HIGH PRESSURE CONNECTORS V SERIES

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Lemo.

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 ø 3 mm to ø 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 (not shown in this catalogue)

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 $C \in$

CE marking $\mathbf{C} \in \mathbf{C}$ means that the appliance or equipment bearing it complies with the protection requirements of one or several European safety directives. CE marking $\mathbf{C} \in \mathbf{C}$ 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.



V Series

V series connectors have been developed for utilisation where protection must be guaranteed under high pressures of liquids. The basic elements, insulators, contacts and clamping system are from the S and E series. The push-pull latching system has been replaced by a screw coupling system with watertightness maintained by compression of an O-ring in FPM (Viton[®]) according to the triangular shaped cavity principle. There are multiple application possibilities, from nuclear physics to the petroleum industry. After cable assembly the rear part must be covered with an adhesive heatshrink boot in order to ensure watertightness on the cable side. V series connectors provide the following main features: - unipole and multipole type

- coaxial, triaxial or mixed type available upon request

polarisation by stepped insert (half moon)
 360° screening for full EMC shielding

- rugged housing for extreme working conditions.

Interconnections



Part Section Showing Internal Components (multipole)





Part Number Example



FVN.2V.306.CLAC60 = straight plug with cable collet, 2V series, multipole type with 6 contacts, outer shell in chrome-plated brass, PEEK insulator, male solder contacts, C type collet for 6 mm diameter cable.

Free socket with cable collet



PVP.2V.306.CLLC60 = free socket with cable collet, 2V series, multipole type with 6 contacts, outer shell in chrome-plated brass, PEEK insulator, female solder contacts, C type collet for 6 mm diameter cable.



EVP.3V.310.SLL = fixed socket, nut fixing, 3V series, multipole type with 10 contacts, outer shell in stainless steel, PEEK insulator, female solder contacts.

Note: ¹⁾ PTFE insulator for unipole type only.

²⁾ The «Variant» position in the reference is used to specify either the presence of a collet nut for fitting the bend relief. For models with collet nut for fitting the bend relief, a «Z» should be indicated and a bend relief can be ordered separately. An order for a connector with bend relief should thus include two part numbers.



Technical Characteristics

Mechanical and Climatical

Characteristics	Value	Standard		
Endurance	rance > 1000 cycles			
Temperature range	-20	° C, +200° C		
Salt spray corrosion test 2)	> 1000 h	IEC 60512-6 test 11f		
Protection index (mated)	> IP 68	IEC 60529		
Resistance to hydrostatic pressure (mated)	~ 30 bars ¹⁾	IEC 60512-7 test 14d		
Climatical category	20/200/21	IEC 60068-1		

FVN Straight plug with cable collet

<u>S 3</u> <u>S 2</u> <u>S 1</u> -N-▲ 0 B ♦ \mathbb{N}

FVN Straight plug with oversize cable collet 1)





Refer	rence		Dimensions (mm)							
Model	Series	А	В	L	М	N	S1	S2	S3	S4
FVN	1V	19.3	14.5	55	47	14.0	18	10	12	12
FVN	2V	23.5	17.0	65	55	15.5	22	14	15	15
FVN	3V	27.8	22.0	80	66	16.5	26	16	19	19
FVN	4V	34.3	36.0	105	91	17.5	32	22	30	32

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 13).

Electrical

Models

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

Note: ¹⁾ in order to perform correctly and withstand the pressure, cable assembly shall be made according to instruction we recommand. See page 18. ¹⁰ for the product (« C» material code).

Refe	rence	Dimensions (mm)							
Model	Series	А	В	L	М	N	S1	S2	S3
FVN	0V	17.2	10	34.0	29	13.5	16	9	8
FVN	1V	19.3	12	43.0	35	14.0	18	10	9
FVN	2V	23.5	16	52.5	42	15.5	22	14	12
FVN	3V	27.8	18	61.0	47	16.5	26	16	15
FVN	4V	34.3	24	71.0	57	17.5	32	22	19
FVN	5V	50.0	38	94.0	78	21.0	47	34	30

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



Refe	rence		Dimensions (mm)						
Model	Series	Α	В	L	М	Ν	S1	S2	S3
FVN	0V	17.2	10	34	29	13.5	16	9	7
FVN	1V	19.3	12	43	35	14.0	18	10	9
FVN	2V	23.5	16	52	42	15.5	22	14	12
FVN	3V	27.8	18	60	47	16.5	26	16	15
FVN	4 V	34.3	24	71	57	17.5	32	22	19

Note: $^{\rm 1)}$ to order, add a «Z» at the end of the reference. The bend relief must be ordered separately (see pages 141 and 142 of the unipole/multipole catalog).

