

2G/2C SERIES MULTIPOLE CONNECTORS



Precision modular connectors to suit your application

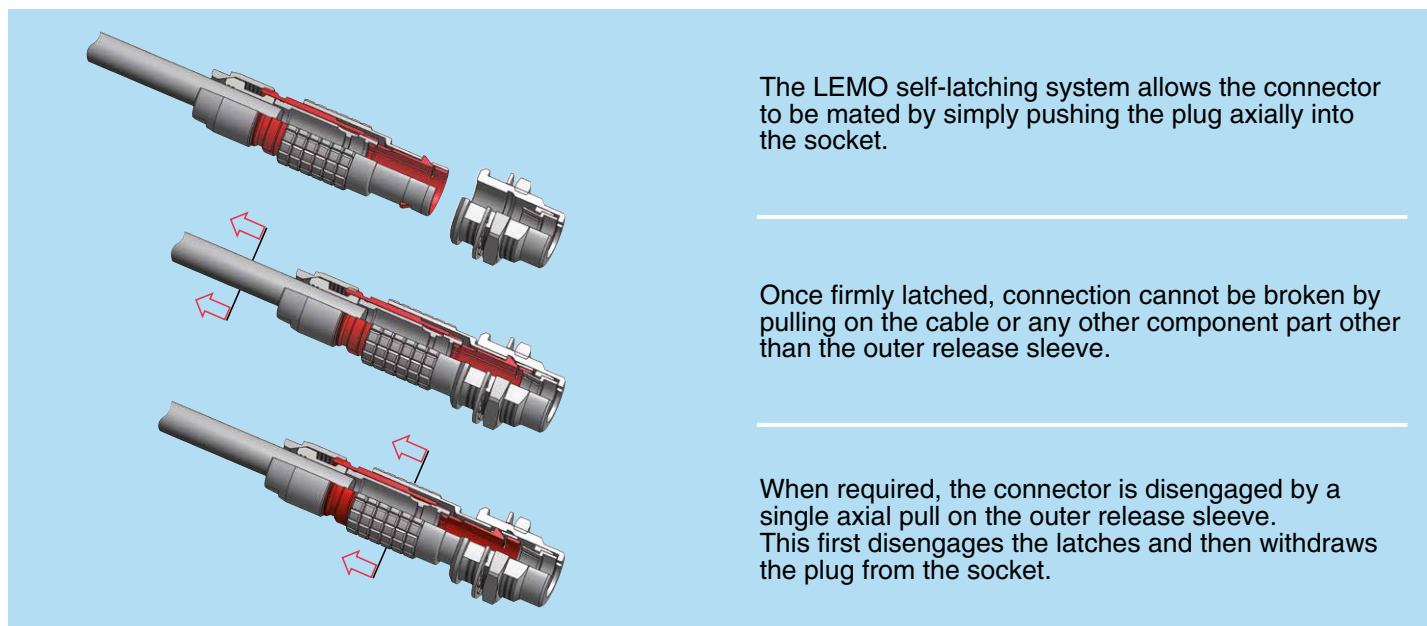
Since its creation in Switzerland in 1946 the LEMO Group has been recognized as a global leader of circular Push-Pull connectors and connector solutions. Today LEMO and its affiliated companies, REDEL and COELVER, are active in more than 80 countries with the help of over 40 subsidiaries and distributors.

Over 75000 connectors

The modular design of the LEMO range provides over 75000 connectors from miniature \varnothing 3 mm to \varnothing 50 mm, capable of handling cable diameters up to 30 mm and for up to 114 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 conform to 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.

Product safety notice & disclaimers

Please read and follow all instructions specified on the last page or on our [website](http://www.lemo.com) carefully and consult all relevant national and international safety regulations for your application. Improper handling, cable assembly, or wrong use of connectors can result in hazardous situations.

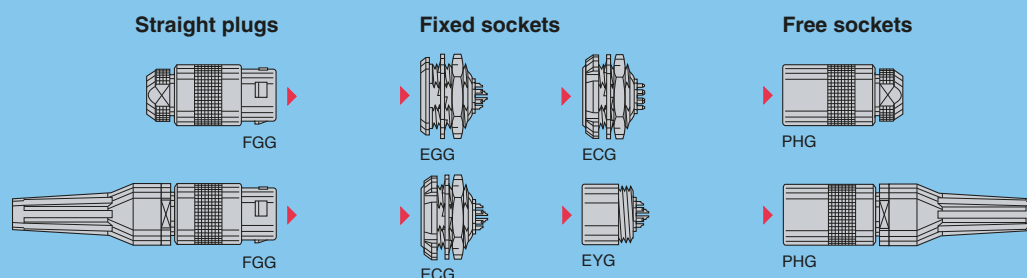
LEMO products and services are provided "as is." LEMO makes no warranties or representations with regard to LEMO product & services or use of them, express, implied or statutory, including for accuracy, completeness, or security.

In no event shall LEMO be liable for any direct, indirect, punitive, incidental, special consequential damages, to property or life, whatsoever arising out of or connected with the use or misuse of LEMO's products.

