



LEMO Solutions Portfolio













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Your configurable solution

- Self-Latching Push-Pull locking
- Wide & modular range
- Broad application reach
- Indoor & outdoor

Series	В, К, Т
	S, E

REDEL

Your medical preferred solution

- · Medical and Industrial grade plastics
- Device ergonomics
- Electrical safety
- High density & modularity

Series	Р
	SP
	MP

OPTIMA

Your optimised solution

- · Compact & miniature
- · Lightweight & low-profile
- · High vibration resistance
- IP68 & MIL-STD tested

Series	М
	F

SUPREME

Your extreme solution

- High/Low pressure
- Radiation & corrosion
- High Voltage
- Regulated environments

Series	N	
	W	
	Υ	

SPECIALTIES

Your specialised solution

- Industry standards
- Special configurations
- Historical products

Series	3K.93C.Y, 00 Nim-Camac
	H, V, 2G/2C, R,

CABLES

Your unique cable solution

- Design expertise
- In house prototype to production
- Custom cables
- Conductive & hybrid

Series	Technical cables
	Biocompatibility
	Automation & high-flex
	Retractile coil cords
	Ruggedised

SERVICES

Cable assembly services (single-end, double-end, custom harness, overmolding, ...)

Custom solution (connector, cable, device)

Signal integrity end-to-end services

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1P Series

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Precision modular connectors to suit your application

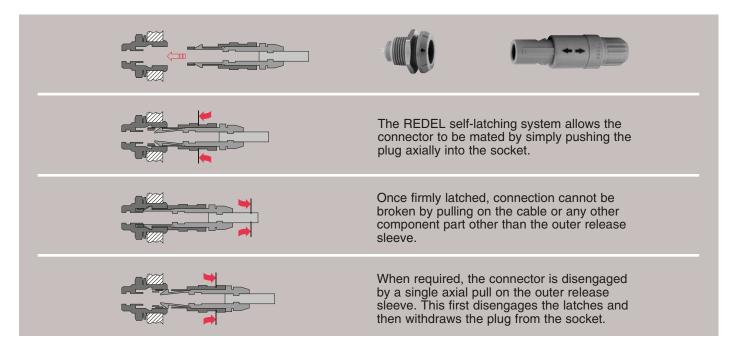
Since its creation in Switzerland in 1946 the LEMO Group has been recognized as a global leader of circular Push-Pull connectors and connector solutions. Today LEMO and its affiliated companies, REDEL and COELVER, are active in more than 80 countries with the help of over 40 subsidiaries and distributors.

Over 5000 REDEL connectors

The modular design of the REDEL range provides over 5000 connectors from Ø 14 mm to Ø 21 mm, capable of handling cable diameters up to 9.5 mm and up to 32 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.

REDEL'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 N

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

CE Marking (€

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

RoHS

REDEL 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.

Product safety notice & disclaimers

Please read and follow all instructions specified on the last page or on our <u>website</u> 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.



REDEL connector range

REDEL connectors are high-quality plastic Push-Pull connectors designed specifically for demanding applications such as medical electronics and test and measurement. These circular plastic connectors are engineered to provide exceptional performance in rigorous environments, with a design that is both ergonomic and robust—capable of withstanding numerous mating and unmating cycles without degradation.

These connectors comply with ISO 11134 standards and IEC 60601-1 (3rd Edition) medical safety standards, ensuring reliability and safety in critical applications. REDEL offers a wide range of configurations, including multipole contacts, coaxial, fiber optics, and fluidic connectors, as well as single-use connectors and options for mains power. Available in three sizes to accommodate various cable diameters, our 1P and 2P models feature specially qualified inserts to meet the strictest requirements.

Features & Benefits

- Lightweight and Durable:
 Constructed with high-performance PSU or PEI plastic
- Reliable Sterilization (Autoclave, ETO, Gamma):
 Based on the ISO 11134 and IEC 60601-1 (3rd. Ed)
 recommendations *
- Enhanced Electrical Safety:
 Touch-proof and scoop-proof design offers maximum protection
- Quick and Easy Identification:
 Available in a wide range of colors to facilitate fast, accurate connector identification and reduce setup errors

• High Voltage Compliance:

1P and 2P models meet IEC 60601-1 (3rd Edition) standards, ensuring safety and compliance in high voltage applications

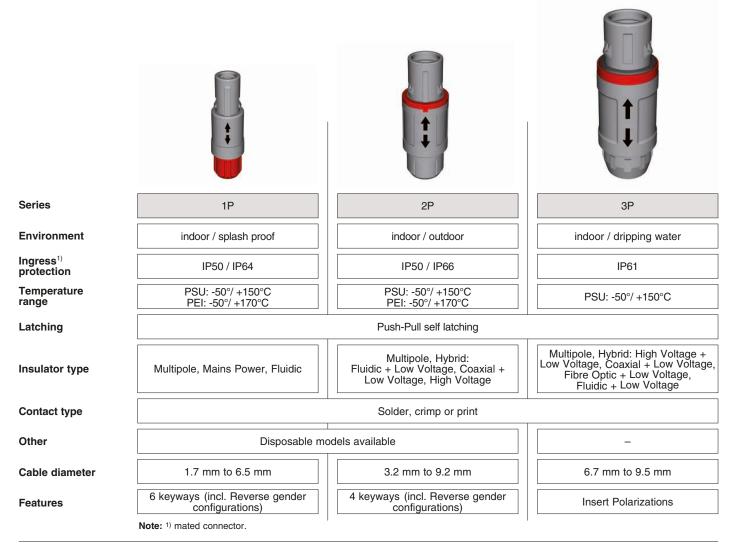
Versatile Contact Options:

Solder, crimp, print, and elbow print 90° contacts to suit diverse application needs

Single-Use Models:

Disposable versions available as standard or on demand

* Please contact us for further information regarding sterilisation protocols, cycles and tests on our different plastic materials



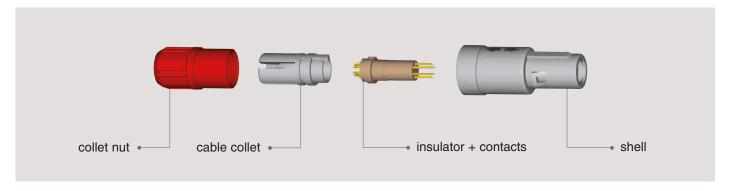
1P SERIES



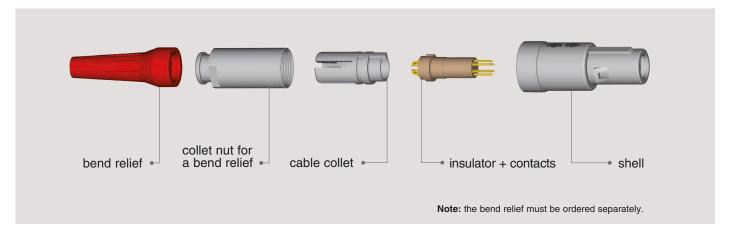


Exploded view of the REDEL 1P

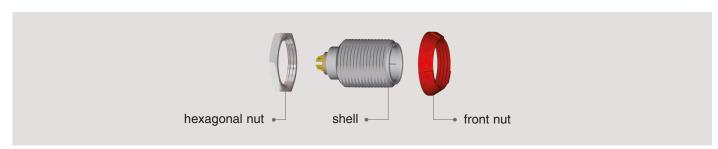
Straight plug



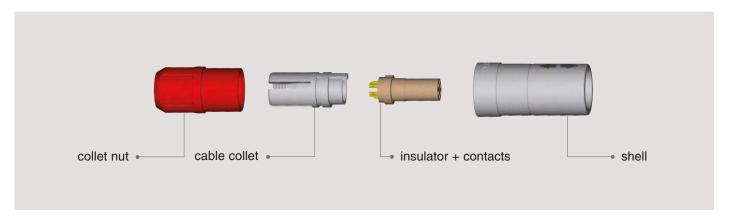
Straight plug with bend relief



Fixed socket



Free socket



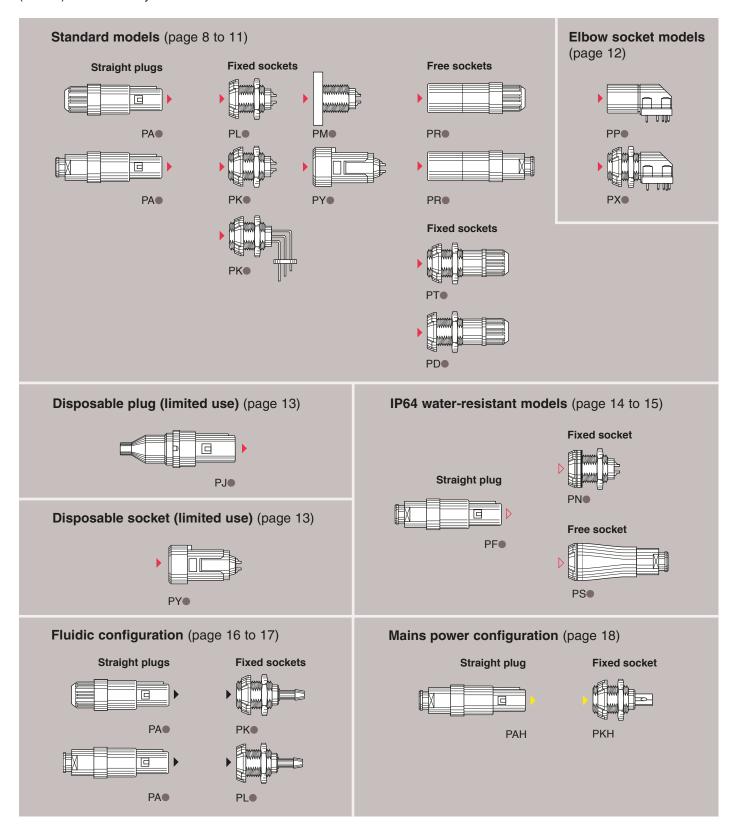


1P Series

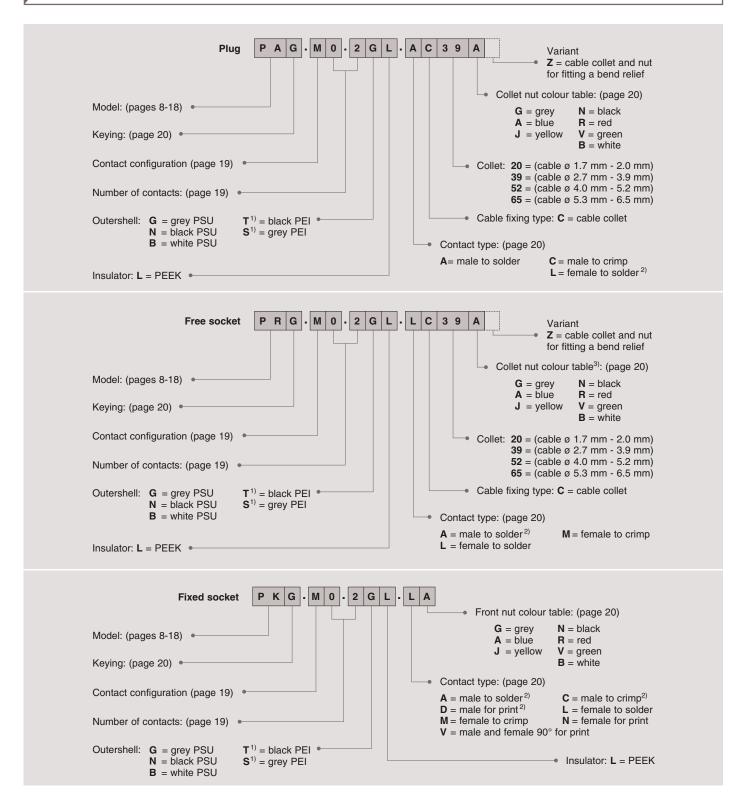
A well proven connector of a small size to accommodate cable diameter up to 6.5 mm and allow up to 14 solder contacts. Top quality lightweight and rugged materials have been chosen to optimize most applications.

The contacts are gold-plated over copper and nickel to ensure at least 5000 mating/unmating cycles without significantly

The contacts are gold-plated over copper and nickel to ensure at least 5000 mating/unmating cycles without significantly affecting the electrical characteristics. A keying system combined with colour coding can be incorporated on most connector models to assist in the prevention of mismating. Colour coding of the plug collet nut and socket flange will give an instant visual indication of connector compatibility. Mains power configurations are qualified for applications requiring IEC 60601-1 (3rd Ed.) medical safety standard.



Part numbering system



PAG.M0.2GL.AC39A Straight plug with cable collet and alignment key (G), multipole type with 2 male contacts to solder, grey PSU outershell, PEEK insulator, collet for a cable ø 2.7 to 3.9 mm and blue collet nut.

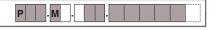
PRG.M0.2GL.LC39A Free socket with cable collet and alignment key (G), multipole with 2 female contacts to solder, grey PSU outershell, PEEK insulator, collet for a cable ø 2.7 to 3.9 mm and blue collet nut.

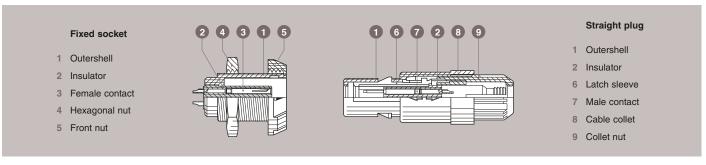
PKG.M0.2GL.LA Fixed socket with two nuts and alignment key (G), multipole type with 2 female contacts to solder, grey PSU outershell, PEEK insulator, and blue plastic front nut.

Note: 1) for extensive steam sterilization we recommend Polyetherimide ULTEM® (PEI).
2) contact available only with H and J keying and with 8, 10 or 14 contacts (inverted contacts).
3) collet nut and front nut colour table for PT● and PD● models.



Standard models (IP50)



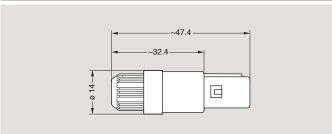


Characteristics	Value	Standards
Average retention force when pulling on the cable 1N = 0.102 kg	90 N	IEC 60512-8 test 15f
Cable retention force (depends on cable construction) 1N = 0.102 kg	50 - 150 N	IEC 60512-9 test 17c

Characteristics	Value	Standards
Endurance (latching)	> 5000 cycles	IEC 60512-5 test 9a
Working temperature range (PSU)	-50/+150°C	-
Working temperature range (PEI)	-50/+170°C	-

PAG Straight plug, key (G) or keys (A, B, C, H and J), with cable collet



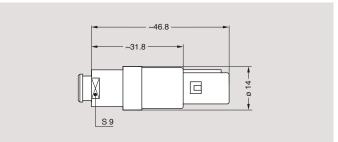


Part Number	Cable ø	
	min	max
PAG.M®.®GL.AC20G	1.7	2.0
PAG.Me.eGL.AC39G	2.7	3.9
PAG.M®.®GL.AC52G	4.0	5.2
PAG.M®.®GL.AC65G	5.3	6.5

Note: replace •.• by contact configuration (see page 19).

PAG Straight plug, key (G) or keys (A, B, C, H and J), with cable collet and nut for fitting a bend relief





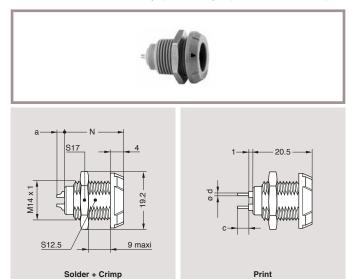
Note: all dimensions are in millimeters

Part Number	Cable ø	
	min	max
PAG.Mo.oGL.AC20GZ	1.7	2.0
PAG.Me.eGL.AC39GZ	2.7	3.9
PAG.Mo.oGL.AC52GZ	4.0	5.2
PAG.Mo.oGL.AC65GZ	5.3	6.5

Note: replace •.• by contact configuration (see page 19). The bend relief must be ordered separately (see page 22).



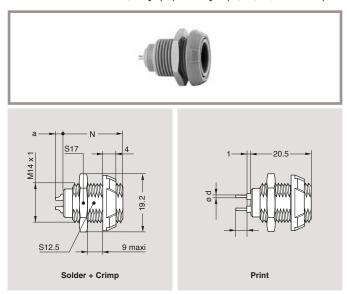
PLG Fixed socket, key (G) or keys (A, B, C, H and J), nut fixing



				Con	tact		
Part Number	number of contacts	Sol	lder	Cri	mp	Pr	int
	Contacts	N	a max	N	а	С	ød
PLG.M0.2GL.LG	2	20.5	2.5	22.2	0	5	0.7
PLG.M0.4GL.LG	4	20.5	2.5	22.2	0	5	0.7
PLG.M0.5GL.LG	5	20.5	2.5	22.2	0	5	0.7
PLG.M0.6GL.LG	6	20.5	2.5	22.2	0	3	0.5
PLG.M0.7GL.LG	7	20.5	4.5	22.2	0	3	0.5
PLG.M0.8GL.LG	8	20.5	4.5	22.2	0	3	0.5
PLG.M0.9GL.LG	9	20.5	3.9	-	_	3	0.5
PLG.M1.0GL.LG	10	20.5	3.9	_	_	3	0.5
PLG.M1.4GL.LG	14	20.5	3.9	_	_	3	0.5

Note: for PCB drilling pattern and panel hole see page 24.

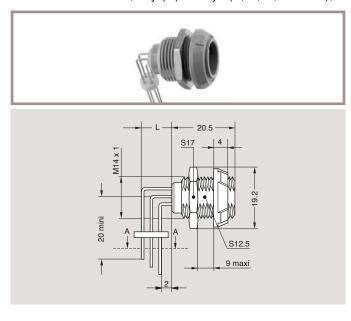
PKG Fixed socket, key (G) or keys (A, B, C, H and J), with two nuts (back panel mounting)



	Contact						
Part Number	number of contacts	Sol	lder	Cri	mp	Pr	int
	Contacto	N	a max	N	а	С	ød
PKG.M0.2GL.LG	2	20.5	2.5	22.2	0	5	0.7
PKG.M0.4GL.LG	4	20.5	2.5	22.2	0	5	0.7
PKG.M0.5GL.LG	5	20.5	2.5	22.2	0	5	0.7
PKG.M0.6GL.LG	6	20.5	2.5	22.2	0	3	0.5
PKG.M0.7GL.LG	7	20.5	4.5	22.2	0	3	0.5
PKG.M0.8GL.LG	8	20.5	4.5	22.2	0	3	0.5
PKG.M0.9GL.LG	9	20.5	3.9	-	_	3	0.5
PKG.M1.0GL.LG	10	20.5	3.9	_	_	3	0.5
PKG.M1.4GL.LG	14	20.5	3.9	_	_	3	0.5

Note: for PCB drilling pattern and panel hole see page 24.

PKG Fixed socket, key (G) or keys (A, B, C, H and J), with two nuts, with 90° contacts (back panel mounting)

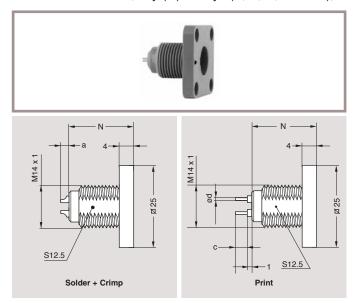


Part Number	number of contacts	
PKG.M0.2GL.VG	2	5.4
PKG.M0.4GL.VG	4	5.2
PKG.M0.5GL.VG	5 7.	
PKG.M0.6GL.VG	6	7.7
PKG.M0.7GL.VG	7	7.7
PKG.M0.8GL.VG	8	7.7
PKG.M0.9GL.VG	9	10.3
PKG.M1.0GL.VG	10	10.3
PKG.M1.4GL.VG	14	12.9

Note: for PCB drilling pattern see page 25. Panel hole see page 24.