EVP Fixed socket, nut fixing



PSN Fixed socket, cable collet, nut fixing



Refe	rence				Dime	ensior	ns (mi	n)			
Model	Series	А	В	е	Е	L	М	Ν	Р	S1	S4
EVP	0V	19	19.2	M14x1.0	5.5	19.0	2.0	8.0	8.0	12.5	17
EVP	1V	21	21.5	M16x1.0	10.5	26.0	2.0	8.0	13.5	14.5	19
EVP	2V	26	27.0	M20x1.0	11.0	29.0	2.5	9.0	15.0	18.5	24
EVP	3V	31	34.0	M24x1.0	15.0	34.5	3.0	9.5	20.0	22.5	30
EVP	4V	38	40.5	M30x1.0	14.5	35.0	3.5	10.0	21.5	28.5	36
EVP	5 V	55	54.0	M45x1.5	15.5	44.5	4.5	12.5	24.5	42.5	-

Panel cut-out (page 15)

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

Refe	rence				Dime	ensior	ns (mr	n)			
Model	Series	A	В	е	Е	L	М	Ν	S1	S3	S4
PSN	0V	19	19.2	M14x1.0	5.5	34.0	2.0	8.0	12.5	8	17
PSN	1V	21	21.5	M16x1.0	10.5	46.0	2.0	8.0	14.5	9	19
PSN	2V	26	27.0	M20x1.0	11.0	54.0	2.5	9.0	18.5	12	24
PSN	3V	31	34.0	M24x1.0	15.0	65.0	3.0	9.5	22.5	15	30
PSN	4V	38	40.5	M30x1.0	14.5	75.5	3.5	10.0	28.5	19	36
PSN	5V	56	54.0	M45x1.5	15.5	95.0	4.5	12.5	42.5	30	-

Panel cut-out (page 15)

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



PSN Fixed socket, cable collet, nut fixing and nut for fitting a bend relief ¹⁾



Refe	rence				Dime	ensior	ns (mi	n)			
Model	Series	Α	В	е	Е	L	М	Ν	S1	S3	S4
PSN	0V	19	19.2	M14x1.0	5.5	34.0	2.0	8.0	12.5	7	17
PSN	1V	21	21.5	M16x1.0	10.5	46.0	2.0	8.0	14.5	9	19
PSN	2V	26	27.0	M20x1.0	11.0	54.0	2.5	9.0	18.5	12	24
PSN	3V	31	34.0	M24x1.0	15.0	64.0	3.0	9.5	22.5	15	30
PSN	4V	38	40.5	M30x1.0	14.5	75.5	3.5	10.0	28.5	19	36

Panel cut-out (page 15)

Note: ¹⁾ to order, add a «Z» at the end of the reference. The bend relief must be ordered separately (see pages 141 and 142 of the unipole/multipole catalog).

PVP Free socket with cable collet



Refe	rence	Dimensions (mm)							
Model	Series	В	е	L	S1	S2			
PVP	0V	10	M14x1.0	34.0	9	8			
PVP	1V	12	M16x1.0	45.0	10	9			
PVP	2V	16	M20x1.0	54.0	14	12			
PVP	3V	19	M24x1.0	65.0	16	15			
PVP	4V	24	M30x1.0	75.5	22	19			
PVP	5 V	38	M45x1.5	95.0	34	30			

PVP Free socket with oversize cable collet ¹⁾



Refe	rence	Dimensions (mm)					
Model	Series	В	е	L	S1	S2	S3
PVP	1V	14.5	M16x1.0	58	10	12	12
PVP	2V	17.0	M20x1.0	67	14	15	15
PVP	3V	22.0	M24x1.0	84	16	19	19
PVP	4V	36.0	M30x1.0	109	22	30	32

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 13).



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



Refe	rence	Dimensions (mm)							
Model	Series	В	е	L	S1	S2			
PVP	0V	10	M14x1.0	34.0	9	7			
PVP	1V	12	M16x1.0	46.0	10	9			
PVP	2V	16	M20x1.0	54.0	14	12			
PVP	3V	19	19 M24x1.0		16	15			
PVP	4V	24	M30x1.0	75.5	22	19			

Note: ¹⁾ to order, add a «Z» at the end of the reference. The bend relief must be ordered separately (see pages 141 and 142 of the unipole/ multipole catalog).



