

# S Series

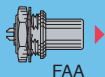
S series connectors have main features as follows:

- security of the Push-Pull self-latching system
- unipole types transmitting current up to 230 A and multipole types with up to 106 contacts
- 360° screening for full EMC shielding.

- solder or print contacts (straight or elbow)
- polarisation by stepped insert (half-moon) fitted with male and female contacts

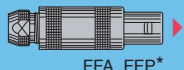
## Metal housing models (page 76)

### Fixed plug



FAA

### Straight plugs



FFA, FFP\*

### Fixed sockets

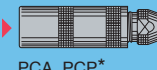


ERA



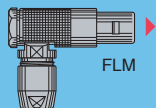
EEP

### Free sockets

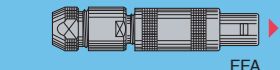


PCA, PCP\*

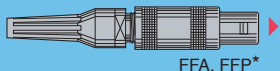
### Elbow plugs



FLM



FFA



FFA, FFP\*



ERN



ERC



ERS\*



EHP



EBD\*



EBS\*



EBC\*



ERD



ECP

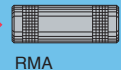


ECP



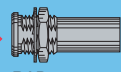
ECP

### Free coupler

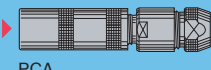


RMA

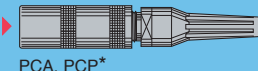
### Fixed coupler



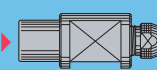
RAD



PCA

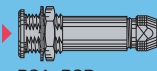


PCA, PCP\*

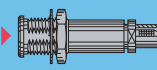


PZP\*

### Fixed sockets



PSA, PSP



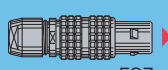
PSS



FTA\*

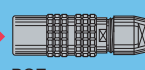
## New design models (page 86)

### Straight plugs

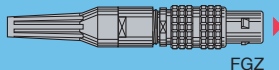


FGZ

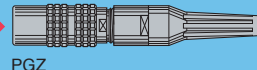
### Free sockets



PGZ



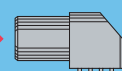
FGZ



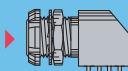
PGZ

## Elbow socket models (page 87)

### Elbow sockets



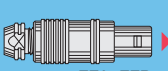
EPL



EXP

## Plastic housing models (page 89)

### Straight plugs

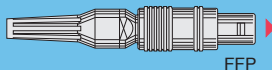


FFA, FFP

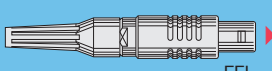
### Fixed socket



ERN



FFP



FFL

## Watertight or vacuumtight models (page 91)

### Fixed sockets



HGP



HCP



EWB



HGW

### Fixed coupler



SWH

Алматы (7273)495-231  
 Ангарск (3955)60-70-56  
 Архангельск (8182)63-90-72  
 Астрахань (8512)99-46-04  
 Барнаул (3852)73-04-60  
 Белгород (4722)40-23-64  
 Благовещенск (4162)22-76-07  
 Брянск (4832)59-03-52  
 Владивосток (423)249-28-31  
 Владикавказ (8672)28-90-48  
 Владимир (4922)49-43-18  
 Волгоград (844)278-03-48  
 Вологда (8172)26-41-59  
 Воронеж (473)204-51-73  
 Екатеринбург (343)384-55-89

Иваново (4932)77-34-06  
 Ижевск (3412)26-03-58  
 Иркутск (395)279-98-46  
 Казань (843)206-01-48  
 Калининград (4012)72-03-81  
 Калуга (4842)92-23-67  
 Кемерово (3842)65-04-62  
 Киров (8332)68-02-04  
 Коломна (4966)23-41-49  
 Кострома (4942)77-07-48  
 Краснодар (861)203-40-90  
 Красноярск (391)204-63-61  
 Курск (4712)77-13-04  
 Курган (3522)50-90-47  
 Липецк (4742)52-20-81

Магнитогорск (3519)55-03-13  
 Москва (495)268-04-70  
 Мурманск (8152)59-64-93  
 Набережные Челны (8552)20-53-41  
 Нижний Новгород (831)429-08-12  
 Новокузнецк (3843)20-46-81  
 Ноябрьск (3496)41-32-12  
 Новосибирск (383)227-86-73  
 Омск (3812)21-46-40  
 Орел (862)44-53-42  
 Оренбург (3532)37-68-04  
 Пенза (8412)22-31-16  
 Петрозаводск (8142)55-98-37  
 Псков (8112)59-10-37  
 Пермь (342)205-81-47

Ростов-на-Дону (863)308-18-15  
 Рязань (4912)46-61-64  
 Самара (846)206-03-16  
 Санкт-Петербург (812)309-46-40  
 Саратов (845)249-38-78  
 Севастополь (8692)22-31-93  
 Саранск (8342)22-96-24  
 Симферополь (3652)67-13-56  
 Смоленск (4812)29-41-54  
 Сочи (862)225-72-31  
 Ставрополь (8652)20-65-13  
 Сургут (3462)77-98-35  
 Сыктывкар (8212)25-95-17  
 Тамбов (4752)50-40-97  
 Тверь (4822)63-31-35

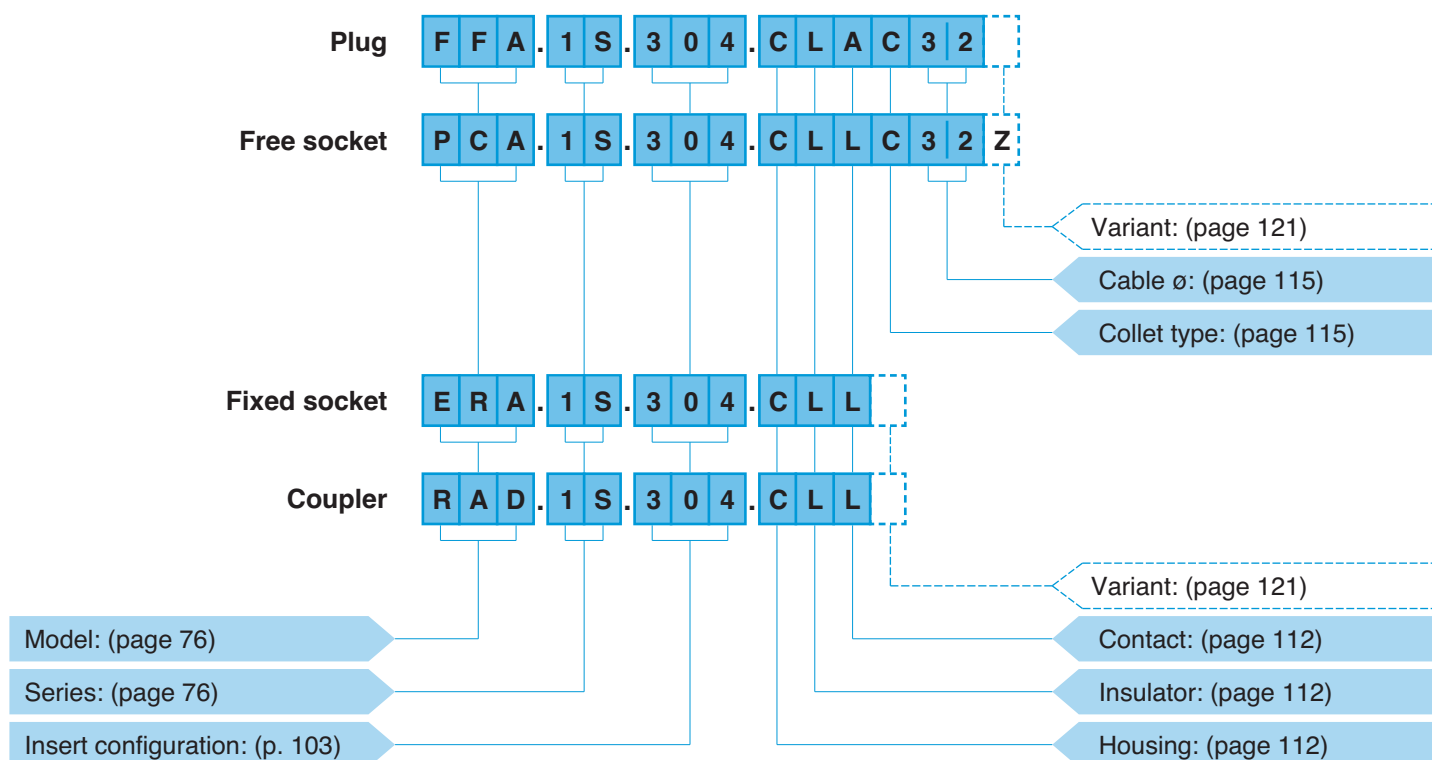
Тольятти (8482)63-91-07  
 Томск (3822)98-41-53  
 Тула (4872)33-79-87  
 Тюмень (3452)66-21-18  
 Ульяновск (8422)24-23-59  
 Улан-Удэ (3012)59-97-51  
 Уфа (347)229-48-12  
 Хабаровск (4212)92-98-04  
 Чебоксары (8352)28-53-07  
 Челябинск (351)202-03-61  
 Череповец (8202)49-02-64  
 Чита (3022)38-34-83  
 Якутск (4112)23-90-97  
 Ярославль (4852)69-52-93

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Киргизия +996(312)96-26-47

## Part Numbering System



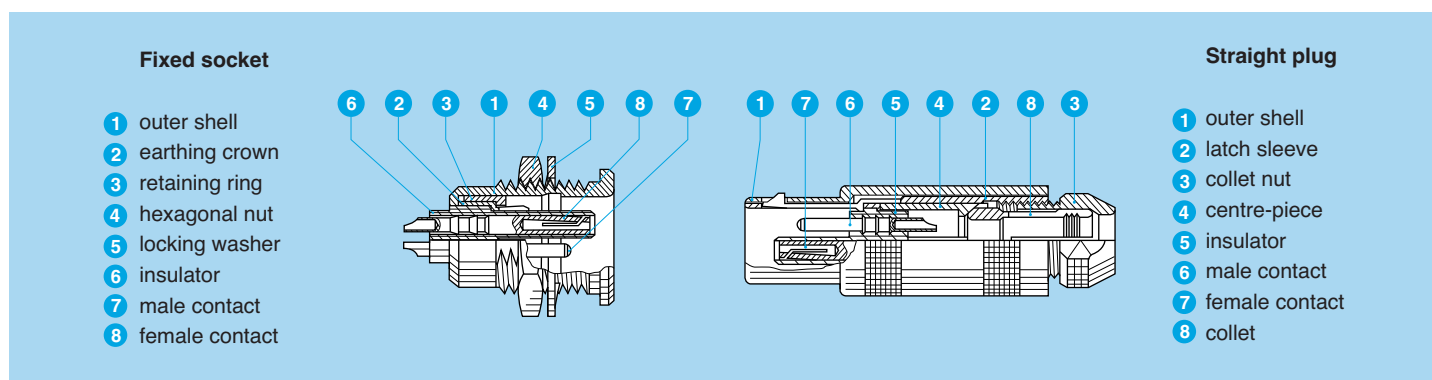
**FFA.1S.304.CLAC32** = straight plug with cable collet, 1S series, multipole type with 4 contacts, outer shell in chrome-plated brass, PEEK insulator, 2 male and 2 female solder contacts, C type collet for a 3.2 mm diameter cable.

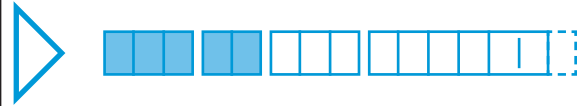
**PCA.1S.304.CLLC32Z** = free socket, with cable collet, 1S series, multipole type with 4 contacts, outer shell in chrome-plated brass, PEEK insulator, 2 female and 2 male solder contacts, C type collet for a 3.2 mm diameter cable and nut for fitting a bend relief.

**ERA.1S.304.CLL** = fixed socket, nut fixing, 1S series, multipole type with 4 contacts, outer shell in chrome-plated brass, PEEK insulator, 2 female and 2 male solder contacts.