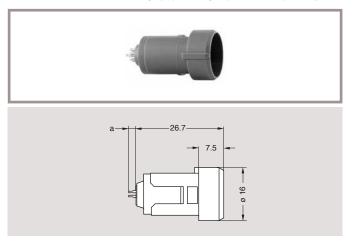
PMG Fixed socket, key (G) or keys (A, B, C, H and J), with square flange



	Contact						
Part Number	number of contacts	Sol	der	Cri	mp	Pri	nt
	Comadio	N	a max	N	а	С	ø d
PMG.M0.2GL.LG	2	20.5	2.5	22.2	0	5	0.7
PMG.M0.4GL.LG	4	20.5	2.5	22.2	0	5	0.7
PMG.M0.5GL.LG	5	20.5	2.5	22.2	0	5	0.7
PMG.M0.6GL.LG	6	20.5	2.5	22.2	0	3	0.5
PMG.M0.7GL.LG	7	20.5	4.5	22.2	0	3	0.5
PMG.M0.8GL.LG	8	20.5	4.5	22.2	0	3	0.5
PMG.M0.9GL.LG	9	20.5	3.9	_	_	3	0.5
PMG.M1.0GL.LG	10	20.5	3.9	_	-	3	0.5
PMG.M1.4GL.LG	14	20.5	3.9	_	_	3	0.5

Note: for PCB drilling pattern see page 24. Panel hole see page 24.

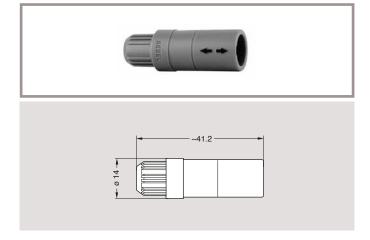
PYG Fixed socket, key (G) or keys (A, B or H), snap-on fixing



Part Number	number of	Solder
Part Number	contacts	a max
PYG.M0.2GL.LG	2	2.5
PYG.M0.4GL.LG	4	2.5
PYG.M0.5GL.LG	5	2.5
PYG.M0.6GL.LG	6	2.5
PYG.M0.7GL.LG	7	2.5
PYG.M0.8GL.LG	8	2.5
PYG.M0.9GL.LG	9	4.0
PYG.M1.0GL.LG	10	4.0
PYG.M1.4GL.LG	14	4.0

Note: only with A, B or G keying (2 to 14 contacts) or H (8,10 or 14 contacts). The insulator is made of PEEK.

PRG Free socket, key (G) or keys (A, B, C, H and J), with cable collet

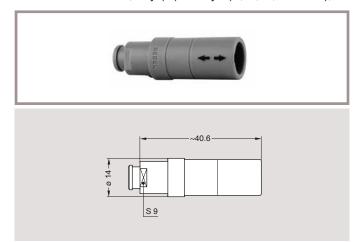


Part Number	Cable ø		
	min	max	
PRG.Mo.oGL.LC20G	1.7	2.0	
PRG.Mo.oGL.LC39G	2.7	3.9	
PRG.Mo.oGL.LC52G	4.0	5.2	
PRG.Mo.oGL.LC65G	5.3	6.5	

Note: replace •.• by contact configuration (see page 19).



PRG Free socket, key (G) or keys (A, B, C, H and J), with cable collet and nut for fitting a bend relief

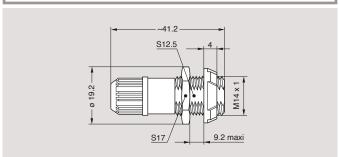


Part Number	Cable ø		
	min	max	
PRG.Mo.oGL.LC20GZ	1.7	2.0	
PRG.Mo.oGL.LC39GZ	2.7	3.9	
PRG.Mo.oGL.LC52GZ	4.0	5.2	
PRG.Mo.oGL.LC65GZ	5.3	6.5	

Note: replace • • by contact configuration (see page 19). The bend relief must be ordered separately (see page 22).

PTG Fixed socket, key (G) or keys (A, B, C, H and J), with two nuts and cable collet (back panel mounting)



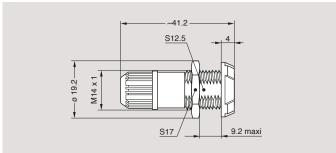


Part Number	Cable ø		
	min	max	
PTG.Mo.oGL.LC20G	1.7	2.0	
PTG.Mo.oGL.LC39G	2.7	3.9	
PTG.Mo.oGL.LC52G	4.0	5.2	
PTG.Mo.oGL.LC65G	5.3	6.5	

Note: replace •.• by contact configuration (see page 19). Panel hole see page 24.

PDG Fixed socket, key (G) or keys (A, B, C, H and J), nut fixing and cable collet





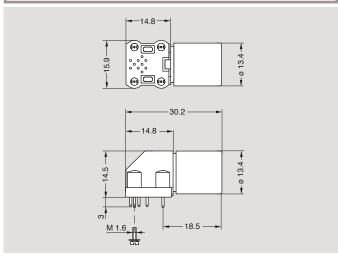
Part Number	Cable ø		
	min	max	
PDG.Mo.oGL.LC20G	1.7	2.0	
PDG.Mo.oGL.LC39G	2.7	3.9	
PDG.Mo.oGL.LC52G	4.0	5.2	
PDG.Mo.oGL.LC65G	5.3	6.5	

Note: replace •.• by contact configuration (see page 19). Panel hole see page 24.

Elbow socket models (IP50)

PPG Elbow socket, key (G) or keys (A, B, C), for printed circuit



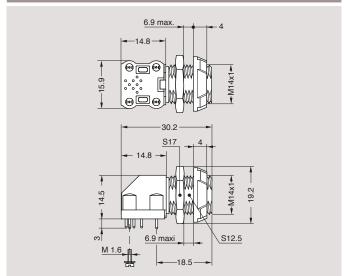


Part Number	number of contacts
PPG.M0.2GG.N	2
PPG.M0.4GG.N	4
PPG.M0.5GG.N	5
PPG.M0.6GG.N	6
PPG.M0.7GG.N	7
PPG.M0.8GG.N	8
PPG.M0.9GG.N	9
PPG.M1.0GG.N	10

Note: only available with G or A, B, C keying. The insulator is made of PSU. Outershell material is grey or black PSU. For PCB drilling, see page 25. It is possible to replace the 4 ground pins by 4 screws (M1.6) add an «S» to the end of the part number. (e.g.: PPG.M0.2GG.NS)

PXG Elbow socket, key (G) or keys (A, B, C), with two nuts, for printed circuit





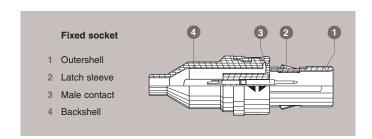
 $\begin{tabular}{ll} \textbf{Note:} & \text{all dimensions are in millimeters.} \\ \textbf{For outershell in black PSU replace material code by $N.} \end{tabular}$

Part Number	number of contacts
PXG.M0.2GG.NG	2
PXG.M0.4GG.NG	4
PXG.M0.5GG.NG	5
PXG.M0.6GG.NG	6
PXG.M0.7GG.NG	7
PXG.M0.8GG.NG	8
PXG.M0.9GG.NG	9
PXG.M1.0GG.NG	10

Note: only available with G or A, B, C keying. The insulator is made of PSU. Outershell material is grey or black PSU. For PCB drilling, see page 25. Panel hole see page 24. It is possible to replace the 4 ground pins by 4 screws (M1.6) add an «S» to the end of the part number. (e.g.: PXG.M0.2GG.NGS)

Disposable plug (limited use)



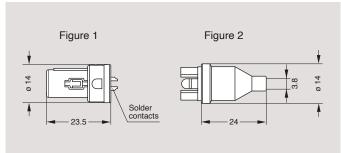


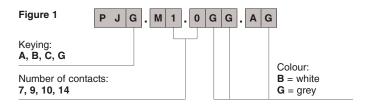
Characteristics	Value	Standards
Endurance for PJ (latching) 1)	15 cycles min.	IEC 60512-5 test 9a
Working temperature range (ABS)	-30 / +90°C	-
Outershell / insulator material	PSU	-
Backshell material	ABS	_

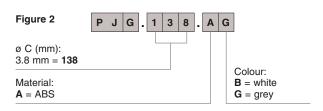
Note: 1) with machined contacts

PJG Straight disposable plug



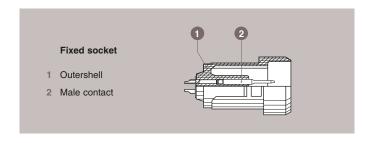






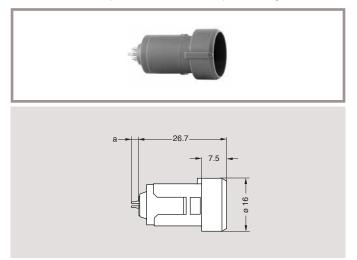
Note: 7 pin ø 0.7 mm male with ø 0.8 mm solder buckets. 9, 10 and 14 pin ø 0.5 mm male with ø 0.44 mm solder buckets. Not intended for use with PN• or PY• sockets.

Disposable socket (limited use)



Characteristics	Value	Standards
Endurance for PY (latching)	< 100 cycles	IEC 60512-5 test 9a
Working temperature range (PSU)	-50/+150°C	_
Average latching force	6N	IEC 60512-7 test 13a
Average unmating force	7N	IEC 60512-7 test 13a
Average retention force	90N	IEC 60512-7 test 13a

PY Fixed disposable socket, snap on fixing



Note: all dimensions are in millimeters

Part Number	nb. of cts.	Contact Type	Solder a max	Shell	Recommanded Mating straight plug part number
PYG.M0.4GG.LG	4	female	2.5	grey	PAG.M0.4GL.AC•••
PYG.M0.4GG.LN	4	female	2.5	black	PAG.M0.4GL.AC•••
PYH.M0.8GG.AA	8	male	2.5	blue	PAH.M0.8GL.LC***
PYH.M0.8GG.AB	8	male	2.5	white	PAH.M0.8GL.LC•••
PYA.M1.0GG.LG	10	female	4.0	grey	PAA.M1.0GL.AC***

PYH.M1.0GG.AA Note:

The outershell and the insulator are moulded out of the same material (PSU). Protective backshell available (see page 22).

4.0

blue

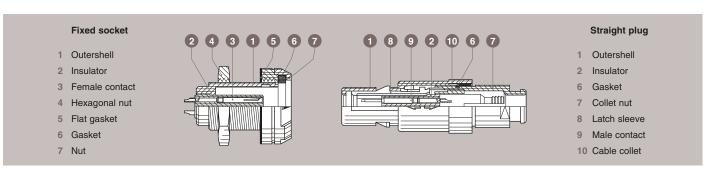
male

Part number last digit represents the colour.

10

PAH.M1.0GL.LC•••

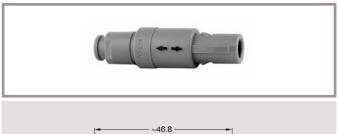
Water-resistant models (IP64 when mated)

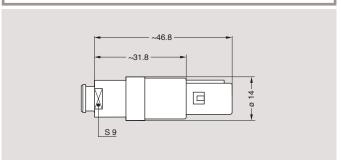


Characteristics	Value	Standards
Average retention force when pulling on the cable 1N = 0.102 kg	90 N	IEC 60512-8 test 15f
Cable retention force (depends on cable construction) 1N = 0.102 kg	50 - 150 N	IEC 60512-9 test 17c

Characteristics	Value	Standards
Endurance (latching)	> 5000 cycles	IEC 60512-5 test 9a
Working temperature range (PSU)	-50/+90°C	-
Gasket material	Elastomer SEBS	-

PFG Straight plug with cable collet and nut for fitting a bend relief



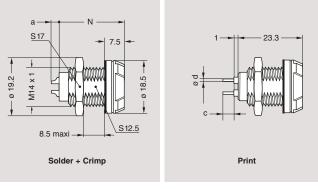


Part Number	Cable ø		
	min	max	
PFG.M•.•GL.AC20GZ	1.7	2.0	
PFG.Mo.oGL.AC39GZ	2.7	3.9	
PFG.M ^o .oGL.AC52GZ	4.0	5.2	
PFG.M•.•GL.AC65GZ	5.3	6.5	

Note: the bend relief must be ordered separately (see page 22). Replace •.• by contact configuration (see page 19).

PNG Fixed socket, nut fixing





Note: all dimensions are in millimeters

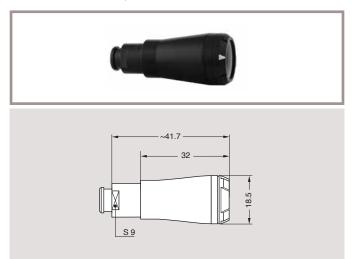
				Con	tact		
Part Number	number of contacts	Sol	der	Cri	mp	Pri	nt
	Oomaolo	N	a max	N	а	С	ø d
PNG.M0.2GL.LG	2	23.3	2.5	25.0	0	5	0.7
PNG.M0.4GL.LG	4	23.3	2.5	25.0	0	5	0.7
PNG.M0.5GL.LG	5	23.3	2.5	25.0	0	5	0.7
PNG.M0.6GL.LG	6	23.3	2.5	25.0	0	3	0.5
PNG.M0.7GL.LG	7	23.3	4.5	25.0	0	3	0.5
PNG.M0.8GL.LG	8	23.3	4.5	25.0	0	3	0.5
PNG.M0.9GL.LG	9	23.3	3.9	_	_	3	0.5
PNG.M1.0GL.LG	10	23.3	3.9	_	_	3	0.5
PNG.M1.4GL.LG	14	23.3	3.9	_	_	3	0.5

Note: for PCB drilling pattern see page 24.





PSG Free socket, conical outershell with cable collet and nut for fitting a bend relief



Note: all dimensions are in millimeters

Part Number	Cable ø		
	min	max	
PSG.Mo.oYL.LC39AZ	2.7	3.9	
PSG.Mo.oYL.LC39GZ	2.7	3.9	
PSG.Mo.oYL.LC39RZ	2.7	3.9	
PSG.Mo.oYL.LC52GZ	4.0	5.2	
PSG.Mo.oYL.LC52NZ	4.0	5.2	
PSG.Mo.oYL.LC52RZ	4.0	5.2	
PSG.M•.•YL.LC65AZ	5.3	6.5	
PSG.Mo.oYL.LC65NZ	5.3	6.5	
PSG.Mo.oYL.MC65NZ	5.3	6.5	

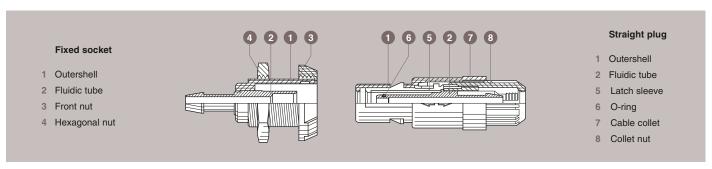
Note: replace • • by contact configuration (see page 19). Outershell in black Delrin® The bend relief must be ordered separately (see page 22).



Fluidic configuration (2 bars)



The REDEL fluidic connector has many applications for example in medical or dentistry equipment. The connector is a monotube type and primarily intended for use with air or inert gas.



Characteristics	Value	Standards
Max. working pressure	2 bars	-
Endurance (latching)	> 5000 cycles	IEC 60512-5 test 9a
Working temperature range (PSU)	-20/+150°C	-

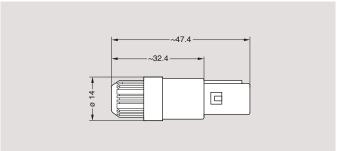
Characteristics	Value Standa	
Inner fluidic contact diameter	2.6 mm	_
Tube diameter inner/outer	4 mm / 6 mm	-
Fluidic tube material	Ni plated brass	-
O-ring material	FPM (Viton®)	_

PAG Straight plug, key (G) or keys (A, B, C, H and J), with cable collet

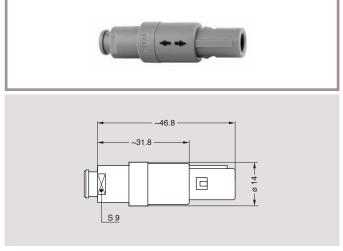


Part Number	ø max. tube (mm)	ø inner tube (mm)
PAG.A0.1GZ.ZC65G	6.5	4

Note: For collet nut colour replace last digit (see table page 20).



PAG Straight plug, key (G) or keys (A, B, C, H and J), with cable collet and nut for fitting a bend relief



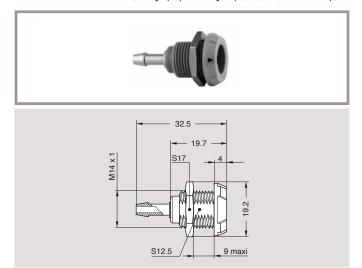
Note: all dimensions are in millimeters

Part Number	ø max. tube (mm)	ø inner tube (mm)
PAG.A0.1GZ.ZC65GZ	6.5	4

The bend relief must be ordered separately (see page 22).



PLG Fixed socket, key (G) or keys (A, B, C, H and J), with fluidic contact, nut fixing



Part Number	ø inner tube (mm)
PLG.A0.1GZ.ZG	4

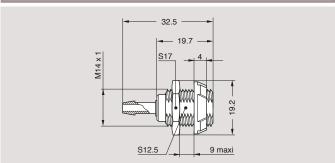
Note: For front nut colour replace last digit (see table page 20). Recommended tube Legris 102540601

PKG Fixed socket, key (G) or keys (A, B, C, H and J), with fluidic contact, with two nuts (back panel mounting)



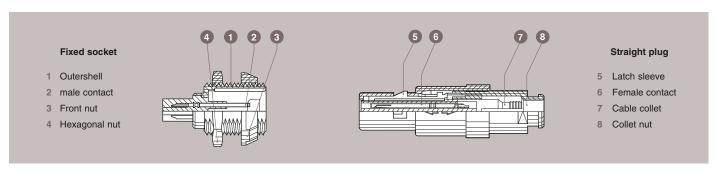
Part Nun	nber	ø inner tube (mm)
PKG.A0.1GZ	.ZG	4

Note: For front nut colour replace last digit (see table page 20). Recommended tube Legris 102540601



Mains power configuration

The new mains power PA• and PK• models are qualified for applications requiring IEC 60601-1 (3rd Ed.) medical safety standard. The design of a special insulator offers the required creepage distance. The 3 contacts are only solder type with a maximum AWG 18 (wire size max 1.35 mm). The connectors are UL certified to be used at 250 Volt AC (9 Amps). See UL approval file number N°E242949 (only valid for 3 contact configuration).