Insert configuration

Unipole

	Solder con	tacts								
Number of LV contacts			Reference	Watertight	Contact ø (mm)	Solder	AWG solder (max.)	Test voltage (kV ms) ¹⁾	Test voltage (kV dc) ¹⁾	Rated current $(A)^{1}$
			116	0V	1.6	2)	18	1.5	2.1	12
	Ŭ	<u> </u>								
			120	1V	2.0	2)	16	1.9	2.7	18
				1V	3.0	•	12	1.5	2.1	25
			130	2V	3.0	•	12	2.1	3.0	30
1										
				2V	4.0	•	10	1.7	2.4	40
			140	2V 3V	4.0	•	10	2.3	3.3	40
				3V	6.0	•	8	1.7	2.4	65
			160	4V	6.0	•	8	2.7	3.9	70
				5V	12.0	•	0	1.5	2.1	230
Nata 1)	see calculation method, caution and sugge					nolo		mal	_	

Note: 1) see calculation method, caution and suggested standard. 2) also available with inversed contacts: plug = female, socket = male.

• First choice alternative O Special order alternative

Coaxial, Triaxial, Mixed

A wide choice of those types is available, please consult us.



	Solder	contacts					Cor ty	ntact pe			AWG				
Number of LV contacts					Ē						Cri	mp	Test voltage (kV rms) ^{1) 2)}	Test voltage (kV dc) ¹⁾²⁾	(A) ¹⁾
of LV	Crimp o		e	Ħ	ø (mr			aight)	(moc	nax.)			age (k	age (k	urrent
Number			Reference	Watertight	Contact ø (mm)	Solder	Crimp	Print (straight)	Print (elbow)	Solder (max.)	min.	max.	Test volt	Test volt	Rated current (A) ¹⁾
2				0V	0.9	•	•	•	•	22	32	20	1.1	1.6	10 ³⁾
				1V	1.3	•	•	•	•	20	26	18	1.2	1.8	15 ³⁾
			302	2V	1.6	•	0	•	•	18	22	14	1.7	2.4	204)
	2	2		3V	2.0	•		0		16			3.0	4.2	23
				4V	4.0	•		0		10			2.1	3.0	35
	1			5V	6.0	•				8			3.7	5.2	50
3				0V	0.7	•	•	•	•	26	32	22	1.0	1.5	7 ³⁾
				1V	0.9	•	0	•	•	22	32	20	1.2	1.8	10 ³⁾
			303	2V	1.3	•	•	•	0	20	26	18	1.5	2.1	15 ⁴⁾
	30			3V	2.0	•		0		16			1.5	2.1	20
				4V	3.0 1x6.0	•		0		12 8			2.1	3.0	25 50
	1			5V	2x4.0	•				10			3.7	5.2	35
4				0V	0.7	•	•	•	•	26	32	22	1.0	1.5	7 ³⁾
				1V	0.9	•	•	•	•	22	32	20	1.2	1.8	10 ³⁾
		$\begin{pmatrix} 1 \bigcirc \bigcirc_2 \\ 4 \bigcirc \bigcirc 3 \end{pmatrix}$	304	2V	1.3	•		•	•	20	26	18	1.7	2.4	15 ⁴⁾
				3V	2.0	•		0		16			1.5	2.1	18
				4V	3.0			0		12			2.1	3.0	22
				5V	4.0 2x0.9					10	00	20	3.7	5.2	35
5				1V	2x0.9 3x0.7	•	0	•		22 26	32	20 22	1.5	2.1	10 ³⁾ 7 ³⁾
L			0.05	2V	1.3 2x2.0	•	0		•	20 16	26	18	1.5	2.1	13 ⁴⁾ 18
	40 0	• ₅ • ⁴	305	3V	2x2.0 3x1.3 2x3.0	•				20 12			1.5	2.1	14
				4V	2x3.0 3x2.0 2x4.0	•		0		16 10			2.1	3.0	22 16 35
				5V	2x4.0 3x3.0					12			3.0	4.2	35 25

Note: ¹⁾ **see calculation method, caution and suggested standard.** ²⁾ lowest measured value; contact to contact or contact to shell. ³⁾ rated current = 6A for socket with elbow (90°) contacts for printed circuit. ⁴⁾ rated current = 12A for socket with elbow (90°) contacts for printed circuit.

