

S Series Connectors 12G-SDI 4K UltraHD



Precision modular connectors to suit your application

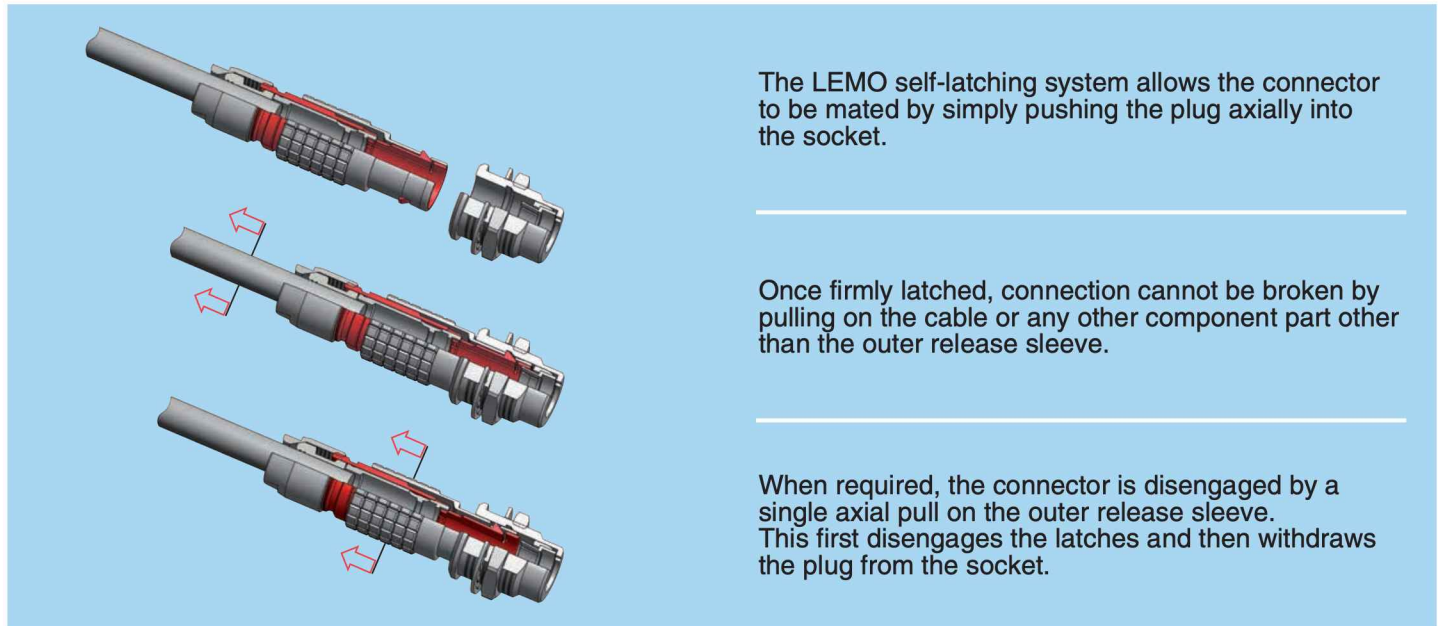
Since its creation in Switzerland in 1946 the LEMO Group has been recognized as a global leader of circular Push-Pull connectors and connector solutions. Today LEMO and its affiliated companies, REDEL and COELVER, are active in more than 80 countries with the help of over 40 subsidiaries and distributors.

Over 90000 connectors

The modular design of the LEMO range provides over 90000 connectors from miniature $\varnothing$ 3 mm to $\varnothing$ 50 mm, capable of handling cable diameters up to 30 mm and for up to 114 contacts. This vast portfolio enables you to select the ideal connector configuration to suit almost any specific requirement in most markets, including medical devices, test and measurement instruments, machinery, audio video broadcast, telecommunications and military.

