	Series	A	B	e	E	L	L ¹⁾	M	S1	S3
HGP	0S	18	15.8	M12x1.0	11.5	20.5	21.5	4.0	10.5	14
HGP	1S	20	19.2	M14x1.0	15.5	25.0	22.0	4.0	12.5	17
HGP	2S	20	21.5	M16x1.0	17.0	29.5	28.0	4.0	14.5	19
HGP	3S	28	27.0	M20x1.0	18.0	33.0	34.0	6.0	18.5	24
HGP	4S	34	34.0	M25x1.0	22.5	39.0	43.0	6.5	23.5	30
HGP	5S	45	40.0	M35x1.0	28.0	50.5	78.5	7.5	33.5	—
HGP	6S	58	54.0	M48x1.5	22.0	51.0	—	6.0	45.5	—

P3 Panel cut-out (page 152)

Note: ¹⁾ unipole model

Note: the 5S and 6S series are delivered with a round nut.

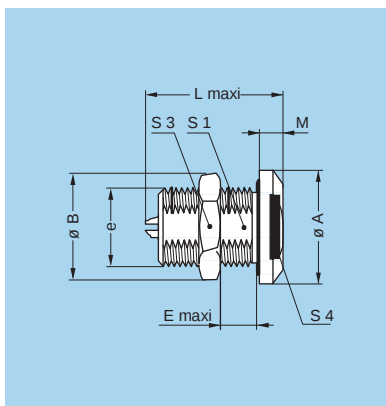


HGW Fixed socket, nut fixing, with back washer, watertight or vacuumtight

Reference		Dimensions (mm)							
Model	Series	A	B	e	E _{mini}	E _{maxi}	L	M	S3
HGW	0S	10	15	M9x0.6	2.0	3.0	20.5	1.2	11
HGW	1S	14	18	M12x1.0	2.0	4.0	25.0	1.5	14

P11 Panel cut-out (page 152)

Note: vacuumtight version is only available in the 0S series.

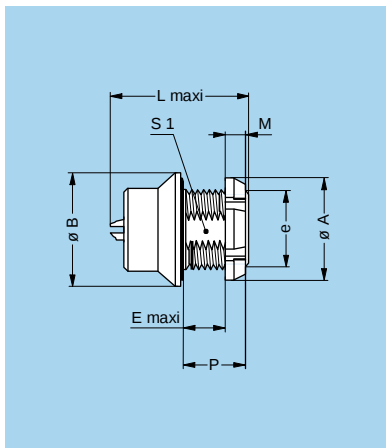


EWB Fixed socket, nut fixing, with two flats on the flange, watertight or vacuumtight

Reference		Dimensions (mm)									
Model	Series	A	B	e	E	L	L ¹⁾	M	S1	S3	S4
EWB	0S	18	15.8	M12x1.0	11.0	20.5	—	4.0	10.5	14	14
EWB	1S	20	19.2	M14x1.0	15.5	25.5	25.5	4.0	12.5	17	16
EWB	2S	20	21.5	M16x1.0	17.0	28.0	26.5	4.0	14.5	19	16
EWB	4S	34	34.0	M25x1.0	22.5	43.0	—	6.5	23.5	30	27

P3 Panel cut-out (page 152)

Note: ¹⁾ unipole model

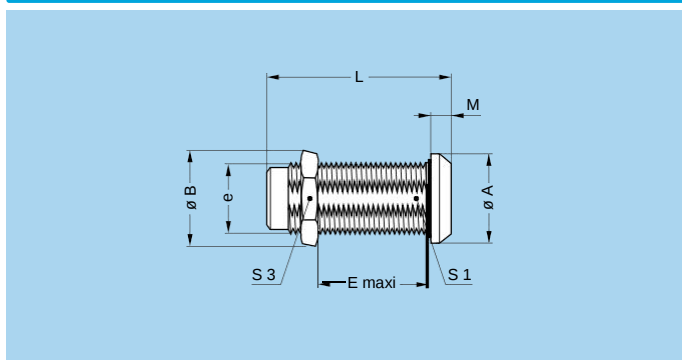


HCP Fixed socket, nut fixing, watertight or vacuumtight (back panel mounting)

Reference		Dimensions (mm)							
Model	Series	A	B	e	E	L	M	P	S1
HCP	1S	18	20	M14x1.0	8.6	25.5	3.5	12.0	—
HCP	2S	20	20	M16x1.0	12.5	29.0	3.5	16.5	14.5
HCP	4S	27	34	M25x1.0	15.5	41.0	4.5	20.0	23.5

P3 Panel cut-out (page 152)

Note: the 2S and 4S series are delivered with a conical nut.



SWH Fixed coupler, nut fixing, watertight or vacuumtight

Reference		Dimensions (mm)							
Model	Series	A	B	e	E	L	M	S1	S3
SWH	0S	14	13.8	M10x0.75	17	34	2.0	9.0	12
SWH	1S	17	15.8	M12x1.00	28	39	2.5	10.5	14
SWH	2S	20	21.5	M16x1.00	25	44	4.0	15.0	19
SWH	3S	25	27.0	M20x1.00	30	53	4.0	18.5	24
SWH	4S	34	34.0	M25x1.00	50	65	4.0	23.5	30
SWH	5S	45	40.0	M35x1.00	58	80	5.0	33.5	—
SWH	6S	58	54.0	M48x1.50	55	81	6.0	45.5	—

P4 Panel cut-out (page 152)

Note: see page 101 for the available plug and contact configurations and in order to ensure correct contact alignment.
The 5S and 6S series are delivered with a round nut.

E Series

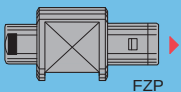
E series connectors have been specifically designed for outdoor applications.

They include an inner sleeve and two seals to prevent penetration of solids or liquids into the housing formed by the plug, free socket, fixed socket or coupler. All models of these series are watertight when mated and give a protection index of IP 68 as per IEC 60529 standard (in mated condition) when correctly assembled to an appropriate cable (IP 66 otherwise).

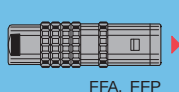
- security of the Push-Pull latching system
- unipole types transmitting current up to 230 A and multipole types with up to 106 contacts
- wide range of models satisfying most applications
- 360° screening for full EMC shielding
- watertight connection (IP 68/IP 66)
- polarization by stepped insert (half-moon) fitted with male and female contacts
- solder or print contacts (straight or elbow)
- rugged housing for extreme working condition.

