General Production Programme

Connectors

- Unipole from 2 to 150 Amps
- Coaxial 50 and 75 Ω
- ❁ Coaxial 50 Ω (NIM-CAMAC)
- Coaxial 50 Ω for frequency up to 12 GHz
- Coaxial 50 Ω SMA
- Multicoaxial 50 and 75 Ω
- Multipole from 2 to 106 contacts
- High Voltage 3, 5, 8, 10, 15, 30, and 50 kV dc
- Multi High Voltage 3, 5, and 10 kV dc
- Triaxial 50 and 75 Ω
- Quadrax
- Mixed: High Voltage (HV) + Low Voltage (LV)
- Mixed: Coax + LV
- Thermocouple
- Multithermocouple
- Fibre optic singlemode
- Fibre optic multimode
- Mixed: fibre optic + LV
- For OPTABALL® fibre optic singlemode
- Fluidic
- Multifluidic
- Mixed: fluidic + LV
- Subminiature
- Miniature
- Plastic
- ❁ Printed circuit board
- Remote handling
- ❁ Watertight
- ❁ Sealed (pressure and/or vacuum)
- ❁ With plastic outer shell
- ❁ With aluminium outer shell
- With stainless steel outer shell
- ❁ With special radiation resistant insulator material
- With screw thread coupling for very high pressure
- ❁ With microswitch

Adaptors

- ❁ For BNC, C, UHF, N, CINCH connectors
- ❁ For GEN-RADIO, SMA connectors
- For TNC connectors

Patch Panels

- For audio-mono applications: triax or 3 contacts (with or without commutator)
- For audio-stereo applications: quadrax or 6 contacts
- For video applications: coax 75 Ω
- For video HDTV applications: 3 coax 75 Ω + 2LV
- For fibre optic applications

Accessories

- Insulator for crimp contacts
- Crimp contacts
- Coaxial contacts
- Fibre optic contacts
- Fibre optic ferrules
- ❁ Caps
- ❁ Strain relief
- ❁ Insulating washers
- Double plastic panel washers
- ❁ Locking washers
- ❁ Tapered washers
- ❁ Hexagonal nuts
- ❁ Round nuts
- ❁ Conical nuts
- ❁ Earthing washers
- Lead-through with cable collet

Tools

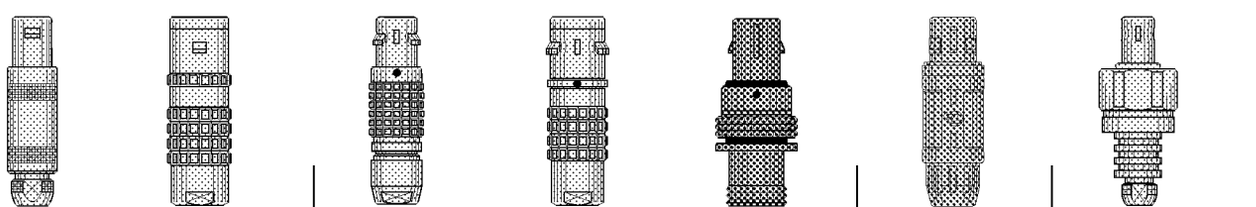
- ❁ Spanners
- ❁ Crimping tools
- Positioners
- ❁ Crimping dies
- ❁ Extractors
- Fibre optic termination workstation
- Fibre optic polishing tools

On request

- Filtered connectors
- Connectors with special alloy housing
- Mixed special connectors
- ❁ Assembly onto cable

❁ Connectors, accessories, and tools found in this catalogue.

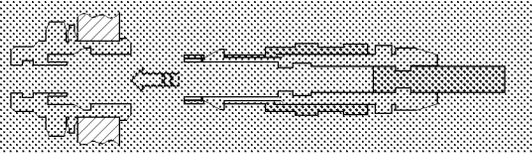
Main Characteristics and Types

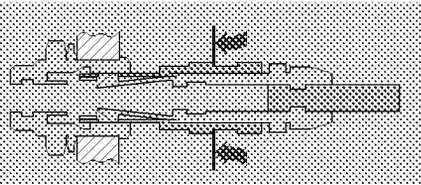


	STANDARD	WATERTIGHT	KEYED	KEYED WATERTIGHT		PLASTIC	SCREW
Series	01 (Minax) 00 (NIM-CAMAC) R0 0S to 6S 0A / 4A 1D / 2C 1Y-3Y-6Y	0E to 6E 3T 4M	00 (multipin) 0B to 5B 2G-5G	0K to 5K	0F to 5F	3P	03 EA 0V to 5V 0W-2W
Latching	Push-Pull						Screw
Key	Stepped insert (Half-Moon)		Key (G) or key-way code		Key (N) or key-way code	Key (G) or key-way code	Key (G) or stepped insert (Half-Moon)
Shell	Metal or plastic				Metal	Plastic	Metal
Insert	Stepped insert (Half-Moon)		Cylindrical				Cylindrical or stepped insert
Contact	Solder or Print		Solder, Crimp or Print				Solder

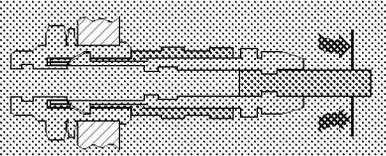
LEMO's Push-Pull Self-Latching Connecting System

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

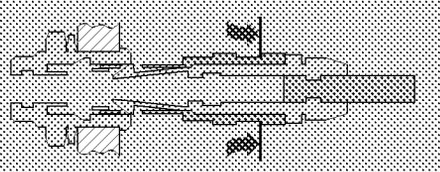




The LEMO self-latching system allows the connector to be mated by simply pushing the plug axially into socket.

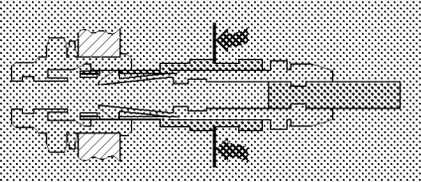


Once firmly latched, connection cannot be broken by pulling on the cable or any other component part other than the outer release sleeve.

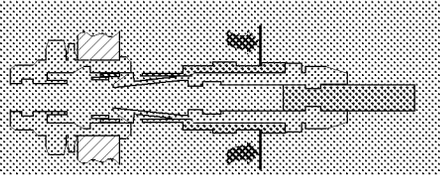


When required, the connector is disengaged by a single axial pull on the outer release sleeve. This first disengages the latches and then withdraws the plug from the socket.

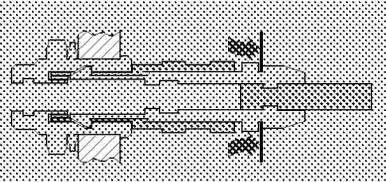
Mechanical Connecting Characteristics



Fv: average latching force = 9 N



Fd: average unmating force with axial pull on the outer release sleeve = 7 N



Fa: average pull force with axial pull on the collet nut = 120 N

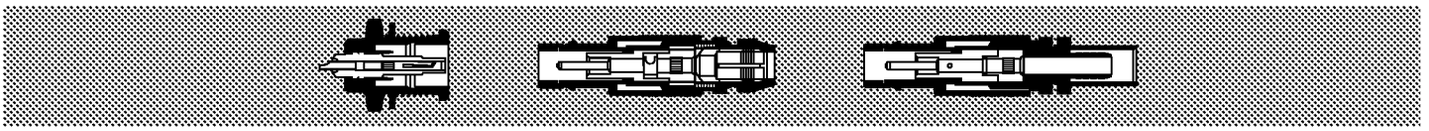
Notes: the forces were measured on outer shells not fitted with contacts.
The mechanical endurance represents the number of cycles after which the latching system is still effective (1 cycle = 1 latching/unlatching – 300 cycles per hour).
Mechanical endurance: 5000 cycles.
The values were measured according to the standard MIL-STD-1344A method 2013.1.

1N = 0,102 kg.

Series and Types

	Series	Types																				
		Unipole	Coaxial 50 Ω	Coaxial 75 Ω	Multipole	High Voltage	Triaxial 50 Ω	Triaxial 75 Ω	Quadrax	Multi High Voltage (Keyed series)	Multi High Voltage	Multi Coaxial	Mixed HV + LV	Mixed Coax + LV	Mixed Triax + LV	Fibre Optic (single fibre)	Multi Fibre Optic	Mixed FO + LV	Fluidic	Multifluidic	Mixed fluidic + LV	Thermocouple
Standard	01		●																			
	00	●	⊗				●												●			
	R0		●																			
	0A		●	●																		
	0S	●	●		●	●	●															●
	1S	●	●	●	●	●	●															●
	2S	●	●	●	●	●	●	●					●									●
	3S	●	●	●	●	●	●	●			●		●	●								
	4S	●	●	●	●	●	●	●			●	●	●	●								
	5S	●	●	●	●						●	●	●	●								
	6S				●							●		●								
	1D								●													
	2C		●		●																	
	4A							●														
	1Y					●																
	3Y					●																
	6Y					●																
Watertight	0E	●	●		●	●	●															●
	1E	●	●	●	●	●	●															●
	2E	●	●	●	●	●	●	●					●									●
	3E	●	●	●	●	●	●	●			●		●	●								
	4E	●	●	●	●		●	●					●	●								
	5E	●			●						●	●	●	●								
	6E				●							●		●								
	3T			●				●														
	4M						●	●														
Keyed	00				●											●						
	0B				●											●			●			●
	1B				●								●									●
	2B				●								●	●				●			●	●
	3B				●							●	●	●			●	●		●	●	
	4B				●					●		●	●	●			●	●		●	●	
	5B				●					●		●	●	●	●		●					
	2G				●																	
Keyed Watertight	0K				●														●			●
	1K				●								●									●
	2K				●								●	●				●			●	●
	3K			●	●							●	●	●			●	●		●	●	
	4K				●					●		●	●	●			●	●		●	●	
	5K				●					●		●	●	●	●		●					
Plastic	3P				●								●	●				●				
Screw	03		●		●																	
	EA															●						
	0V	●	●		●		●															●
	1V	●	●	●	●		●															●
	2V	●	●	●	●		●	●					●									●
	3V	●	●	●	●		●	●			●		●	●								
	4V	●	●	●	●		●	●					●	●								
	5V	●			●						●	●	●	●								
	2W				●								●	●				●			●	●

General Characteristics



Outer Shell

Brass
LEMO series 00 connectors have a brass outer shell as standard, and this is suitable for most general purpose applications, including civilian and military.
The brass outer shells have a nickel-plated surface which ensures very good protection against most atmospheres. Alternative protective coatings are available:
– Nickel-chrome offering higher protection against salt air and most corrosive agents
– Nickel-gold
– Nickel-black chrome. After the black chrome treatment, the part is coated with a protective film.

Aluminium Alloy
Aluminium alloy outer shells find numerous applications where light weight is a predominant factor; such as in the aeronautics and space industries, and for portable and mobile equipment.
These materials have high mechanical strength and excellent resistance to corrosion.
The shell surface is protected by anodizing which is available in six colours: blue, yellow, black, red, green, and natural.

Plastic Materials
A PEEK beige coloured outer shell is available which offers excellent insulating properties and is mostly used in the medical industry. This material is suitable for gas or vapour sterilization.

Other Metallic Components
In general, other components are manufactured from brass. However, bronze is used where good elasticity is required (for example: earthing crown).
These parts are nickel or nickel-gold plated depending on the utilization.

Materials and Treatment

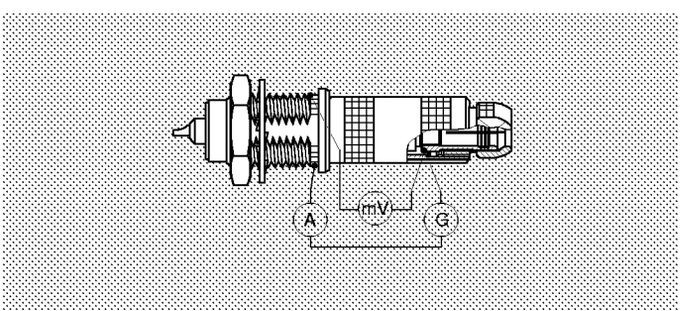
Component	Material (Standard)	Surface Treatment (µm)										
		Nickel		Chrome			Gold			Black Chrome		
		Cu	Ni	Cu	Ni	Cr	Cu	Ni	Au	Cu	Ni	Cr
Outer shell, collet nut, conical nut	Brass (UNS C 38500)	0.5	3	0.5	3	0.3	0.5	3	0.5	–	1	2
	Alu. alloy (AA 6012)	anodized										
	PEEK (MIL-P-46183)	beige coloured										
Earthing crown	Cu-Be (UNS C 17300)	0.5	3	–	–	–	0.5	3	1.5	–	–	–
Latch sleeve	Special Brass	0.5	3	–	–	–	0.5	3	1.5	–	–	–
Crimp ferrule	Copper (UNS C 18700)	0.5	3	–	–	–	0.5	3	1.5	–	–	–
Locking washer	Bronze (UNS C 52100)	0.5	3	–	–	–	0.5	3	0.5	–	–	–
Hexagonal nut	Brass (UNS C 38500)	0.5	3	–	–	–	0.5	3	0.5	–	–	–
	Alu. alloy (AA 6012) [1]	anodized										
Other metallic components	Brass (UNS C 38500)	0.5	3	–	–	–	0.5	3	0.5	–	–	–
Sealing glands	Silicone or FPM	without treatment										

Notes: the surface treatment standards are as follows:
– nickel QQ-N-290A, or MIL-C-26074C
– chrome QQ-N-320B
– gold MIL-G-45204C type I, class 1 (1.5 µm) class 00 (0.5 µm)
– black chrome MIL-C-14538C

[1] supplied only with aluminium alloy free or fixed sockets.

Electrical Characteristics

Screen continuity: according to test MIL-STD-1344A, method 3007.



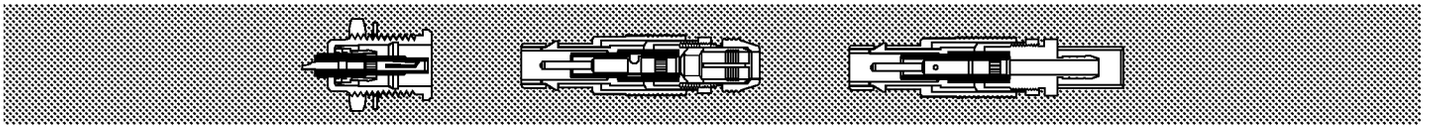
R_1 Values with earthing crown and latch sleeve or inner-sleeve nickel plated.

R_2 Values with gold-plated earthing crown and nickel plated latch sleeve or inner-sleeve.

R_3 Values with earthing crown and gold-plated latch sleeve or inner-sleeve.

R_1 (mΩ)	R_2 (mΩ)	R_3 (mΩ)
3.5	2.8	2.0

Testing current: 1A
A = Ammeter
mV = Millivoltmeter
G = Generator



Insulator

Technical Description

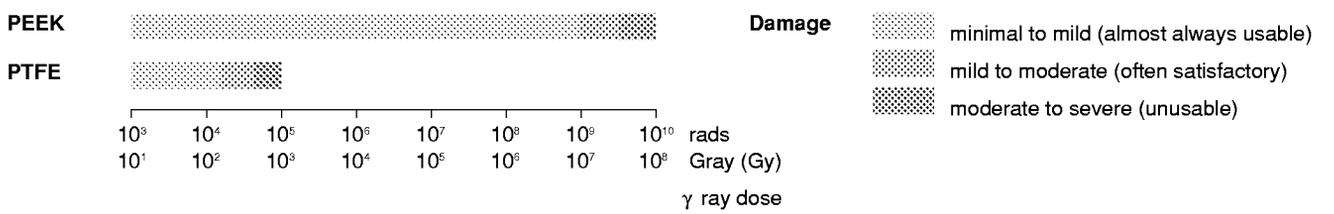
LEMO uses virgin quality PTFE for the insulator material of coaxial connectors, which guarantees excellent insulating properties.
LEMO also proposes PEEK (Polyether Etherketone). Its higher mechanical strength and excellent radiation resistance make it ideal for most applications.

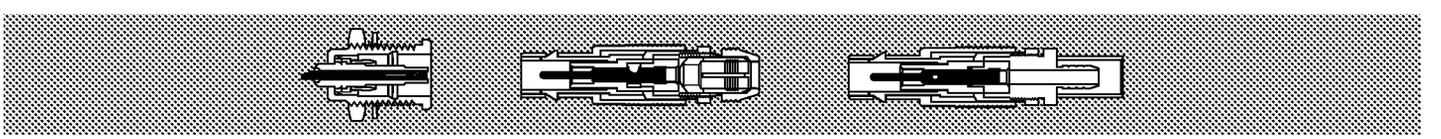
Technical Characteristics

Property	Test method	Unit	PEEK	PTFE
Dielectric strength	ASTM D 149	kV/mm	19 - 25	17.2 - 24
Volume resistivity at 50% HR and 23°C	ASTM D 257	Ω • cm	10^{16}	10^{18}
Surface resistivity	ASTM D 257	Ω	10^{15}	10^{17}
Thermal conductivity	ASTM C 177	W/K • m	0.25	0.23
Comparative tracking index	IEC 112	V	CTI 150	CTI 500
Dielectric constant (10^6 Hz)	ASTM D 150	–	3.2 - 3.5	2 - 2.1
Dissipation factor (10^6 Hz)	ASTM D 150	–	< 0.005	< 0.0003
Continuous service temperature	–	°C	250	260
Water absorption in 24h at 23°C	ASTM D 570	%	< 0.3	< 0.01
Radiation resistance	–	Gy	10^7	$2 • 10^2$
Flammability rating	UL 94	–	V 0	V 0

Note: the technical data contained in this chapter gives a general information about plastic materials used by LEMO as electrical insulator materials. LEMO reserves the right to propose new material which would have higher technical characteristics and to withdraw any material contained in this publication or others from LEMO and its subsidiary companies. LEMO only uses granulated, powdered plastic materials or bars from specialized suppliers. LEMO is not responsible, in any case, for these materials.

Radiation resistance



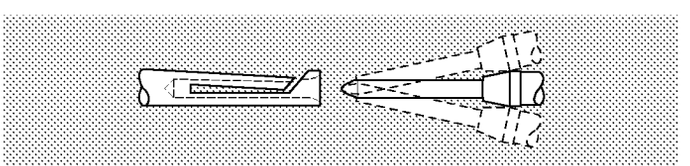


Electrical Contact

Technical Description

The secure, reliable electromechanical connection achieved with LEMO female contacts is mainly due to two important design features:

1. **Prod proof entry** which ensures perfect concentric mating even with well used and/or carelessly handled connectors.
2. **The pressure spring** that maintains a constant, even force on the male contact when mated. The leading edge of the spring is chamfered to slide smoothly on the male contact, preserving the gold-plated surface treatment and preventing undue wear.



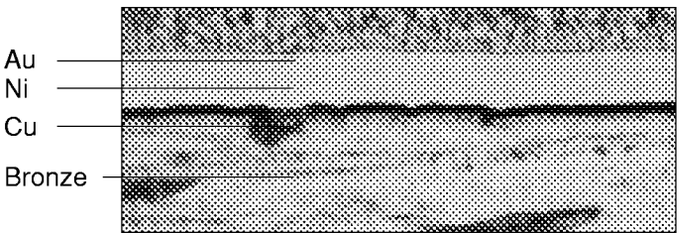
Contact Material

LEMO female electrical contacts are made from bronze (UNS C 54400). Bronze is chosen because of its high modulus of elasticity, its excellent electrical conductivity and a high mechanical strength.
LEMO male solder and print contacts are made from brass (UNS C 38500). Male crimp contacts are made from brass (UNS C 34500) which is ideal for crimping onto the electrical conductor.

Conductor retention method

Both male and female contacts are available in crimp, solder or print versions.

Materials and Treatments

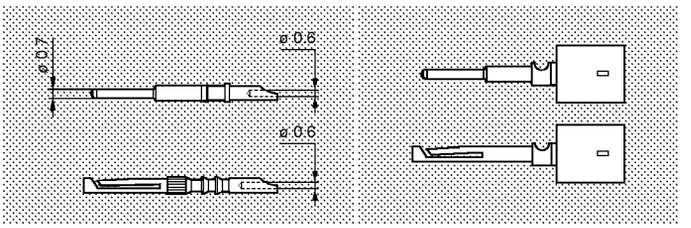


Type	Material (Standard)	Surface treatment (µm)		
		Cu	Ni	Au
Male solder	Brass (UNS C 38500)	0.5	3	1.5
Male crimp	Brass (UNS C 34500)			
Male print	Brass (UNS C 38500)			
Female solder	Bronze (UNS C 54400)	0.5	3	2.0
Female crimp				
Female print				

Notes: the standard surface treatments are as follows:
- Nickel QQ-N-290A or MIL-C-26074C
- Gold MIL-G-45204C, type I, class 1.

Solder Contacts

The conductor bucket of these contacts is machined at an angle to form a cup into which the solder can flow.

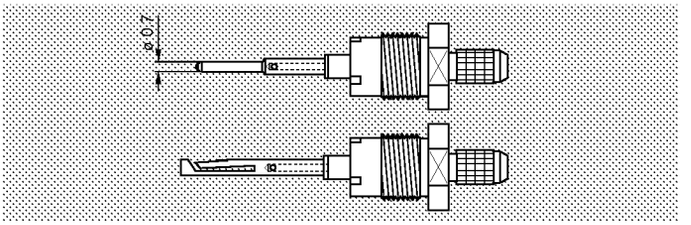


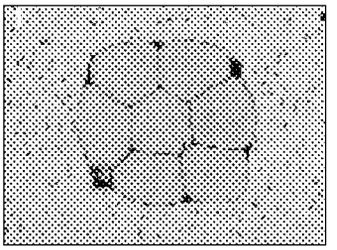
Crimp Contacts

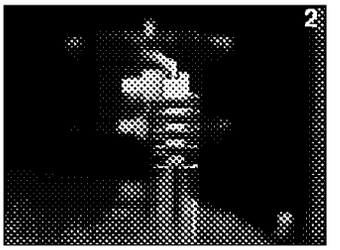
The square form crimp method is used (MIL-C-22520F, type2) (photo 1).

The crimp method requires a controlled compression to obtain a symmetrical deformation of the conductor strand and of the contact material. The radial hole in the side of the contact enables correct positioning of the conductor within the contact to be verified. A good crimping is characterized by a small conductor section reduction and by the quite closed free spaces.

The LEMO crimp contacts are factory annealed to relieve internal stresses, and reduce the risk of the material work hardening during the crimping process.
During this process, an induction heating machine designed by LEMO's Research and Development Department is used (photo 2).





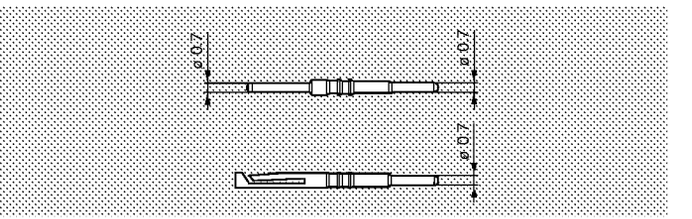


Features of the LEMO crimp contacts:

- Quick and simple assembly
- Insulator is not heated during contact to conductor assembly
- High temperature applications possible
- Increased conductor retention force

Print contacts

Print contacts are available in certain connectors versions, mostly for the straight or elbow sockets models. Connection is made on flexible or rigid printed circuits by soldering



Contact Resistance in Relation to Numbers of Mating Cycles

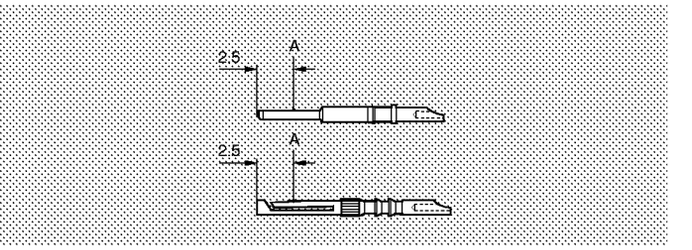
(Corrosion according to MIL-STD-202, method 101D).

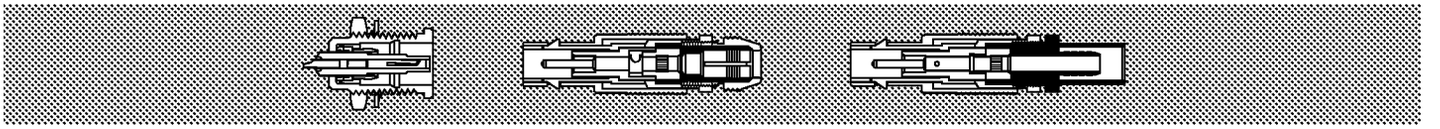
Contact resistance (mΩ)		
1000 cycles	3000 cycles	5000 cycles
5.6	5.7	6.1

Thickness comparison between the outside and the inside of female contacts

Gold thickness[1)]		
male (µm)	female	
	outside (µm)	inside (%)
1.5	2	60

Note: [1)] minimal thickness according to MIL-G-45204C, type I, class 1.
A = test point





Cable Fixing

Cable fixing onto LEMO connectors is determined by the connector model. This is achieved either with a cable collet system or with hexagonal crimping (MIL-C-22520F, type 2).

The collet system cable fixing is made without any specific tooling. The crimping method guarantees a good electrical continuity of the shield which improves greatly the shielding efficiency of the cable/connector link.

