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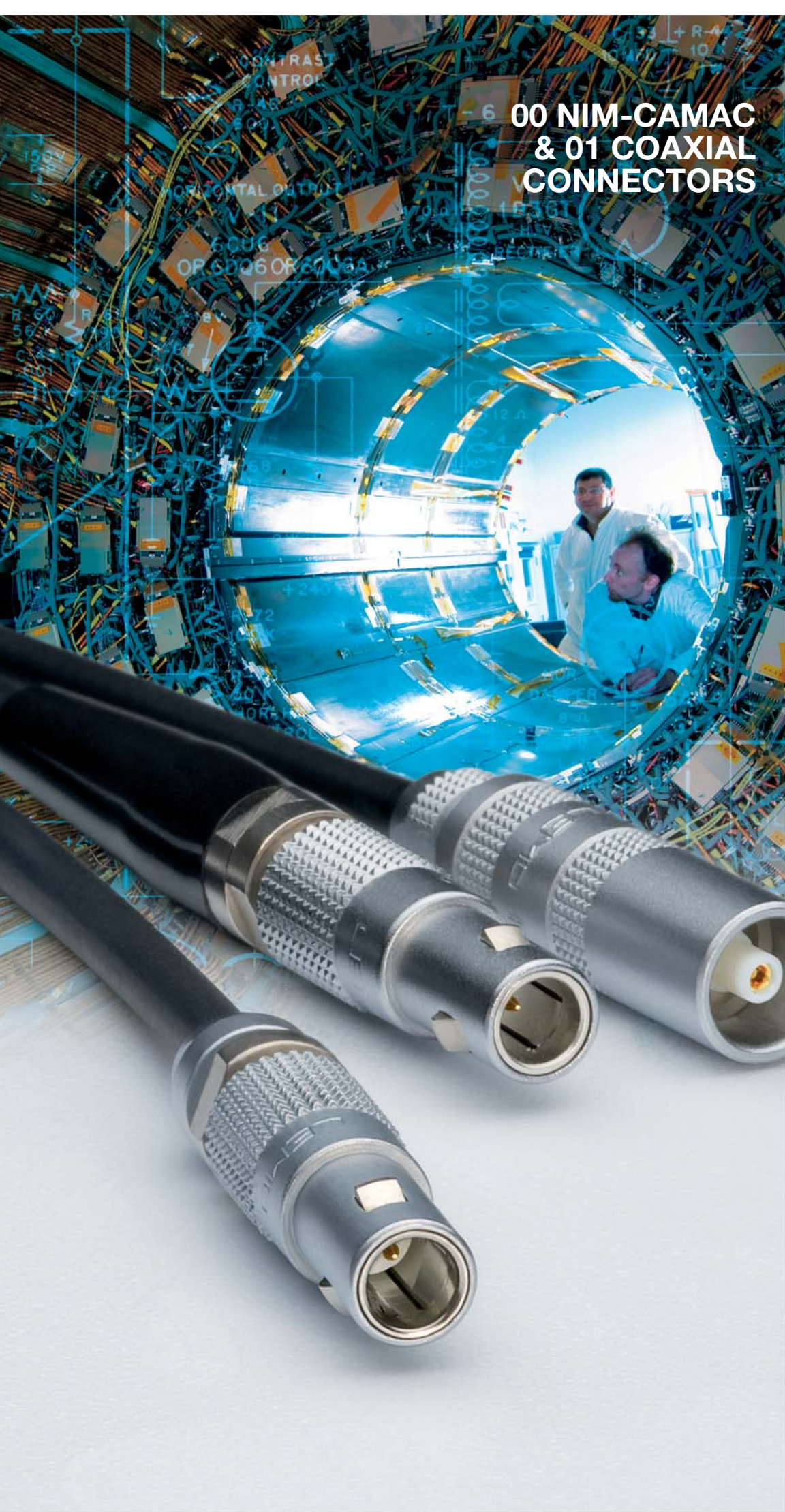
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# 00 NIM-CAMAC & 01 COAXIAL CONNECTORS

00  
&  
01  
SERIES



## LEMO coaxial 00 and 01 Series (50 Ω)

Fundamental research in particle physics as practised within CERN and other nuclear research establishments requires more and more complex equipment of high performance in order to achieve the objectives. The needs of such research contribute to the development of leading products for the whole of industry. For many years LEMO has participated in this evolution. This has resulted in a range of miniature coaxial connectors (50 Ω) with a push-pull self-latching system, the LEMO 00.250 series. These connectors now form the basis of the NIM-CAMAC CD/N 549 standard.

The plugs and sockets of the 01 series are amongst the smallest available 50 Ω coaxial connectors with a self-latching intermating capability. In spite of their small size and light weight, their technical characteristics remain excellent. Available in a wide range of housing configurations, they are especially useful when connecting onto printed circuit boards.

The LEMO 00 series and 01 are now used in many areas such as: telecommunications, sensors, medical equipment, space research, etc...

The program covered in this catalog now includes more than 50 models suitable for many cable types.

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## Precision modular connectors to suit your application

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

### Over 50'000 connectors

The modular design of the LEMO range provides over 50'000 connectors from miniature  $\varnothing$  3 mm to  $\varnothing$  50 mm, capable of handling cable diameters up to 30 mm and for up to 106 contacts.

This vast portfolio enables you to select the ideal connector configuration to suit almost any specific requirement in most markets, including medical devices, test and measurement instruments, machinery, audio video broadcast, telecommunications and military.

### LEMO's Push-Pull Self-Latching Connection System

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

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

	Series	
Force	00	01
F <sub>v</sub>	9N	5N

F<sub>v</sub>: average latching force

---

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

	Series	
Force	00	01
F <sub>a</sub>	120N	110N

F<sub>a</sub>: average pull force with axial pull on the collet nut

---

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.

	Series	
Force	00	01
F <sub>d</sub>	7N	6N

F<sub>d</sub>: average unmating force with axial pull on the outer release sleeve.

1N = 0,102 kg.

Force measured according to the standard IEC 60512- test

### UL Recognition

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

### CE marking

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

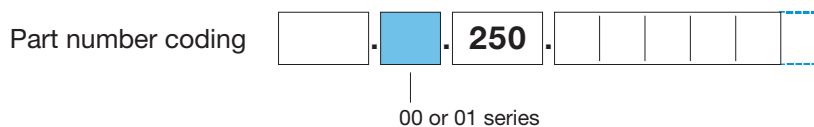
### RoHS

LEMO connector specifications exceed the requirements of the RoHS directives (2002/95/EC) of the European Parliament and the latest amendments. This directive specifies the restrictions of the use of hazardous substances in electrical and electronic equipment marketed in Europe. LEMO guarantees that its connectors are free of mercury, cadmium, lead, hexavalent chromium and polybromide biphenyl (PBB), polybromide diphenyl ether (PBDE), or DecaBDE.

# 2 steps to select the right connector

## ● Step 1: Select connector series

Select the appropriate LEMO connector series according to the standard, the cable, according to the application or the mated connector already on your equipment.

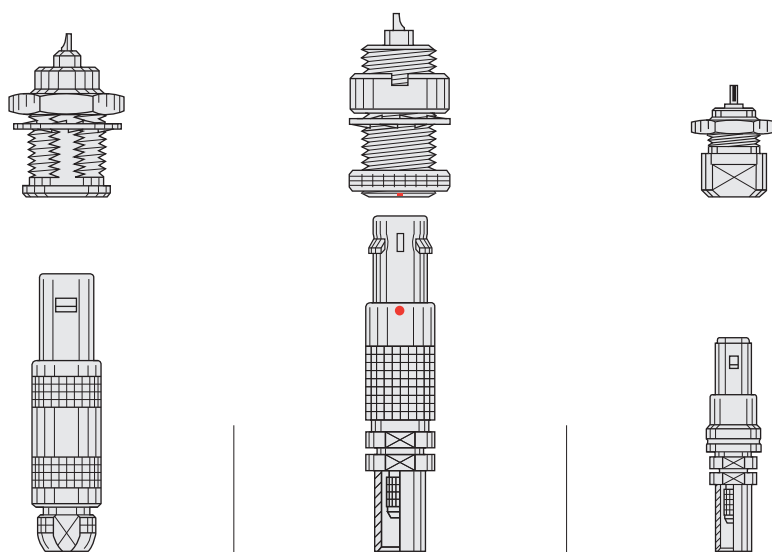


### The NIM-CAMAC 00.250 series

The 00 series is coaxial (50 Ω). This connectors family was conceived for all applications where a high density of connectors is necessary, especially for patch panels. Because of LEMO's special self-latching system, it is possible to connect them with a simple axial push-pull thereby reducing the space needed to mount sockets to an absolute minimum, up to 50 sockets per square decimetre. LEMO 00 connectors served as the norm for NIM-CAMAC CD/N549 standard, used in nuclear physics as well as many other applications.

### The miniature 01.250 series

The 01 series is coaxial (50 Ω). The plugs and sockets are amongst the smallest available 50 Ω coax connectors with a self-latching intermating capability. In spite of their small size and light weight, their technical characteristics remain excellent. Available in a wide range of housing configurations, they are especially useful when connecting onto printed circuit boards.



Series	00	00	01
Standard	NIM-CAMAC	–	–
Environment	indoor	indoor	indoor
Ingress Protection <sup>1)</sup>	IP50	IP50	IP50
Ingress Protection <sup>2)</sup>	IP64	IP50	IP64
Temperature range	- 55 to 260°C	- 55 to 260°C	- 55 to 230°C
Keying	–	Yes	–
Latching	Push-Pull self-latching		
Contact type	Solder, crimp or print	Solder, crimp or print	Solder or print
Cable fixing type	Clamping or crimping	Crimping	Crimping

**Note:** <sup>1)</sup> IP50 = Protection from the amount of dust that would interfere with the operation of the equipment

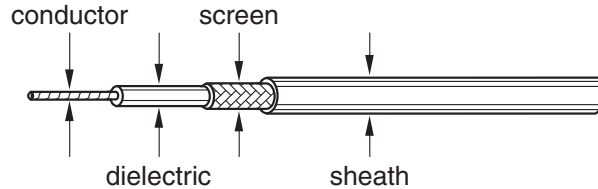
<sup>2)</sup> Ingress protection between LEMO socket and your device (IP64 = protection from splashed water and dust tight)

## Step 2: Complete the part number

Complete the part numbering by choosing the model depending on your cable and the application.

Part number coding    .    . **250** .                           

## Verify the fitting to your cable and cable wire



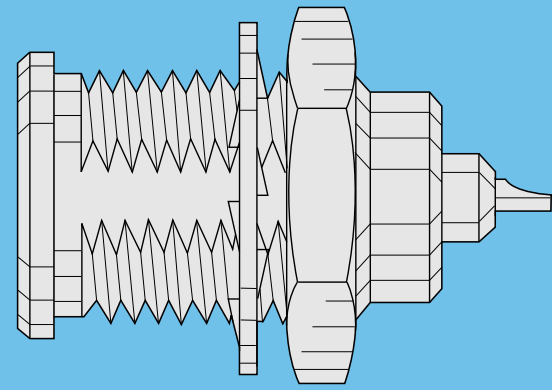
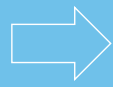
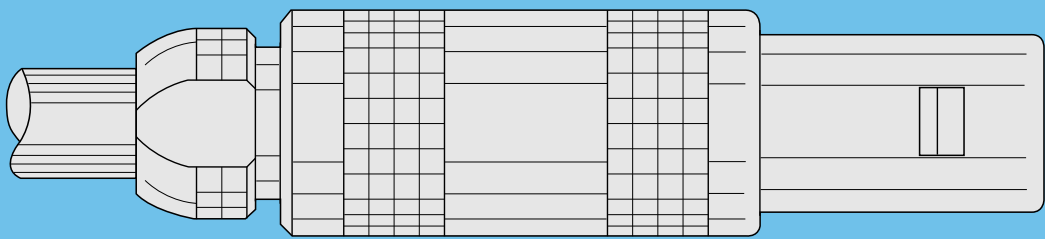
## Recommended coaxial cables