Metal housing models (page 76)

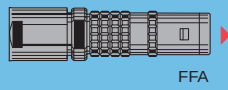
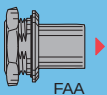
Straight plug



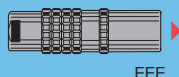
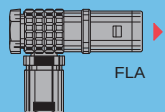
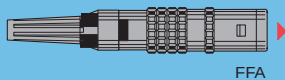
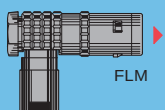
Straight plugs



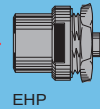
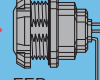
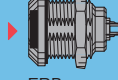
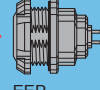
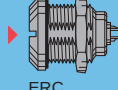
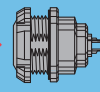
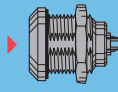
Fixed plug



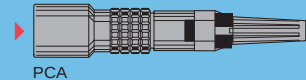
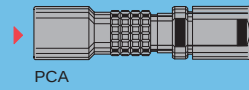
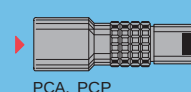
Elbow plug



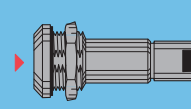
Fixed sockets



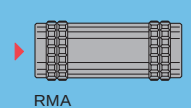
Free sockets



Fixed socket

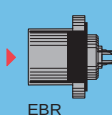
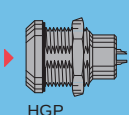


Free coupler

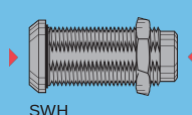


Watertight or vacuumtight models (page 82)

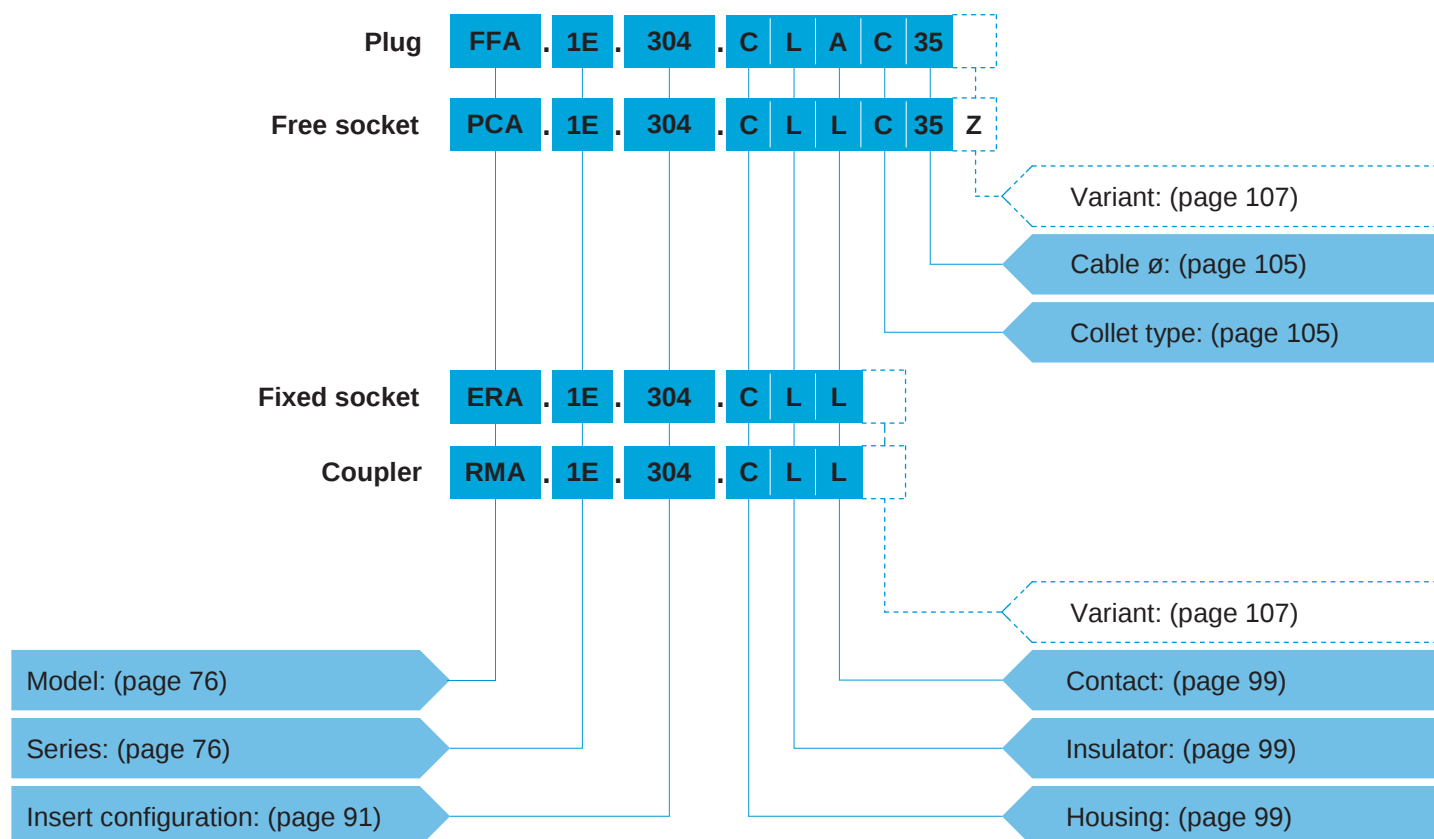
Fixed sockets



Fixed coupler



Part Numbering System



Part Number Example

Straight plug with cable collet:

FFA.1E.304.CLAC35 = straight plug with cable collet, 1E series, multipole type with 4 contacts, outer shell in chrome-plated brass, PEEK insulator, 2 male and 2 female solder contacts, C type collet for a 3.5 mm diameter cable.

Free socket:

PCA.1E.304.CLLC35Z = free socket with cable collet, 1E series, multipole type with 4 contacts, outer shell in chrome-plated brass, PEEK insulator, 2 female and 2 male solder contacts, C type collet for a 3.5 mm diameter cable and collet nut for fitting a bend relief.

