

FPL Series circular connectors for power supply

Description

- Conforming to GJB5371-2005
- Compared to GJB598 (MIL-C-26482), this series add #28 and #32 shell size and large size contacts (The largest contact is 0# contact)
- Bayonet coupling
- Termination: solder
- Crown spring socket
- Plug with several types of cable mounting
- Applicable to power supply with high current
- Company standard: Q/21EJ679



Main technical characteristic

- Operating temperature: -55°C ~ 125°C
- Relative humidity: 90% ~ 98%
- Operating air pressure: 4.4kPa ~ 101.3kPa
- Salt spray: N and H types: 48 hours; R and B types: 96 hours
- Hermetic: receptacle: pressure difference 2×10^5 Pa, no air leakage in 1 minute;
Mated: 1.8 meters underwater, no water leakage for 48 hours
- Vibration: frequency 10 ~ 2000 Hz, acceleration 196 m/s^2 , discontinuity $\leq 1 \mu\text{s}$
- Shock: acceleration 980 m/s^2 , discontinuity $\leq 1 \mu\text{s}$
- Endurance: 500 cycles
- Insulation resistance: normal $\geq 5000 \text{ M}\Omega$, damp & heat $\geq 100 \text{ M}\Omega$
- Rated current and contact resistance:

Contact size	Dia. for mating face (mm)	Solder cup dia. (mm)	Rated current (A)	Contact resistance (max.) mΩ	
				Initial value	After durability
20	1.02	1.0	7.5	7	8.5
16	1.59	1.8	13	3.7	4.5
12	2.39	2.2	23	1.8	2.2
10	3.18	3.4	33	1.0	1.2
8	3.61	4.8	46	0.5	0.7
6	4.52	5.8	60	0.4	0.5
4	5.72	6.8	80	0.25	0.35
2	7.19	7.2	100	0.17	0.21
0	9.07	9.1	150	0.14	0.17

- Rated voltage and withstanding voltage:

Contact layout	Rated voltage (V)		Withstanding voltage (V)	
	Sea level	21336m	Sea level	21336m
0802, 0803, 0804, 1404c, 1410, 1412, 1819,	600	300	1500	375

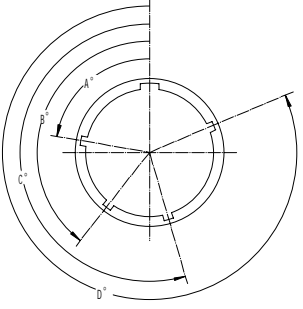
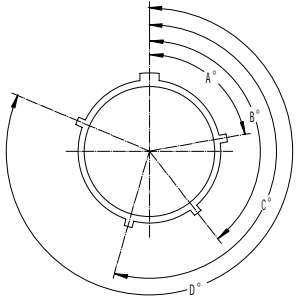
1002, 1003, 1202, 1203, 1204a, 1204b, 1403, 1404a, 1404b, 1405, 1407, 1602, 1603, 1604, 1605, 1802, 1803, 1804, 1804b, 1805, 1806a, 1806b, 1809a, 1809b, 2202, 2203, 2204, 2402, 2403, 2802, 2803, 2804, 3202, 3203, 3204	1000	450	2300	500
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Ordering information






















Basic series	FPL 16 R 14 05 K 21 -A (φ6)
Type	10—square flange receptacle, non-shielding (R plating only) 20—square flange receptacle, shielding (conductive square rubber cushion) 14—jam nut receptacle, non-shielding (R plating only) 24—jam nut receptacle, shielding (conductive O-ring) 16—plug, non-shielding (R plating only) 26—plug, shielding
Plating	R—anodized, black, non-conductive BW—Olive-drab cadmium plating, conductive shell N—electroless nickel plating, conductive shell B—cadmium electroplating, conductive shell H—black chromium electroplating, conductive shell
Shell size	08, 10, 12, 14, 16, 18, 22, 24, 28, 32
Contact code	See the insert arrangement
Contact style	J—pin K—socket
Back shell code	See the back shell (only for plug)
Polarization	Blank – N, A – A, B – B, C – C, D – D, E – E
Cable diameter	See the back shell (only for plug)

Polarization

Mating face of receptacle	Type	Polarization	A°	B°	C°	D°
08		N	95	141	208	236
		A	102	132	248	320
		B	80	118	230	312
		C	35	140	205	275
		D	64	155	234	304
		E	91	131	197	240