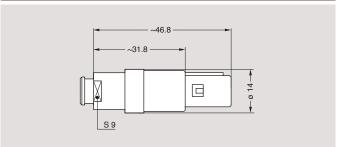


Characteristics	Value	Standards
Test voltage (rms)	3.4 kV	IEC 60512-2 test 4a
Rated voltage (rms)	250 V	IEC 60601 (3 rd Ed.) UL 60601-1
Average retention force when pulling on the cable 1N = 0.102 kg	90 N	IEC 60512-8 test 15f

Characteristics	Value	Standards
Cable retention force (depends on cable construction) 1N = 0.102 kg	50 – 150 N	IEC 60512-9 test 17c
Endurance (latching)	> 5000 cycles	IEC 60512-5 test 9a
Working temperature range (PSU)	-50/+150°C	-
UL file number	E242949	_

PA Straight plug, key (H or G), with cable collet and nut for fitting a bend relief

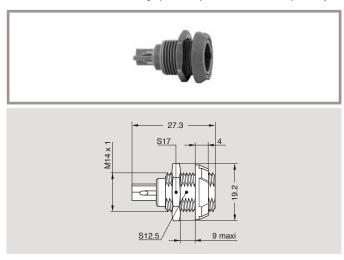




Part Number	Cable ø		
	min	max	
PAH.N0.3GL.LC52GZ	4.0	5.2	
PAH.N0.3GL.LC65GZ	5.3	6.5	
PAG.N0.4GL.AC52GZ	4.0	5.2	
PAG.N0.4GL.AC65GZ	5.3	6.5	

Note: The bend relief must be ordered separately (see page 22).

PK Fixed socket, key (H or G), with two nuts (back panel mounting)





Note: For front nut colour replace last digit (see table page 20). Not available with print contact.



Insert configuration

Multipole, Main power, Fluidic

	Male solder contact	Female solder contacts							Cor ty	ntact pe			(mm)	
	Male crimp contact	female crimp contacts	Reference	Number of contacts	Contact ø (mm)	Solder bucket ø (mm) ⁵⁾	Crimp bucket ø (mm) ⁵⁾	Solder	Crimp	Print (straight)	Print (elbow)	Test voltage (kV DC) ¹⁾ Contact-contact	Air dearance min ²⁾ (mm) Creepage distance min ³⁾ (Rated current (A)
			M0.2	2	1.3	1.10	1.4	•	•	•	•	1.70	1.30	10.0
			M0.4	4	0.9	0.80	1.1	•	•	•	•	1.70	1.20	8.0
			M0.5	5	0.9	0.80	1.1	•	•	•	•	1.48	0.80	7.0
			M0.6	6	0.7	0.60	0.8	•	•	•	•	1.48	0.85	6.0
Multipole			M0.7	7	0.7	0.60	0.8	•	•	•	•	1.48	0.85	5.0
Multi			M0.8	8	0.7	0.60	0.8	•	•	•	•	1.48	0.60	5.0
			M0.9	9	0.5	0.45	-	•	-	•	•	1.20	0.60	3.0
			M1.0	10	0.5	0.45	_	•	-	•	•	1.20	0.55	3.04)
			M1.2	12	0.5	0.45	-	•	-	•	•	0.75	0.50	2.5
			M1.4	14	0.5	0.45	_	•	_	•	•	0.85	0.50	2.0
Mains power			N0.3	3	0.9	1.40	_	•	-	_	_	4.81 (1.50 ⁶⁾)	2.00 6.00	9.0
Mains			N0.4	4	0.9	1.40	-	•	-	_	_	3.50	1.30 3.50	8.0
Fluidic			A0.1	1 Flu	uidic (m	onotub	e) up to	2 bars						

Note: 1) depending on specific application and related standard, more restrictive operating voltage may apply, see page 68.

2) shortest distance in air between two conductive parts.

3) shortest distance along the surface of the insulating material between two conductive parts.

4) for PPG and PXG (with 10 contacts) electrical characteristics, please contact factory.

5) for a given AWG, the diameter of some stranded conductor design is larger than the solder cup diameter (see page 69).

6) 1.5 kV according to UL file number: E242949.



Alignment key



Verify the third digit of the part number in order to select the right keying. The standard keying is «G» coded.

		Standar	rd gender		Reverse	e gender
Keying (plug front view)	0	40°	60°	80°	1700	2050
Reference	G	Α	В	С	Н	J
Contact type for plug	male	male	male	male	female	female
Contact type for socket	female	female	female	female	male	male
Number of contacts		2 to	14		8, 10	or 14

Outer shell material

|--|

Material	Ref.	Colour	Temperature
	G Grey		
PSU	Ν	Black	-50° / +150°C
	В	White	

Material	Ref.	Colour	Temperature
PEI	S	Grey	-50° / +170°C
PEI	Т	Black	-50 / +1/0 C

Note: for extensive sterilization use PEI.
For complete connector in PEI (collet nut, front nut or flange also in PEI), available colours are grey or black only. Use colour coding grey or black according to colour coding table (see below).

Contact type



Select the type of contact: solder or crimp?

Plug

Type	Male	Female
solder	Α	L ¹⁾
crimp	С	•

Socket

Т	ype	Male	Female
S	older	A ¹⁾	L
С	rimp	-	М
k	orint	D	N
pri	nt 90°	V	V

Note: 1) only for H and J keying with 8, 10 or 14 contacts

When should I use crimp rather than solder contacts?

Soldering

- recommended for small volumes
- requires little amount of tooling (soldering iron)
- requires more time

Crimping

- recommended for large volumes
- no heat is required to make the connection
- for contacts with high density
- for use in high temperature environment
- requires extra tooling (crimping tools)

Colour coding



Easy identification with the assistance of colour coding.

		Colours							
	grey	blue	yellow	black	red	green	white		
Reference	G	Α	J	N	R	V	В		
RAL code	7001	5002	1016	9005	3020	6024	9003		

Note:

PSU outer shells are available in grey, black and white while PEI outer shells are only available in grey and black. The RAL colours are indicative and depend on raw material and production process. Colour may differ.



Accessories

PAG-PLG Insulator for crimp contacts





Contact	Insulator part number		
configuration	For male contact	For female contact	
M0.2	PAG.302.YL	PLG.402.YL	
M0.4	PAG.304.YL	PLG.404.YL	
M0.5	PAG.305.YL	PLG.405.YL	
M0.6	PAG.306.YL	PLG.406.YL	
M0.7	PAG.307.YL	PLG.407.YL	
M0.8	PAG.308.YL	PLG.408.YL	

PAG-PKG Crimp contacts, kit with the number of contacts in a tube

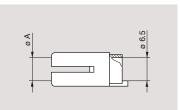


Contact	nb. of	ø contact (mm)	Kit contact	part number
configuration	contacts		Male	Female
M0.2	2	1.3	PAG.567.02C	PKG.667.02M
M0.4	4	0.9	PAG.562.04C	PKG.662.04M
M0.5	5	0.9	PAG.562.05C	PKG.662.05M
M0.6	6	0.7	PAG.557.06C	PKG.657.06M
M0.7	7	0.7	PAG.557.07C	PKG.657.07M
8.0M	8	0.7	PAG.557.08C	PKG.657.08M

Note: upon request, contacts with reduced crimp barrel are available.

PLA Collet



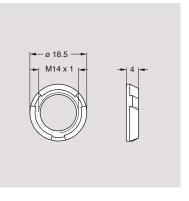


Cable ø (mm) ø A (mm) Part Number min. max. PLA.720.** 2.0 1.7 2.0 PLA.739.** 3.9 3.9 2.7 PLA.752.** 5.2 4.0 5.2 PLA.765.** 6.5 5.3 6.5

Note: •• = UG (grey PSU), TN (black PEI) or UN (black PSU).

PKG Plastic front nut for PK• and PT• models

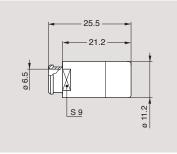




Part Number	Mat.	Colours
PKG.220.UA	PSU	blue
PKG.220.UB	PSU	white
PKG.220.UG	PSU	grey
PKG.220.UJ	PSU	yellow
PKG.220.UN	PSU	black
PKG.220.UR	PSU	red
PKG.220.UV	PSU	green
PKG.220.TG	PEI	grey
PKG.220.TN	PEI	black

PAM.130. • Nut for fitting a GMA.1B bend relief



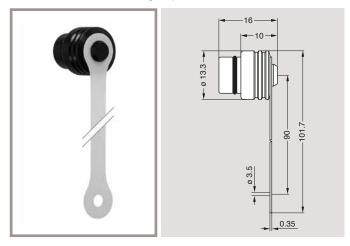


Note: all dimensions are in millimeters

Part Number	Mat.	Colours
PAM.130.UA	PSU	blue
PAM.130.UB	PSU	white
PAM.130.UG	PSU	grey
PAM.130.UJ	PSU	yellow
PAM.130.UN	PSU	black
PAM.130.UR	PSU	red
PAM.130.UV	PSU	green
PAM.130.TN	PEI	black
PAM.130.TG	PEI	grey

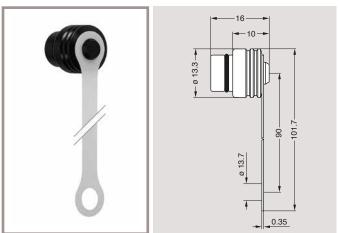
Note: only for PA $_{\circ}$, PR $_{\circ}$ or PT $_{\circ}$ models.

PBG.200.BMV Blanking cap for REDEL P

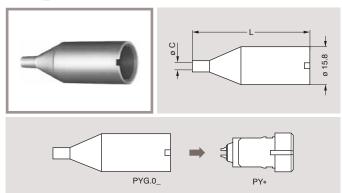


With PNG socket model it offers IP64. Material: Delrin®, colours: black

PBG.201.BMV Blanking cap for REDEL P



PYG.0_ Protective backshell for PY●





	P Y G . 0 2 . 7 Y G	. 0 P	SU
ø C (mm): ● 2.5 mm = 02.5 2.7 mm = 02.7 3.8 mm = 03.8			Material: ABS PSU
Color: A = Blue B = White G = Grey J = Yellow N = Black R = Red V = Green		•	Length: 0 = 47 mm 1 = 67.1 mm

Note: Length 47 mm can be delivered in 3 different diameters 2.5/2.7/3.8 mm. Length 67 mm can be delivered in 2 different diameters 2.5 and 2.7 mm.

A bend relief absorbs the force that may be exerted on cables.

These are designed for plugs and free sockets with cable collet and nut.

			sions (Temperat	ture range	
Part Number	Bend	relief	Cab	le ø	Material			
	Α	L	max.	min.		in dry atmosphere	in water steam	
GMA.1B.025.DG	2.5	30	2.9	2.5				
GMA.1B.030.DG	3.0	30	3.4	3.0				
GMA.1B.035.DG	3.5	30	3.9	3.5	TPU			
GMA.1B.040.DG	4.0	30	4.4	4.0	(Thermoplastic	-40°C, +80°C	_	
GMA.1B.045.DG	4.5	30	4.9	4.5	Polyurethane)	Polyurethane)		
GMA.1B.054.DG	5.4	30	6.0	5.4				
GMA.1B.065.DG ¹⁾	6.5	30	7.0	6.5				
GMA.1B.025.RG	2.5	34	2.9	2.5				
GMA.1B.030.RG	3.0	34	3.4	3.0				
GMA.1B.035.RG	3.5	34	3.9	3.5				
GMA.1B.040.RG	4.0	34	4.4	4.0	Silicone elastomer	60°C +300°C	+140°C	
GMA.1B.045.RG	4.5	34	5.0	4.5	VMQ	-60°C, +200°C	+140	
GMA.1B.051.RG	5.1	34	5.6	5.1				
GMA.1B.057.RG	5.7	34	6.2	5.7				
GMA.1B.063.RG	6.3	34	7.0	6.3				

Reference	Colours
А	blue
В	white
G	grey
J	yellow
M	brown
N	black
R	red
S	orange
V	green

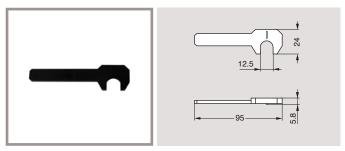
Note: the selection of pigments, which should remain stable at high temperature, is limited by the new regulations. For this reason, some colours will be a shade different from those used for TPU bend reliefs. The selected solutions represent the best possible compromise.

¹⁾ Design may differ from other bend relief, model without stripes. The last letter «G» of the part number indicates a grey colour, see the adjacent table and replace letter «G» by the letter of the colour required. All dimensions are in millimeters



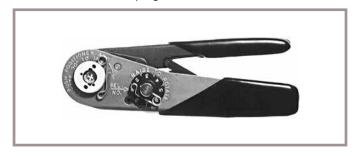
Tooling

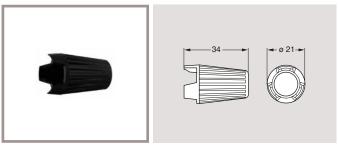
POP.125.GN Spanner for outershell



both spanners available as a kit, ref. POZ.12.18G.N. Material: PA 6.6

DPC.91.701.V Crimping tool





Spanner for front nut

Material: PA 6.6

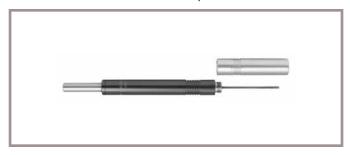
POB.186.GN

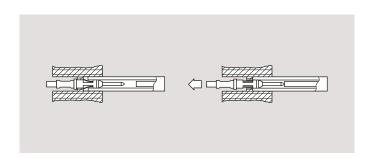
DCE Positioners for crimp contacts





DCC Manual extractor for crimp contacts



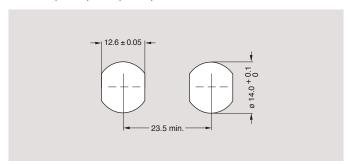


Configuration	Contact ø	Conductor	Positioner _I	oart number	Selector No	Part number
Configuration	(mm)	AWG	Male contact	Female contact	Setting	extractor
M0.2	1.3	18-20	DCE.91.135.BVD	DCE.91.130.BVM	8-7	DCC.13.15B.LAG
M0.4/M0.5	0.9	20-22-24	DCE.91.095.BVD	DCE.91.090.BVM	6-5-5	DCC.09.05B.LAG
M0.6/M0.7/M0.8	0.7	22-24-26	DCE.91.075.BVD	DCE.91.070.BVM	6-5-5	DCC.07.04B.LAG

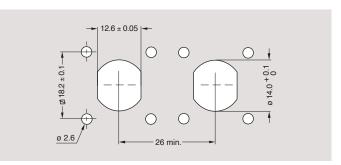
the variance in conductor stranding diameter for the minimum AWG is such that some can have a cross section which is not sufficient to guarantee crimping as per IEC 60352-2 standard. All dimensions are in millimeters.

Panel hole

For PLe, PKe, PNe, PXe, PTe and PDe



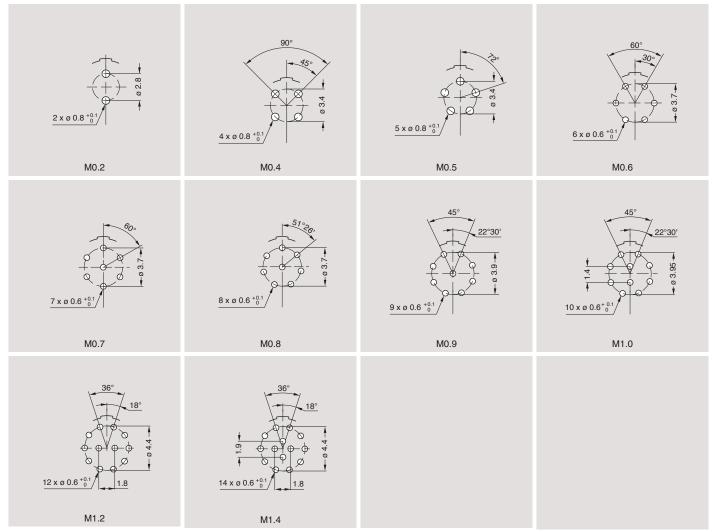
For PM



Note: PY• is also designed for snap-on fixing into customer housing. Consult factory for information. – Socket mounting nut torque = 1.5 Nm.

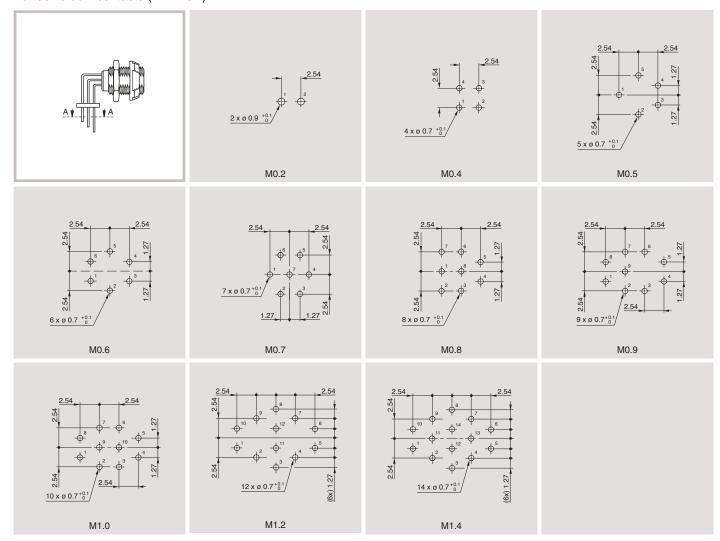
PCB drilling pattern

For straight contacts

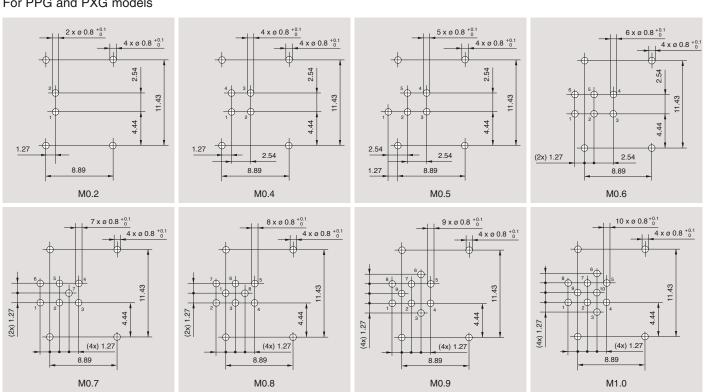




For 90° elbow contacts (A-A view)

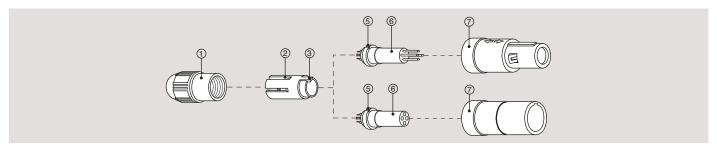


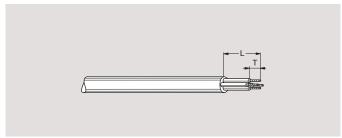
For PPG and PXG models

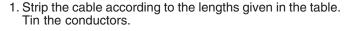


Assembly instructions

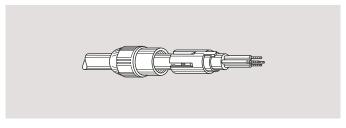
Solder contacts



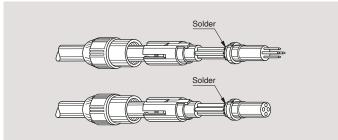




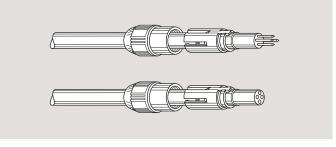
Configuration	Dimensions (mm)		
Configuration	L	Т	
M0.2	14.0	4.0	
M0.4, M0.5	13.0	3.0	
M0.6 to M1.4	12.5	2.5	
N0.3	11.5	3.5	
N0.4	11.5	3.5	



2. Slide the collet nut ① and then the collet ② onto the cable.



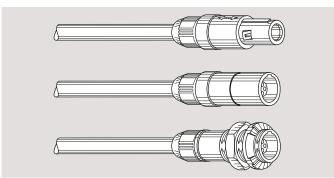
Solder conductors into contacts, making sure that neither solder nor flux gets onto the insulator or cable insulation.



