

# P1/P3 FLUIDIC CONTACT WITH VALVE



## Precision modular connectors to suit your application

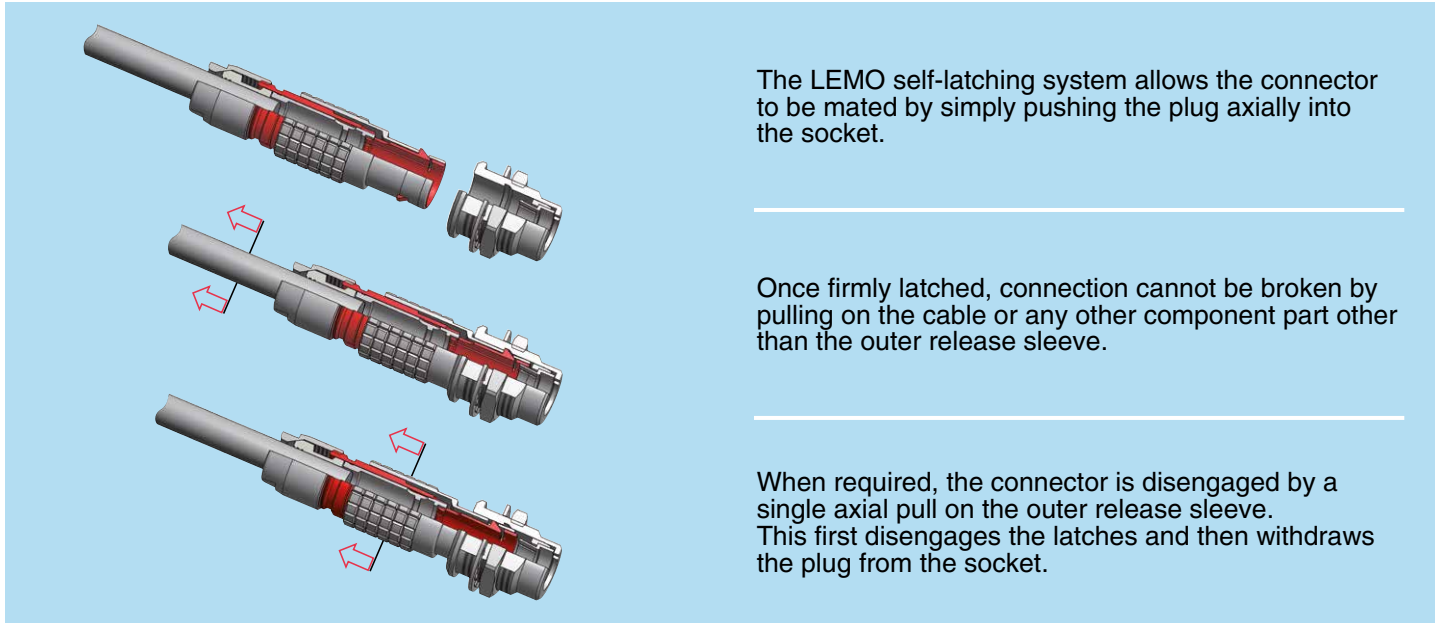
Since its creation in Switzerland in 1946 the LEMO Group has been recognized as a global leader of circular Push-Pull connectors and connector solutions. Today LEMO and its affiliated companies, REDEL and COELVER, are active in more than 80 countries with the help of over 40 subsidiaries and distributors.

## 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.



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



Once firmly latched, connection cannot be broken by pulling on the cable or any other component part other than the outer release sleeve.

When required, the connector is disengaged by a single axial pull on the outer release sleeve. This first disengages the latches and then withdraws the plug from the socket.

## 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](#) 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.

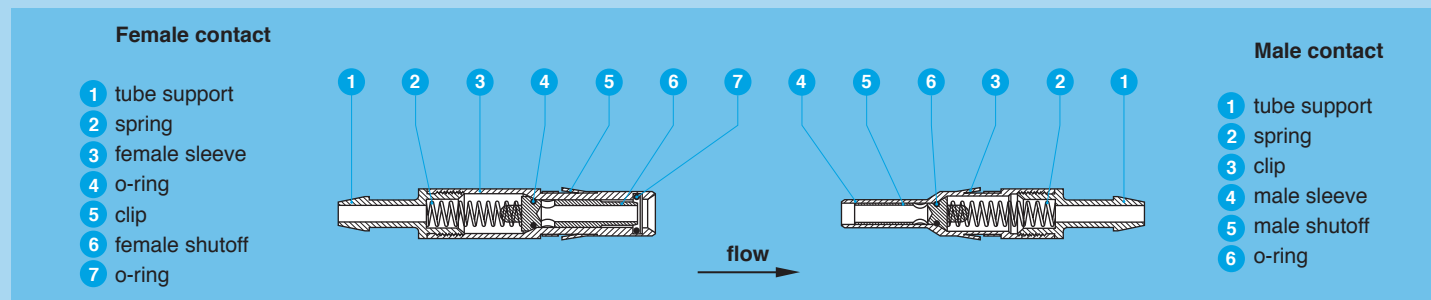
# P1/P3 Fluidic contact with valve

The P1 fluidic contact is designed to fit multi fluid connectors or mixed fluid/electrical connectors from 2B to 5B and 2K to 5K series. This new design includes a shut-off valve. It fits into all insert cavities that already accept the LEMO coaxial type «C» of contact. The P3 fluidic contact is designed to fit multi fluid connectors of the 5B and 5K series.

Its main features are:

- contacts with shut-off valve
  - maximum working pressure 6 bars
  - stainless alloy body
  - after mounting on tube, the contact is installed in the main insulator and retained with a metallic clip.
- The contact is fitted with FPM o-ring, it can be used with liquids or gas.