 <p>Mating face of plug</p> 	10、12、14	N A B C D E	95 113 90 53 119 51	141 156 145 156 146 141	208 182 195 220 176 184	236 292 252 255 298 242
	18	N A B C D E	105 135 49 66 62 79	140 170 169 140 145 153	215 200 200 200 180 197	265 310 244 257 280 272
	16、22 24、28、32	N A B C D E	80 135 49 66 62 79	142 170 169 140 145 153	196 200 200 200 180 197	293 310 244 257 280 272

Insert arrangement (Mating face of pin inserts)

Shell size	02	 2-20#	03	 3-20#	04	 4-20#				
	10	 2-16#	03	 3-16#						
12	02	 2-12#	03	 3-12#	04a	 4-16#	04b	 4-12#		
14	03	 1-16# 2-12#	04a	 2-16# 2-12#	04b	 4-12#	04c	 2-20# 2-10#	05	 5-16#
	07	 5-16# 2-12#	10	 6-20# 4-16#	12	 8-20# 4-16#				
16	02	 2-10#	03	 3-10#	04	 4-10#	05	 5-12#		

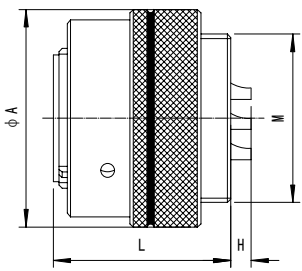
18	02 2-8#	03 3-8#	04 4-8#	04b 2-16# 2-8#	05 3-12# 2-8#
	06a 4-16# 2-8#	06b 3-16# 3-8#	09a 7-16# 2-12#	09b 6-16# 3-12#	19 14-20# 5-16#
	02 2-6#	03 3-6#	04 4-6#		

Shell size	24	02 2-4#	03 3-4#		
	28	02 2-2#	03 3-2#	04 3-4#	
	32	02 2-0#	03 3-0#	04 4-2#	

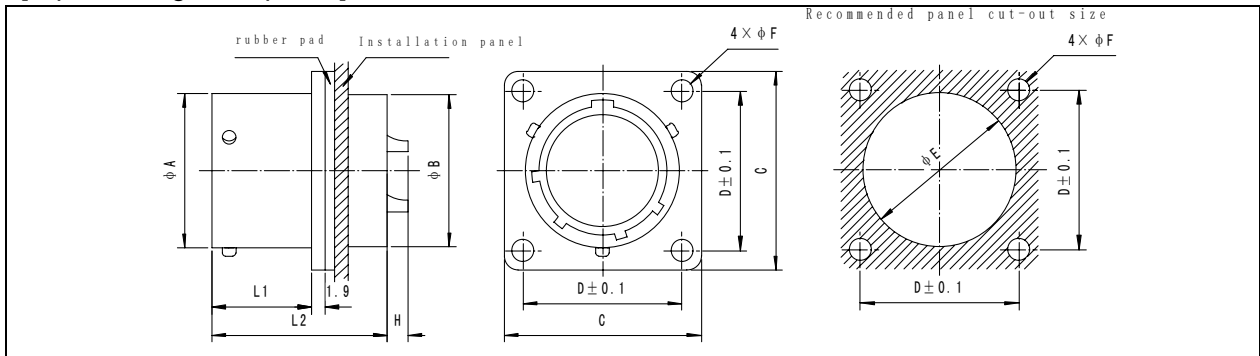
Contact specifications ● 20# ● 16# ● 12# ● 10# ● 8# ● 6# ● 4# ● 2# ● 0#

Outline dimensions

[Plug]