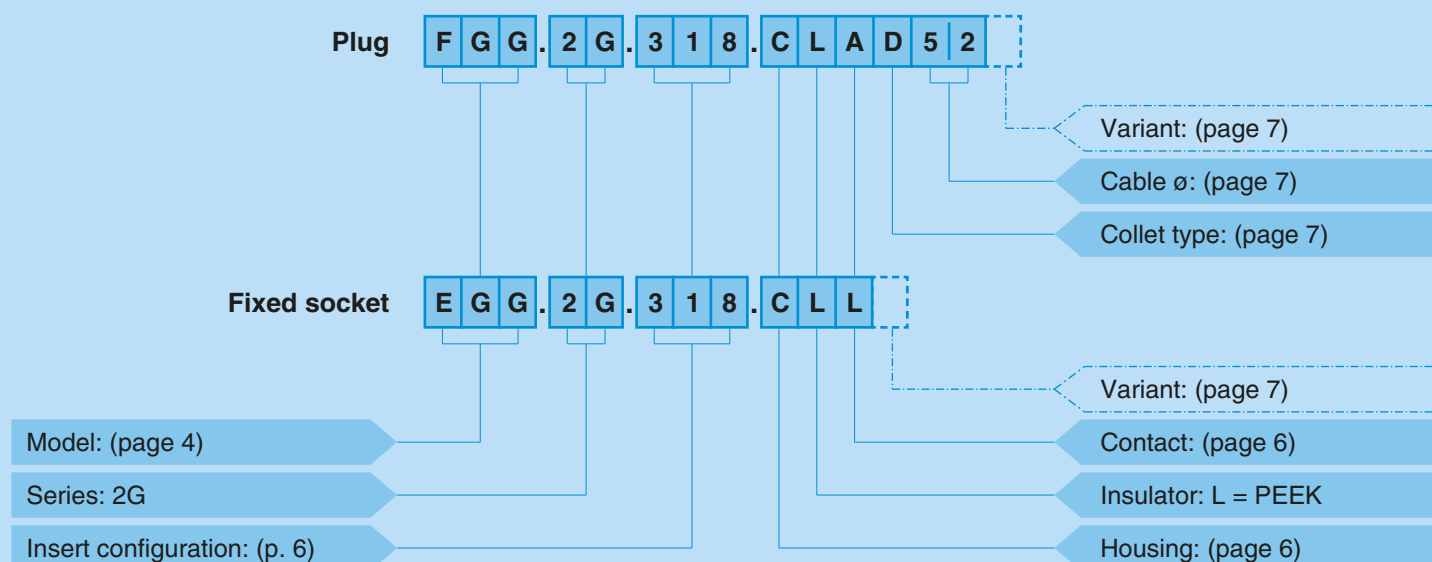
2G Series

The 2G series with key (G) provides the same advantages of space saving due to its small dimensions as the 2C series and is available in multipole type with 18 contacts.

Metal housing models (page 4)



Part Numbering System



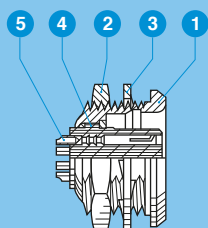
FGG.2G.318.CLAD52 = straight plug with cable collet, 2G series, multipole type with 18 contacts, outer shell in chrome-plated brass, PEEK insulator, male solder contacts, D type collet for 5.2 mm diameter cable.

EGG.2G.318.CLL = fixed socket, 2G series, multipole type with 18 contacts, outer shell in chrome-plated brass, PEEK insulator, female solder contacts.

Part Section Showing Internal Components

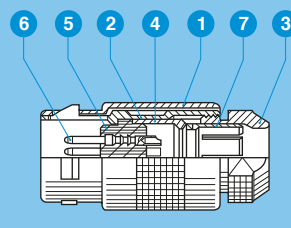
Fixed socket

- 1 outer shell
- 2 hexagonal nut
- 3 locking washer
- 4 insulator
- 5 female contact



Straight plug

- 1 outer shell
- 2 latch sleeve
- 3 collet nut
- 4 split centre-piece
- 5 insulator
- 6 male contact
- 7 collet



Metal housing models

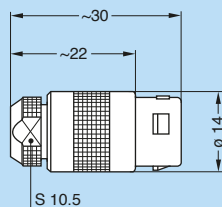
Technical Characteristics

Mechanical and Climatical

Characteristics	Value	Standard
Endurance	> 500 cycles	IEC 60512-5 test 9a
Humidity	up to 95% at 60° C	
Temperature range ¹⁾	- 55° C, + 250° C	
Salt spray corrosion test	> 1000h	IEC 60512-6 test 11f
Protection index	IP50	IEC 60529
Climatical category	55/175/21	IEC 60068-1

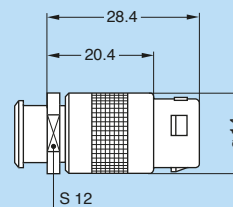
Note: ¹⁾ maximum temperature valid for short periods of use.
The various tests have been carried out with FGG and EGG connector pairs, with chrome-plated brass shell and PEEK insulator.
Detailed electrical characteristics, as well as materials and treatment are presented in the unipole-multipole catalogue.