LEMO's Push-Pull Self-Latching Connection System

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



UL Recognition

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

CE marking

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

RoHS

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

Product safety notice & disclaimers

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

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

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

S Series

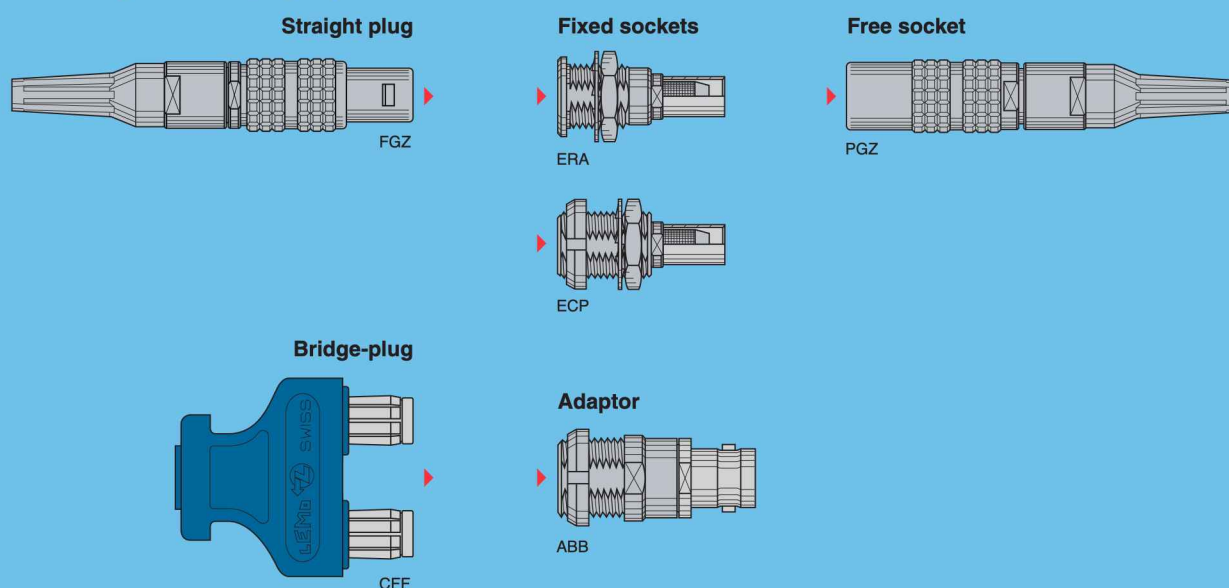
The 1S.275 is a robust push-pull connector series specially designed for 12G-SDI 4K UHD applications. LEMO has developed these connectors in response to the rapidly advancing technology landscape and market demands for high transmission rates of 12 Gbit/s meeting the 12G-SDI transmission standards.

These products meet the 12G-SDI transmission standard using a compact single link connection, enabling higher panel density thus reducing the number of cables/connectors finding its main applications for UHD displays in the Audio Video Broadcasting (AVB) and medical imaging platforms such as endoscopy and laparoscopy, amongst others.

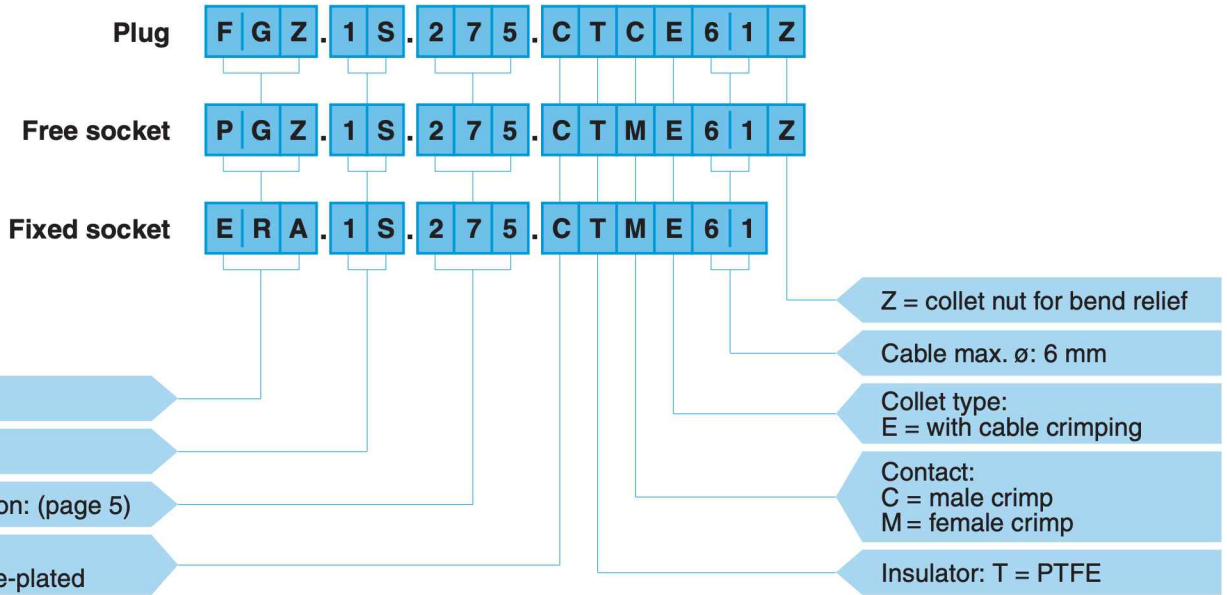
The main features are as follows:

- Security of the Push-Pull self-latching
- Compact design for space savings
- 360° screening for full EMC shielding
- Bend relief colour coding
- Crimp contacts
- SMPTE ST 2082-1 compliant
- Finger proof
- UL compliant
- Knurled crimping collet for improved cable retention
- Low VSWR/Return loss

Metal housing models (page 3)



Part Numbering System



FGZ.1S.275.CTCE61Z = straight plug with cable crimping, 1S series, coaxial 75 Ω , outer shell in chrome-plated brass, PTFE insulator, male crimp contact, E type collet for a 6.1 mm diameter cable and nut for fitting a bend relief.

PGZ.1S.275.CTME61Z = free socket with cable crimping, 1S series, coaxial 75 Ω , outer shell in chrome-plated brass, PTFE insulator, female crimp contact, E type collet for a 6.1 mm diameter cable and nut for fitting a bend relief.

ERA.1S.275.CTME61 = fixed socket with cable crimping, nut fixing, 1S series, coaxial 75 Ω , outer shell in chrome-plated brass, PTFE insulator, female crimp contact, E type collet for a 6.1 mm diameter.