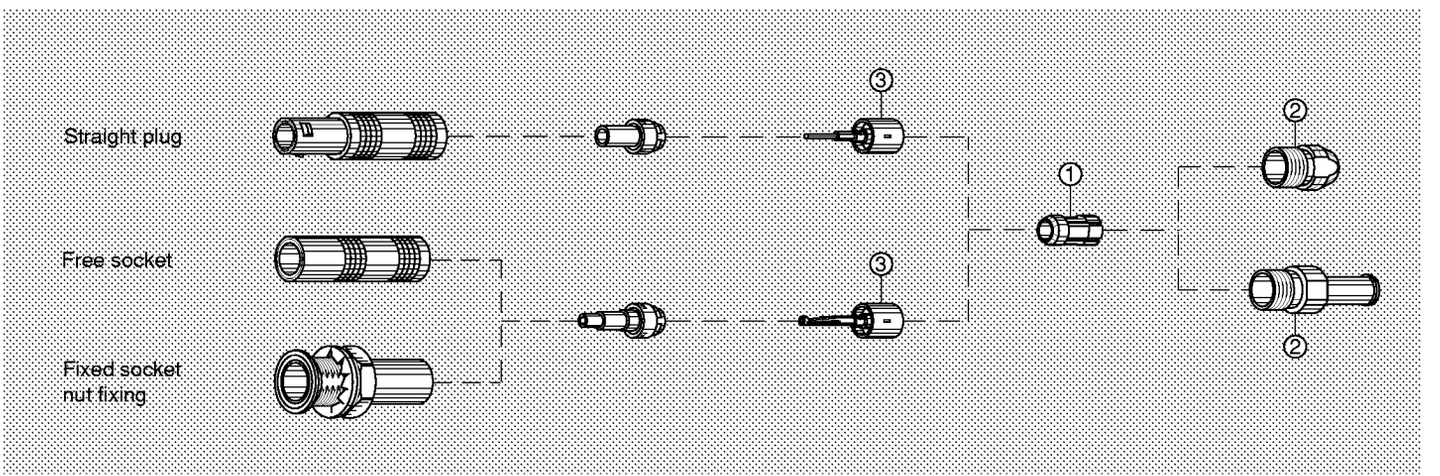
Material and Treatment

Component	Material (Standard)	Surface Treatment (µm)	
		Cu	Ni
Earthing sleeve	Brass (UNS C 38500)	0.5	3
Collet	Brass (UNS C 38500)	0.5	3
Crimp ferrule	Copper (UNS C 18700)	0.5	3
Collet nut	Brass (UNS C 38500)	0.5	3

Note: collet nut tightening torque: maximum 0.25 Nm (1N = 0.102 kg)

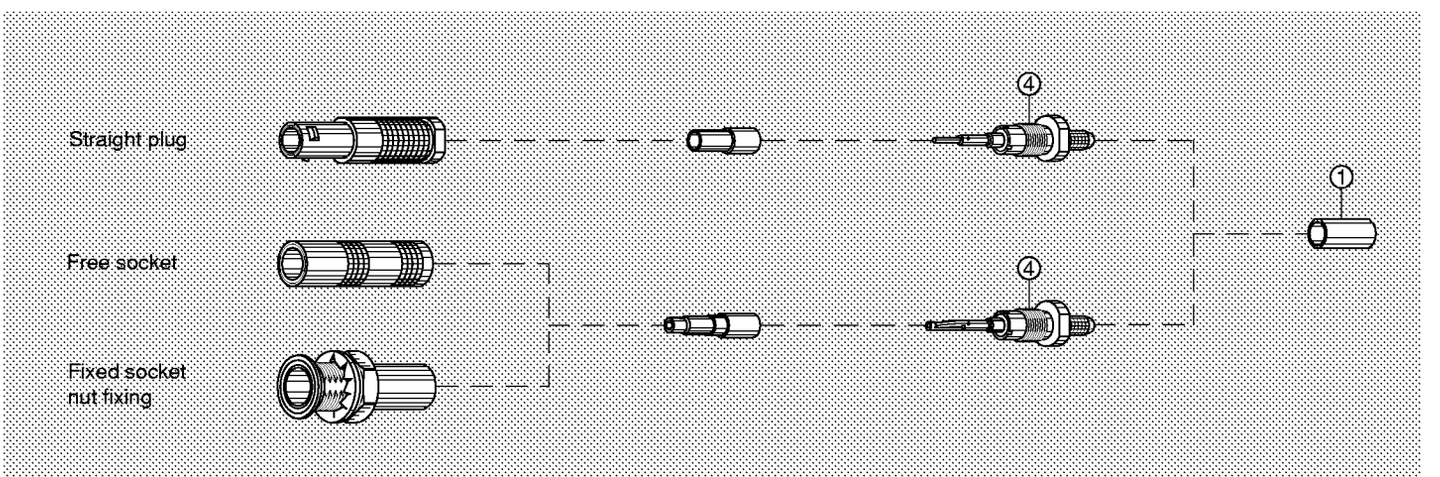
Type C Cable Clamping

This system has an earthing sleeve ③ and a collet ① which is compressed by the collet nut ② to ensure a good clamp onto the cable. When assembling the connector, the cable shield is gripped between the earthing sleeve and the collet.



Type E Crimping

The back end of the crimp nut ④ which receives the shield braid, is milled to ensure a good retention of the shield once crimped.



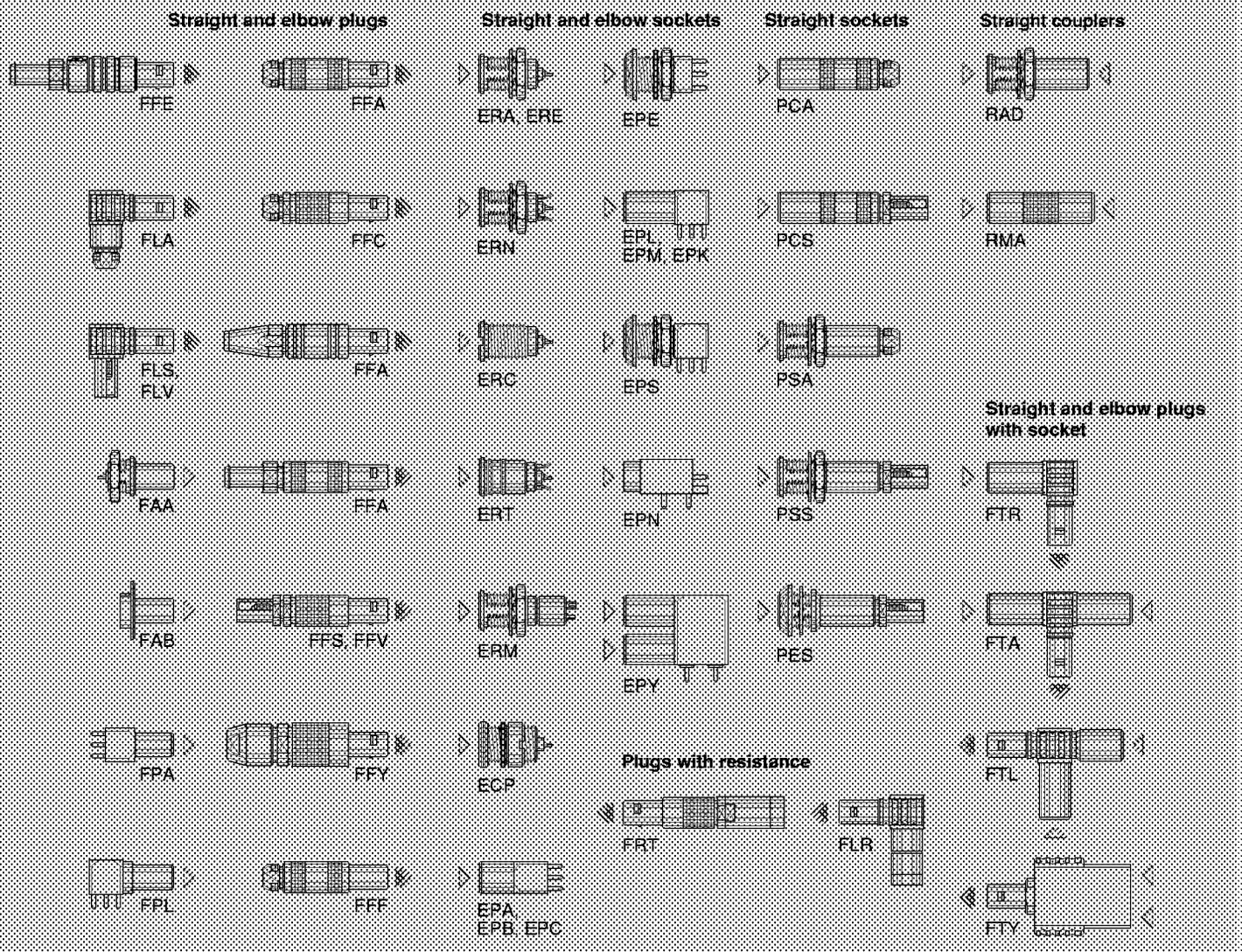
Series 00 (NIM-CAMAC-CD/N 549)

Introduction

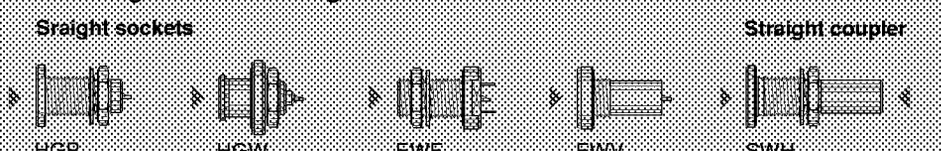
The 00 series is a range of 50 Ω coaxial connectors. They are suitable for a wide variety of applications particularly in measurement, control system and nuclear physics, having formed the basis for the NIM-CAMAC-CD/N 549 standard. LEMO 00 connectors offer customers many benefits including:

- Self-latching push-pull system
- Aesthetically pleasing appearance
- Small size
- High packing density
- Rugged construction
- Ease of use
- Low weight
- Reliable performances
- Wide choice to suit application

Interconnections



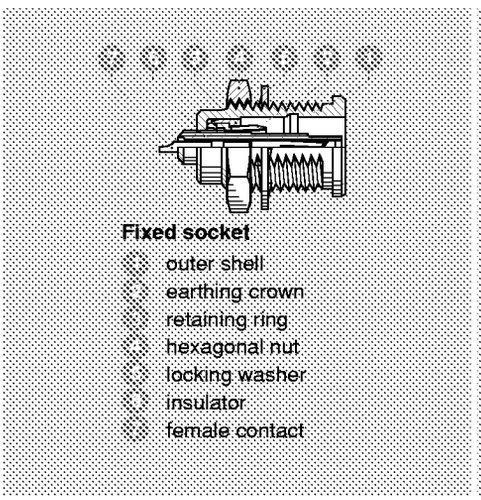
Watertight or vacuumtight models

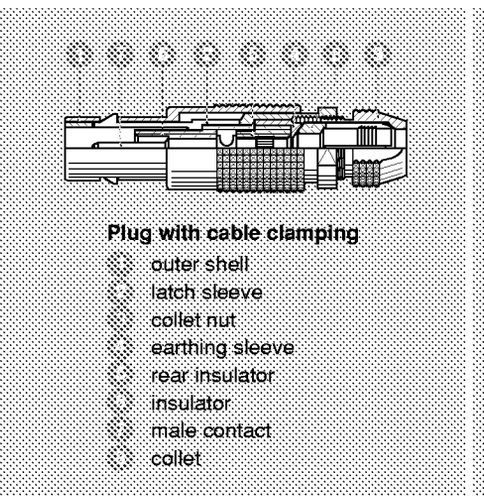


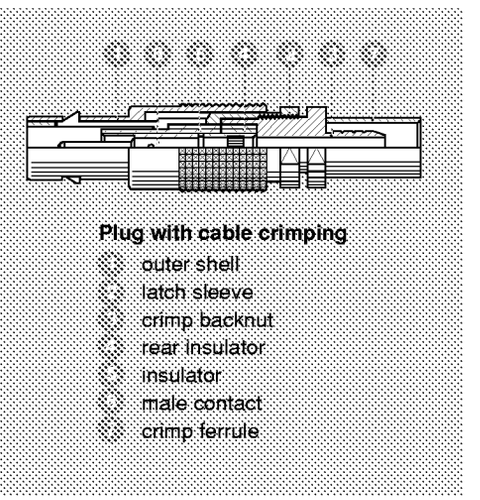
Models Description

ABA Adaptor from LEMO socket to BNC plug
ABB Adaptor from LEMO fixed socket to BNC socket
ABC Adaptor from LEMO socket to BNC socket
ABD Adaptor from LEMO socket to BNC fixed socket
ABF Adaptor from LEMO plug to BNC socket
ACA Adaptor from LEMO socket to C plug
ACB Adaptor from LEMO socket to C socket
AGG Adaptor from LEMO socket to General-Radio socket type 874
AGH Adaptor from LEMO socket to UHF plug
ANA Adaptor from LEMO socket to N plug
ANB Adaptor from LEMO socket to N socket
ANC Adaptor from LEMO socket to N fixed socket
APF Adaptor from LEMO plug to CINCH socket
ASA Adaptor from LEMO socket to SMA plug
ASB Adaptor from LEMO socket to SMA socket
ASF Adaptor from LEMO plug to SMA socket
ASG Adaptor from LEMO plug to SMA plug
ECP Straight socket with two nuts
EPA Straight socket for printed circuit
EPB Straight socket for printed circuit (long studs)
EPC Straight socket for printed circuit with clearance under the body
EPE Straight socket with two nuts for printed circuit
EPK Elbow socket (90°) for printed circuit with clearance under the body
EPL Elbow socket (90°) for printed circuit
EPM Elbow socket (90°) for printed circuit (long studs)
EPN Straight socket for press mouniting in pair on printed circuit,
EPS Elbow socket (90°) with two nuts for printed circuit
EPY Elbow socket (90°) for printed circuit with two vertical sockets
ERA Fixed socket, nut fixing
ERC Fixed socket, nut fixing, with slots in flange
ERE Fixed socket, nut fixing, with conical lead in
ERM Fixed socket, nut fixing, with microswitch
ERN Fixed socket, nut fixing, with tags
ERT Straight socket without thread, force or adhesive fit
EWF Fixed socket, nut fixing, with tags, vacuumtight, (back panel mounting)
EWV Fixed socket, vacuumtight
FAA Straight plug, non-latching, nut fixing
FAB Straight plug, non-latching, riveted fixing
FFA Straight plug with cable collet
FFA Straight plug with cable collet PEEK outer shell
FFA Straight plug with cable collet and nut for fitting a strain relief
FFC Straight plug with flats on latch sleeve and cable collet
FFE Straight plug with front sealing ring, cable collet and nut for fitting a strain relief
FFF Straight plug, non-latching, with cable collet
FFS Straight plug with cable crimping
FFY Straight plug with cable collet
FFV Straight plug for cable crimping with improved screen efficiency
FLA Elbow plug (90°) with cable collet
FLR Elbow plug (90°) with resistor
FLS Elbow plug (90°) for cable crimping
FLV Elbow plug (90°) for cable crimping with improved screen efficiency
FPA Straight plug, non-latching, for printed circuit
FPL Elbow plug (90°) non-latching for printed circuit
FRT Straight plug with resistor or shorted
FTA T-plug with two sockets in line
FTL T-plug with two sockets (90°)
FTR Elbow plug (90°) with one socket
FTY Straight plug with two parallel sockets
HGP Fixed socket, nut fixing, watertight
HGW Fixed socket, nut fixing, with rear sealing ring
PCA Free socket with cable collet
PCS Free socket with cable crimping
PES Fixed socket, nut fixing, with cable crimping (back panel mounting)
PSA Fixed socket, nut fixing, with cable collet
PSS Fixed socket, nut fixing, with cable crimping
RAD Fixed coupler, nut fixing
RMA Free coupler
SWH Fixed coupler, nut fixing, vacuumtight

Part Section Showing Internal Components







Models with collet nut for fitting a strain relief

To order models with a collet nut for fitting a strain relief, add a "Z" in the "variant" position (see page12) of the part number. Strain reliefs are available in nine colours and several sizes to accomodate different cable outside diameters. They are ordered separately as indicated in the "Accessories" section.

Watertight/Vacuumtight models

The fixed sockets and couplers, models HGP, HGW, EWF, EWV, SWH allow the device on which they are fitted to reach a protection index of IP66 as per IEC 529 (unmated). They are fully compatible with the non watertight models of the same series and are widely used for portable radios, ship installations and in aircraft.

Specially prepared & tested versions of these models are available for vacuumtight applications guaranteeing a leakage level of less than 10^{-6} mbar.l.s^{-1} (as per MIL-STD-1344A standard method 1008). A vacuumtight model is identified by the letter at the end of the part number (certificate on request).
To seal both the watertight and vacuumtight models, LEMO uses an epoxy resin.

Technical Characteristics

Mechanical and climatical

Characteristics	Value	Standard	Method
Contact retention force	> 18 N	MIL-STD-1344A	2007.1
Cable pull off force	> 100 N	MIL-STD-1344A	2009.1
Connector pull off force	> 90 N		
Endurance	> 1000 cycles	MIL-STD-1344A	2016
Operating temperature	- 55°C + 260°C		

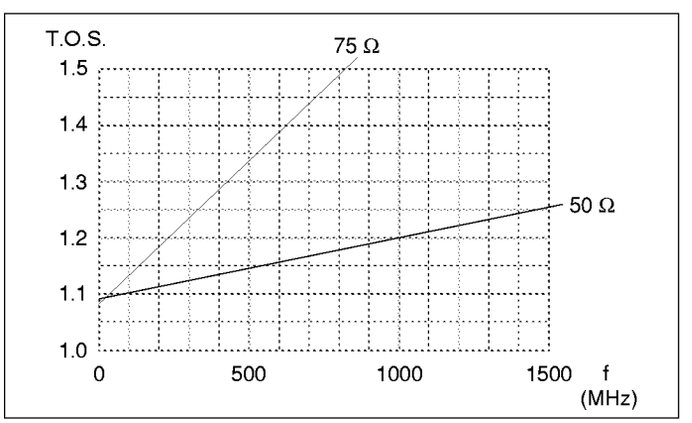
Note: 1) to seal both the watertight and vacuumtight models, LEMO uses and epoxy resin. The operating temperature is limited between -20°C and +80°C.

Electrical

Characteristics		Value	Standard	Method
Impedance		50 Ω		
Operating voltage (50 Hz)		0.7 kV rms	IEC 130-1 1^{ére} ed.	§ 14.5
Test voltage (50 Hz)		2.1 kV rms	MIL-STD-1344A	3001.1
Rated current		4 A	IEC 512-3	
Contact resistance		< 6 mΩ	MIL-STD-202 F	307
Screen resistance		< 3.5 mΩ	MIL-STD-1344A	3007
Insulating resistance		> 10^{12} Ω	MIL-STD-1344A	3003.1
VSWR (f in GHz)	50 Ω	1.09+0.11f	IEC 169-1-1	
	75 Ω	1.08+0.51f	IEC 169-1-1	

Voltage Standing Wave Ratio

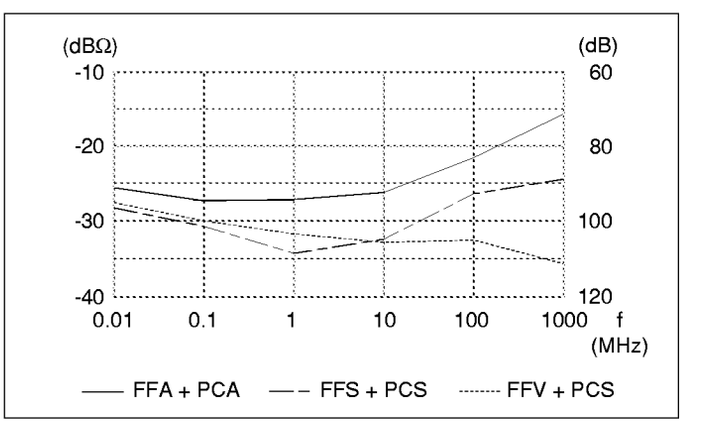
The VSWR (Voltage Standing Wave Ratio) is the value representing the power reflected in a connection. In most cases, the working frequency range is where VSWR ≤ 1.25



Note: value for FFS plug and PCS socket mated (with PTFE insulator). Impedance measured under 50 Ω with a RG-174 A/U cable or under 75 Ω with a RG-179 B/U cable.

Screening efficiency (EMC properties) in dB (transfer impedance in dBohm)

The screening efficiency is the ratio between the electromagnetic field inside the connector and a power source at the outside of the connector (or vice versa).



Note: measured according to IEC-169-1-3 standard.

Recommended cables

Cable group	Standard			Other cable	Imp. (Ω)
	MIL-C-17	IEC 96-2	CCTU 10-01A		
6	RG.58 C/U	50.3.1	KX 15	Belden 8262	50 ± 2 Ω
7	RG.142 B/U				50 ± 2 Ω
3	RG.174 A/U	50.2.1	KX 3A	Belden 8216	50 ± 2 Ω
				Lemo CCH.99.281.505	50 ± 2 Ω
1	RG.178 B/U	50.1.1	KX 21A	Belden 83265	50 ± 2 Ω
2	RG.179 B/U	75.2.1			75 ± 3 Ω
5	RG.180 B/U				95 ± 5 Ω
2	RG.187 A/U	75.2.2			75 ± 3 Ω
4	RG.188 A/U	50.2.3		Belden 83269	50 ± 2 Ω
1	RG.196 A/U	50.1.2			50 ± 2 Ω
4	RG.316 /U	50.2.2	KX 22A	Belden 83284	50 ± 2 Ω
3				Dätwyler HF-2114	50 ± 2 Ω
8				Storm 421 099	50 ± 2 Ω
8				H+S G02232D-60	50 ± 2 Ω

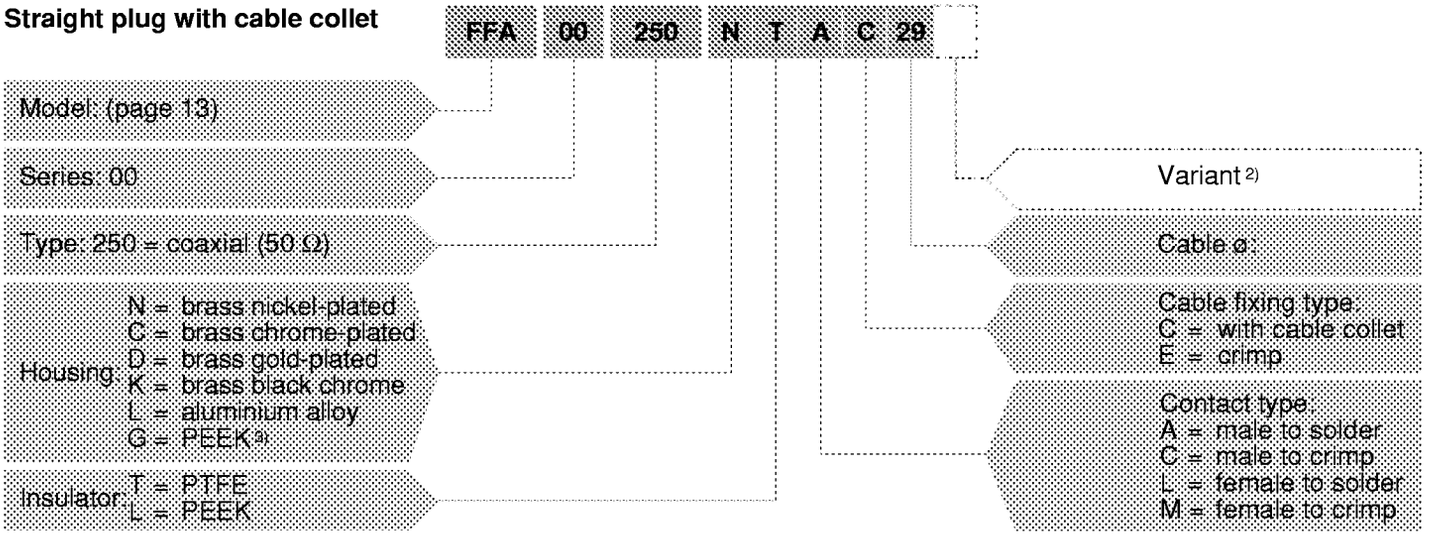
Colour of connectors in anodized aluminium alloy

When ordering a connector with an aluminium alloy, the outer shell colour must be chosen from the table variant listed below and included in the position of the part number.