**RAD.1S.304.CLL** = straight coupler, nut fixing, 1S series, multipole type with 4 contacts, outer shell in chrome-plated brass, PEEK insulator, 2 female and 2 male contacts each end.

## Part Section Showing Internal Components





## Metal housing models

### Technical Characteristics

#### Mechanical and Climatical

Characteristics	Value	Standard
Endurance <sup>1)</sup>	> 5000 cycles <sup>2)</sup>	IEC 60512-5 test 9a
Humidity	up to 95% at 60°C	
Temperature range	- 55°C, + 250°C	
Resistance to vibrations	10-2000 Hz, 15g	IEC 60512-4 test 6d
Shock resistance	100 g, 6 ms	IEC 60512-4 test 6c
Salt spray corrosion test <sup>3)</sup>	> 1000h	IEC 60512-6 test 11f
Protection index (mated)	IP50	IEC 60529
Climatical category	55/175/21	IEC 60068-1

#### Electrical

Characteristics	Value	Standard	
Shielding efficiency	at 10 MHz	> 75 dB	IEC 60169-1-3
	at 1 GHz	> 40 dB	IEC 60169-1-3

#### Note:

The various tests have been carried out with FFA and ERA connector pairs, with chrome-plated brass shell and PEEK insulator.

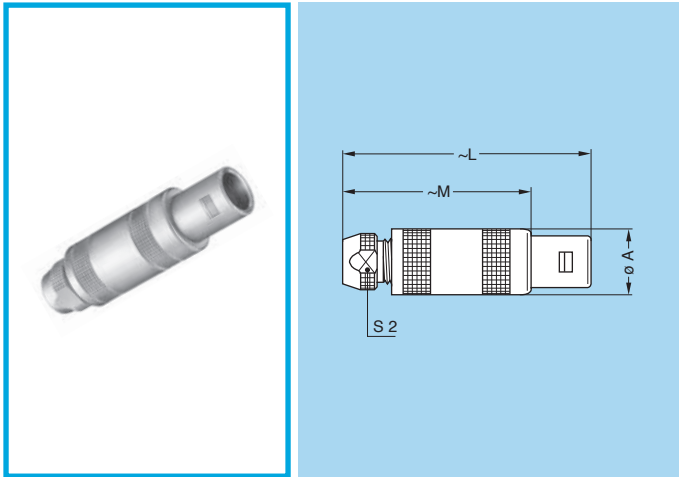
Detailed electrical characteristics, as well as materials and treatment are presented in the chapter Technical Characteristics on page 182.

<sup>1)</sup> see page 189, contact resistance after mating cycles. See page 185, mechanical endurance latching force.

<sup>2)</sup> 1000 cycles for FFE models.

<sup>3)</sup> for chrome plated product (« C » material code).

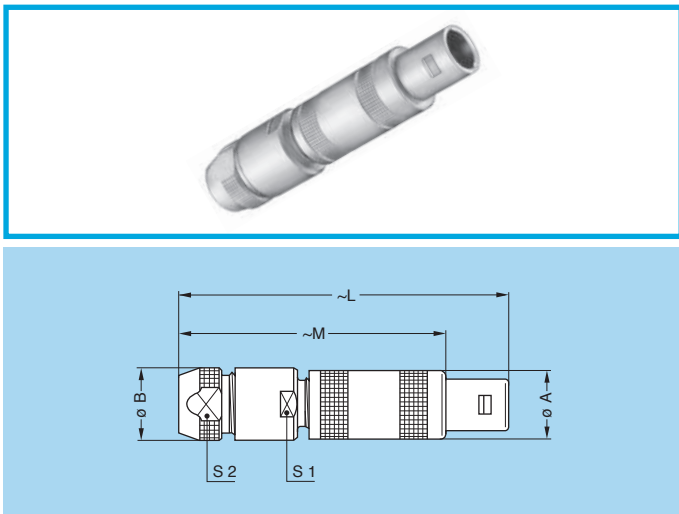
### FFA Straight plug, cable collet



Reference		Dimensions (mm)			
Model	Series	A	L	M	S2
FFA	00	6.4	26.0	18.0	4.5
FFA	0S	9.0	34.5	24.5	6.5
FFA	1S	12.0	42.5	31.5	8.5
FFA	2S	14.8	52.0	40.0	11.0
FFA	3S	17.8	61.0	46.0	14.0
FFA	4S	24.8	77.0	59.0	19.0
FFA	5S	35.0	103.0	78.0	29.0
FFA	6S	46.0	106.0	81.0	38.0

**M1** Cable assembly (pages 175 to 177)

### FFA Straight plug with oversize cable collet <sup>1)</sup>



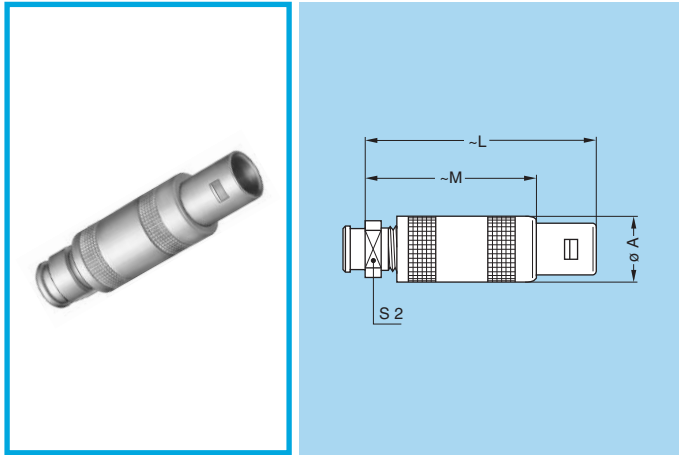
Reference		Dimensions (mm)					
Model	Series	A	B	L	M	S1	S2
FFA	00	6.4	8.0	34.0	26.0	7.0	6.5
FFA	0S	9.0	10.0	45.5	35.5	9.0	8.5
FFA	1S	12.0	13.0	57.0	46.0	12.0	11.0
FFA	2S	14.8	18.0	67.0	55.0	14.0	14.0
FFA	3S	17.8	21.0	85.0	70.0	19.0	19.0
FFA	4S	24.8	31.8	107.0	89.0	28.5	29.0
FFA	5S	35.0	41.8	138.0	113.0	37.5	38.0

**M2** Cable assembly (pages 175 and 178)

**Note:** <sup>1)</sup> correspond to K type of collet, the fitting of oversize collets onto this model allows them to be fitted to the cables that can be accommodated by the next housing size up (see page 115).



### FFA Straight plug, cable collet and nut for fitting a bend relief <sup>1)</sup>

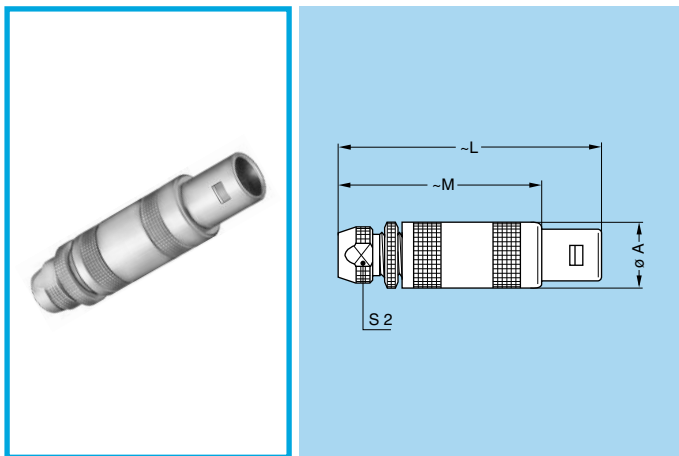


Reference		Dimensions (mm)			
Model	Series	A	L	M	S2
FFA	00	6.4	26.0	18.0	6
FFA	0S	9.0	34.5	24.5	7
FFA	1S	12.0	42.5	31.5	9
FFA	2S	14.8	52.0	40.0	12
FFA	3S	17.8	61.0	46.0	14
FFA	4S	24.8	77.0	59.0	20

**M1** Cable assembly (pages 175 and 176)

**Note:** <sup>1)</sup> to order, add a «Z» at the end of the reference. The bend relief must be ordered separately (see page 145).

### FFB Straight plug, cable collet and safety locking ring

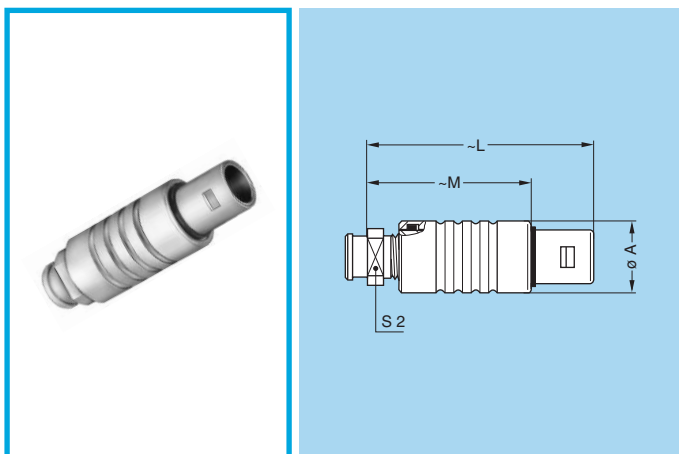


Reference		Dimensions (mm)			
Model	Series	A	L	M	S2
FFB	0S	9.0	36.8	26.8	6.5
FFB	1S	12.0	45.0	34.0	8.5
FFB	2S	14.8	55.5	43.5	11.0
FFB	3S	17.8	65.0	50.0	14.0

**M1** Cable assembly (pages 175 and 176)

**Note:** nut for fitting a bend relief (available only for size 1S).

### FFE Straight plug, cable collet, front seal and nut for fitting a bend relief <sup>1)</sup> (protected to IP54 when mated)

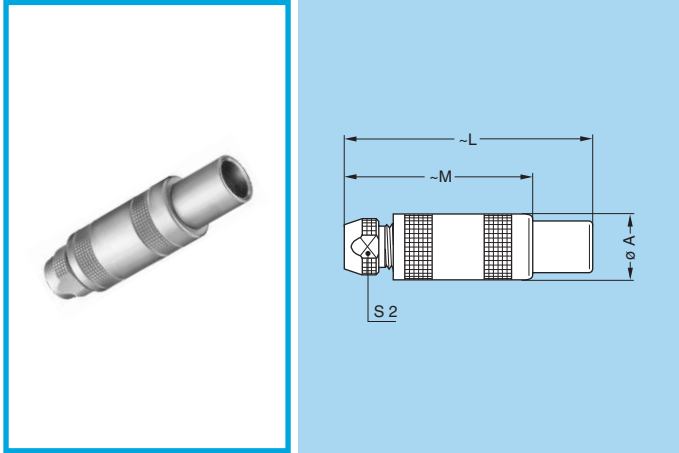


Reference		Dimensions (mm)			
Model	Series	A	L	M	S2
FFE	00	7.4	26.0	18.0	6
FFE	0S	10.0	34.5	24.5	7
FFE	1S	13.0	42.5	31.5	9
FFE	2S	16.0	52.0	40.0	12
FFE	3S	19.0	61.0	46.0	14

**M1** Cable assembly (pages 175 and 176)

**Note:** <sup>1)</sup> to order, add a «Z» at the end of the reference. The bend relief must be ordered separately (see page 145).