### Electrical and general properties

	MIL-C-17	IEC 60096-2	CCTU 10-01A	LEMO Part-No	LEMO Cable group	Impedance Ohm	Capacitance pF/m	Attenuation dB/100 m at 100 MHz	Operating voltage U max. KV eff.	Temperature °C		Series	
										from	to	00	01
Standard	RG 58 C/U	50.3.1	KX 15	CCX.50.RG5.8CU50N	6	50 ± 2	101	23	1.90	-25	+70	•	
	RG 142 B/U			CCX.50.RG1.42BU50M	7	50 ± 2	95	12.8	1.50	-70	+200	•	
	RG 174 /U	50.2.1	KX 38	CCX.50.RG1.74U25N	3	50 ± 2	101	35	2.50	-40	+75	•	•
	RG 174 A/U	50.2.1	KX 3A	CCX.50.RG1.74AU27N	8	50 ± 2	101	31.5	1.50	-25	+70	•	•
	RG 178 B/U	50.1.1	KX 21A	CCX.50.RG1.78BU18M	1	50 ± 2	96	48	0.70	-90	+205	•	•
	RG 179 B/U	75.2.1		CCX.75.RG1.79BU26M	2	75 ± 3	64	33	1.20	-90	+205	•	•
	RG 187 A/U	75.2.2		CCX.75.RG1.87AU26B	2	75 ± 3	64	33	1.20	-50	+205	•	•
	RG 188 A/U	50.2.3		CCX.50.RG1.88AU24B	4	50 ± 2	96	33	1.20	-50	+205	•	•
	RG 195 A/U			CCX.95.RG1.95AU37B	5	95 ± 5	49	17	1.50	-90	+205	•	
	RG 196 A/U	50.1.2		CCX.50.RG1.96AU20B	1	50 ± 2	96	48	0.70	-50	+205	•	•
RG 316 /U	50.2.2	KX 22A	CCX.50.RG3.16BU26M	4	50 ± 2	96	33	1.20	-90	+205	•	•	
Non standard	Huber+Suhner	G02232D-60			8	50 ± 2	101	24	1.50	-40	+105	•	
	Huber+Suhner	K01152-07			9	50 ± 5	96	72	0.45	-45	+165	•	
	Storm	421-099			8	50 ± 2	96	72	2.50	-40	+75	•	

### Mechanical properties

	Type	Conductor			Dielectric		Screen		Sheath			Weight
		Mat.	Stranding	ø mm	Mat.	ø mm	Mat.	ø mm	Mat.	Colour	ø mm	kg/100m.
Standard	RG 58 C/U	CuSn	19 x 0.18	0.90	PE	2.92	CuSn	3.6	PVC	black	4.95	3.80
	RG 142 B/U	CuStAg	solid	0.95	PTFE	2.95	CuAg CuAg	1 <sup>st</sup> : 3.53 2 <sup>nd</sup> : 4.20	FEP		4.95	6.60
	RG 174 U	CuSt	7 x 0.16	0.48	PE	1.50	CuSn	2.0	PVC1	black	2.55	
	RG 174 A/U	CuSt	7 x 0.16	0.48	PE	1.50	CuSn	2.0	PVC2	black	2.80	1.10
	RG 178 B/U	CuStAg	7 x 0.10	0.30	PTFE	0.87	CuAg	1.4	FEP	brown	1.80	0.85
	RG 179 B/U	CuStAg	7 x 0.10	0.30	PTFE	1.50	CuAg	2.0	FEP	brown	2.60	1.50
	RG 187 A/U	CuStAg	7 x 0.10	0.30	PTFE	1.50	CuAg	2.0	PFA	white	2.60	1.60
	RG 188 A/U	CuStAg	7 x 0.18	0.54	PTFE	1.50	CuAg	2.0	PFA	white	2.60	1.60
	RG 195 A/U	CuStAg	7 x 0.10	0.30	PTFE	2.52	CuAg	3.1	PFA	white	3.70	2.80
	RG 196 A/U	CuStAg	7 x 0.10	0.30	PTFE	0.87	CuAg	1.37	PFA	white	2.00	1.10
RG 316 /U	CuStAg	7 x 0.18	0.54	PTFE	1.50	CuAg	2.1	FEP	brown	2.60	1.60	
Non standard	G02232D-60	Cu	7 x 0.16	0.50	PE	1.50	CuAg CuSn	1 <sup>st</sup> : 1.95 2 <sup>nd</sup> : 2.40	PVC	grey	3.10	2.10
	K01152-07	CuAg	7 x 0.06	0.19	PFA	0.52	CuAg	0.9	PFA	white	1.25	0.90
	421-099	CuStAg	7 x 0.16	0.50	PTFE	1.52	CuAg CuAg	1 <sup>st</sup> : 2.00 2 <sup>nd</sup> : 2.50	FEP		3.05	1.95



**00 SERIES (NIM-CAMAC)**



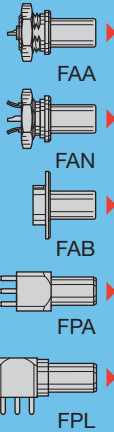
# 00 Series (NIM-CAMAC CD/N 549)

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:

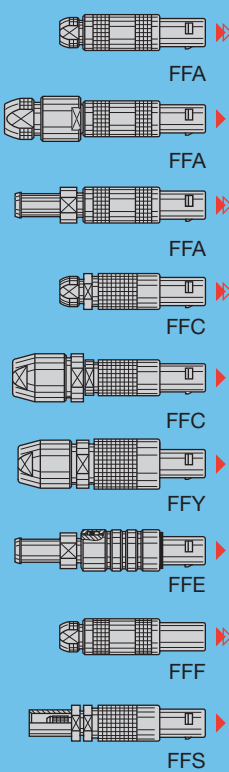
- Self-latching push-pull system
- Aesthetically pleasing appearance
- Small size
- High packing density
- Rugged construction
- Ease of use
- Low weight
- Reliable performances
- Wide choice to suit application

## Metal housing models (page 8)

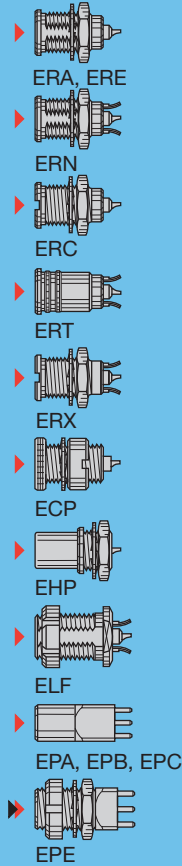
### Fixed plugs



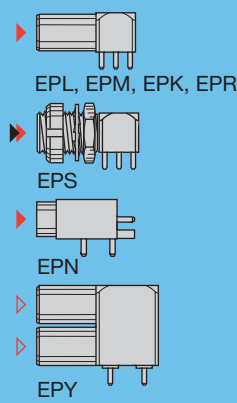
### Straight plugs



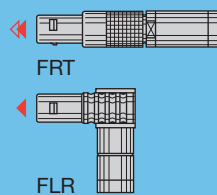
### Fixed sockets



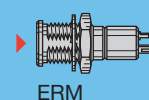
### Elbow sockets



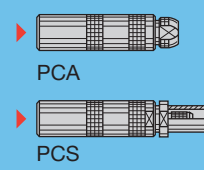
### Plugs with resistor



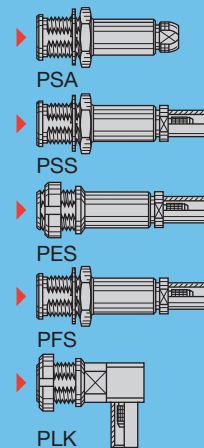
### Socket with microswitch



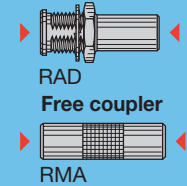
### Free sockets



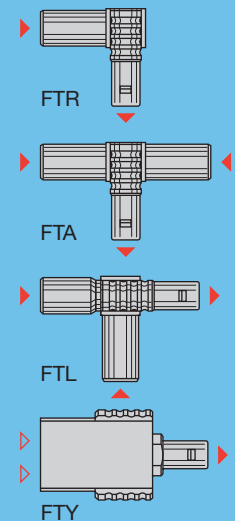
### Fixed sockets



### Fixed coupler

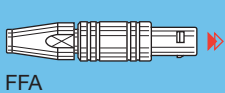


### Straight and elbow plugs with socket

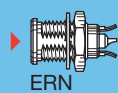


## Plastic housing models\* (page 21)

### Straight plug

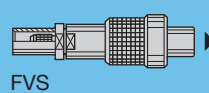


### Fixed socket



## Threaded latching models\* (page 26)

### Straight plug

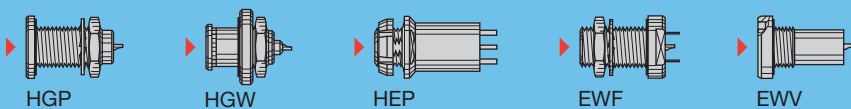


## Adaptors

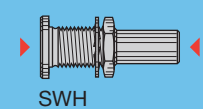
(See page 27)