## Part Section Showing Internal Components



## Technical Characteristics

### Material and Treatment

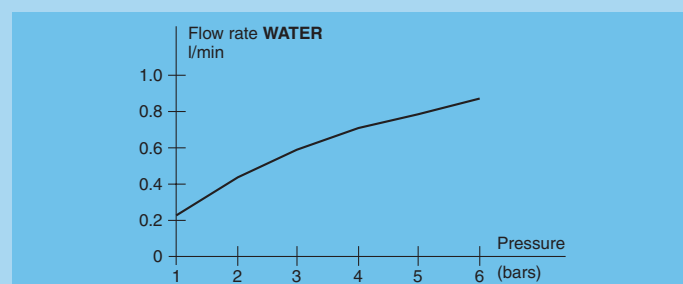
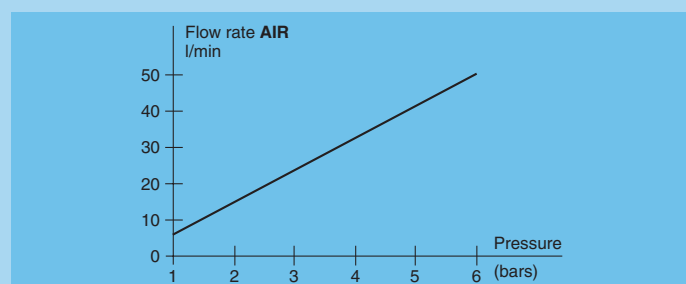
Components	Value
Body	Stainless steel
Valve	Alloy CuNiZn
Spring	Stainless steel
Clips	CuBe
O-ring	FPM

### Mechanical and Environmental

Characteristics	Value	Cont. type	Standard
Mating durability	1000 cycles	P1/P3	IEC 60512-5 test 9a
Temperature range	-20°C, +125°C	P1/P3	
Max. working pressure	6 bars	P1/P3	
Air flow rate at 6 bars	50 l/min	P1	
Water flow rate at 6 bars	0.80 l/min	P1	
Air flow rate at 6 bars	210 l/min	P3	
Water flow rate at 6 bars	4.20 l/min	P3	

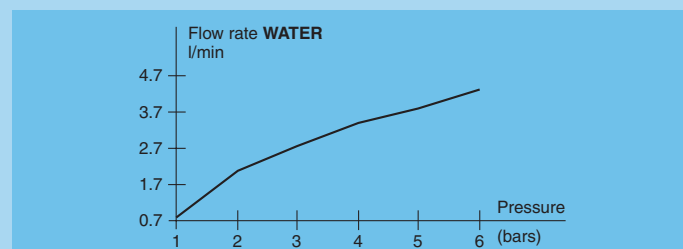
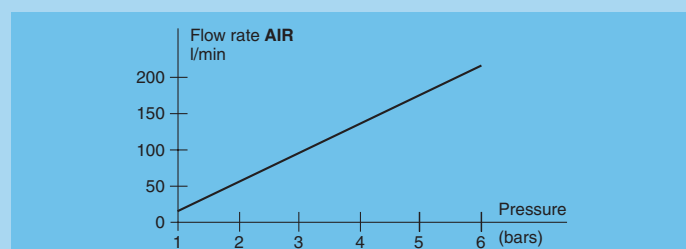
**Note:** flow direction is always from female contact to male contact.

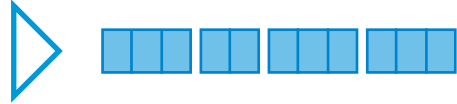
### Flow/pressure diagram P1 contact type