4. Slide the collet @ forward and locate tag @ in the slot @ on the insulator @.

Slide collet nut ① over collet ② and then push the whole assembly into the shell ⑦ whilst turning it to ensure that the tag ③ locates in the inside slot of the shell. Tighten the collet nut ① to the maximum torque of 0.25 Nm.

Socket mounting nut torque = 1.5 Nm.

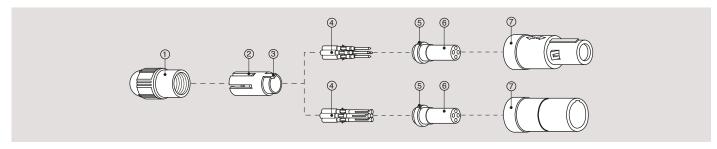


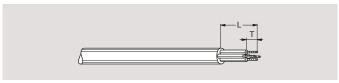
For PSU only:

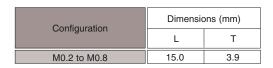
We recommend the use of Vibra-tite VC-6, Araldite CW2243 + Aradur HY 2966, Ablestik FDA2 Trapax or ThreeBond 1401 to secure the connector collet nut. The use of other materials could result in damage to the connector. The only recommended chemical cleaner is Isopropyl Alcohol.

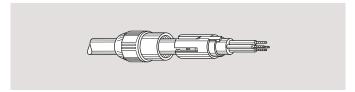


Crimp contacts



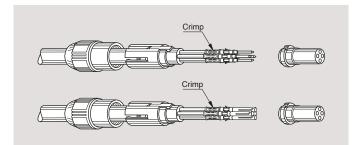






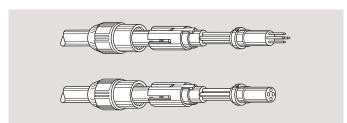
2. Slide the collet nut ① and then the collet ② onto the cable.

1. Strip the cable according to the lengths given in the table.

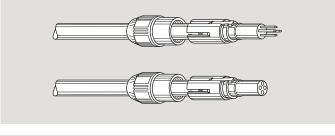


3. Fix the appropriate positioner (table page 23) in the crimping tool. Set selector to the number corresponding to the conductor AWG as indicated on the positioner label.

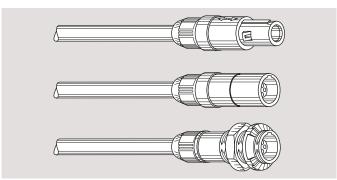
Fit conductor into contact ④ and make sure it is visible through the inspection hole in the crimp barrel. Slide conductor-contact combination into the open crimping tool; make sure that the contact is fully pushed into the positioner. Close the tool. Remove from crimping tool and check that conductor is secure in contact and shows in inspection hole.



4. Now arrange contact-conductor combinations according to the insert marking and locate them into the insert ®. Check that all contacts are correctly located and remain in position when given a gentle pull.



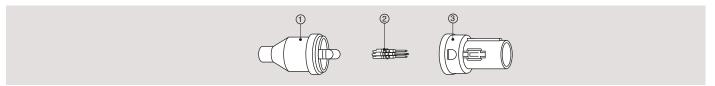
- 5. Slide the collet ② forward and locate tag ③ in the slot ⑤ on the insulator ⑥. Slide collet nut ① over collet ② and then push the whole assembly into the shell ⑦ whilst turning it to ensure that the tag ③ locates in the inside slot of the shell. Tighten the collet nut ① to the maximum torque of 0.25 Nm.
 - Socket mounting nut torque = 1.5 Nm.

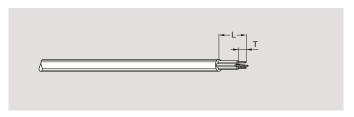


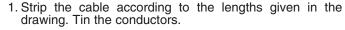
For PSU only:

We recommend the use of Vibra-tite VC-6, Araldite CW2243 + Aradur HY 2966, Ablestik FDA2 Trapax or ThreeBond 1401 to secure the connector collet nut. The use of other materials could result in damage to the connector. The only recommended chemical cleaner is Isopropyl Alcohol.

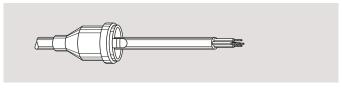
Solder contacts (For PJ●)



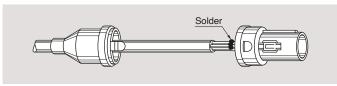




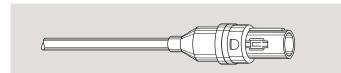
Configuration	Dimensions (mm)		
Comiguration	L	Т	
M0.9, M1.0, M1.4	15.0	3.0	



2. Slide the backshell ① onto the cable



3. Solder conductors into contacts ②, making sure that neither solder nor flux gets onto the cable insulation.



- 4. Slide backshell ① forward and align the tabs to the slots on the plug ③. Snap backshell onto the plug to complete the assembly. Various strain relief techniques can be incorporated, depending on application.
- If the need arises to remove an installed contact, during the assembly process or subsequent repair, individual contacts can be removed using LEMO extraction tool (part number: DCF.91.050.2LT). DO NOT reuse extracted contacts.

The only recommended chemical cleaner is Isopropyl Alcohol.



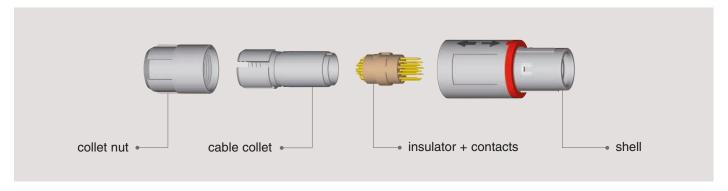


2P SERIES

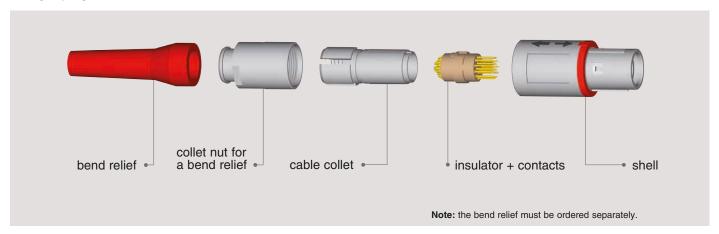


Exploded view of the REDEL 2P

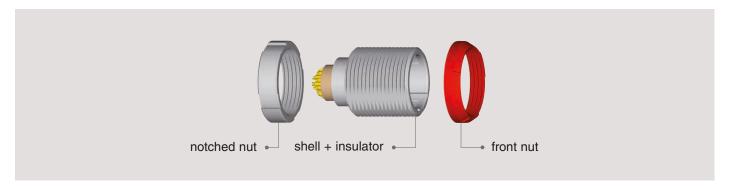
Straight plug



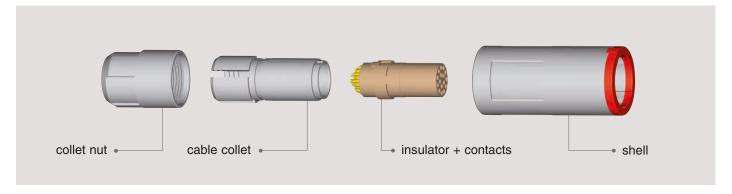
Straight plug with bend relief



Fixed socket



Free socket

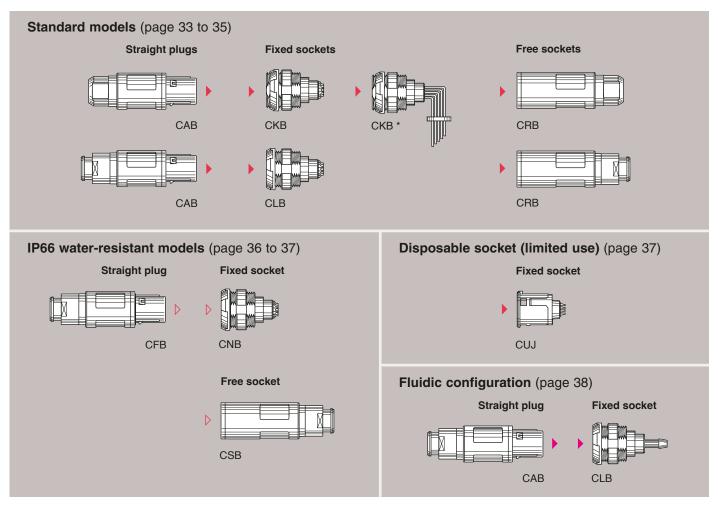




2P Series

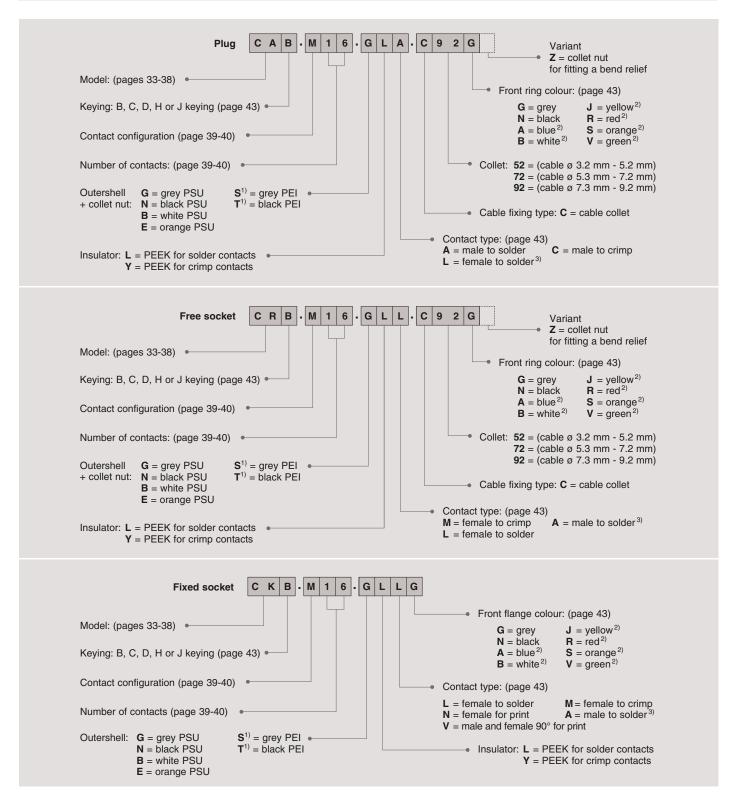
This sleek 18 mm connector supports cable diameters up to 9.2 mm and is compatible with up to 34 solder or crimp contacts. Crafted from top-tier lightweight yet durable materials, it's engineered for optimal performance across a wide range of applications. Made from PSU (polysulfone), a UL-certified, self-extinguishing material that can be sterilized by either gas or steam, the 2P series connectors are also available in PEI (Polyetherimide ULTEM), offering enhanced resistance to sterilization cycles (ETO, gamma, steam...). The gold-plated contacts, layered over copper and nickel, are designed to withstand extensive mating/unmating cycles while maintaining exceptional signal integrity.

Featuring five intuitive keys on the plug nose, including Reverse Gender configurations, it ensures effortless blind mating, while the color-coded plug and socket flange provide instant visual confirmation of compatibility. For added protection, water-resistant options up to IP66 are available. The high-voltage configurations meet the rigorous IEC 60601-1 (3rd Ed.) medical safety standard, making this connector a perfect choice for high-stakes applications.



Note: * not available for High Voltage configurations.

Part numbering system



CAB.M16.GLA.C92G Straight plug with cable collet and alignment key (B), multipole type with 16 male contacts to solder, grey PSU outershell, PEEK insulator, collet for a cable ø 7.3 to 9.2 mm and grey front ring.

CRB.M16.GLL.C92G Free socket with two nuts and alignment key (B), multipole type with 16 female contacts to solder, grey PSU outershell, PEEK insulator, collet for a cable Ø 7.3 to 9.2 mm and grey front ring.

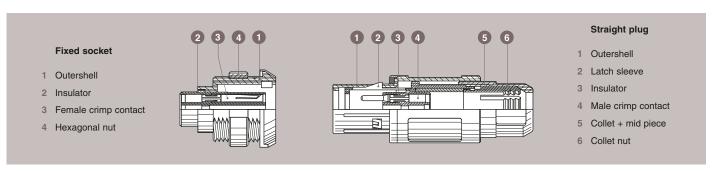
CKB.M16.GLLG Fixed socket with two nuts and alignment key (B), multipole type with 16 female contacts to solder, grey PSU outershell, PEEK insulator, and grey front ring.

Note: 1) for extensive steam sterilization we propose polytherimide ULTEM® (PEI). 2) only available with PSU outershells.

3) model available only with H and J keying and with 26 or 34 contacts (inverted contacts).



Standard models (IP50)



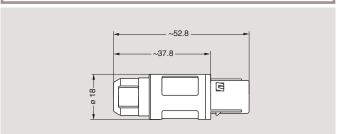
Characteristics	Value	Standards
Average retention force when pulling on the cable 1N = 0.102 kg	150 N	IEC 60512-8 test 15f
Cable retention force (depends on cable construction) 1N = 0.102 kg	150 - 250 N	IEC 60512-9 test 17c

Characteristics	Value	Standards
Endurance (latching) for plug	> 1000 cycles	IEC 60512-5 test 9a
Endurance (latching) for fixed socket	> 5000 cycles	IEC 60512-5 test 9a
Working temperature range (PSU)	-50/+150°C	-
Working temperature range (PEI)	-50/+170°C	_

CAB Straight plug with cable collet

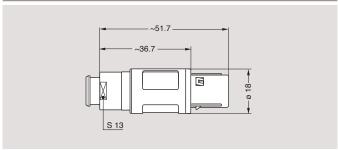


Part Number	Cable ø		
	min	max	
CAB. •••. GLA. C52G	3.2	5.2	
CAB. ••• .GLA. C72G	5.3	7.2	
CAB. ••• .GLA. C92G	7.3	9.2	



CAB Straight plug with cable collet and nut for fitting a bend relief



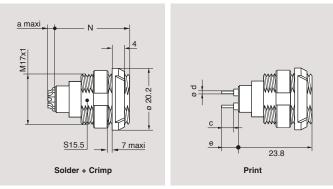


Part Number	Cable ø			
	min	max		
CAB. •••. GLA. C52GZ	3.2	5.2		
CAB. ••• .GLA. C72GZ	5.3	7.2		
CAB. ••• .GLA. C92GZ	7.3	9.2		

Note: the bend relief must be ordered separately (see page 45).

CKB Fixed socket with two nuts (back panel mounting)





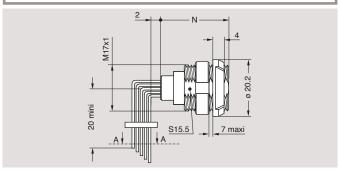
		Contact						
Part Number	number of contacts	Solder		Crimp		Print		
		N	а	N	а	С	ø d	е
CKB.M16.GLLG	16	23.8	3.4	25.1	0	5.7	0.7	6.0
CKB.M19.GLLG	19	23.8	4.9	25.1	0	5.7	0.7	6.0
CKB.M26.GLLG	26	23.8	4.7	25.1	0	3.0	0.5	3.0
CKB.M32.GLLG	32	23.8	4.7	25.1	0	3.0	0.5	3.0

	Part Number number of contacts	Contact	
Part Number		Solder	
	OOMaoto	N	а
CKB.H02.GLLG	2	26.6	2.5
CKB.H05.GLLG	5	26.6	2.5
CKB.H08.GLLG	8	26.6	2.5

Note: for PCB drilling pattern see page 47. Panel hole see page 47.

CKB Fixed socket with two nuts with 90° contacts (back panel mounting)



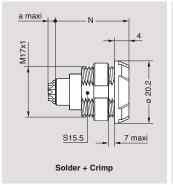


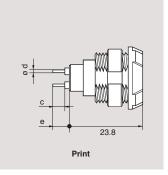
Part Number	number of contacts	N (mm)
CKB.M12.GLVG	12	23.5
CKB.M16.GLVG	16	24.2
CKB.M19.GLVG	19	24.2
CKB.M26.GLVG	26	24.2

Note: for PCB drilling pattern see page 48. Panel hole see page 47.

CLB Fixed socket, nut fixing







		Contact						
Part Number	number of contacts				mp	Print		
	00.114.010	N	а	N	а	С	ø d	е
CLB.M16.GLLG	16	23.8	3.4	25.1	0	5.7	0.7	6.0
CLB.M19.GLLG	19	23.8	4.9	25.1	0	5.7	0.7	6.0
CLB.M26.GLLG	26	23.8	4.7	25.1	0	3.0	0.5	3.0
CLB.M32.GLLG	32	23.8	4.7	25.1	0	3.0	0.5	3.0

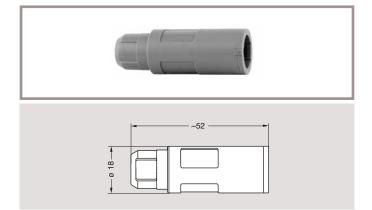
		Contact		
Part Number	number of contacts	Solder		
	Somasis	N	а	
CLB.H02.GLLG	2	26.6	2.5	
CLB.H05.GLLG	5	26.6	2.5	
CLB.H08.GLLG	8	26.6	2.5	

Note: for PCB drilling pattern see page 47. Panel hole see page 47.



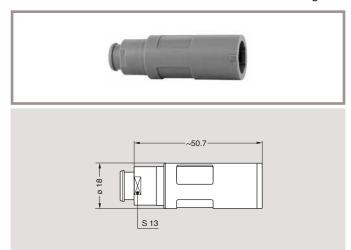


CRB Free socket with cable collet



Part Number	Cable ø		
	min	max	
CRB. •••. GLL. C52G	3.2	5.2	
CRB. •••. GLL. C72G	5.3	7.2	
CRB. •••. GLL. C92G	7.3 9.2		

CRB Free socket with cable collet and nut for fitting a bend relief



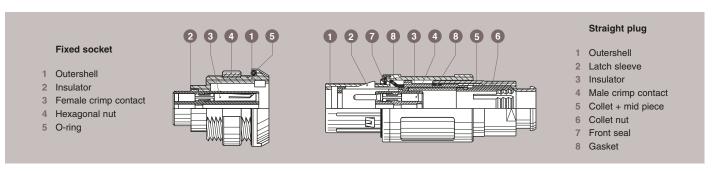
Part Number	Cable ø		
	min max		
CRB. •••. GLL. C52GZ	3.2	5.2	
CRB. ••• .GLL. C72GZ	5.3 7.2		
CRB. ••• .GLL. C92GZ	7.3	9.2	

Note: the bend relief must be ordered separately (see page 45).



Water-resistant models (IP66)

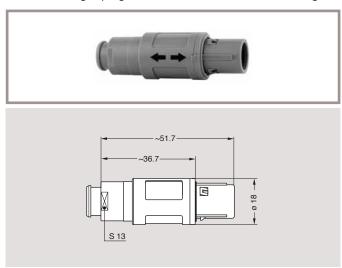




Characteristics	Value	Standards
Average retention force when pulling on the cable 1N = 0.102 kg	90 N	IEC 60512-8 test 15f
Cable retention force (depends on cable construction) 1N = 0.102 kg	50 - 150 N	IEC 60512-9 test 17c

Characteristics	Value	Standards
Endurance (latching) for plug	> 1000 cycles	IEC 60512-5 test 9a
Endurance (latching) for fixed socket	> 5000 cycles	IEC 60512-5 test 9a
Working temperature range (PSU)	-50/+150°C	-
Working temperature range (PEI)	-50/+170°C	-
Index protection	IP66	IEC-60529

CFB Straight plug with cable collet and nut for fitting a bend relief

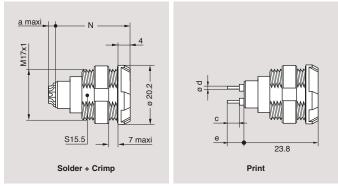


Part Number	Cable ø		
	min max		
CFB. ••• .GLA. C52GZ	3.2	5.2	
CFB.•••.GLA.C72GZ	5.3	7.2	
CFB. •••. GLA. C92GZ	7.3	9.2	

Note: the bend relief must be ordered separately (see page 45).