## Watertight or vacuumtight models (page 22)

### Straight sockets

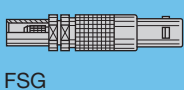


### Straight coupler

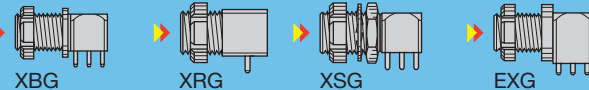


## Metal housing models with mechanical keying\* (page 24)

### Straight plug



### Elbow sockets

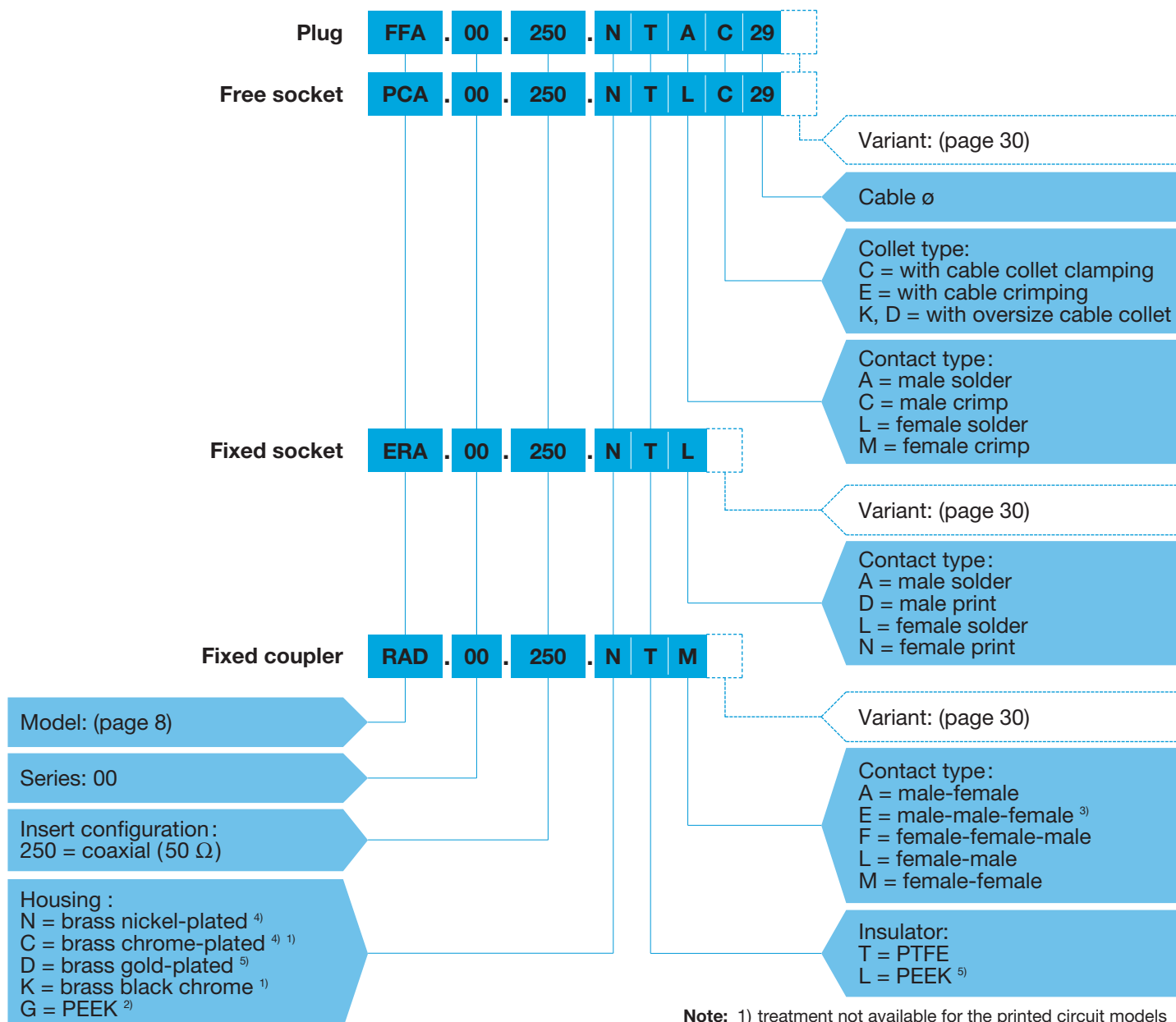


### Fixed sockets



\* not included in NIM-CAMAC standard

## Part Numbering System

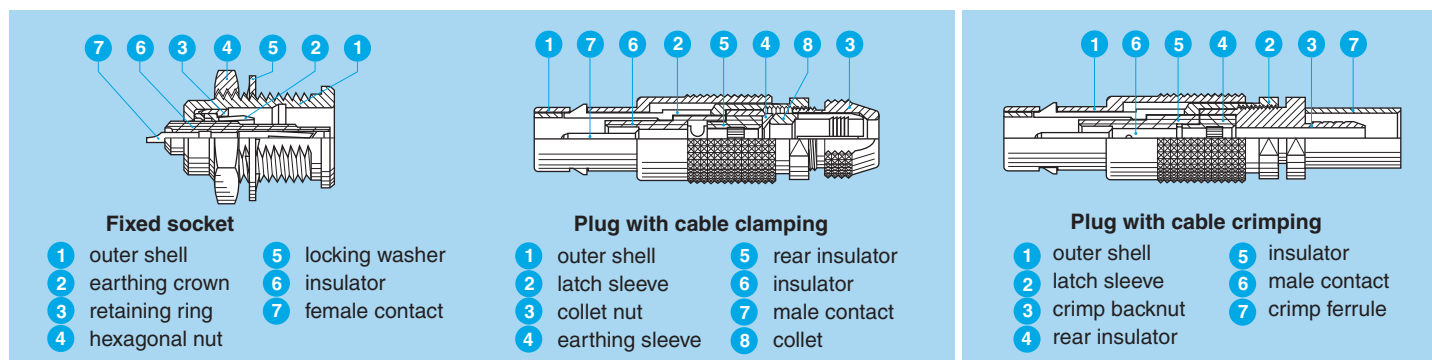


**Note:** 1) treatment not available for the printed circuit models  
 2) available for the FFA and ERN model only  
 3) used only for models: FTA, FTL and FTY.  
 4) standard  
 5) non-standard, on request only

## Part Number Example

**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.

## Part Section Showing Internal Components





## Metal housing models

### Technical Characteristics

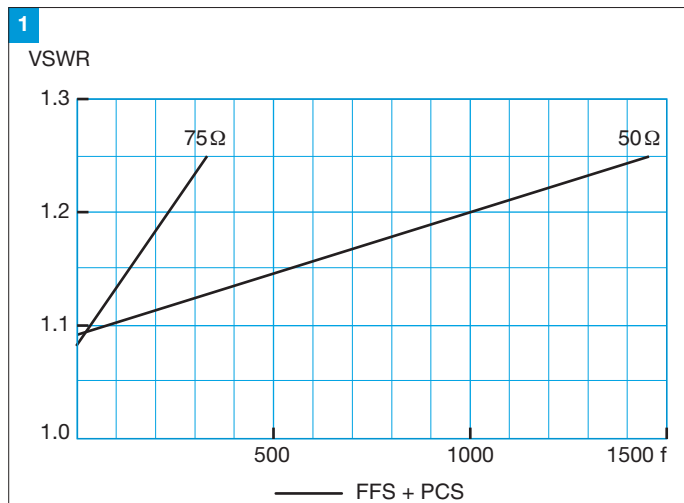
#### Mechanical and climatical

Characteristics	Value	Standard	Test
Contact retention force	> 18 N	IEC 60512-8	15a
Cable pull off force <sup>1)</sup>	> 100 N	IEC 60512-9	17c
Connector pull off force	> 90 N	IEC 60512-8	15f
Endurance	> 5000 cycles	IEC 60512-5	9a
Operating temperature	- 55°C + 260°C		

**Note:** <sup>1)</sup> depending on cable design

#### Voltage Standing Wave Ratio

The VSWR (Voltage Standing Wave Ratio) is the value representing the power reflected in a connection. The VSWR varies with frequency, in most cases, the working frequency range is where VSWR is  $\leq 1.25$ .



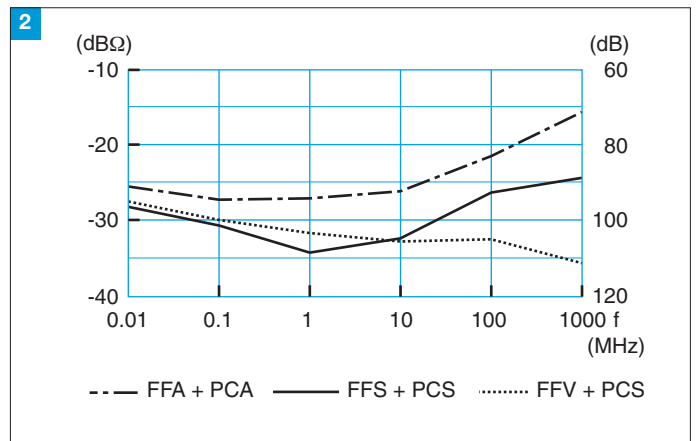
**Note:** value for connectors with PTFE insulator. VSWR measured 50  $\Omega$  with a RG-174 A/U cable and 75  $\Omega$  with a RG-179 B/U cable. Measured according to IEC-60169-1-1.

#### Electrical

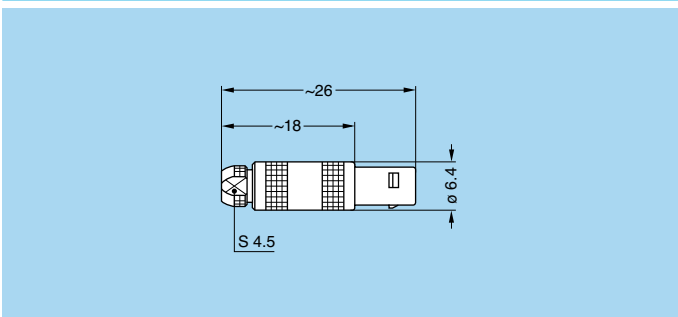
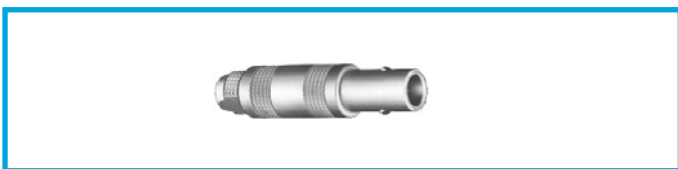
Characteristics	Value	Standard	Test
Impedance	50 $\Omega$	-	
Operating voltage (50 Hz)	0.7 kV rms	-	
Test voltage (50 Hz)	2.1 kV rms	IEC 60512-2	4a
Rated current	4 A	IEC 60512-3	5a
Contact resistance	< 6 m $\Omega$	IEC 60512-2	2a
Shell electrical continuity	< 3.5 m $\Omega$	IEC 60512-2	2f
Insulating resistance	> 10 <sup>12</sup> $\Omega$	IEC 60512-2	3a
VSWR	see chart N°1 below		
Shielding efficiency	see chart N°2 below		

#### Shielding efficiency (EMC properties) in dB (transfer impedance in dB $\Omega$ )

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



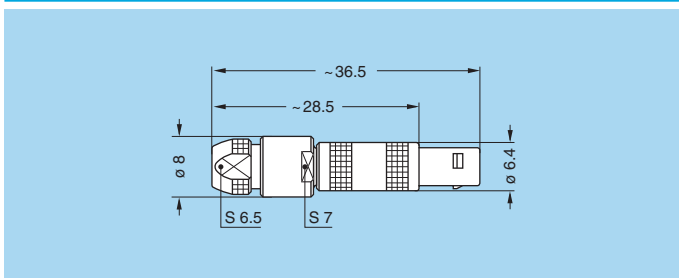
**Note:** measured according to IEC-60169-1-3 standard.



#### FFA Straight plug with cable collet

Part number	Cable group	Cond. $\varnothing$ max.	Dielectric $\varnothing$ max.	Sheath $\varnothing$	
				min.	max.
FFA.00.250.NTAC15	9	0.55	1.45	1.1	1.4
FFA.00.250.NTAC17	-	0.55	1.45	1.3	1.7
FFA.00.250.NTAC22	1	0.55	1.95	1.8	2.2
FFA.00.250.NTAC27	2-3-4	0.55	1.95	2.3	2.7
FFA.00.250.NTAC31	8	0.55	1.95	2.8	3.1

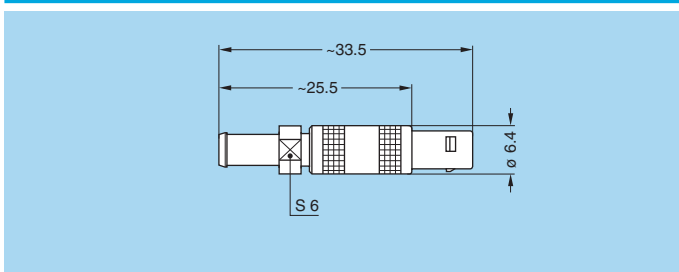
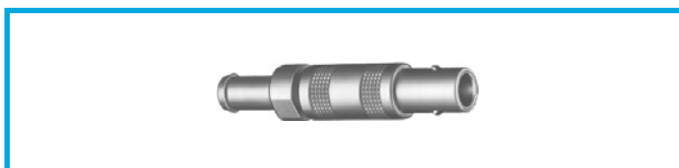
**M1** Cable assembly, solder contact (page 39)



### FFA Straight plug with oversize cable collet

Part number	Cable group	Cond. Ø max	Dielectric Ø maxi	Sheath Ø	
				mini	maxi
FFA.00.250.NTAK37	8	0.55	1.95	3.0	3.6
FFA.00.250.NTAK42	-	0.55	1.95	3.3	4.1

**M1** Cable assembly, solder contact (page 39)

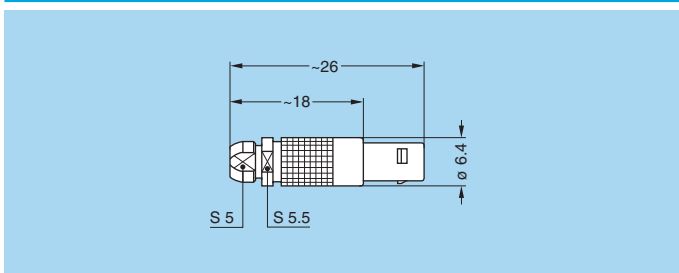
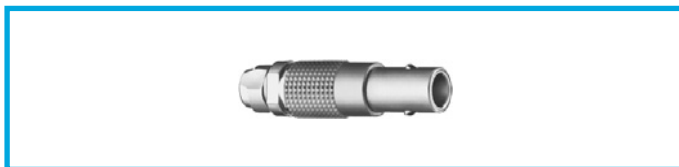


### FFA Straight plug with cable collet and nut for fitting a bend relief

Part number	Cable group	Cond. Ø max	Dielectric Ø maxi	Sheath Ø	
				mini	maxi
FFA.00.250.NTAC15Z	9	0.55	1.45	1.1	1.4
FFA.00.250.NTAC17Z	-	0.55	1.45	1.3	1.7
FFA.00.250.NTAC22Z	1	0.55	1.95	1.7	2.1
FFA.00.250.NTAC27Z	2-3-4	0.55	1.95	2.3	2.7
FFA.00.250.NTAC31Z	8	0.55	1.95	2.8	3.1

**M1** Cable assembly, solder contact (page 39)

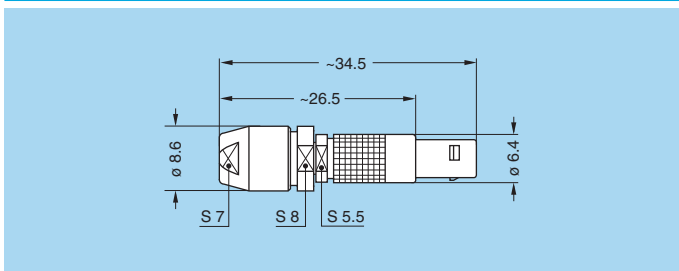
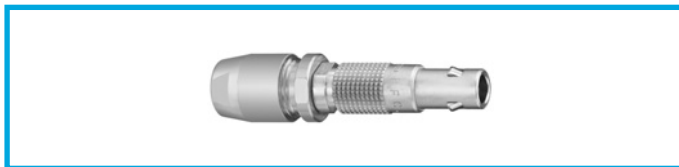
**Note:** the bend relief must be ordered separately (see page 30).