Reference	Colour
A	blue
J	yellow
N	black
R	red
T	natural
V	green

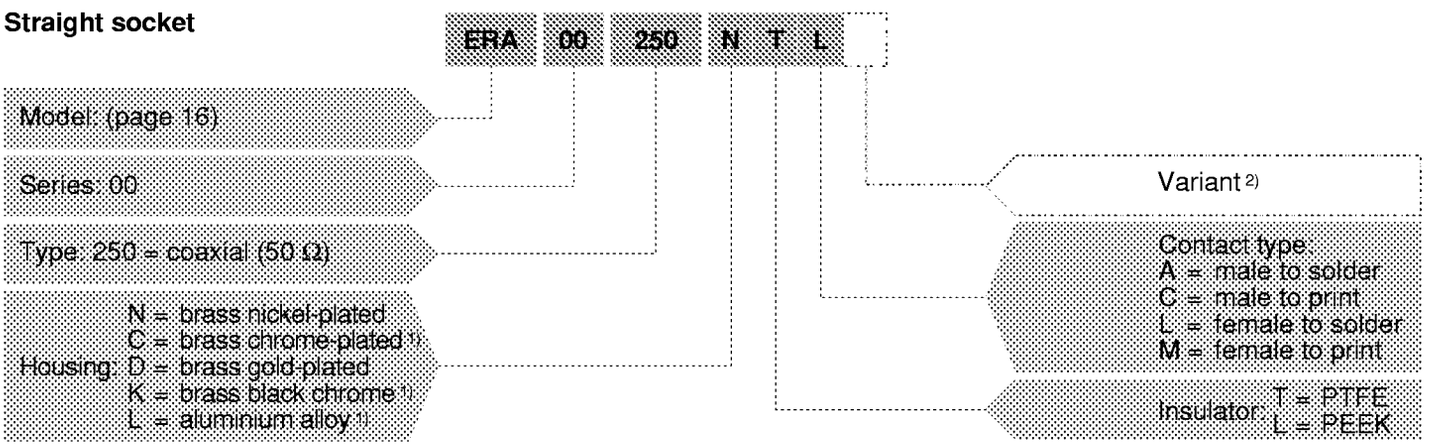
Part Number Example

Straight plug with cable collet



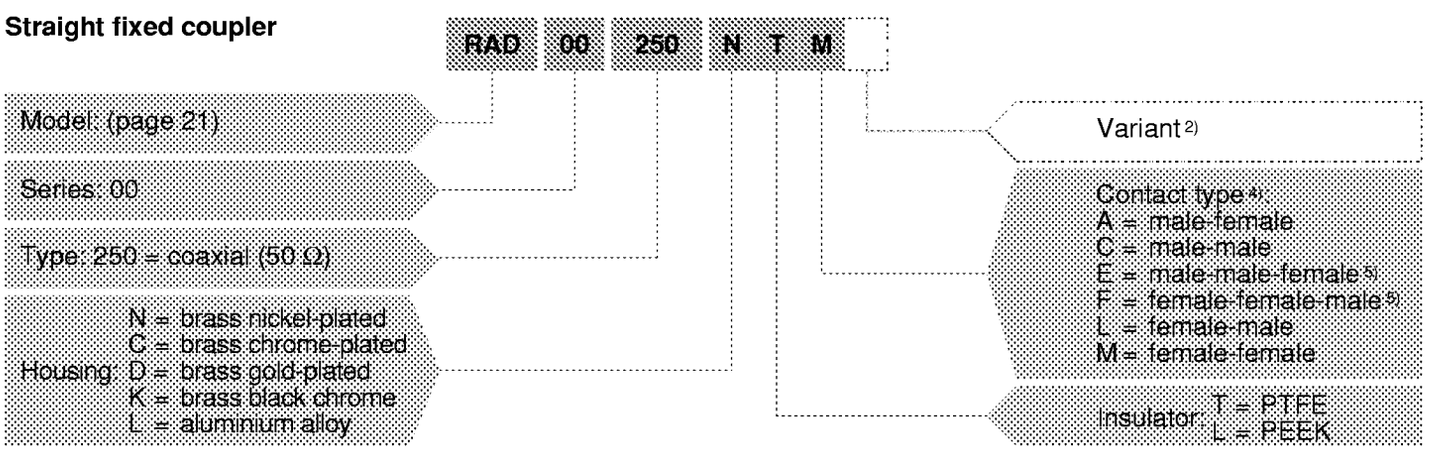
FFA.00.250.NTAC29 = straight plug with cable collet, series 00, coaxial type (50 Ω), outer shell in nickel-plated brass, PTFE insulator, male solder contact, C type collet of 2.9 mm diameter.

Straight socket



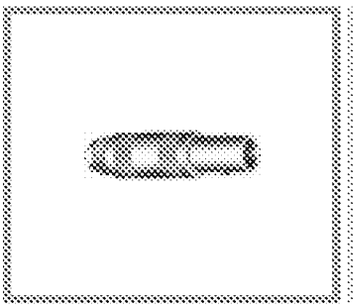
ERA.00.250.NTL = fixed socket, nut fixing, series 00, coaxial type (50 Ω), outer shell in nickel-plated brass, PTFE insulator, female solder contact.

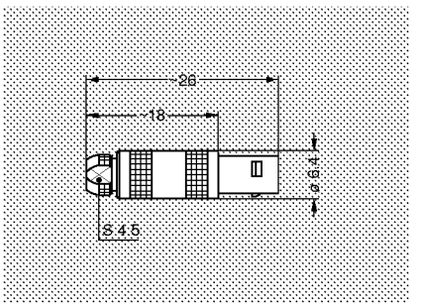
Straight fixed coupler



RAD.00.250.NTM = straight fixed coupler, nut fixing, series 00, coaxial type (50 Ω), outer shell in nickel-plated brass, PTFE insulator, female-female contact.

Note: 1) treatment not available for the printed circuit models
2) the "variant" position in the reference is used to specify the anodized colour of the housing in aluminium alloy (page 11) or models with a collet nut for fitting a strain relief "Z". The strain relief can be ordered separately as indicated in the "Accessories" section.
3) available for the FFA model only
4) concerning the straight fixed couplers with nut fixing RAD and SWH, the first contact type mentioned is always the contact at the flange end.
5) used only for models: FTA, FTL and FTY.

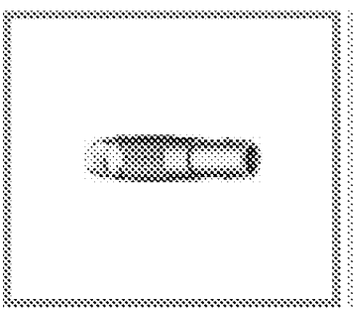


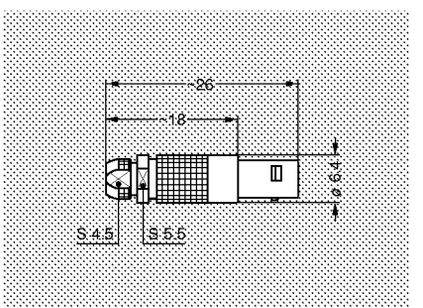


FFA Straight plug with cable collet

Part number	Cable group	Note
FFA.00.250.NTAC22	1	●
FFA.00.250.NTAC29	2-3-4	●
FFA.00.250.NTAC31	8	●

M1 Cable assembly

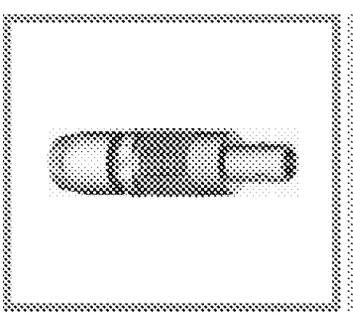


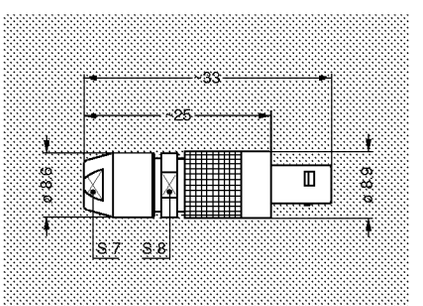


FFC Straight plug with flats on latch sleeve and cable collet

Part number	Cable group	Note
FFC.00.250.NTAC22	1	●
FFC.00.250.NTAC27	2-4	●
FFC.00.250.NTAC31	3-8	●

M3 Cable assembly

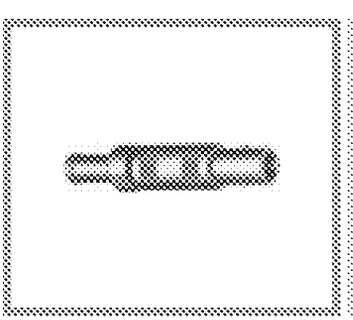


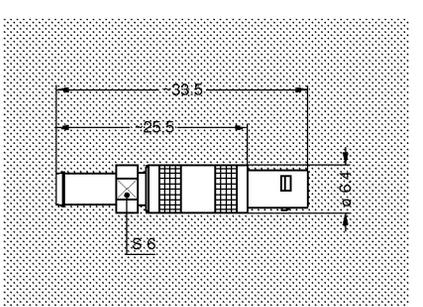


FFY Straight plug with cable collet

Part number	Cable group	Note
FFY.00.250.NTAC52	6-7	●

M2 Cable assembly



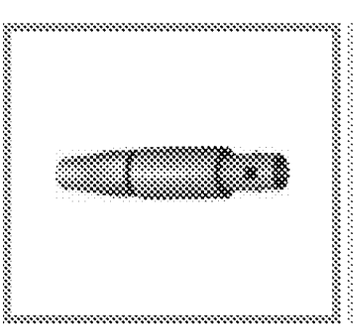


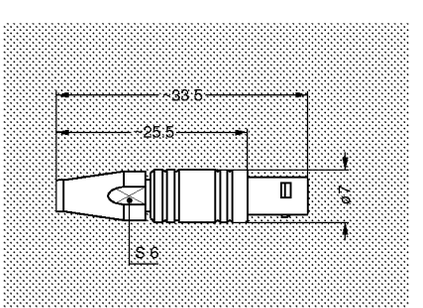
FFA Straight plug with cable collet and nut for fitting a strain relief

Part number	Cable group	Note
FFA.00.250.NTAC22Z	1	●
FFA.00.250.NTAC29Z	2-3-4	●
FFA.00.250.NTAC31Z	8	●

Note: the strain relief must be ordered separately (see page 29).

M1 Cable assembly

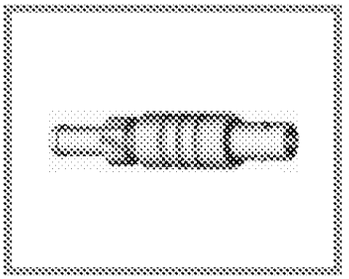


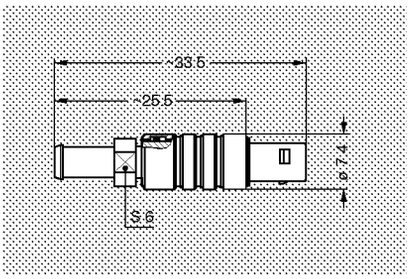


FFA Straight plug with cable collet, PEEK outer shell

Part number	Cable group	Note
FFA.00.250.GTAC22	1	●
FFA.00.250.GTAC29	2-3-4	●
FFA.00.250.GTAC31	8	●

M1 Cable assembly ● Available ○ On request



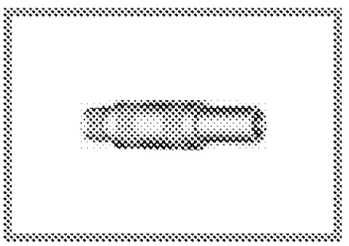


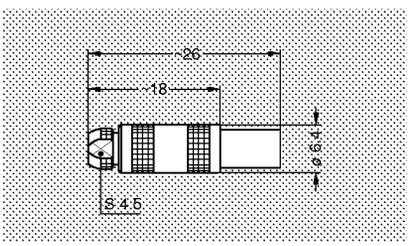
FFE Straight plug with front sealing ring, cable collet and nut for fitting a strain relief

Part number	Cable group	Note
FFE.00.250.NTAC22Z	1	○
FFE.00.250.NTAC29Z	2-3-4	○
FFE.00.250.NTAC31Z	8	○

Note: the strain relief must be ordered separately (see page 29).

M1 Cable assembly

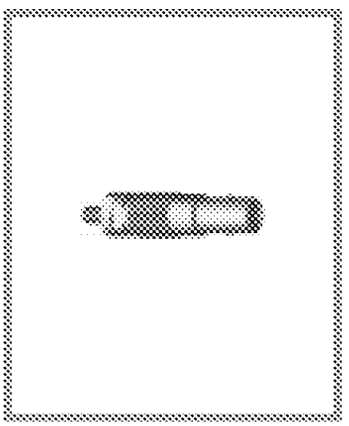


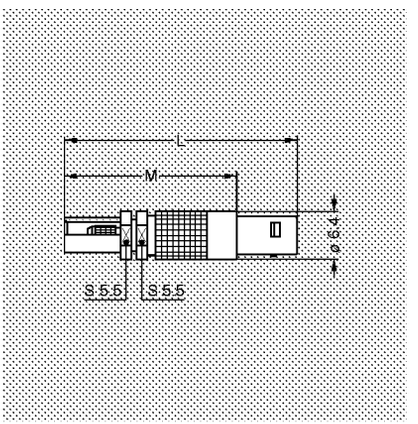


FFF Straight plug, non-latching, with cable collet

Part number	Cable group	Note
FFF.00.250.NTAC22	1	●
FFF.00.250.NTAC29	2-3-4	●
FFF.00.250.NTAC31	8	●

M1 Cable assembly





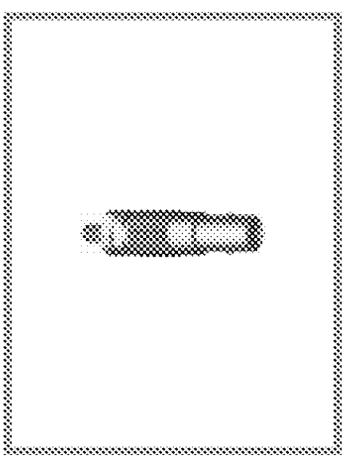
FFS Straight plug with cable crimping

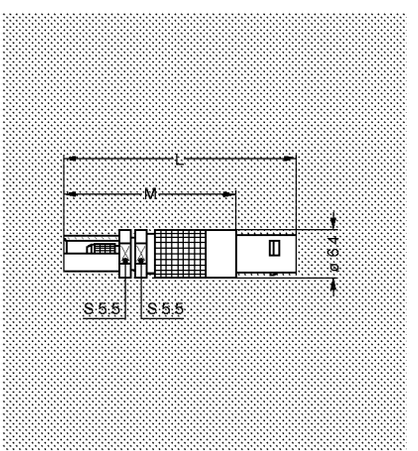
Part number	Cable group	Dim. L	Dim. M	Note
FFS.00.250.NTCE24	1	31	23	●
FFS.00.250.NTCE30	2	31	23	●
FFS.00.250.NTCE31	3-4	31	23	●
FFS.00.250.NTCE35	8	31	23	○
FFS.00.250.NTCE44	5	31	23	●
FFS.00.250.NTCE52	6	34	26	●
FFS.00.250.NTCE56	7	31	23	○

Note: the strain relief must be ordered separately (see page 29).

M4 Cable assembly, crimp contact

M5 Cable assembly, solder contact (on request)





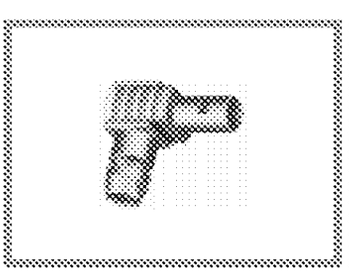
FFV Straight plug for cable crimping with improved screen efficiency

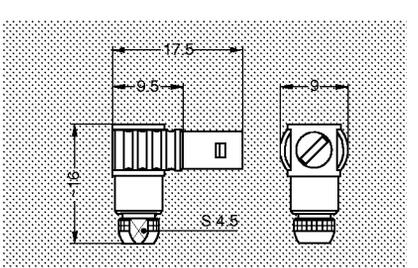
Part number	Cable group	Dim. L	Dim. M	Note
FFV.00.250.NTCE24	1	31	23	○
FFV.00.250.NTCE30	2	31	23	○
FFV.00.250.NTCE31	3-4	31	23	○
FFV.00.250.NTCE35	8	31	23	●
FFV.00.250.NTCE44	5	31	23	○
FFV.00.250.NTCE52	6	34	26	○
FFV.00.250.NTCE56	7	31	23	●

Note: the strain relief must be ordered separately (see page 29).

M4 Cable assembly, crimp contact

M5 Cable assembly, solder contact (on request)



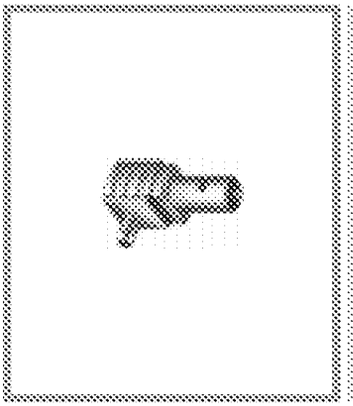


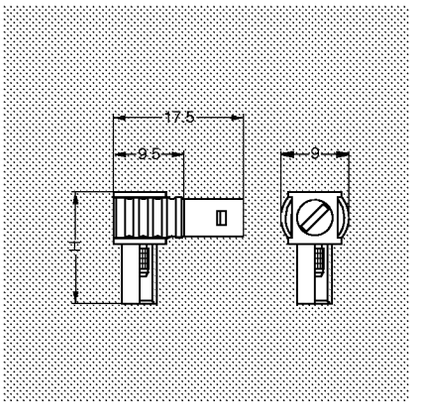
FLA Elbow plug (90°) with cable collet

Part number	Cable group	Note
FLA.00.250.NTAC22	1	●
FLA.00.250.NTAC27	2-4	●
FLA.00.250.NTAC31	3-8	●

M6 Cable assembly

● Available ○ On request

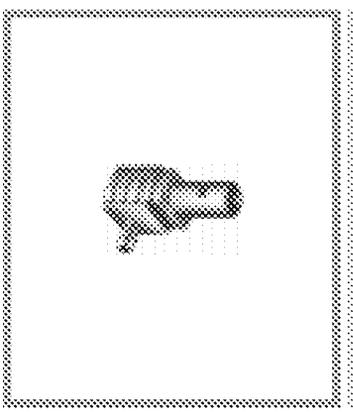


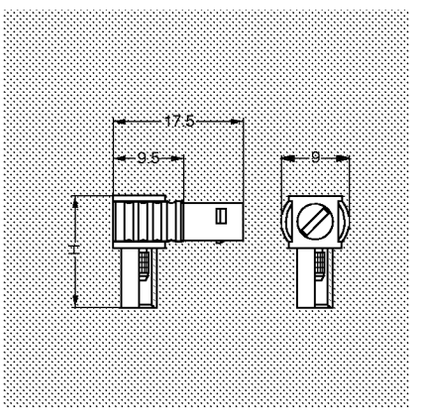


FLS Elbow plug (90°) cable crimping

Part number	Cable group	H (mm)	Note
FLS.00.250.NTAE24	1	15	○
FLS.00.250.NTAE31	3-4	15	●
FLS.00.250.NTAE35	8	15	●
FLS.00.250.NTAE52	6	18	●
FLS.00.250.NTAE56	7	15	○

M7 Cable assembly

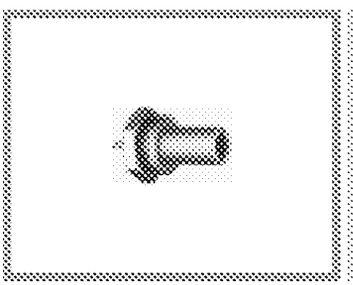


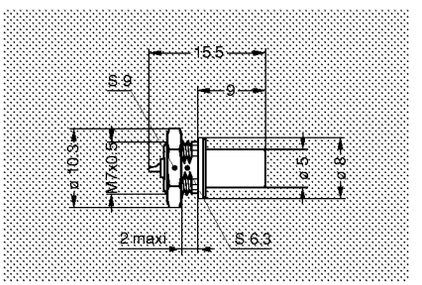


FLV Elbow plug (90°) cable crimping with improved screen efficiency

Part number	Cable group	H (mm)	Note
FLV.00.250.NTAE24	1	15	○
FLV.00.250.NTAE30	2	15	○
FLV.00.250.NTAE31	3-4	15	○
FLV.00.250.NTAE35	8	15	●
FLV.00.250.NTAE52	6	18	○
FLV.00.250.NTAE56	7	15	●

M7 Cable assembly

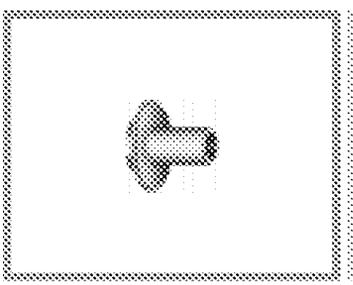


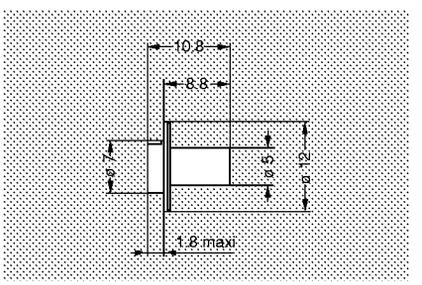


FAA Straight plug, non-latching, nut fixing

Part number	Weight (g)	Note
FAA.00.250.NTA	2.5	●

P5 Panel cut-out

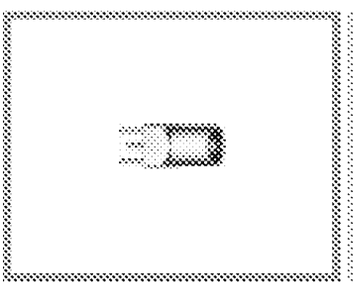


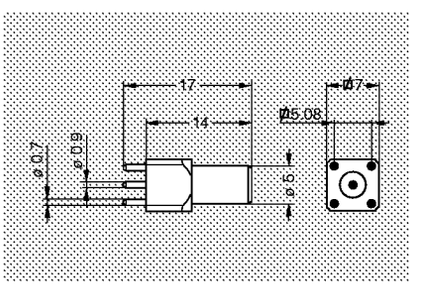


FAB Straight plug, non-latching, riveted fixing

Part number	Weight (g)	Note
FAB.00.250.NTA	2.5	○

P1 Panel cut-out

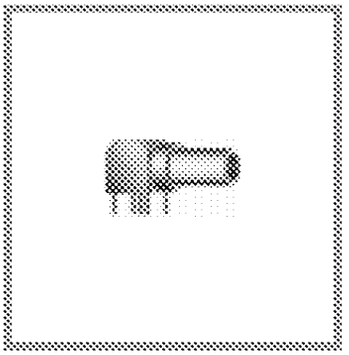


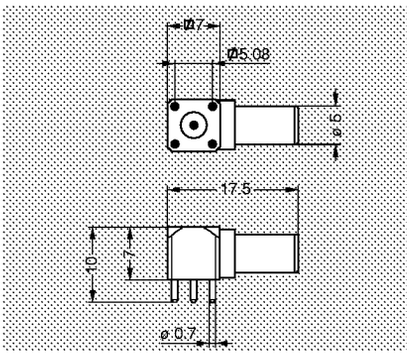


FPA Straight plug, non-latching, for printed circuit

Part number	Weight (g)	Note
FPA.00.250.NTD	2.5	●

P11 PCB drilling pattern ● Available ○ On request

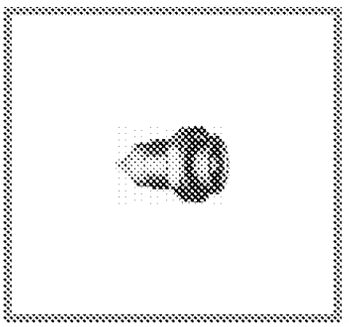


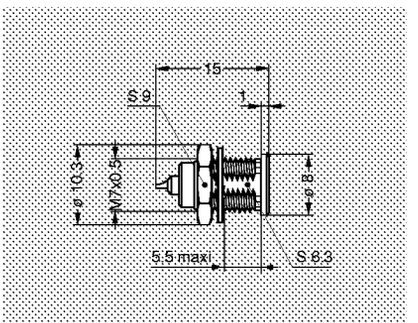


FPL. Elbow plug (90°), non-latching for printed circuit

Part number	Weight (g)	Note
FPL.00.250.NTD	2.5	●

P10 PCB drilling pattern

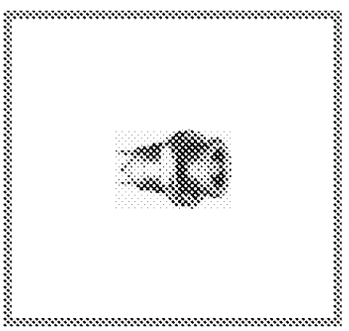


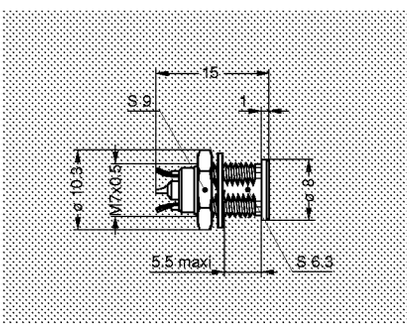


ERA Fixed socket, nut fixing

Part number	Weight (g)	Note
ERA.00.250.NTL	2.8	●

P5 Panel cut-out

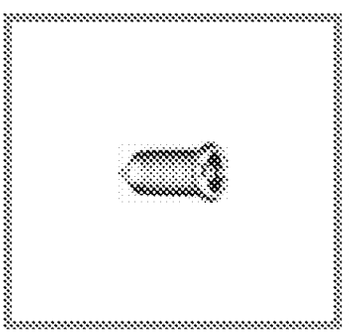


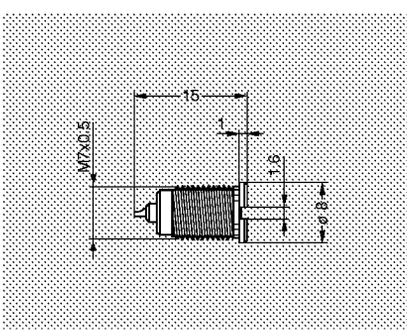


ERN Fixed socket, nut fixing, with earthing tags

Part number	Weight (g)	Note
ERN.00.250.NTL	2.8	●

P5 Panel cut-out

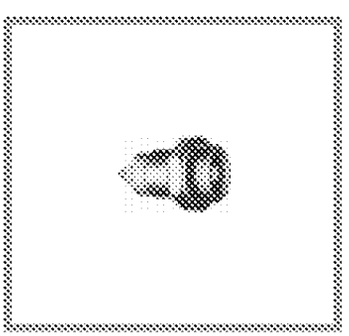


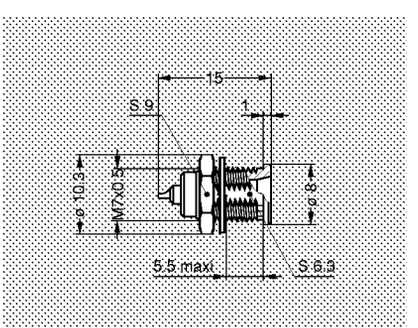


ERC Fixed socket, nut fixing, with slots in flange

Part number	Weight (g)	Note
ERC.00.250.NTL	2.2	●

P3 Panel cut-out



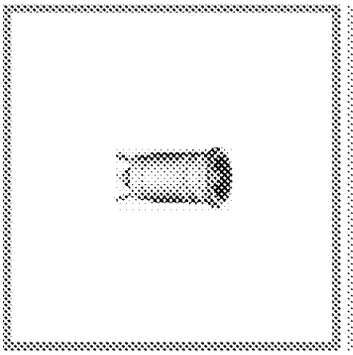


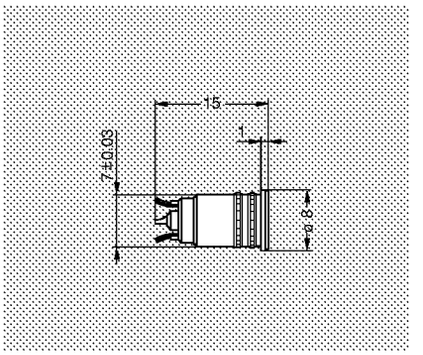
ERE Fixed socket, nut fixing, with conical lead-in