CNB Fixed socket, nut fixing





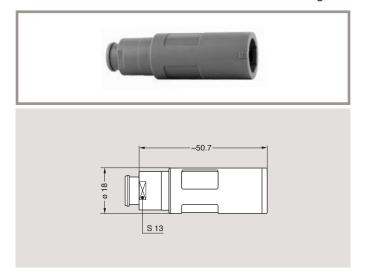
				С	ontac	t		
Part Number	number of contacts	Sol	der	Cri	mp		Print	
	Johnadio	N	а	N	а	С	ød	е
CNB.M16.GLLG	16	23.8	3.4	25.1	0	5.7	0.7	6.0
CNB.M19.GLLG	19	23.8	4.9	25.1	0	5.7	0.7	6.0
CNB.M26.GLLG	26	23.8	4.7	25.1	0	3.0	0.5	3.0
CNB.M32.GLLG	32	23.8	4.7	25.1	0	3.0	0.5	3.0

		Contact	
Part Number of contacts	Solder		
	Cornacis	N	а
CNB.H02.GLLG	2	26.6	2.5
CNB.H05.GLLG	5	26.6	2.5
CNB.H08.GLLG	8	26.6	2.5

Note: for PCB drilling pattern see page 47. Panel hole see page 47.



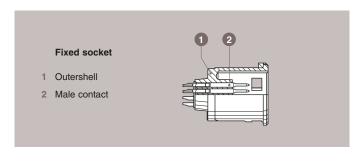
CSB Free socket with cable collet and nut for fitting a bend relief



Part Number	Cable ø		
	min max		
CSB. •••. GLL. C52GZ	3.2	5.2	
CSB. •••. GLL. C72GZ	5.3	7.2	
CSB. •••. GLL. C92GZ	7.3 9.2		

Note: the bend relief must be ordered separately (see page 45).

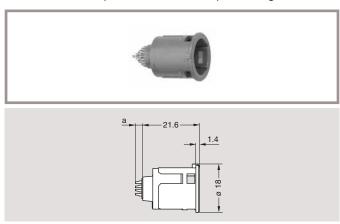
Disposable socket (limited use)

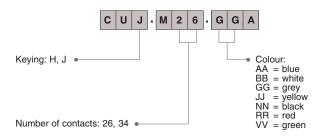


Characteristics	Value	Standards
Endurance for CU● (latching) 1)	100 cycles min	IEC 60512-5 test 9a
Working temperature range (PSU)	-50/+150°C	-
Average latching force	5.5N	IEC 60512-7 test 13a
Average unmating force	8.5N	IEC 60512-7 test 13a
Average retention force	150N	IEC 60512-7 test 13a

 $\textbf{Note:}\ ^{1)}$ with machined contacts. The outershell and the insulator are moulded out of the same material (PSU).

CU• Fixed disposable socket, snap on fixing

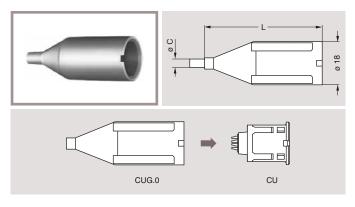


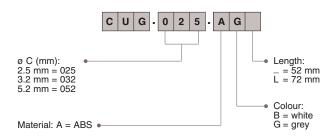


Number of contacts	а
26	5.5
34	7.0

Note: not available with H26 and H34. Contacts are ø 0.5 mm male with ø 0.44 mm solder buckets.

CUG Protective backshell for CUe

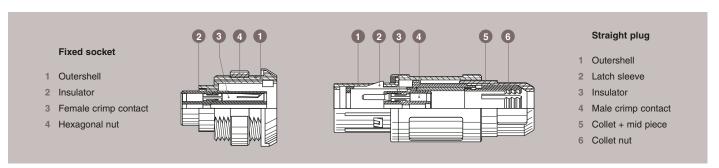




Note: ABS working temperature: -30°C +90°C. All dimensions are in millimeters.



Fluidic models



Characteristics	Value	Standards
Average retention force when pulling on the cable 1N = 0.102 kg	90 N	IEC 60512-8 test 15f
Cable retention force (depends on cable construction) 1N = 0.102 kg	50 - 150 N	IEC 60512-9 test 17c

Characteristics	Value	Standards
Endurance (latching) for plug	> 1000 cycles	IEC 60512-5 test 9a
Endurance (latching) for fixed socket	> 5000 cycles	IEC 60512-5 test 9a
Working temperature range (PSU)	-50/+150°C	-
Working temperature range (PEI)	-50/+170°C	-

. G | .

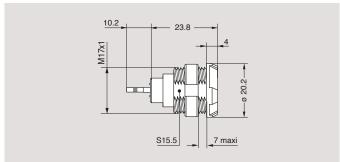
CAB Straight plug with cable collet



Part Number	Cable ø			
	min	max		
CAB.012.GLA.C52G	3.2	5.2		
CAB.012.GLA.C72G	5.3	7.2		
CAB.012.GLA.C92G	7.3	9.2		

CLB Fixed socket nut fixing





Part Number	Number of low voltage contacts	Fluidic contact	Maximum working pressure (bars)
CLB.012.GLLG	4	without valve	6
CLB.015.GLLG	10	without valve	6
CLB.P12.GLLG	4	with valve 1)	6
CLB.P15.GLLG	10	with valve 1)	6

 $\textbf{Note:} \ \ ^{1)} \ \text{fluidic contact must be ordered separately (see page 40)}.$

Panel hole see page 47.



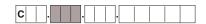
Insert configuration

Multipole

	Male solder contacts	Female solder contacts							Cor ty	ntact pe			mm)	
	Male crimp contacts	Female crimp contacts	Reference	Number of contacts	Contact ø (mm)	Solder bucket ø (mm) ⁴⁾	Crimp bucket ø (mm) ⁴⁾	Solder	Crimp	Print (straight)	Print (elbow)	Test voltage (kV DC) ¹⁾ Contact-contact	Air clearance \min^2) (mm) Creepage distance \min^3) (mm)	Rated current (A)
	•	8	M02	2	2.0	1.8	2.4	•	•	•	•	2.97	1.60	30.0
			M03	3	1.6	1.4	1.9	•	•	•	•	3.39	1.50	17.0
			M04	4	1.3	1.0	1.4	•	•	•	•	2.62	1.80	15.0
			M05	5	1.3	1.0	1.4	•	•	•	•	2.47	1.75	14.0
			M06	6	1.3	1.0	1.4	•	•	•	•	1.91	0.85	12.0
			M07	7	1.3	1.0	1.4	•	•	•	•	2.47	0.95	11.0
Multipole			M08	8	0.9	0.8	1.1	•	•	•	•	2.12	1.00	10.0
Mul			M10	10	0.9	0.8	1.1	•	•	•	•	2.05	0.75	8.0
			M12	12	0.7	0.8	0.8	•	•	•	•	1.77	0.85	7.0
			M16	16	0.7	0.8	0.8	•	•	•	•	1.63	0.65	5.0
			M19	19	0.7	0.8	0.8	•	•	•	•	1.48	0.60	4.5
			M26	26	0.5	0.5	-	•	-	•	•	1.27	0.55	2.0
			M32	32	0.5	0.5	-	•	-	•	-	1.06	0.35	2.0
			M34	34	0.5	0.4	_	•	_	_	_	0.92	0.30	1.5

Note: 1) depending on specific application and related standard, more restrictive operating voltage may apply, see page 68.
2) shortest distance in air between two conductive parts.
3) shortest distance along the surface of the insulating material between two conductive parts.
4) for a given AWG, the diameter of some stranded conductor design is larger than the solder cup diameter (see page 69).





Fluidic, Coaxial, High Voltage

	Male solder contacts	Female solder contacts							Cor ty	tact pe			mm)	
	Male crimp contacts	Female crimp contacts	Reference	Number of contacts	Contact ø (mm)	Solder bucket ø (mm) ⁴⁾	Crimp bucket ø (mm) ⁴⁾	Solder	Crimp	Print (straight)	Print (elbow)	Test voltage (kV DC) ¹⁾ Contact-contact	Air dearance \min^2) (mm) Creepage distance \min^3) (mm)	Rated current (A)
			012	4	0.7	0.8	0.8	•	•	_	_	1.20	0.60	5.0
dic			015	10	0.7	0.8	0.8	•	•	_	_	1.63	0.90	5.0
Fluidic			P12 ⁶⁾	4	0.7	0.8	0.8	•	•	-	-	1.20	0.60	9.0
		O	P15 ⁶⁾	10	0.7	0.8	0.8	•	•	_	-	1.63	0.90	6.0
			804 ⁵⁾	4	0.7	0.8	0.8	•	•	_	_	1.20	0.60	5.0
Coaxial			810 ⁵⁾	10	0.7	0.8	0.8	•	•	_	_	1.77	0.90	5.0
			814 ⁵⁾	14	0.5	0.4	-	•	-	-	-	2.40	0.30	1.5
Ф			H02	2	0.7	0.8	_	•	_	_	_	17.96	8.907)	11.0
High Voltage			H05	5	0.7	0.8	-	•	_	-	-	16.40	7.96 ⁷⁾	8.0
I			H08	8	0.7	0.8	-	•	-	-	-	14.56	7.42 ⁷⁾	6.5
ltage + ity – PFA			H26	26	0.5	0.4	-	•	-	-	-	6.0	5.6 ⁸⁾	1.0
High Voltage + High Density - PFA	(000000		H34	34	0.5	0.4	-	•	_	_	_	5.6	5.6 ⁸⁾	1.0

Note: 1) depending on specific application and related standard, more restrictive operating voltage may apply, see page 68.

2) shortest distance in air between two conductive parts.

3) shortest distance along the surface of the insulating material between two conductive parts.

4) for a given AWG, the diameter of some stranded conductor design is larger than the solder cup diameter (see page 69).

5) configuration 804 and 810 use «C» type coaxial contact. Configuration 814 uses "0R" coaxial contact, see R series catalogue page 16 for details and stripping length.

6) configuration P12 and P15 use fluidic contact with valve (FGG.P1.150.ACV and EGG.P1.150.ACV). Contacts must be ordered separately.

7) for insert configuration H02, H05 and H08: the use of potting type Epoxy* or adhesive-lined (strongly recommended) heatshrink tubes over each termination is necessary to achieve the indicated Air Clearance and Creepage distance values as well as the indicated Test voltage.

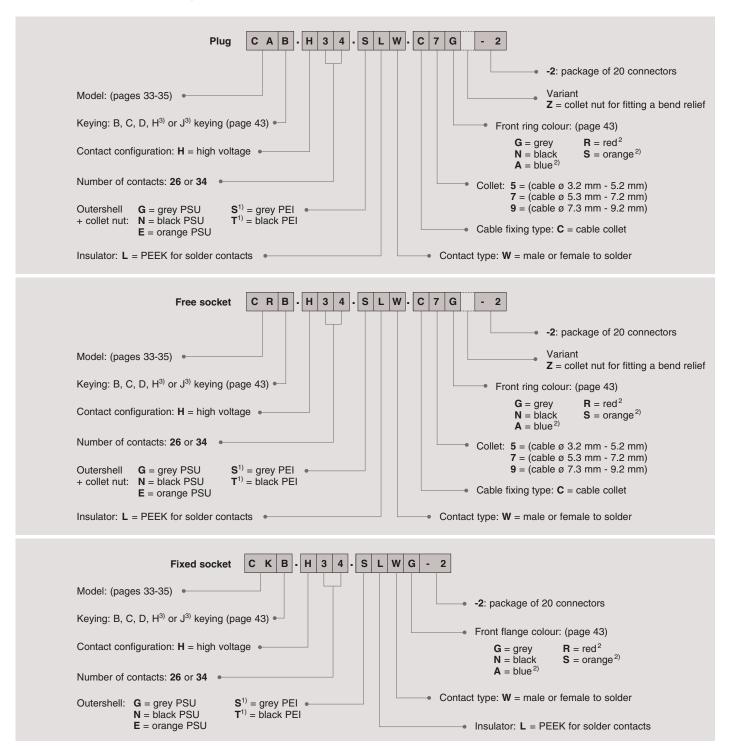
8) for insert configuration H26 and H34: the installation of the dedicated tubes on each contact, supplied with the connector is essential to achieve the creepage and air clearance distances indicated in the table. For the additional potting we recommend using the biocompatible EPO-TEK MED-353ND resin.

Part numbering system (High Voltage – High Density - PFA models)

Benefiting from the cutting-edge technical and industrial assets of the 2P series, the patented design of the 2P High Voltage and High Density configurations provides unmatched connection performance. The exceptional robustness of its components ensures seamless and secure integration throughout the lifespan of the latest generation of electrophysiology medical devices and PFA (Pulsed Field Ablation) catheters. The miniaturization and ergonomic design of the 26 and 34 contact configurations, delivering up to 5 kV per pin, make this latest-generation series the ideal solution for all applications requiring compact and extremely high-performing interconnect solutions.



Important information: Each reference of the Redel 2P High voltage series H26 and H34 is sold **in sets of 20 pieces** and includes respective quantities of polyimide tubes and potting rings required for the cable assembly. Ordering individual references is not possible.



Note:

- 1) for increased and optimal steam sterilization cycles (autoclave), we highly recommend the use of PEI material (polytherimide).
- 2) only available with PSU outershells.
- ³⁾ H and J keying apply exclusively for reverse gender configurations (inverted contacts).



Important information: Each reference of the Redel 2P High voltage series H26 and H34 is sold **in sets of 20 pieces** and includes respective quantities of polyimide tubes and potting rings required for the cable assembly. Ordering individual references is not possible.

Reference of the set CAB.H34.SLW.C7G-2 consists of:



20 x straight plugs with cable collet and alignment **key B**, multipole type with **34 x high voltage male contacts** (up to 5 kV) to **solder**, **grey PEI outershell**, PEEK insulator, collet for a cable Ø 5.3 mm to 7.2 mm and **grey front ring (PEI)**



700 x polyimides tubes (540 x for H26 configurations) for cable assembly – rear part of the connector (essential to achieve the indicated (*8) creepage and air clearance distances)



20 x potting rings for cable assembly - rear part of the connector (EPO-TEK MED-353ND potting resin is highly recommended)

Reference of the set CKB.H34.SLWG-2 consists of:



20 x fixed sockets with two nuts and alignment key B, multipole type with 34 x high voltage female contacts (up to 5 kV) to solder, grey PEI outershell, PEEK insulator and grey PEI front ring



700 x polyimides tubes (540 x for H26 configurations) for cable assembly – rear part of the connector (essential to achieve the indicated (*8) creepage and air clearance distances)



20 x potting rings for cable assembly - rear part of the connector (EPO-TEK MED-353ND potting resin is highly recommended)

Reference of the set CRB.H34.SLW.C7G-2 consists of:



20 x free sockets with cable collet and alignment **key B**, multipole type with **34 x high voltage female contacts** (up to 5 kV) to **solder, grey PEI outershell**, PEEK insulator, collet for a cable \emptyset 5.3 mm to 7.2 mm and **grey front ring (PEI)**



700 x polyimides tubes (540 x for H26 configurations) for cable assembly – rear part of the connector (essential to achieve the indicated (*8) creepage and air clearance distances)

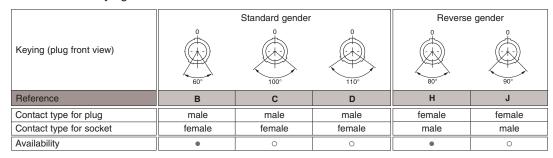


20 x potting rings for cable assembly - rear part of the connector (EPO-TEK MED-353ND potting resin is highly recommended)



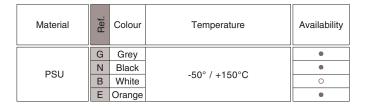
Alignment key

Verify the third digit of the part number in order to select the right keying. The standard keying is «B» coded.



Note: ● Standard / ○ On demand

Outer shell material



Material	Ref.	Colour	Temperature	Availability
PEI	S	Grey	-50° / +170°C	•
PEI	Т	Black	-50° / +170°C	•

Note: for extensive steam sterilization we propose polytherimide ULTEM® (PEI).

Contact type

Select the type of contact: solder or crimp?

Plug

Type	Male	Female
solder	Α	L
solder1)	W	W
crimp	С	ı

Socket

Туре	Male	Female
solder	Α	L
solder1)	W	W
crimp	-	M
print	-	N
print 90°	V	٧

Note: 1) available only with High Voltage H26 and H34 configurations.

When should I use crimp rather than solder contacts?

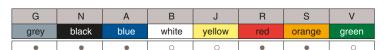
Soldering

- recommended for small volumes
- requires little amount of tooling (soldering iron)
- requires more time

Crimping

- recommended for large volumes
- no heat is required to make the connection
- for contacts with high density
- for use in high temperature environment
- requires extra tooling (crimping tools)

Front flanges / Ring colour coding



Note: ● Standard / ○ On demand



Accessories

CAG-CLG Insulator for crimp contacts





Contact	Insulator part number					
configuration	For male contact	For female contact				
M02	CAG.302.YL	CLG.402.YL				
M03	CAG.303.YL	CLG.403.YL				
M04	CAG.304.YL	CLG.404.YL				
M05	CAG.305.YL	CLG.405.YL				
M06	CAG.306.YL	CLG.406.YL				
M07	CAG.307.YL	CLG.407.YL				
M08	CAG.308.YL	CLG.408.YL				
M10	CAG.310.YL	CLG.410.YL				
M12	CAG.312.YL	CLG.412.YL				
M16	CAG.316.YL	CLG.416.YL				
M19	CAG.319.YL	CLG.419.YL				

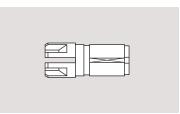
Crimp contacts, kit with the number of contacts in a tube **CAG-CLG**



Contact	nb. of	ø contact	Kit contact	part number
configuration	contacts	(mm)	Male	Female
M02	2	2.0	CAG.575.02C	CLG.675.02M
M03	3	1.6	CAG.570.03C	CLG.670.03M
M04	4	1.3	CAG.565.04C	CLG.665.04M
M05	5	1.3	CAG.565.05C	CLG.665.05M
M06	6	1.3	CAG.565.06C	CLG.665.06M
M07	7	1.3	CAG.565.07C	CLG.665.07M
M08	8	0.9	CAG.560.08C	CLG.660.08M
M10	10	0.9	CAG.560.10C	CLG.660.10M
M12	12	0.7	CAG.555.12C	CLG.655.12M
M16	16	0.7	CAG.555.16C	CLG.655.16M
M19	19	0.7	CAG.555.19C	CLG.655.19M

CAB Collet



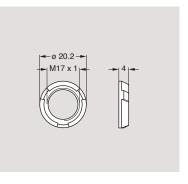


Part Number	Cable ø (mm)				
	min.	max.			
CAB.752.••	3.2	5.2			
CAB.772.••	5.3	7.2			
CAB.792.••	7.3	9.2			

Note: •• = UG (grey PSU), UN (black PSU), TG (grey PEI), TN (black PEI).