FGG.2G Straight plug, key (G), cable collet



Cable assembly (page 9)

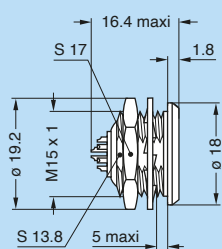
FGG.2G Straight plug, key (G), cable collet and nut for fitting a bend relief ¹⁾



Cable assembly (page 9)

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

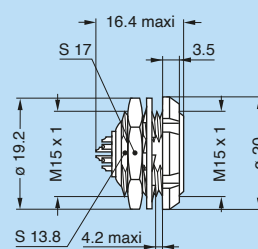
EGG.2G Fixed socket, nut fixing, key (G)



Panel cut-out (page 9)

Note: all dimensions are in millimetres.

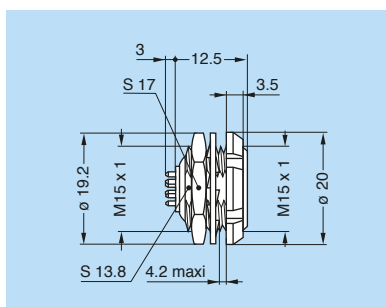
ECG.2G Fixed socket with two nuts, key (G) (back panel mounting)



Panel cut-out (page 9)



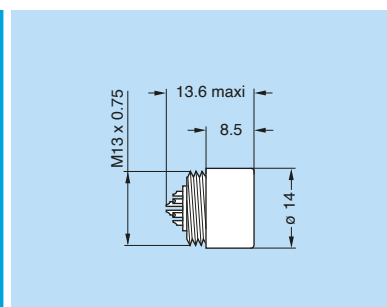
ECG.2G Fixed socket with two nuts, key (G), straight contact for printed circuit (back panel mounting)



Panel cut-out (page 9)

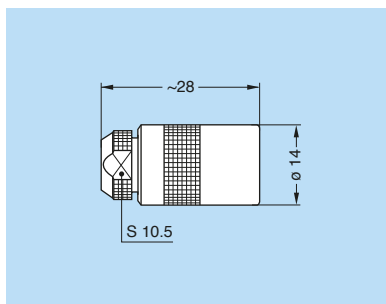
PCB drilling pattern (page 9)

EYG.2G Fixed socket, key (G), protruding shell (screw fixing on the panel)



Panel cut-out (page 9)

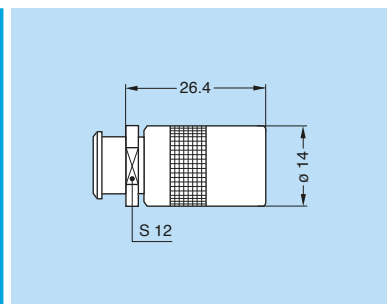
PHG.2G Free socket, key (G), cable collet



Cable assembly (page 9)

Note: all dimensions are in millimetres.

PHG.2G Free socket, key (G), cable collet and nut for fitting a bend relief ¹⁾

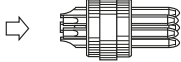
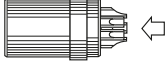




Cable assembly (page 9)

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



Insert configurations (2G series)

	 Male solder contacts	 Female solder contacts	Reference	Series	Contact ø (mm)	Contact type		Test voltage (kV DC) ^{1) 2)}	Rated current (A) ¹⁾
						Solder	Print		
18			318	2G	0.7	●	●	1.2	5.5

Note: 1) see calculation method, caution and suggested standard in the unipole-multipole catalogue.
2) lowest measured value; contact to contact or contact to shell.



Housings (2G series)

Ref.	Outer shell and collet nut		Latch sleeve		Other metallic components		Note
	Material	Surf. treatment	Material	Surf. treatment	Material	Surf. treatment	
C	Brass	chrome	brass/bronze	nickel	brass	nickel	●
N	Brass	nickel	brass/bronze	nickel	brass	nickel	○
K	Brass	black chrome	brass/bronze	nickel	brass	nickel	●

● First choice alternative
○ Special order alternative

Note: detailed characteristics of these materials and treatments are presented in the unipole-multipole catalogue.



Contacts (2G series)

Ref.	Contact type	Ref.	Contact type
A	Male solder	N	Female print
L	Female solder		



Collets (2G series)

D type collets for 2G series

D type



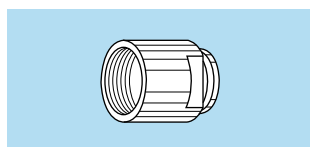
Reference		Collet \varnothing		Cable \varnothing	
Type	Code	$\varnothing A$	$\varnothing B$	max.	min.
D	52	5.2	—	5.1	4.5
D	62	6.2	—	6.1	5.5
D	72	7.2	6.2	7.1	6.5
D	80	8.0	6.2	7.9	7.5

Note: all dimensions are in millimetres.