### FFC Straight plug with flats on latch sleeve and cable collet

Part number	Cable group	Cond. Ø max	Dielectric Ø maxi	Sheath Ø	
				mini	maxi
FFC.00.250.CTAC22	1	0.60	1.55	1.7	2.1
FFC.00.250.CTAC27	2-3-4	0.60	1.95	2.3	2.7
FFC.00.250.CTAC31	8	0.60	1.95	2.8	3.1

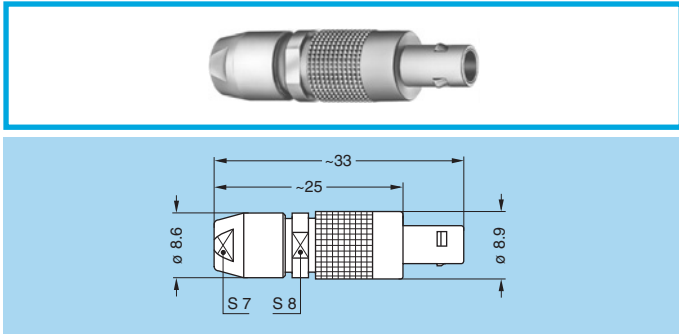
**M3** Cable assembly, solder contact (page 39)



### FFC Straight plug with flats on latch sleeve and oversize cable collet

Part number	Cable group	Cond. Ø max	Dielectric Ø maxi	Sheath Ø	
				mini	maxi
FFC.00.250.CTAD42	5	1.05	3.05	3.1	4.0
FFC.00.250.CTAD52	6-7	1.05	3.05	4.1	5.0
FFC.00.250.CTAD56	-	1.05	3.05	5.1	5.5

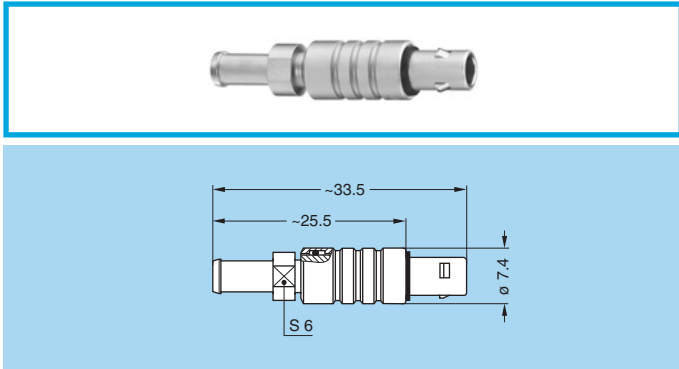
**M3** Cable assembly, solder contact (page 39)



### FFY Straight plug, large shell with cable collet

Part number	Cable group	Cond. Ø max	Dielectric Ø maxi	Sheath Ø	
				mini	maxi
FFY.00.250.NTAC40	5	1.05	3.05	3.2	3.8
FFY.00.250.NTAC47	–	1.05	3.05	3.9	4.5
FFY.00.250.NTAC52	6-7	1.05	3.05	4.6	5.0

**M2** Cable assembly, solder contact (page 39)

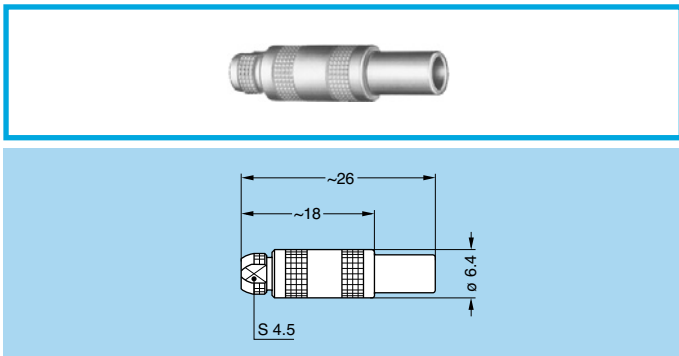


### FFE Straight plug with front sealing ring, cable collet and nut for fitting a bend relief (IP 54 protection index when mated)

Part number	Cable group	Cond. Ø max	Dielectric Ø maxi	Sheath Ø	
				mini	maxi
FFE.00.250.NTAC22Z	1	0.55	1.95	1.7	2.1
FFE.00.250.NTAC27Z	2-3-4	0.55	1.95	2.3	2.7
FFE.00.250.NTAC31Z	8	0.55	1.95	2.8	3.1

**M1** Cable assembly, solder contact (page 39)

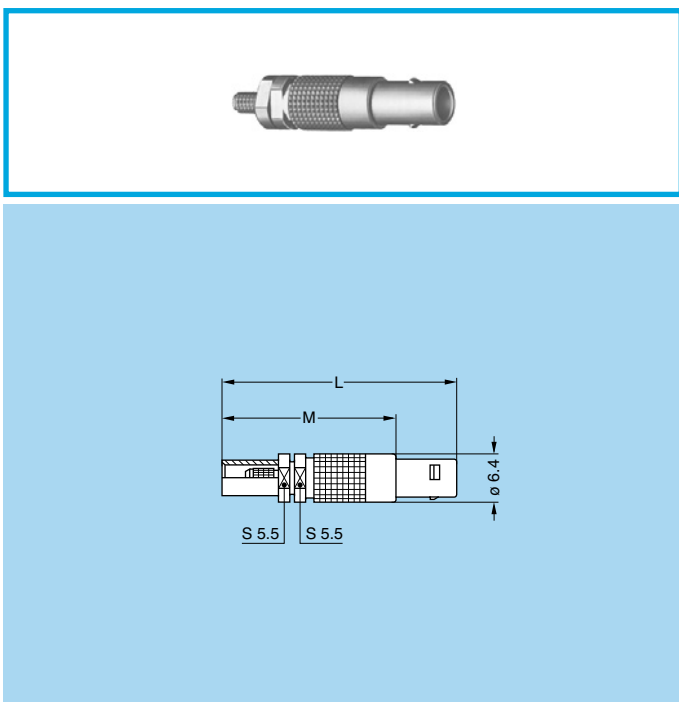
**Note:** the bend relief must be ordered separately (see page 30).



### FFF Straight plug, non-latching, with cable collet

Part number	Cable group	Cond. Ø max	Dielectric Ø maxi	Sheath Ø	
				mini	maxi
FFF.00.250.NTAC22	1	0.55	1.95	1.7	2.1
FFF.00.250.NTAC27	2-3-4	0.55	1.95	2.3	2.7
FFF.00.250.NTAC31	8	0.55	1.95	2.8	3.1

**M1** Cable assembly, solder contact (page 39)



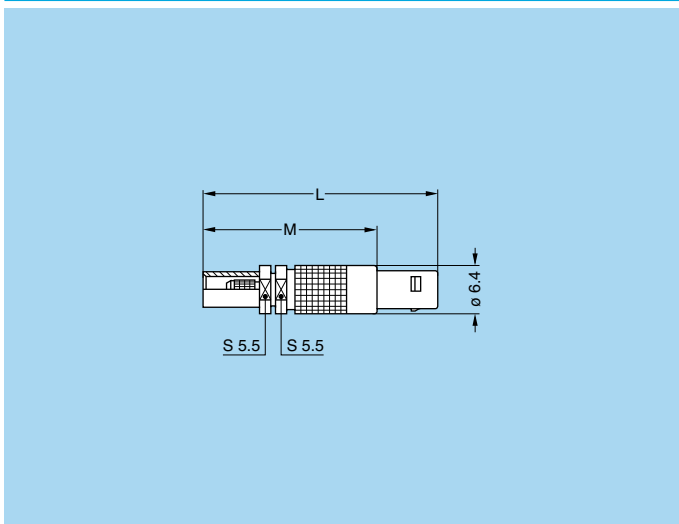
### FFS Straight plug for cable crimping

Part number	Dim		Cable group	Cond. Ø maxi	Dielec. Ø maxi	Sheath Ø maxi
	L	M				
FFS.00.250.CTAE24	31	23	1	0.4	0.95	2.35
FFS.00.250.CTAE31	31	23	3-4	0.55	1.65	3.0
FFS.00.250.CTAE52	34	26	6	0.97	3.05	5.2

**M5** Cable assembly, solder contact (page 41)

Part number	Dim		Cable group	Cond. Ø		Dielec. Ø maxi	Sheath Ø maxi
	L	M		mini	maxi		
FFS.00.250.CTCE24	31	23	1	0.28	0.4	0.95	2.35
FFS.00.250.CTCE25	31	23	1	0.28	0.4	1.15	2.35
FFS.00.250.CTCE30	31	23	2	0.28	0.4	1.65	3.0
FFS.00.250.CTCE31	31	23	3-4	0.46	0.55	1.65	3.0
FFS.00.250.CTCE35	31	23	8	0.46	0.55	1.65	3.35
FFS.00.250.CTCE44	31	23	5	0.28	0.4	2.65	4.35
FFS.00.250.CTCE52	34	26	6	0.90	0.97	3.05	5.2
FFS.00.250.CTCE56	34	26	7	0.90	0.97	3.05	5.45

**M4** Cable assembly, crimp contact (page 40)



### FFV Straight plug for cable crimping with improved screen efficiency <sup>1)</sup>

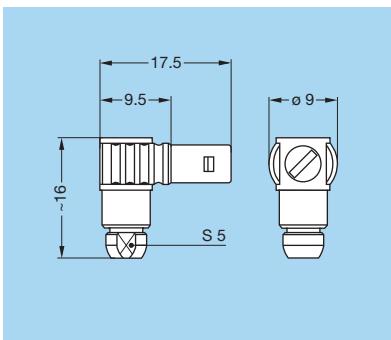
Part number	Dim		Cable group	Cond. Ø maxi	Dielec. Ø maxi	Sheath Ø maxi
	L	M				
FFV.00.250.NTAE24	31	23	1	0.4	0.95	2.35
FFV.00.250.NTAE31	31	23	3-4	0.55	1.65	3.0
FFV.00.250.NTAE52	34	26	6	0.97	3.05	5.2

**M5** Cable assembly, solder contact (page 41)

Part number	Dim		Cable group	Cond. Ø		Dielec. Ø maxi	Sheath Ø maxi
	L	M		mini	maxi		
FFV.00.250.NTCE24	31	23	1	0.28	0.4	0.95	2.35
FFV.00.250.NTCE30	31	23	2	0.28	0.4	1.65	3.0
FFV.00.250.NTCE31	31	23	3-4	0.46	0.55	1.65	3.0
FFV.00.250.NTCE35	31	23	8	0.46	0.55	1.65	3.35
FFV.00.250.NTCE44	31	23	5	0.28	0.4	2.65	4.35
FFV.00.250.NTCE52	34	26	6	0.90	0.97	3.05	5.2
FFV.00.250.NTCE56	34	26	7	0.90	0.97	3.05	5.45

**M4** Cable assembly, crimp contact (page 40)

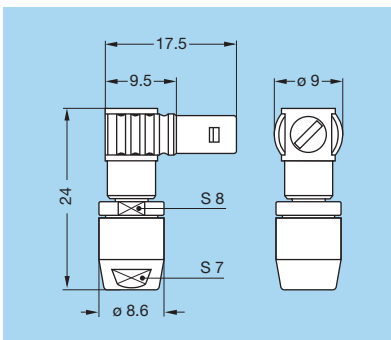
**Note:** <sup>1)</sup> Screen efficiency >100dB at 1 GHz, see page 8.