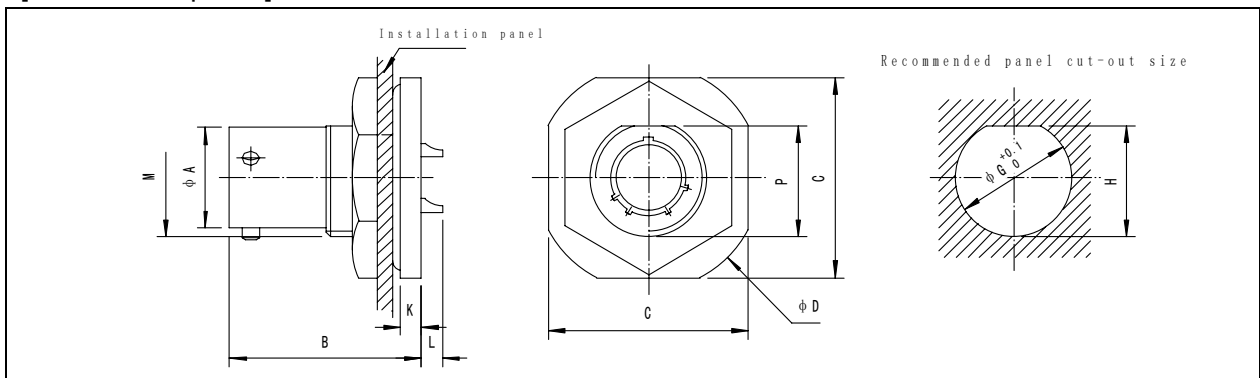
	Shell size	A	H	Thread M	L (reference)
	08	20.5	2.8	M14×1.0 (left)	25.5
10	24.5	2.8	M16×1.0 (left)	25.5	
12	27.0	2.8	M20×1.0 (left)	25.5	
14	31.0	2.8	M24×1.0 (left)	25.5	
16	32.0	2.8	M24×1.0 (left)	25.5	
18	35.5	2.8	M27×1.0 (left)	25.5	
22	44.5	0.9	M35×1.5 (left)	28.5	
24	49.0	1.0	M38×1.5 (left)	30.5	
28	53.5	1.0	M42×1.5 (left)	30.5	
32	59.5	1.0	M48×1.5 (left)	30.5	

[Square flange receptacle]



Shell size	A	B	C	D	E	H	F	L1	L2
08	12.04	12.0	21.00	15.09	12.5	2.8	3.2	14.5	25.5
10	15.01	15.0	24.00	18.26	15.5	2.8	3.2	14.5	25.5
12	19.07	19.0	27.00	20.62	19.5	2.8	3.2	14.5	25.5
14	22.25	22.0	28.60	23.00	22.5	2.8	3.2	14.5	25.5
16	25.43	25.4	31.30	24.61	25.9	2.8	3.2	14.5	25.5
18	28.60	28.6	33.69	26.97	29.4	2.8	3.2	14.5	25.5
22	34.95	35.0	40.00	31.75	35.5	2.8	3.2	16.5	26.5
24	38.13	38.1	43.15	34.92	39.0	3.0	3.8	16.5	28.5
28	41.81	42.0	50.80	39.70	43.0	3.0	3.8	16.5	28.5
32	48.25	47.9	57.15	44.45	49.0	3.0	3.8	16.5	28.5

[Jam nut receptacle]



Shell size	A	B	C	D	P	K	G	H	M
08	12.04	23	23.94	26.94	13.0	2.5	14.2	13.2	M14×1.0
10	15.01	23	26.94	30.14	16.9	2.5	18.2	17.2	M18×1.0
12	19.07	23	31.74	34.94	20.7	2.5	22.2	20.9	M22×1.0
14	22.25	23	34.94	38.04	23.8	2.5	25.2	24.0	M25×1.5
16	25.43	23	38.24	41.24	26.8	2.5	28.2	27.0	M28×1.5
18	28.60	23	41.34	44.44	30.5	2.5	32.2	30.7	M32×1.5
22	34.95	23	49.24	52.24	36.7	3.5	38.2	36.9	M38×1.5
24	38.13	25	52.74	55.54	40.5	3.5	42.2	40.7	M42×1.5
28	41.81	25	55.00	58.00	43.5	3.5	45.2	43.7	M45×1.5
32	48.25	25	62.00	65.00	50.0	3.5	52.2	50.2	M52×1.5

Mating dimensions

Shell size	A	B	C	D
08	36.9	30.9	43.5	37.5
10	40.9	30.9	47.5	37.5
12	43.6	30.9	50.0	37.5
14	47.6	30.9	54.0	37.5
16	48.6	30.9	55.0	37.5
18	51.9	30.9	58.5	37.5
22	62.9	33.9	67.5	38.5
24	67.4	34.1	74.0	40.7
28	71.9	34.1	78.5	40.7
32	77.9	34.1	84.5	40.7