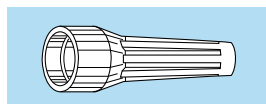


Variant (2G series)

Bend relief for 2G series models with collet



Need to be ordered

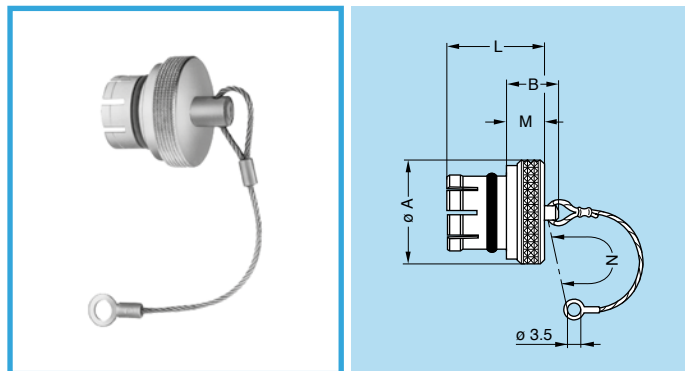


Ref.	Collet	
	Type	Code
z	D	52 to 80

Need to be ordered separately
GMA.2B.●●●●●

Accessories (2G series)

BRE Blanking caps for fixed and free sockets



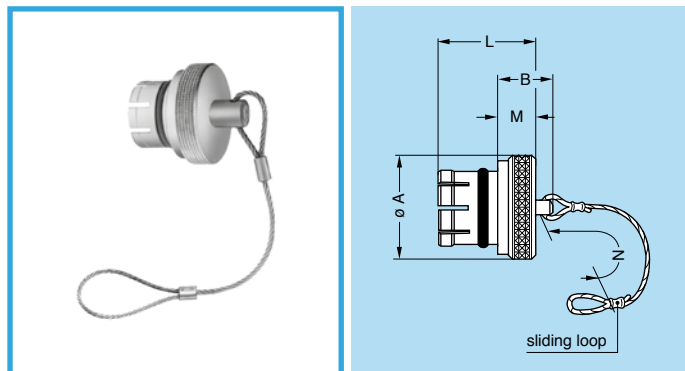
- Body material: Nickel-plated brass (Ni 3 μ m)
- Lanyard material: Stainless steel
- O-ring material: Silicone rubber or FPM

Part number	Dimensions (mm)				
	A	B	L	M	N ¹⁾
BRE.2G.200.NAS	18	12	10.6	6	85

Note: ¹⁾ the tolerance on this dimension is ± 5 mm. These caps are suitable for use with any alignment key configuration. The last letter «S» of the part number stands for the material of the O ring (silicone rubber). O-ring's made from FPM are also available; if required, replace the letter «S» by «V».

- Maximum operating temperature: 200°C
- Watertightness: IP61 according to IEC 60529

BRF Blanking caps for fixed sockets



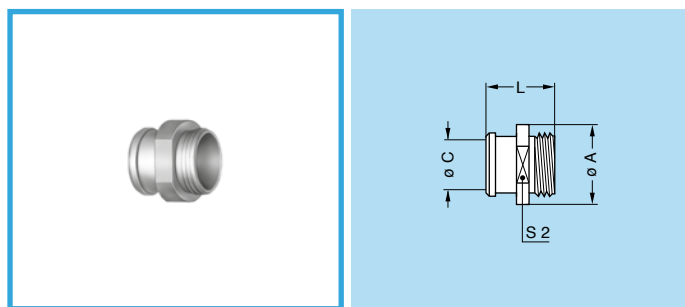
- Body material: Nickel-plated brass (Ni 3 μ m)
- Lanyard material: Stainless steel
- O-ring material: Silicone rubber or FPM

Part number	Dimensions (mm)				
	A	B	L	M	N ¹⁾
BRF.2G.200.NAS	18	12	14	6	85

Note: ¹⁾ the tolerance on this dimension is ± 5 mm. This caps are suitable for use with any alignment key configuration. The last letter «S» of the part number stands for the material of the O ring (silicone rubber). O-ring's made from FPM are also available; if required, replace the letter «S» by «V».

- Maximum operating temperature: 200°C
- Watertightness: IP61 according to IEC 60529

FFM Nut for bend relief



Part number	Dimensions (mm)			
	A	C	L	S2
FFM.2C.130.LC	14	8	12.2	12

Note: for bend reliefs to be used with this nut see section «Accessories» page 141.

- Material: Chrome-plated brass (0.3 μ m)

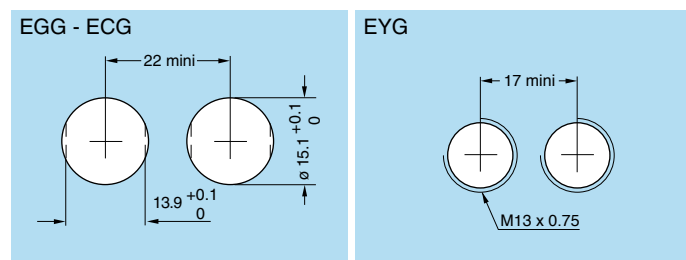
Note: other accessories are also available. See section «Accessories» in the unipole-multipole catalogue.