• First choice alternative O Special order alternative





	Solder o	contacts					Cor ty	itact pe			AWG				
V contacts	Crimp c	ontacts	_		(m			t)		(Cri	mp	(kV rms) ^{1) 2)}	(kV dc) ^{1) 2)}	it (A) ¹⁾
Number of LV contacts			Reference	Watertight	Contact ø (mm)	Solder	Crimp	Print (straight)	Print (elbow)	Solder (max.)	min.	max.	Test voltage (kV rms) ^{1) 2)}	Test voltage (kV dc) ¹⁾²⁾	Rated current (A) ¹⁾
6				0V	0.5	•	•	•	0	28	32	28	0.9	1.3	2.5
				1V	0.7	•	0	•	•	26	32	22	1.2	1.7	7 ³⁾
			306	2V	1.3	•	4)	•	•	20	26	18	1.5	2.1	12
			000	3V	1.3	•		•		20			2.1	3.0	14
				4V	2.0	•		•		16			2.1	3.0	16
				5V	3.0	•				12			3.0	4.2	25
7															
	4 ● ● ²			2V	3x1.3 4x0.9	•	0	•	•	20 22	26 32	18 20	0.8	1.2	12 ³⁾ 9 ³⁾
		$\begin{pmatrix} 1 \bigcirc \\ \hline \\$	307	3V	1.3	•		•		20			1.0	1.5	12
	0			4V	3x2.0 4x1.3	•		0		16 20			2.1	3.0	16 13
8				2V	0.9	•	0	•	•	22	32	20	0.8	1.2	9 ³⁾
				3V	1.3	•		•	0	20			1.0	1.5	10
			308	4V	1.3	•		•		20			2.7	3.9	13
				5V	3.0	•				12			2.1	3.0	22
9															
			309	4V	1.3	•		•		20			2.1	3.0	12
		8 7													
10	4 ● ³ ● ²	20 30		2V	0.9		0	•	•	22	32	20	0.8	1.2	7 ³⁾
			310	3V	1.3	•		•		20	JL	20	1.0	1.5	9
	60 70 8			01	1.5					20			1.0		U
10	5 • 4 • 3 • 2	20 ³ 0 4 5		4V	1.3	•		0		20			2.1	3.0	11
	$\begin{pmatrix} \bullet & \bullet & \bullet & \bullet \\ \bullet & \bullet & \bullet & \bullet \\ \bullet & \bullet &$	$\begin{pmatrix} 1 \\ 0 \\ 1^0 \\ 1^0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\$	310	5V	2.0	•				16			2.1	3.0	18
		9 98		01	2.0								1	5.5	10

Note: ¹⁾ **see calculation method, caution and suggested standard.** ²⁾ lowest measured value; contact to contact or contact to shell. ³⁾ rated current = 6A for socket with elbow (90°) contacts for printed circuit. ⁴⁾ only for FFL model.

• First choice alternative O Special order alternative





	Solder o						Cor ty	itact pe			AWG				
ontacts											Cri	mp	rms) ^{1) 2)}	dc) ^{1) 2)}	(1)
of LV cc	Crimp c	ontacts	ų	t	(mm)			light)	(MC	lax.)			tge (kV	tge (kV	rrent (A)
Number of LV contacts			Reference	Watertight	Contact ø (mm)	Solder	Crimp	Print (straight)	Print (elbow)	Solder (max.)	min.	тах.	Test voltage (kV rms) ^{1) 2)}	Test voltage (kV dc) ^{$1/2$}	Rated current (A) ¹⁾
12															
			312	3V	0.9	•		•	•	22			1.5	2.1	8
12		$20^{30} \frac{4}{0}$ $10^{-10} \frac{10^{-2}}{10^{-2}}$	312	4V	1.3	•				20			2.1	3.0	9
12		00													
			312	5V	2.0	•				16			2.1	3.0	18
13		10-0-03		0) (0.0								4 5	0.4	0
			313	3V	0.9	•		•		22			1.5	2.1	8
14	3														
	$\begin{array}{c} 3 & - & - & - & - & - & - & - & - & - &$	$ \begin{array}{c} 10-0-03\\ 4-0-0-0-0\\ 87\\ 1211\\ 1214\\ \end{array} $	314	3V	0.9	•		•	•	22			1.5	2.1	7
14		$\begin{pmatrix} 20 & 0 \\ 10^{11}0 & 0^{12}0^{-6} \\ 1 & 110 & 0^{12}0^{-6} \\ 1 & 110 & -13 & 6 \end{pmatrix}$													
			314	4V	1.3	•		•		20			2.1	3.0	9
14		20-20													
			314	5V	2X3.0 12X2.0	•				12 16			1.8	2.4	20 15

Note: 1) see calculation method, caution and suggested standard. 2) lowest measured value; contact to contact or contact to shell.