Technical Characteristics

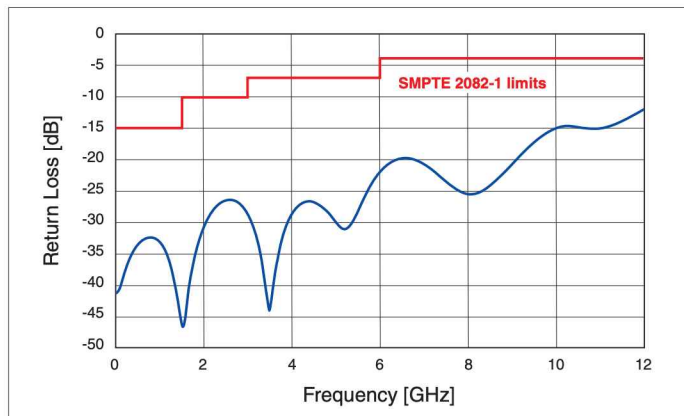
Mechanical and Climatical

Characteristics	Value	Standard
Endurance	> 1000 cycles	IEC 60512-5 test 9a
Humidity	up to 95% at 60°C	
Temperature range	- 55°C, + 260°C ¹⁾	
Salt spray corrosion test	> 1000h	IEC 60512-6 test 11f
Protection index (mated)	IP 50	IEC 60529
Climatical category	55/175/21	IEC 60068-1
Latch retention force (average)	250 N	

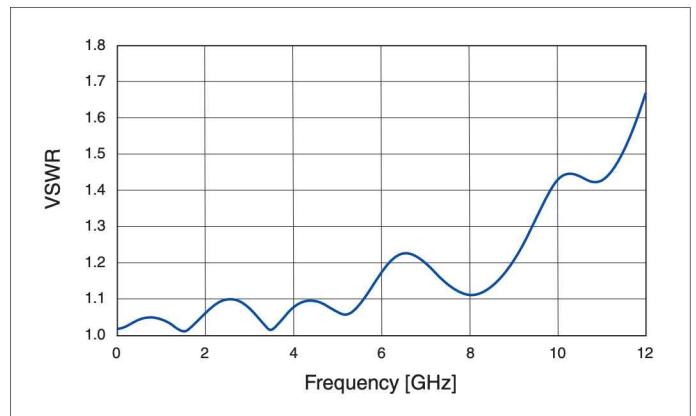
Electrical

Characteristics	Value
Impedance	75 Ω
Central contact resistance	≤ 8 m Ω
Insulation	> 10 ¹² Ω
Test voltage (Ue)	1.7 kV DC
Rated current	3 A
Shell electrical continuity	≤ 3.5 m Ω

Note: ¹⁾ operating temperature for CFF.1S.275.PTCA12G: - 20°C, + 90°C.



Measured return Loss against frequency curve for fixed socket and plug

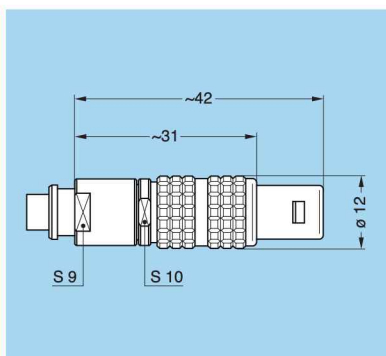


Measured voltage Standing Wave Ratio against frequency curve for fixed socket and plug



Models

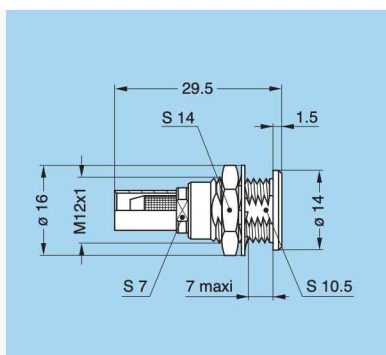
FGZ Straight plug, cable crimping and nut for fitting a bend relief



Part number

FGZ.1S.275.CTCE61Z

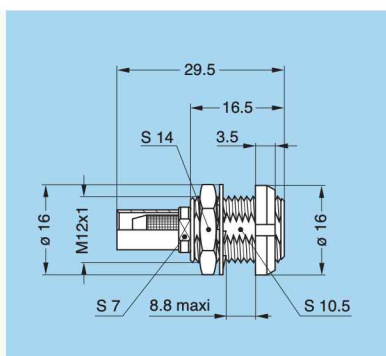
ERA Fixed socket, cable crimping and nut fixing



Part number

ERA.1S.275.CTME61

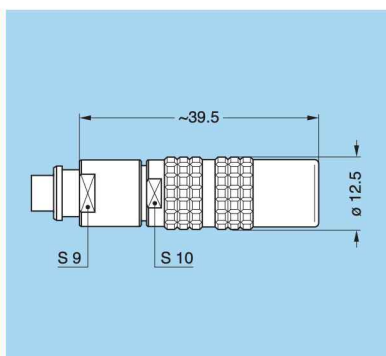
ECP Fixed socket with two nuts, long threaded shell (back panel mounting)