### FLA Elbow plug (90°) with cable collet

Part number	Cable group	Cond. Ø max	Dielectric Ø maxi	Sheath Ø	
				mini	maxi
FLA.00.250.CTAC22	1	0.35	1.55	1.7	2.1
FLA.00.250.CTAC27	-	0.35	1.75	2.3	2.7
FLA.00.250.CTAC31	-	0.35	1.75	2.8	3.1

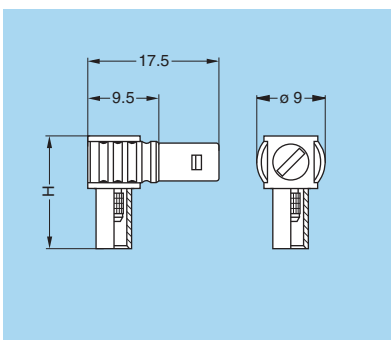
**M6** Cable assembly, solder contact (page 42)



### FLA Elbow plug (90°) with oversize cable collet

Part number	Cable group	Cond. Ø max	Dielectric Ø maxi	Sheath Ø	
				mini	maxi
FLA.00.250.CTAD42	8	0.97	1.75	3.1	4.0
FLA.00.250.NTAD52	6	0.97	1.75	4.1	5.0
FLA.00.250.NTAD56	7	0.97	1.75	5.1	5.5

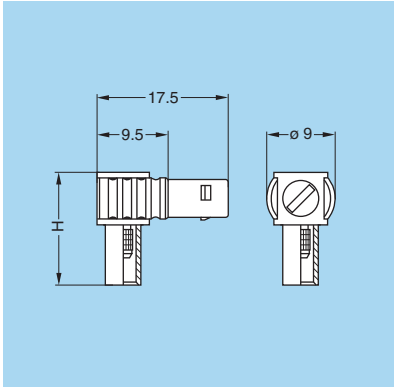
**M6** Cable assembly, solder contact (page 42)



### FLS Elbow plug (90°) for cable crimping

Part number	H (mm)	Cable group	Cond. Ø maxi	Dielectric Ø maxi	Sheath Ø maxi
FLS.00.250.NTAE31	15	-	0.35	1.65	3.0
FLS.00.250.NTAE35	15	-	0.35	1.65	3.35
FLS.00.250.NTAE52	18	6	0.97	3.05	5.2
FLS.00.250.NTAE56	18	7	0.97	3.05	5.45

**M7** Cable assembly, solder contact (page 42)

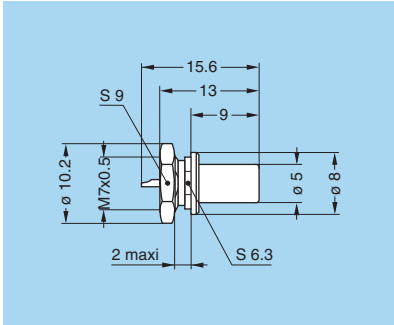
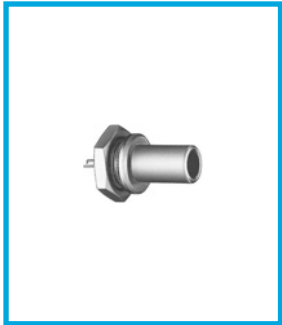


### FLV Elbow plug (90°) for cable crimping with improved screen efficiency \*

Part number	H (mm)	Cable group	Cond. Ø maxi	Dielectric Ø maxi	Sheath Ø maxi
FLV.00.250.NTAE31	15	3-4	0.35	1.65	3.0
FLV.00.250.NTAE35	15	8	0.35	1.65	3.35
FLV.00.250.NTAE52	18	6	0.97	3.05	5.2
FLV.00.250.NTAE56	18	7	0.97	3.05	5.45

**M7** Cable assembly, solder contact (page 42)

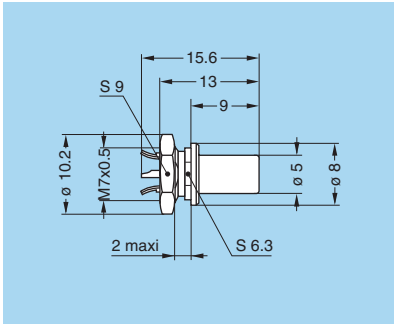
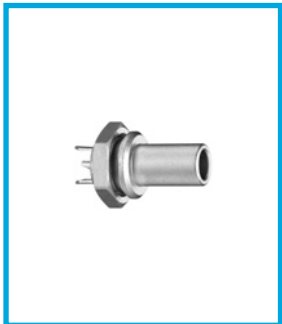
\* Screen efficiency >100dB at 1 GHz, see page 8.



### FAA Straight plug, non-latching, nut fixing

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

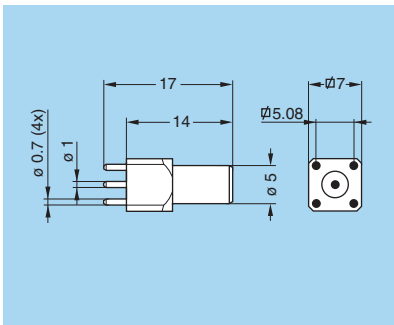
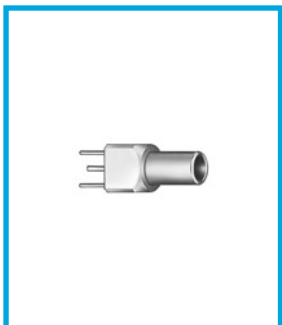
**P5** Panel cut-out (page 38)



### FAN Straight plug, non-latching, nut fixing with earthing tags

Part number	Weight (g)
FAN.00.250.CLA	2.5

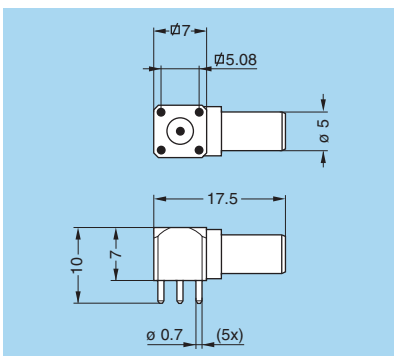
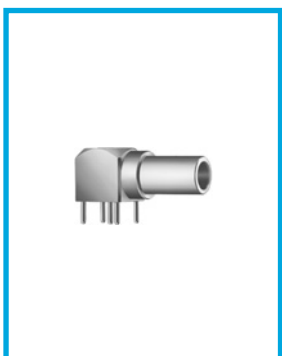
**P5** Panel cut-out (page 38)



### FPA Straight plug, non-latching, for printed circuit

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

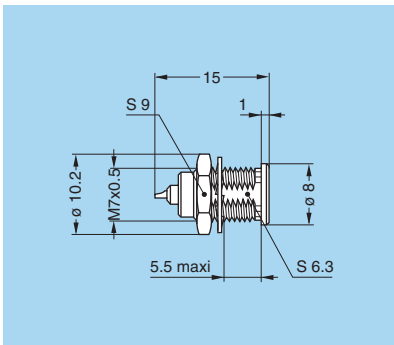
**P11** PCB drilling pattern (page 38)



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

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

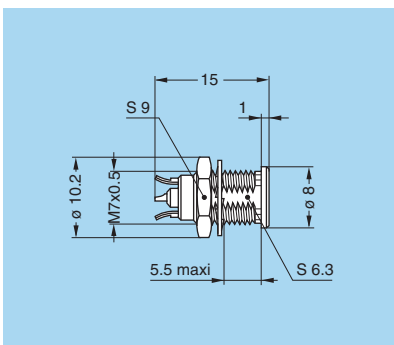
**P10** PCB drilling pattern (page 38)



### ERA Fixed socket, nut fixing

Part number	Weight (g)
ERA.00.250.NTL	2.5

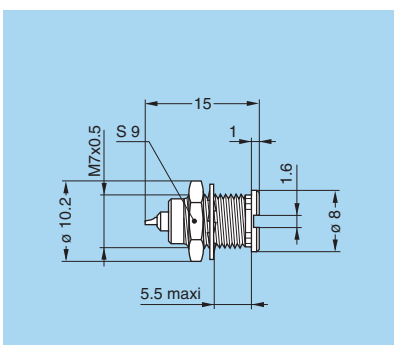
**P5** Panel cut-out (page 38)



### ERN Fixed socket, nut fixing, with earthing tags

Part number	Weight (g)
ERN.00.250.NTL	2.5

**P5** Panel cut-out (page 38)

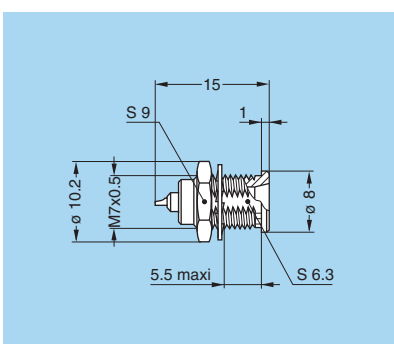


### ERC Fixed socket, with thread, with slots in flange

Part number	Weight (g)
ERC.00.250.NTL	2.6

**P1** Panel cut-out (page 38)

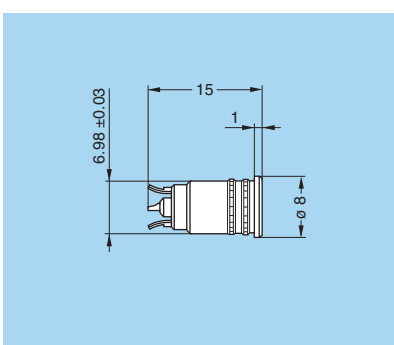
**P3** Panel cut-out for use without hexagonal nut (page 38)



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

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

**P5** Panel cut-out (page 38)

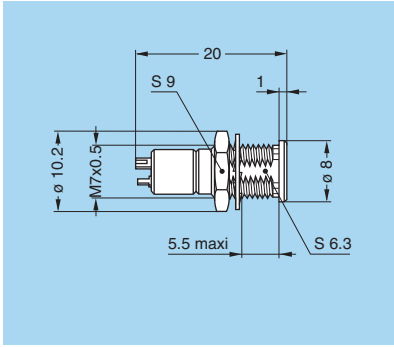
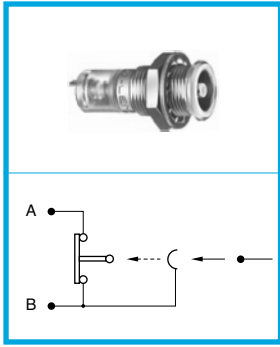


### ERT Straight socket without thread, force or adhesive fit, with earthing tags

Part number	Weight (g)
ERT.00.250.NTL	2.1

**P4** Panel cut-out (page 38)



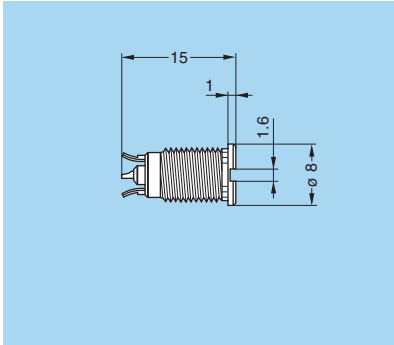


### ERM Fixed socket, nut fixing, with microswitch

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

**P5** Panel cut-out (page 38)

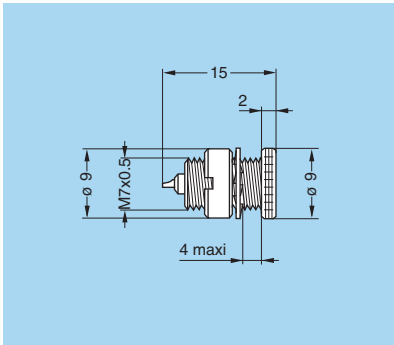
Technical characteristics on request



### ERX Fixed socket, with thread, with slots in flange, with earthing tags

Part number	Weight (g)
ERX.00.250.NTL	2.0

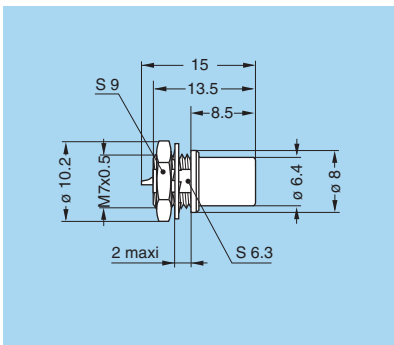
**P3** Panel cut-out (page 38)



### ECP Fixed socket with two nuts

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

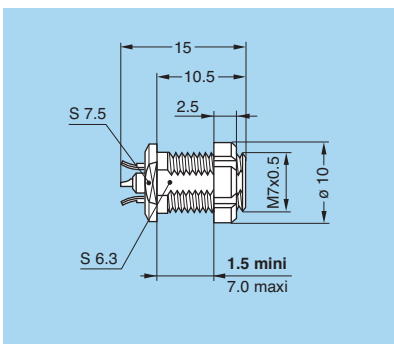
**P1** Panel cut-out (page 38)



### EHP Fixed socket, nut fixing, protruding shell

Part number	Weight (g)
EHP.00.250.NTL	2.8

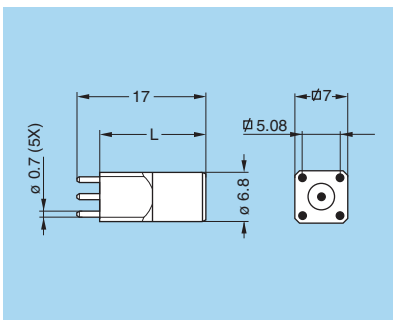
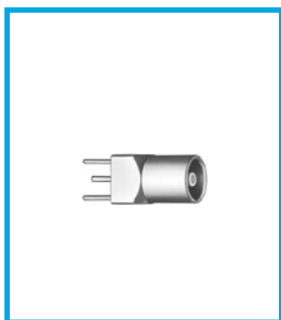
**P5** Panel cut-out (page 38)