CKG Plastic front nut for CKB models



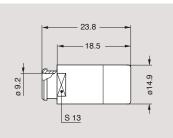


Part Number	Mat.	Colours	Choice
CKG.240.UA	PSU	blue	•
CKG.240.UG	PSU	grey	•
CKG.240.UJ	PSU	yellow	0
CKG.240.UN	PSU	black	•
CKG.240.UR	PSU	red	•
CKG.240.UV	PSU	green	0

Note: ● Standard / ○ On demand

CAM Nut for fitting a GMA.2B bend relief



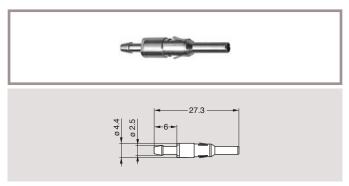


6 0
S 13

Note: all dimensions are in millimeters

Part Number	Mat.	Colours
CAM.130.UG	PSU	grey
CAM.130.UN	PSU	black
CAM.130.TG	PEI	grey

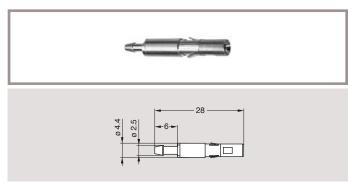
FGG.P1 Male fluidic contact with valve



Part Number FGG.P1.150.ACV

Note: Connectors are delivered without the P1 contacts.

EGG.P1 Female fluidic contact with valve

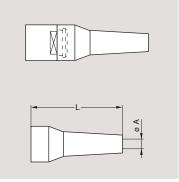


Part Number
EGG.P1.150.ACV

Note: Connectors are delivered without the P1 contacts.

GMA Bend relief





A bend relief absorbs the force that may be exerted on cables.

These are designed for plugs and free sockets with cable collet and nut.

	Dimensions (mm)			Temperat	ture range		
Part Number	Bend	relief	Cab	le ø	Material	'	
	Α	L	max.	min.		in dry atmosphere	in water steam
GMA.2B.040.DG	4.0	36	4.5	4.0			
GMA.2B.045.DG	4.5	36	5.0	4.5			
GMA.2B.050.DG	5.0	36	5.5	5.0	TPU (Thermoplastic	-40°C, +80°C	
GMA.2B.060.DG	6.0	36	6.5	6.0	Polyurethane)	-40 C, +60 C	_
GMA.2B.070.DG	7.0	36	7.7	7.0	, ,		
GMA.2B.080.DG	7.8	36	8.8	7.8			
GMA.2B.040.RG	4.0	41	4.4	4.0			
GMA.2B.045.RG	4.5	41	5.0	4.5			
GMA.2B.051.RG	5.1	41	5.6	5.1	Silicone		
GMA.2B.057.RG	5.7	41	6.2	5.7	elastomer	-60°C, +200°C	+140°C
GMA.2B.063.RG	6.3	41	7.0	6.3	VMQ		
GMA.2B.071.RG	7.1	41	7.9	7.1			
GMA.2B.080.RG	8.0	41	9.0	8.0			

Note: the last letter «G» of the part number indicates a grey colour, see the adjacent table and replace letter «G» by the letter of the colour required.

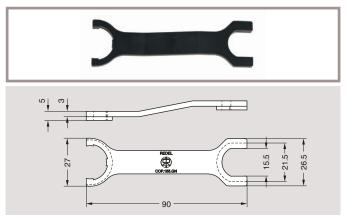
Reference	Colours	Choice
А	blue	•
В	white	0
G	grey	•
J	yellow	0
M	brown	0
N	black	•
R	red	•
S	orange	•
V	green	0

Note: ● Standard / ○ On demand

Note: the selection of pigments, which should remain stable at high temperature, is limited by the new regulations. For this reason, some colours will be a shade different from those used for TPU bend reliefs. The selected solutions represent the best possible compromise.

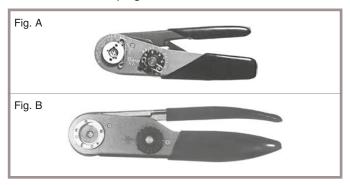
Tooling

COP.155.GN Spanner for rear nut



Material: PA 6.6

DPC Manual crimping tool



DCE Turret for ø 1.6-2.0



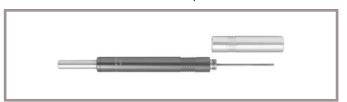
 $\ensuremath{\text{\textbf{Note:}}}$ these turrets can be used with manual crimping tool according to MIL-C-22520/1-01 standard.

DCC Manual extractor for crimp contacts

Contact ø

(mm)

0.5



Conductor

AWG

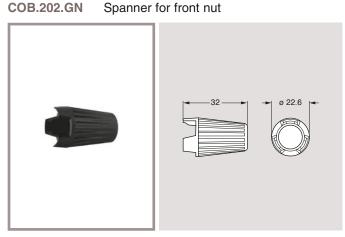
28-30-32

M02	2.0	12-14-16	DCE.91.202.BVCM	DCE.91.202.BVCM	-	DCC.20.25B.LAG
M03	1.6	14-16-18	DCE.91.162.BVCM	DCE.91.162.BVCM	-	DCC.16.25B.LAG
M04/M05/M06/M07	1.3	18-20	DCE.91.132.BVC	DCE.91.132.BVM	8-7	DCC.13.15B.LAG
M08/M10	0.9	20-22-24	DCE.91.092.BVC	DCE.91.092.BVM	6-5-5	DCC.09.05B.LAG
M12/M16/M19	0.7	22-24-26	DCF 91 072 BVC	DCF 91 072 BVM	6-5-5	DCC 07 04B LAG

Male

DCE.91.052.BVC

Positioner part number



Material: PA 6.6

COB.202.GN

Part N	Part Number		
contact ø 0.5-0.7 0.9-1.3 (Fig. A) contact ø 1.6-2.0 (Fig. B)		Supplier	
DPC.91.701.V ¹⁾	DPC.91.101.A ²)	LEMO	
MH860 ¹⁾	AF8 ²⁾	DANIELS	
616336 ¹⁾	615708 ²⁾	ASTRO	

¹⁾ According to specification MIL-C-22520/7-01. ²⁾ According to specification MIL-C-22520/1-01.

DCE Positioners for crimp contacts



Selector No Setting

Part number

extractor

DCC.05.02B.LAG



Note: this model is used for male and female contacts. The variance in conductor stranding diameter for the minimum AWG is such that some can have a cross section which is not sufficient to guarantee crimping as per IEC 60352-2 standard.

DCE.91.052.BVM

Female

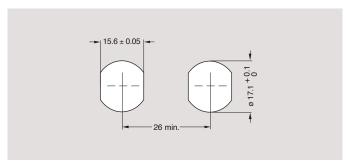
Type

M26/M32



Panel hole

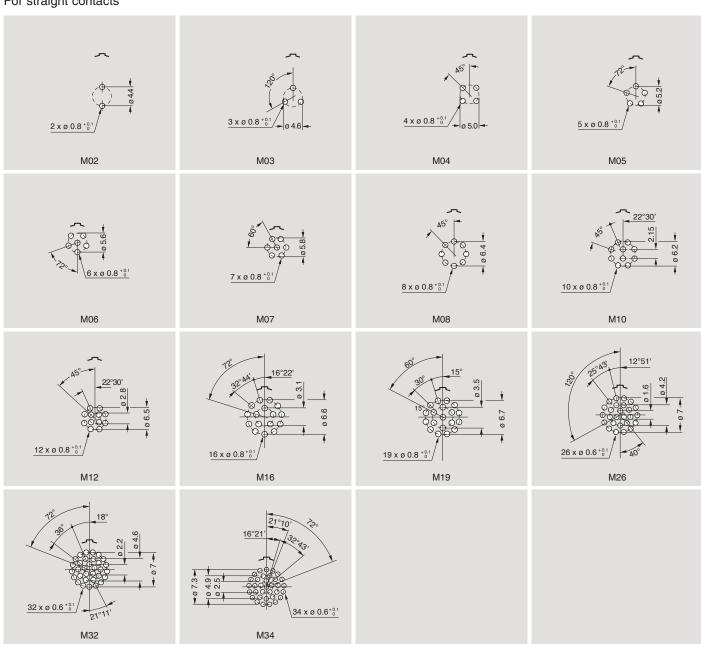
For CKe, CLe, and CNe



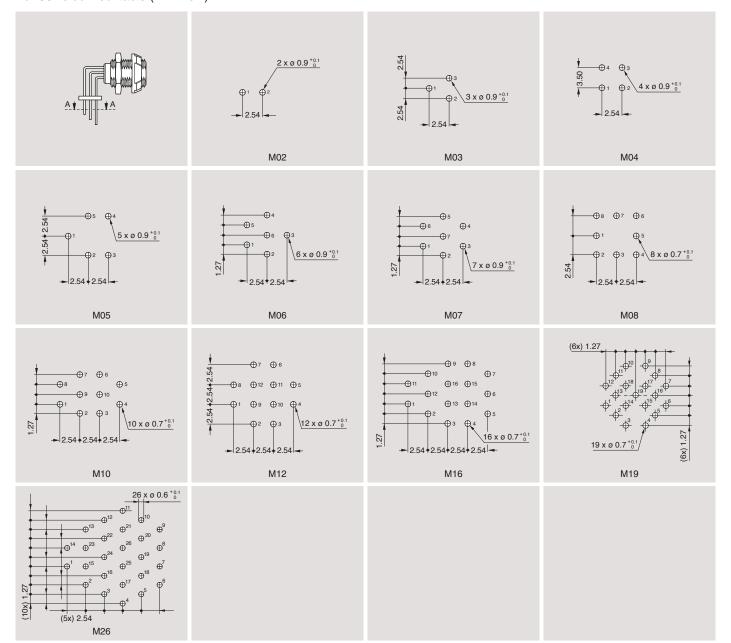
Note: socket mounting nut torque = 0.8 Nm.

PCB drilling pattern

For straight contacts

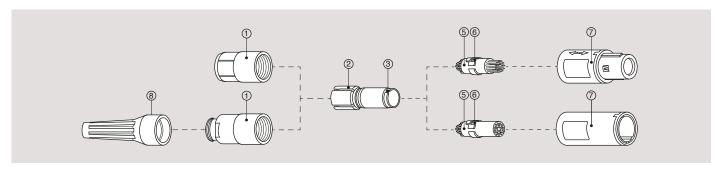


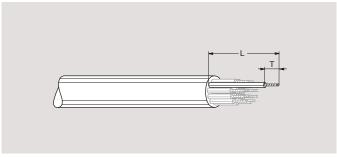
For 90° elbow contacts (A-A view)



Assembly instructions

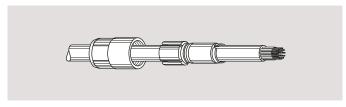
Solder contacts



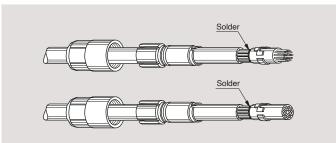


 Strip the cable according to the lengths given in the table. Tin the conductors.

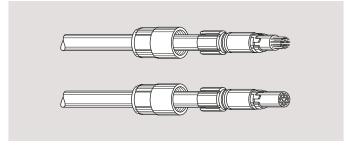
Configuration	Dimensions (mm)		
Configuration	L	Т	
M02	18.0	4.0	
M03, M04, M05, M06, M07	18.0	3.5	
M08, M10, M12, M16, M19	18.0	3.0	
M26, M32, M34	17.0	2.5	



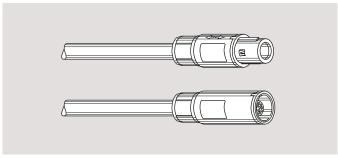
Slide the collet nut ① and then the collet ② onto the cable.
 Slide the bend relief ® (if ordered separately) onto the cable.



Solder conductors into contacts, making sure that neither solder nor flux gets onto the insulator or cable insulation.



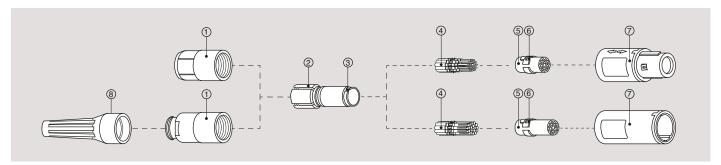
- 4. Slide the collet ② forward and locate slot ③ in the key of the insulator ⑤.
 - Slide collet nut ① over collet ② and then push the whole assembly into the shell ⑦ whilst positioning it to ensure that the slot ⑥ of insulator ⑤ locates in the inside key of the shell. Tighten the collet nut ① to the maximum torque of 0.5~Nm
 - Push the bend relief $\ensuremath{\$}$ (if ordered separately) onto the collet nut $\ensuremath{\$}$.



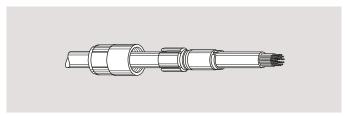
For PSU only:

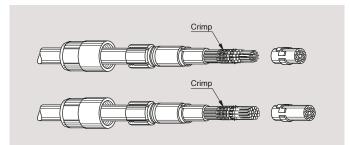
We recommend the use of Vibra-tite VC-6, Araldite CW2243 + Aradur HY 2966, Ablestik FDA2 Trapax or ThreeBond 1401 to secure the connector collet nut. The use of other materials could result in damage to the connector. The only recommended chemical cleaner is Isopropyl Alcohol.

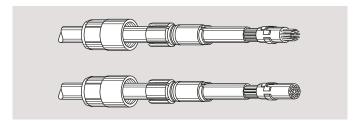
Crimp contacts

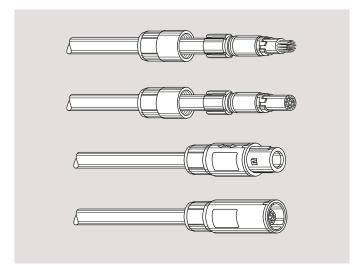












1. Strip the cable according to the lengths given in the table.

Configuration	Dimensions (mm)		
Configuration	L	Т	
M02, M03	21.0	5.5	
M04, M05, M06, M07, M08, M10, M12, M16, M19	21.0	4.0	

- Slide the collet nut ① and then the collet ② onto the cable.
 Slide the bend relief ® (if ordered separately) onto the cable.
- Fix the appropriate positioner (table page 46) in the crimping tool. Set selector to the number corresponding to the conductor AWG as indicated on the positioner label.

Fit conductor into contact 4 and make sure it is visible through the inspection hole in the crimp barrel. Slide conductor-contact combination into the open crimping tool; make sure that the contact is fully pushed into the positioner. Close the tool. Remove from crimping tool and check that conductor is secure in contact and shows in inspection hole.

- 4. Now arrange contact-conductor combinations according to the insert marking and locate them into the insert ⑥. Check that all contacts are correctly located and remain in position when given a gentle pull.
- 5. Slide the collet ② forward and locate slot ③ in the key of the insulator ⑤. Slide collet nut ① over collet ② and then push the whole assembly into the shell ⑦ whilst positioning it to ensure that the slot ⑥ of insulator ⑤ locates in the inside key of the shell. Tighten the collet nut ① to the maximum torque of 0.5 Nm.

Push the bend relief $\ensuremath{\$}$ (if ordered separately) onto the collet nut $\ensuremath{\$}$.

For PSU only:

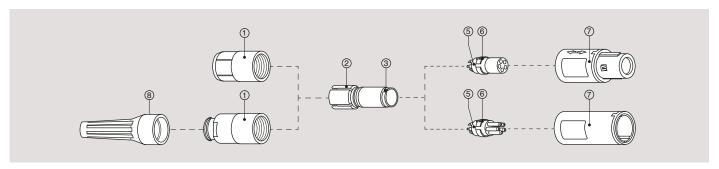
We recommend the use of Vibra-tite VC-6, Araldite CW2243 + Aradur HY 2966, Ablestik FDA2 Trapax or ThreeBond 1401 to secure the connector collet nut. The use of other materials could result in damage to the connector. The only recommended chemical cleaner is Isopropyl Alcohol.

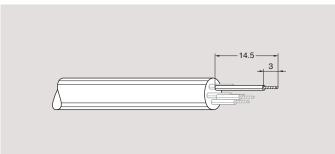


Assembly instructions for high voltage configurations

For H02, H05 and H08 configurations (not applicable for 2P PFA models)

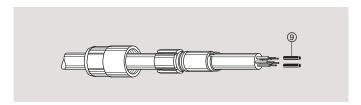
Solder contacts





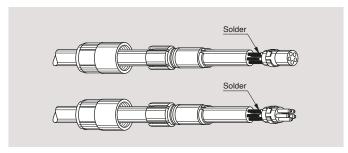
1. Strip the cable according to the lengths given in the drawing. Tin the conductors.

* For insert configurations H02, H05 and H08:
The use of potting type Epoxy* or / and adhesive-lined (strongly recommended) heatshrink tubes (not provided with the connector) over each termination is necessary to achieve the indicated Air Clearance and Creepage distance values as well as the indicated Test voltage.

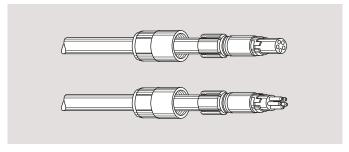


2. Slide the collet nut 1 and then the collet 2 onto the cable. Slide the bend relief ® (if ordered separately) onto the

Place the heatshrink sleeve 9 (not provided with the connector) over the wires.



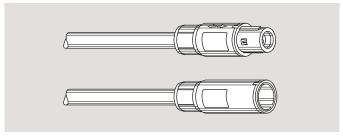
3. Solder conductors into contacts, making sure that neither solder nor flux gets onto the insulator or cable insulation. Put the heatshrink sleeve 9 over the solder contacts and heat gently until it retracts.



4. Slide the collet 2 forward and locate slot 3 in the key of the insulator 5.

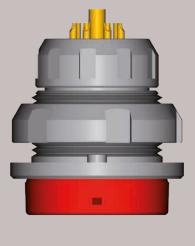
Slide collet nut ① over collet ② and then push the whole assembly into the shell T whilst positioning it to ensure that the slot 6 of insulator 5 locates in the inside key of the shell. Tighten the collet nut ① to the maximum torque of 0.5 Nm.

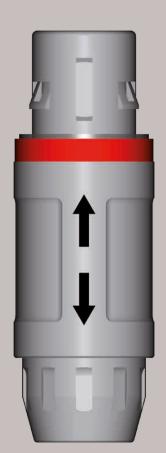
Push the bend relief ® (if ordered separately) onto the collet nut 1.



For PSU only:

We recommend the use of Vibra-tite VC-6, Araldite CW2243 + Aradur HY 2966, Ablestik FDA2 Trapax or ThreeBond 1401 to secure the connector collet nut. The use of other materials could result in damage to the connector. The only recommended chemical cleaner is Isopropyl Alcohol.