• First choice alternative O Special order alternative





	Solder o						Cor ty	itact pe			AWG				
ontacts											Cri	mp	rms) ^{1) 2)}	dc) ^{1) 2)})1)
of LV co	Crimp c		ė	ıt	(mm)			tight)	(MC	lax.)			tge (kV	₁ge (kV	rrent (A
Number of LV contacts			Reference	Watertight	Contact ø (mm)	Solder	Crimp	Print (straight)	Print (elbow)	Solder (max.)	min.	max.	Test voltage (kV ms) ^{1) 2)}	Test voltage (kV dc) $^{1/2}$	Rated current (A) ¹⁾
16															
			316	3V	0.9	•		•	•	22			1.0	1.5	7
				4V	0.9	•		•		22			2.1	3.0	7
10															
16			010	51/	0.0					16			1.0	0.4	15
			316	5V	2.0	•				10			1.8	2.4	15
18				3V	0.9	•		•		22			1.0	1.5	6
			318	3V 4V	0.9	•		0		22			2.1	3.0	6 7
	18 15	15 18													
18															
			318	5V	2x3.0 16x1.6	•				12 18			1.8	2.4	18 11
					10/1.0					10					
20															
	$\begin{pmatrix} 10 \\ 0 \\ 5 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ $		320	4V		0.9	•		0		22		2.1	3.0	7
20		10000 m													
L	$\begin{pmatrix} \begin{pmatrix} \bullet & \mathbf{i} & \bullet & \bullet \\ \mathbf{i} & \mathbf{i} & \bullet & \bullet & \bullet \\ \mathbf{i} & \mathbf{i} & \mathbf{i} & \mathbf{i} & \mathbf{i} & \mathbf{i} \\ \mathbf{i} & \mathbf{i} & \mathbf{i} & \mathbf{i} & \mathbf{i} \\ \mathbf{i} & \mathbf{i} & \mathbf{i} & \mathbf{i} \\ \mathbf{i} & \mathbf{i} & \mathbf{i} & \mathbf{i} \\ $	$\begin{pmatrix} 2 & O & V^{T} \\ I & O & -2 & - & - & O \\ V^{T} & O & 0 \\ V^{T} & V^{T} & V^{T} & V^{T} \\ V$	320	5V		1.6	•				18		1.8	2.4	11
	100000 ¹¹														
22															
	$\begin{pmatrix} 6 & \bullet & \bullet & \bullet \\ 11 & \bullet & \bullet & \bullet & \bullet \\ \hline 0 & \bullet & \bullet & \bullet & \bullet & \bullet \\ \hline 0 & 5 & \bullet & \bullet & \bullet & \bullet \\ \hline 0 & 5 & \bullet & \bullet & \bullet & \bullet \\ \hline 0 & 5 & \bullet & \bullet & \bullet & \bullet \\ \hline \end{array}$	$\begin{pmatrix} 30 & -50 & 0\\ 70 & -00 & 0 & 0\\ 70 & -00 & -0 & 0 & 0\\ \hline 7 & 12 & -0 & 16 & 0\\ \hline 7 & 12 & -0 & 16 & 0 \\ \hline \end{array}$	322	4V	0.9	•		0		22			2.1	3.0	7

Note: 1) see calculation method, caution and suggested standard. 2) lowest measured value; contact to contact to shell.

• First choice alternative O Special order alternative





	Solder of	contacts					Cor ty	ntact pe			AWG				
contacts											Cri	mp	V rms) ^{1) 2)}	(V dc) ¹⁾²⁾	(A) ¹⁾
Number of LV contacts	Crimp c	ontacts	Reference	Watertight	Contact ø (mm)	der	du	Print (straight)	Print (elbow)	Solder (max.)		×	Test voltage (kV rms) ^{1) 2)}	Test voltage (kV dc) ¹⁾²⁾	Rated current (A) ¹⁾
22			Ref	Wa	CO	Solder	Crimp	Prir	Prir	Sol	min.	max.	Tes	Tes	Rat
			322	5V	2x3.0 20x1.6	•				12 18			1.8	2.4	16 9
24		000													
	$\begin{pmatrix} & & & & & \\ & & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & & & \\ & & & & & & & \\ & & & & & & & \\ & & & & & & & \\ & & & & & & & \\ & & & & & & & \\ & & & & & & & \\ & & & & & & & \\ & & & & & & & \\ & & & & & & & \\ & & & & & & & \\ & & & & & & & \\ $	$\begin{pmatrix} 4 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 \\ 0 & 0 &$	324	4V 5V	0.9 1.6	•		•		22 18			2.1 2.7	3.0 3.9	7 9
															-
30															
			330	5V	1.3	•				20			1.8	2.4	8
36		00000													
			336	5V	1.3	•				20			1.8	2.4	7
40		000000													
			340	5V	1.3	•				20			1.2	1.8	7
44															
			344	5V	1.3	•				20			1.2	1.8	6
48		0000 0000000 00000000													
			348	5V	1.3	•				20			1.2	1.8	6