### ELF Fixed socket, with slotted nut, long threaded shell, with earthing tags (back panel mounting)

Part number	Weight (g)
ELF.00.250.NTL	3.1

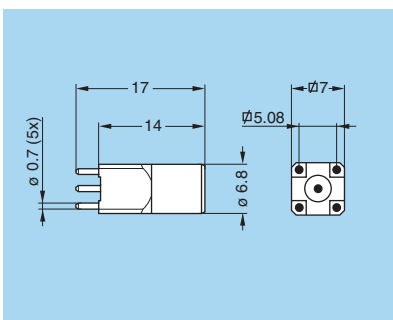
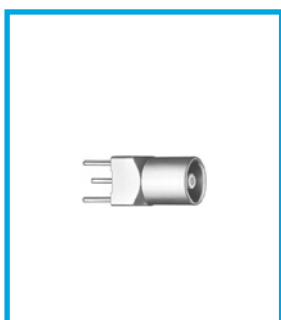
**P5** Panel cut-out (page 38)



### EPA-EPB Straight socket for printed circuit

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

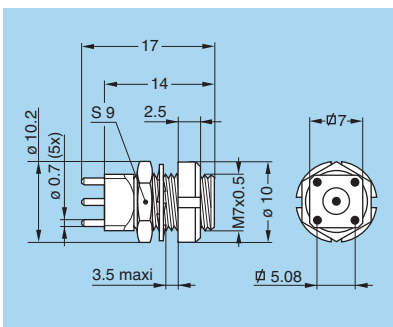
**P10** PCB drilling pattern (page 38)



### EPC Straight socket for printed circuit with clearance under the body

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

**P10** PCB drilling pattern (page 38)

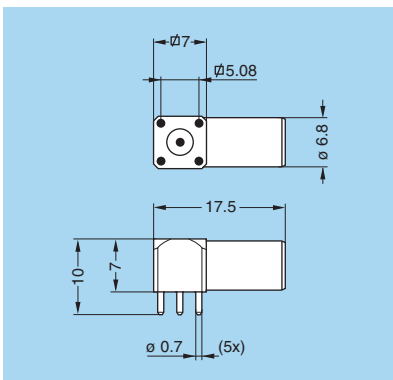
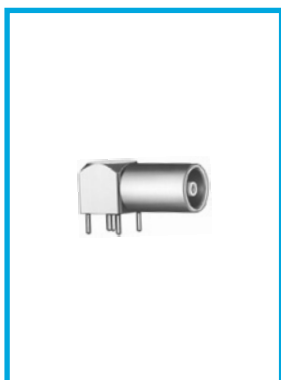


### EPE Fixed socket with two nuts, for printed circuit

Part number	Weight (g)
EPE.00.250.NTN	4.3

**P1** Panel cut-out (page 38)

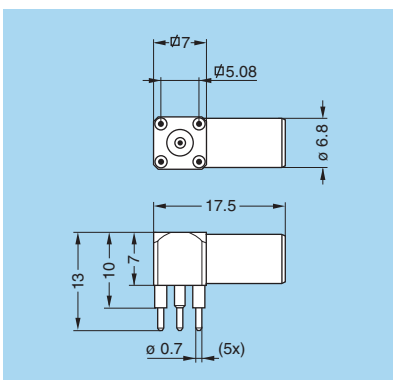
**P12** PCB drilling pattern (page 38)



### EPL Elbow socket (90°) for printed circuit

Part number	H (mm)	Weight (g)
EPL.00.250.NTN	10	4.3

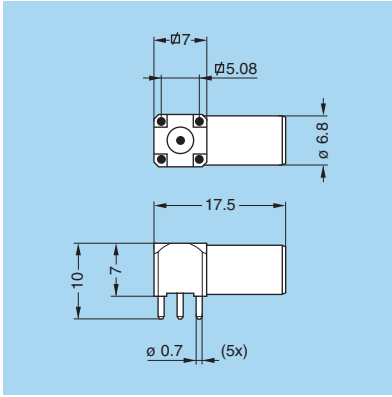
**P10** PCB drilling pattern (page 38)



### EPM Elbow socket (90°) for printed circuit, elevated solder tail

Part number	H (mm)	Weight (g)
EPM.00.250.NTN	13	4.6

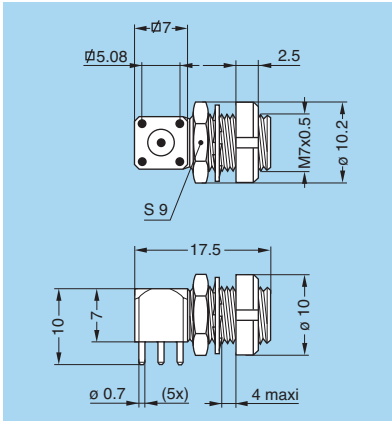
**P10** PCB drilling pattern (page 38)



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

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

**P10** PCB drilling pattern (page 38)

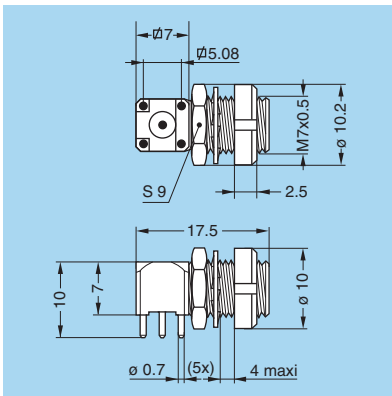


**EPS Elbow socket (90°) with two nuts, for printed circuit**

Part number	Weight (g)
EPS.00.250.NTN	5.4

**P1** Panel cut-out (page 38)

**P12** PCB drilling pattern (page 38)

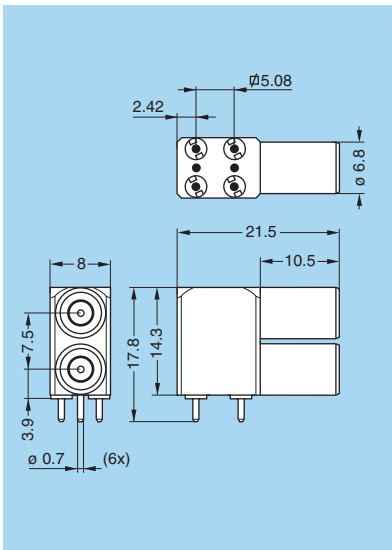
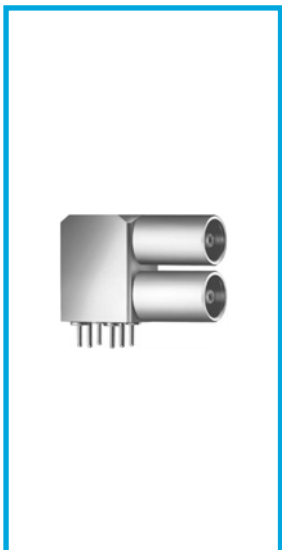


**EPR Elbow socket (90°) with two nuts for printed circuit, with clearance under the body (back panel mounting)**

Part number	Weight (g)
EPR.00.250.NTN	5.4

**P1** Panel cut-out (page 38)

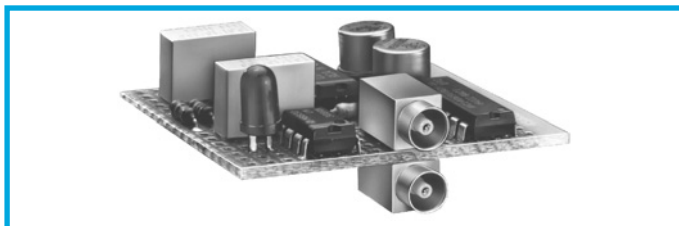
**P12** PCB drilling pattern (page 38)



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

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

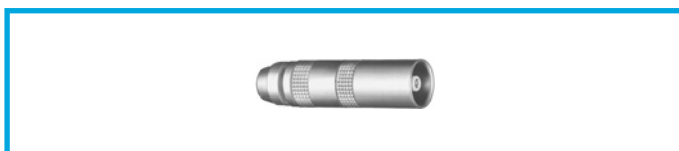
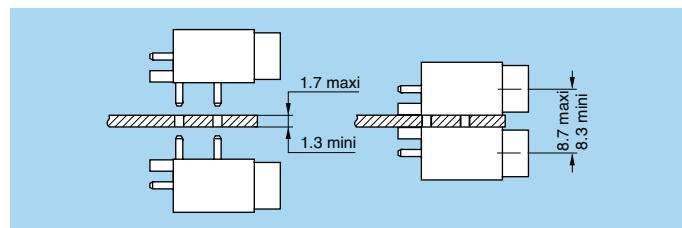
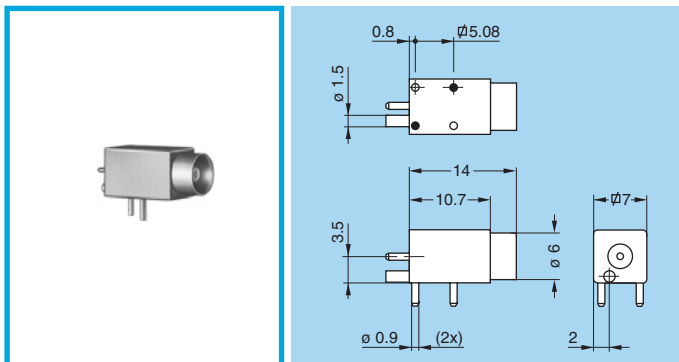
**P13** PCB drilling pattern (page 38)



### EPN Straight socket for press mounting in pair on printed circuit

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

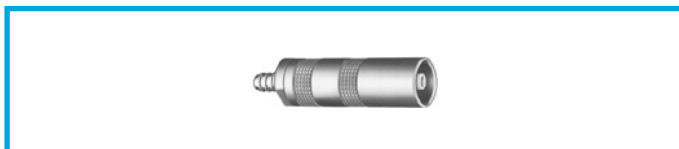
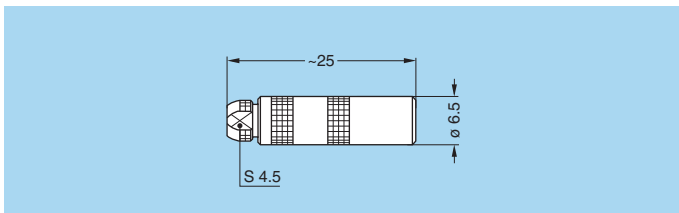
**P9** PCB drilling pattern (page 38)



### PCA Free socket with cable collet

Part number	Cable group	Cond. Ø max	Dielectric Ø maxi	Sheath Ø	
				mini	maxi
PCA.00.250.NTLC15	9	0.55	1.45	1.1	1.4
PCA.00.250.NTLC22	1	0.55	1.95	1.7	2.1
PCA.00.250.NTLC27	2-3-4	0.55	1.95	2.3	2.7
PCA.00.250.NTLC31	8	0.55	1.95	2.8	3.1

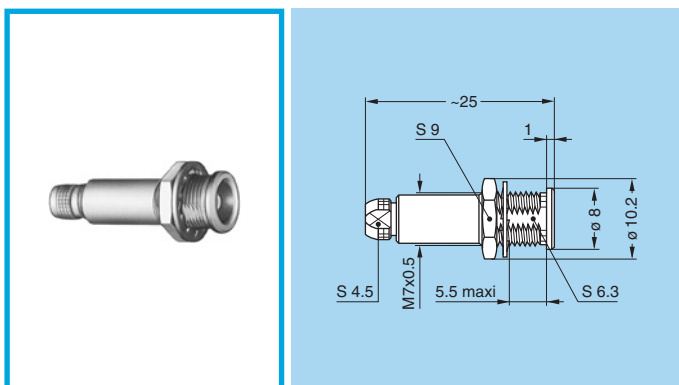
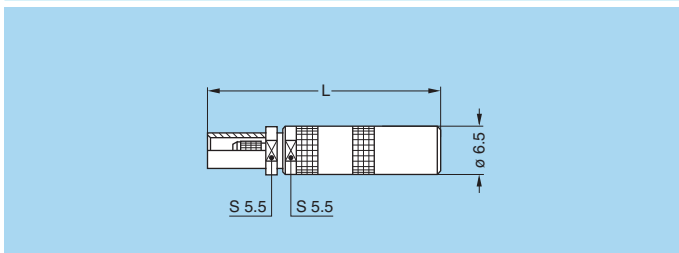
**M1** Cable assembly (page 39)



### PCS Free socket for cable crimping

Part number	Dim L	Cable group	Cond. Ø		Dielec. Ø maxi	Sheath Ø maxi
			mini	maxi		
PCS.00.250.NTME24	30	1	0.28	0.4	0.95	2.35
PCS.00.250.NTME30	30	2	0.28	0.4	1.65	3.0
PCS.00.250.NTME31	30	3-4	0.46	0.55	1.65	3.0
PCS.00.250.NTME44	30	5	0.28	0.4	2.65	4.35
PCS.00.250.NTME52	33	6	0.90	0.97	3.05	5.2

**M4** Cable assembly, crimp contact (page 40)

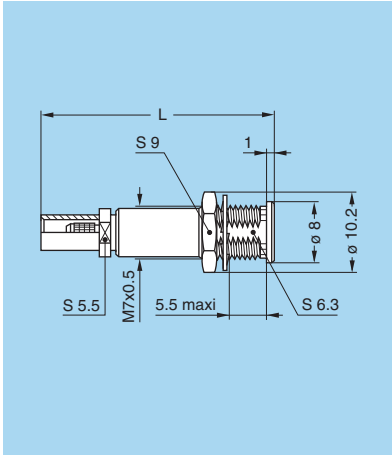


### PSA Fixed socket, nut fixing, with cable collet

Part number	Cable group	Cond. Ø max	Dielectric Ø maxi	Sheath Ø	
				mini	maxi
PSA.00.250.NTLC22	1	0.55	1.95	1.7	2.1
PSA.00.250.NTLC27	2-3-4	0.55	1.95	2.3	2.7
PSA.00.250.NTLC31	8	0.55	1.95	2.8	3.1

**M1** Cable assembly (page 39)

**P5** Panel cut-out (page 38)

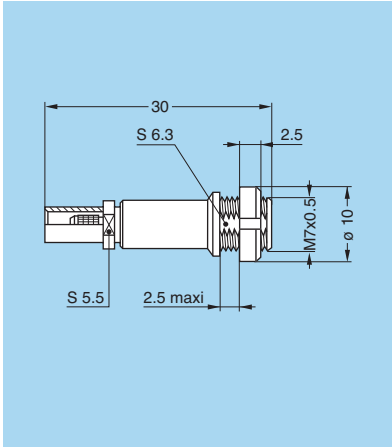


### PSS Fixed socket, nut fixing, for cable crimping

Part number	Dim L	Cable group	Cond. Ø		Dielec. Ø maxi	Sheath Ø maxi
			mini	maxi		
PSS.00.250.NTME24	30	1	0.28	0.4	0.95	2.35
PSS.00.250.NTME30	30	2	0.28	0.4	1.65	3.0
PSS.00.250.NTME31	30	3-4	0.46	0.55	1.65	3.0
PSS.00.250.NTME35	30	8	0.46	0.55	1.65	3.35
PSS.00.250.NTME52	33	6	0.90	0.97	3.05	5.2

**M4** Cable assembly, crimp contact (page 40)

**P5** Panel cut-out (page 38)

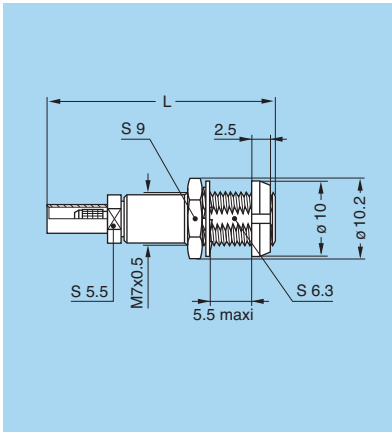


### PES Fixed socket, nut fixing, for cable crimping (back panel mounting)

Part number	Cable group	Cond. Ø		Dielectric Ø maxi	Sheath Ø maxi
		mini	maxi		
PES.00.250.NTME24	1	0.28	0.4	0.95	2.35
PES.00.250.NTME30	2	0.28	0.4	1.65	3.0
PES.00.250.NTME31	3-4	0.46	0.55	1.65	3.0
PES.00.250.NTME35	8	0.46	0.55	1.65	3.35

**M4** Cable assembly, crimp contact (page 40)

**P5** Panel cut-out (page 38)

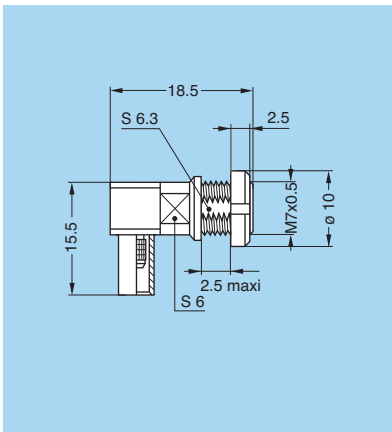


### PFS Fixed socket, with two nuts, for cable crimping (back panel mounting)

Part number	Dim L	Cable group	Cond. Ø		Dielec. Ø maxi	Sheath Ø maxi
			mini	maxi		
PFS.00.250.NTME24	30	1	0.28	0.4	0.95	2.35
PFS.00.250.NTME31	30	3-4	0.46	0.55	1.65	3.0
PFS.00.250.NTME52	33	6	0.90	0.95	3.05	5.2

**P5** Panel cut-out (page 38)

Cable assembly, please contact customer services

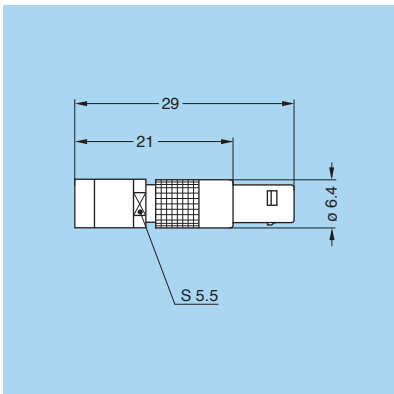


### PLK Fixed elbow socket (90°), for cable crimping (back panel mounting)

Part number	Cable group	Cond. Ø		Dielectric Ø maxi	Sheath Ø maxi
		mini	maxi		
PLK.00.250.NTLE31	3-4	0.46	0.55	1.65	3.0
PLK.00.250.NTLE35	8	0.46	0.55	1.65	3.35

**P5** Panel cut-out (page 38)

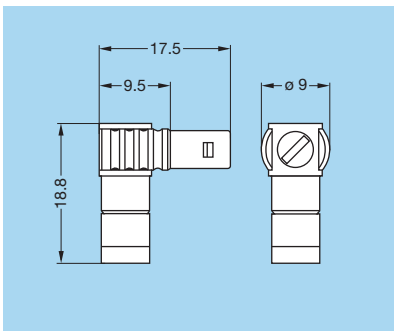
Cable assembly, please contact customer services



### FRT Straight plug with resistor

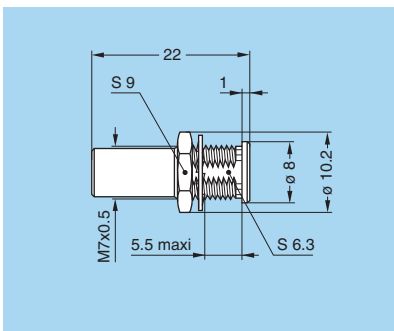
Part number	Resistor	Weight (g)	Note
FRT.00.250.NTA00	shorted	4.4	●
FRT.00.250.NTA50	50 Ω 0.6W	4.4	●
FRT.00.250.NTA100	100 Ω 0.4W	4.4	○

**Note:** ● Standard, first choice alternative  
○ Non standard, on request only



### FLR Elbow plug (90°) with resistor

Part number	Resistor	Weight (g)
FLR.00.250.NTA50	50 Ω 0.6W	5.6

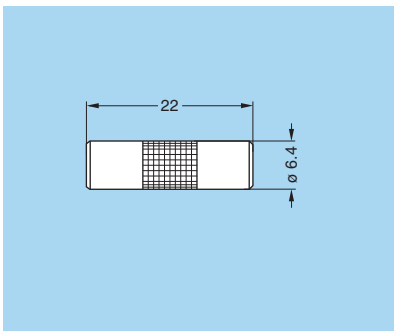
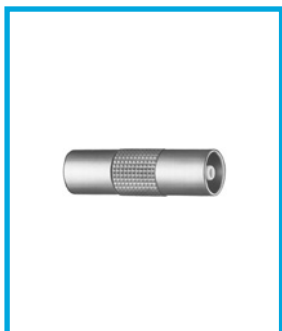


### RAD Fixed coupler, nut fixing

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

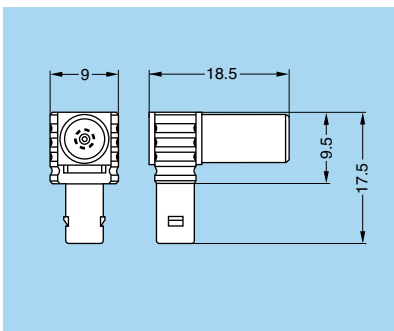
**P5** Panel cut-out (page 38)

**Note:** the first contact type mentioned (page 7) is always the contact at the flange end.



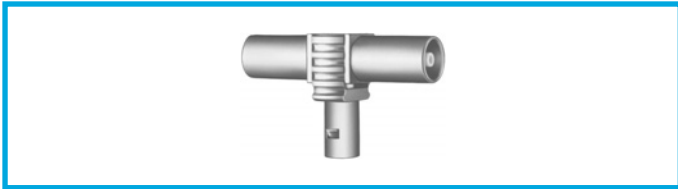
### RMA Free coupler

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

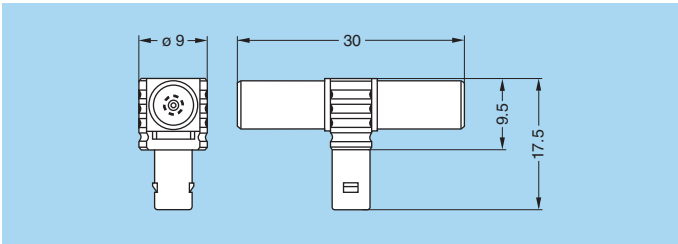


### FTR Elbow plug (90°) with socket

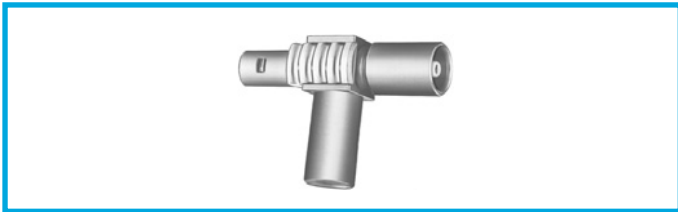
Part number	Weight (g)
FTR.00.250.NTA	5.4



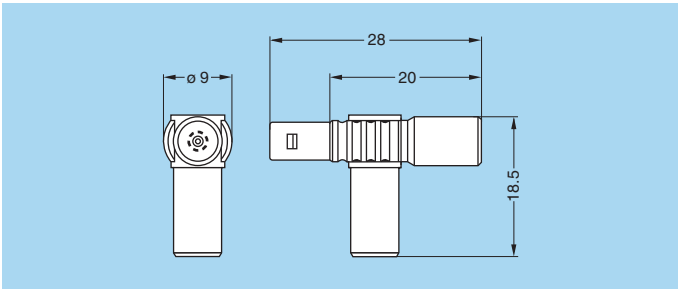
**FTA** T-plug with two sockets in line



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



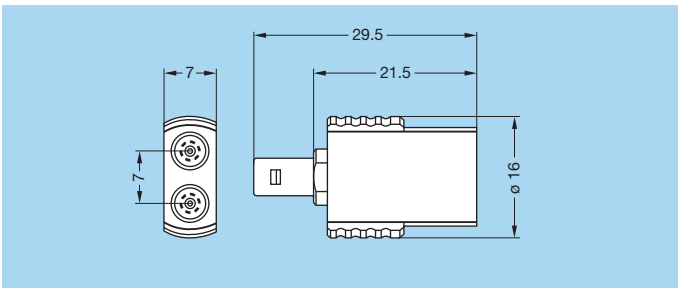
**FTL** T-plug with two sockets (90°)



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



**FTY** Straight plug with two parallel sockets



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

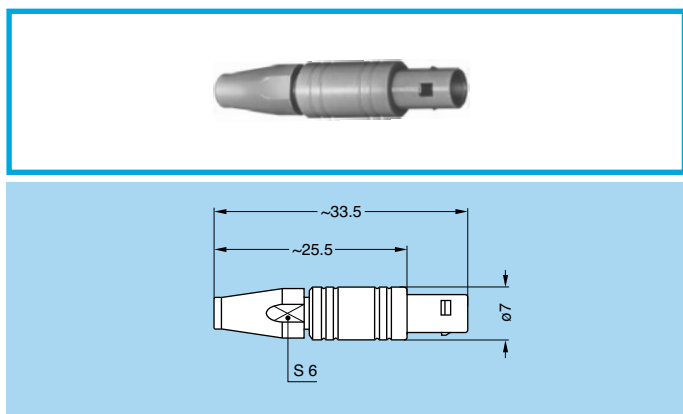
# Plastic housing models

This plastic housing provides the ideal solution when the isolation of the connector is critical (non metallic). The FFA and ERN models in PEEK allow weight saving and can provide ease of use in applications such as medical electronic instrumentation.