Part number

ECP.1S.275.CTME61

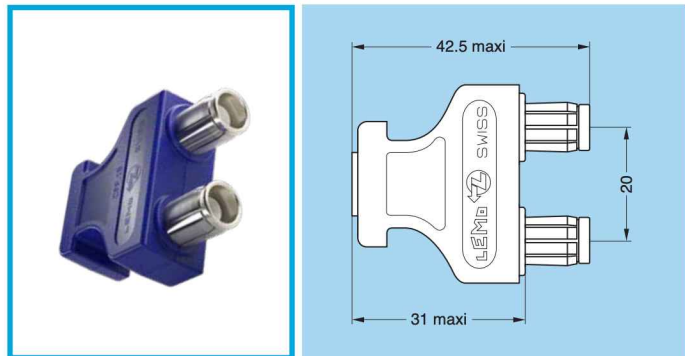
PGZ Free socket, cable crimping and nut for fitting a bend relief



Part number

PGZ.1S.275.CTME61Z

CFF Bridge-plug without monitoring socket

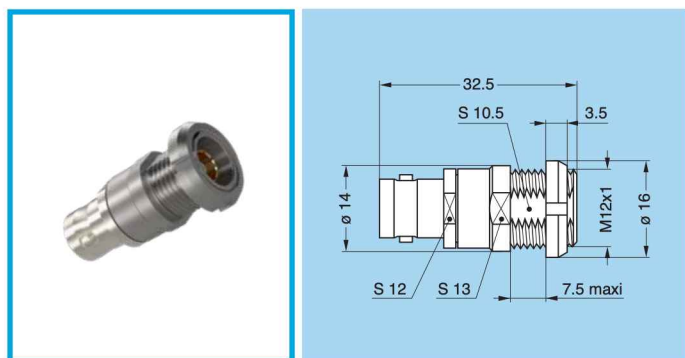


Part number

CFF.1S.275.PTCA12G

Note: In order to provide the user with a coding system, the bridge plug housing is available in several colours. The letter «A» of the part number indicates the blue colour of the bridge plug. For ordering a bridge plug with another colour, see table on page 9 and replace the letter «A» by the letter of the required colour.

ABB Adaptor from LEMO fixed socket to BNC socket

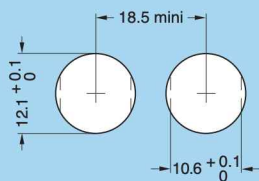


Part number

ABB.1S.275.NTM

Panel cut-out

ERA - ECP - ABB





Insert configuration

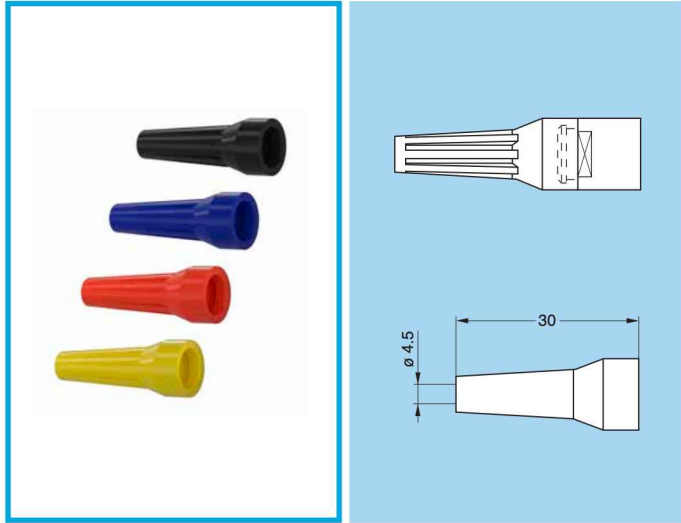
Coaxial

		Reference	Impedance (Ω)	$\varnothing$ A (mm)	Conductor $\varnothing$ maximum	Dielectric $\varnothing$ maximum	Sheath $\varnothing$ maximum	VSWR (f=GHz)	Test voltage (kV DC)	Rated current (A)
1S		275	75	0.6	0.73	2.93	6.1	1)	1.7	3

Note: 1) see VSWR graph on page 2.

Accessories

GMA Bend relief



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

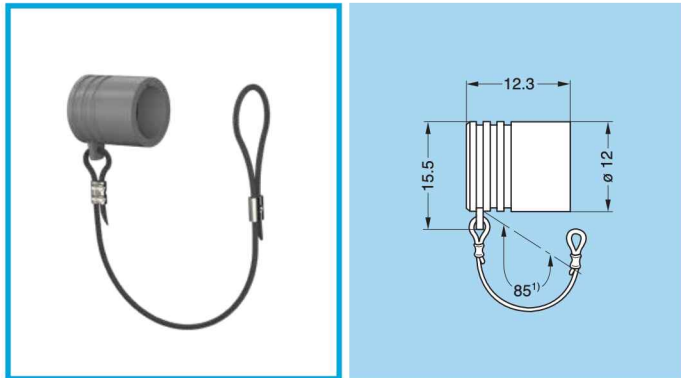
The cable entry of plug and socket models with cable collet can be protected by a grey sleeve made of polyurethane. This accessory can be supplied according to the part number below.



Part number	Cable $\varnothing$ (mm)		Collet nut for bend relief
	min	max	
GMA.1B.045.DG	4.5	4.9	FFM.1B.131.LC

Note: The last letter «G» of the part number indicates the grey colour of the bend relief. For ordering a bend relief with another colour, see table on page 9 and replace the letter «G» by the letter of the required colour.