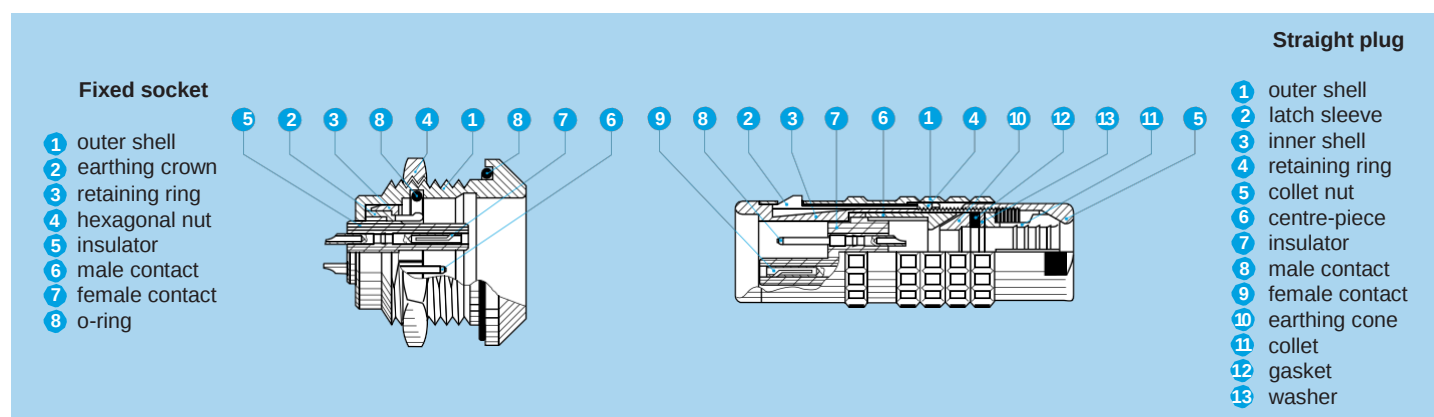
Fixed socket:

ERA.1E.304.CLL = fixed socket, nut fixing, 1E series, multipole type with 4 contacts, outer shell in chrome-plated brass, PEEK insulator, 2 female and 2 male solder contacts.

Free coupler:

RMA.1E.304.CLL = straight coupler, 1E series, multipole type with 4 contacts, outer shell in chrome-plated brass, PEEK insulator, 2 female and 2 male contacts each end.

Part Section Showing Internal Components





Metal housing models

Technical Characteristics

Mechanical and Climatical

Characteristics	Value	Standard
Endurance	> 5000 cycles	IEC 60512-5 test 9a
Humidity	up to 95% at 60° C	
Temperature range ¹⁾	- 55° C, +200° C	
Resistance to vibrations	10-2000 Hz, 15 g	IEC 60512-4 test 6d
Shock resistance	100 g, 6 ms	IEC 60512-4 test 6c
Salt spray corrosion test	> 1000h	IEC 60512-6 test 11f
Protection index (mated) ²⁾	IP 68/IP 66	IEC 60529
Climatical category	50/175/21	IEC 60068-1

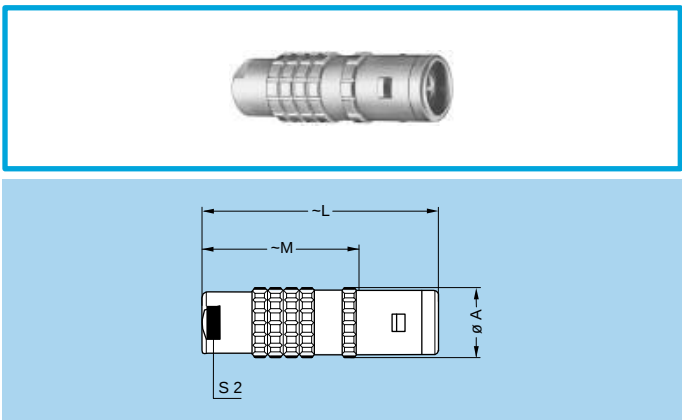
Electrical

Characteristics	Value	Standard
Shielding efficiency	at 10 MHz	> 95 dB
	at 1 GHz	> 80 dB
		IEC 60169-1-3
		IEC 60169-1-3

Note: the various tests have been carried out with FFA and ERA connector pairs, with chrome-plated brass shell, PEEK insulator and silicone O-ring. Detailed electrical characteristics, as well as materials and treatment are presented in the chapter Technical Characteristics on page 171.

¹⁾ minimum operating temperature is -20°C for sockets fitted with an FPM (Viton®) O-ring.

²⁾ IP68 achieved providing that the cable is perfectly circular and that assembly process ensures a high integrity seal.



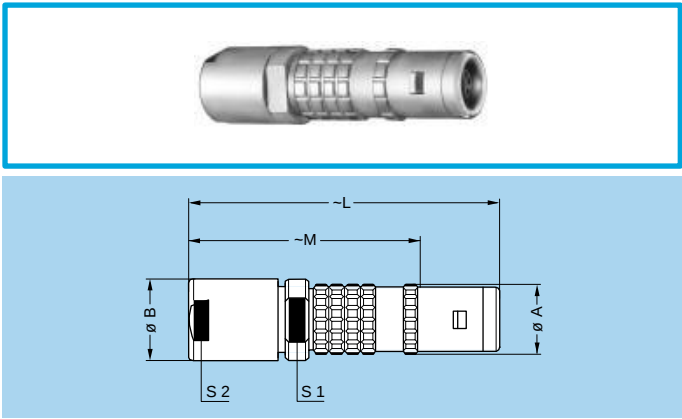
FFA Straight plug, cable collet

Reference		Dimensions (mm)			
Model	Series	A	L	M	S2
FFA	0E	11	34	23.0	8
FFA	1E	13	42	28.0	9
FFA	2E	16	52	36.0	12
FFA	3E	19	61	41.0	15
FFA	4E	25	71	50.5	19
FFA	5E	38	92	67.0	32
FGG ¹⁾	6E	47	118	89.0	38

M1

Cable assembly (pages 167 and 168)

Note: ¹⁾ with key (G)

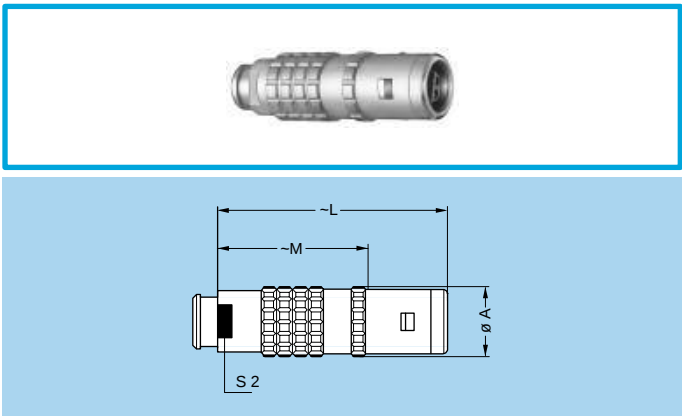


FFA Straight plug with oversize cable collet ¹⁾

Reference		Dimensions (mm)					
Model	Series	A	B	L	M	S1	S2
FFA	1E	13	14.5	55	41	12	12
FFA	2E	16	17.0	65	49	15	15
FFA	3E	19	22.0	80	60	19	19
FFA	4E	25	36.0	118	84	30	32

M2 Cable assembly (pages 167 and 169)

Note: ¹⁾ correspond to K type of collet, the fitting of oversize collets onto this model allows them to be fitted to the cables that can be accommodated by the next housing size up (see page 105).