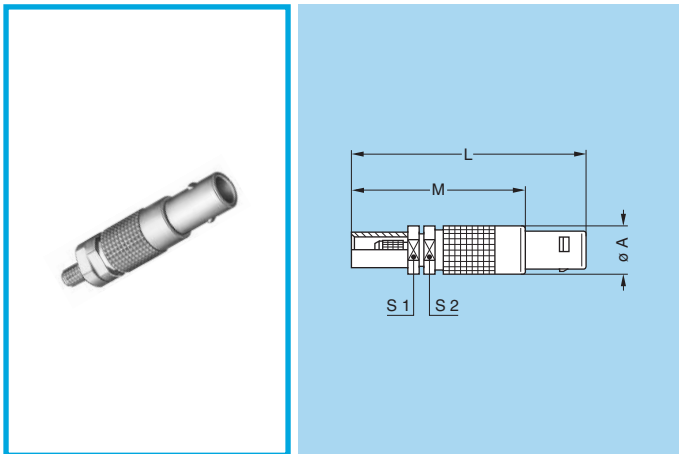
### FFF Straight plug, non-latching, cable collet



Reference		Dimensions (mm)			
Model	Series	A	L	M	S2
FFF	00	6.4	26.0	18.0	4.5
FFF	0S	9.0	34.5	24.5	6.5
FFF	1S	12.0	42.5	31.5	8.5
FFF	2S	14.8	52.0	40.0	11.0

**M1** Cable assembly (pages 175 and 176)

### FFS Straight plug for cable crimping

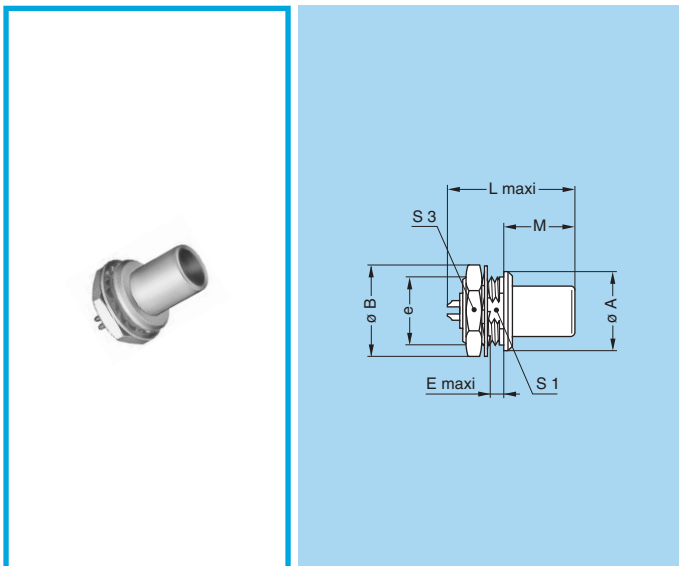


Reference		Dimensions (mm)				
Model	Series	A	L	M	S1	S2
FFS	00	6.4	31	23	5.5	5.5

**M5** Cable assembly (page 175)

**Note:** Model available only with crimp backnut E31 similar to 00.250 series.

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



Reference		Dimensions (mm)								
Model	Series	A	B	e	E	L	L <sup>1)</sup>	M	S1	S3
FAA	00	8	10.2	M7x0.5	2.0	–	15.5	9.0	6.3	9
FAA	0S	10	12.4	M9x0.6	2.0	18.5	18.0	11.2	8.2	11
FAA	1S	14	15.8	M12x1.0	2.5	22.5	21.7	12.5	10.5	14
FAA	2S	18	19.2	M15x1.0	4.0	25.0	25.3	13.8	13.5	17
FAA	3S	22	25.0	M18x1.0	4.0	31.0	29.0	17.0	16.5	22
FAA	4S	28	34.0	M25x1.0	2.5	35.5	39.0	20.5	23.5	30
FAA	5S	40	40.0	M35x1.0	2.5	45.0	–	28.0	33.5	–
FAA	6S	54	54.0	M48x1.5	2.5	45.0	–	28.0	–	–

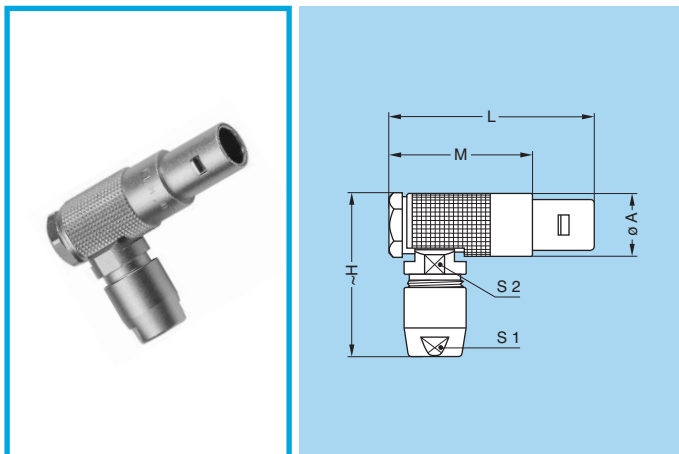
**P1** Panel cut-out (page 158)

**P2** Panel cut-out 6S series (page 158)

**Note:** <sup>1)</sup> unipole model



### FLC/FLM Elbow (90°) plug, cable collet

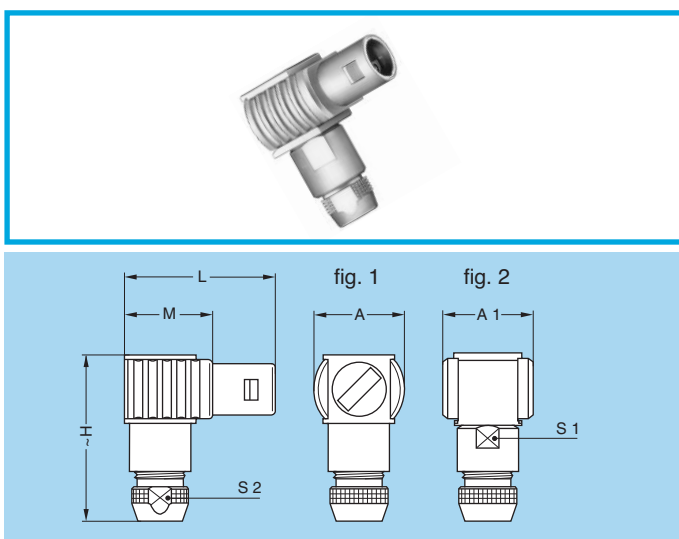


Reference		Dimensions (mm)					
Model	Series	A	H	L	M	S1	S2
FLC	00	7.5	16.5	19.5	11.5	4.5	6
FLM	0S	9.5	23.0	30.0	20.0	7.0	8
FLM	1S	12.0	29.0	36.0	25.0	9.0	10
FLM	2S	14.8	35.0	41.5	29.5	12.0	13

**M3** Cable assembly (pages 175 to 177)

**Note:** FLC.00 model is used for the unipole type. For 0S, 1S and 2S series use «D» type collet, see page 67.

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



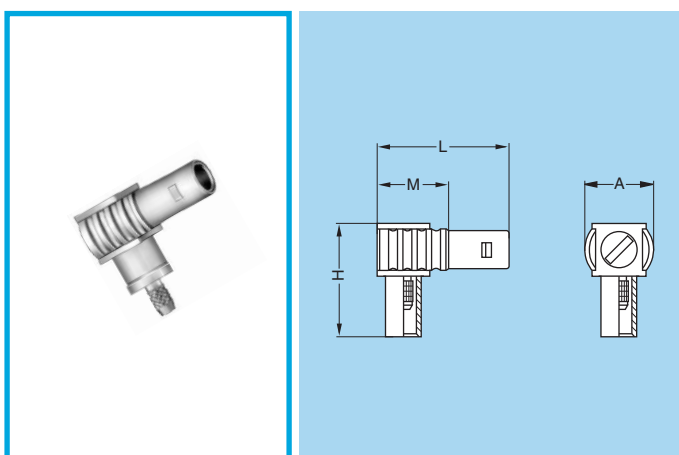
Reference		Dimensions (mm)						
Model	Series	A	A1	H	L	M	S1	S2
FLA	3S	21	21	44.0	38.5	23.5	15	14
FLA	4S	28	28	56.0	49.0	31.0	20	19
FLA	5S	–	37	76.5	65.0	40.0	30	29
FLA	6S	–	48	94.0	81.0	56.0	40	38

**M3** Cable assembly (pages 175 to 177)

**Note:** fig. 1 is used for the unipole type, fig. 2 is used for the multipole type.

- Maximum operating temperature: 120°C

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



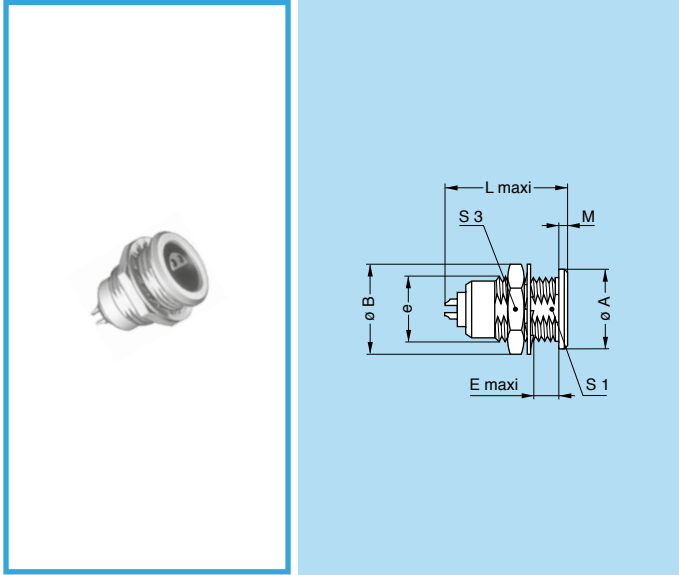
Reference		Dimensions (mm)			
Model	Series	A	H	L	M
FLS	00	9	16	17.5	9.5

**M6** Cable assembly (page 175)

**Note:** Model available only with crimp backnut E31 similar to 00.250 series.

- Maximum operating temperature: 120°C

### ERA Fixed socket, nut fixing



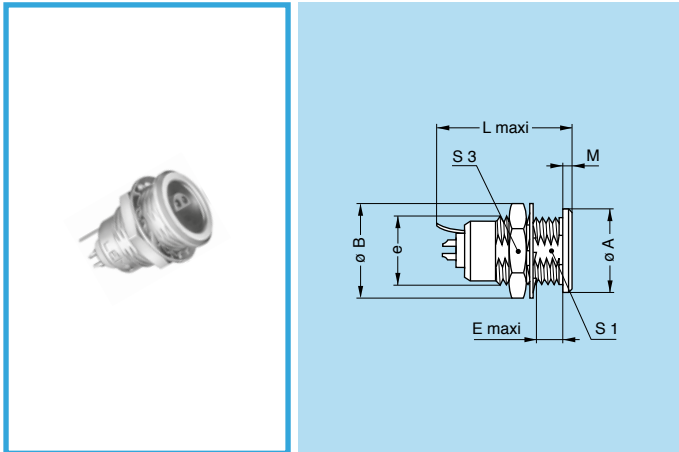
Reference		Dimensions (mm)								
Model	Series	A	B	e	E	L	L <sup>1)</sup>	M	S1	S3
ERA	00	8	10.2	M7x0.5	5.5	–	14.5	1.0	6.3	9
ERA	0S	10	12.4	M9x0.6	7.0	18.5	18.0	1.2	8.2	11
ERA	1S	14	15.8	M12x1.0	7.5	21.0	20.5	1.5	10.5	14
ERA	2S	18	19.2	M15x1.0	8.5	24.5	23.5	1.8	13.5	17
ERA	3S	22	25.0	M18x1.0	11.5	29.0	27.5	2.0	16.5	22
ERA	4S	28	34.0	M25x1.0	12.0	34.0	33.5	2.5	23.5	30
ERA	5S	40	40.0	M35x1.0	15.5	45.0	78.5	3.0	33.5	–
ERA	6S	54	54.0	M48x1.5	16.0	45.0	–	3.5	45.5	–

**P1** Panel cut-out (page 158)

**Note:** <sup>1)</sup> unipole model.

**Note:** The 5S series is delivered with a tapered washer and a round nut. The 6S series is delivered without a locking washer and with a round nut.