Note: 1) see calculation method, caution and suggested standard. 2) lowest measured value; contact to contact to shell.

• First choice alternative O Special order alternative



1

Collets

C and K type collets

0V, 1V, 2V and 3V series

			00		V a	
	Refe	rence	Colle	et ø	Cal	ole ø
	Туре	Code	øΑ	ø B	max.	min.
ov	С	10 ¹⁾	1.6	-	1.2	1.0
UV	С	15 ¹⁾	1.6	-	1.5	1.3
	С	20 ¹⁾	2.1	-	2.0	1.6
	С	25	3.1	-	2.5	2.1
	С	30	3.1	-	3.0	2.6
	С	35	4.2	4.2	3.5	3.1
	С	40	4.2	4.2	4.0	3.6
	С	45	5.2	5.2	4.5	4.1
	к	50	5.2	5.2	5.0	4.6
	к	55	6.2	6.2	5.5	5.1
	к	60	6.2	6.2	6.0	5.6
	К	65	7.2	6.7	6.5	6.1
1V	С	35	4.2	-	3.5	3.1
	С	40	4.2	-	4.0	3.6
	С	45	5.2	-	4.5	4.1
	С	50	5.2	-	5.0	4.6
	С	55	6.2	6.2	5.5	5.1
	С	60	6.2	6.2	6.0	5.6
	С	65	7.2	6.7	6.5	6.1
	к	70	7.2	-	7.0	6.6
	к	75	8.2	8.2	7.5	7.1
	к	80	8.2	8.2	8.0	7.6
	к	85	9.2	8.6	8.5	8.1

	Refe	rence	Colle	et ø	Cal	ble ø
	Туре	Code	ø A	ø B	max.	min.
2V	С	65	7.2	-	6.5	6.1
20	С	70	7.2	-	7.0	6.6
	С	75	8.2	8.2	7.5	7.1
	С	80	8.2	8.2	8.0	7.6
	С	85	9.2	8.6	8.5	8.1
	к	90	9.2	-	9.0	8.6
	к	95	10.2	10.2	9.5	9.1
	К	10	10.2	10.2	10.0	9.6
	К	11	11.2	10.6	10.5	10.1
2)/	С	65	7.2	-	6.5	6.1
3V	С	70	7.2	-	7.0	6.6
	С	75	8.2	-	7.5	7.1
	С	80	8.2	-	8.0	7.6
	С	85	9.2	-	8.5	8.1
	С	90	9.2	-	9.0	8.6
	С	95	10.2	10.2	9.5	9.1
	С	10	10.2	10.2	10.0	9.6
	С	11	11.2	10.6	10.5	10.1
	К	11	12.3	-	12.0	10.6
	К	12	13.8	13.8	12.8	12.1
	К	13	13.8	13.8	13.5	12.9
	К	14	15.3	15.3	14.0	13.6
	к	15	15.3	15.3	15.0	14.1

Note: All dimensions are in millimetres. ¹⁾ the inner diameter of the smallest bend relief available is 2.5 mm (in TPU) / 1.7 mm (in silicone).