FFA Straight plug, cable collet and nut for fitting a bend relief ¹⁾

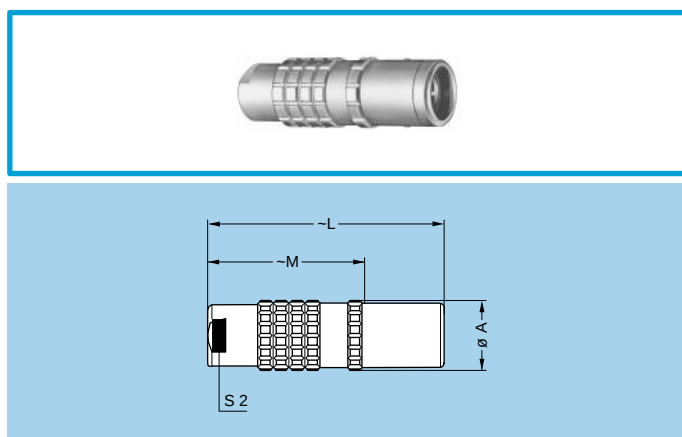
Reference		Dimensions (mm)			
Model	Series	A	L	M	S2
FFA	0E	11	34	23.0	7
FFA	1E	13	42	28.0	9
FFA	2E	16	52	36.0	12
FFA	3E	19	60	40.0	15
FFA	4E	25	71	50.5	19

M1

Cable assembly (pages 167 and 168)

Note: ¹⁾ to order, add a «Z» at the end of the reference.

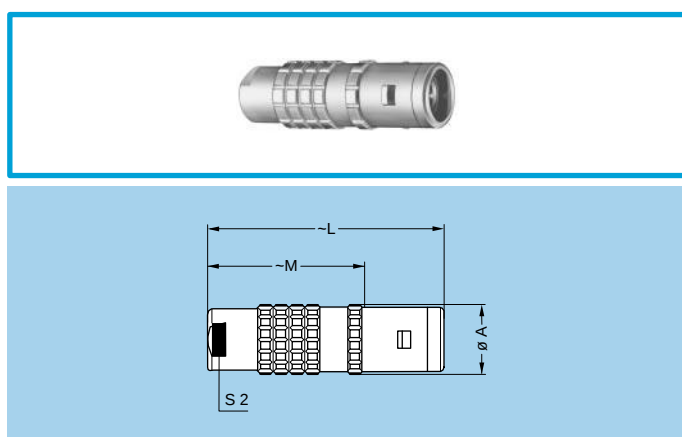
The bend relief must be ordered separately (see page 141).



FFF Straight plug non-latching, cable collet

Reference		Dimensions (mm)			
Model	Series	A	L	M	S2
FFF	0E	11	34	23	8
FFF	1E	13	42	28	9

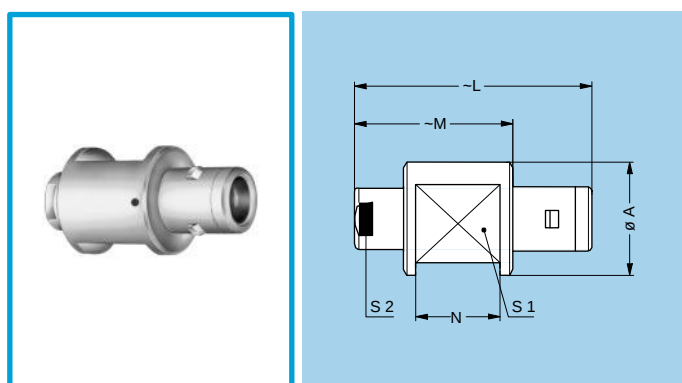
M1 Cable assembly (page 167)



FFP Straight plug, cable collet and inner anti-rotating device

Reference		Dimensions (mm)			
Model	Series	A	L	M	S2
FFP	3E	19	61	41.0	15
FFP	4E	25	71	50.5	19

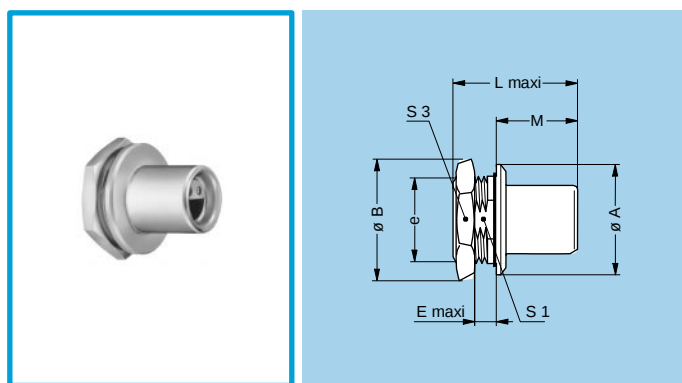
M1 Cable assembly (pages 167 and 168)



FZP Straight plug for remote handling, cable collet and inner anti-rotating device

Reference		Dimensions (mm)					
Model	Series	A	L	M	N	S1	S2
FZP	1E	20	42	28.0	15	15	9
FZP	2E	22	52	36.0	16	16	12
FZP	3E	23	61	41.0	20	19	15
FZP	4E	32	71	50.5	29	25	19
FZP	5E	44	92	67.0	40	36	32

M1 Cable assembly (pages 167 and 168)

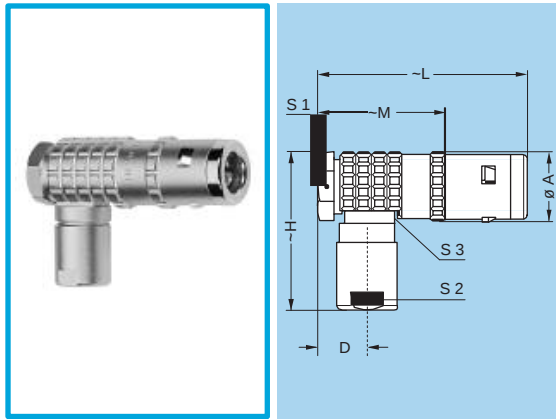


FAA Fixed plug non-latching, nut fixing

Reference		Dimensions (mm)								
Model	Series	A	B	e	E	L	L ¹⁾	M	S1	S3
FAA	0E	18	19.2	M14x1.0	3.5	19.5	19.5	13.0	12.5	17
FAA	1E	20	21.5	M16x1.0	3.5	23.0	23.0	16.0	14.5	19
FAA	2E	25	27.0	M20x1.0	4.0	27.0	27.0	18.0	18.5	24
FAA	3E	31	34.0	M24x1.0	4.5	32.5	32.5	22.5	22.5	30