## Technical Characteristics

### Mechanical and climatical

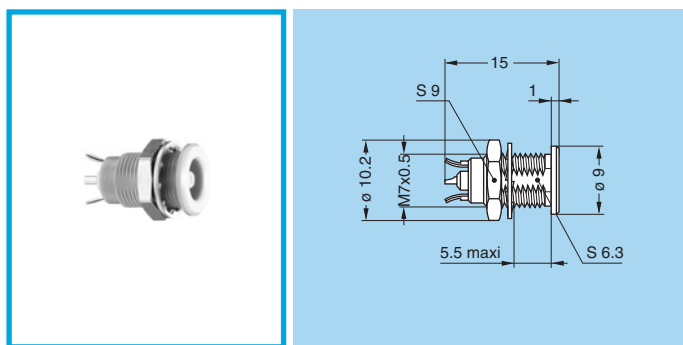
Characteristics	Value	Standard	Test
Contact retention force	> 18 N	IEC 60512-8	15a
Cable pull off force	> 100 N	IEC 60512-9	17a
Connector pull off force	> 90 N		
Endurance	> 5000 cycles	IEC 60512-5	9a
Operating temperature	- 50°C + 250°C		



### FFA Straight plug with cable collet, PEEK outer shell

Part number	Cable group	Cond. Ø max	Dielectric Ø maxi	Sheath Ø	
				mini	maxi
FFA.00.250.GTAC15	9	0.55	1.45	1.1	1.4
FFA.00.250.GTAC17	-	0.55	1.45	1.3	1.7
FFA.00.250.GTAC22	1	0.55	1.95	1.7	2.1
FFA.00.250.GTAC27	2-3-4	0.55	1.95	2.3	2.7
FFA.00.250.GTAC31	8	0.55	1.95	2.8	3.1

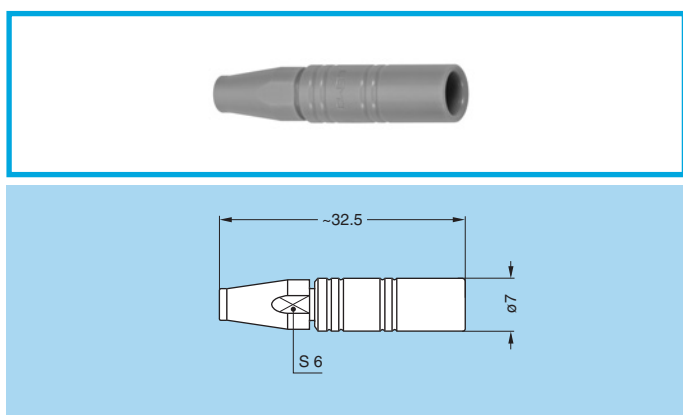
**M1** Cable assembly (page 39)



### ERN Fixed socket, nut fixing, with earthing tags, PEEK outer shell

Part number	Weight (g)
ERN.00.250.GTL	1.4

**P5** Panel cut-out (page 38)



### PCA Free socket with cable collet, PEEK outer shell

Part number	Cable group	Cond. Ø max	Dielectric Ø maxi	Sheath Ø	
				mini	maxi
PCA.00.250.GTLC15	9	0.55	1.45	1.1	1.4
PCA.00.250.GTLC17	-	0.55	1.45	1.3	1.7
PCA.00.250.GTLC22	1	0.55	1.95	1.7	2.1
PCA.00.250.GTLC27	2-3-4	0.55	1.95	2.3	2.7
PCA.00.250.GTLC31	8	0.55	1.95	2.8	3.1

**M1** Cable assembly (page 39)



## Watertight or vacuumtight models

A range of sealed sockets and couplers allows the device on which they are fitted to reach a protection index of IP68 as per IEC 60529 (unmated). They are fully compatible with plugs of the same series and are widely used for portable radios, military, laboratory equipment, aviation, etc.

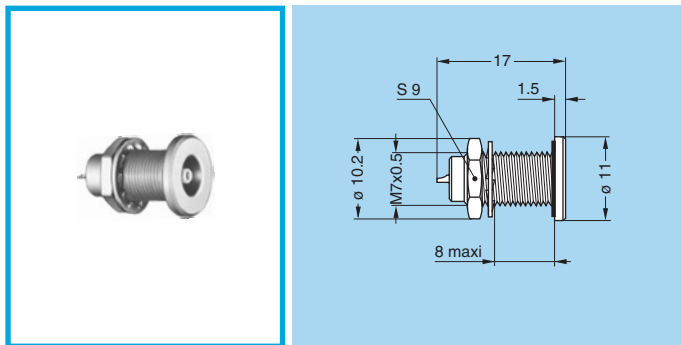
These models are identified by a letter «P» at the end of the reference for watertight model and by a «PV» for vacuumtight models. Epoxy resin or o-rings are used to seal these models.

### Mechanical and climatical

Characteristics	Value	Standard
Endurance	> 5000 cycles	IEC 60512-5 test 9a
Humidity	up to 95% at 60° C	
Temperature range	- 20° C/+100° C	
Salt spray corrosion test	> 144h	IEC 60512-6 test 11f
Climatical category	20/80/21	IEC 60068-1
Leakage rate (He) <sup>1)</sup>	< 10 <sup>-7</sup> mbar.l.s <sup>-1</sup>	IEC 60512-7 test 14b
Maximum operating pressure <sup>2)</sup>	60 bars	IEC 60512-7 test 14d

**Note:**

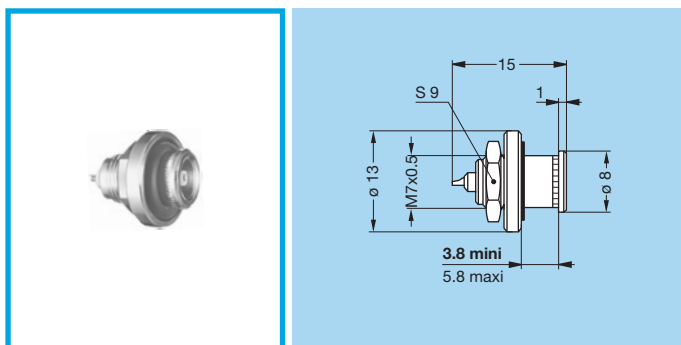
1) only for vacuumtight models.  
2) this value corresponds to the maximum allowed pressure difference for the assembled socket.



### HGP Fixed socket, nut fixing, watertight or vacuumtight

Part number	Weight (g)
HGP.00.250.NTLP	4.2
HGP.00.250.NTLPV	4.2

**P1** Panel cut-out (page 38)

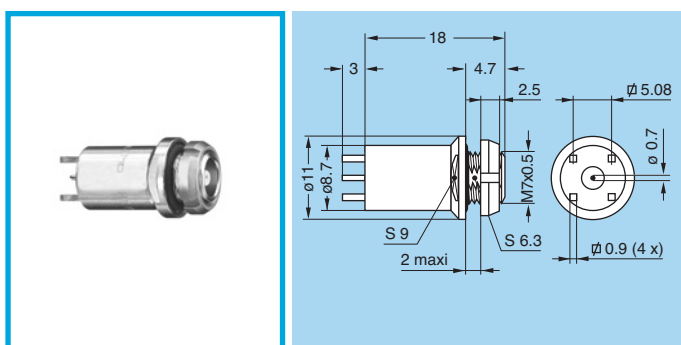


### HGW Fixed socket, nut fixing, watertight with rear sealing ring

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

**P1** Panel cut-out (page 38)

**Note:** Non standard, on request only

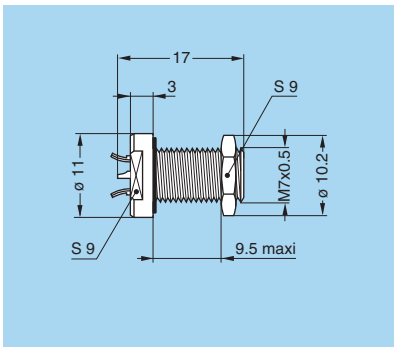
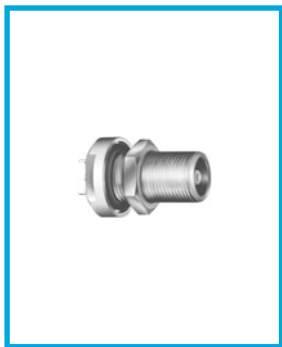


### HEP Fixed socket, nut fixing, watertight for printed circuit (back panel mounting)

Part number	Weight (g)
HEP.00.250.NTNP	7.4

**P5** Panel cut-out (page 38)

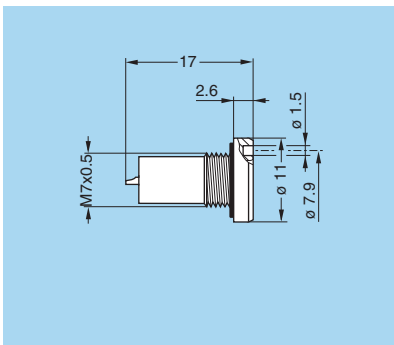
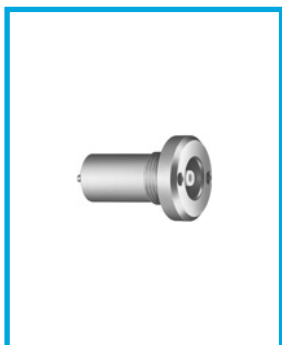
**P15** PCB drilling pattern (page 38)



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

Part number	Weight (g)
EWF.00.250.NTLP	4.2
EWF.00.250.NTLPV	4.2

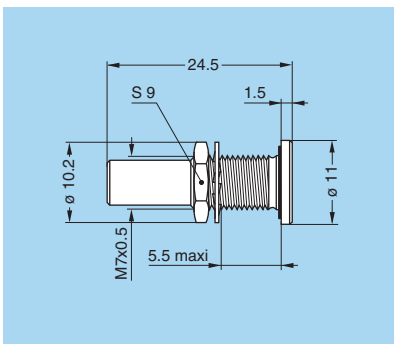
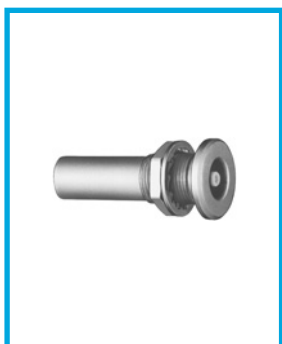
**P1** Panel cut-out (page 38)



### EWV Fixed socket, watertight or vacuumtight

Part number	Weight (g)
EWV.00.250.NTLP	3.7
EWV.00.250.NTLPV	3.7

**P2** Panel cut-out (page 38)

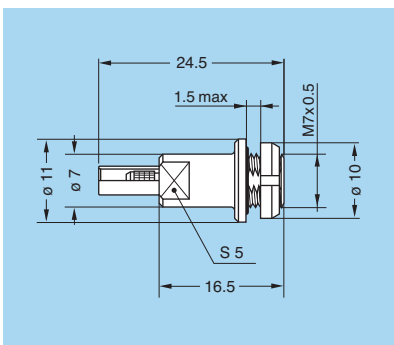


### SWH Fixed coupler, nut fixing, vacuumtight

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

**P1** Panel cut-out (page 38)

**Note:** this model is sealed with o-rings (no epoxy).



### VPS Fixed socket, short shell, vacuumtight with cable crimping (back panel mounting)

Part number	Cable group	Cond. Ø		Dielectric Ø maxi	Sheath Ø maxi
		mini	maxi		
VPS.00.250.CTLE31	3-4	0.46	0.55	1.65	3.0

**P1** Panel cut-out (page 38)

Cable assembly, please contact customer service