C and K type collets

	4V series							
			$\bigcirc 0$		₹ Vo			
	Refe	rence	Colle	et ø	Cal	ble ø		
	Туре	Code	ø A	ø B	max.	min.		
4V	С	50	6.3	-	5.0	4.8		
4 V	С	55	6.3	-	5.5	5.1		
	С	60	6.3	-	6.0	5.6		
	С	65	7.3	-	6.5	6.1		
	С	70	7.3	_	7.0	6.6		
	С	75	8.3	-	7.5	7.1		
	С	80	8.3	-	8.0	7.6		
	С	85	9.3	-	8.5	8.1		
	С	90	9.3	-	9.0	8.6		
	С	95	10.8	-	9.5	9.1		
	С	10	10.8	-	10.5	9.6		
	С	11	12.3	-	12.0	10.6		
	С	12	13.8	13.8	12.8	12.1		
	С	13	13.8	13.8	13.5	12.9		
	С	14	15.3	15.3	14.0	13.6		
	С	15	15.3	15.3	15.0	14.1		
	К	16	17.8	-	16.5	15.6		
	К	17	17.8	-	17.5	16.6		
	К	18	19.8	_	18.5	17.6		
	к	19	19.8	-	19.5	18.6		
	к	20	21.8	-	20.5	19.6		
	к	21	21.8	_	21.5	20.6		
	К	22	23.8	23.8	22.5	21.6		
	К	23	23.8	23.8	23.5	22.6		

5V	series

	Refe	rence	Colle	et ø	Cat	ole ø
	Туре	Code	ø A	øΒ	max.	min.
5V	С	14	15.8	-	14.5	13.6
3 V	С	15	15.8	-	15.5	14.6
	С	16	17.8	-	16.5	15.6
	С	17	17.8	-	17.5	16.6
	С	18	19.8	-	18.5	17.6
	С	19	19.8	-	19.5	18.6
	С	20	21.8	-	20.5	19.6
	С	21	21.8	-	21.5	20.6
	С	22	23.8	23.8	22.5	21.6
	С	23	23.8	23.8	23.5	22.6



Variant

Bend relief for models with collet





Note: The bend relief must be ordered separately (see pages 141 and 142 of the unipole/multipole catalog). All dimensions are in millimetres.



Panel Cut-outs



Mounting nuts torque

Component			Torque	e (Nm)		
Component	0V	1V	2V	ЗV	4V	5V
Collet nut for Fee and Pee	0.7	0.8	2	3	5	8
Mounting hex nut for sockets	5	7	9	12	17	22
Coupling nut	0.7	0.8	2	3	5	8

Series	Dime	nsions	(mm)
Series	Α	В	L
0V	14.1	12.6	19.0
1V	16.1	14.6	21.0
2V	20.2	18.6	25.5
3V	24.2	22.6	30.0
4V	30.2	28.6	37.0
5V	45.2	42.6	53.0

Accessories

Plug caps (IP68 and resistance to hydrostatic pressure 30 bars) **BFA**



Part number	Series	Dimensions (mm)						
Fait number	Selles	А	В	е	L	N ¹⁾	S1	
BFA.0V.100.•AZ	0V	17.2	6	M14x1.0	12.5	85	16	
BFA.1V.100.•AZ	1V	19.3	6	M16x1.0	15.5	85	18	
BFA.2V.100.•AZ	2V	23.5	6	M20x1.0	17.5	85	22	
BFA.3V.100.•AZ	ЗV	27.8	6	M24x1.0	22.0	120	26	
BFA.4V.100.•AZ	4V	34.3	10	M30x1.0	22.5	120	32	
BFA.5V.100.•AZ	5V	50.0	10	M45x1.5	27.0	120	47	

Note: 1) the tolerance on this dimension is ± 5 mm.

- Body material: $\bullet = N$, nickel-plated brass (Ni 3μ m) $\bullet = S$, stainless steel Lanyard material: Stainless steel
- Crimp ferrule material: Nickel-plated brass





Part number	Series	Dimensions (mm)					
Fait number	Selles	А	L	N ¹⁾	S1		
BRE.0V.200.•AV	0V	17.2	13.7	85	16		
BRE.1V.200.•AV	1V	19.3	13.7	85	18		
BRE.2V.200.•AV	2V	23.5	14.7	85	22		
BRE.3V.200.•AV	ЗV	27.8	14.7	120	26		
BRE.4V.200.•AV	4V	34.3	14.7	120	32		
BRE.5V.200.•AV	5V	50.0	16.2	120	47		

Note: 1) the tolerance on this dimension is ± 5 mm.

- Body material: = N, nickel-plated brass (Ni 3µm) = S, stainless steel Lanyard material: Stainless steel
- Crimp ferrule material: Nickel-plated brass O-ring: FPM (Viton®)

BRF Blanking caps for free sockets (This cap is only IP68 when installed)



Part number	Series	Dimensions (mm)					
Fait number		А	L	N ¹⁾	S1		
BRF.0V.200.•AV	0V	17.2	13.7	85	16		
BRF.1V.200. AV	1V	19.3	13.7	85	18		
BRF.2V.200. AV	2V	23.5	14.7	85	22		
BRF.3V.200.•AV	ЗV	27.8	14.7	120	26		
BRF.4V.200. • AV	4V	34.3	14.7	120	32		
BRF.5V.200. AV	5V	50.0	16.2	120	47		

Note: 1) the tolerance on this dimension is ± 5 mm.