P1 Panel cut-out (page 153)

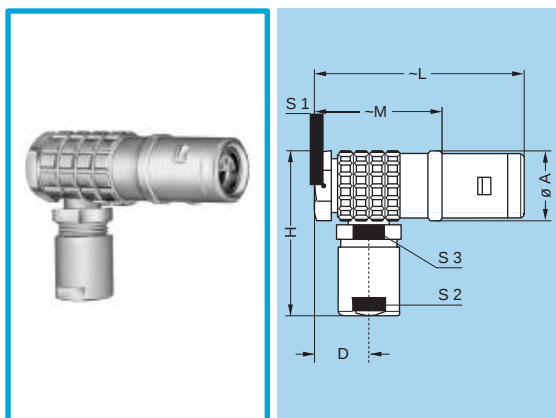
Note: ¹⁾ unipole model



FLM Elbow (90°) plug, cable collet

Reference		Dimensions (mm)							
Model	Series	A	D	H	L	M	S1	S2	S3
FLM	0E	11	7.3	25	36	25	9	8	8
FLM	1E	13	8.7	33	42	28	11	9	10
FLM	2E	16	10.2	40	51	35	14	12	13

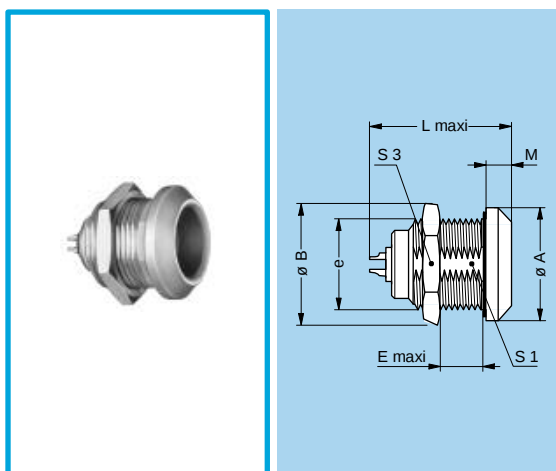
M3 Cable assembly (page 162)



FLA Elbow (90°) plug, cable collet

Reference		Dimensions (mm)							
Model	Series	A	D	H	L	M	S1	S2	S3
FLA	3E	21.0	11.5	47	60	40.0	18	15	15
FLA	4E	27.5	15.5	57	72	51.5	24	19	20

M3 Cable assembly (pages 167 and 168)

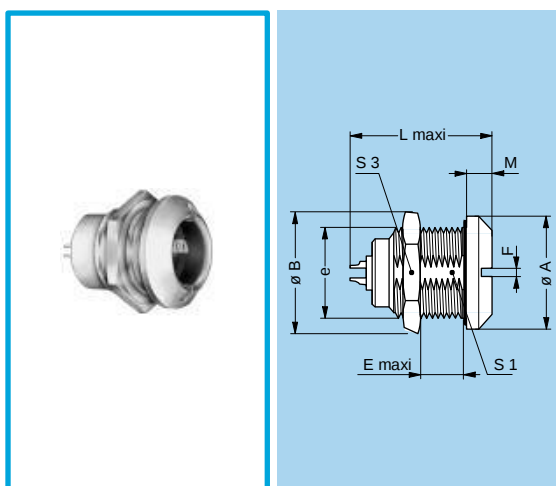


ERA Fixed socket, nut fixing

Reference		Dimensions (mm)								
Model	Series	A	B	e	E	L	L ¹⁾	M	S1	S3
ERA	0E	18	19.2	M14x1.0	5.5	19.5	20.5	4.0	12.5	17
ERA	1E	20	21.5	M16x1.0	9.0	24.0	25.3	4.5	14.5	19
ERA	2E	25	27.0	M20x1.0	9.0	28.5	30.0	5.0	18.5	24
ERA	3E	31	34.0	M24x1.0	11.0	34.0	35.0	6.0	22.5	30
ERA	4E	37	40.5	M30x1.0	9.0	36.0	38.0	6.5	28.5	36
ERA	5E	55	54.0	M45x1.5	10.0	44.5	78.0	9.0	42.5	—
EGG ²⁾	6E	65	65.0	M55x2.0	10.5	48.5	—	10.0	52.0	—

P1 Panel cut-out (page 153)

Note: The 5E and 6E series are delivered with a round nut.
¹⁾ unipole model. ²⁾ with key (G).

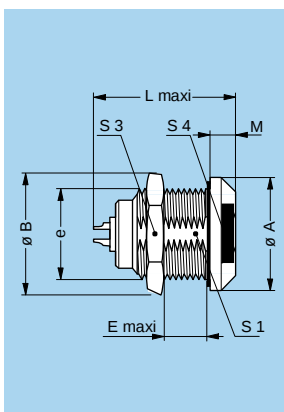


ERC Fixed socket, nut fixing with slot in the flange

Reference		Dimensions (mm)									
Model	Series	A	B	e	E	F	L	L ¹⁾	M	S1	S3
ERC	0E	18	19.2	M14x1.0	5.5	1.5	19.5	20.5	4.0	12.5	17
ERC	3E	31	34.0	M24x1.0	11	3.0	34.0	35.0	6.0	22.5	30
ERC	4E	37	40.5	M30x1.0	9	3.0	36.0	38.0	6.5	28.5	36

P1 Panel cut-out (page 153)

Note: ¹⁾ unipole model

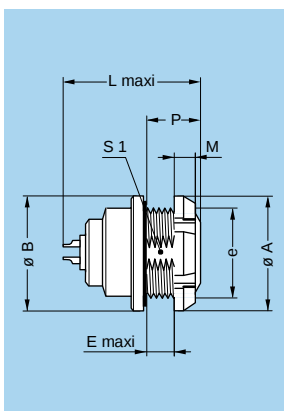


ERB Fixed socket, nut fixing with two flats in the flange

Reference		Dimensions (mm)									
Model	Series	A	B	e	E	L	L ¹⁾	M	S1	S3	S4
ERB	0E	18	19.2	M14x1.0	5.5	19.5	20.5	4.0	12.5	17	14
ERB	1E	20	21.5	M16x1.0	9	24.0	25.3	4.5	14.5	19	17
ERB	2E	25	27.0	M20x1.0	9	28.5	30.0	5.0	18.5	24	20
ERB	3E	31	34.0	M24x1.0	11	34.0	35.0	6.0	22.5	30	24

P1 Panel cut-out (page 153)

Note: ¹⁾ unipole model



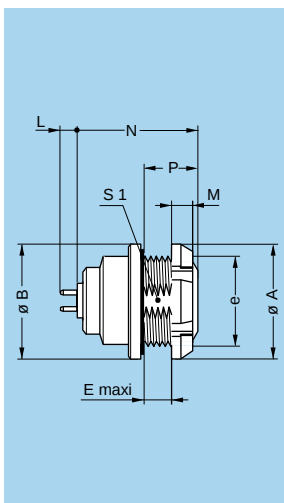
EEP Fixed socket, nut fixing (back panel mounting)

Reference		Dimensions (mm)								
Model	Series	A	B	e	E	L	L ¹⁾	M	P	S1
EEP	0E	18	18	M14x1.0	3.5	19.5	20.5	3.5	7	12.5
EEP	1E	20	20	M16x1.0	6.5	24.0	25.3	3.5	10	14.5
EEP	2E	25	25	M20x1.0	6.5	28.5	30.0	3.5	10	18.5
EEP	3E	30	31	M24x1.0	7.5	34.0	35.0	4.5	12	22.5

P1 Panel cut-out (page 153)

Note: ¹⁾ unipole model

Note: the 3E series is delivered with a conical nut.