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

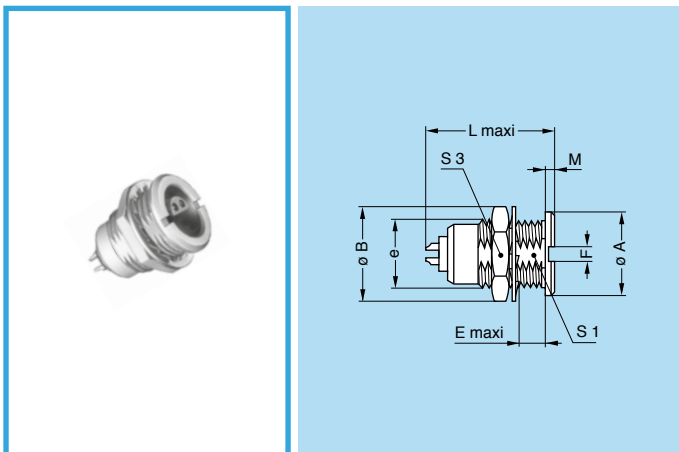


Reference		Dimensions (mm)								
Model	Series	A	B	e	E	L	L <sup>1)</sup>	M	S1	S3
ERN	0S	10	12.4	M9x0.6	7.0	19.3	19.3	1.2	8.2	11
ERN	1S	14	15.8	M12x1.0	7.5	22.4	22.4	1.5	10.5	14
ERN	2S	18	19.2	M15x1.0	8.5	26.3	26.3	1.8	13.5	17
ERN	3S	22	25.0	M18x1.0	11.5	29.8	29.8	2.0	16.5	22

**P1** Panel cut-out (page 158)

**Note:** <sup>1)</sup> unipole model

### ERC Fixed socket, nut fixing with slot in the flange



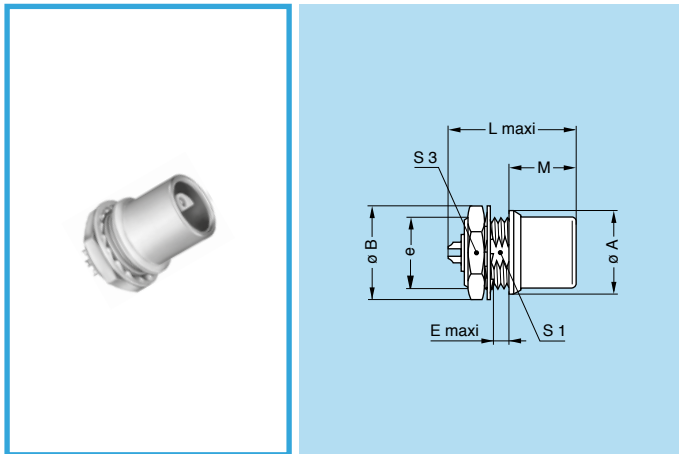
Reference		Dimensions (mm)									
Model	Series	A	B	e	E	F	L	L <sup>1)</sup>	M	S1	S3
ERC	00	8	10.2	M7x0.5	5.5	1.6	–	14.5	1.0	6.3	9
ERC	0S	10	12.4	M9x0.6	7.0	2.0	18.5	18.0	1.2	8.2	11
ERC	1S	14	15.8	M12x1.0	7.5	2.5	20.2	20.5	1.5	10.5	14

**P1** Panel cut-out (page 158)

**Note:** <sup>1)</sup> unipole model.



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



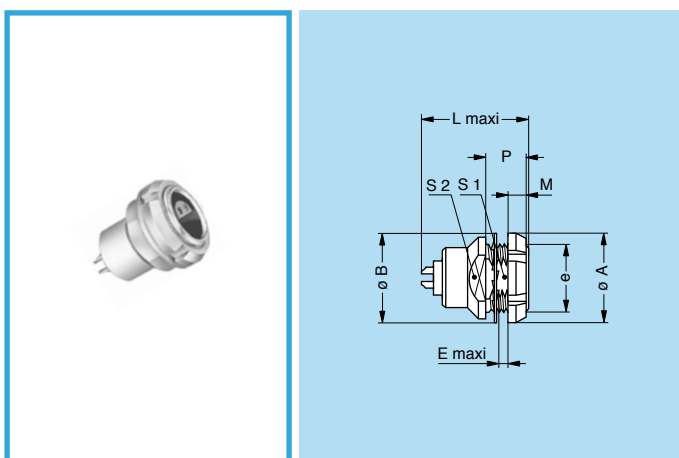
Reference		Dimensions (mm)								
Model	Series	A	B	e	E	L	L <sup>1)</sup>	M	S1	S3
EHP	0S	10	12.4	M9x0.6	2.0	20.5	18.0	12.5	8.2	11
EHP	1S	14	15.8	M12x1.0	3.5	20.2	20.5	12.0	-	14
EHP	3S	22	25.0	M18x1.0	4.0	29.0	29.0	18.7	-	22

**P1** Panel cut-out 0S series (page 158)

**P2** Panel cut-out (page 158)

**Note:** <sup>1)</sup> unipole model

### EEP Fixed socket, nut fixing (back panel mounting)

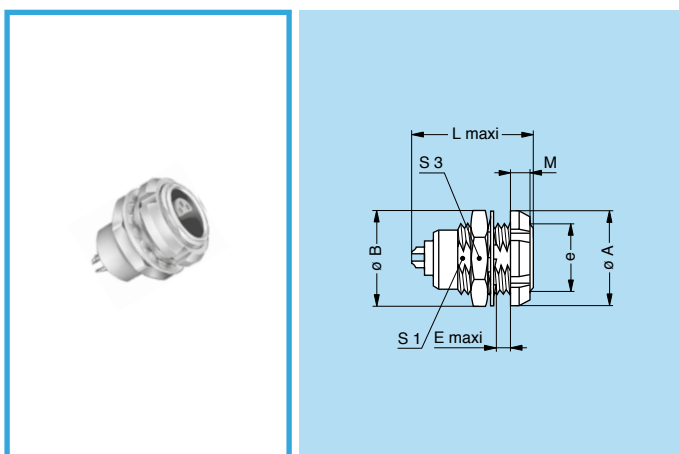


Reference		Dimensions (mm)									
Model	Series	A	B	e	E	L	L <sup>1)</sup>	M	P	S1	S2
EEP	1S	16	16.0	M12x1.0	6.5	20.2	20.5	3.5	11	10.5	13
EEP	2S	20	19.5	M15x1.0	4.3	24.5	23.5	3.5	9	13.5	15

**P1** Panel cut-out (page 158)

**Note:** <sup>1)</sup> unipole model.

### ERD Fixed socket with two nuts (back panel mounting)



Reference		Dimensions (mm)								
Model	Series	A	B	e	E	L	L <sup>1)</sup>	M	S1	S3
ERD	0S	12	12.4	M9x0.6	5.5	18.5	18.0	2.5	8.2	11
ERD	1S	16	15.8	M12x1.0	6.0	20.2	20.5	3.5	10.5	14
ERD	2S	20	19.2	M15x1.0	6.5	24.5	23.5	3.5	13.5	17
ERD	3S	24	25.0	M18x1.0	9.0	29.0	27.5	4.5	16.5	22
ERD	4S	30	34.0	M25x1.0	10.0	34.0	33.5	4.5	23.5	30

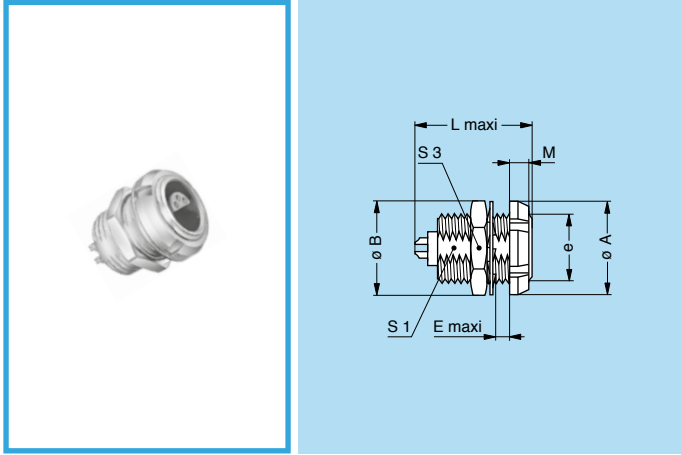
**P1** Panel cut-out (page 158)

**Note:** <sup>1)</sup> unipole model.

**Note:** The 3S and 4S series are delivered with a conical nut.



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



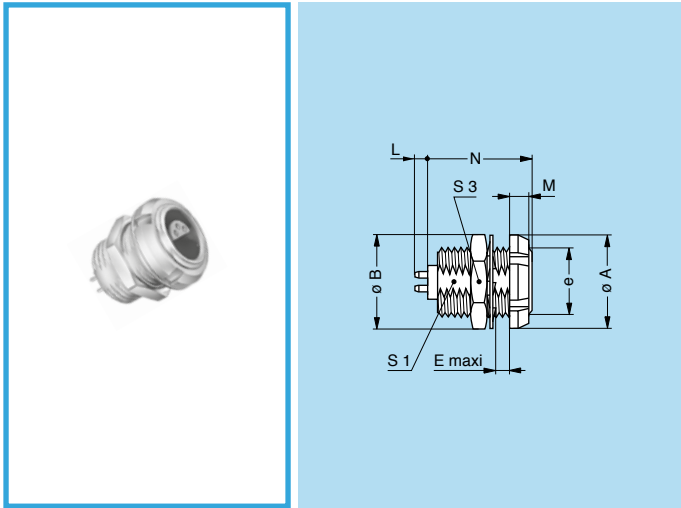
Reference		Dimensions (mm)								
Model	Series	A	B	e	E	L	L <sup>1)</sup>	M	S1	S3
ECP	0S	12	12.4	M9x0.6	8.5	18.5	18.5	2.5	8.2	11
ECP	1S	16	15.8	M12x1.0	10.0	20.2	20.5	3.5	10.5	14
ECP	2S	20	19.2	M15x1.0	11.0	24.5	26.0	3.5	13.5	17
ECP	3S	24	25.0	M18x1.0	14.0	29.0	30.0	4.5	16.5	22

**P1** Panel cut-out (page 158)

**Note:** <sup>1)</sup> unipole model.

**Note:** The 3S series is delivered with a conical nut.

### ECP Fixed socket with two nuts, long threaded shell, straight contact for printed circuit (back panel mounting)



Reference		Dimensions (mm)								
Model	Series	A	B	e	E	M	N	S1	S3	
ECP	0S	12	12.4	M9x0.6	8.5	2.5	15.0	8.2	11	
ECP	1S	16	15.8	M12x1.0	10.0	3.5	17.5	10.5	14	
ECP	2S	20	19.2	M15x1.0	11.0	3.5	20.0	13.5	17	
ECP	3S	24	25.0	M18x1.0	14.0	4.5	24.0	16.5	22	

**P1** Panel cut-out (page 158)

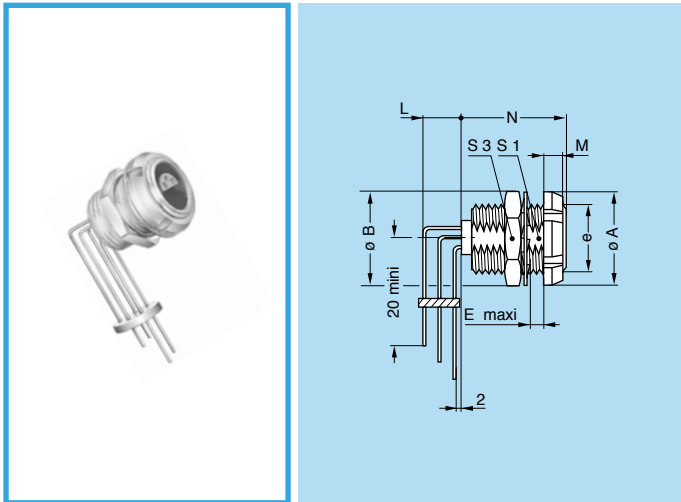
**P21** PCB drilling pattern (page 166)

**Note:** The 3S series is delivered with a conical nut.

**Note:** this contact type is available for all E● socket models. See page 167 for table of available types.

Length «L» depends on the number of contacts, see table on page 167.

### ECP Fixed socket with two nuts, long threaded shell, elbow (90°) contacts for printed circuit (back panel mounting)



Reference		Dimensions (mm)								
Model	Series	A	B	e	E	M	N	S1	S3	
ECP	0S	12	12.4	M9x0.6	8.5	2.5	15.0	8.2	11	
ECP	1S	16	15.8	M12x1.0	10.0	3.5	17.5	10.5	14	
ECP	2S	20	19.2	M15x1.0	11.0	3.5	20.0	13.5	17	
ECP	3S	24	25.0	M18x1.0	14.0	4.5	24.0	16.5	22	

**P1** Panel cut-out (page 158)

**P24** PCB drilling pattern (page 168)

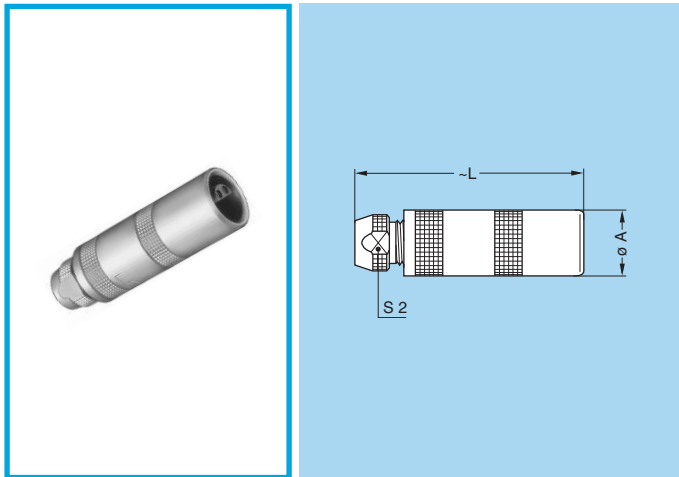
**Note:** The 3S series is delivered with a conical nut.

**Note:** this contact type is available for all back panel mounting socket types. See page 168 for available types.

Length «L» depends on the number of contacts, see PCB drilling pattern on page 168.



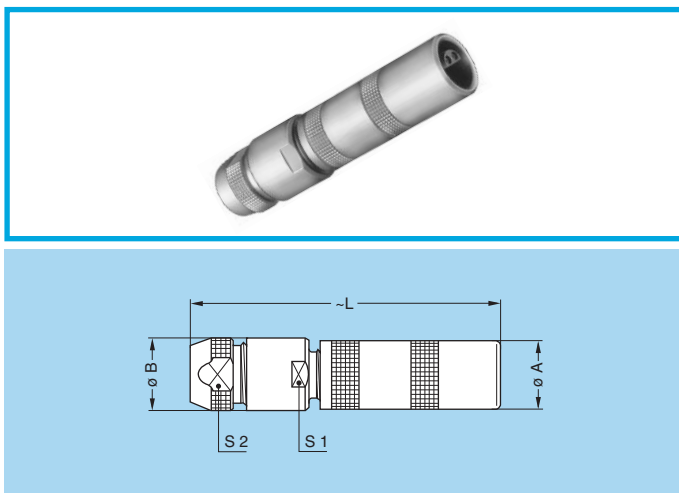
### PCA Free socket, cable collet



Reference		Dimensions (mm)		
Model	Series	A	L	S2
PCA	00	6.5	25.0	4.5
PCA	0S	8.9	33.5	6.5
PCA	1S	11.9	40.5	8.5
PCA	2S	14.8	50.0	11.0
PCA	3S	17.8	59.0	14.0
PCA	4S	24.8	75.0	19.0
PCA	5S	34.7	99.0	29.0
PCA	6S	46.0	102.0	38.0

**M1** Cable assembly (pages 175 to 177)

### PCA Free socket with oversize cable collet <sup>1)</sup>

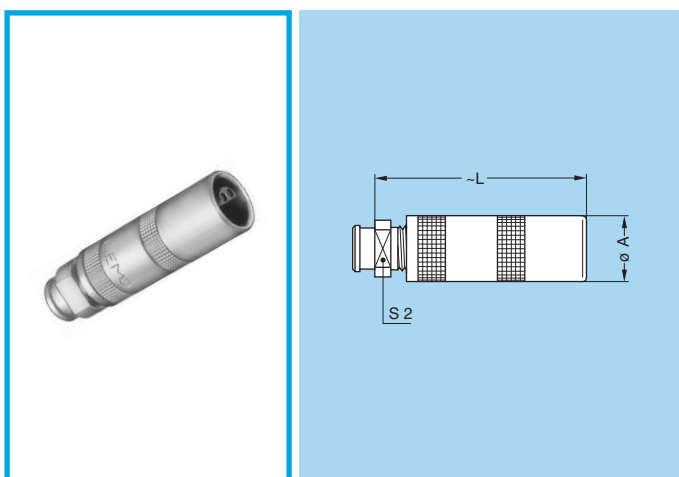


Reference		Dimensions (mm)				
Model	Series	A	B	L	S1	S2
PCA	00	6.5	8.0	33.0	7.0	6.5
PCA	0S	8.9	10.0	44.5	9.0	8.5
PCA	1S	11.9	13.0	55.0	12.0	11.0
PCA	2S	14.8	18.0	65.0	14.0	14.0
PCA	3S	17.8	21.0	83.0	19.0	19.0
PCA	4S	24.8	31.8	105.0	28.5	29.0

**M2** Cable assembly (pages 175 and 178)

**Note:** <sup>1)</sup> correspond to K type of collet, the fitting of oversize collets onto this model allows them to be fitted to the cables that can be accommodated by the next housing size up (see page 115).

### PCA Free socket, cable collet and nut for fitting a bend relief <sup>1)</sup>

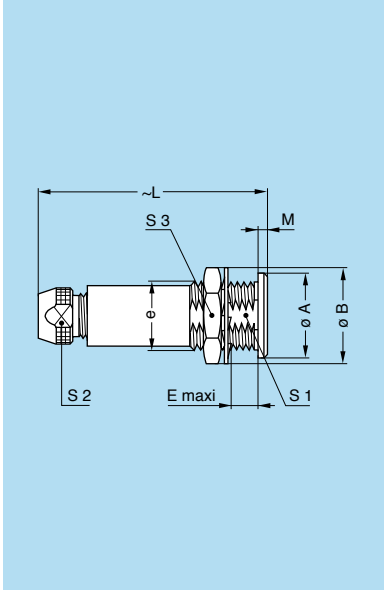


Reference		Dimensions (mm)		
Model	Series	A	L	S2
PCA	00	6.5	25.0	6
PCA	0S	8.9	33.5	7
PCA	1S	11.9	40.5	9
PCA	2S	14.8	50.0	12
PCA	3S	17.8	59.0	14
PCA	4S	24.8	75.0	20

**M1** Cable assembly (pages 175 and 176)

**Note:** <sup>1)</sup> to order, add a «Z» at the end of the reference. The bend relief must be ordered separately (see page 145).

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



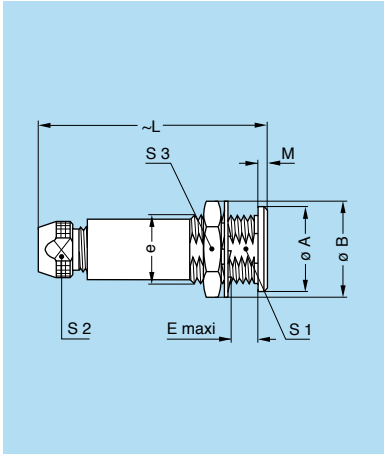
Reference		Dimensions (mm)								
Model	Series	A	B	e	E	L	M	S1	S2	S3
PSA	00	8	10.2	M7x0.5	5.5	25.0	1.0	6.3	4.5	9
PSA	0S	10	12.4	M9x0.6	7.0	33.5	1.2	8.2	6.5	11
PSA	1S	14	15.8	M12x1.0	7.5	40.5	1.5	10.5	8.5	14
PSA	2S	18	19.2	M15x1.0	8.5	50.0	1.8	13.5	11.0	17
PSA	3S	22	25.0	M18x1.0	11.5	59.0	2.0	16.5	14.0	22
PSA	4S	28	34.0	M25x1.0	12.0	75.0	2.5	23.5	19.0	30
PSA	5S	40	40.0	M35x1.0	15.5	99.0	3.0	33.5	29.0	-
PSA	6S	54	54.0	M48x1.5	16.0	102.0	3.5	45.5	38.0	-

**M1** Cable assembly (pages 175 to 177)

**P1** Panel cut-out (page 158)

**Note:** the 5S series is delivered with a tapered washer and a round nut. The 6S series is delivered without a locking washer and with a round nut.

### PSP Fixed socket, nut fixing, cable collet and inner anti-rotating device

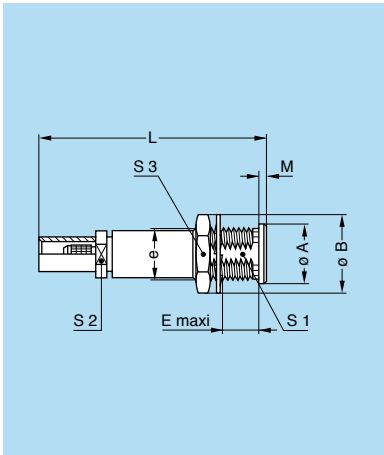


Reference		Dimensions (mm)								
Model	Series	A	B	e	E	L	M	S1	S2	S3
PSP	2S	18	19.2	M15x1.0	8.5	50.0	1.8	13.5	11.0	17
PSP	3S	22	25.0	M18x1.0	11.5	59.0	2.0	16.5	14.0	22
PSP	4S	28	34.0	M25x1.0	12.0	75.0	2.5	23.5	19.0	30

**M1** Cable assembly (pages 175 and 176)

**P1** Panel cut-out (page 158)

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



Reference		Dimensions (mm)								
Model	Series	A	B	e	E	L	M	S1	S2	S3
PSS	00	8	10.2	M7x0.5	5.5	30	1	6.3	5.5	9

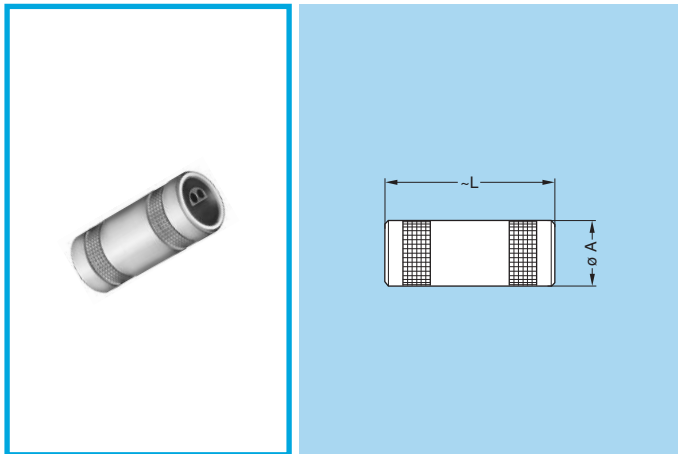
**M5** Cable assembly (page 175)

**P1** Panel cut-out (page 158)

**Note:** Model available only with crimp backnut E31 similar to 00.250 series.



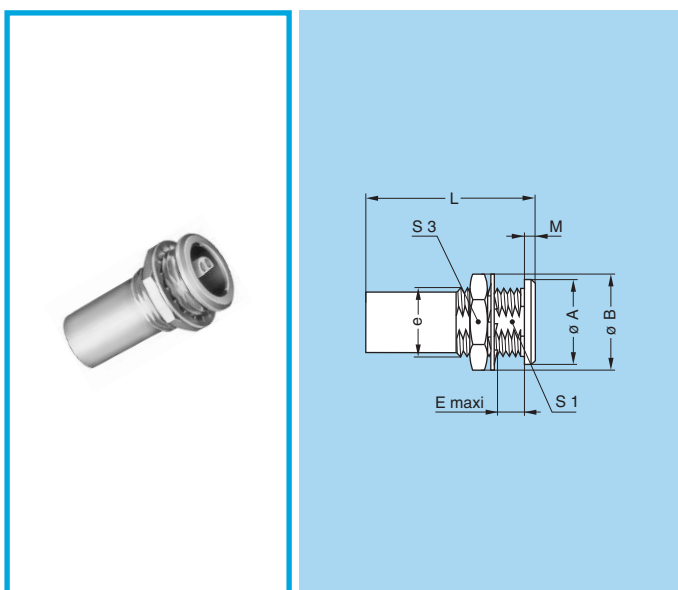
## RMA Free coupler



Reference		Dim. (mm)	
Model	Series	A	L
RMA	00	6.4	22.0
RMA	0S	8.9	25.0
RMA	1S	11.9	28.5
RMA	2S	14.8	31.5
RMA	3S	17.8	38.5
RMA	4S	24.8	46.5
RMA	5S	34.7	60.5

**Note:** see page 114 for the available plug and contact configurations and in order to ensure correct contact alignment.

## RAD Fixed coupler, nut fixing



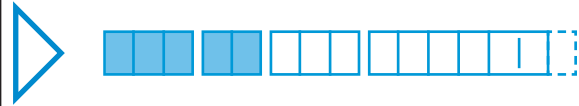
Reference		Dimensions (mm)							
Model	Series	A	B	e	E	L	M	S1	S2
RAD	00	8	10.2	M7x0.5	5.5	22.0	1.0	6.3	9
RAD	0S	10	12.4	M9x0.6	7.0	25.0	1.2	8.2	11
RAD	1S	14	15.8	M12x1.0	7.5	28.5	1.5	10.5	14
RAD	2S	18	19.2	M15x1.0	8.5	31.5	1.8	13.5	17
RAD	3S	22	25.0	M18x1.0	11.5	38.5	2.0	16.5	22
RAD	4S	28	34.0	M25x1.0	12.0	46.5	2.5	–	30
RAD	5S	40	40.0	M35x1.0	15.5	60.5	3.0	–	–

**P1** Panel cut-out (page 158)

**P2** Panel cut-out 4S and 5S series (page 158)

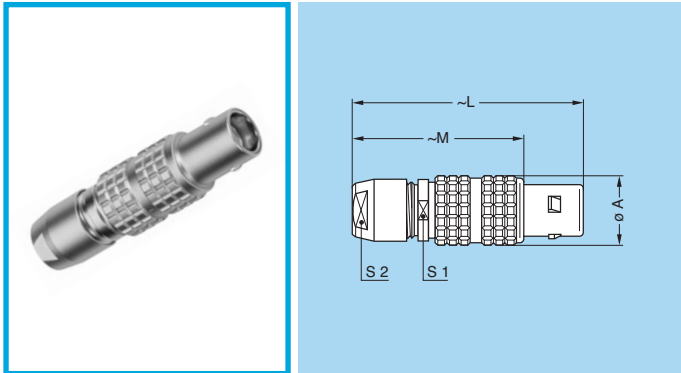
**Note:** the 5S series is delivered with a tapered washer and a round nut.

**Note:** See page 114 for the available plug and contact configurations and in order to ensure correct contact alignment.



## New design models

### FGZ Straight plug, cable collet

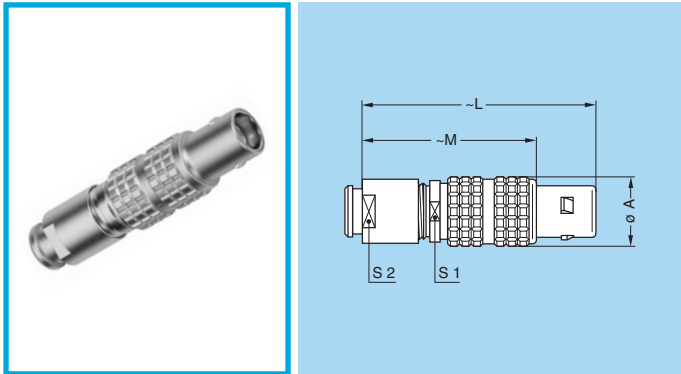


Reference		Dimensions (mm)				
Model	Series	A	L	M	S1	S2
FGZ	0S	9.5	36	26	8	7
FGZ	1S	12.0	43	32	10	9
FGZ	2S	15.0	50	38	13	12

**M1** Cable assembly (page 169)

**Note:** D type collets of the B series are used in this model (see page 67).

### FGZ Straight plug, cable collet and nut for fitting a bend relief <sup>1)</sup>



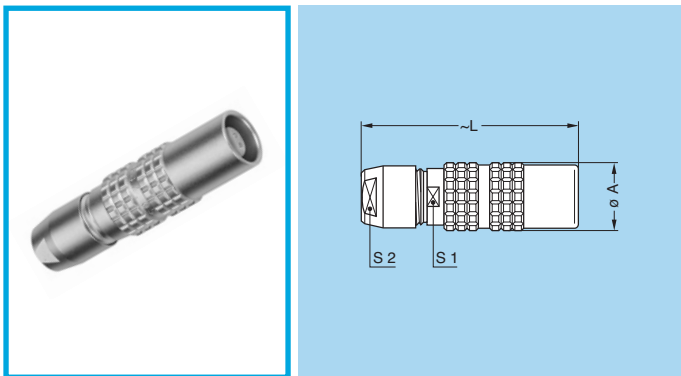
Reference		Dimensions (mm)				
Model	Series	A	L	M	S1	S2
FGZ	0S	9.5	35	25	8	7
FGZ	1S	12.0	42	31	10	9
FGZ	2S	15.0	49	37	13	12

**M1** Cable assembly (page 169)

**Note:** D type collets of the B series are used in this model (see page 67).

**Note:** <sup>1)</sup> to order, add a «Z» at the end of the reference. The bend relief must be ordered separately (see page 145).

### PGZ Free socket, cable collet

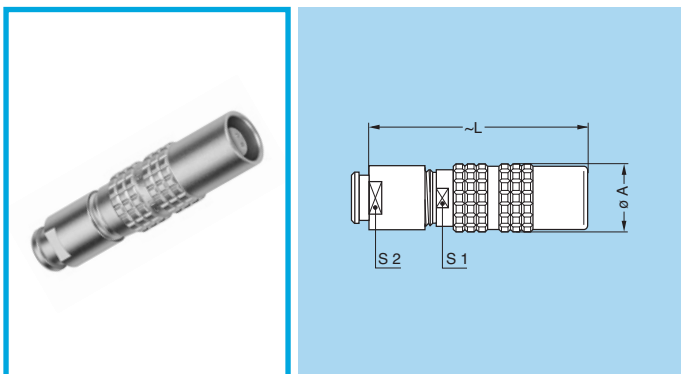


Reference		Dim. (mm)			
Model	Series	A	L	S1	S2
PGZ	0S	9.5	35.5	8	7
PGZ	1S	12.5	40.5	10	9
PGZ	2S	15.0	49.0	13	12

**M1** Cable assembly (page 169)

**Note:** D type collets of the B series are used in this model (see page 67).

### PGZ Free socket, cable collet and nut for fitting a bend relief <sup>1)</sup>



Reference		Dim. (mm)			
Model	Series	A	L	S1	S2
PGZ	0S	9.5	34.5	8	7
PGZ	1S	12.5	39.5	10	9
PGZ	2S	15.0	48.0	13	12

**M1** Cable assembly (page 169)

**Note:** D type collets of the B series are used in this model (see page 67).

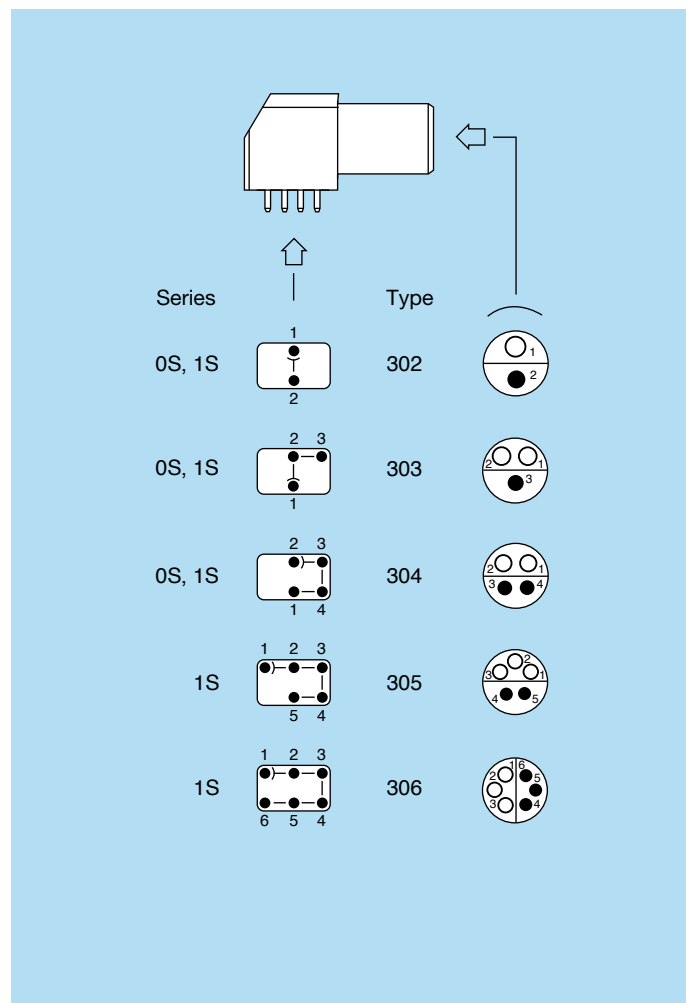
**Note:** <sup>1)</sup> to order, add a «Z» at the end of the reference. The bend relief must be ordered separately (see page 145).



## Elbow socket models

### Technical Characteristics

#### Types



#### Materials and Treatment

Component	Material	Surface Treat. (µm)		
		Cu	Ni	Au
Housing	PPS <sup>1)</sup>	-		
	Brass	0.5	3	-
Metallic parts	Brass	0.5	3	-
Earthing crown	Bronze	0.5	3	-
Insulator	PEEK	-		
Female contact	Bronze	0.5	3	1.5

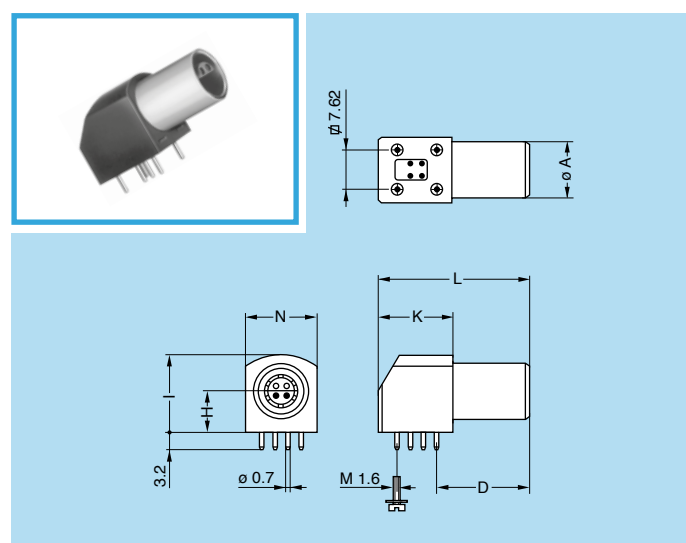
**Note:** <sup>1)</sup> not used for all sizes.  
 The surface treatment standards are as follows:  
 - Nickel SAE AMS QQ N 290  
 - Gold: ISO 27874

#### Electrical

Model	Series	Types	Test voltage (kV rms) <sup>1)</sup>	Rated current (A)
EPL	0S	302-303-304	1.20	4.5
EXP	0S	302-303-304	1.20	4.5
EPL	1S	302-303-304	1.20	4.5
EXP	1S	302-303-304	1.20	4.5
EPL	1S	305-306	0.70	4.5
EXP	1S	305-306	0.70	4.5

**Note:** <sup>1)</sup> see calculation method, caution and suggested standard on page 190.

### EPL Elbow (90°) socket for printed circuit (solder or screw fixing)

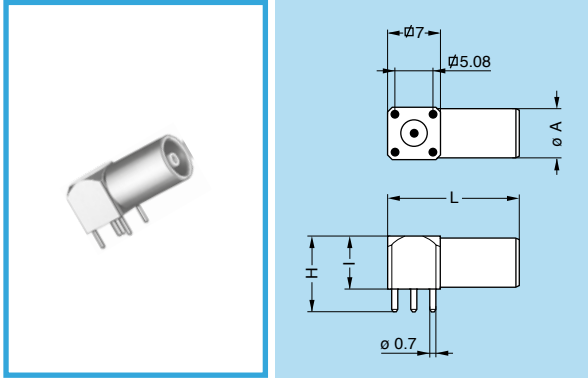


Part number	Dimensions (mm)						
	A	D	H	I	K	L	N
EPL.0S.302.HLN	9	14.6	6.7	12.6	13.3	25	11.7
EPL.0S.303.HLN							
EPL.0S.304.HLN							
EPL.1S.302.HLN	11	16.6	7.5	14.0	13.3	27	12.6
EPL.1S.303.HLN							
EPL.1S.304.HLN							
EPL.1S.305.HLN							
EPL.1S.306.HLN							

**Note:** to replace the 4 ground pins by 4 screws (M1.6) add an «S» to the end of the part number. (e.g.: EPL.1S.303.HLNS)

**P22** PCB drilling pattern (page 168)

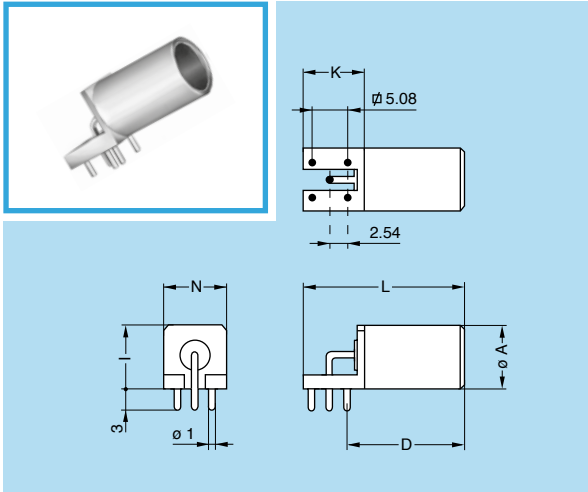
### EPL Elbow (90°) socket for printed circuit



Part number	Dimensions (mm)		
	A	H	I
<b>EPL.00.113.NLN</b>	6.8	10	7

**P23** PCB drilling pattern (page 168)

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

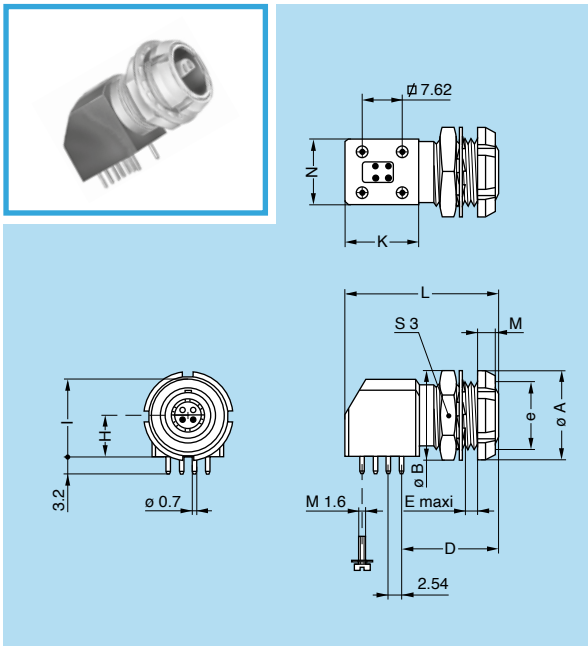


Part number	Dimensions (mm)						
	A	D	H	I	K	L	N
<b>EPL.0S.116.DTL</b>	8.8	16	12	9	7.7	22.7	9

**Note:** available only in unipole version.

**P23** PCB drilling pattern (page 168)

### EXP Elbow (90°) socket for printed circuit with two nuts (solder or screw fixing)



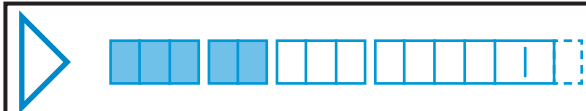
Part number	Dimensions (mm)											
	A	B	D	e	E	H	I	K	L	M	N	S3
<b>EXP.0S.302.HLN</b>												
<b>EXP.0S.303.HLN</b>	12	12.4	14.6	M9x0.6	6.0	6.7	12.6	13.3	25	2.5	11.7	11
<b>EXP.0S.304.HLN</b>												
<b>EXP.1S.302.HLN</b>												
<b>EXP.1S.303.HLN</b>												
<b>EXP.1S.304.HLN</b>	14	15.0	16.6	M11x0.5	7.5	7.5	14.0	13.3	27	3.5	12.6	13
<b>EXP.1S.305.HLN</b>												
<b>EXP.1S.306.HLN</b>												

**Note:** to replace the 4 ground pins by 4 screws (M1.6) add an «S» to the end of the part number. (e.g.: EXP.1S.303.HLNS).

**P2** Panel cut-out 0S series (page 158)

**P10** Panel cut-out 1S series (page 158)

**P22** PCB drilling pattern (page 168)



## Plastic housing models

These connectors are particularly recommended for all applications requiring maximum electrical insulation when mated. The design, including a latch sleeve and a metal earthing crown, guarantees EMC screening efficiency to meet most requirements.

### Technical Characteristics

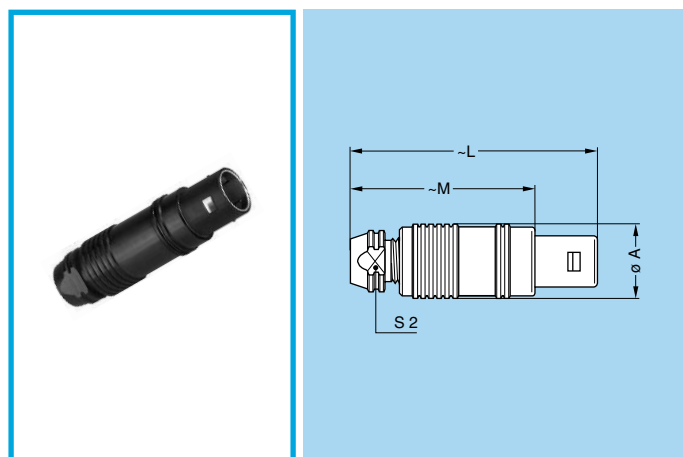
#### Mechanical and Climatical

Characteristics	Value				Standard
	PEEK	POM	PSU	PPSU	
Colour	natural (beige)	black	white or grey	cream	–
Endurance <sup>1)</sup>	> 5000 cycles	> 5000 cycles	> 5000 cycles	> 5000 cycles	IEC 60512-5 test 9a
Humidity	up to 95% at 60° C				–
Temperature range	- 50° C/+ 250° C	- 50° C/+ 115° C	- 50° C/+ 150° C	- 50° C/+ 180° C	–
Sterilization resistance <sup>2)</sup>	> 200 cycles	none	~20 cycles	> 100 cycles	IEC 60601-1 § 44.7
Resistance to organic solvents	very good	very good	limited	good	–

**Note:** <sup>1)</sup> see page 189, contact resistance after mating cycles. See page 185, mechanical endurance latching force. <sup>2)</sup> Steam sterilization

**FFA** Straight plug, cable collet, PEEK or POM outer shell

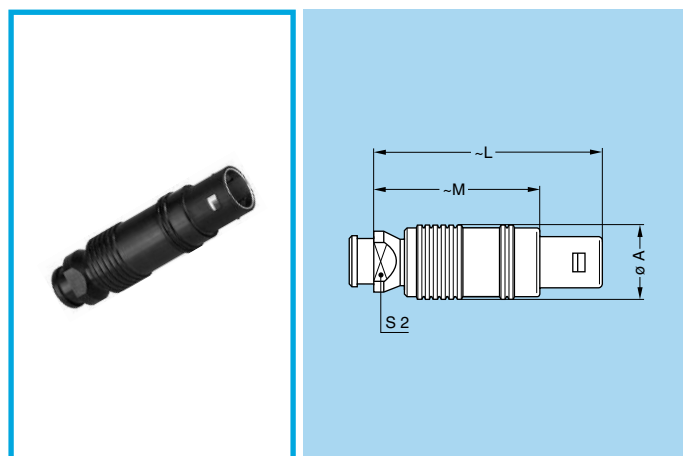
**FFP** Straight plug, cable collet, PEEK or POM outer shell and inner anti-rotating device



Reference		Dimensions (mm)			
Model	Series	A	L	M	S2
<b>FFA</b>	<b>00</b>	7	33.5	25.5	6
<b>FFP</b>	<b>1S</b>	12	42.5	31.5	10
<b>FFP</b>	<b>2S</b>	15	52.0	40.0	12
<b>FFP</b>	<b>3S</b>	18	61.0	46.0	14

**M1** Cable assembly (pages 175 and 176)

**FFP** Straight plug, cable collet, PEEK or POM outer shell, inner anti-rotating device and nut for fitting a bend relief <sup>1)</sup>



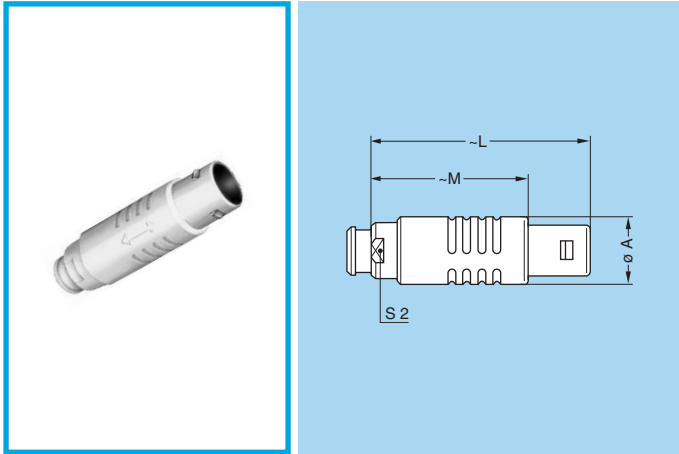
Reference		Dimensions (mm)			
Model	Series	A	L	M	S2
<b>FFP</b>	<b>1S</b>	12	41.5	30.5	10
<b>FFP</b>	<b>2S</b>	15	51.0	39.0	12
<b>FFP</b>	<b>3S</b>	18	61.0	46.0	14

**M1** Cable assembly (pages 175 and 176)

**Note:** <sup>1)</sup> to order, add a «Z» at the end of the reference. The bend relief must be ordered separately (see page 145).



**FFL** Straight plug, cable collet, with PSU and PPSU outer shell, inner anti-rotating device and nut for fitting a bend relief <sup>1)</sup>



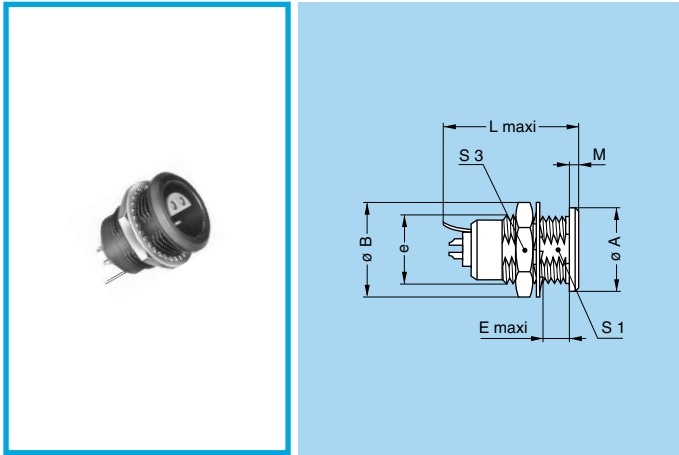
Reference		Dimensions (mm)			
Model	Series	A	L	M	S2
<b>FFL</b>	<b>2S</b>	16.5	51.5	39.5	13

**M4** Cable assembly (page 177)

**Note:** <sup>1)</sup> to order, add a «Z» at the end of the reference. The bend relief must be ordered separately (see page 145).

**Note:** This model is fitted with a «D or M» type collet system. It is also adapted for crimp contacts. Available only for multipole.

**ERN** Fixed socket, nut fixing, with earthing tag, PEEK or POM outer shell



Reference		Dimensions (mm)								
Model	Series	A	B	e	E	L	L <sup>1)</sup>	M	S1	S3
<b>ERN</b>	<b>00</b>	9	10.2	M7x0.5	5.5	—	14.5	1.0	6.3	9
<b>ERN</b>	<b>0S</b>	11	12.4	M9x0.6	6.4	19.3	19.3	1.8	8.2	11
<b>ERN</b>	<b>1S</b>	14	15.8	M12x1.0	7.5	22.4	22.4	1.5	10.5	14
<b>ERN</b>	<b>2S</b>	18	19.2	M15x1.0	8.5	26.3	26.3	2.0	13.5	17
<b>ERN</b>	<b>3S</b>	22	25.0	M18x1.0	11.5	29.8	29.8	2.0	16.5	22

**P1** Panel cut-out (page 158)

**Note:** <sup>1)</sup> unipole model



## Watertight or vacuumtight models

These socket or coupler models allow the device on which they are fitted to reach a protection index of IP68 as per IEC 60529. 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.

Most of these models are also available in a vacuumtight version. Such models are identified by an additional letter «V» at the end of the part number (certificate on request).

Epoxy resin is used to seal these models.

### Technical Characteristics

#### Mechanical and Climatical

Characteristics	Value	Standard
Endurance <sup>1)</sup>	> 5000 cycles	IEC 60512-5 test 9a
Humidity	up to 95% at 60° C	
Temperature range	0S-1S	- 20° C/ + 100° C
	2S-6S	- 20° C/+ 80° C
Salt spray corrosion test <sup>4)</sup>	> 1000h	IEC 60512-6 test 11f
Climatical category	20/80/21	IEC 60068-1
Leakage rate (He) <sup>2)</sup>	< 10 <sup>-7</sup> mbar.l.s <sup>-1</sup>	IEC 60512-7 test 14b

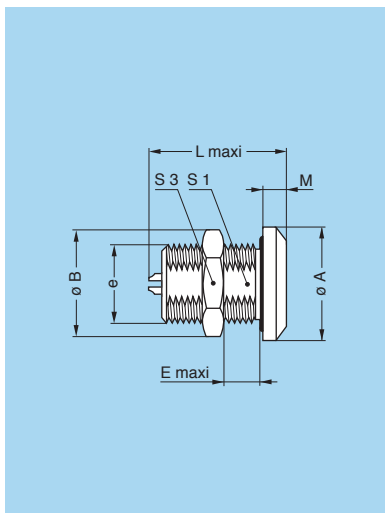
Characteristics	Value	Standard	
Maximum operating pressure <sup>3)</sup>	0S	60 bar	IEC 60512-7 test 14d
	1S	60 bar	IEC 60512-7 test 14d
	2S	40 bar	IEC 60512-7 test 14d
	3S	30 bar	IEC 60512-7 test 14d
	4S	15 bar	IEC 60512-7 test 14d
	5S	5 bar	IEC 60512-7 test 14d
6S	5 bar	IEC 60512-7 test 14d	

**Note:** <sup>1)</sup> see page 189, contact resistance after mating cycles. See page 185, mechanical endurance latching force.

<sup>2)</sup> only for vacuumtight models. Residual traces of grease used during (He) leak testing are on the o-ring. Please contact us for further details.

<sup>3)</sup> this value corresponds to the maximum allowed pressure difference for the assembled socket. <sup>4)</sup> for chrome plated product («C» material code).

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



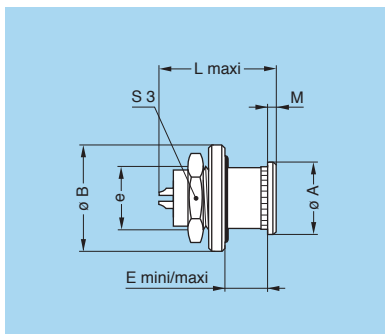
Reference		Dimensions (mm)								
Model	Series	A	B	e	E	L	L <sup>1)</sup>	M	S1	S3
HGP	0S	18	15.8	M12x1.0	11.5	20.5	21.5	4.0	10.5	14
HGP	1S	20	19.2	M14x1.0	15.5	25.0	22.0	4.0	12.5	17
HGP	2S	20	21.5	M16x1.0	17.0	29.5	28.0	4.0	14.5	19
HGP	3S	28	27.0	M20x1.0	18.0	33.0	34.0	6.0	18.5	24
HGP	4S	34	34.0	M25x1.0	22.5	39.0	43.0	6.5	23.5	30
HGP	5S	45	40.0	M35x1.0	28.0	50.5	78.5	7.5	33.5	–
HGP	6S	58	54.0	M48x1.5	22.0	51.0	–	6.0	45.5	–

**P3** Panel cut-out (page 158)

**Note:** <sup>1)</sup> unipole model.

**Note:** The 5S and 6S series are delivered with a round nut.

### HGW Fixed socket, nut fixing, with back washer, watertight or vacuumtight

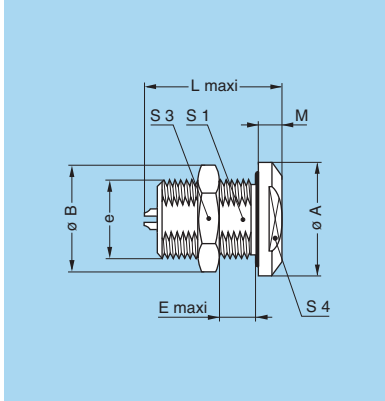


Reference		Dimensions (mm)								
Model	Series	A	B	e	E <sub>mini</sub>	E <sub>maxi</sub>	L	M	S3	
HGW	0S	10	15	M9x0.6	2	3	20.5	1.2	11	
HGW	1S	14	18	M12x1.0	2	4	25.0	1.5	14	

**P11** Panel cut-out (page 158)

**Note:** vacuumtight version is only available in the 0S series.

## EWB Fixed socket, nut fixing, with two flats on the flange, watertight or vacuumtight

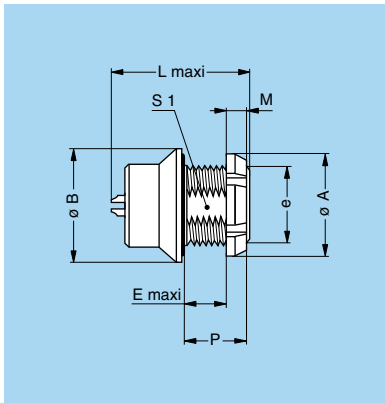


Reference		Dimensions (mm)									
Model	Series	A	B	e	E	L	L <sup>1</sup>	M	S1	S3	S4
EWB	0S	18	15.8	M12x1.0	11.0	20.5	–	4.0	10.5	14	14
EWB	1S	20	19.2	M14x1.0	15.5	25.5	25.5	4.0	12.5	17	16
EWB	2S	20	21.5	M16x1.0	17.0	28.0	26.5	4.0	14.5	19	16
EWB	4S	34	34.0	M25x1.0	22.5	43.0	–	6.5	23.5	30	27

**P3** Panel cut-out (page 158)

**Note:** <sup>1)</sup> unipole model

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

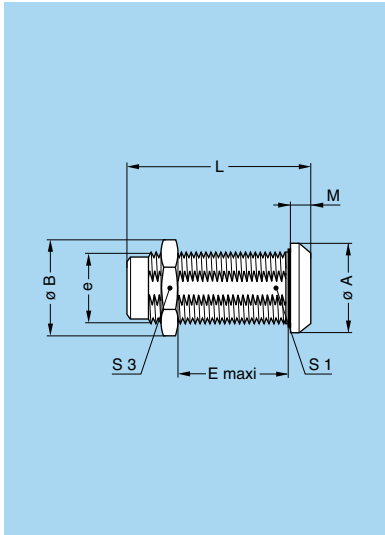


Reference		Dimensions (mm)							
Model	Series	A	B	e	E	L	M	P	S1
HCP	1S	18	20	M14x1.0	8.6	25.5	3.5	12.0	–
HCP	2S	20	20	M16x1.0	12.5	29.0	3.5	16.5	14.5
HCP	4S	27	34	M25x1.0	15.5	41.0	4.5	20.0	23.5

**P3** Panel cut-out (page 158)

**Note:** the 2S and 4S series are delivered with a conical nut.

## SWH Fixed coupler, nut fixing, watertight or vacuumtight



Reference		Dimensions (mm)							
Model	Series	A	B	e	E	L	M	S1	S3
SWH	0S	14	13.8	M10x0.75	17	34	2.0	9.0	12
SWH	1S	17	15.8	M12x1.00	28	39	2.5	10.5	14
SWH	2S	20	21.5	M16x1.00	25	44	4.0	15.0	19
SWH	3S	25	27.0	M20x1.00	30	53	4.0	18.5	24
SWH	4S	34	34.0	M25x1.00	50	65	4.0	23.5	30
SWH	5S	45	40.0	M35x1.00	58	80	5.0	33.5	–
SWH	6S	58	54.0	M48x1.50	55	81	6.0	45.5	–

**P4** Panel cut-out (page 158)

**Note:** The 5S and 6S series are delivered with a round nut.

**Note:** see page 114 for the available plug and contact configurations and in order to ensure correct contact alignment.

Алматы (7273)495-231  
 Ангарск (3955)60-70-56  
 Архангельск (8182)63-90-72  
 Астрахань (8512)99-46-04  
 Барнаул (3852)73-04-60  
 Белгород (4722)40-23-64  
 Благовещенск (4162)22-76-07  
 Брянск (4832)59-03-52  
 Владивосток (423)249-28-31  
 Владикавказ (8672)28-90-48  
 Владимир (4922)49-43-18  
 Волгоград (844)278-03-48  
 Вологда (8172)26-41-59  
 Воронеж (473)204-51-73  
 Екатеринбург (343)384-55-89

Иваново (4932)77-34-06  
 Ижевск (3412)26-03-58  
 Иркутск (395)279-98-46  
 Казань (843)206-01-48  
 Калининград (4012)72-03-81  
 Калуга (4842)92-23-67  
 Кемерово (3842)65-04-62  
 Киров (8332)68-02-04  
 Коломна (4966)23-41-49  
 Кострома (4942)77-07-48  
 Краснодар (861)203-40-90  
 Красноярск (391)204-63-61  
 Курск (4712)77-13-04  
 Курган (3522)50-90-47  
 Липецк (4742)52-20-81

Магнитогорск (3519)55-03-13  
 Москва (495)268-04-70  
 Мурманск (8152)59-64-93  
 Набережные Челны (8552)20-53-41  
 Нижний Новгород (831)429-08-12  
 Новокузнецк (3843)20-46-81  
 Ноябрьск (3496)41-32-12  
 Новосибирск (383)227-86-73  
 Омск (3812)21-46-40  
 Орел (4862)44-53-42  
 Оренбург (3532)37-68-04  
 Пенза (8412)22-31-16  
 Петрозаводск (8142)55-98-37  
 Псков (8112)59-10-37  
 Пермь (342)205-81-47

Ростов-на-Дону (863)308-18-15  
 Рязань (4912)46-61-64  
 Самара (846)206-03-16  
 Санкт-Петербург (812)309-46-40  
 Саратов (845)249-38-78  
 Севастополь (8692)22-31-93  
 Саранск (8342)22-96-24  
 Симферополь (3652)67-13-56  
 Смоленск (4812)29-41-54  
 Сочи (862)225-72-31  
 Ставрополь (8652)20-65-13  
 Сургут (3462)77-98-35  
 Сыктывкар (8212)25-95-17  
 Тамбов (4752)50-40-97  
 Тверь (4822)63-31-35

Тольятти (8482)63-91-07  
 Томск (3822)98-41-53  
 Тула (4872)33-79-87  
 Тюмень (3452)66-21-18  
 Ульяновск (8422)24-23-59  
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 Чита (3022)38-34-83  
 Якутск (4112)23-90-97  
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