**Note:** test carried out with a 2 mm inner diameter tube.

### Flow/pressure diagram P3 contact type

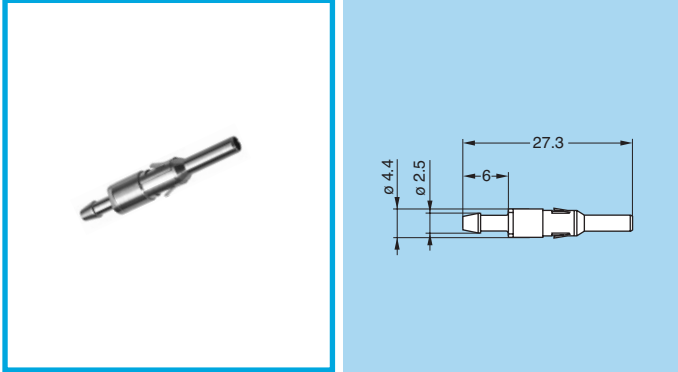




## Model - Fluidic Contact Type

### P1 contacts

#### FGG.P1 Male fluidic contact with valve

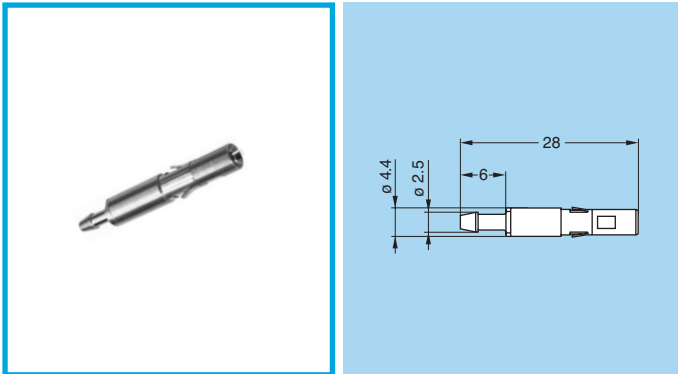


Part number

**FGG.P1.150.AC**V

**Note:** Connectors are delivered without the P1 contacts.

#### EGG.P1 Female fluidic contact with valve



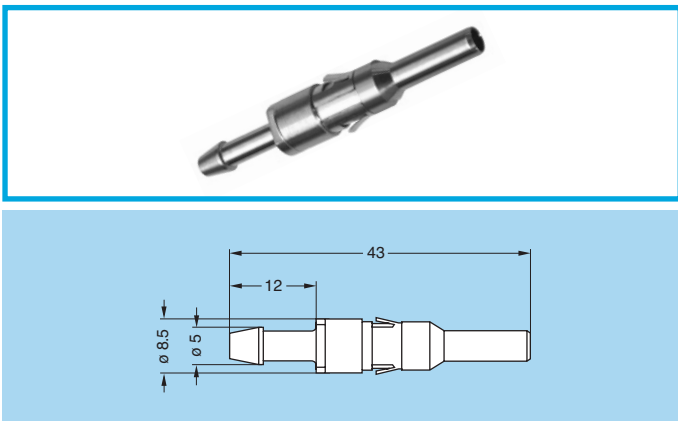
Part number

**EGG.P1.150.AC**V

**Note:** Connectors are delivered without the P1 contacts.

### P3 contacts

#### FGG.P3 Male fluidic contact with valve



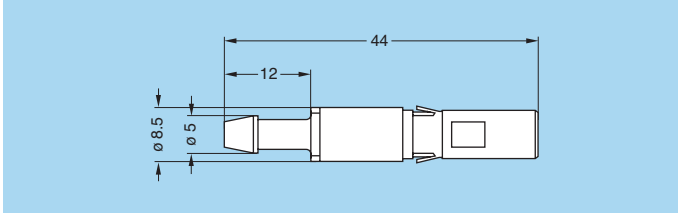
Part number

**FGG.P3.300.AC**V

**Note:** Connectors are delivered without the P3 contacts.



### EGG.P3 Female fluidic contact with valve



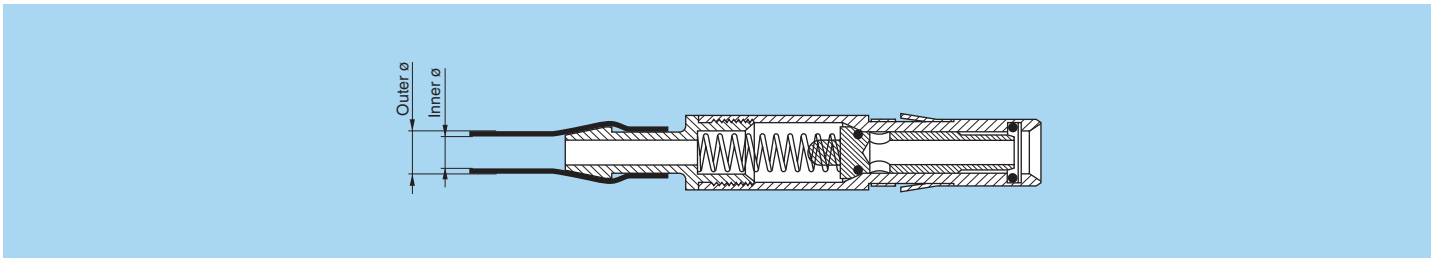
Part number

**EGG.P3.300.AC**V

**Note:** Connectors are delivered without the P3 contacts.

## Recommended tubing/hose

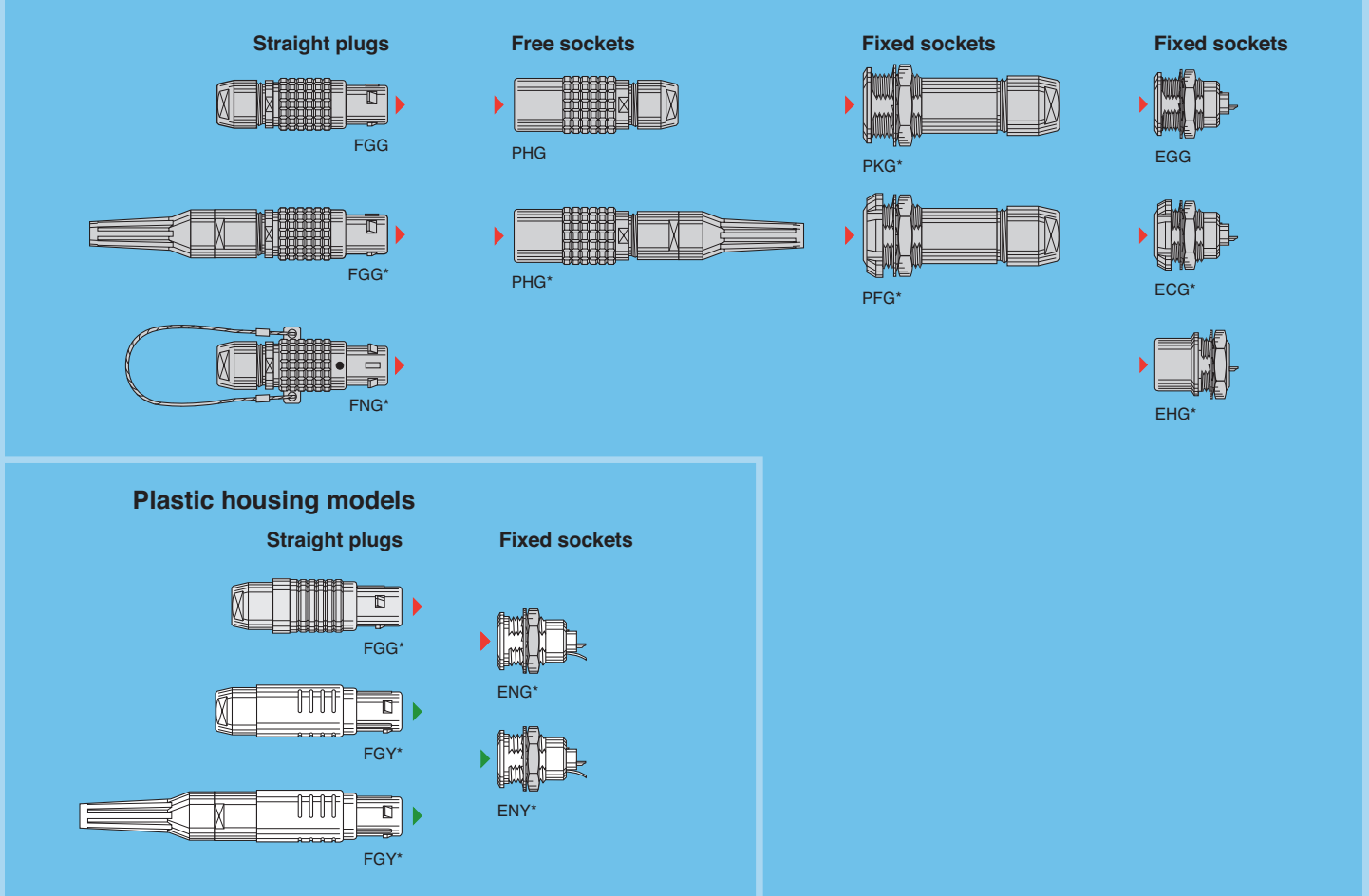
Series	Contact type	Diameter (mm)		Supplier	Material	Colour	Working temperature
		Outer $\varnothing$	Inner $\varnothing$				
2B, 3B, 2K, 3K	P1	4.0	2.0	Legris 1100P0400	Polyamide (nylon)	White	-20° C to 80° C
2B, 3B, 2K, 3K	P1	4.0	2.0	Legris 1100P0401	Polyamide (nylon)	Black	-20° C to 80° C
2B, 3B, 4B, 5B	P1	3.0	1.8	Legris 1025U030118	Polyurethane	Black	-20° C to 70° C
2K, 3K, 4K, 5K	P1	3.0	1.8	Legris 1025U030118	Polyurethane	Black	-20° C to 70° C
5B, 5K	P3	6.0	4.0	Legris 1100P0601	Polyamide (nylon)	Black	-20° C to 80° C



# 2B-5B Series

The P1 fluidic contact has been designed to work in the 2B to 5B series. The P3 contact has been designed to work in the 5B series. The main features of these series are as follows:

- security of the LEMO Push-Pull self-latching system
  - the alignment key (G, A...F, Y and R) ensures excellent repeatability of performance during frequent matings
  - the P1 fluidic contact allows hybrid configuration in the 2B series and multi fluid up to 10 channels in the 5B series.
- The possible outer cable diameters range from 4.0 to 25 mm.

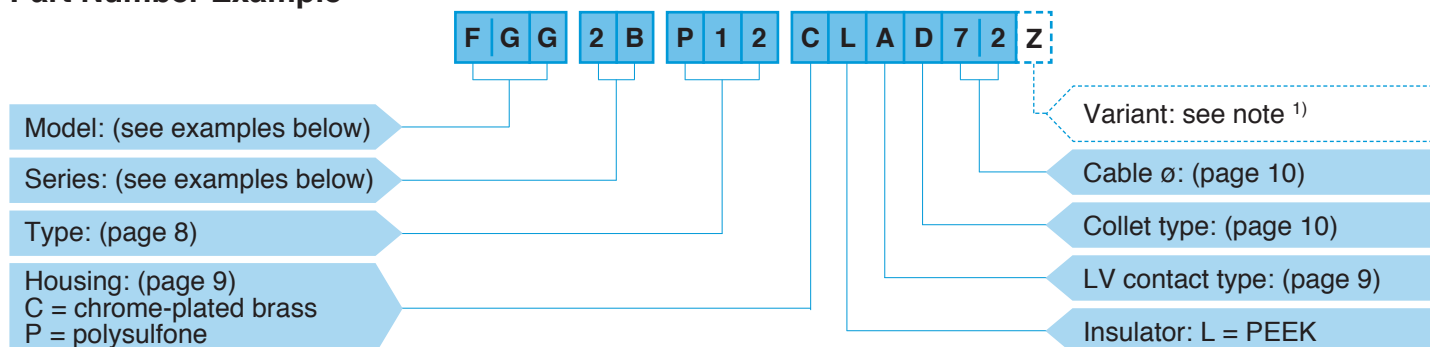


## Model Description

- |  |   |  |
|--|---|--|
| <p><b>ECG</b> Fixed socket, with two nuts, key (G) or keys (A...F and R), (back panel mounting)</p> <p><b>EGG</b> Fixed socket, nut fixing, key (G) or keys (A...F and R)</p> <p><b>EHG</b> Fixed socket, nut fixing, key (G) or keys (A...F and R) with visible shell</p> <p><b>ENG</b> Fixed socket with grounding tab, nut fixing, key (G), PEEK outer shell</p> <p><b>ENY</b> Fixed socket with grounding tab, nut fixing, keys (Y), PSU or PPSU outer shell</p> <p><b>FGG</b> Straight plug, key (G) or keys (A...F and R) and cable collet</p> <p><b>FGG</b> Straight plug, key (G) or keys (A...F) cable collet and nut for fitting a bend relief</p> | <p><b>FGG</b> Straight plug, key (G), cable collet, PEEK outer shell</p> <p><b>FGY</b> Straight plug, keys (Y), cable collet and PSU or PPSU outer shell</p> <p><b>FGY</b> Straight plug, keys (Y), cable collet and PSU or PPSU outer shell and nut for fitting a bend relief</p> <p><b>FNG</b> Straight plug, key (G) or keys (A...F and R) and cable collet with lanyard release</p> <p><b>PFG</b> Fixed socket, with two nuts, key (G) or keys (A...F and R) and cable collet (back panel mounting)</p> <p><b>PHG</b> Free socket, key (G) or keys (A...F and R) and cable collet</p> | <p><b>PHG</b> Free socket, key (G) or keys (A...F) and cable collet and nut for fitting a bend relief</p> <p><b>PKG</b> Fixed socket, nut fixing, key (G) or keys (A...F and R) and cable collet</p> <p>* Not show in this catalogue. Refer to our catalogue unipole-multipole</p> |
|--|---|--|

Certain models and certain alignment key may not be available in all series. Please consult us.

## Part Number Example

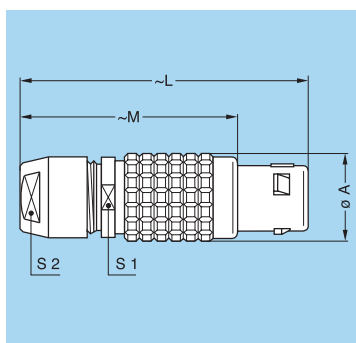


**FGG.2B.P12.CLAD72Z** = Straight plug with key (G), 2B series, mixed type to accept one P1 fluid contact and 4 low voltage electrical contacts, chrome-plated brass housing, PEEK insulator, 4 male solder electrical contacts, type D collet system to suit a 6.1 to 7.0 mm diameter cable, and a nut for fitting a bend relief.

**Note: Connectors are always delivered without fluidic contact.**

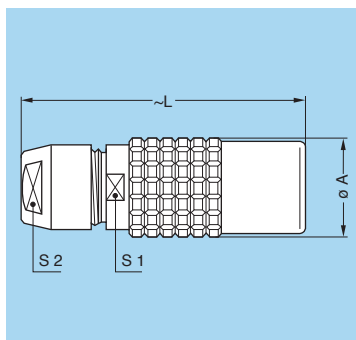
<sup>1)</sup> The «Variant» position in the reference is used to indicate the presence of a collet nut for fitting the bend relief. The bend relief must be ordered separately (see page 12).

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



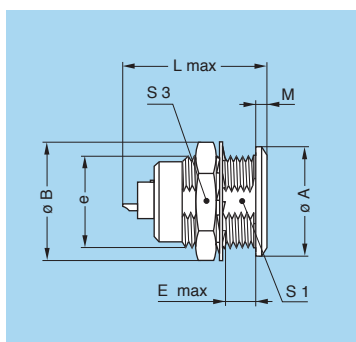
Reference		Dimensions (mm)				
Model	Series	A	L	M	S1	S2
FGG	2B	15	50	38	13	12
FGG	3B	18	58	43	15	14
FGG	4B	25	75	57	21	20
FGG	5B	35	103	78	31	30

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



Reference		Dimensions (mm)			
Model	Series	A	L	S1	S2
PHG	2B	16.5	47.0	13	12
PHG	3B	19.0	56.0	15	14
PHG	4B	24.4	73.0	21	20
PHG	5B	34.2	99.0	31	30

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



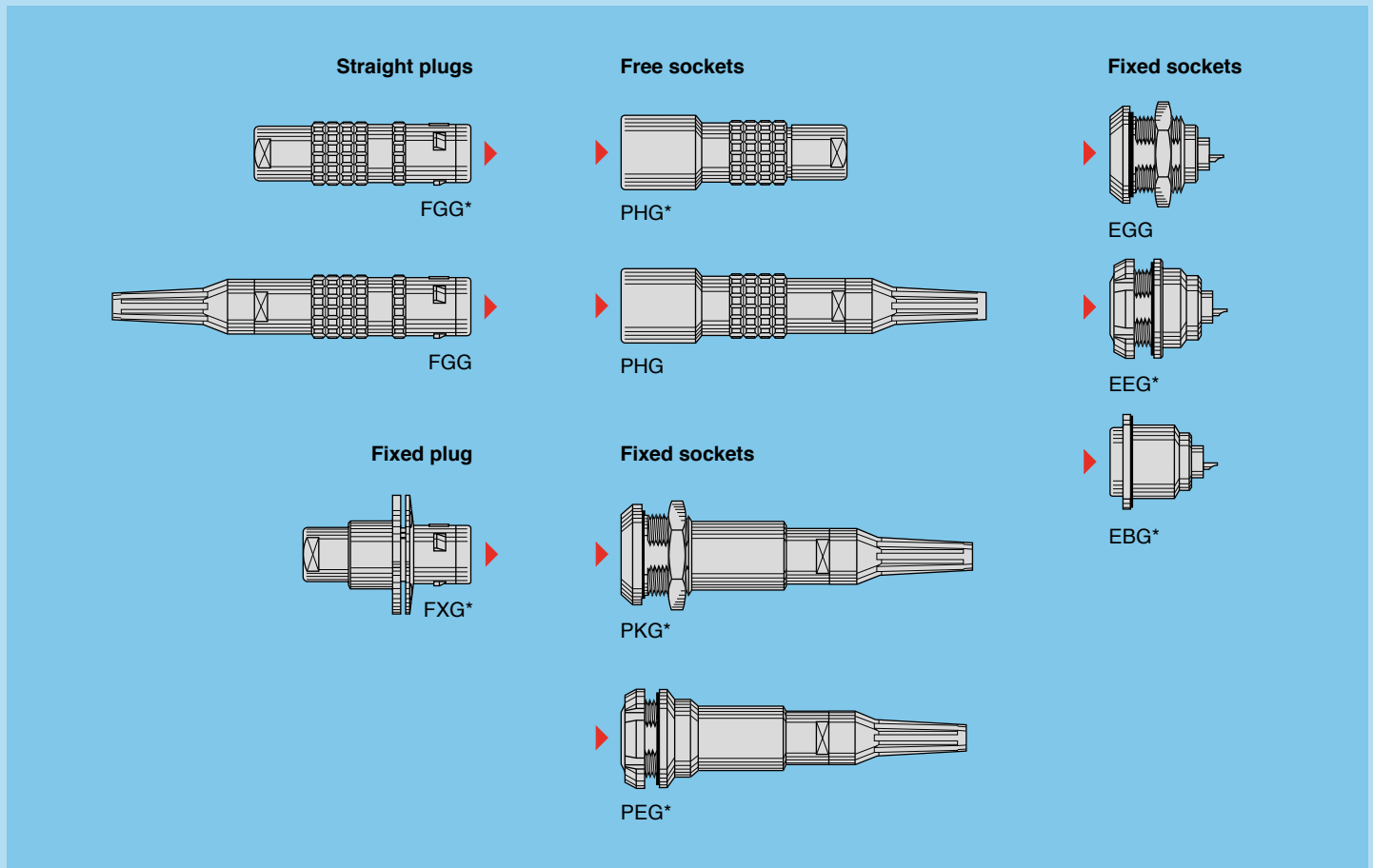
Reference		Dimensions (mm)							
Model	Series	A	B	e	E	L	M	S1	S3
EGG	2B	18	19.2	M15x1.0	8.5	28.8	1.8	13.5	17
EGG	3B	22	25.0	M18x1.0	11.5	30.0	2.0	16.5	22
EGG	4B	28	34.0	M25x1.0	12.0	34.5	2.5	23.5	30
EGG	5B	40	40.0	M35x1.0	11.0	36.5	3.0	33.5	–
EGG	5B <sup>1)</sup>	40	40.0	M35x1.0	11.0	45.9	3.0	33.5	–

**Note:** <sup>1)</sup> with P3 contact.

## 2K-5K Series

The P1 fluidic contact has been designed to work in the 2K-5K series. The P3 contact has been designed to work in the 5K series. The main features of these series are as follows:

- security of the LEMO Push-Pull self-latching system
  - specially designed for outdoors applications. All these models (except FX● model) are waterproof when mated and reach a protection index of IP 66-IP 68, according to the IEC 60529 standard
  - the alignment key (G, A...F and R) ensures excellent repeatability of performance during frequent matings
  - the P1 fluidic contact allows hybrid configuration in the 2K series and multi fluid up to 10 channels in the 5K series.
- The 2K-5K series consists of ten models which will accept outer cable diameters ranging from 2.6 mm to 23.5 mm.



### Model Description

**EBG** Fixed socket with square flange, key (G) or keys (A...F and R), four holes fixing

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

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

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

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

**FXG** Fixed plug with round flange, four holes fixing, key (G) or keys (A...F and R)

**PEG** Fixed socket, nut fixing, key (G) or keys (A...F and R), cable collet and nut for fitting a bend relief (back panel mounting)

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

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

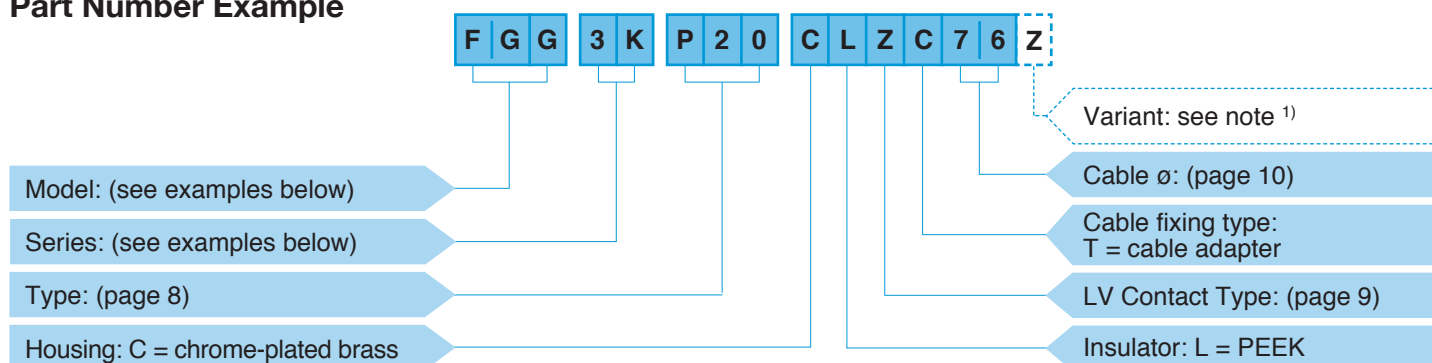
**PKG** Fixed socket, nut fixing, key (G) or keys (A...F and R), cable collet and nut for fitting a bend relief

\* Not show in this catalogue. Refer to our catalogue unipole-multipole

Certain models and certain alignment key may not be available in all series. Please consult us.



## Part Number Example

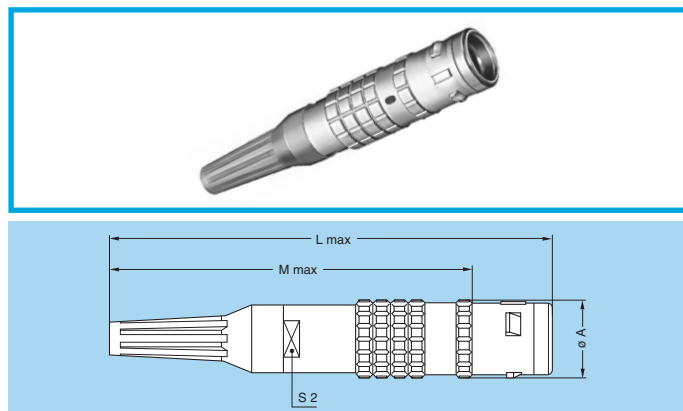


**FGG.3K.P20.CLZC76Z** = Straight plug with key (G), 3K series, multi fluid with 2 times P1 contacts, chrome-plated brass housing, PEEK insulator, C type collet for 7.5 mm diameter cable, and nut for fitting a bend relief.

**Note: Connectors are always delivered without fluidic contact.**

<sup>1)</sup> The «Variant» position in the reference is used to indicate the presence of a collet nut for fitting the bend relief. The bend relief must be ordered separately (see page 12).

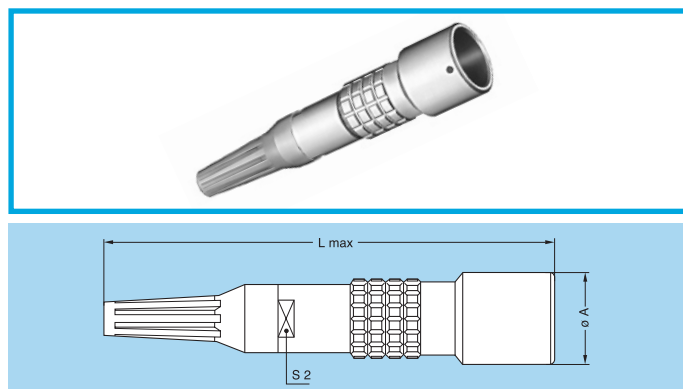
## FGG Straight plug, key (G) or keys (A...F and R), cable collet and nut for fitting a bend relief



Reference		Dimensions (mm)			
Model	Series	A	L	M	S2
FGG	2K	16	101	85.0	12
FGG	3K	19	109	89.0	15
FGG	4K	25	131	110.5	19
FGG	5K	38	160	135.0	30

**Note:** The overall length dimension is with bend relief

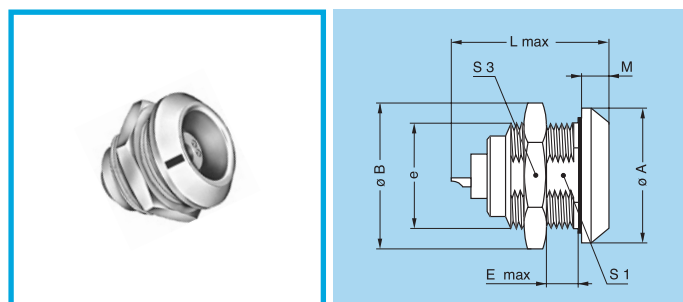
## PHG Free socket, key (G) or keys (A...F and R), cable collet and nut for fitting a bend relief



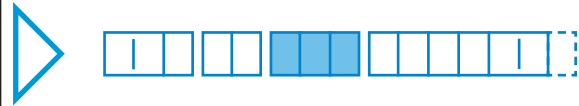
Reference		Dimensions (mm)		
Model	Series	A	L	S2
PHG	2K	19	103.0	12
PHG	3K	23	113.0	15
PHG	4K	29	135.5	19
PHG	5K	42	164.0	30

**Note:** The overall length dimension is with bend relief

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



Reference		Dimensions (mm)							
Model	Series	A	B	e	E	L	M	S1	S3
EGG	2K	25	27.0	M20x1.0	9	32.8	5.0	18.5	24
EGG	3K	31	34.0	M24x1.0	11	35.5	6.0	22.5	30
EGG	4K	37	40.5	M30x1.0	9	37.0	6.5	28.5	36
EGG	5K	55	54.0	M45x1.5	10	40.5	9.0	42.5	-



## Insert configuration

### Multi fluid and Mixed fluid + LV

		Fluidic contact						Low Voltage contact									
		Reference	Nb of fluidic tube	Type	Ext. $\phi$ of tube (see page 3)	Int. $\phi$ of tube (see page 3)	Max. working pressure (bars)	Contact No	$\phi$ A (mm)	Contact type		Solder contact		Crimp contact		Rated current (A)	
Male solder contacts	Female solder contacts									Solder	Crimp	Test voltage (kV rms) Contact-contact	Test voltage (kV rms) Contact-shell	Test voltage (kV rms) Contact-contact	Test voltage (kV rms) Contact-shell		
Male crimp contacts	Female crimp contacts																
<b>2B</b> <b>2K</b>			<b>P11</b>	1	P1	3.0 4.0	1.8 2.0	6	2	0.9	●	●	1.75	1.60	1.85	1.60	9.0
			<b>P12</b>	1	P1	3.0 4.0	1.8 2.0	6	4	0.7	●	●	0.85	1.20	0.85	1.25	6.0
			<b>P13</b>	1	P1	3.0 4.0	1.8 2.0	6	6	0.7	●	●	0.85	1.20	0.85	1.25	6.0
			<b>P15</b>	1	P1	3.0 4.0	1.8 2.0	6	10	0.7	●	●	1.15	1.35	1.30	1.05	6.0
<b>3B</b> <b>3K</b>			<b>P20</b>	2	P1	3.0 4.0	1.8 2.0	6	-	-	-	-	-	-	-	-	-
			<b>P22</b>	2	P1	3.0 4.0	1.8 2.0	6	4	0.9	●	●	1.20	1.05	1.00	0.80	8.0
			<b>P23</b>	2	P1	3.0 4.0	1.8 2.0	6	6	0.9	●	●	1.20	1.05	1.00	0.80	8.0
			<b>P25</b>	2	P1	3.0 4.0	1.8 2.0	6	10	0.7	●	●	0.95	0.75	0.85	0.65	6.0
			<b>P28</b>	2	P1	3.0 4.0	1.8 2.0	6	16	0.7	●	●	0.80	0.70	0.80	0.75	5.5
<b>4B</b> <b>4K</b>			<b>P40</b>	4	P1	3.0	1.8	6	-	-	-	-	-	-	-	-	-
			<b>P49</b>	4	P1	3.0	1.8	6	9	0.7	●	●	1.00	1.00	0.80	0.80	8
			<b>P33</b>	3	P1	3.0	1.8	6	6	0.7	●	●	0.90	0.95	0.80	0.80	8
			<b>P36</b>	3	P1	3.0	1.8	6	12	0.7	●	●	0.90	0.95	0.80	0.80	6
			<b>P26</b>	2	P1	3.0	1.8	6	12	0.9	●	●	0.95	0.85	0.90	1.20	10
			<b>P28</b>	2	P1	3.0	1.8	6	16	0.9	●	●	0.95	0.85	0.85	0.85	10
			<b>P29</b>	2	P1	3.0	1.8	6	18	0.7	●	●	0.90	0.95	0.85	0.75	8



## Multi fluid and Mixed fluid + LV

	Male solder contacts		Female solder contacts		Reference	Fluidic contact					Low Voltage contact								
	Male crimp contacts		Female crimp contacts			Nb of fluidic tube	Type	Ext. $\phi$ of tube (see page 3)	Int. $\phi$ of tube (see page 3)	Max. working pressure (bars)	Contact No	$\phi$ A (mm)	Contact type		Solder contact		Crimp contact		Rated current (A)
												Solder	Crimp	Test voltage (kV rms) Contact-contact	Test voltage (kV rms) Contact-shell	Test voltage (kV rms) Contact-contact	Test voltage (kV rms) Contact-shell		
<b>5B 5K</b>					<b>P01</b>	10	P1	3.0	1.8	6	-	-	-	-	-	-	-	-	-
					<b>P30</b>	3	P3	6.0	4.0	6	-	-	-	-	-	-	-	-	-
					<b>P40</b>	4	P3	6.0	4.0	6	-	-	-	-	-	-	-	-	-

## Housings (B and K series)

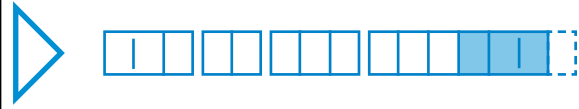
Ref.	Outer shell and collet nut		Latch sleeve + earthing crown		Other metallic components		Remarks
	Material	Surf. treatment	Material	Surf. treatment	Material	Surf. treatment	
<b>C</b>	Brass	chrome	brass/bronze	nickel <sup>2)</sup>	brass	nickel	
<b>G</b>	PEEK (natural)	-	brass/bronze	nickel <sup>2)</sup>	brass	nickel	Only for FGG and ENG (B series)
<b>P</b>	PSU	-	brass/bronze	nickel <sup>2)</sup>	brass	nickel	Only for FGY and ENY (B series) <sup>1)</sup>

Note: <sup>1)</sup> see «variant» for the colour. <sup>2)</sup> in the K series, the latch sleeve is chrome-plated.

## Electrical Contact

### Contact for plug, socket, and fixed socket

Ref.	Contact type
<b>A</b>	male solder
<b>C</b>	male crimp
<b>L</b>	female solder
<b>M</b>	female crimp
<b>Z</b>	no contact



## 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.	
<b>2B</b>	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)
	<b>3B</b>	M	52	5.2	–	5.2	> 4.2
D		62	6.2	–	6.2	4.9	
D		72	7.7	–	7.7	> 6.2	
D		92	9.2	–	9.2	> 7.7	
D		10	10.2	–	10.0	> 9.2	
D		11	11.0	–	11.0	> 10.0	
D		12	12.0	10.2	12.0	> 11.0	1)

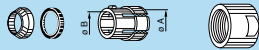
	Reference		Collet ø		Cable ø		Notes
	Type	Code	ø A	ø B	max.	min.	
<b>4B</b>	M	62	6.2	–	6.2	4.9	
	M	72	7.2	–	7.7	> 6.2	
	M	92	9.2	8.6	9.2	> 7.7	
	D	10	10.8	–	10.5	9.1	
	D	12	12.3	–	12.0	10.6	
	D	13	13.8	12.5	13.5	12.1	
	D	15	15.3	12.5	15.0	13.6	
	D	16	16.3	12.5	16.0	15.1	1)
<b>5B</b>	D	11	11.8	–	11.5	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)

**Note:** all dimensions are in millimetres.

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

### C and K type collets for K series

C type



K type  
oversize  
cable collet



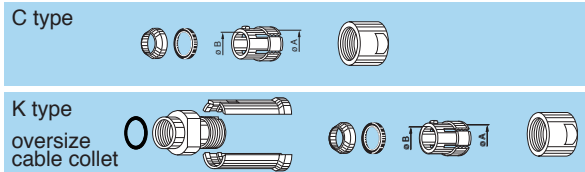
	Reference		Collet ø		Cable ø	
	Type	Code	ø A	ø B	max.	min.
<b>2K</b>	C	35	4.2	–	3.5	3.1
	C	40	4.2	–	4.0	3.6
	C	45	5.2	–	4.5	4.1
	C	50	5.2	–	5.0	4.6
	C	55	6.2	–	5.5	5.1
	C	60	6.2	–	6.0	5.6
	C	65	7.2	–	6.5	6.1
	C	70	7.2	–	7.0	6.6