BFG Plug caps



- Body material: Polyoxymethylene (POM) grey (or black)
- Cord material: Polypropylene core and PVC coat, grey (or black)
- Gasket material: Silicone rubber
- Maximum operating temperature: 100°C
- Watertightness: IP51 according to IEC 60529

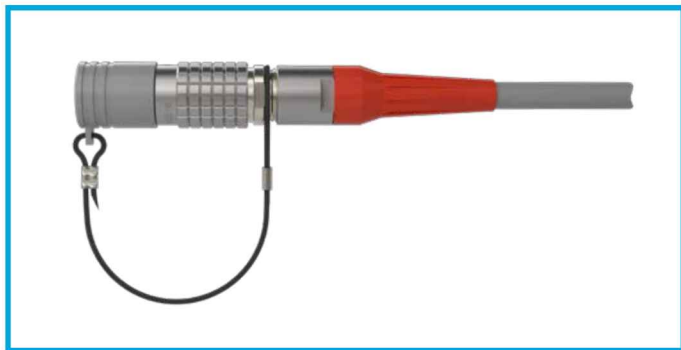
Part number

BFG.1B.100.PCZG

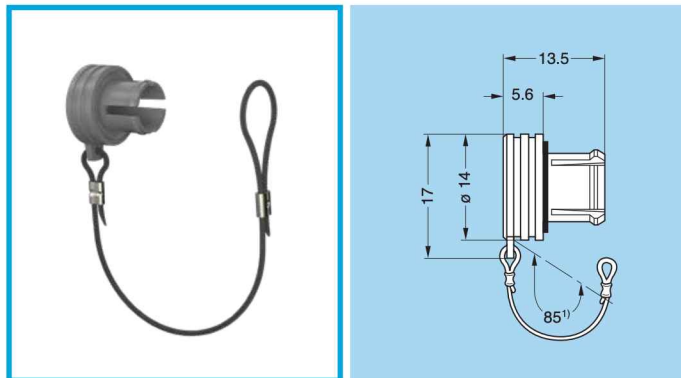
Note: ¹⁾ the tolerance on this dimension is ± 5 mm. This cap is available only with an alignment key (G). Upon request this cap can be supplied in black and the last letter «G» of the part number should be replaced with «N».

Fitting the cord

Slide the plug into the loop of the cord. Place the loop into the groove in front of the collet nut and tighten the loop.



BRD Blanking caps for free sockets



- Body material: Polyoxymethylene (POM) grey (or black)
- Cord material: Polypropylene core and PVC coat, grey (or black)
- Gasket material: Silicone rubber
- Maximum operating temperature: 100°C
- Watertightness: IP61 according to IEC 60529

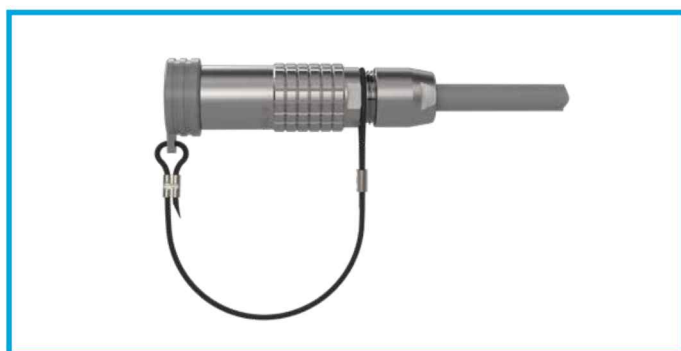
Part number

BRD.1B.200.PCSG

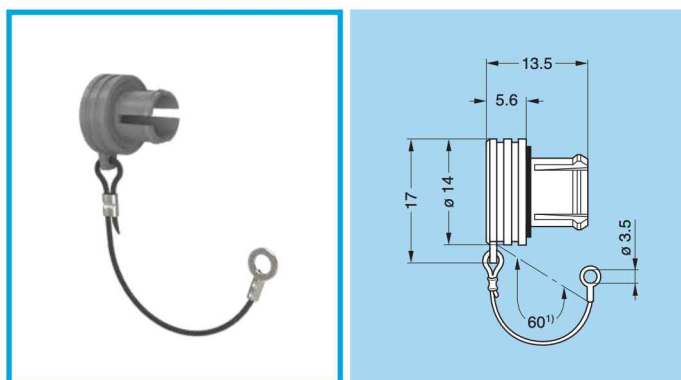
Note: 1) the tolerance on this dimension is ± 5 mm.
On request this cap is available in black. If required, replace the last letter «G» of the part number by «N».

Fitting the cord

Slide the socket into the loop of the cord.
Place the loop into the groove in front of the collet nut and tighten the loop.