EEP Fixed socket, nut fixing, with straight contact for printed circuit (back panel mounting)

Reference		Dimensions (mm)							
Model	Series	A	B	e	E	M	N	P	S1
EEP	0E	18	18	M14x1.0	3.5	3.5	16.0	7	12.5
EEP	1E	20	20	M16x1.0	6.5	3.5	21.5	10	14.5
EEP	2E	25	25	M20x1.0	6.5	3.5	24.0	10	18.5
EEP	3E	30	31	M24x1.0	7.5	4.5	29.5	12	22.5

P1 Panel cut-out (page 153)

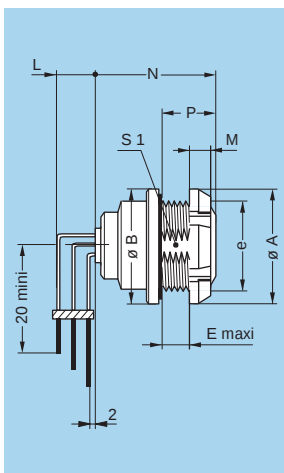
P21 PCB drilling pattern (page 159)

Note: this contact type is available for all E●● socket models.

See page 159 for table of available types.

Length «L» depends on the number of contacts, see PCB drilling pattern on page 159.

The 3E series is delivered with a conical nut.



EEP Fixed socket, nut fixing, with elbow (90°) contacts for printed circuit (back panel mounting)

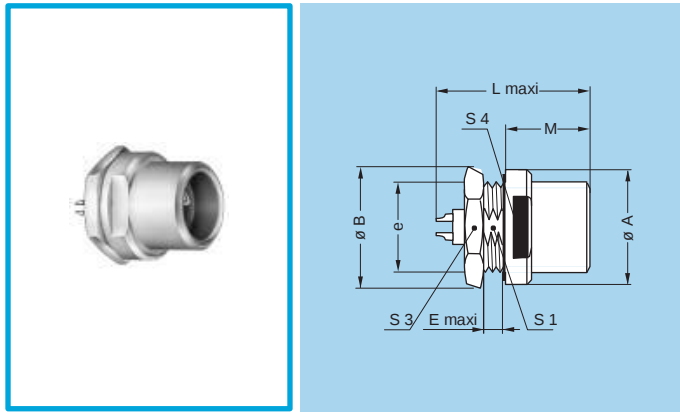
Reference		Dimensions (mm)							
Model	Series	A	B	e	E	M	N	P	S1
EEP	1E	20	20	M16x1.0	6.5	3.5	21.5	10	14.5
EEP	2E	25	25	M20x1.0	6.5	3.5	24.0	10	18.5

P1 Panel cut-out (page 153)

P24 PCB drilling pattern (page 160)

Note: this contact type is available for all back panel mounting socket types. See page 160 for available types.

Length «L» depends on the number of contacts, see PCB drilling pattern on page 160.

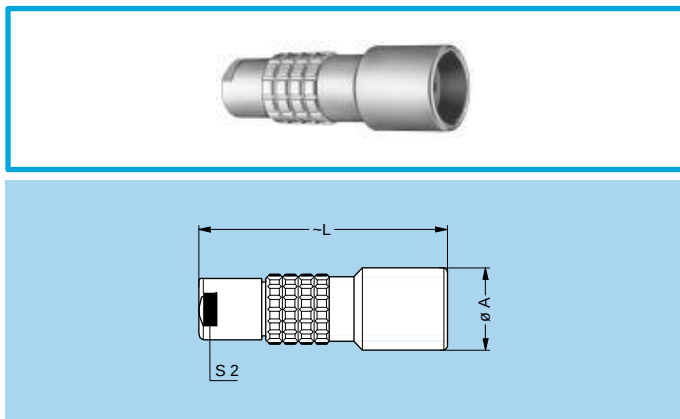


EHP Fixed socket, nut fixing, protruding shell

Reference		Dimensions (mm)									
Model	Series	A	B	e	E	L	L ¹⁾	M	S1	S3	S4
EHP	0E	18	19.2	M14x1.0	1.5	19.5	20.5	10.5	12.5	17	15
EHP	1E	20	21.5	M16x1.0	1.5	24.0	25.3	15.5	14.5	19	17
EHP	2E	25	27.0	M20x1.0	1.5	28.5	30.0	17.0	18.5	24	20

P1 Panel cut-out (page 153)

Note: ¹⁾ unipole model



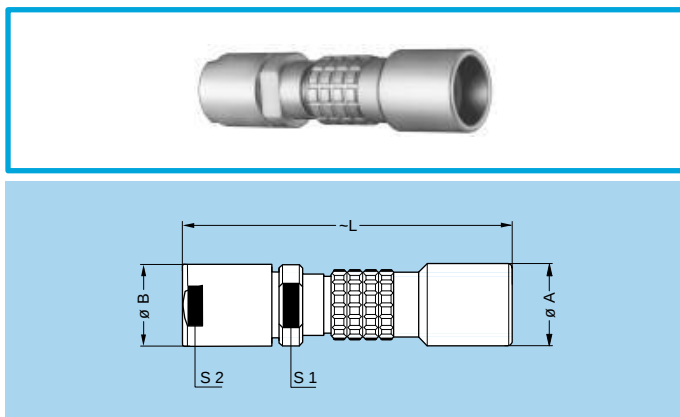
PCA Free socket, cable collet

Reference		Dimensions (mm)		
Model	Series	A	L	S2
PCA	0E	13	34.0	8
PCA	1E	15	45.0	9
PCA	2E	19	54.0	12
PCA	3E	23	65.0	15
PCA	4E	29	75.5	19
PCA	5E	42	95.0	32
PHG ¹⁾	6E	52	125.0	38