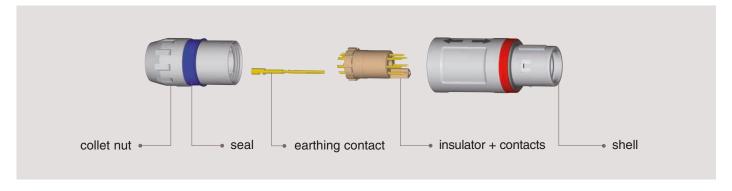




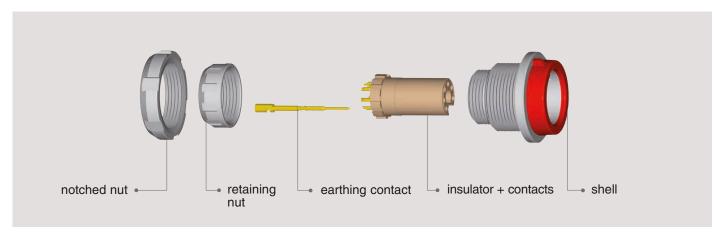
3P SERIES

Exploded view of the REDEL 3P

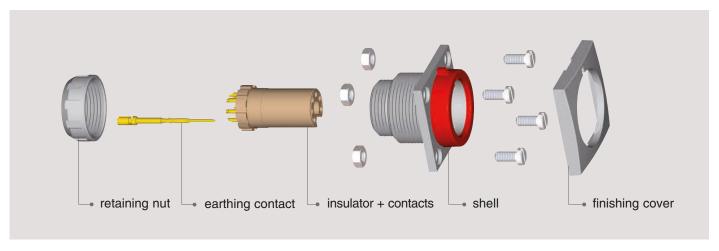
Straight plug



Fixed socket



Fixed socket with square flange



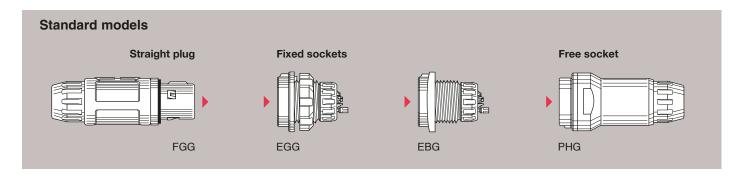


3P Series

The 3P series represents LEMO's first fully plastic connector line, designed to accommodate cable diameters of up to 9.5 mm. These connectors are available in 11 different contact configurations, including multi-contact, hybrid HV/electrical, coaxial/electrical, fiber optic/electrical, and fluidic options.

Specifically engineered for applications requiring minimal weight, maximum electrical insulation, and superior thermal and mechanical properties, the 3P series is ideal for all kinds of critical environments.

Constructed from non-conductive materials, these connectors provide exceptional safety and reliability. They feature four distinct systems to prevent accidental cross-mating: colour coding, housing keying, insert keying, and insert polarization.



Alignment keys and insert polarization

The 3P series makes it possible for the user to configure his own keying system.

The insert can be located into 11 different angular positions relative to the external alignment key.

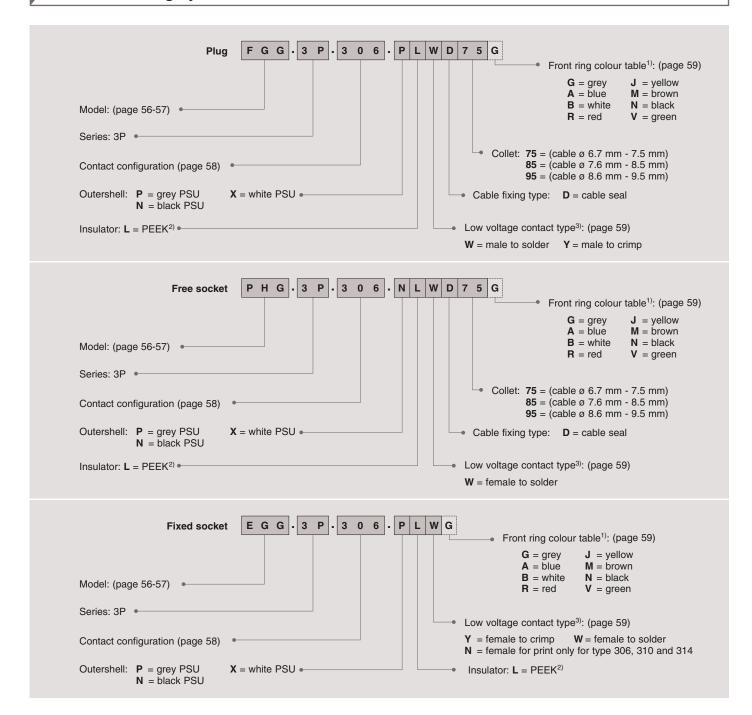
Rear view	Insert code	An	gle
of a socket	insert code	Plug	Socket
	А	180°	180°
_	В	147° 16'	212° 44'
K L	С	114° 33'	245° 27'
o J	D	81° 49'	278° 11'
Н (Н () В	Е	49° 05'	310° 55'
G C C	F	16° 22'	343° 38'
	G	343° 38'	16° 22'
,	Н	310° 55'	49° 05'
	J	278° 11'	81° 49'
	K	245° 27'	114° 33'
	L	212° 44'	147° 16'

Note: the reference letter:

- on the plug insert, is placed to the left of the alignment key.

⁻ on the socket insert, is placed to the right of the alignment key.

Part numbering system



FGG.3P.306.PLWD75G Straight plug with key and cable seal, 3P series, multipole type with 6 contacts, outer shell in grey PSU, PEEK insulator, male solder contact, D type collet for 6.7 mmm to 7.5 mm diameter cable and grey coloured ring.

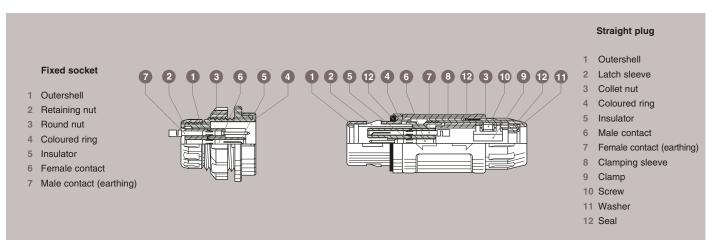
PHG.3P.310.NLWD75G Free socket with key and cable seal, 3P series, multipole with 6 contacts, outer shell in black PSU, PEEK insulator, female solder contact, D type collet for 6.7 mm to 7.5 mm diameter cable and grey coloured ring.

EGG.3P.306.PLWG Fixed socket with key, 3P series, multipole type with 6 contacts, outer shell in grey PSU, PEEK insulator, female solder contact and grey coloured ring.

Note: 1) the variant position of the part number is used to specify the colour of the coloured ring. For grey PSU (material Code P).
2) for the high voltage type «709» use «J» enhanced PEEK material code. The standard colour is grey and nothing is mentionned in the variant position.
3) the letters W or Y are also used for special arrangements.



Standard models (IP61)



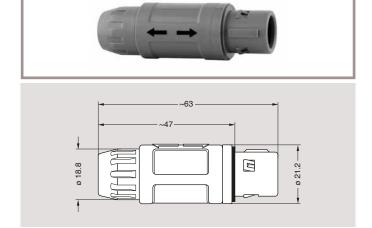
Characteristics	Value	Standards
Average retention force when pulling on the cable 1N = 0.102 kg	120 N	IEC 60512-8 test 15f
Cable retention force (depends on cable construction) 1N = 0.102 kg	100 - 200 N	IEC 60512-9 test 17c

Characteristics	Value	Standards
Endurance (latching)	> 3000 cycles	IEC 60512-5 test 9a
Working temperature range ¹⁾ (PSU)	-50/+150°C	-
Watertightness (mated)	IP61	IEC 60529

. 3 P.

Note: 1) for the type hybrid LV + fibre optic, the temperature is: $-40/+80^{\circ}C$

FGG Straight plug with key and cable seal



Part Number	Cable ø	
	min	max
FGG.3P.•••.PLWD75G	6.7	7.5
FGG.3P.•••.PLWD85G	7.6	8.5
FGG.3P.•••.PLWD95G	8.6	9.5

EGG Fixed socket with key, nut fixing

3 P



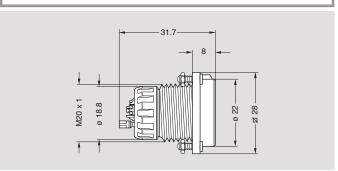
8 8 27 8 8 8 5 7 8 8 8 5 7 8 8 8 9 8 9 8 9 9 8 9 9 9 9 9 9 9 9 9	7.5
Solder + Crimp	Print

	number				Сс	ntact	
Part Number	of	So	lder	Cri	mp	Pr	int
	contacts	N	a max	N	а	С	ø d
EGG.3P.306.PLWG	6+1LV	27	4.7	27	4.7	5.5	0.7
EGG.3P.310.PLWG	10+1LV	27	4.7	27	4.7	5.5	0.7
EGG.3P.314.PLWG	14+1LV	27	4.7	27	4.7	5.5	0.7
EGG.3P.318.PLWG	18+1LV	27	4.7	27	4.7	_	_

Note: for PCB drilling pattern see page 65. Panel hole see page 65.

EBG Fixed socket with key, square flange and screw fixing



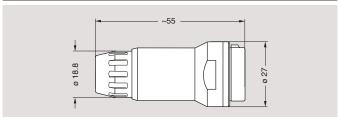


Part Number EBG.3P.306.PLWG EBG.3P.310.PLWG EBG.3P.314.PLWG

Note: for PCB drilling pattern see page 65. Panel hole see page 65.

PHG Free socket with key and cable seal





Part Number	Cable ø			
	min	max		
PHG.3P. ••• .NLWD75N	6.7	7.5		
PHG.3P. ••• .NLWD85N	7.6	8.5		
PHG 3P ••• NI WD95N	8.6	9.5		

 $\textbf{Note:} \ \ \text{the picture shows outershell in black PSU}.$



. 3 P. **Insert configuration**

Multipole, High voltage, Coaxial, Fibre optic, Fluidic

	Male solder contacts	Female solder contacts						Con typ	tact oe			mm)	
	Male crimp contacts	Temale crimp contacts	Reference	Number of contacts	ø A (mm)	Solder bucket ø (mm) ⁵⁾	Solder	Crimp	Print (straight)	Test voltage (kV DC) ¹⁾ Contact-contact	Air clearance $\min^{2)}$ (mm)	Creepage distance \min^{3} (mm)	Rated current (A)
			306	6+1LV	0.9	0.8	•	•	•	5.51	1.95	1.95	6.0
Multipole			310	10+1LV	0.9	0.8	•	•	•	4.67	1.25	1.25	5.0
Multi			314	14+1LV	0.9	0.8	•	•	•	2.40	0.90	0.90	4.0
			318	18+1LV	0.7	0.6	•	_	-	1.84	0.70	0.70	3.0
H.V. Hybrid + LV			709	9+1LV 1HV	0.9	0.8	•	•	-	2.40	0.90	0.90	4.0
Coaxial Hybrid + LV			809	9+1LV 1Coax ⁶⁾	0.9	0.8	•	•	-	2.40	0.90	0.90	4.0
			92H	9+1LV 1FO ⁴⁾	0.9	0.8	•	•	-	2.40	0.90	0.90	4.0
Fibre optic Hybrid + LV			92K	11+1LV 1FO ⁴⁾	0.7	0.6	•	-	-	3.82	0.75	0.75	3.0
Fibre			96H	9+1LV 1FO ⁴⁾	0.9	0.8	•	•	-	2.40	0.90	0.90	4.0
			96K	11+1LV 1FO ⁴⁾	0.7	0.6	•	-	-	3.82	0.75	0.75	3.0
Fluidic Hybrid + LV			033	3Fluid. + 3LV	0.9	_	-	•	-	4.24	1.45	1.45	9.0

Note: 1) depending on specific application and related standard, more restrictive operating voltage may apply, see page 68.
2) shortest distance in air between two conductive parts.
3) shortest distance along the surface of the insulating material between two conductive parts.
4) fibre optic contact must be ordered seperately (see page 61). F2 contact for 92H/92K and F1 contact for 96H/96K.
5) for a given AWG, the diameter of some stranded conductor design is larger than the solder cup diameter (see page 69).
6) configuration 809 use «C» type coaxial contact.



Contact type

Select the type of contact: solder or crimp?

Plug

Туре	Male
solder	W
crimp	Υ

Socket

Туре	Female
solder	W
crimp	Υ
print	N

When should I use crimp rather than solder contacts?

. 3 P.

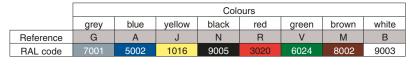
Soldering

- recommended for small volumes
- requires little amount of tooling (soldering iron)
 requires more time

Crimping

- recommended for large volumesno heat is required to make the connection
- for contacts with high density
- for use in high temperature environment
- requires extra tooling (crimping tools)

Colour coding



Note: the RAL colours are indicative and depend on raw material and production process. Colour may differ.

. 3 P.

Easy identification with the assistance of colour coding. Outershell is only available in grey, black or white (see page 55).



Accessories

FGG-EGG Insulator for crimp contacts





Contact configuration	Insulator part number				
Contact configuration	For plug	For socket			
306	FGG.3P.306.ML	EGG.3P.406.ML			
310	FGG.3P.310.ML	EGG.3P.410.ML			
314	FGG.3P.314.ML	EGG.3P.414.ML			

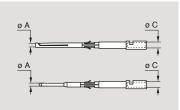
FGG-EGG Crimp contacts, kit with the number of contacts in a tube



Contact	ø A	ø C	Contact part number			
configuration	(mm)	(mm)	Male	Female		
306	0.9	1.1	FGG.3P.306.ZZYT	EGG.3P.306.ZZYT		
310	0.9	1.1	FGG.3P.310.ZZYT	EGG.3P.310.ZZYT		
314	0.9	1.1	FGG.3P.314.ZZYT	EGG.3P.314.ZZYT		

FGG-EGG Earthing contacts

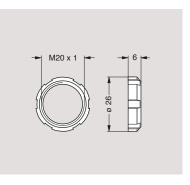




Tyme	ø A	ø C	Contact part number		
Type	(mm)	(mm)	Male	Female	
306 - 310	0.9	2.0	FGG.3P.561.ZZY	EGG.3P.661.ZZY	
314 - 318	0.9	2.0	FGG.3P.561.ZZY	EGG.3P.661.ZZY	
709 - 809	0.9	2.0	FGG.3P.561.ZZY	EGG.3P.661.ZZY	
96H - 92H	0.9	2.0	FGG.3P.561.ZZY	EGG.3P.661.ZZY	
96K - 92K	0.9	2.0	FGG.3P.561.ZZY	EGG.3P.661.ZZY	

GEB Plastic nut

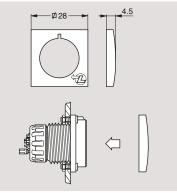




Part Number	Mat.	Colours
GEB.3P.240.UB	PSU	white
GEB.3P.240.UG	PSU	grey
GEB.3P.240.UN	PSU	black

EBG Finishing cover





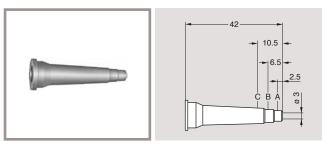
Note: all dimensions are in millimeters

Part Number	Mat.	Colours
EBG.3P.260.UB	PSU	white
EBG.3P.260.UG	PSU	grey
EBG.3P.260.UN	PSU	black

Note: a finishing cover is supplied with all EBG fixed sockets with a square flange. Models EBG sockets, with a square flange, can also be mounted without using the fixing screws.



GMA Bend relief



Part Number	04	Cable ø (mm)		
Part Number Cut		min.	max.	
GMA.3P.050.SN	_	3.0	3.9	
	Α	4.0	4.9	
	В	5.0	5.9	
	С	6.0	7.0	

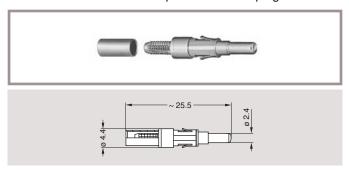
Material: Black thermoplastic rubber

Note: the cable entry of the FGG plugs can be fitted with a flexible bend relief which can accommodate cables of 3 to 7 mm in diameter. The adjustment to the diameter is done by cutting the conical end. The bend relief is mounted inside the nut. The cable must have a sheath with a large enough diameter in order to be held by the clamping system.

Fibre optic contact

For the hybrid type LV + fibre optic, fibre optic contacts must be ordered separately.

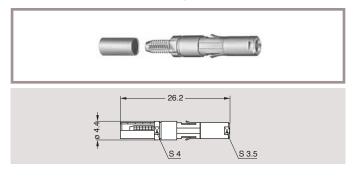
FFS.F1 Male F1 Fibre Optic Contact for plug



Reference	Ferrule inside ø (μm)	Fibre type
FFS.F1.GB1.ACE30	235	HCS
FFS.F1.HB1.AAE30	335	HCS
FFS.F1.JB1.AAE30	435	HCS
FFS.F1.KB1.AAE30	640	HCS
FFS.F1.RB1.AAE30	1100	Polymer

Note: other ferrule inside diameter, consult us.

PSS.F1 Female F1 Fibre Optic Contact for socket



Reference	Ferrule inside ø (μm)	Fibre type
PSS.F1.GB1.ACE30	235	HCS
PSS.F1.HB1.AAE30	335	HCS
PSS.F1.JB1.AAE30	435	HCS
PSS.F1.KB1.AAE30	640	HCS
PSS.F1.RB1.AAE30	1100	Polymer

Ferrule inside

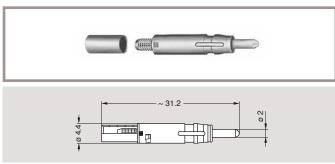
ø (µm)

Fibre type

Note: other ferrule inside diameter, consult us.

Reference

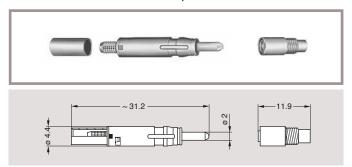
FFS.F2 Male F2 Fibre Optic Contact for plug



FFS.F2.BA2.LCE30	125	9/125
FFS.F2.BB2.LCE30	126	9/125
FFS.F2.BD2.LCE30	128	50/125
FFS.F2.BD2.LCE30	128	62.5/125
FFS.F2.FB2.LCE30	144	100/40

Note: all dimensions are in millimeters.

PSS.F2 Female F2 Fibre Optic Contact for socket



Reference	Ferrule inside ø (μm)	Fibre type
PSS.F2.BA2.LCE30	125	9/125
PSS.F2.BB2.LCE30	126	9/125
PSS.F2.BD2.LCE30	128	50/125
PSS.F2.BD2.LCE30	128	62.5/125
PSS.F2.FB2.LCE30	144	100/40

Note: all dimensions are in millimeters.

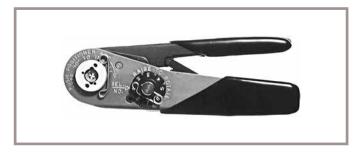
Recommended coaxial cables

	Group ¹⁾		Type	
1	2	3	туре	
•			RG.174A/U	
	•		RG.178B/U	
		•	RG.179B/U	
		•	RG.187A/U	
•			RG.188A/U	
	•		RG.196A/U	
•			RG.316/U	

Note: 1) the cable group number corresponding to the cable must be written in the variant position of the part number (see page 55).