BRA Blanking caps for fixed sockets and free straight sockets



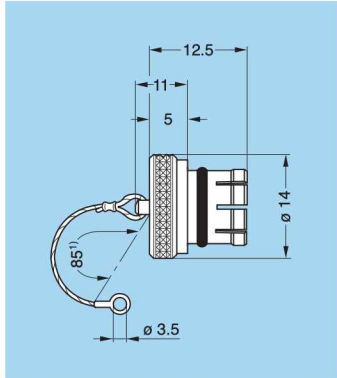
- Body material: Polyoxymethylene (POM) grey (or black)
- Cord material: Polypropylene core and PVC coat, grey (or black)
- Gasket material: Silicone rubber
- Maximum operating temperature: 100°C
- Watertightness: IP61 according to IEC 60529

Part number

BRA.1B.200.PCSG

Note: 1) the tolerance on this dimension is ± 5 mm.
These caps are suitable for use with any alignment key configuration. On request this cap can be supplied in black. If so, replace the last letter «G» of the part number by «N».

BRE Blanking caps for fixed sockets



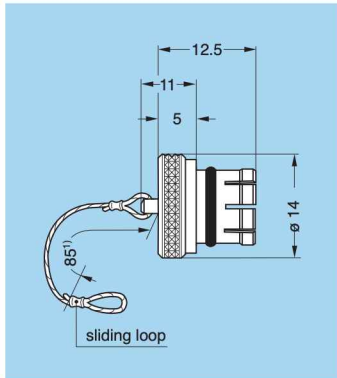
- Body material: Nickel-plated brass (Ni 3 µm)
- Lanyard material: Stainless steel
- Crimp ferrule material: Nickel-plated brass + polyolefin
- O-ring material: Silicone rubber or FPM
- Operating temperature: -50°/135°C (Silicone rubber & Polyolefine)
- Watertightness: IP61 according to IEC 60529 for S series

Part number

BRE.1S.200.NAS

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

BRF Blanking caps for free sockets



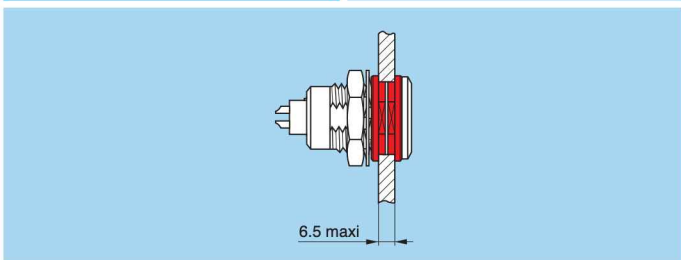
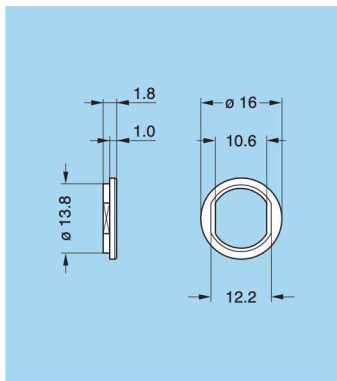
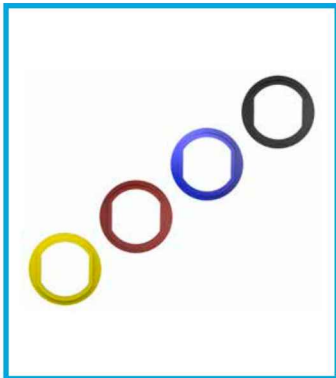
- Body material: Nickel-plated brass (Ni 3 µm)
- Lanyard material: Stainless steel
- Crimp ferrule material: Nickel-plated brass + polyolefin
- O-ring material: Silicone rubber or FPM
- Operating temperature: -50°/135°C (Silicone rubber & Polyolefine)
- Watertightness: IP61 according to IEC 60529 for S series

Part number

BRF.1S.200.NAS

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

GRA Insulating washers



Sockets or plugs mounted on panels can be fitted with insulating washers. The nine colours available combined with those for the bend reliefs makes colour coding possible.

Part number

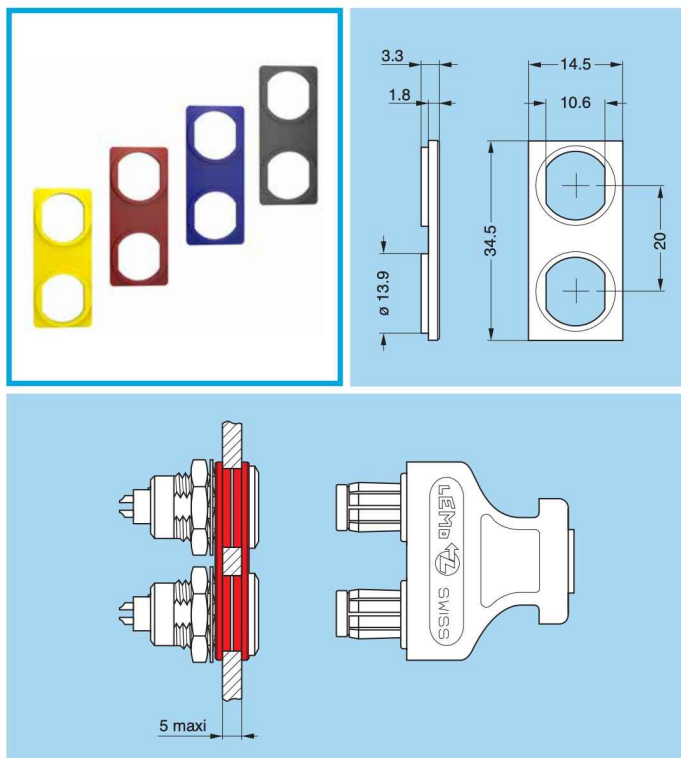
GRA.1S.269.GG

Caution: These insulating washers can be used with fixed and free sockets with across flat dimension S1 equivalent to the S dimension of the washer.