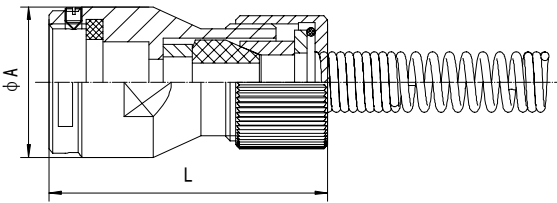
Back shell

Ordering information

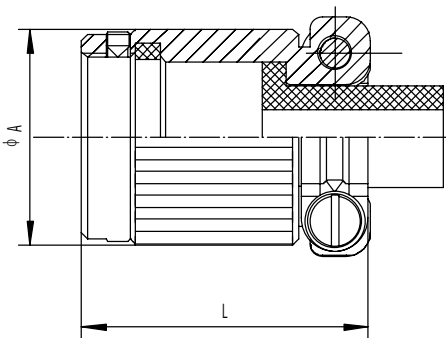
Basic series	FPL	-10	N	-21	(Φ7)
Shell size	08, 10, 12, 14, 16, 18, 22, 24, 28, 32				
Shell plating	R—black anodized, nonconductive shell N—electroless nickel plating, conductive shell B—black cadmium electro plating, conductive shell H—black chromium electro plating, conductive shell BW—Olive-drab cadmium plating, conductive shell				
Back shell code	21—straight back shell, shielding and sealed 02—straight cable clamp 32—straight cable clamp, shielding and sealed 04—elbow back shell 05—elbow cable clamp 25—elbow cable clamp back shell, shielding				
Cable diameter	Cable diameter should be marked				

Outline dimensions

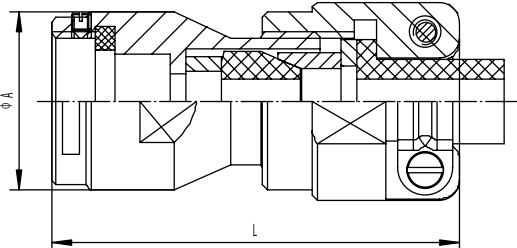
[Straight back shell, shielding and sealed]

	Shell size	A	L(max)	Cable diameter
		08	18	36
	10	20.5	37.5	5, 6, 7, 8
	12	24.5	43	7, 8, 9, 10
	14	28	44	8, 9, 10, 11, 12, 13
	16	28	44	8, 9, 10, 11, 12, 13
	18	32	49	10, 12, 13, 15, 16
	22	39	45.2	13, 15, 17
	24	43	49.2	13, 15, 17
	28	47	49	13, 17, 20
	32	53	49	17, 20

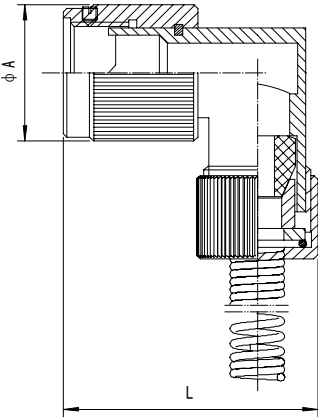
[Straight cable clamp]

	Shell size	A	L(max)	Cable diameter
		08	18	25.5
	10	20.5	31.5	5, 6, 7, 8
	12	24.5	31.5	7, 8, 9, 10
	14	28	31.5	8, 9, 10, 11, 12
	16	28	31.5	8, 9, 10, 11, 12
	18	32	31.5	10, 12, 13, 15
	22	39	34.5	13, 15, 17
	24	43	34.5	13, 15, 17
	28	47	34.5	17, 20
	32	53	39.5	17, 20

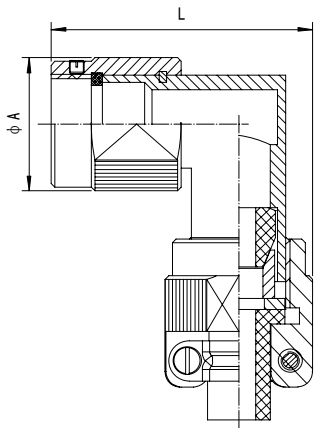
[Straight cable clamp, shielding and sealed]

	Shell size	A	L(max)	Cable diameter
		08	18	42
	10	20.5	44	5, 6, 7, 8
	12	24.5	50	7, 8, 9, 10, 13
	14	28	51.5	8, 9, 10, 11, 12, 13, 16
	16	28	51.5	8, 9, 10, 11, 12, 13, 16
	18	32	51.5	10, 12, 13, 15, 18
	22	39	51	13, 15, 17
	24	43	55	13, 15, 17
	28	47	56	17, 20
	32	53	56	17, 20