Tooling (2G series)

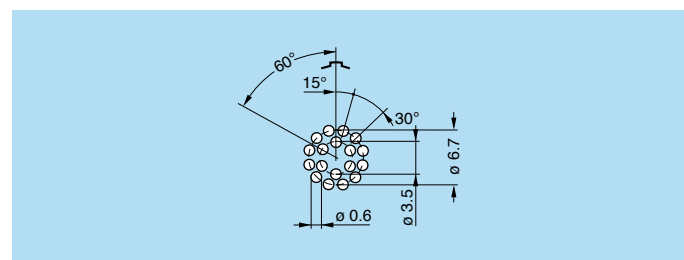
Please consult the «Tooling» section in the unipole-multipole catalogue

Panel cut-outs (2G series)

Panel cut-outs



PCB drilling pattern



Note: mounting nut torque: 6 Nm (1N = 0.102 kg)

Cable assembly (2G series)

Cable stripping lengths

Type	Contact ø (mm)	Cable stripping lengths (mm)			
		L	S	T	
2G	318	0.7	9	7	3

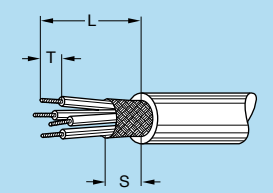


Diagram illustrating the cable stripping lengths L, S, and T. L is the total length of the stripped cable, S is the length of the stripped conductors, and T is the length of the stripped insulation.

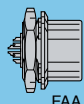
Note: the tolerances on these dimensions are: L: ± 0.5 mm; S: ± 0.5 mm; T: ± 0.2 mm.

2C Series

In many applications, it is necessary to use multipole connectors which have shortened dimensions but require high contact density. LEMO short series connectors, which are shorter than 30 mm, perfectly meet these needs. The 2C series, featuring a hermaphroditic insert, is available in multipole type up to 14 contacts.

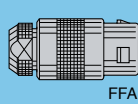
Metal housing models (page 11)

Fixed plug



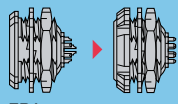
FAA

Straight plugs

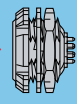


FFA

Fixed sockets



ERA

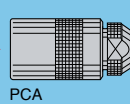


ECP



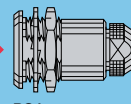
ERY

Free sockets

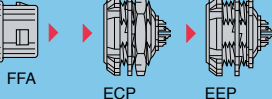


PCA

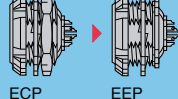
Fixed socket



PSA



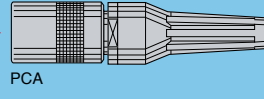
FFA



ECP



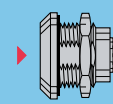
EEP



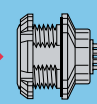
PCA

Watertight or vacuumtight models (page 13)

Fixed sockets



HGP



HEP

Part Numbering System

Plug

F F A . 2 C . 3 0 6 . C L A C 2 7

Variant: (page 16)

Cable ø: (page 15)

Collet type: (page 15)

Fixed socket

E R A . 2 C . 3 0 6 . C L L

Variant: (page 16)

Contact: (page 15)

Insulator: L = PEEK

Housing: (page 15)

Model: (page 11)

Series: 2C

Insert configuration: (p. 14)

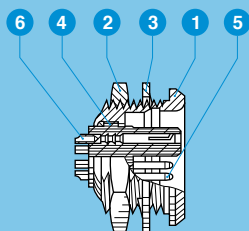
FFA.2C.306.CLAC27 = straight plug with cable collet, 2C series, multipole type with 6 contacts, outer shell in chrome-plated brass, PEEK insulator, male solder contacts, C type collet for 2.7 mm diameter cable.

ERA.2C.306.CLL = fixed socket, nut fixing, 2C series, multipole type with 6 contacts, outer shell in chrome-plated brass, PEEK insulator, female solder contacts.

Part Section Showing Internal Components

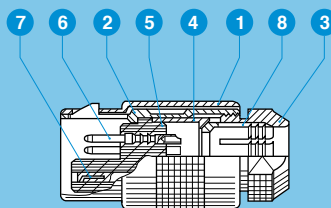
Fixed socket

- 1 outer shell
- 2 hexagonal nut
- 3 locking washer
- 4 insulator
- 5 male contact
- 6 female contact



Straight plug

- 1 outer shell
- 2 latch sleeve
- 3 collet nut
- 4 split centre-piece
- 5 insulator
- 6 male contact
- 7 female contact
- 8 collet





Metal housing models

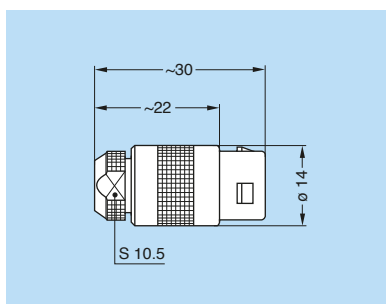
Technical Characteristics

Mechanical and Climatical

Characteristics	Value	Standard
Endurance	> 500 cycles	IEC 60512-5 test 9a
Humidity	up to 95% at 60° C	
Temperature range ¹⁾	- 55° C, + 250° C	
Salt spray corrosion test	> 1000h	IEC 60512-6 test 11f
Protection index	IP50	IEC 60529
Climatical category	55/175/21	IEC 60068-1

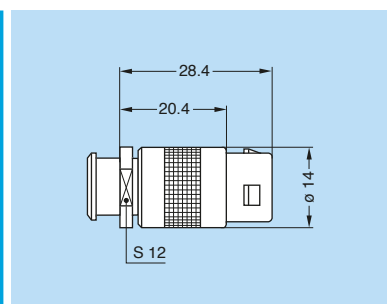
Note: ¹⁾ maximum temperature valid for short periods of use.
The various tests have been carried out with FFA and ERA connector pairs, with chrome-plated brass shell and PEEK insulator.
Detailed electrical characteristics, as well as materials and treatment are presented in the unipole-multipole catalogue.