Part number	Weight (g)	Note
ERE.00.250.NTL	2.8	●

P5 Panel cut-out

● Available ○ On request

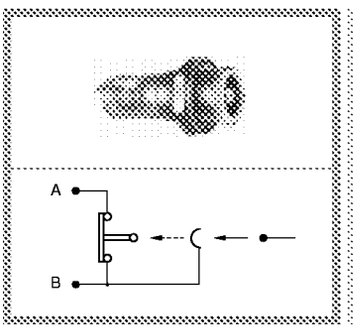


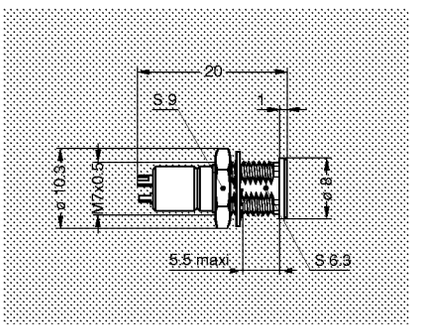


ERT Straight socket without thread, force or adhesive fit

Part number	Weight (g)	Note
ERT.00.250.NTL	2.2	●

P4 Panel cut-out

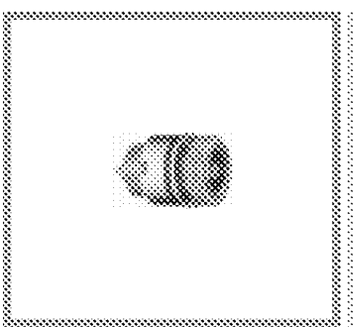


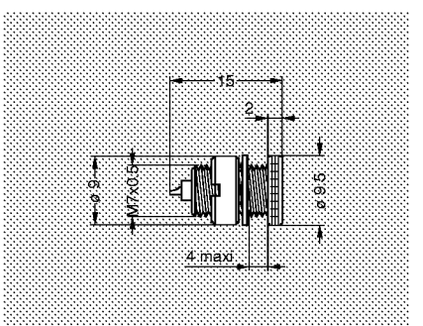


ERM Fixed socket, nut fixing, with microswitch

Part number	Weight (g)	Note
ERM.00.250.NTL	3.0	●

P5 Panel cut-out

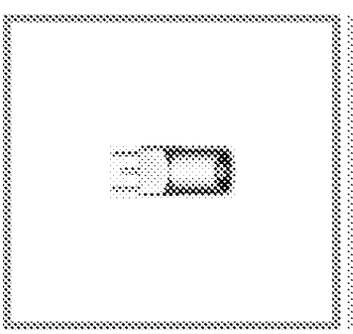


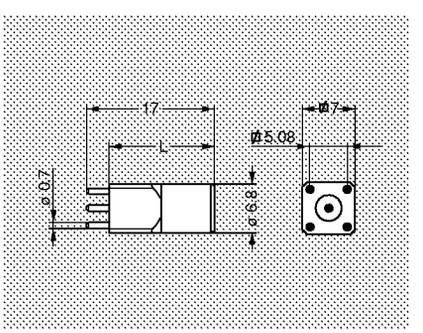


ECP Fixed socket with two nuts

Part number	Weight (g)	Note
ECP.00.250.NTL	3.3	●

P1 Panel cut-out

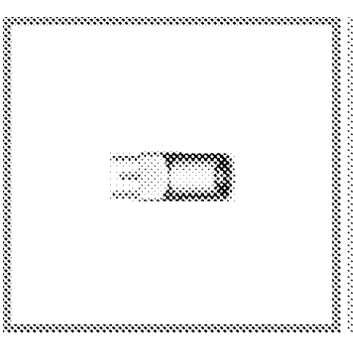


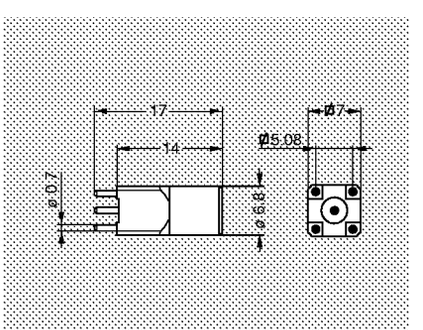


EPA-EPB Straight socket for printed circuit

Part number	L (mm)	Weight (g)	Note
EPA.00.250.NTN	14	3.4	●
EPB.00.250.NTN	12	3.3	●

P10 PCB drilling pattern



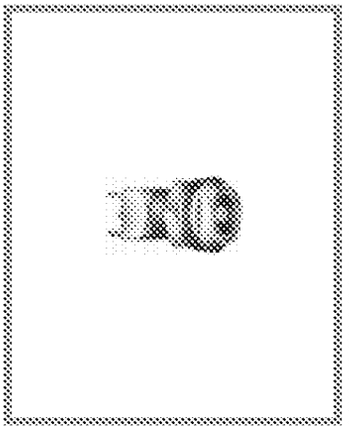


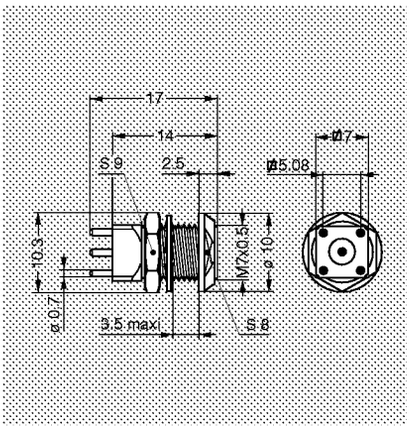
EPC Straight socket for printed circuit with clearance under the body

Part number	Weight (g)	Note
EPC.00.250.NTN	3.3	●

P10 PCB drilling pattern

● Available ○ On request



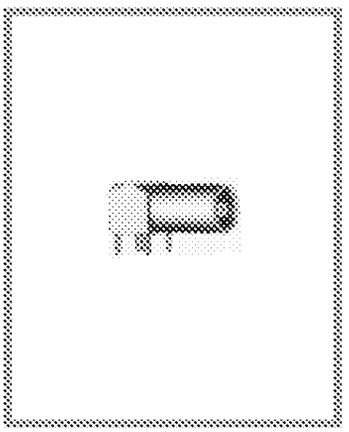


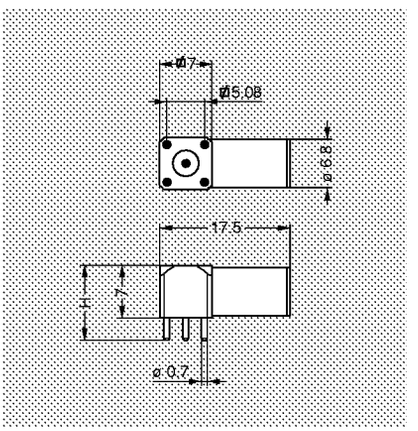
EPE Fixed socket with two nuts, for printed circuit

Part number	Weight (g)	Note
EPE.00.250.NTN	4.2	●

P1 Panel cut-out

P12 PCB drilling pattern

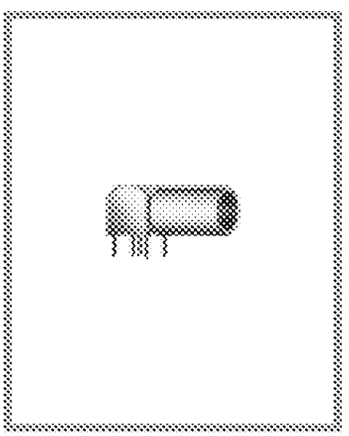


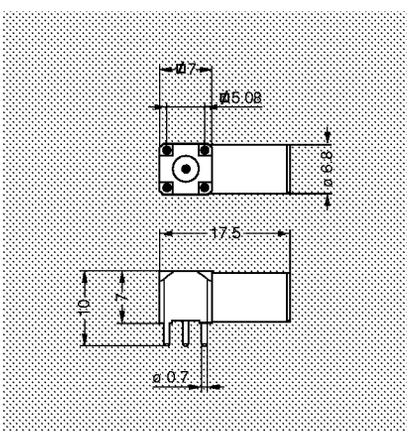


EPL-EPM Elbow socket (90°) for printed circuit

Part number	H (mm)	Weight (g)	Note
EPL.00.250.NTN	10	4.3	●
EPM.00.250.NTN	13	4.5	●

P10 PCB drilling pattern

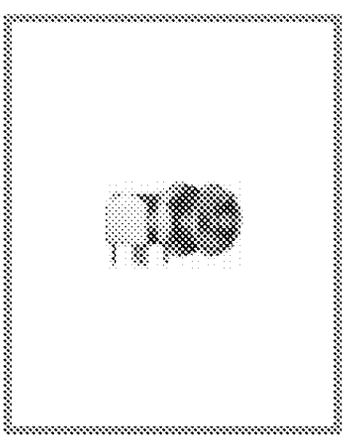


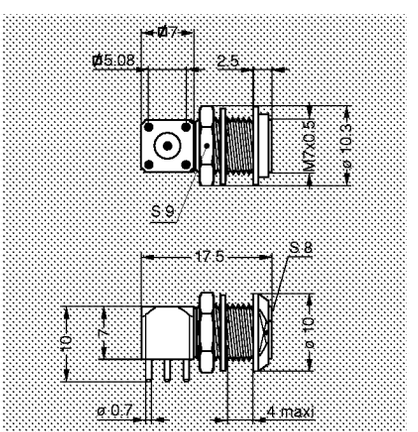


EPK Elbow socket (90°) for printed circuit with clearance under the body

Part number	Weight (g)	Note
EPK.00.250.NTN	4.2	●

P10 PCB drilling pattern





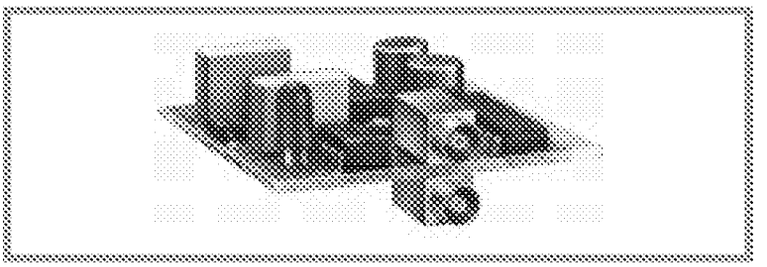
EPS Elbow socket (90°) with two nuts, for printed circuit

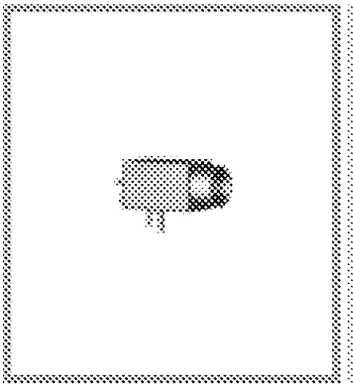
Part number	Weight (g)	Note
EPS.00.250.NTN	5.3	●

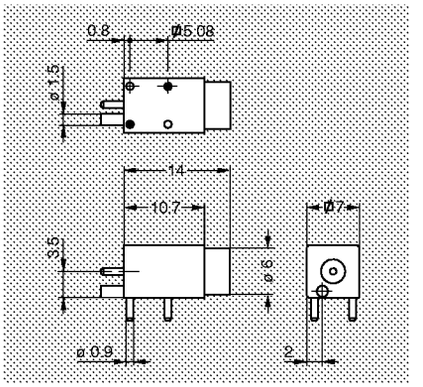
P1 Panel cut-out

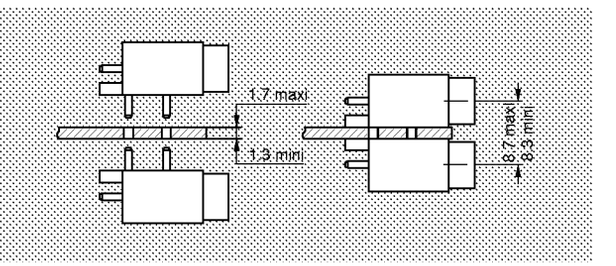
P12 PCB drilling pattern

● Available ○ On request





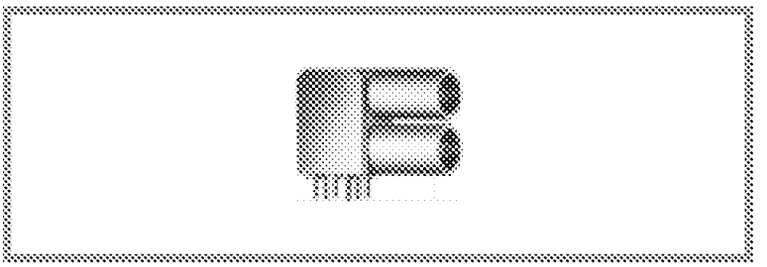


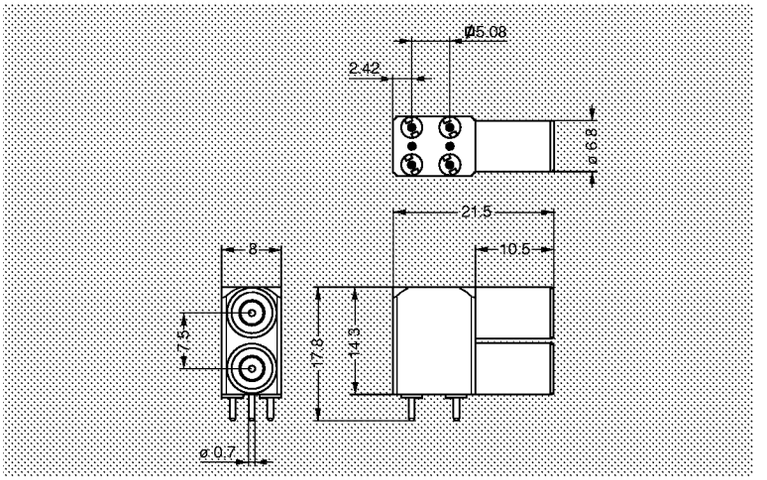


EPN Straight socket for press mounting in pair on printed circuit

Part number	Weight (g)	Note
EPN.00.250.NTN	3.6	●

P9 PCB drilling pattern

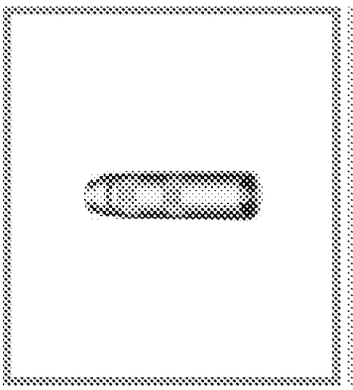


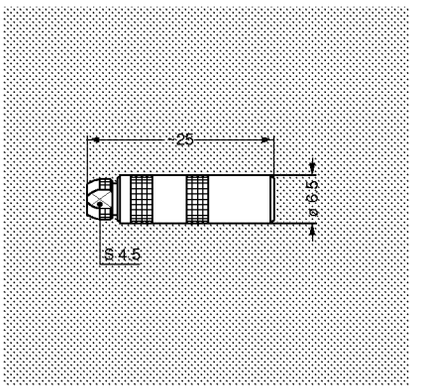


EPY Elbow socket (90°) for printed circuit, with two vertical sockets

Part number	Weight (g)	Note
EPY.00.250.NTN	12.8	●

P13 PCB drilling pattern



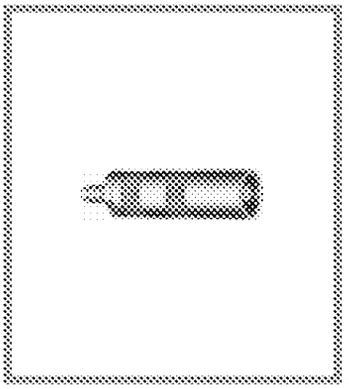


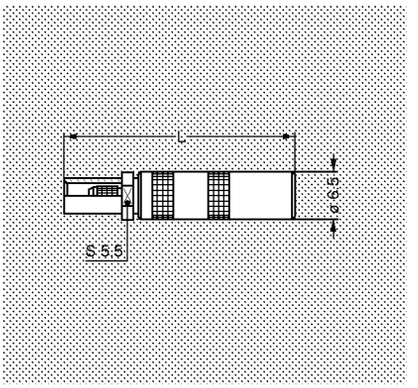
PCA Free socket with cable collet

Part number	Cable group	Note
PCA.00.250.NTLC22	1	●
PCA.00.250.NTLC29	2-3-4	●
PCA.00.250.NTLC31	8	●

M1 Cable assembly

● Available ○ On request





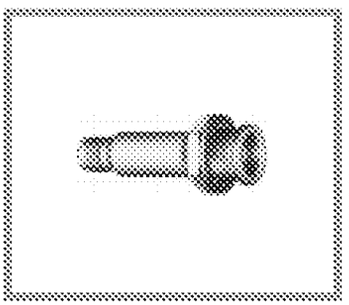
PCS Free socket with cable crimping

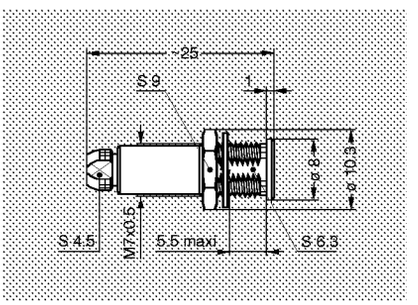
Part number	Cable group	Dim. L	Note
PCS.00.250.NTME24	1	30	●
PCS.00.250.NTME30	2	30	●
PCS.00.250.NTME31	3-4	30	●
PCS.00.250.NTME35	8	30	○
PCS.00.250.NTME44	5	30	●
PCS.00.250.NTME52	6	33	●

Note: the strain relief must be ordered separately (see page 29).

M4 Cable assembly, crimp contact

M5 Cable assembly, solder contact (on request)



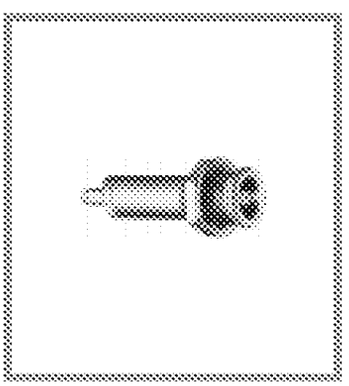


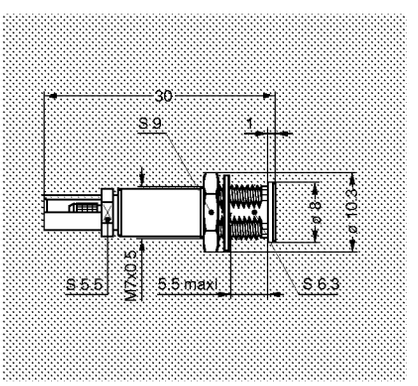
PSA Fixed socket, nut fixing, with cable collet

Part number	Cable group	Note
PSA.00.250.NTLC22	1	●
PSA.00.250.NTLC29	2-3-4	●
PSA.00.250.NTLC31	8	●

M1 Cable assembly

P5 Panel cut-out





PSS Fixed socket, nut fixing, with cable crimping

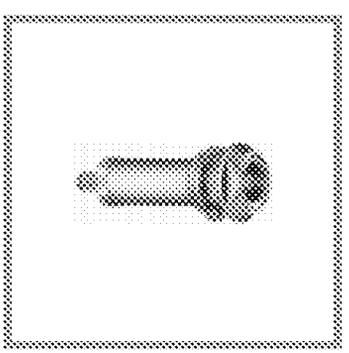
Part number	Cable group	Note
PSS.00.250.NTME24	1	●
PSS.00.250.NTME30	2	●
PSS.00.250.NTME31	3-4	●
PSS.00.250.NTME35	8	○

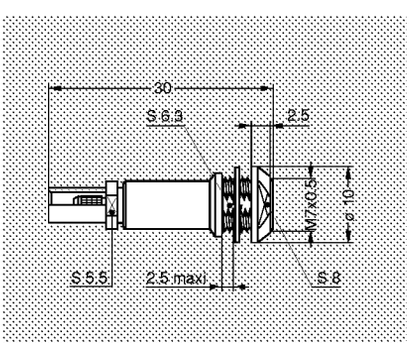
Note: the strain relief must be ordered separately (see page 29).

M4 Cable assembly, crimp contact

M5 Cable assembly, solder contact (on request)

P5 Panel cut-out





PES Fixed socket, nut fixing, with cable crimping (back panel mounting)

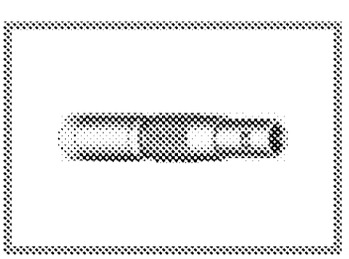
Part number	Cable group	Note
PES.00.250.NTME31	3-4	●
PES.00.250.NTME35	8	●

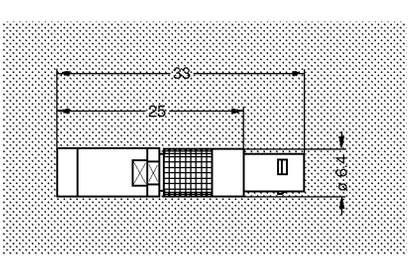
Note: the strain relief must be ordered separately (see page 29).

M4 Cable assembly, crimp contact

M5 Cable assembly, solder contact (on request)

P5 Panel cut-out

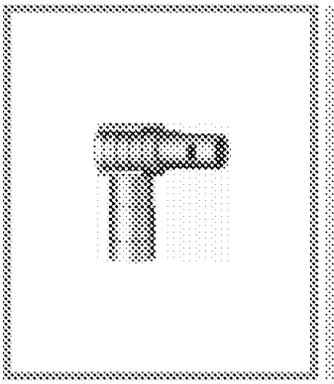


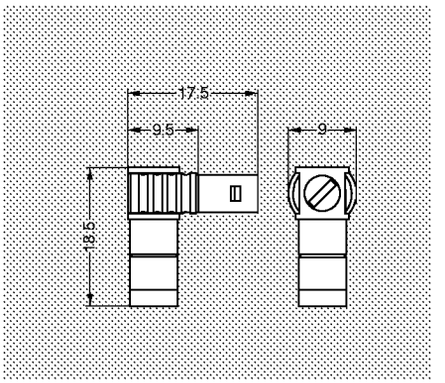


FRT Straight plug with resistor or shorted

Part number	Resistor	Weight (g)	Note
FRT.00.250.NTA00	shorted	4.4	○
FRT.00.250.NTA50	50 Ω 1/8W	4.4	●

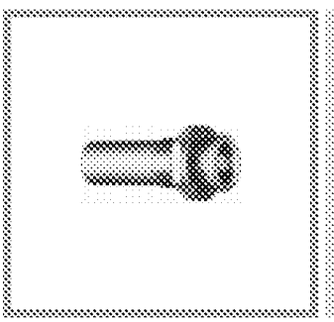
● Available ○ On request

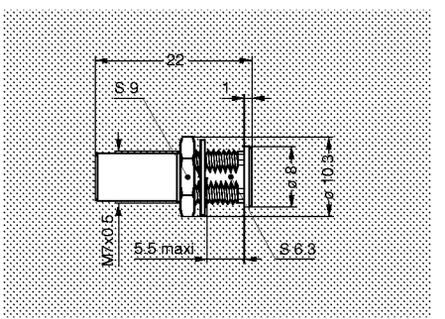




FLR Elbow plug (90°) with resistor

Part number	Resistor	Weight (g)	Note
FLR.00.250.NTA50	50 Ω 1/8W	5.6	●

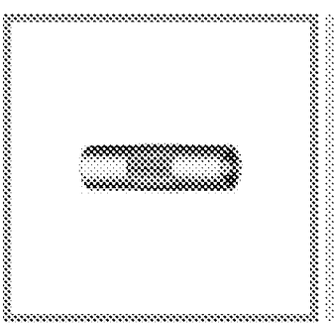


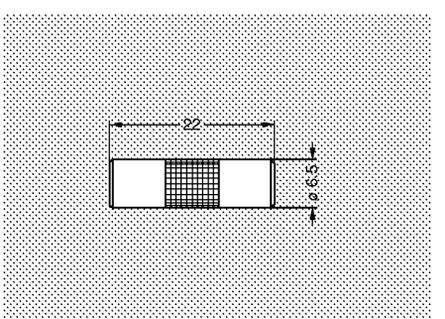


RAD Fixed coupler, nut fixing

Part number	Weight (g)	Note
RAD.00.250.NTM	3.8	●

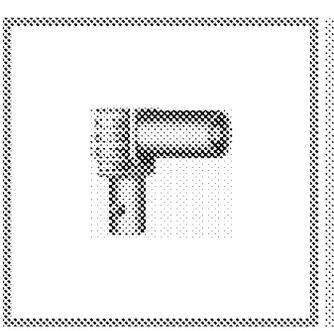
P5 Panel cut-out

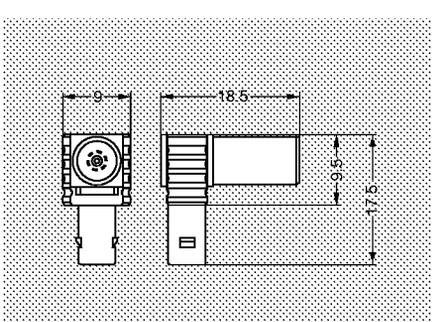




RMA Free coupler

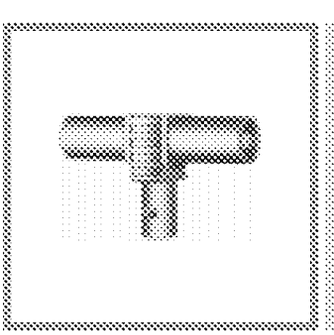
Part number	Weight (g)	Note
RMA.00.250.NTM	2.7	●