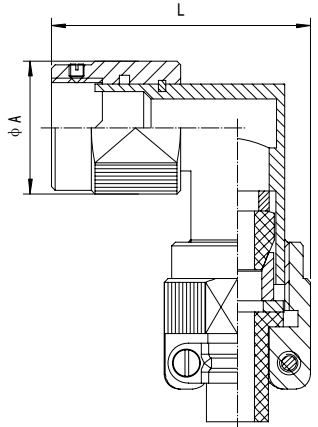
[Elbow back shell]

	Shell size	A	L(max)	Cable diameter
	08	18	35	5, 6, 7
10	20.5	40	5, 6, 7, 8	
12	24.5	35.15	7, 8, 9, 10	
14	28	42.5	8, 9, 10, 11, 12	
16	32	40	8, 9, 10, 11, 12	
18	33	45	10, 12, 13, 15	
22	42.5	45	13, 15, 17	
24	46	45	13, 15, 17	
28	50.5	45	17, 20	
32	56.5	45	17, 20	

[Elbow cable clamp]

	Shell size	A	L(max)	Cable diameter
	08	18	35	5, 6, 7
10	22.5	40	5, 6, 7, 8	
12	24.5	40	7, 8, 9, 10	
14	29	40	8, 9, 10, 11, 12	
16	30	40	8, 9, 10, 11, 12	
18	33	46.5	10, 12, 13, 15	
22	42.5	45	13, 15, 17	
24	46	45	13, 15, 17	
28	50.5	45	17, 20	
32	56.5	45	17, 20	

[Elbow cable clamp, shielding]

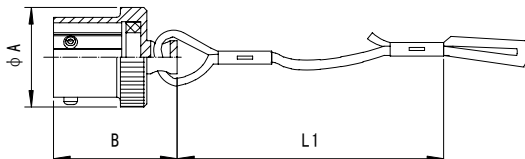
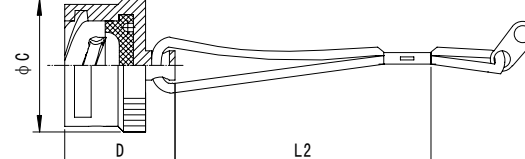
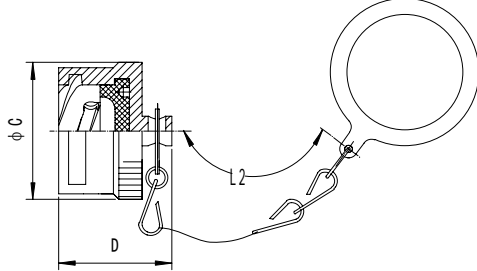
	Shell size	A	L(max)	Cable diameter
	08	18	35	5, 6, 7
10	22.5	40	5, 6, 7, 8	
12	24.5	40	7, 8, 9, 10	
14	29	40	8, 9, 10, 11, 12	
16	30	40	8, 9, 10, 11, 12	
18	33	48.7	10, 12, 13, 15	
22	42.5	45	13, 15, 17	
24	46	45	13, 15, 17	
28	50.5	45	17, 20	
32	56.5	45	17, 20	

Metal dust cap

Ordering information

Basic series		FPL	-3181	-08	-N	-L	-O
Type	3181—applicable to receptacle 3180—applicable to plug						
Shell size	08, 10, 12, 14, 16, 18, 22, 24, 28, 32						
Plating	R—anodized, black, non-conductive BW—olive-drab cadmium plating, conductive shell N—electroless nickel plating, conductive shell B—cadmium electroplating, conductive shell H—black chromium electroplating, conductive shell						
Chain type	L—metal chain, for receptacle only; Blank—nylon chain						
Application	O—for square flange receptacle						

Outline dimensions

<p>Dust cap for plug</p> 		<p>Dust cap for square flange receptacle</p> 				
<p>Dust cap for jam nut receptacle</p> 						
Shell size	A	B	L1	C	D	L2
08	17	18.5	140	19	18.5	100
10	20	18.5	140	22.4	18.5	100
12	24	18.5	140	25	18.5	100
14	27	18.5	140	30	18.5	100
16	30.5	18.5	140	32	18.5	100
18	33.5	18.5	140	35	18.5	100
22	41	21	140	43	18.5	100
24	44	23	140	45.5	18.5	100
28	50	23	140	50	20	140
32	56	24	140	58	20	140