- Material: Polyamide
- Maximum operating temperature: 90°C

Note: The last letter «G» of the part number indicates the grey colour of the insulating washer. For ordering an insulating washer with another colour, see table on page 9 and replace the letter «G» by the letter of the required colour.

GRC Double panel washers



Double panel washers have been designed to make the drilling of panel holes easier for mounting fixed and free sockets. The combination of the nine different colours of the double panel washers and of the bend reliefs makes colour coding possible.

Part number

GRC.1B.260.HG

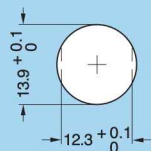
Caution: These double panel washers can be used with fixed or free sockets with across flat dimension S1 equivalent to the S dimension of the washer.

- Material: Polyamide
- Maximum operating temperature: 90°C

Note: The last letter «G» of the part number indicates the grey colour of the double panel washer. For ordering an double panel washer with another colour, see table on page 9 and replace the letter «G» by the letter of the required colour.

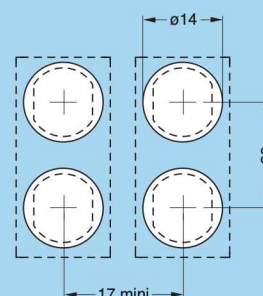
Panel cut-out for mounting with insulating washer

GRA



Panel cut-out for mounting with double panel washer

GRC



Colour table for bridge plug, bend relief, insulating washers and double panel washers

Ref.	Colour	Ref.	Colour	Ref.	Colour
A	blue	M	brown	S	orange
G	grey	N	black	V	green
J	yellow	R	red		

Tooling

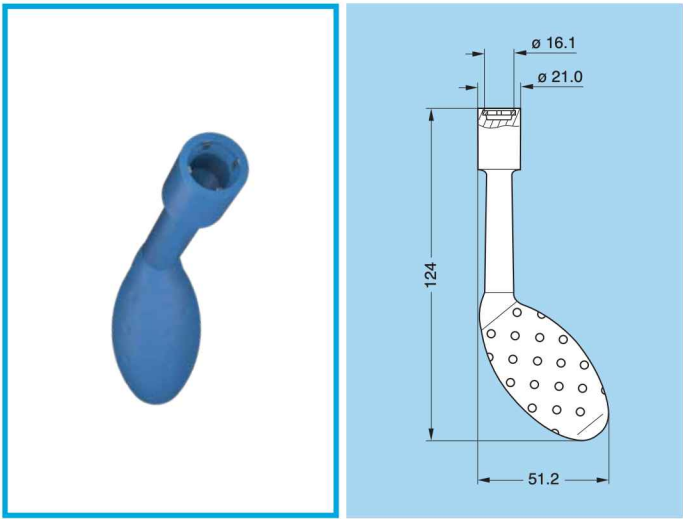
DPE Crimping tool with dies for coax cables



Part number
DPE.99.127.0K

Note: tool used for contact and tube crimping.

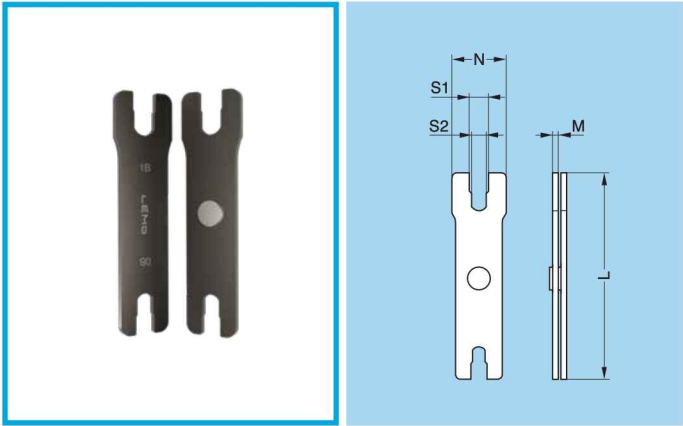
DCH Spanners for notched nuts



Part number	Part number of the nut
DCH.91.161.PA	GEG.1S.240.LC

● Material: blue polyurethane

DCP Set of flat spanners for collet nuts



Part number	Dimensions (mm)				
	L	M	N	S1	S2
DCP.91.001.TN	95	2.5	21	8.1	7.1
	95	2.5	25	10.1	9.1
DCP.91.023.TN	115	3.0	30	13.1	12.1
	115	3.0	35	15.1	14.1

● Material: blackened steel

Recommended cable

To guarantee an optimum performance for the cable-connector solution at high frequencies, LEMO recommends to use the Draka ULTRA HD PRO 50 UHD cable which is specifically designed for 12 Gbit/s, 4K (SMPTE 2082) ultra high definition transmission (UHD).

Matrix to determine max. transmission length

Draka video cables	Single link 12 Gb/s (m)	Dual link 6 Gb/s (m)	Quad link 3 Gb/s (m)	OD (mm)
ULTRA HD PRO 50 UHD ¹⁾	50	74	108	4.5

Note: ¹⁾ the maximum transmission distances are based on 40 dB maximum loss at half clock frequency.