	Reference		Collet ø		Cable ø	
	Type	Code	ø A	ø B	max.	min.
<b>2K</b>	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

**Note:** all dimensions are in millimetres.



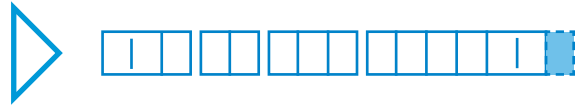
## C and K type collets for K series



	Reference		Collet ø		Cable ø	
	Type	Code	ø A	ø B	max.	min.
<b>3K</b>	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
	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
	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	
<b>4K</b>	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
	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

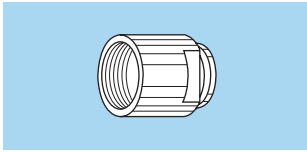
	Reference		Collet ø		Cable ø	
	Type	Code	ø A	ø B	max.	min.
<b>4K</b>	C	14	15.3	15.3	14.0	13.6
	C	15	15.3	15.3	15.0	14.1
	K	16	17.8	–	16.5	15.6
	K	17	17.8	–	17.5	16.6
	K	18	19.8	–	18.5	17.6
	K	19	19.8	–	19.5	18.6
	K	20	21.8	–	20.5	19.6
	K	21	21.8	–	21.5	20.6
	K	22	23.8	23.8	22.5	21.6
	K	23	23.8	23.8	23.5	22.6
<b>5K</b>	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
	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:** all dimensions are in millimetres.

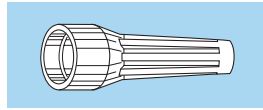


## Variant (B and K series)

### Bend relief for B series models with collet

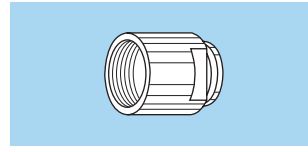


Need to be ordered

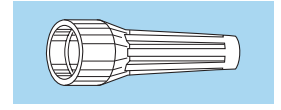


	Ref.	Collet		Need to be ordered separately
		Type	Code	
<b>2B</b>	Z	D	42 to 92	GMA.2B.●●●.●●
<b>3B</b>	Z	M	52	GMA.1B.●●●.●●
		D	62 to 10	GMA.3B.●●●.●●
<b>4B</b>	Z	M	62 and 72	GMA.2B.●●●.●●
		M	92	GMA.4B.●●●.●●
		D	10 to 15	GMA.4B.●●●.●●
<b>5B</b>	Z	D	11 to 15	GMA.4B.●●●.●●

### Bend relief for K series models with collet



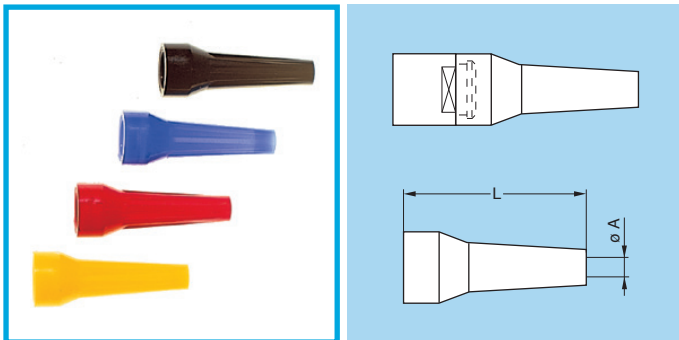
Need to be ordered



	Ref.	Collet		Need to be ordered separately
		Type	Code	
<b>2K</b>	Z	C	40 to 85	GMA.2B.●●●.●●
		K	90 to 10	GMA.3B.●●●.●●
<b>3K</b>	Z	C	40 to 10	GMA.3B.●●●.●●
		K	11 to 15	GMA.4B.●●●.●●
<b>4K</b>	Z	C	50 to 15	GMA.4B.●●●.●●

Note: All dimensions are in millimetres.

### GM Bend relief



A bend relief made from thermoplastic polyurethane elastomer can be fitted over LEMO plugs and sockets that are supplied with nut for fitting such bend relief.

They are available in nine different colours that match with the GRA insulating washers (see unipole-multipole catalog). Use the part numbers shown below to order this accessory separately.



### Main characteristics

- Material: TPU (Thermoplastic Polyurethane)
- Temperature range in dry atmosphere: -40°C +80°C

Part number	Dimensions (mm)				Series
	Bend relief		Cable ø		
	A	L	max.	min.	
<b>GMA.2B.040.DG</b>	4.0	36	4.5	4.0	2B-2K
<b>GMA.2B.045.DG</b>	4.5	36	5.0	4.5	2B-2K
<b>GMA.2B.060.DG</b>	6.0	36	6.5	6.0	2B-2K
<b>GMA.2B.070.DG</b>	7.0	63	7.7	7.0	2B-2K
<b>GMA.3B.060.DG</b>	6.0	42	6.9	6.0	3B-3K
<b>GMA.3B.070.DG</b>	7.0	42	7.9	7.0	3B-3K
<b>GMA.3B.080.DG</b>	8.0	42	8.9	8.0	3B-3K
<b>GMA.4B.011.DG</b>	11.0	60	11.9	11.0	4B-4K-5B
<b>GMA.4B.012.DG</b>	12.0	60	13.0	12.0	4B-4K-5B
<b>GMA.4B.013.DG</b>	13.5	60	14.5	13.5	4B-4K-5B

Ref.	Colour	Ref.	Colour
<b>A</b>	blue	<b>N</b>	black
<b>B</b>	white	<b>R</b>	red
<b>G</b>	grey	<b>S</b>	orange
<b>J</b>	yellow	<b>V</b>	green
<b>M</b>	brown		

Note: the last letter «G» of the part number indicates the grey colour of the bend relief. For ordering a bend relief with another colour, see table above and replace the letter «G» by the letter of the required colour.

## Tools

### Extractor

Reference	Contact type
<b>DCC.91.CP1.LAG</b>	P1
<b>DCC.91.808.0LC</b>	P3

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**Note**



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## Note

**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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