- Body material: $\bullet = N$, nickel-plated brass (Ni 3µm)
- = S, stainless steel Lanyard material: Stainless steel
- Crimp ferrule material: Nickel-plated brass O-ring: FPM (Viton®)
- ò

GEA Hexagonal nuts



Dent europhen	Oariaa	Dimensions (mm)					
Part number	Series	А	В	е	L		
GEA.0E.240.LN	0V	17	19.2	M14 x 1.00	2.5		
GEA.1E.240.LN	1V	19	21.5	M16 x 1.00	3.0		
GEA.2E.240.LN	2V	24	27.0	M20 x 1.00	4.0		
GEA.3E.240.LN	3V	30	34.0	M24 x 1.00	5.0		
GEA.4E.240.LN	4V	36	40.5	M30 x 1.00	7.0		

Note: to order this part separately, use the above part numbers. The last letters «LN» of the part number refer to the nut material and treatment. If a nut in stanless steel is desired, replace the last letters of the part number by «AZ».

- Material:
 Nickel-plated brass (3 μm)
 Stainless steel

GEB Round nuts



Part number	Series	Dimensions (mm)				
		А	е	L		
GEB.5E.240.LN	5V	54	M45 X 1.5	8.0		

Note: to order this part separately, use the above part numbers. The last letters «LN» of the part number refer to the nut material and treatment. If a nut in stainless steel is desired, replace the last letters of the part number by «AZ».

- Material:

 Nickel-plated brass (3 μm)
 Stainless steel

GDA O-ring for plug



Part number	Series	Dim. (mm)		
Part number	Series	А	С	
GDA.99.080.100VK	0V	8.0	1.0	
GDA.99.100.100VK	1V	10.0	1.0	
GDA.99.130.150VK	2V	13.0	1.5	
GDA.99.165.150VK	ЗV	16.5	1.5	
GDA.99.210.200VK	4V	21.0	2.0	
GDA.99.330.250VK	5V	33.0	2.5	

Material: FPM (Viton[®])

Cable assembly

Assembly instructions

In order to ensure the sealing of plugs and sockets on the cable side, it is imperatively necessary to complete their assembly by realizing it with an adapted technique.

We recommend the fitting of an heatshrink boot with inner melting coating of type ATUM (manufactured by the RAYCHEM company) or similar.

This heatshrink boot is not provided with the connector.

For multiconductors cables, the assembly instructions are the followings:



1) Preparation and stripping of cable (see above).

2) Slide the heatshrink boot over the cable; types and dimensions to have are:

Series	0V	1V	2V	3V	4V	5V
Type of heatshrink boot	12/3-0	12/3-0	19/6-0	19/6-0	24/6-0	40/13-0
Length of the boot	30	35	40	45	50	65
Oversize collet	-	16/4-0	19/6-0	24/8-0	40/13-0	-
Length of the boot for oversize collet	-	-	70	-	-	-

- 3) After having soldered the conductors on the contacts of the plug/socket insulator, bring the earthing cone against the centre-piece. Cut the excess of screen.
- Locate the insulator, the centre-piece, the earthing cone, the gland, the compression ring and the collet in the plug/socket shell.
- 5) Screw the collet nut at the recommended torque value.
- 6) Remove all grease left on plug/socket shells with acetone.
- 7) Place the heatshrink boot of the correct dimensions onto the rear end of the plug/socket against the coupling nut.
- 8) Heat the heatshrink boot until the melting coating totally melts and adheres perfectly onto the cable jacket.

Product safety notice

PLEASE READ AND FOLLOW ALL INSTUCTIONS CAREFULLY AND CONSULT ALL RELEVENT 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 $C \in$

CE marking **(€** means that the appliance or equipment bearing it complies with the protection requirements of one or several European safety directives.

CE marking CE 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)

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 FVN.3V.312.CLAC70
 FVN.4V.312.CLAC11

 FVN.4V.322.CLAC11
 FVN.5V.305.CLAC16
 FVN.2V.250.CLAC50Z
 FVN.2V.304.CLAC40
 FVN.2V.304.CLAC75Z

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 FVN.1V.304.CLAC45
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