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. LEMO is specialized in cable assemblies and is available to provide wired and certified solutions. Please don't hesitate to contact us for quotes.

Product safety notice

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

1. SHOCK AND FIRE HAZARD

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

2. HANDLING

Connectors and their components should be visually inspected for damage prior to installation and assembly. Suspect components should be rejected or returned to the factory for verification.

Connector assembly and installation should only be carried out by properly trained personnel. Proper tools must be used during installation and / or assembly in order to obtain safe and reliable performance.

3. USE

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

4. TEST AND OPERATING VOLTAGES

The maximum admissible operating voltage depends upon the national or international standards in force for the application in question. Air and creepage distances impact the operating voltage; reference values are indicated in the catalog however these may be influenced by PC board design and / or wiring harnesses.

The test voltage indicated in the catalog is 75% of the mean breakdown voltage; the test is applied at 500 V/s and the test duration is 1 minute.

5. CE MARKING

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

CE marking  applies to complete products or equipment, **but not to electromechanical components, such as connectors.**

6. PRODUCT IMPROVEMENTS

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

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

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

Disclaimers

LEMO works constantly to improve the quality of its products; the information and illustrations figuring in this document may therefore vary and are not binding. In any case, LEMO makes no specific warranty of merchantability, fitness for a particular purpose, third party components as such or included in assembly, non-infringement, title, accuracy, completeness, or security. The user is fully responsible for his products and applications using LEMO component.

In no event shall LEMO, its affiliates, officers, agents or employees be liable for any incidental, indirect, special or consequential damages in connection with the products or services provided by LEMO, including (without limitation) loss of profits or revenues, interruption of business, loss of use of the products or any associated equipment, materials, components or products, damages to associated equipment or in combination with other components, materials.

Reproduction of significant portions of LEMO information in LEMO data books or data sheets is permissible only if reproduction is without alteration and is accompanied by all associated warranties, conditions, limitations, and notices. LEMO is not responsible or liable for such altered documentation. Information of third parties may be subject to additional restrictions.



HEADQUARTERS

SWITZERLAND

LEMO SA
Tel: +41 21 695 16 00
info@lemo.com

SUBSIDIARIES

AUSTRIA

LEMO ELEKTRONIK GESMBH
Tel: +43 1 914 23 20 0
salesAT@lemo.com

BRAZIL

LEMO LATIN AMERICA LTDA
Tel: +55 11 94242 4293
info-la@lemo.com

CANADA

LEMO CANADA INC
Tel: +1 905 889 56 78
info-canada@lemo.com

CHINA / HONG KONG

LEMO ELECTRONICS
(SHANGHAI) CO., LTD
Tel: +86 21 5899 7721
cn.sales@lemo.com

DENMARK

LEMO DENMARK A/S
Tel: +45 45 20 44 00
info-dk@lemo.com

FRANCE

LEMO FRANCE SÀRL
Tel: +33 1 60 94 60 94
info-fr@lemo.com

GERMANY

LEMO ELEKTRONIK GMBH
Tel: +49 89 42 77 03
info@lemo.de

HUNGARY

REDEL ELEKTRONIKA KFT
Tel: +36 1 421 47 10
info-hu@lemo.com

ITALY

LEMO ITALIA SRL
Tel: +39 02 66 71 10 46
sales.it@lemo.com

JAPAN

LEMO JAPAN LTD
Tel: +81 3 54 46 55 10
info-jp@lemo.com

NETHERLANDS / BELGIUM

LEMO CONNECTORS
NEDERLAND B.V.
Tel: +31 232 06 07 01
info-nl@lemo.com

NORWAY / ICELAND

LEMO NORWAY A/S
Tel: +47 22 91 70 40
info-no@lemo.com

SINGAPORE

LEMO ASIA PTE LTD
Tel: +65 6476 0672
sg.sales@lemo.com

SPAIN / PORTUGAL

IBERLEMO SAU
Tel: +34 93 860 44 20
info-es@lemo.com

SWEDEN / FINLAND

LEMO NORDIC AB
Tel: +46 8 635 60 60
info-se@lemo.com

SWITZERLAND

LEMO VERKAUF AG
Tel: +41 41 790 49 40
ch.sales@lemo.com

UNITED ARAB EMIRATES

LEMO MIDDLE EAST
CONNECTORS LLC
Tel: +971 55 222 36 77
info-me@lemo.com

UNITED KINGDOM

LEMO UK LTD
Tel: +44 1903 23 45 43
lemouk@lemo.com

USA

LEMO USA INC
Tel: +1 707 578 88 11
info-us@lemo.com

USA

NORTHWIRE INC
Tel: +1 715 294 21 21
cableinfo_northwire@lemo.com

DISTRIBUTORS

ARGENTINA
AUSTRALIA
BRAZIL
CHILE

COLOMBIA / PERU
CZECH REPUBLIC
GREECE
INDIA

ISRAEL
NEW ZEALAND
POLAND
SOUTH AFRICA

SOUTH KOREA
TURKEY
UKRAINE

CATALOG ONLINE



WWW.LEMO.COM