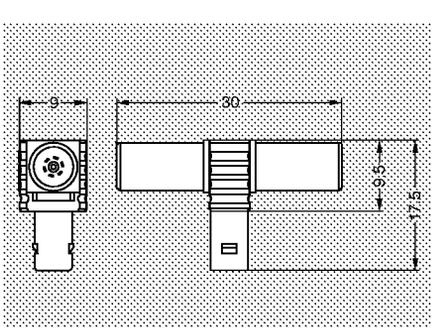




FTR Elbow plug (90°) with socket

Part number	Weight (g)	Note
FTR.00.250.NTA	5.4	●

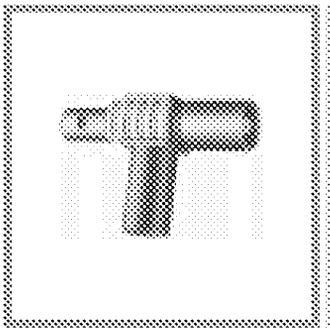


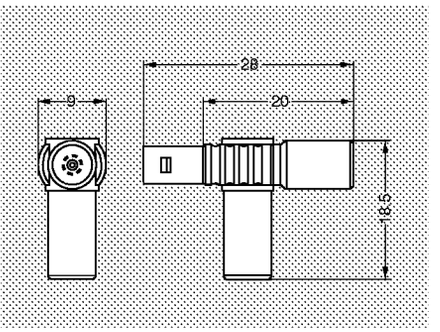


FTA T-plug with two sockets in line

Part number	Weight (g)	Note
FTA.00.250.NTF	7.8	●

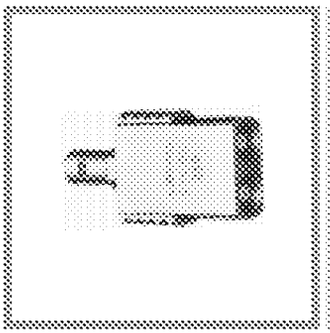
● Available ○ On request

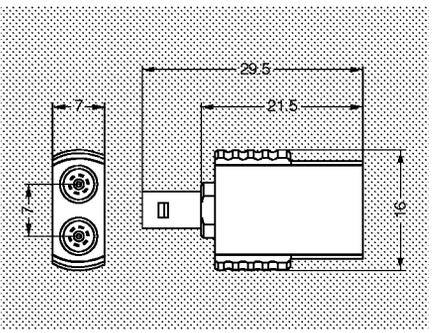




FTL. T-plug with two sockets (90°)

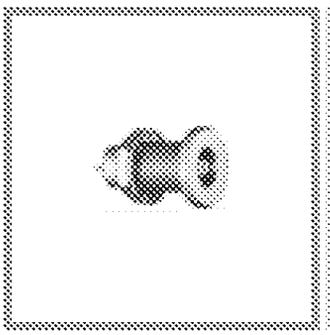
Part number	Weight (g)	Note
FTL.00.250.NTF	7.1	●

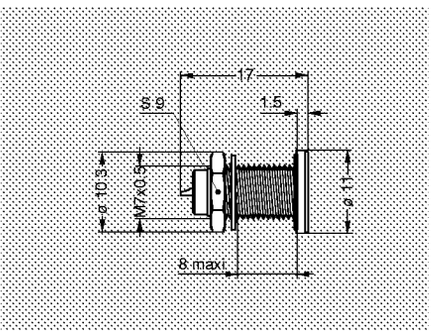




FTY Straight plug with two parallel sockets

Part number	Weight (g)	Note
FTY.00.250.NTF	12.5	●

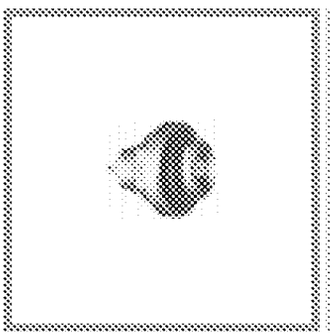


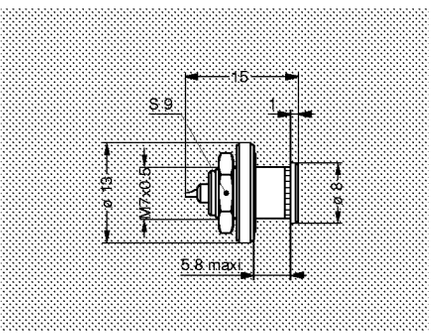


HGP Fixed socket, nut fixing, watertight

Part number	Weight (g)	Note
HGP.00.250.NTLP	4.2	●

P1 Panel cut-out

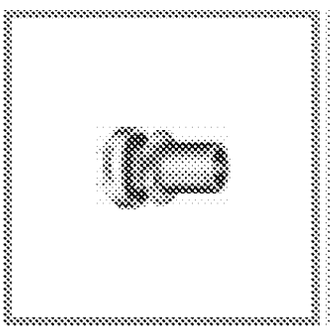


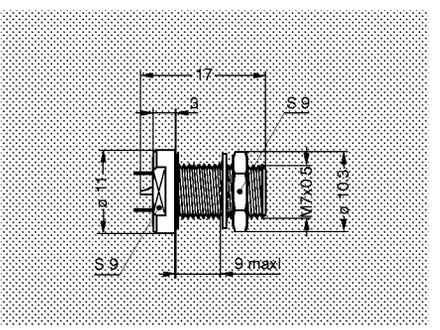


HGW Fixed socket, nut fixing, with rear sealing ring

Part number	Weight (g)	Note
HGW.00.250.NTLP	4.2	●

P1 Panel cut-out



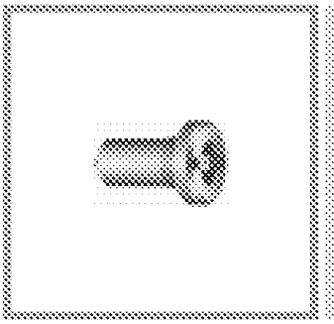


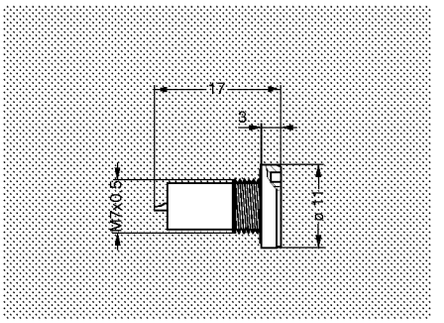
EWF Fixed socket, nut fixing, vacuumtight (back panel mounting)

Part number	Weight (g)	Note
EWF.00.250.NTLPV	4.2	●

P1 Panel cut-out

● Available ○ On request

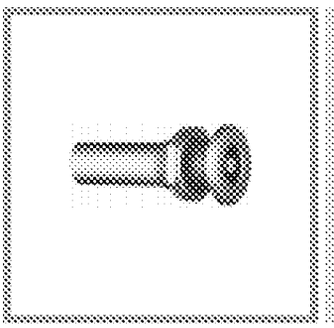


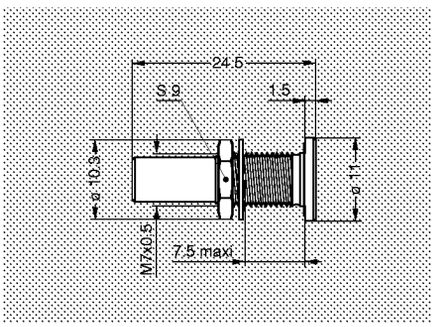


EWV Fixed socket, vacuumtight

Part number	Weight (g)	Note
EWV.00.250.NTLPV	3.7	●

P2 Panel cut-out

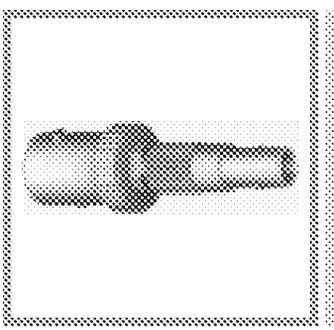


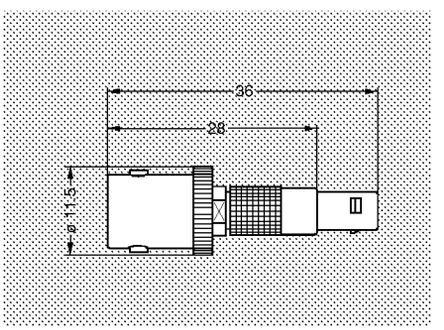


SWH Fixed coupler, nut fixing, vacuumtight

Part number	Weight (g)	Note
SWH.00.250.NTMV	5.2	●

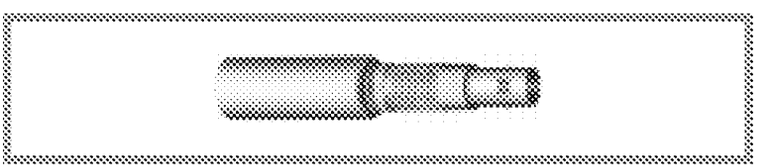
P1 Panel cut-out

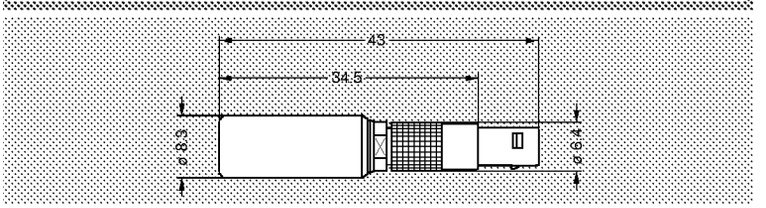




ABF Adaptor from LEMO plug to BNC socket

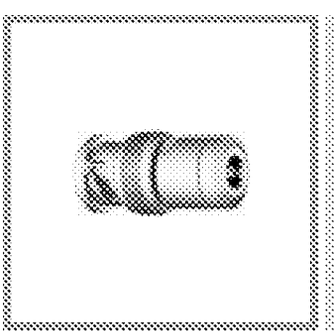
Part number	Weight (g)	Note
ABF.00.250.NTA	8.3	●

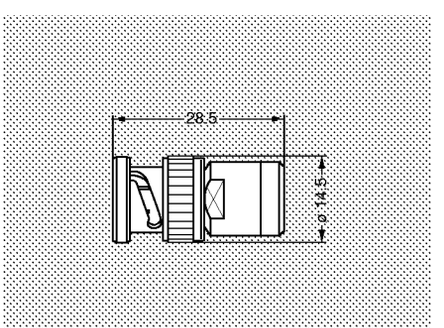




APF Adaptor from LEMO plug to CINCH socket

Part number	Colour of the ring	Weight (g)	Note
APF.00.250.DTAB	white	7	●
APF.00.250.DTAR	red	7	●

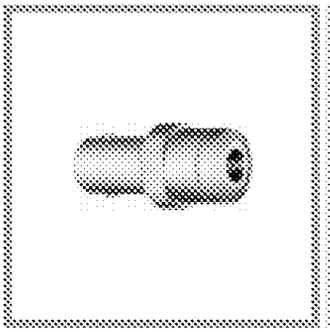


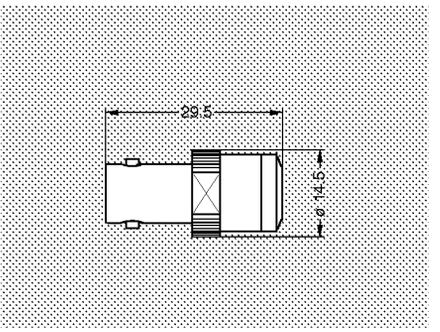


ABA Adaptor from LEMO socket to BNC plug

Part number	Weight (g)	Note
ABA.00.250.NTL	18.7	●

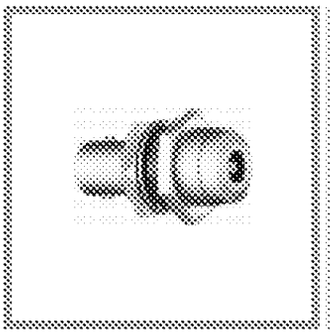
● Available ○ On request

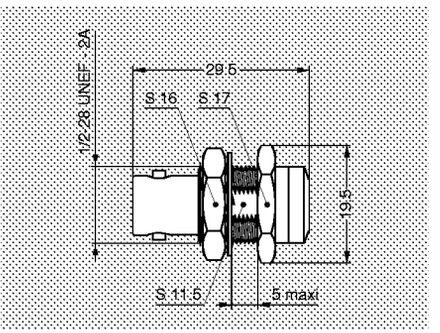




ABC Adaptor from LEMO socket to BNC socket

Part number	Weight (g)	Note
ABC.00.250.NTM	17	●

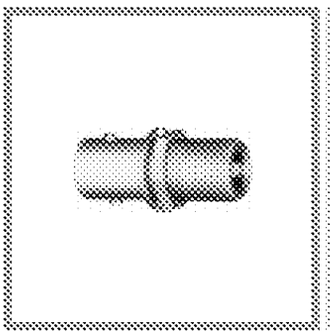




ABD Adaptor from LEMO socket to BNC fixed socket

Part number	Weight (g)	Note
ABD.00.250.NTM	21.4	●

P7 Panel cut-out



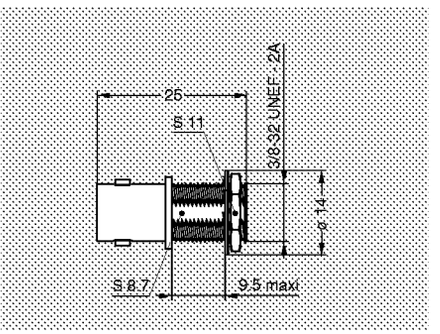
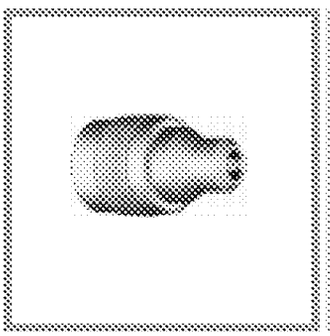
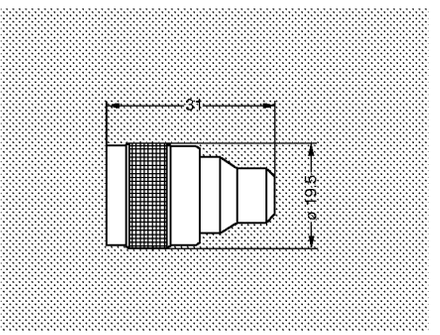


ABB Adaptor from LEMO fixed socket to BNC socket

Part number	Weight (g)	Note
ABB.00.250.NTM	9.4	●

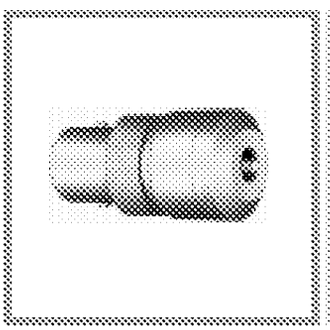
P6 Panel cut-out

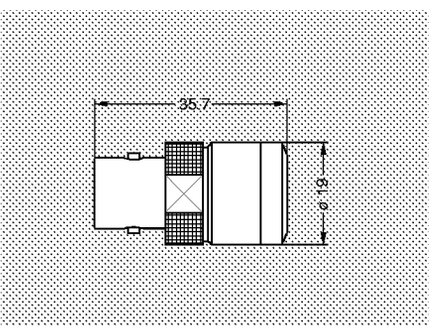




ACA Adaptor from LEMO socket to C plug

Part number	Weight (g)	Note
ACA.00.250.NTL	32	●

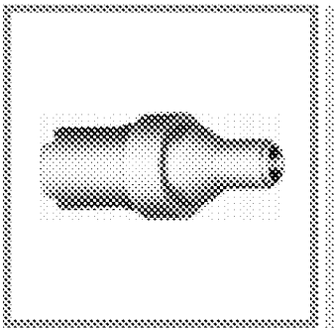


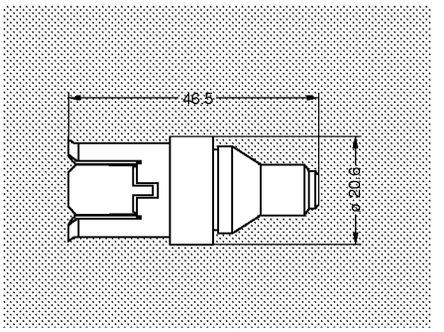


ACB Adaptor from LEMO socket to C socket

Part number	Weight (g)	Note
ACB.00.250.NTM	50.3	●

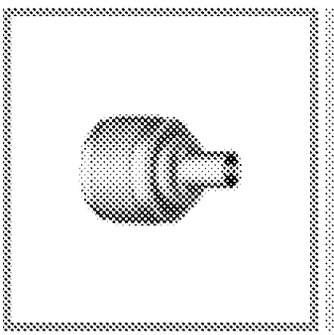
● Available ○ On request

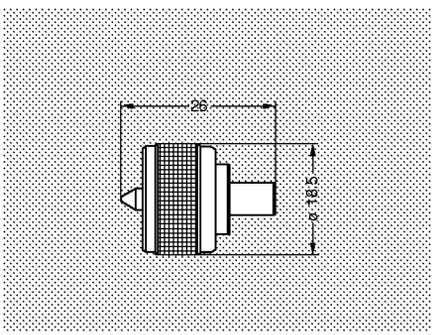




AGG Adaptor from LEMO socket to General-Radio socket type 874

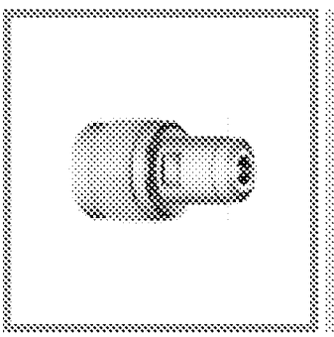
Part number	Weight (g)	Note
AGG.00.250.NTM	20	●

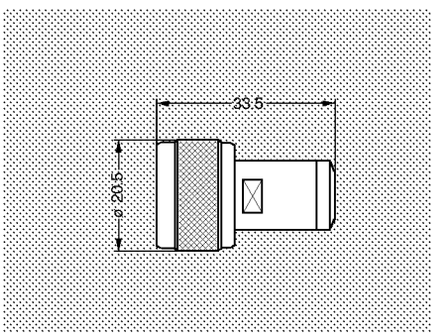




AGH Adaptor from LEMO socket to UHF plug

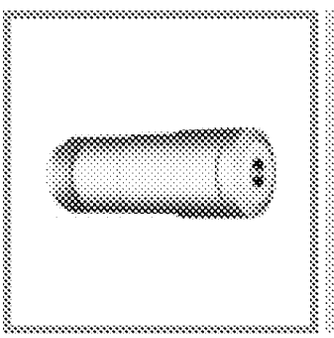
Part number	Weight (g)	Note
AGH.00.250.NTL	13.8	●

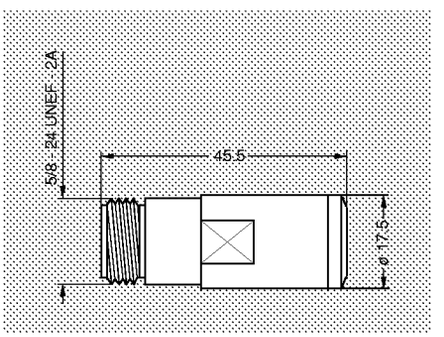




ANA Adaptor from LEMO socket to N plug

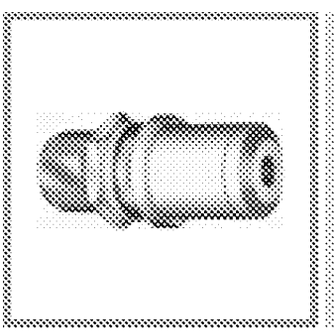
Part number	Weight (g)	Note
ANA.00.250.NTL	38	●

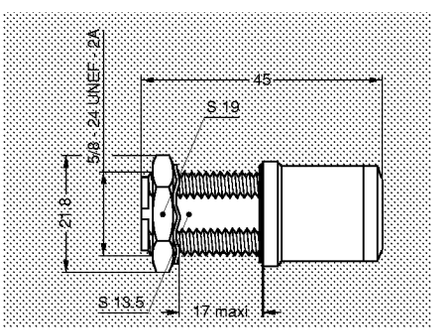




ANB Adaptor from LEMO socket to N socket

Part number	Weight (g)	Note
ANB.00.250.NTM	61.7	●



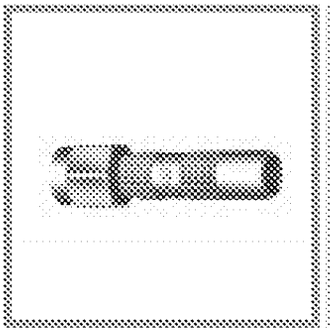


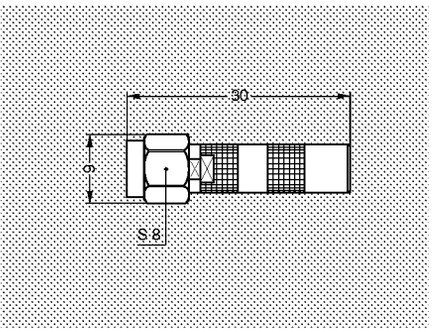
ANC Adaptor from LEMO socket to N fixed socket

Part number	Weight (g)	Note
ANC.00.250.NTM	63.5	●

P8 Panel cut-out

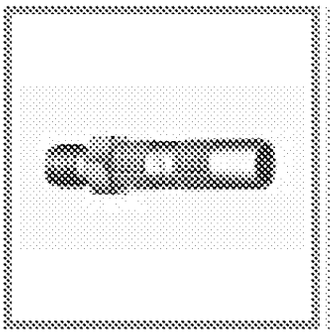
● Available ○ On request

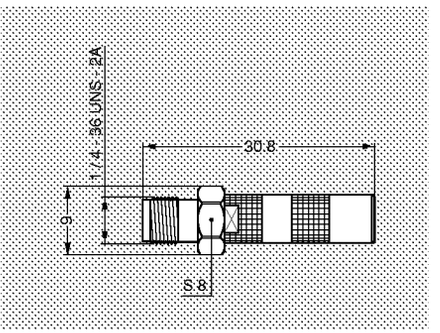




ASA Adaptor from LEMO socket to SMA plug

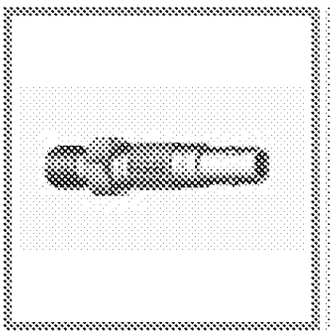
Part number	Weight (g)	Note
ASA.00.250.NTL	4.9	●

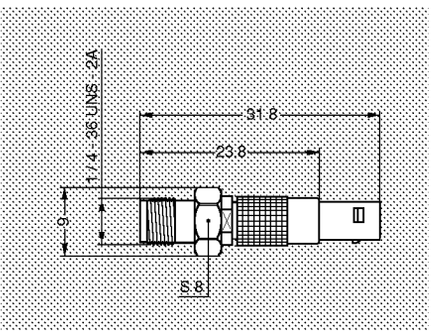




ASB Adaptor from LEMO socket to SMA socket

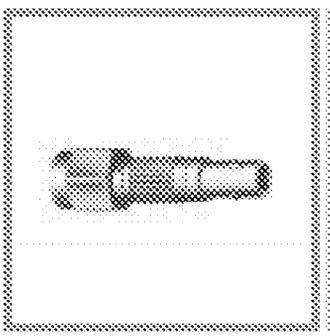
Part number	Weight (g)	Note
ASB.00.250.NTM	4.6	●

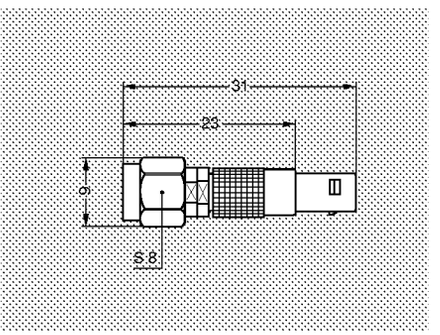




ASF Adaptor from LEMO plug to SMA socket

Part number	Weight (g)	Note
ASF.00.250.NTA	4.6	●



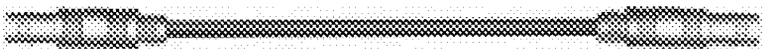


ASG Adaptor from LEMO plug to SMA plug

Part number	Weight (g)	Note
ASG.00.250.NTG	4.9	●

● Available ○ On request

MFB models



MSB models

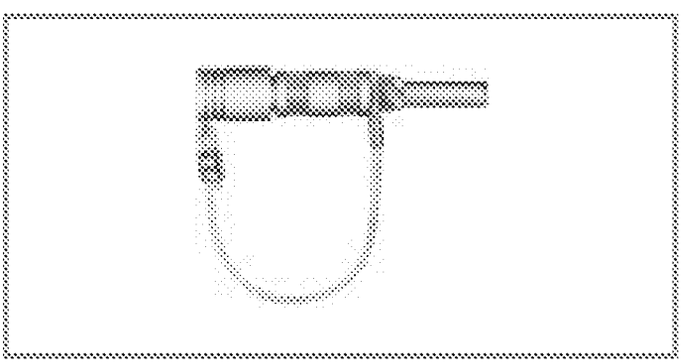
Delay lines

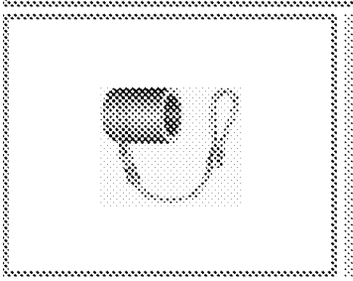
Part number	Delay (ns)	Part number
MFB.00.250.RTE005	0.5	MSB.00.250.RTE005
MFB.00.250.RTE010	1.0	MSB.00.250.RTE010
MFB.00.250.RTE020	2.0	MSB.00.250.RTE020
MFB.00.250.RTE030	3.0	MSB.00.250.RTE030
MFB.00.250.RTE040	4.0	MSB.00.250.RTE040
MFB.00.250.RTE050	5.0	MSB.00.250.RTE050
MFB.00.250.RTE060	6.0	MSB.00.250.RTE060
MFB.00.250.RTE080	8.0	MSB.00.250.RTE080
MFB.00.250.RTE100	10.0	MSB.00.250.RTE100
MFB.00.250.RTE160	16.0	MSB.00.250.RTE160
MFB.00.250.RTE200	20.0	MSB.00.250.RTE200
MFB.00.250.RTE320	32.0	MSB.00.250.RTE320
MFB.00.250.RTE640	64.0	MSB.00.250.RTE640

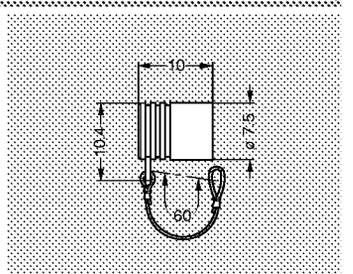
Assembled Cables

Part number	Length (cm)	Part number
MFB.00.250.LTE010	10	MSB.00.250.LTE010
MFB.00.250.LTE020	20	MSB.00.250.LTE020
MFB.00.250.LTE030	30	MSB.00.250.LTE030
MFB.00.250.LTE040	40	MSB.00.250.LTE040
MFB.00.250.LTE050	50	MSB.00.250.LTE050
MFB.00.250.LTE060	60	MSB.00.250.LTE060
MFB.00.250.LTE080	80	MSB.00.250.LTE080
MFB.00.250.LTE100	100	MSB.00.250.LTE100
MFB.00.250.LTE150	150	MSB.00.250.LTE150
MFB.00.250.LTE200	200	MSB.00.250.LTE200
MFB.00.250.LTE300	300	MSB.00.250.LTE300
MFB.00.250.LTE400	400	MSB.00.250.LTE400
MFB.00.250.LTE500	500	MSB.00.250.LTE500

Note: the standard cable used to manufacture these cable assemblies is CCH.99.281.505 (LEMO) as per IEC.50.2.1 standard. On request this type of cable can be replaced by other coaxial cables. Other cable lengths are available on request.







Fitting of the cord

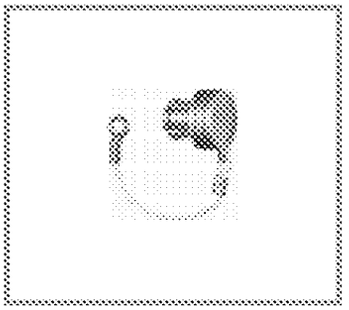
Slide the plug into the loop of the cord. Place the loop into the groove in front of the collet nut and tighten the loop.

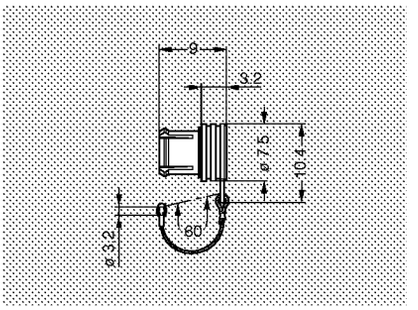
BFA Plug Caps

Part number	Weight (g)
BFA.00.100.PCSG	0.7

Note: upon request this cap can be supplied in black and the last letter "G" of the part number should be replaced with "N".

- Body material: Polyoxymethylen (POM) grey
- Cord material: Polyamid 6, white
- O-ring material: Silicone rubber
- Maximum operating temperature: 100°C
- Watertightness: IP61 according to IEC 529





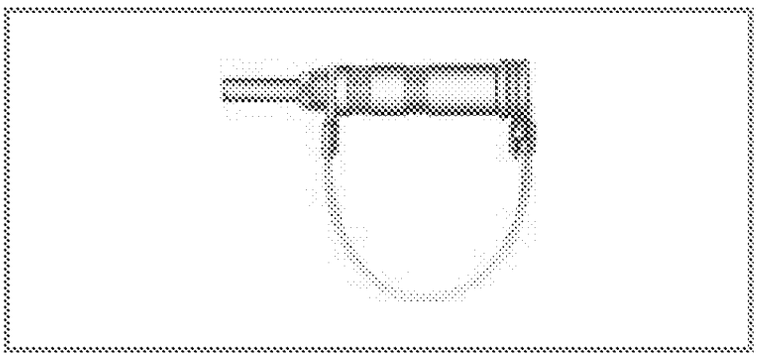
- Body material: Polyoxymethylen (POM) grey
- Cord material: Polyamid 6, white

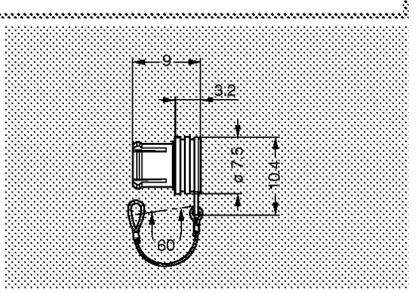
BRA Blanking cap for fixed socket and free straight socket

Part number	Weight (g)
BRA.00.200.PCSG	0.6

Note: upon request this cap can be supplied in black and the last letter “G” of the part number should be replaced with “N”.

- O-ring material: Silicone rubber
- Maximum operating temperature: 100°C
- Watertightness: IP61 according to IEC 529





Fitting of the cord

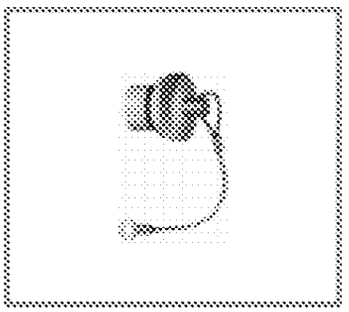
Slide the socket into the loop of the cord. Place the loop into the groove in front of the collet nut and tighten the loop.

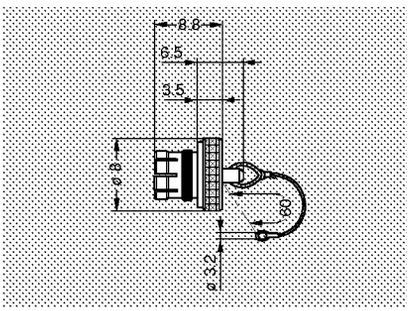
BRD Blanking cap for free socket

Part number	Weight (g)
BRD.00.200.PCSG	0.5

Note: upon request this cap can be supplied in black and the last letter “G” of the part number should be replaced with “N”.

- Body material: Polyoxymethylen (POM) grey
- Cord material: Polyamid 6, white
- O-ring material: Silicone rubber
- Maximum operating temperature: 100°C
- Watertightness: IP61 according to IEC 529

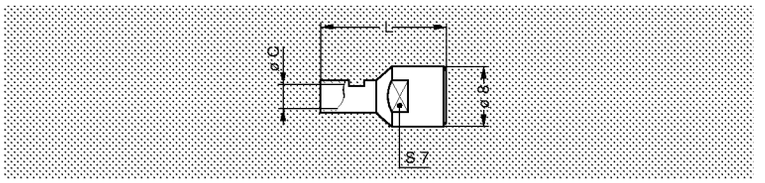


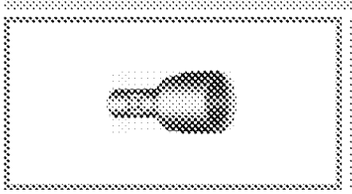


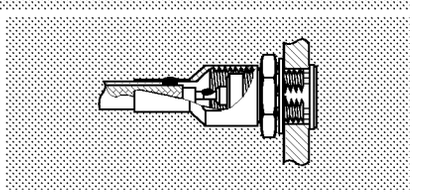
BRE Blanking cap for fixed socket, free socket and coupler

Part number	Weight (g)
BRE.00.200.NAS	6.5

- Body material: Brass (UNS C 38500), nickel-plated (3 µm)
- Cable material: Stainless steel
- O-ring material: Silicone rubber or FPM
- Maximum operating temperature: 250°C
- Watertightness: IP61 according to IEC 529





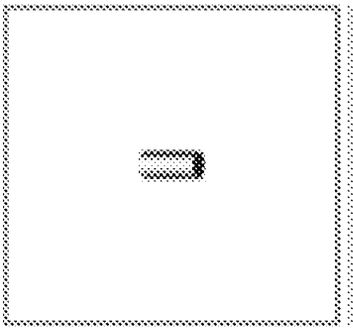


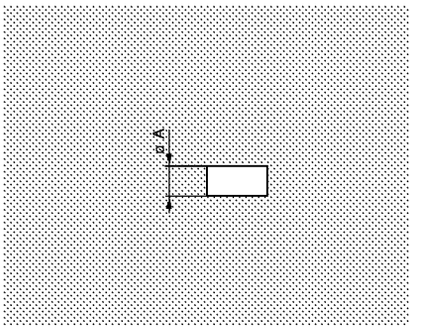
GCD Earthing cap

Part number	Cable group	Dim.	
		L	C
GCD.00.020.LA	1	12	2.0
GCD.00.032.LA	2-3-4	16	3.2
GCD.00.050.LA	6	19	5.0

Note: the shield braid of the cable should be soldered onto the back of the cap screwed on the socket outer shell.

- Material: Brass (UNS C 38500) gold-plated (0.5 µm)



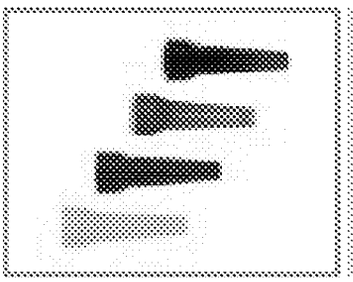


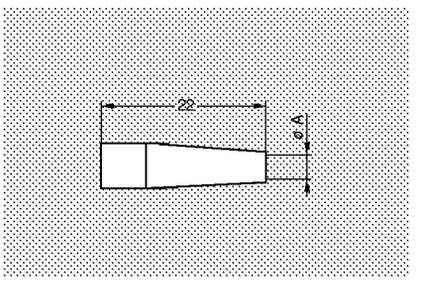
❁ Material: Copper (UNS C 18700) nickel-plated (3µm)

FFS Crimp ferrule

Part number	Cable group	Dim. øA
FFS.00.160.DN	1	3.1
FFS.00.161.MN	2-3-4	3.8
FFS.00.162.DN	8	4.4
FFS.00.163.DN	5	5.3
FFS.00.164.DN	6	6.2
FFV.00.160.DN	7	6.3

Note: sockets and plugs to be crimped are always supplied with a crimp ferrule. To order this accessory separately, use the above part numbers.





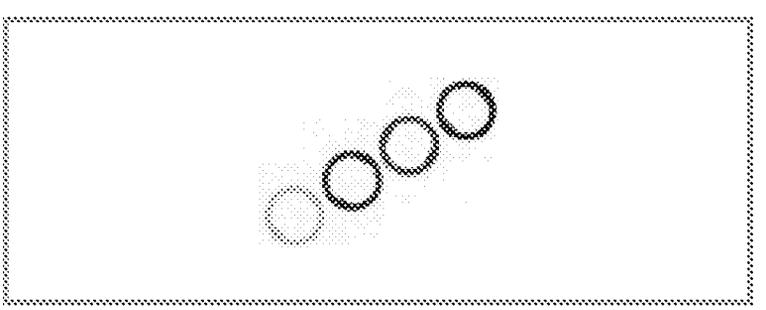
Ref.	Colour	Ref.	Colour	Ref.	Colour
A	blue	J	yellow	R	red
B	white	M	brown	S	orange
G	grey	N	black	V	green

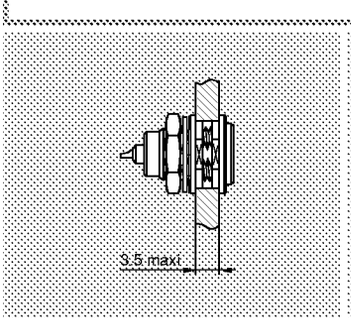
GMB Strain relief

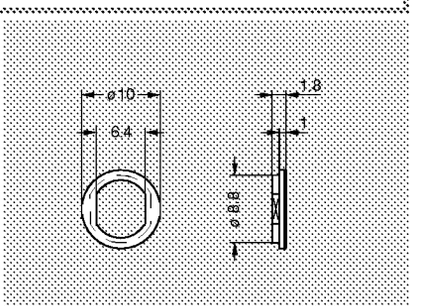
Part number	ø Cable max	ø Cable min	Dim. A	Nut for fitting the strain relief part nb
GMB.00.025.DG	2.8	2.5	2.5	FFM.00.130.LN
GMB.00.028.DG	3.1	2.8	2.8	FFM.00.130.LN
GMB.00.032.DG	3.5	3.2	3.2	FFM.00.130.LN

Note:
a) for use with all crimp models and nut for fitting a strain relief
b) the last letter of the part number "G" specifies the colour grey. Refer to the table to the left to define another colour and replace the letter "G" by the one corresponding to the colour required.

❁ Material: Polyurethan (Desmopan 786)
❁ Operating temperature: -40°C + 80°C







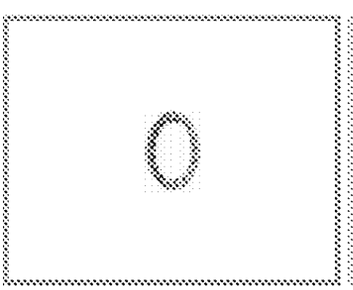
GRA Insulating washers

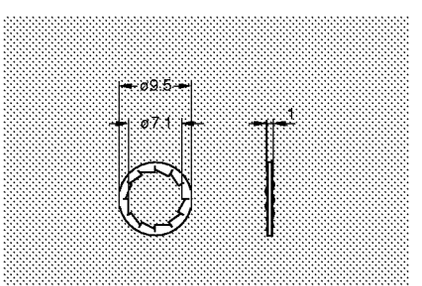
Part number	Weight (g)
GRA.00.269.GG	0.1

Note:
a) sockets and plugs mounted on panels can be fitted with insulating washers. The nine colours available combined with those for the strain reliefs makes colour coding possible.
b) the last letter of the part number "G" specifies the colour grey. Refer to the table below to define another colour and replace the letter "G" by the one corresponding to the colour required.

❁ Material: Polyamid (PA.6)
❁ Operating temperature: -40°C + 80°C

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



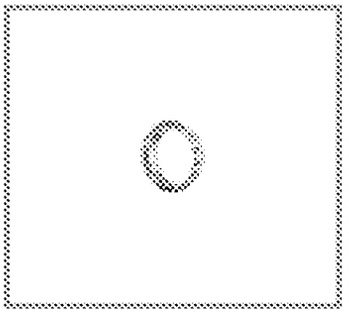


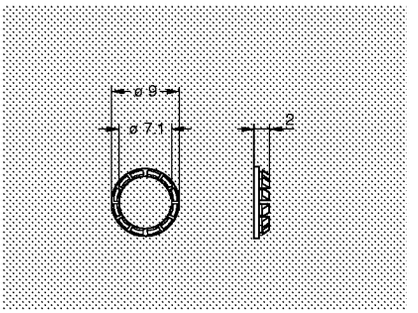
GBA Locking washer

Part number	Weight (g)
GBA.00.250.FN	0.2

Note: sockets and plugs are always supplied with a locking washer. To order this accessory separately, use the above part number.

❁ Material: Brass (UNS C 52100) nickel-plated (3 µm)



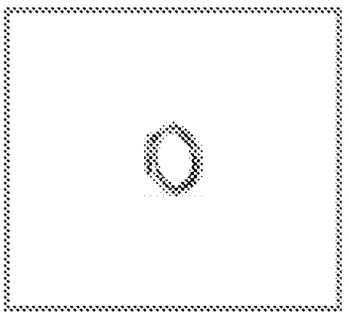


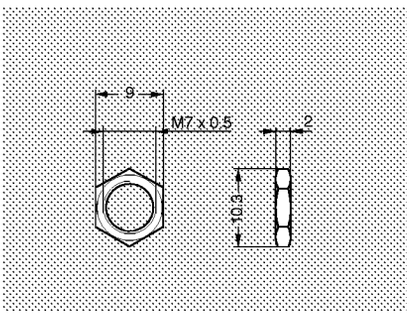
GBB Tapered washer

Part number	Weight (g)
GBB.00.250.LN	0.2

Note: to order this accessory separately, use the above part number.

- Material: Brass (UNS C 38500) nickel-plated (3 µm)



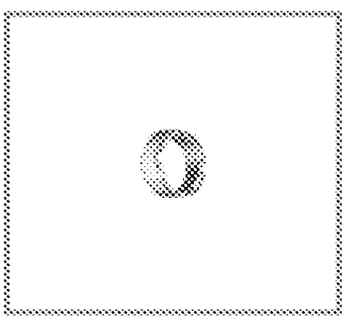


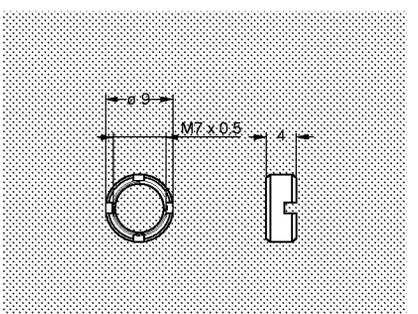
GEA Hexagonal nut

Part number	Weight (g)
GEA.00.240.LN	0.6

Note: sockets and plugs are supplied with a hexagonal nut as standard. To order this accessory separately, use the above part number. The last letters "LN" of the part number refer to the nut material and treatment. If a nut in aluminium alloy is desired, replace the last letters of the part number by "PT".

- Material:
  – Brass (UNS C 38500) nickel-plated (3 µm)
  – Aluminium alloy (AA 6012) natural anodized



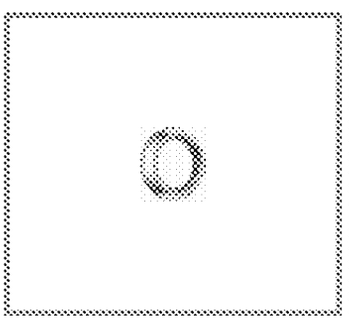


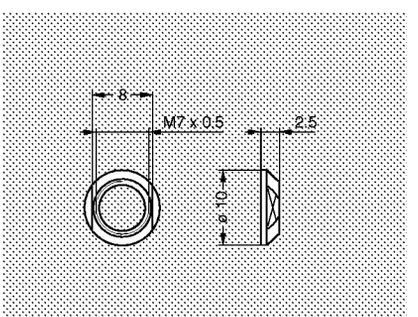
GEB Round nut

Part number	Weight (g)
GEB.00.240.LN	0.8

Note: to order this accessory separately, use the above part number.

- Material: Brass (UNS C 38500) nickel-plated (3 µm)



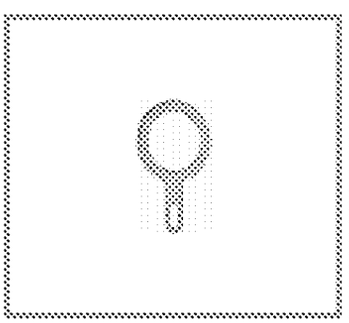


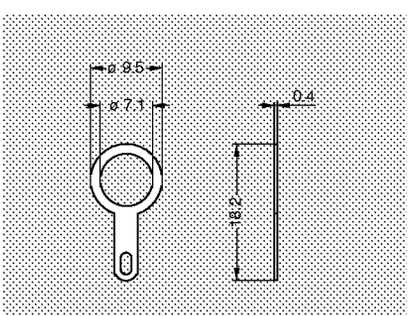
GEC Conical nut

Part number	Weight (g)
GEC.00.240.LN	0.6

Note: to order this accessory separately, use the above part number.

- Material: Brass (UNS C 38500) nickel-plated (3 µm)

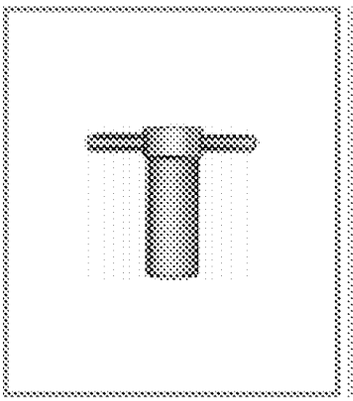


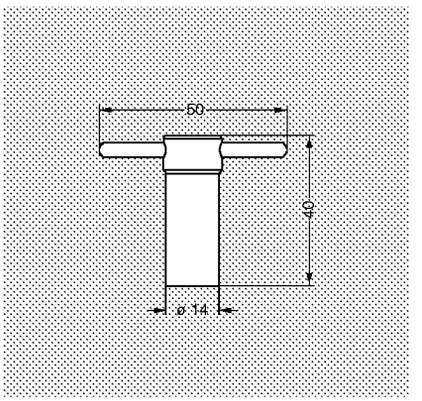


GCA Earthing Washer

Part number	Weight (g)
GCA.00.255.LT	0.2

- Material: Brass (UNS C 27400) treated CuSnZn (2 µm)

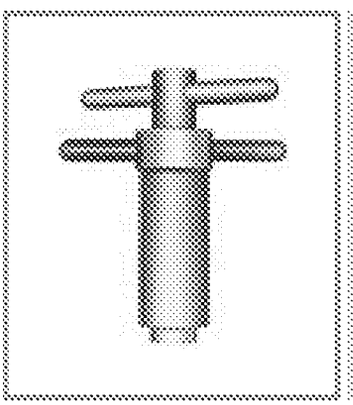


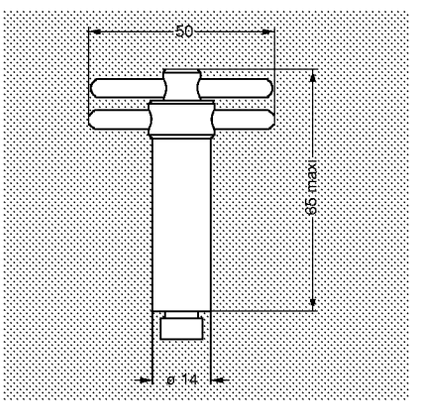


DCG Spanner for hexagonal nut

Part number	Part number of the nut
DCG.91.149.0TN	GEA.00.240.LN

※ Material: Blackened steel

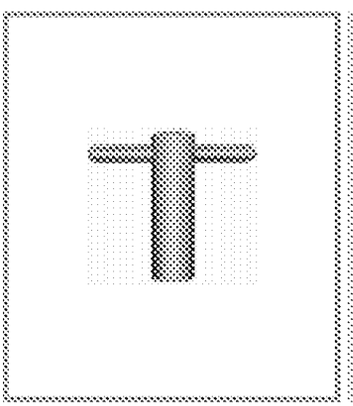


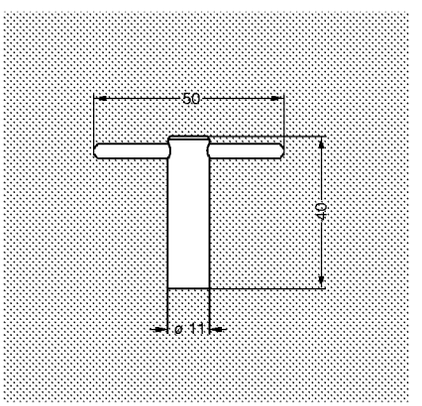


DCA Spanner for hexagonal nut with locator for flats on socket thread

Part number	Part number of the nut
DCA.91.149.0TN	GEA.00.240.LN

※ Material: Blackened steel

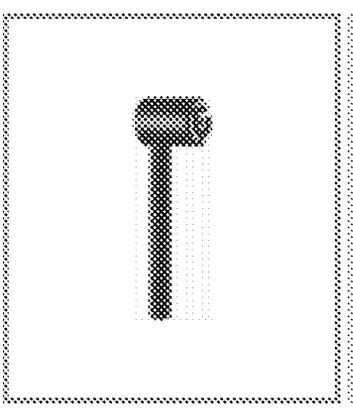


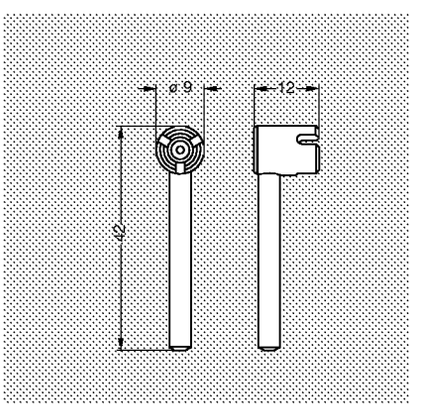


DCB Spanner for round nut

Part number	Part number of the nut
DCB.91.119.0TN	GEB.00.240.LN

※ Material: Blackened steel

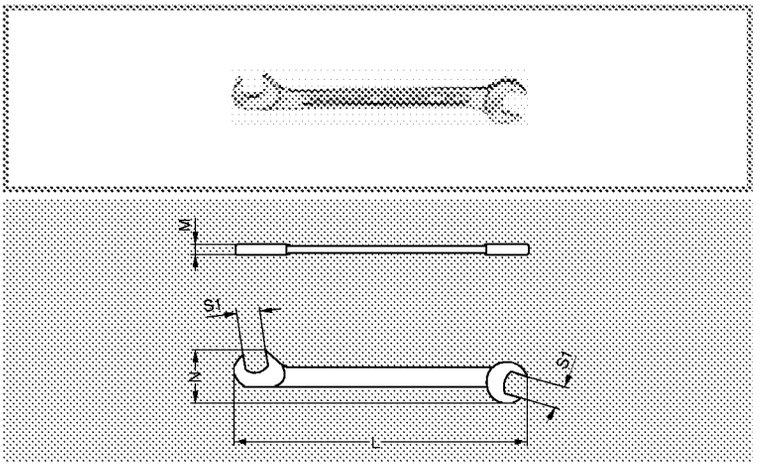




DCN Spanner for assembling plug with 3 latches

Part number
DCN.91.905.0TK

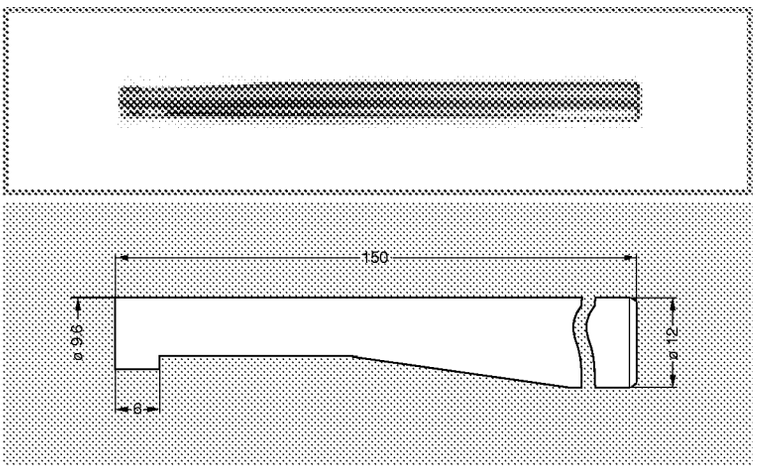
※ Material: Blackened steel



DCP Flat spanner for collet nut

Part number	Dimensions			
	L	M	N	S1
DCP.99.045.TC	70	2	10.5	4.5
DCP.99.050.TC	78	2	12.6	5.0
DCP.99.055.TC	78	2	12.6	5.5
DCP.99.060.TC	78	2	12.6	6.0

❖ Material: Chrome-plated steel

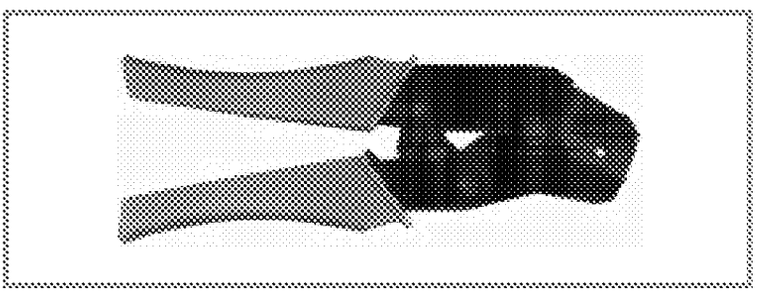


DCR Extraction tool for plugs

Part number
DCR.91.106.PT

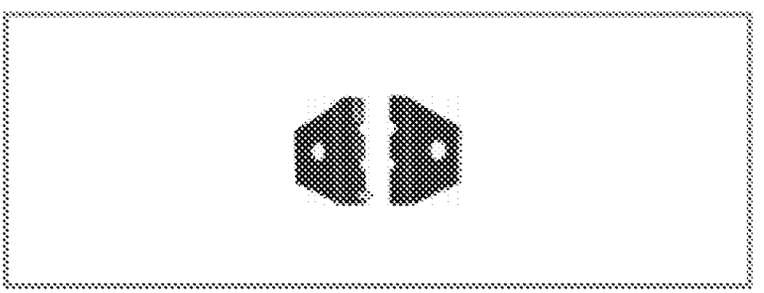
❖ Material: Aluminium alloy

Note: this type of tool has been produced in order to facilitate the mating and unmating of plugs and is particularly useful in high density applications.



DPE Crimping tool with die

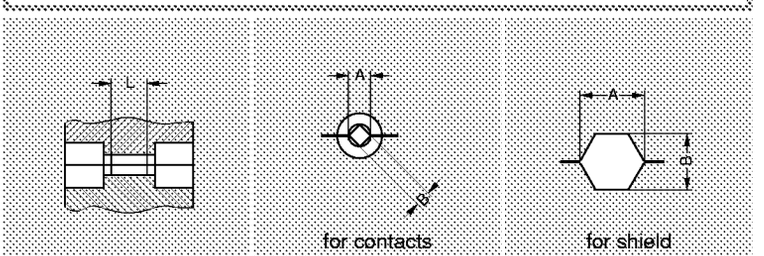
Part number	Cable group
DPE.99.123.1K	1
DPE.99.123.8K	2-3-4
DPE.99.124.3K	8
DPE.99.125.2K	5
DPE.99.176.2K	6-7



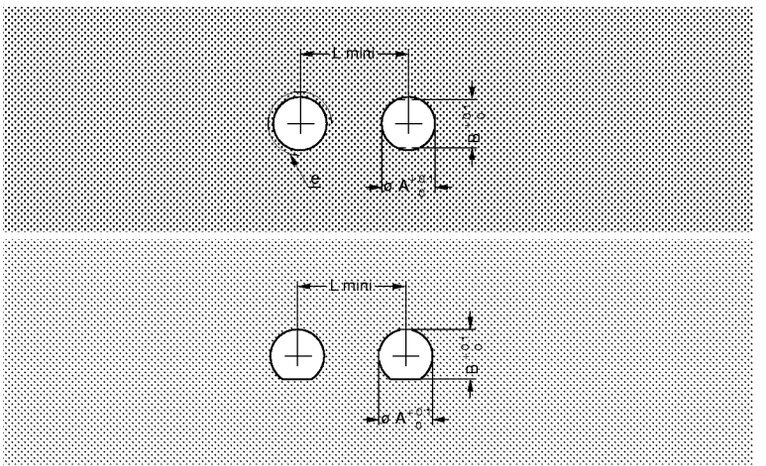
DPN Dies

Part number	Cable group	Die dimension				
		For contacts			For shield	
		A	B	L	A	B
DPN.99.123.1K	1	1.29	0.91	2.0	3.10	2.70
DPN.99.123.8K	2-3-4	1.29	0.91	2.0	3.80	3.30
DPN.99.124.3K	8	1.29	0.91	2.0	4.36	3.78
DPN.99.125.2K	5	1.29	0.91	2.0	5.20	4.50
DPN.99.176.2K	6-7	1.71	1.21	2.5	6.20	5.37

❖ Dies material: Blackened steel



Panel cut-out

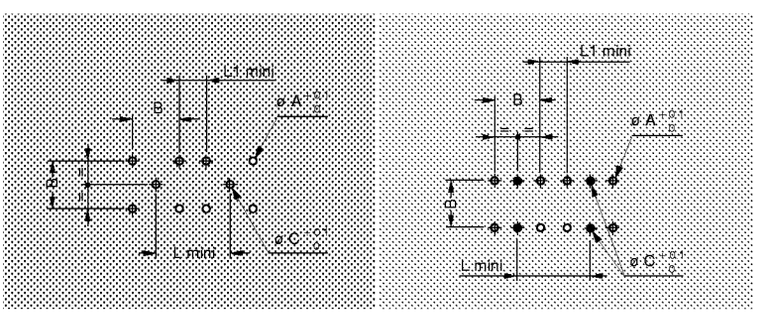


Cut-out	Model	Dimensions			
		A	B	L	e
P1	HGP-HGW-SWH-ECP EPE-EPS-FAB-EWF	7.1	–	14.5	–
P2	EWV	–	–	12.0	M7x0.5
P3	ERC	–	–	9.0	M7x0.5
P4	ERT	$7^{0}_{-0.02}$	–	–	–
P5	Other models [1]	7.1	6.5	14.5	–
P6	ABB	9.7	9.0	15.0	–
P7	ABD	12.9	11.7	20.5	–
P8	ANC	16.1	13.7	24.0	–

Note: 1) If these models are used with a tapered washer GBB, the panel cut-out must be according P1.

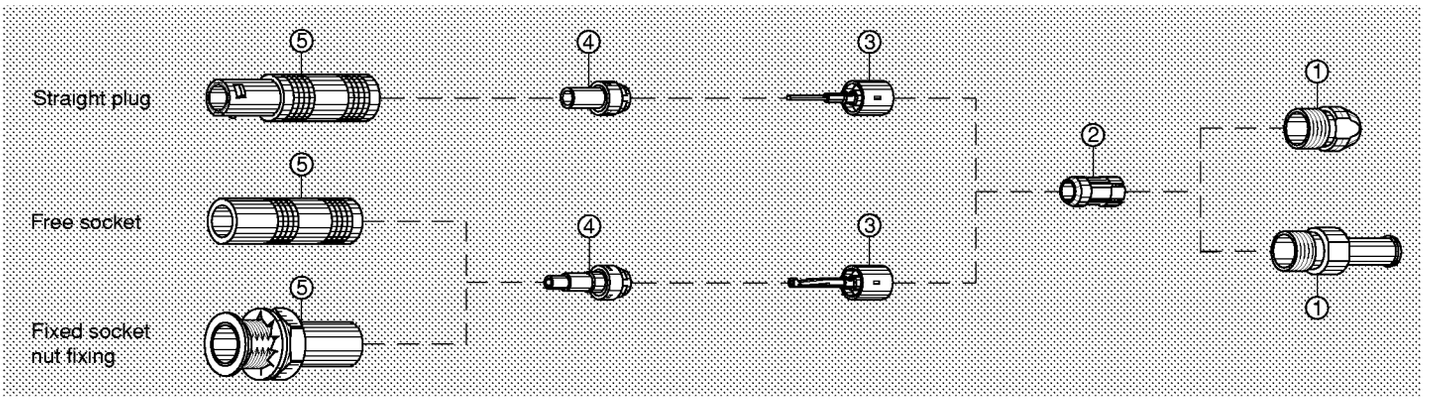
Recommended mounting nut torque: 2.5 Nm.

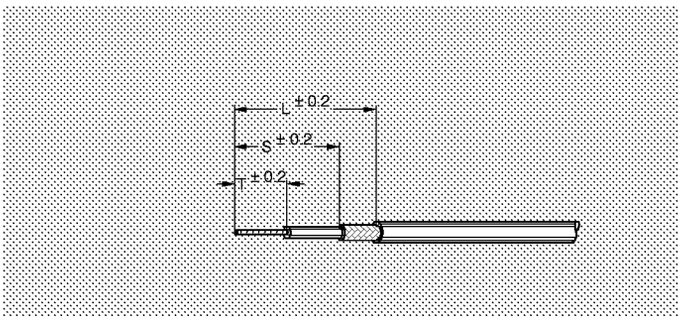
PCB drilling pattern



Cut-out	Model	Dimensions				
		A	B	L	L1	C
P9	EPN	0.9	5.08	–	2.0	–
P10	Other models	0.8	5.08	8.0	2.9	0.8
P11	FPA	0.8	5.08	8.0	2.9	1.0
P12	EPE-EPS	0.8	5.08	14.5	9.4	0.8
P13	EPY	0.8	5.08	9.0	3.9	0.8

Terminating of plugs and straight sockets with cable collet M1 M2 M3

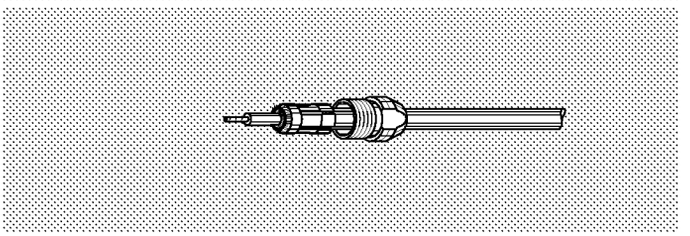




1. Cable preparation

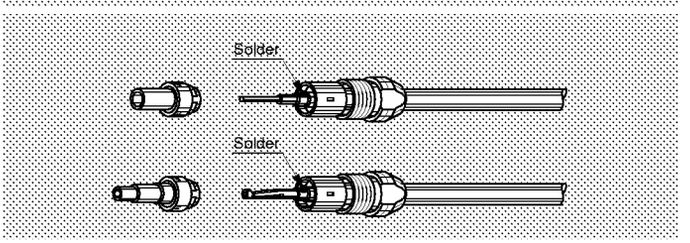
First place the strain relief (if to be used) on the cable.
Strip the cable according to dimensions below.

Cable group	M1			M2			M3		
	T	S	L	T	S	L	T	S	L
1-2-3-4-8	4	4.5	8	–	–	–	5	5	8
6-7	–	–	–	7.5	8.5	13	–	–	–

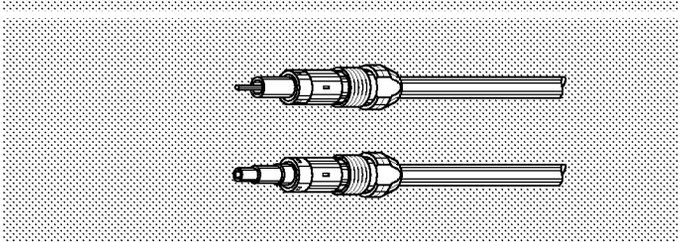


2. Cable termination

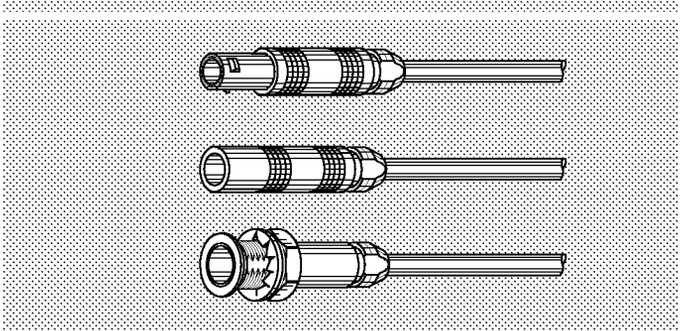
2.1 Place the collet nut ① and the collet ② on the cable. Fold back the shield braid onto the conical part of the collet, and trim to the outer edge of the collet



2.2 Slide the subassembly ③ to trap the shield braiding and solder the central conductor into the contact.



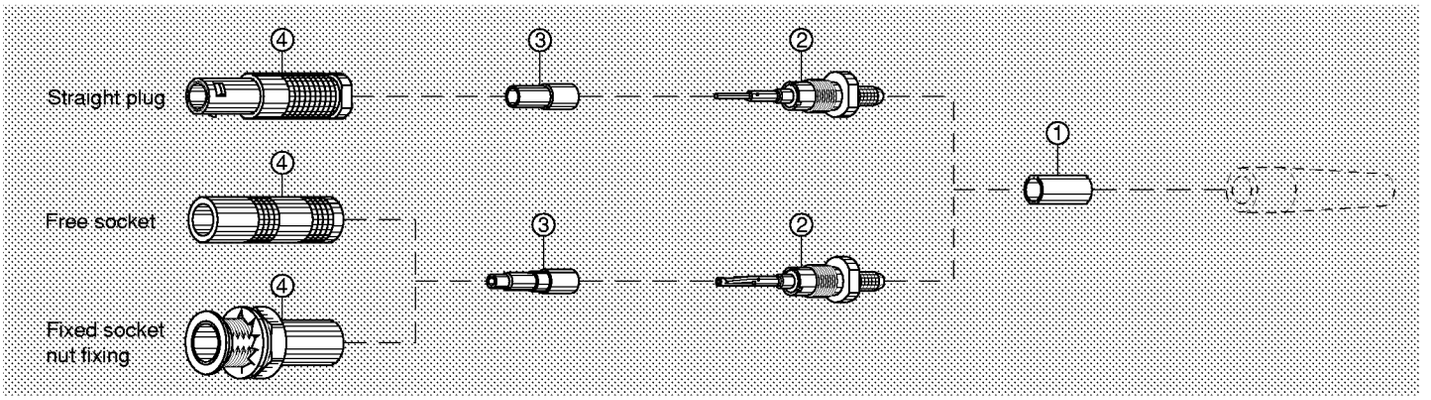
2.3 Slide the insulator ④ onto the subassembly ③ until it rests against the earthing sleeve of the subassembly ③.

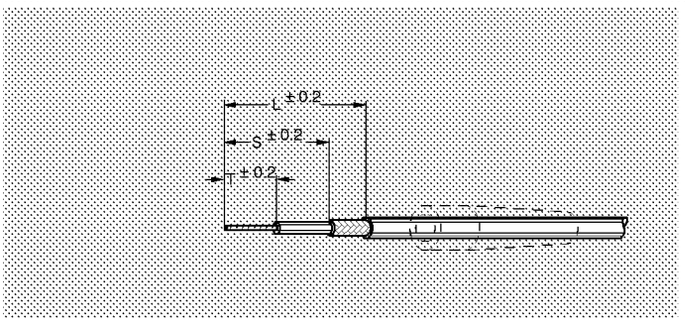


2.4 Slide the assembly into the connector outer shell ⑤. Screw the collet nut ① into the connector outer shell ⑤ using the appropriate tool and tighten to a torque of 0.25 Nm (see “Tooling” on page 31 and 32). Push the strain relief (if used) onto the collet nut.

Note: these terminating instructions apply to the following models:
M1 = FFA, FFE, FFF, PCA, PSA
M2 = FFY
M3 = FFC

Terminating of plugs and straight sockets with cable crimping (crimp contact) M4

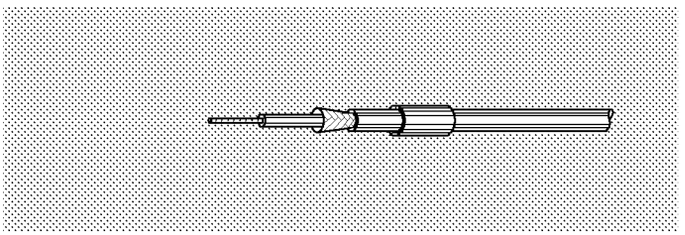




1. Cable preparation

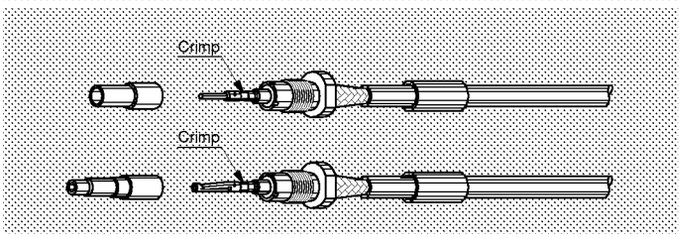
First place the strain relief (if to be used) on the cable.
Strip the cable according to dimensions below.

Cable group	M4		
	T	S	L
1-2-3-4-5-8	7	15	19.5
6-7	7	15	21.5

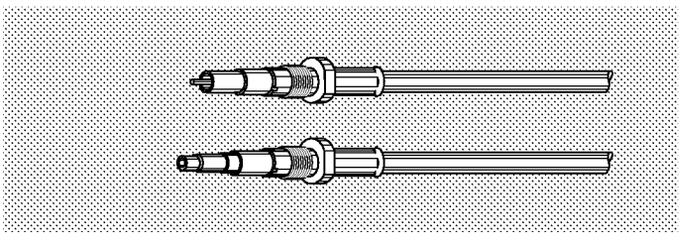


2. Cable termination

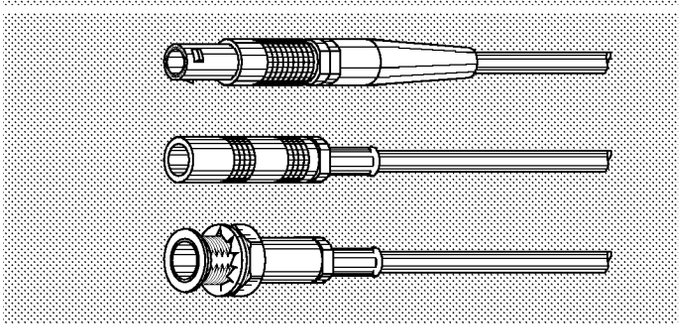
2.1 Place crimp ferrule ① on the cable. Widen the shield braid. Slide the subassembly ② into the cable until the insulator rests against the dielectric and the cable conductor is visible through the contact inspection hole.



2.2 Crimp the contact with the LEMO crimping tool using the square hole (see “Tooling” on page 32).
Gently pull the cable in order to check the crimping.



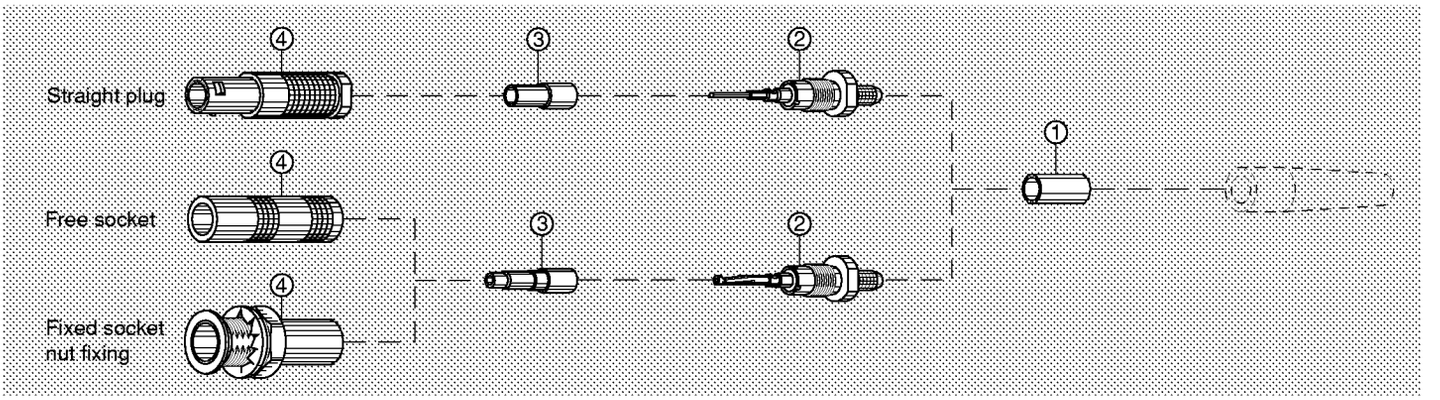
2.3 Slide the crimp ferrule ① onto the shield until it rests against the crimp backnut of the subassembly ②. Crimp with the same LEMO crimping tool using the hexagonal opening.
Slide the insulator ③ onto the subassembly ②.

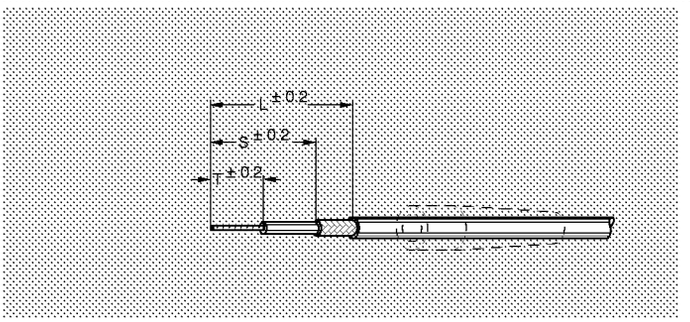


2.4 Slide the assembly into the connector shell ④ and screw it onto the subassembly ②. Tighten using the appropriate tool to a torque of 0.25 Nm (see “Tooling” on page 31 and 32). Push the strain relief (if used) onto the crimp ferrule ①.

Note: these terminating instructions apply to the following models:
M4 = FFS, FFV, PCS, PSS, PES

Terminating of plugs and straight sockets with cable crimping (solder contact) M5

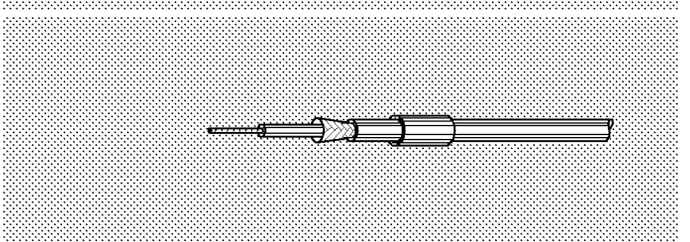




1. Cable preparation

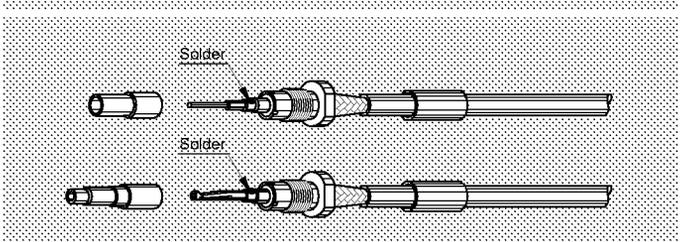
First place the strain relief (if to be used) on the cable.
Strip the cable according to dimensions below.

Cable group	M5		
	T	S	L
1-2-3-4-5-8	5	12	17
6-7	5	12	19

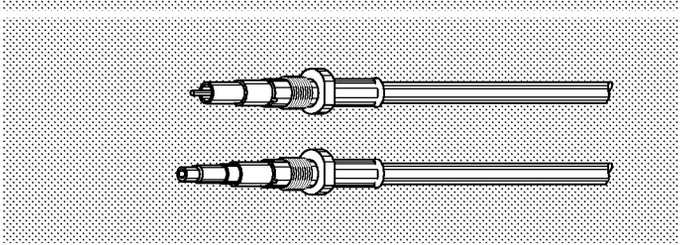


2. Cable terminating

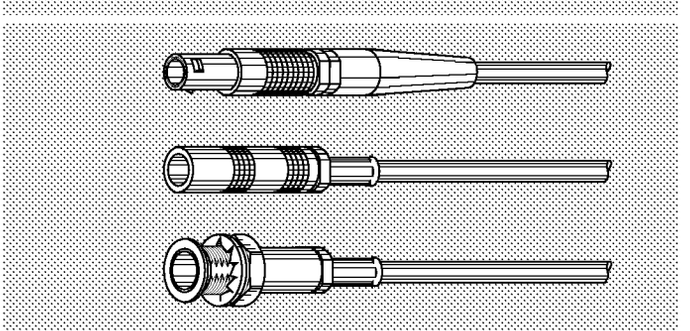
2.1 Place the crimp ferrule ① on the cable. Widen the shield braid. Slide the subassembly ② over the cable until the insulator rests against the dielectric and the cable conductor is visible through the contact solder hole.



2.2 Solder the conductor through the hole.



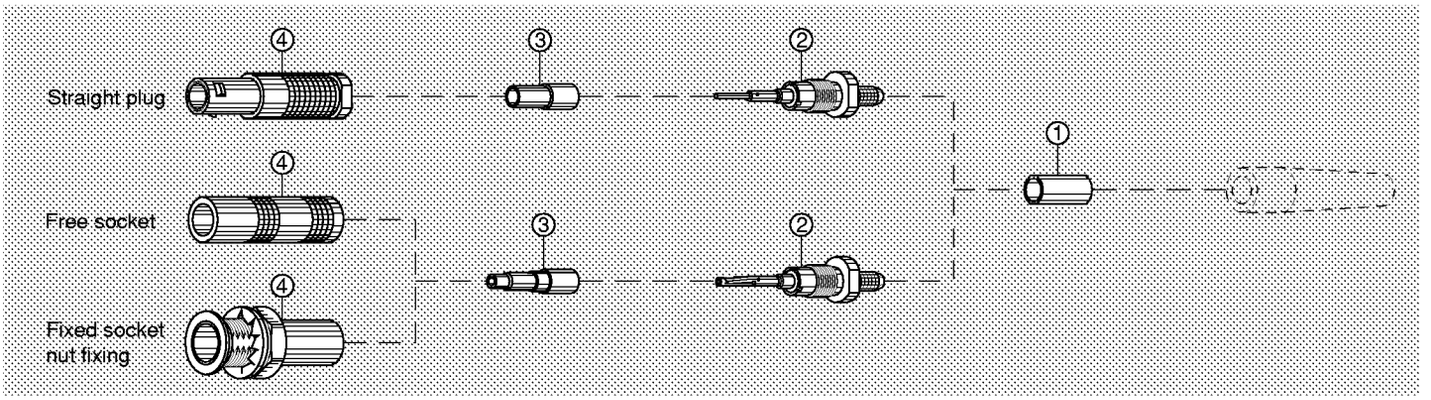
2.3 Slide the crimp ferrule ① onto the shield until it rests against the crimp backnut of the subassembly ②. Crimp with the LEMO crimping tool using the hexagonal opening (see “Tooling” on page 32).
Slide the insulator ③ onto the subassembly ②.

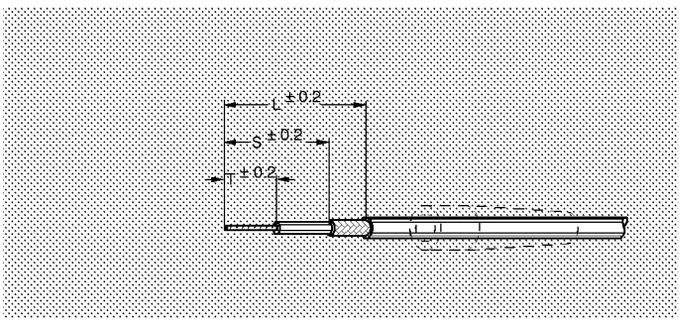


2.4 Slide the assembly into the connector shell ④ and screw it onto the subassembly ②. Tighten using the appropriate tool to a torque of 0.25 Nm (see tooling on pages 31 and 32).
Push the strain relief (if used) onto the crimp ferrule.

Note: these terminating instructions apply to the following models:
M5 = FFS, FFV, PCS, PSS, PES

Terminating of plugs and straight sockets with cable crimping (crimp contact) M4

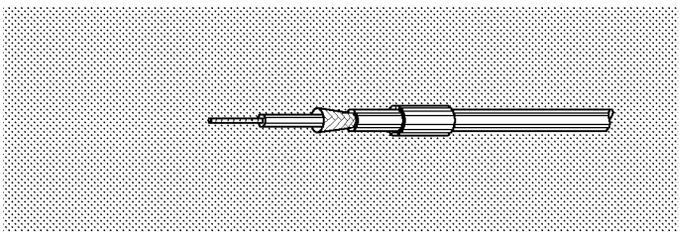




1. Cable preparation

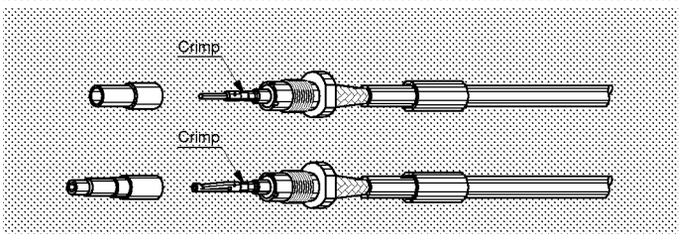
First place the strain relief (if to be used) on the cable.
Strip the cable according to dimensions below.

Cable group	M4		
	T	S	L
1-2-3-4-5-8	7	15	19.5
6-7	7	15	21.5

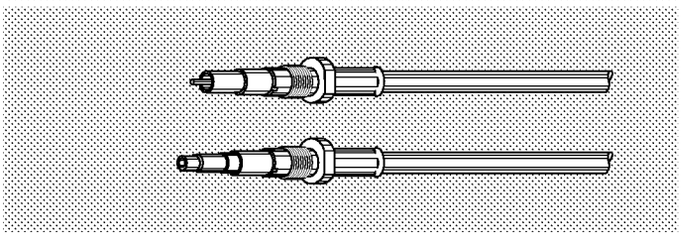


2. Cable termination

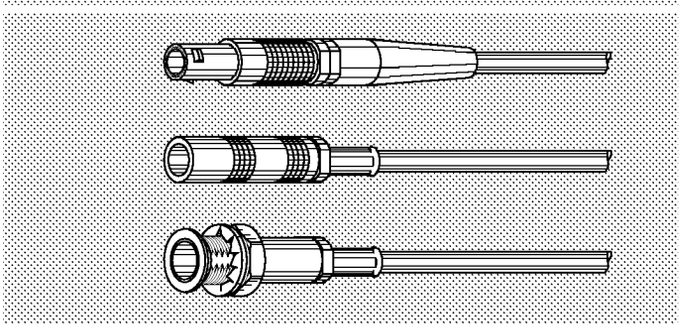
2.1 Place crimp ferrule ① on the cable. Widen the shield braid. Slide the subassembly ② into the cable until the insulator rests against the dielectric and the cable conductor is visible through the contact inspection hole.



2.2 Crimp the contact with the LEMO crimping tool using the square hole (see “Tooling” on page 32).
Gently pull the cable in order to check the crimping.



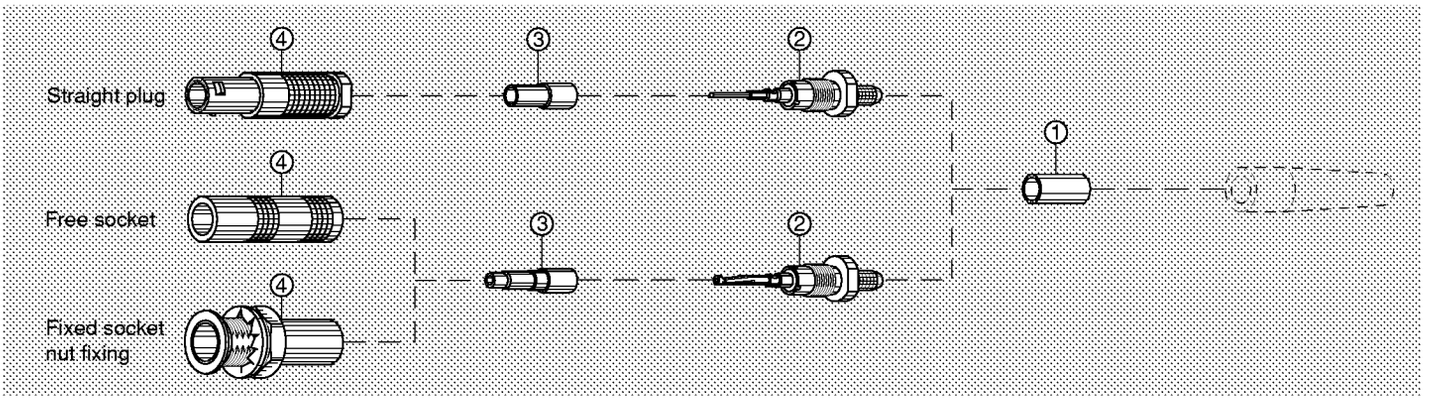
2.3 Slide the crimp ferrule ① onto the shield until it rests against the crimp backnut of the subassembly ②. Crimp with the same LEMO crimping tool using the hexagonal opening.
Slide the insulator ③ onto the subassembly ②.

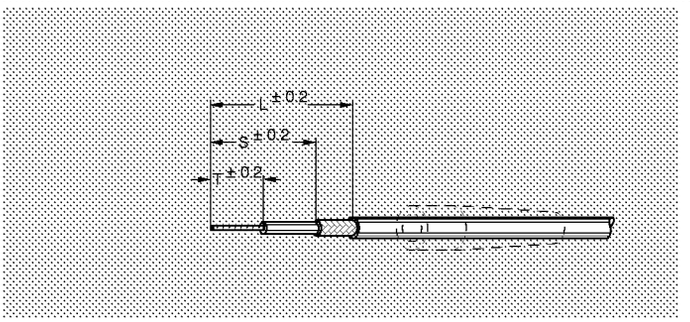


2.4 Slide the assembly into the connector shell ④ and screw it onto the subassembly ②. Tighten using the appropriate tool to a torque of 0.25 Nm (see “Tooling” on page 31 and 32). Push the strain relief (if used) onto the crimp ferrule ①.

Note: these terminating instructions apply to the following models:
M4 = FFS, FFV, PCS, PSS, PES

Terminating of plugs and straight sockets with cable crimping (solder contact) M5

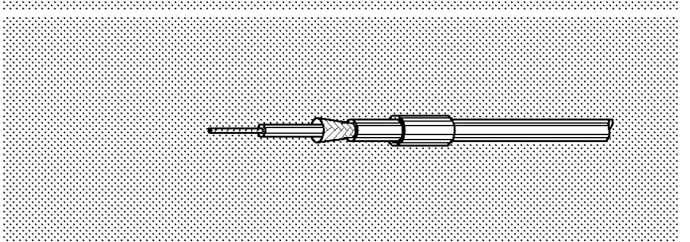




1. Cable preparation

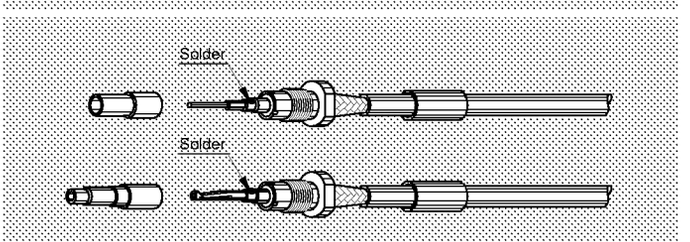
First place the strain relief (if to be used) on the cable.
Strip the cable according to dimensions below.

Cable group	M5		
	T	S	L
1-2-3-4-5-8	5	12	17
6-7	5	12	19

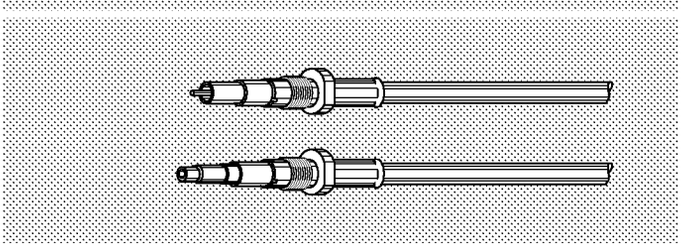


2. Cable terminating

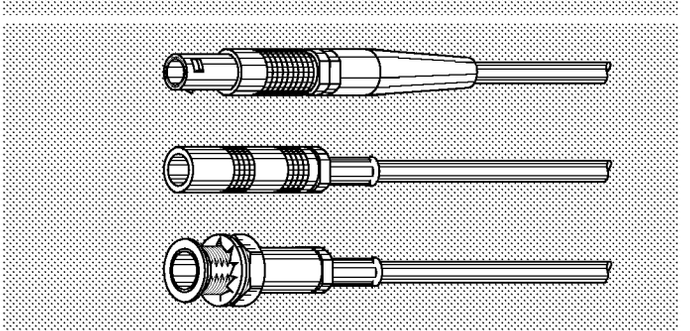
2.1 Place the crimp ferrule ① on the cable. Widen the shield braid. Slide the subassembly ② over the cable until the insulator rests against the dielectric and the cable conductor is visible through the contact solder hole.



2.2 Solder the conductor through the hole.



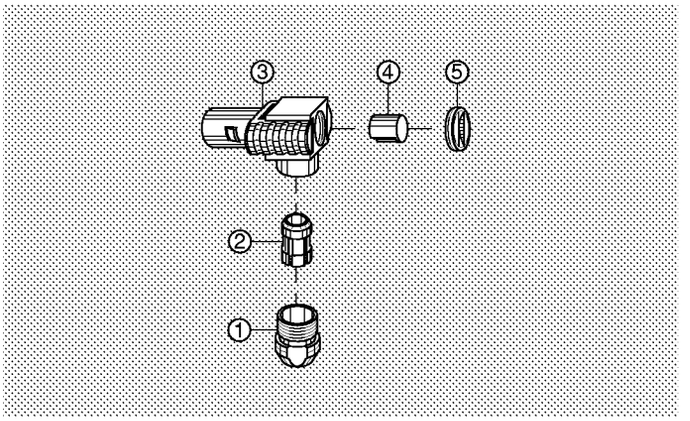
2.3 Slide the crimp ferrule ① onto the shield until it rests against the crimp backnut of the subassembly ②. Crimp with the LEMO crimping tool using the hexagonal opening (see “Tooling” on page 32).
Slide the insulator ③ onto the subassembly ②.

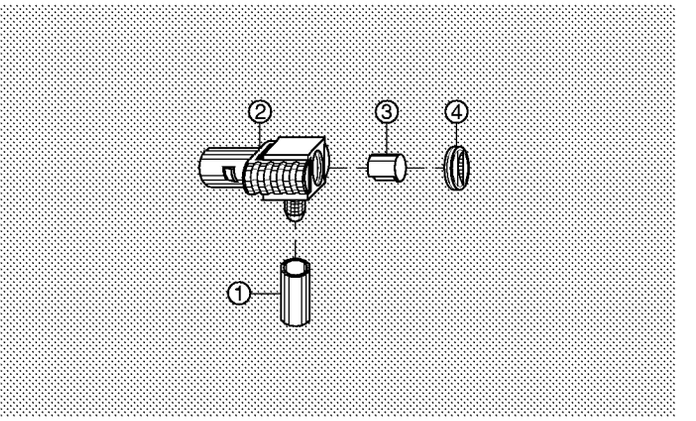


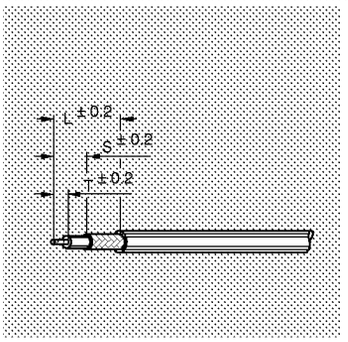
2.4 Slide the assembly into the connector shell ④ and screw it onto the subassembly ②. Tighten using the appropriate tool to a torque of 0.25 Nm (see tooling on pages 31 and 32).
Push the strain relief (if used) onto the crimp ferrule.

Note: these terminating instructions apply to the following models:
M5 = FFS, FFV, PCS, PSS, PES

Terminating of elbow plugs (90°) with cable collet M6 and cable crimp M7



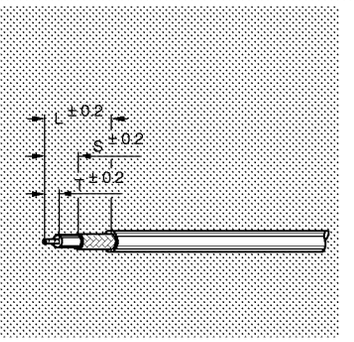




1. Cable preparation

First place the strain relief (if to be used) on the cable. Strip the cable according to dimensions below.

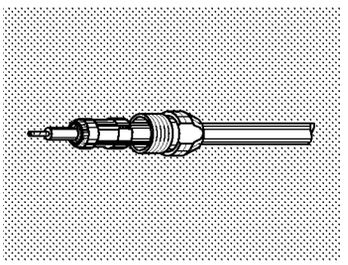
Cable group	M6		
	T	S	L
1-2-3-4-8	1	3.5	6.5



1. Cable preparation

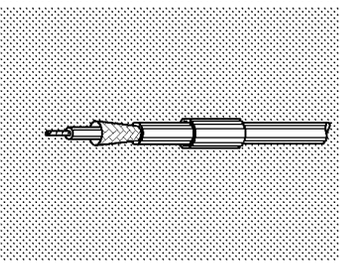
First place the strain relief (if to be used) on the cable. Strip the cable according to dimensions below.

Cable group	M7		
	T	S	L
1-2-3-4-8	1	4.5	9
6-7	3	4.5	11



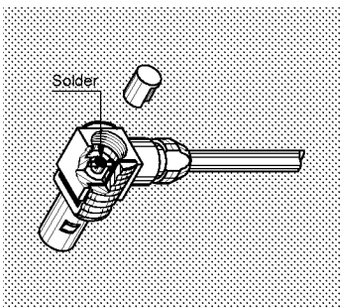
2. Cable terminating

2.1 Place the crimp ferrule ① and collet ② on the cable. Fold back the shield braid onto the conical part of the collet, and trim to outer edge of the collet.

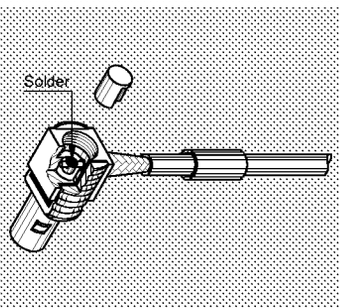


2. Cable terminating

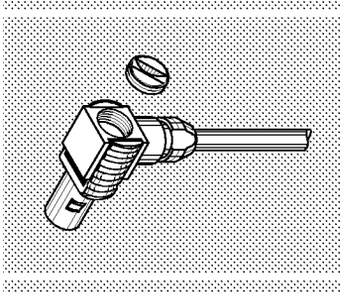
2.1 Place the cable crimp ferrule ① on the cable and widen the braiding.



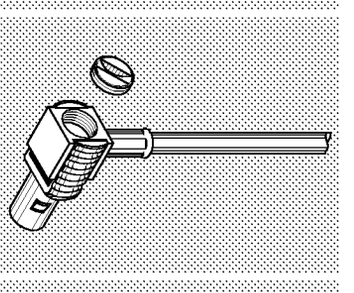
2.2 Slide the assembly into the connector shell ③ and tighten the collet nut ① using the appropriate tool to a torque of 0.25 Nm (see “Tooling” on page 31 and 32). Check that the cable conductor rests in the contact slot, solder the conductor through the hole.



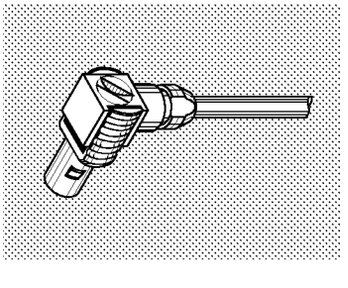
2.2 Slide the cable into the connector shell ②. Check that cable conductor rests in the contact slot, tin solder the conductor through the hole. Slide the crimp ferrule ① over the braiding until it reaches the connector shell ②. Crimp with the LEMO crimp tool using the hexagonal opening (see “Tooling” on page 32).



2.3 Place the insulating sleeve ④ over the soldered contact.



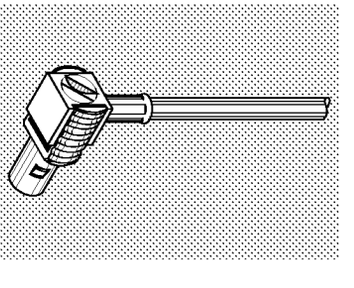
2.3 Place the insulating sleeve ③ over the soldered contact.



2.4 Close the access hole with the flat screw ⑤.
Push the strain relief (if used) onto the collet nut ①.

Note: these terminating instructions apply to the following models:

M6 = FLA



2.4 Close the connector hole with the flat screw ④.
Push the strain relief (if used) onto the crimping tube ①.

Note: these terminating instructions apply to the following models:

M7 = FLS, FLV

Recommended coaxial cables

Dimensions and characteristics

Standard / Part number (supplier)			Imp. (Ω)	Construction and dimensions									Weight kg/100 m
				Conductor			Dielectric		Shield		Sheath		
MIL-C-17	CCTU 10-01A	CEI 96-2		Construction	Mat.	ø	Mat.	ø	Mat.	ø	Mat.	ø	
RG 58C/U	KX 15	50-3-1	50 ± 2 Ω	19x0.18	CuSn	0.90	PE	2.95	CuSn	3.60	PVC*	4.95	3.80
RG 142B/U		-	50 ± 2 Ω	solid	CuStAg	0.95	PTFE	2.95	CuAg CuAg	2nd : 4.20	FEP	4.95	6.60
RG 174A/U	KX 3A	50-2-1	50 ± 2 Ω	7x0.16	CuSt	0.48	PE	1.50	CuSn	2.00	PVC*	2.60	1.10
RG 178B/U	KX 21A	50-1-1	50 ± 2 Ω	7x0.10	CuStAg	0.30	PTFE	0.87	CuAg	1.40	FEP	1.80	0.85
RG 179B/U		75-2-1	75 ± 3 Ω	7x0.10	CuStAg	0.30	PTFE	1.50	CuAg	2.00	FEP	2.50	1.50
RG 180B/U		-	95 ± 5 Ω	7x0.10	CuStAg	0.30	PTFE	2.60	CuAg	3.10	FEP	3.60	3.20
RG 187A/U		75-2-2	75 ± 3 Ω	7x0.10	CuStAg	0.30	PTFE	1.50	CuAg	2.00	PTFE	2.60	1.60
RG 188A/U		50-2-3	50 ± 2 Ω	7x0.18	CuStAg	0.54	PTFE	1.50	CuAg	2.00	PTFE	2.60	1.60
RG 196A/U		50-1-2	50 ± 2 Ω	7x0.10	CuStAg	0.30	PTFE	0.87	CuAg	1.37	PTFE	2.10	1.10
RG 316/U	KX 22A	50-2-2	50 ± 2 Ω	7x0.18	CuStAg	0.54	PTFE	1.50	CuAg	2.10	FEP	2.50	1.60
8216	(Belden)	50-2-1	50 ± 2 Ω	7x0.16	CuSt	0.48	PE	1.52	CuSn	-	PVC	2.55	-
8262	(Belden)	50-3-1	50 ± 2 Ω	19x0.18	CuSn	0.90	PE	2.95	CuSn	-	PVC	4.95	-
83265	(Belden)	50-1-1	50 ± 2 Ω	7x0.10	CuStAg	0.30	PTFE	0.86	CuAg	-	FEP	1.85	-
83269	(Belden)	-	50 ± 2 Ω	7x0.17	CuStAg	0.51	PTFE	1.52	CuAg	-	PTFE	2.60	-
83284	(Belden)	50-2-2	50 ± 2 Ω	7x0.17	CuStAg	0.51	PTFE	1.52	CuAg	-	FEP	2.50	-
HF-2114	(Datwyler)	-	50 ± 2 Ω	7x0.16	Cu	0.48	PE	1.32	Cu	1.9	PVC	2.70	1.15
CCH.99.281.505	(Lemo)[1]	50-2-1	50 ± 2 Ω	7x0.18	Cu	0.54	PE	1.50	Cu	2.2	PoF	2.80	1.30
421.099	(Storm)	-	50 ± 2 Ω	7x0.16	CuStAg	0.50	PTFE	1.52	CuAg CuAg	1st : 2.00 2nd : 2.50	FEP	3.05	1.95
G02232D-60	(H+S)	-	50 ± 2 Ω	7x0.16	Cu	0.50	PE	1.50	CuAg CuSn	1st : 1.95 2nd : 2.50	PVC	3.10	2.10

Notes: all dimensions are in millimeters.
[1] Fire resistant according IEC 332-1.

Cu	Bare copper	FEP	Extruded Fluorethylenpropylen	PVC	Polyvinylchlorid
CuAg	Silver-plated copper	PE	Polyethylen	PVC*	Polyvinylchlorid
CuSn	Tinned copper	PoF	Polyolefin		(Qual.lla MIL-C-17)
CuSt	Copper-plated steel	PTFE	Wrapped or extruded		
CuStAg	Silvered copper plated steel		Polytetrafluorethylen		

Technical tables

VSWR effect on transmitted power

VSWR	VSWR (dB)	Return loss (dB)	Transmiss. loss (dB)	Reflected voltage coefficient	Transmit. power (%)	Reflected power (%)
1.00	0		0.000	0.00	100.0	0.0
1.01	0.1	46.1	0.000	0.00	100.0	0.0
1.02	0.2	40.1	0.000	0.01	100.0	0.0
1.03	0.3	36.6	0.001	0.01	100.0	0.0
1.04	0.3	34.2	0.003	0.03	100.0	0.0
1.05	0.4	32.3	0.003	0.02	99.9	0.1
1.06	0.5	30.7	0.004	0.03	99.9	0.1
1.07	0.6	29.4	0.005	0.03	99.9	0.1
1.08	0.7	28.3	0.006	0.04	99.9	0.1
1.09	0.7	27.3	0.008	0.04	99.8	0.2
1.10	0.8	26.4	0.010	0.05	99.8	0.2
1.11	0.9	25.7	0.012	0.05	99.7	0.3
1.12	1.0	24.9	0.014	0.06	99.7	0.3

VSWR	VSWR (dB)	Return loss (dB)	Transmiss. loss (dB)	Reflected voltage coefficient	Transmit. power (%)	Reflected power (%)
1.13	1.1	24.3	0.016	0.06	99.6	0.4
1.14	1.1	23.7	0.019	0.07	99.6	0.4
1.15	1.2	23.1	0.021	0.07	99.5	0.5
1.16	1.3	22.6	0.024	0.07	99.5	0.5
1.17	1.4	22.1	0.027	0.08	99.4	0.6
1.18	1.4	21.7	0.030	0.08	99.3	0.7
1.19	1.5	21.2	0.033	0.09	99.2	0.8
1.20	1.6	20.8	0.036	0.09	99.2	0.8
1.21	1.7	20.4	0.039	0.10	99.1	0.9
1.22	1.7	20.1	0.043	0.10	99.0	1.0
1.23	1.8	19.7	0.046	0.10	98.9	1.1
1.24	1.9	19.4	0.050	0.11	98.9	1.1
1.25	1.9	19.1	0.054	0.11	98.8	1.2