M1

Cable assembly
(pages 167 and 168)

Note: ¹⁾ with key (G)

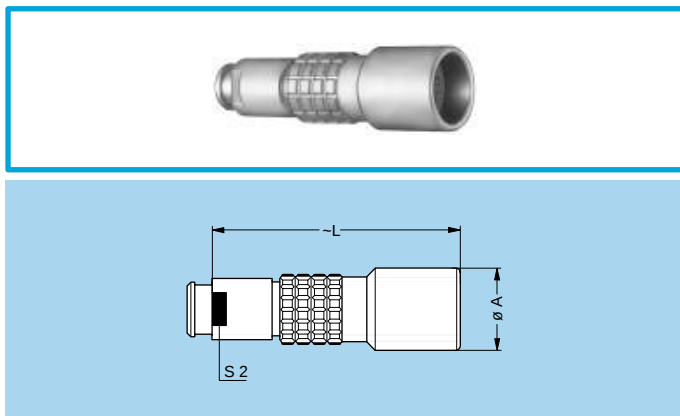


PCA Free socket with oversize cable collet ¹⁾

Reference		Dimensions (mm)				
Model	Series	A	B	L	S1	S2
PCA	1E	15	14.5	58.0	12	12
PCA	2E	19	17.0	67.0	15	15
PCA	3E	23	22.0	84.0	19	19
PCA	4E	29	36.0	109.0	30	32

M2 Cable assembly (pages 167 and 169)

Note: ¹⁾ correspond to K type of collet, the fitting of oversize collets onto this model allows them to be fitted to the cables that can be accommodated by the next housing size up (see page 105).



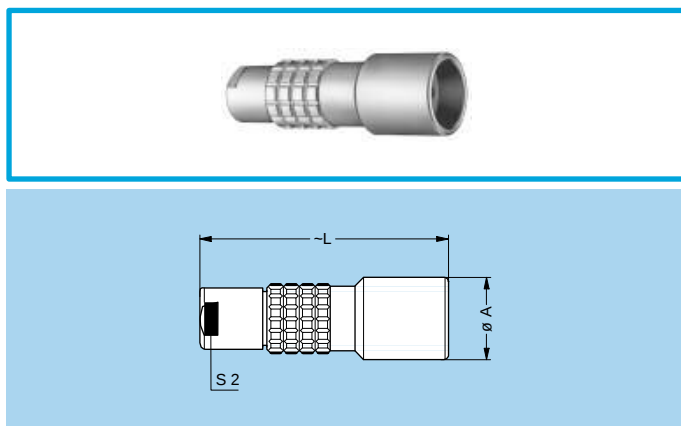
PCA Free socket, cable collet and nut for fitting a bend relief ¹⁾

Reference		Dimensions (mm)		
Model	Series	A	L	S2
PCA	0E	13	34.0	7
PCA	1E	15	45.0	9
PCA	2E	19	54.0	12
PCA	3E	23	64.0	15
PCA	4E	29	75.5	19

M1

Cable assembly
(pages 167 and 168)

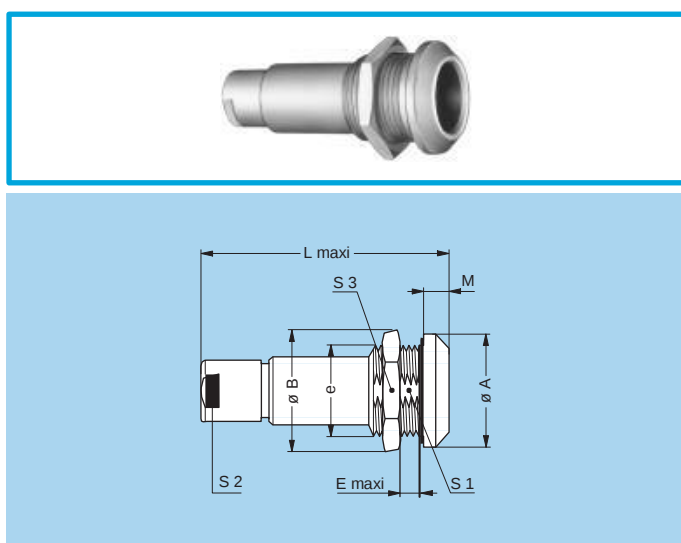
Note: ¹⁾ to order, add a «Z» at the end of the reference.
The bend relief must be ordered separately (see page 141).



PCP Free socket, cable collet and inner anti-rotating device

Reference		Dimensions (mm)		
Model	Series	A	L	S2
PCP	3E	23	65.0	15
PCP	4E	29	75.5	19

M1 Cable assembly (pages 167 and 168)



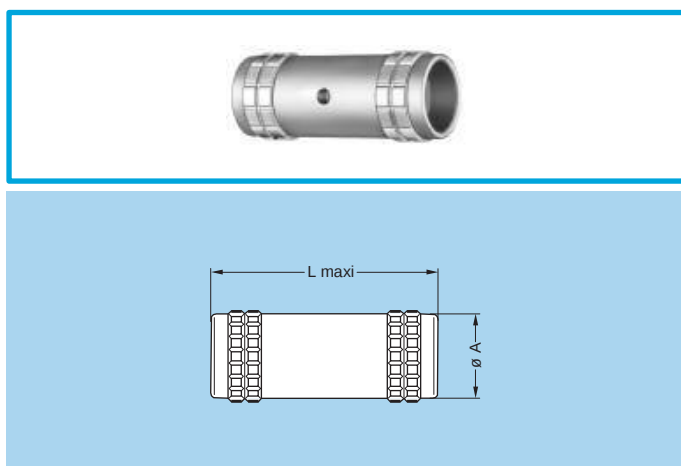
PSA Fixed socket, nut fixing, cable collet

Reference		Dimensions (mm)									
Model	Series	A	B	e	E	L	M	S1	S2	S3	
PSA	0E	18	19.2	M14x1.0	5.5	34.0	4.0	12.5	8	17	
PSA	1E	20	21.5	M16x1.0	9.0	45.0	4.5	14.5	9	19	
PSA	2E	25	27.0	M20x1.0	9.0	54.0	5.0	18.5	12	24	
PSA	3E	31	34.0	M24x1.0	11.0	65.0	6.0	22.5	15	30	
PSA	4E	37	40.5	M30x1.0	9.0	75.5	6.5	28.5	19	36	
PSA	5E	51	54.0	M45x1.5	10.0	95.0	9.0	–	32	54	
PKG ¹⁾	6E	65	65.0	M55x2.0	10.5	125.0	10.0	–	38		

P1 Panel cut-out (page 153)

M1 Cable assembly (pages 167 and 168)

Note: ¹⁾ with key (G).
The 5E and 6E series are delivered with a round nut.



RMA Free coupler

Reference		Dim. (mm)	
Model	Series	A	L
RMA	0E	14	30
RMA	1E	16	40
RMA	2E	20	44
RMA	3E	25	54
RMA	4E	30	57
RMA	5E	44	67

Note: see page 101 for the available plug and contact configurations and in order to ensure correct contact alignment.



Watertight or vacuumtight models

These socket or coupler models allow the device on which they are fitted to reach a protection index of IP 68 as per IEC 60529. They are fully compatible with plugs of the same series and are widely used for portable radios, military, laboratory equipment, aviation, etc.

These models are identified by a letter «P» at the end of the reference.

Most of these models are also available in a vacuumtight version. Such models are identified by an additional letter «V» at the end of the part number (certificate on request).

Epoxy resin is used to seal these models.

Technical Characteristics

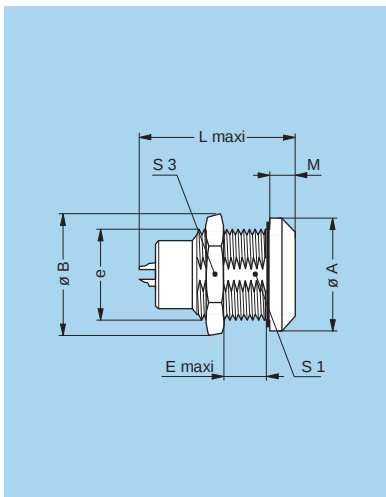
Mechanical and Climatical

Characteristics	Value	Standard
Endurance	> 5000 cycles	IEC 60512-5 test 9a
Humidity	up to 95% at 60° C	
Temperature range (0E-1E)	- 20° C/+100° C	
Temperature range (2E-6E)	- 20° C/+80° C	
Salt spray corrosion test	> 1000h	IEC 60512-6 test 11f
Climatical category	20/80/21	IEC 60068-1
Leakage rate (He) ¹⁾	< 10 ⁻⁷ mbar.l.s ⁻¹	IEC 60512-7 test 14b

Note: ¹⁾ only for vacuumtight models.

Characteristics	Value	Standard
Maximum operating pressure ²⁾	0E 60 bar	IEC 60512-7 test 14d
	1E 60 bar	
	2E 40 bar	
	3E 30 bar	
	4E 15 bar	
	5E 5 bar	
	6E 5 bar	

Note: ²⁾ this value corresponds to the maximum allowed pressure difference for the assembled socket.



HGP Fixed socket, nut fixing, watertight or vacuumtight

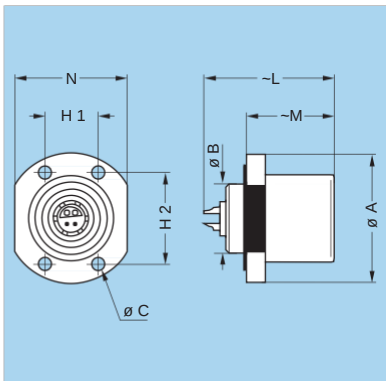
Reference		Dimensions (mm)								
Model	Series	A	B	e	E	L	L ¹⁾	M	S1	S3
HGP	0E	18	19.2	M14x1.0	5.5	23.5	22.0	4.0	12.5	17
HGP	1E	20	21.5	M16x1.0	9.0	29.5	28.0	4.5	14.5	19
HGP	2E	25	27.0	M20x1.0	10.5	32.5	28.0	5.0	18.5	24
HGP	3E	31	34.0	M24x1.0	15.5	39.5	38.5	6.0	22.5	30
HGP	4E	37	40.5	M30x1.0	17.5	43.0	44.0	6.5	28.5	36
HGP	5E	55	54.0	M45x1.5	20.0	52.0	76.0	9.0	42.5	–
HGP ²⁾	6E	65	65.0	M55x2.0	20.5	52.0	–	10.0	52.0	–

P1 Panel cut-out (page 153)

Note: The 5E and 6E series are delivered with a round nut.

¹⁾ unipole model.

²⁾ with key (G).



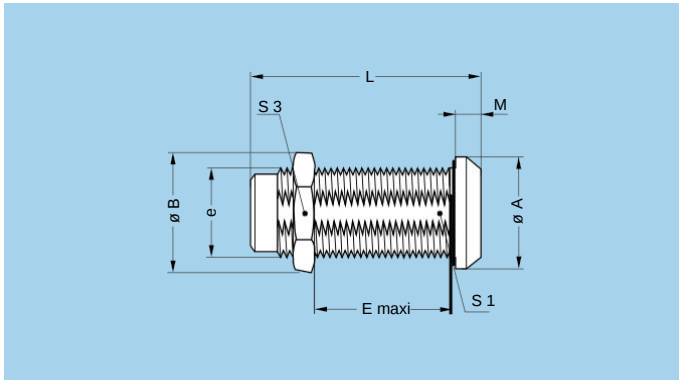
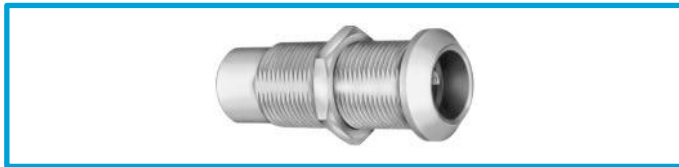
EBR Fixed socket with round flange, watertight, protruding shell and screw fixing

Reference		Dimensions (mm)								
Model	Series	A	B	C	H1	H2	L	L ¹⁾	M	N
EBR	2E	28	15	2.8	11.8	20.4	32.5	28.0	19	25

P6 Panel cut-out (page 153)

Note: ¹⁾ unipole model.

This model is only available in a watertight version.



SWH Fixed coupler, nut fixing, watertight or vacuumtight

Reference		Dimensions (mm)							
Model	Series	A	B	e	E	L	M	S1	S3
SWH	0E	18	19.2	M14x1.0	22.5	36.0	4.0	12.5	17
SWH	1E	20	21.5	M16x1.0	30.5	47.0	4.5	14.5	19
SWH	2E	25	27.0	M20x1.0	28.0	52.4	5.0	18.5	24
SWH	3E	31	34.0	M24x1.0	33.0	64.2	6.0	22.5	30
SWH	4E	37	40.5	M30x1.0	44.5	70.0	6.5	28.5	36
SWH	5E	55	54.0	M45x1.5	47.0	81.0	9.0	42.5	—
SWH ¹⁾	6E	65	65.0	M55x2.0	12.0	76.0	10.0	—	—

P1 Panel cut-out (page 153)

Note: ¹⁾ with key (G). The 5E and 6E series are delivered with a round nut. See page 101 for the available plug and contact configurations and in order to ensure correct contact alignment.