FFA.2C Straight plug, cable collet



Cable assembly (page 17)

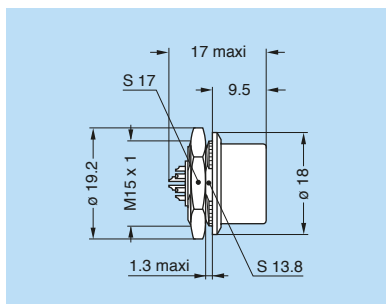
FFA.2C Straight plug, cable collet and nut for fitting a bend relief ¹⁾



Cable assembly (page 17)

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

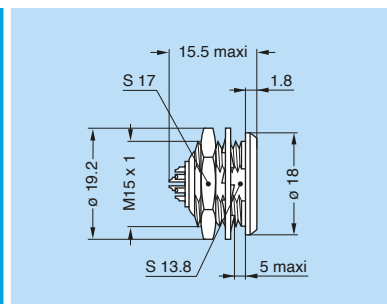
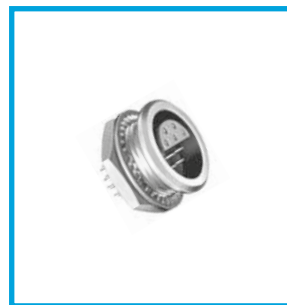
FAA.2C Fixed plug, nut fixing, non-latching



Panel cut-out (page 16)

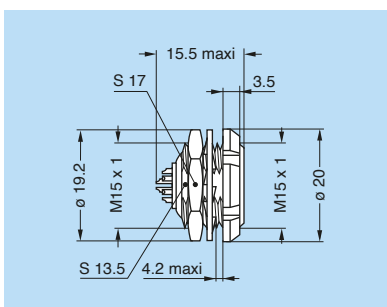
Note: all dimensions are in millimetres.

ERA.2C Fixed socket, nut fixing



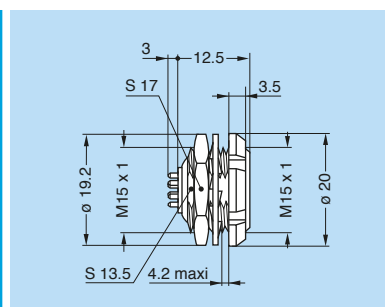
Panel cut-out (page 16)

ECP.2C Fixed socket with two nuts (back panel mounting)



Panel cut-out (page 16)

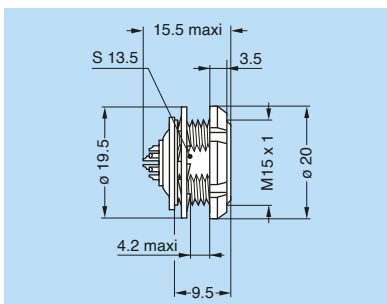
ECP.2C Fixed socket with two nuts, straight contact for printed circuit (back panel mounting)



Panel cut-out (page 16)

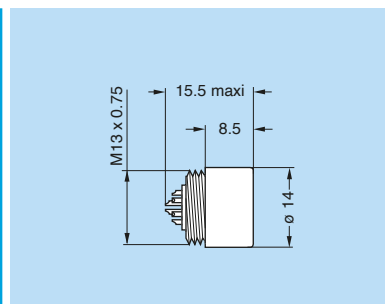
PCB drilling pattern (page 16)

EEP.2C Fixed socket, nut fixing (back panel mounting)



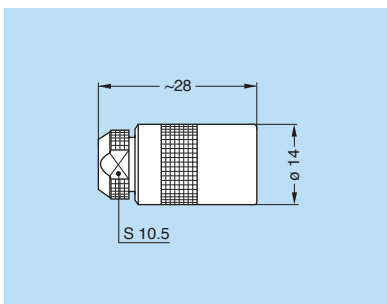
Panel cut-out (page 16)

ERY.2C Fixed socket, protruding shell, (screw fixing on the panel)



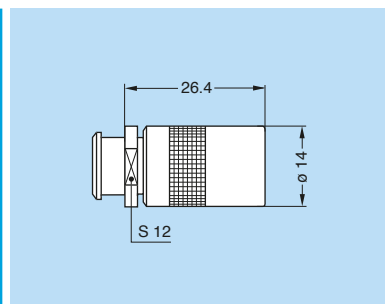
Panel cut-out (page 16)

PCA.2C Free socket, cable collet



Cable assembly (page 17)

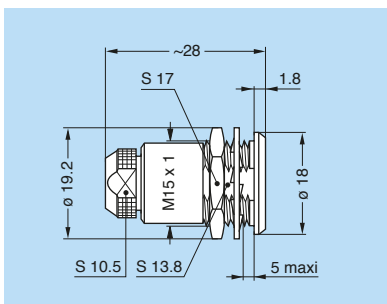
PCA.2C Free socket, cable collet and nut for fitting a bend relief ¹⁾



Cable assembly (page 17)

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

PSA.2C Fixed socket nut fixing, cable collet



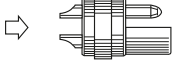
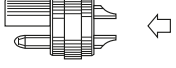
















Panel cut-out (page 16)

Cable assembly (page 17)

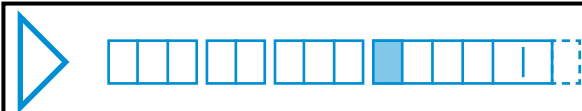
Note: all dimensions are in millimetres.



Insert configurations (2C series)

	 Male solder contacts	 Female solder contacts	Reference	Series	Contact ø (mm)	Contact type		Test voltage (kV DC) ^{1) 2)}	Rated current (A) ¹⁾
						Solder	Print		
2			302	2C	1.6	●	—	2.40	20
3			303	2C	1.3	●	—	2.10	15
4			304	2C	1.3	●	—	2.40	15
6			306	2C	1.3	●	—	2.10	12
8			308	2C	0.7	●	●	1.35	7
10			310	2C	0.7	●	●	1.35	7
12			312	2C	0.7	●	●	0.90	5
14			314	2C	0.7	●	●	0.90	5

Note: 1) see calculation method, caution and suggested standard in the unipole-multipole catalogue.
2) lowest measured value; contact to contact or contact to shell.



Housings (2C series)

Ref.	Outer shell and collet nut		Latch sleeve		Other metallic components		Note
	Material	Surf. treatment	Material	Surf. treatment	Material	Surf. treatment	
C	Brass	chrome	brass/bronze	nickel	brass	nickel	●
N	Brass	nickel	brass/bronze	nickel	brass	nickel	○
K	Brass	black chrome	brass/bronze	nickel	brass	nickel	●

● First choice alternative
○ Special order alternative

Note: detailed characteristics of these materials and treatments are presented in the unipole-multipole catalogue.



Contacts (2C series)

Ref.	Contact type
A	Male solder
L	Female solder
N	Female print

Multipole connectors are fitted with hermaphroditic inserts including male and female contacts. However, by convention, the letter indicating the contact type in the part number composition will be the male contact (reference A) for plugs and female contact (reference L) for sockets.



Collets (2C series)

C and L type collets for 2C series

C type



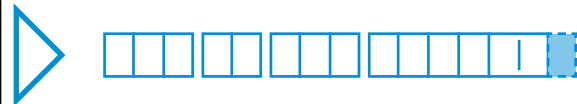
Reference		Collet ø		Cable ø	
Type	Code	ø A	ø B	max.	min.
2C	C	27	2.7	—	2.6 2.2
	C	32	3.2	—	3.1 2.7
	C	37	3.7	—	3.6 3.2
	C	42	4.2	—	4.1 3.7
	C	47	4.7	—	4.6 4.2
	C	52	5.2	—	5.1 4.7
	C	57	5.7	—	5.6 5.2
	C	62	6.2	—	6.1 5.7
	C	67	6.7	6.2	6.2
	C	72	7.2	6.2	7.1 6.7
	C	75	7.5	6.2	7.4 7.2
	C	80	8.0	6.2	7.9 7.5

L type
(non EMC)



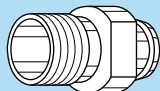
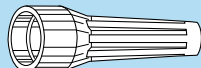
Reference		Collet ø		Cable ø	
Type	Code	ø A	ø B	max.	min.
2C	L	14	1.4	—	1.3 0.8
	L	27	2.7	—	2.6 2.2
	L	32	3.2	—	3.1 2.7
	L	37	3.7	—	3.6 3.2
	L	42	4.2	—	4.1 3.7
	L	47	4.7	—	4.6 4.2
	L	52	5.2	—	5.1 4.7
	L	57	5.7	—	5.6 5.2
	L	62	6.2	—	6.1 5.7
	L	67	6.7	—	6.6 6.2
	L	72	7.2	—	7.1 6.7
	L	77	7.5	—	7.6 7.2
	L	82	8.2	—	8.1 7.7

Note: all dimensions are in millimetres.



Variant (2C series)

Bend relief for 2C series models with collet

		Need to be ordered	
			
Ref.	Collet		Need to be ordered separately
	Type	Code	
2C	z	C	42 to 80
		L	42 to 82
			GMA.2B.0...D●
			GMA.2B.0...D●

Watertight and vacuumtight socket models (2C series)

Ref.	Model (HEP or HGP)	
	Watertight	Vacuumtight
2C	P	●
	PV	—

Accessories (2C series)

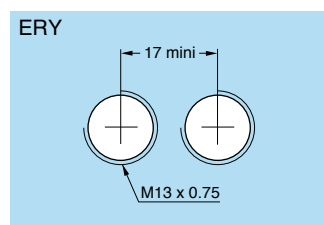
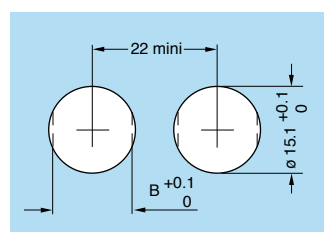
Accessories for the 2C series are identical with the 2G series. Please refer to corresponding pages in the unipole-multipole catalogue.

Tooling (2C series)

Please consult the «Tooling» section in the unipole-multipole catalogue.

Panel cut-outs (2C series)

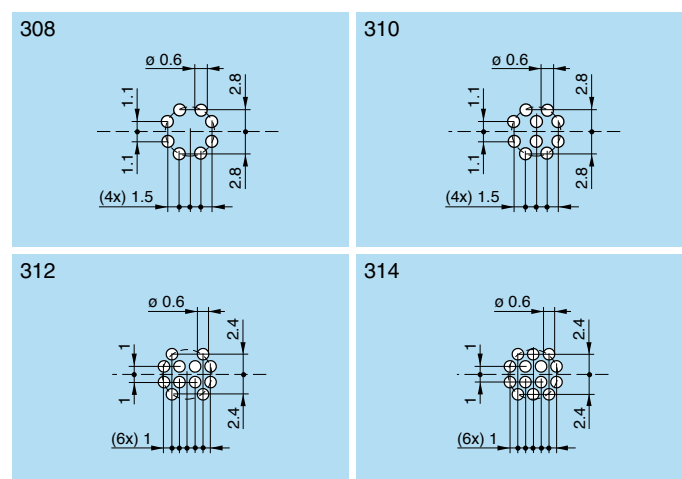
Panel cut-outs



Model	B (mm)	Model	B (mm)
ECP	13.6	HEP	13.9
EEP	13.6	HGP	13.9
ERA	13.9	PSA	13.9
FAA	13.9		

Note:
mounting nut torque:
6 Nm (1N = 0.102 kg)

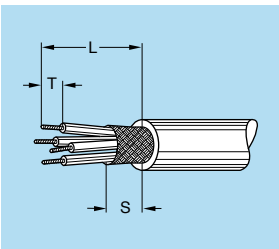
PCB drilling patterns



Cable assembly (2C series)

Cable stripping lengths

	Type	ø contact A (mm)	Cable stripping lengths (mm)		
			L	S	T
2C	302	1.6	11	8	3
	303/304/306	1.3	11	8	3
	308/310/312/314	0.7	11	8	3



Note: the tolerances on these dimensions are: L: ± 0.5 mm; S: ± 0.5 mm; T: ± 0.2 mm.

Note

Product safety notice

PLEASE READ AND FOLLOW ALL INSTRUCTIONS CAREFULLY AND CONSULT ALL RELEVANT NATIONAL AND INTERNATIONAL SAFETY REGULATIONS FOR YOUR APPLICATION. IMPROPER HANDLING, CABLE ASSEMBLY, OR WRONG USE OF CONNECTORS CAN RESULT IN HAZARDOUS SITUATIONS.

1. SHOCK AND FIRE HAZARD

Incorrect wiring, the use of damaged components, presence of foreign objects (such as metal debris), and / or residue (such as cleaning fluids), can result in short circuits, overheating, and / or risk of electric shock. Mated components should never be disconnected while live as this may result in an exposed electric arc and local overheating, resulting in possible damage to components.

2. HANDLING

Connectors and their components should be visually inspected for damage prior to installation and assembly. Suspect components should be rejected or returned to the factory for verification. Connector assembly and installation should only be carried out by properly trained personnel. Proper tools must be used during installation and / or assembly in order to obtain safe and reliable performance.


3. USE


Connectors with exposed contacts should never be live (or on the current supply side of a circuit). Under general conditions voltages above 30 VAC and 42 VDC are considered hazardous and proper measures should be taken to eliminate all risk of transmission of such voltages to any exposed metal part of the connector.

4. TEST AND OPERATING VOLTAGES

The maximum admissible operating voltage depends upon the national or international standards in force for the application in question. Air and creepage distances impact the operating voltage; reference values are indicated in the catalog however these may be influenced by PC board design and / or wiring harnesses. The test voltage indicated in the catalog is 75% of the mean breakdown voltage; the test is applied at 500 V/s and the test duration is 1 minute.

5. 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.**

6. PRODUCT IMPROVEMENTS

The LEMO Group reserves the right to modify and improve to our products or specifications without providing prior notification.

7. **WARNING (Prop 65 State of California)**

Proposition 65 requires businesses to provide warnings to Californians about significant exposures to chemicals that cause cancer, birth defects or other reproductive harm. LEMO products are exempt from proposition 65 warnings because they are manufactured, marketed, and sold solely for commercial and industrial use. For further information, please visit <https://www.lemo.com/quality/LEMO-Prop-65-compliance-declaration.pdf>.

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