Tooling

DPC.91.701.V Crimping tool

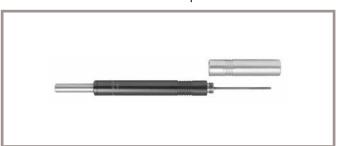


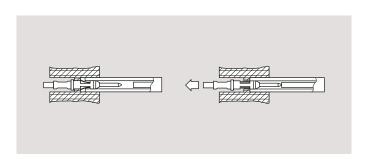
DCE Positioners for crimp contacts





DCC Manual extractor for crimp contacts





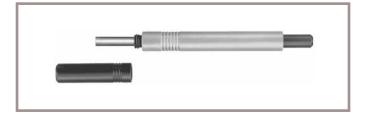
Contact	Contact ø	Conductor	Positioner part number Selector No		Part number	
type	(mm)	AWG	Male	Female	Setting	extractor
306	0.9	20-22-24	DCE.91.093.PVC	DCE.91.093.PVM	6-5-5	DCC.09.05B.LAG
310	0.9	20-22-24	DCE.91.093.PVC	DCE.91.093.PVM	6-5-5	DCC.09.05B.LAG
314	0.9	20-22-24	DCE.91.093.PVC	DCE.91.093.PVM	6-5-5	DCC.09.05B.LAG

Note: this model is used for male and female contacts.

The variance in conductor stranding diameter for the minimum AWG is such that some can have a cross section which is not sufficient to guarantee crimping as per IEC 60352-2 standard. All dimensions are in millimeters.



DCC Manual extractor for coax contact type «C»



Part Number	Contact type
DCC.91.CP1.LAG	809

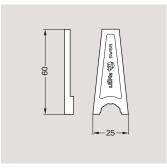
DPE Crimping tool for coax contact type «C»



Part Number	Cable group
DPE.99.103.8K	1-3
DPE.99.103.1K	2

Spanners with notch for securing the collet nut DCP.91.019.HN

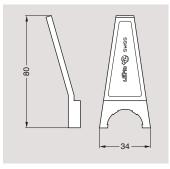




Material: Black polyamide

Spanners for securing the socket nut DCP.91.026.HN





Material: Black polyamide

DCS Polishing tool for fibre optic contact



Part Number	Contact type
DCS.91.F24.LC	F2
DCS.91.F13.LC	F1

Note: all dimensions are in millimeters.

DRV.91.CF2.PN F2 contact fibre optic work station



DPE.99.524.337K Crimp tool for fibre optic contact F1 and F2 type



DCS Microscope adaptor for fibre optic contact



Part Number	Contact type
DCS.91.G90.6E200	F2
DCS 91 G90 6F240	F1

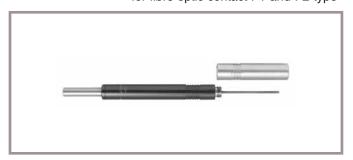
WST.FB.G00.301 Fibre inspection microscope



DCS.F2.035.PN F2 contact alignment device installation/extraction tool



DCC.91.F12.LAG Manual extractor for fibre optic contact F1 and F2 type

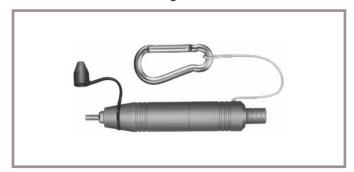


WST Epoxy curing oven for fibre optic contact



Part Number	Voltage
WST.FR.220.VA	220 volts
WST.FR.110.VA	110 volts

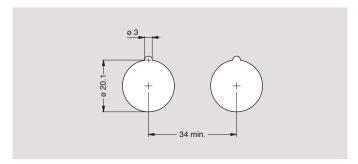
DCS.91.F23.LA Cleaning tool for F2 contact



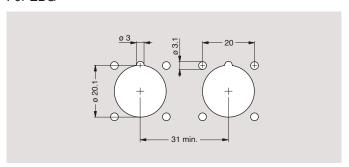


Panel hole

For EGG

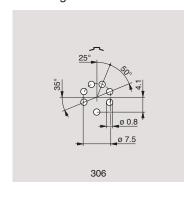


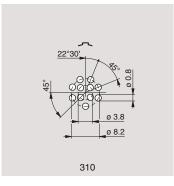
For EBG

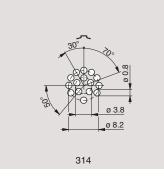


PCB drilling pattern

For straight contacts

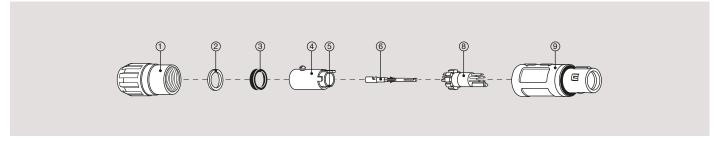


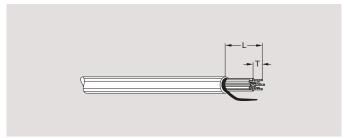




Assembly instructions

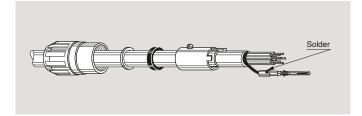
Solder LV contacts



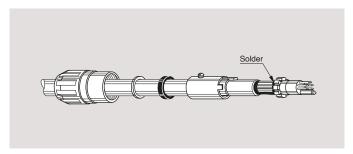


1. Strip the cable according to the lengths given in the table. Tin the conductors. In case of a screened cable separate the braid and twist it apart as shown.

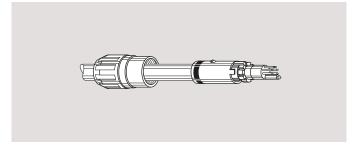
Configuration	Dimensions (mm)		
	L	Т	
306 - 310	13.0	3.0	
314 - 318	13.0	3.0	



2. Slide the collet nut ①, the washer ②, the seal ③ and the clamping sleeve 4. In case of a screened cable solder the braid into the earthing contact 6.

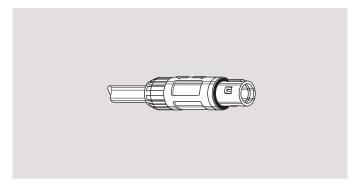


3. In case of a screened cable introduce the earthing contact 6 into the insert 8. Check that contact is correctly located and remains in position when given a gentle pull. Solder conductors into contacts, making sure that neither solder nor flux gets onto the insulator or cable insulation.



- 4.Slide the clamping sleeve $\ensuremath{\mathfrak{P}}$ forward and locate tag $\ensuremath{\mathfrak{S}}$ into one of the insulator slot according to the selected polarization code. Make sure that same code is used for plug and socket.

 Tight the screw of the clamping sleeve ④ to secure the
- cable. Slide washer and seal against clamping sleeve.

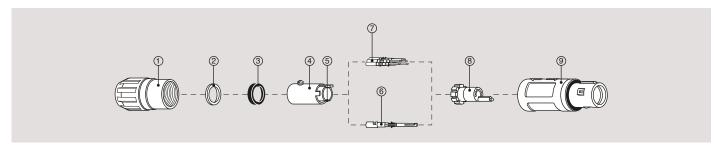


- 5. Push the whole assembly into the shell 9 whilst turning it to insure that the tag 5 is correctly located in the inside slot of the shell. Tighten the collet nut ① to the maximum torque of 1.2 Nm.
 - Socket mounting nut or screws = 2.3 Nm.

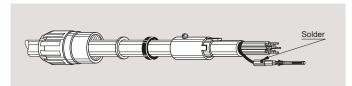
For PSU only:

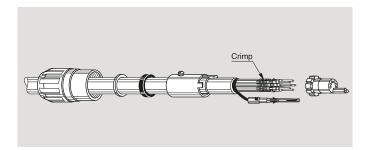
We recommend the use of Vibra-tite VC-6, Araldite CW2243 + Aradur HY 2966, Ablestik FDA2 Trapax or ThreeBond 1401 to secure the connector collet nut. The use of other materials could result in damage to the connector. The only recommended chemical cleaner is Isopropyl Alcohol.

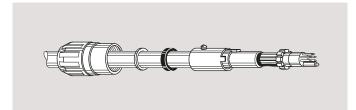
Crimp LV contacts

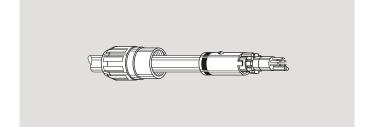


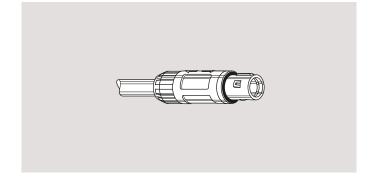












1. Strip the cable according to the lengths given in the table. Tin the conductors. In case of a screened cable separate the braid and twist it apart as shown.

Configuration	Dimensions (mm)		
Configuration	L	Т	
306, 310, 314	19.0	5.4	

- 2. Slide the collet nut ①, the washer ②, the seal ③ and the clamping sleeve ④.
 - In case of a screened cable solder the braid into the earthing contact ©.
- 3. Fix the appropriate positioner (table page 62) in the crimping tool. Set selector to the number corresponding to the conductor AWG as indicated on the positioner label.

Fit conductor into contact @ and make sure it is visible through the inspection hole in the crimp barrel. Slide conductor-contact combination into the open crimping tool; make sure that the contact is fully pushed into the positioner. Close the tool. Remove from crimping tool and check that conductor is secure in contact and shows in inspection hole.

- 4. Now arrange contact-conductor combinations according to the insert marking and locate them into the insert ⑤. Check that all contacts are correctly located and remain in position when given a gentle pull. In case of a screened cable introduce the earthing contact ⑥ into the insert ⑧. Check that contact is correctly located and remains in position when given a gentle pull.
- 5. Slide the clamping sleeve ④ forward and locate tag ⑤ into one of the insulator slot according to the selected polarization code. Make sure that same code is used for plug and socket.

Tight the screw of the clamping sleeve 4 to secure the cable. Slide washer and seal against clamping sleeve.

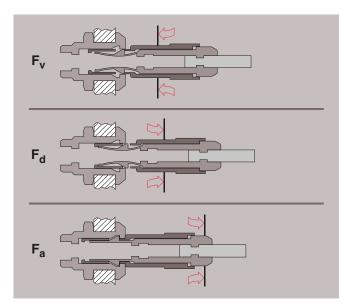
- 6. Push the whole assembly into the shell [®] whilst turning it to insure that the tag [®] is correctly located in the inside slot of the shell. Tighten the collet nut [®] to the maximum torque of 1.2 Nm.
 - Socket mounting nut or screws = 2.3 Nm.

For PSU only:

We recommend the use of Vibra-tite VC-6, Araldite CW2243 + Aradur HY 2966, Ablestik FDA2 Trapax or ThreeBond 1401 to secure the connector collet nut. The use of other materials could result in damage to the connector. The only recommended chemical cleaner is Isopropyl Alcohol.



Mechanical latching characteristics



F_v: average latching force

F_d: average unmating force with axial pull on the outer release sleeve

Fa: average retention force for straight pull on the collet nut

PSU shell material

Force	Series		
(N)	1P	2P	3P
Fv	8.0	5.5	7.5
Fd	8.0	8.5	17.0
Fa	100	150	120

PEI shell material

п				
ı	Force	Series		
	(N)	1P	2P	
	Fv	6.5	6.0	
	Fd	6.5	9.0	
	Fa	120	100	

Notes: 1N = 0.102 kg. Mechanical endurance: 1000 cycles.

Notes: The forces were measured on PSU outer shells not fitted with contacts. The mechanical endurance represents the number of cycles after which the latching system is still effective (1 cycle = 1 latching/unlatching – 300 cycles per hour). The values were measured according to the standard IEC 60512-7, test 13a. 2P, for standard models only.

Contact resistance with relation to the number of mating cyles

(measured according to IEC 60512-2 test 2a)

Average values measured after the mating cycles and the salt spray test according to IEC 60512-6 test 11f.

A ø	Contact resistance (mΩ)
(mm)	1000 cycles
0.5	< 8.5
0.7	< 6.5
0.9	< 4.5
1.3	< 2.8
1.6	< 2.9
2.0	< 2.6

Note: 1) 21 days at 95% RH according to IEC 60068-2-3.

Insulation resistance between the contacts and contact/shell

(measured according to IEC 60512-2 test 3a)

Inculating material	Multipole	
Insulating material	PEEK	
new	> 10 ¹² Ω	
after humidity test ¹⁾	> 10 ¹⁰ Ω	

Test voltage

Test voltage (Ue):

(measured according to the IEC 60512-2 test 4a standard)

It corresponds to 75% of the mean breakdown voltage.

Test voltage is applied at 500 V/s and the test duration is 1 minute.

This test has been carried out with a mated plug and socket, with power supply only on the plug end.

The operating voltage value definition is at the entire responsibility of the customer who defines this value according to the safety factors that they apply to their equipment and system.

For a number of applications, safety requirements for electrical appliances are more severe with regard to operating

In such cases operating voltage is defined according to creepage distance and air clearance between live parts. Please consult us for the choice of a connector by indicating the safety standard to be met by the product.



Technical tables

Table of American Wire Gauge

	Constr	ruction	ø wire	max	Wire s	ection
AWG	Strand	AWG/	, ,	4. \	(0)	, , ,
	nb	strand	(mm)	(in)	(mm ²)	(sq in)
0	259	24	11.277	0.444	52.90	0.0820
1	817	30	9.702	0.382	41.40	0.0641
2	259	26	8.89	0.35	33.20	0.0514
4	133	25	6.9596	0.274	21.5925	0.0335
6	133	27	5.5118	0.217	13.5885	0.0211
8	168	30	4.4450	0.175	8.5127	0.0132
8	133	29	4.3942	0.173	8.6053	0.0133
10	105	30	3.3020	0.13	5.3204	0.0082
10	37	26	2.9210	0.115	4.7397	0.0073
10	1	10	2.6162	0.103	5.2614	0.0082
12	37	28	2.3114	0.091	2.9765	0.0046
12	19	25	2.3622	0.093	3.0847	0.0048
12 ¹⁾	7	20	2.5400	0.10	3.6321	0.0056
12	1	12	2.0828	0.082	3.3081	0.0051
14	41	30	2.0574	0.081	2.0775	0.0032
14	19	27	1.8542	0.073	1.9413	0.0030
14 ¹⁾	7	22	2.0828	0.082	2.2704	0.0035
14	1	14	1.6510	0.065	2.0820	0.0032
16 ¹⁾	65	34	1.5748	0.062	1.3072	0.0020
16	26	30	1.5748	0.062	1.3174	0.0020
16	19	29	1.4986	0.059	1.2293	0.0019
16 ¹⁾	7	24	1.5494	0.061	1.4330	0.0022
16	1	16	1.3208	0.052	1.3076	0.0020
18 ¹⁾	65	36	1.2700	0.05	0.8234	0.0013
18 ¹⁾	42	34	1.2700	0.05	0.8447	0.0013
18	19	30	1.3208	0.052	0.9627	0.0015
18	16	30	1.2954	0.051	0.8107	0.0013
18	7	26	1.2700	0.05	0.8967	0.0014
18	1	18	1.0414	0.041	0.8229	0.0013
20 1)	42	36	1.0160	0.04	0.5320	8.2x10 ⁻⁴
20	19	32	1.0414	0.041	0.6162	0.0010
20	10	30	1.0160	0.04	0.5067	7.9x10 ⁻⁴
20	7	28	0.9906	0.039	0.5631	8.7x10 ⁻⁴
20	1	20	0.8382	0.033	0.5189	8.0x10 ⁻⁴
22	19	34	0.8382	0.033	0.3821	5.9x10 ⁻⁴
22	7	30	0.7874	0.031	0.3547	5.5x10 ⁻⁴
22	1	22	0.6604	0.026	0.3243	5.0x10 ⁻⁴
24 1)	42	40	0.6604	0.026	0.2045	3.2x10 ⁻⁴
24	19	36	0.6858	0.027	0.2407	3.7x10 ⁻⁴
24	7	32	0.6350	0.025	0.2270	3.5x10 ⁻⁴
24	1	24	0.5588	0.022	0.2047	3.2x10 ⁻⁴
26	19	38	0.5588	0.022	0.1540	2.4x10 ⁻⁴
26	7	34	0.5080	0.02	0.1408	2.2x10 ⁻⁴
26	1	26	0.4318	0.017	0.1281	2.0x10 ⁻⁴
28 1)	19	40	0.4318	0.017	0.0925	1.4x10 ⁻⁴
28	7	36	0.4064	0.016	0.0887	1.4x10 ⁻⁴
28	1	28	0.3302	0.013	0.0804	1.2x10 ⁻⁴
30	7	38	0.3302	0.013	0.0568	8.8x10 ⁻⁵
30	1	30	0.2794	0.011	0.0507	7.9x10 ⁻⁵
32	7	40	0.2794	0.011	0.0341	5.3x10 ⁻⁵
32	1	32	0.2286	0.009	0.0324	5.0x10 ⁻⁵
34	1	34	0.1693	0.007	0.0201	3.1x10 ⁻⁵
36	1	36	0.127	0.005	0.0127	2.0x10 ⁻⁵
38	1	38	0.1016	0.004	0.0081	1.3x10 ⁻⁵
40	1	40	0.078	0.003	0.0049	7.5x10 ⁻⁶

Table of wire gauges according to IEC-60228 standard

Conductor no x Ø (mm)	Max Ø (mm)	Max Ø (in)	Section (mm²)	Section (sq in)
196x0.40	7.50	0.295	25.00	0.0387
7x2.14	6.10	0.240	25.00	0.0387
125x0.40	6.00	0.236	16.00	0.0248
7x1.72	4.90	0.192	16.00	0.0248
1x4.50	4.50	0.177	16.00	0.0248
80x0.40	4.70	0.155	10.00	0.0155
7x1.38	3.95	0.155	10.00	0.0155
1x3.60	3.60	0.141	10.00	0.0155
84x0.30	3.70	0.145	6.00	0.0093
7x1.50	3.15	0.124	6.00	0.0093
1x2.76	2.76	0.108	6.00	0.0093
56x0.30	2.80	0.110	4.00	0.0062
7x0.86	2.58	0.098	4.00	0.0062
1x2.25	2.25	0.082	4.00	0.0062
50x0.25	2.15	0.084	2.50	0.0038
7x0.68	2.04	0.080	2.50	0.0038
1x1.78	1.78	0.070	2.50	0.0038
30x0.25	1.60	0.062	1.50	0.0023
7x0.52	1.56	0.061	1.50	0.0023
1x1.4	1.40	0.055	1.50	0.0023
32x0.20	1.35	0.053	1.00	0.0015
7x0.43	1.29	0.050	1.00	0.0015
1x1.15	1.15	0.045	1.00	0.0015
42x0.15	1.20	0.047	0.75	0.0011
28x0.20	1.15	0.045	0.75	0.0011
1x1.0	1.00	0.039	0.75	0.0011
28x0.15	0.95	0.037	0.50	7.7x10 ⁻⁴
16x0.20	0.90	0.035	0.50	7.7x10 ⁻⁴
1x0.80	0.80	0.031	0.50	7.7x10 ⁻⁴
7x0.25	0.75	0.029	0.34	5.2x10 ⁻⁴
1x0.60	0.60	0.023	0.28	4.3x10 ⁻⁴
14x0.15	0.75	0.029	0.25	3.8x10 ⁻⁴
7x0.20	0.65	0.023	0.22	3.4x10 ⁻⁴
18x0.10	0.50	0.019	0.14	2.1x10 ⁻⁴
14x0.10	0.40	0.015	0.11	1.7x10 ⁻⁴
21x0.07	0.40	0.015	0.09	1.3x10 ⁻⁴
14x0.10	0.40	0.015	0.09	1.3x10 ⁻⁴

Note: 1) not included in the standard



Product safety notice

PLEASE READ AND FOLLOW ALL INSTRUCTIONS 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 catalogue however these may be influenced by PC board design and / or wiring harnesses.

The test voltage indicated in the catalogue 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

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

CE marking (é 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. MARNING (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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Notes:



Notes:



