

AM923 Series Circular Electrical Connectors

Brief introduction

- Compliant with GJB2889
- Applicable for electrical connection between equipments and cables under severe environment such as water immersion, moisture etc
- Hyperboloid wire spring socket, smooth mating and reliable connection
- Bayonet quick coupling, firm locking, vibration and shock resistance
- Water-proof, withstanding water depth of 1m after mating
- Anti-scoop function, protecting pins from damage by shell effectively
- 5 keyways polarization for blind mating and anti mismatching
- Rigid environment resistance, aluminum alloy withstanding salt spray for 200h
- 10 types of contact size from $\phi 0.635$ to $\phi 12\text{mm}$, meeting various requirements
- Plug and receptacle loaded with pins or sockets
- Termination type of plug and receptacle is soldering
- Anti-rotation teeth for plug and receptacle shell ends
- “waist “ shape mounting hole for more compatibility of receptacle mounting
- Standard: Q/21EJ1070



Main technical characteristics

[Mechanical characteristics]

—shell: high strength aluminum alloy

Shielding plating: nickel plating

Non-shielding plating: hard anodized plating

—shell: stainless steel

Shell plating: passive, conductive

—insulator: thermoplastic

—cable sealing and O-ring: high tear-proof and high temperature silicone rubber

—contacts:

Material and plating: copper alloy, gold plating

Ferroalloy, gold plating

—sine vibration: frequency 10~2000Hz acceleration: 196m/s^2

—random vibration: power spectral density $0.6\text{G}^2/\text{Hz}$, acceleration RMS 28.4G

—shock: acceleration 980 m/s^2

—constant acceleration: 980 m/s^2

—endurance: 1000 cycles

[Electrical characteristics]

——Insulation resistance: normal temperature $\geq 5000\text{ M}\Omega$; heat and damp $\geq 100\text{ M}\Omega$

Normal connectors:

——voltage rating and withstanding voltage:

Operation environment	Service level			
	I		N	
	Rated voltage (V)	withstanding voltage (V)	Rated voltage (V)	withstanding voltage (V)
normal temperature	500	1500	500	1000
heat and damp	500	1125	500	750
Altitude(1kPa)	250	300	115	200

Sealing connectors (glass filled):

——voltage rating and withstanding voltage:

Operation environment	Service level			
	I		N	
	Rated voltage (V)	withstanding voltage (V)	Rated voltage (V)	withstanding voltage (V)
normal temperature	500	1500	500	1000
heat and damp	500	750	500	500
Altitude (1kPa)	150	300	115	200

——contact resistance and current rating:

Contact size (mm)	contact resistance (mΩ)	Rated current (A)	Solder cup ID (mm)
φ0.635	25	1	φ0.8
φ1.0	5	5	φ1.3
φ1.5	2.5	10	φ1.8
φ2.0	1.25	20	φ2.5
φ2.5	1	25	φ2.5
φ3.0	0.75	40	φ3.4
φ3.5	0.5	45	φ4.8
φ4.5	0.41	60	φ5.5
φ10	0.2	200	φ10
φ12	0.15	250	φ15

Bulkhead sealing adapting receptacle is mated with two types of plugs with sockets. Contact resistance of the contacts is 6 times of the value in table above.

[Environmental characteristics]

——Operation temperature: -55℃~+200℃

——RH: 40℃, 95%

——Operation altitude: 30000m

——Salt spray:

Aluminum shell with silk nickel plating, 200h of salt spray

Aluminum shell with hard anodized plating, 200h of salt spray

Stainless steel, passive, 1000h of salt spray;

——hermetic: Bulkhead sealing adapting receptacle, when withstanding air pressure difference between the out and inner parts is 1 atmosphere, air leakage rate $\leq 1 \times 10^{-3} \text{Pa} \cdot \text{cm}^3/\text{s}$

Designation

[Designation of non-sealing plug and receptacle]

Series	AM923	14	T	4	K1	P13	(W)
Shell size	12-14-18-22-24-27-30-33-36						
Product type	T-plug F-Square Flange receptacle U-left plug (only for left plug mated with bulkhead sealing adaptor)						
Number of contacts	1~ 129 (see "Insert arrangement")						
Contact type	Z1-pin, gold plating K1-socket, gold plating						
Shell plating	Shielding plating: P13-thread at rear, with selected accessories, aluminum alloy, nickel plating P40- thread at rear, with selected accessories, stainless steel, passive Non-shielding plating: E22- thread at rear, with selected accessories, aluminum alloy, hard anodized plating						
Polarization	None –N, (W)-W, (X)-X, (Y)-Y, (Z)-Z						

Examples:

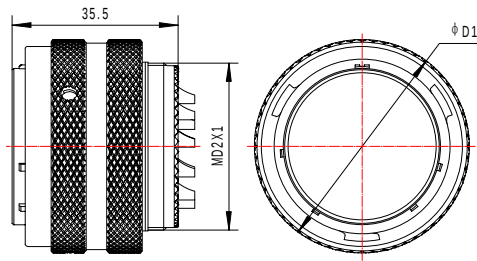
1. AM923 Series, #14 shell, aluminum alloy shell with nickel plating, 4 contacts of gold plated sockets, Square Flange receptacle, Polarization N, P/N: AM923/14F4K1P13
2. AM923 Series, #14 shell, aluminum alloy shell with nickel plating, 4 contacts of gold plated pins, Polarization N, P/N: AM923/14T4Z1P13

[Designation of bulkhead sealing adaptor]

Series	AM923	14	C	4	M1	D40	(W)
Shell size	12-14-18-22-24-27-30-33-36						
Product type	S- Nut tightening bulkhead sealing adaptor (pins at both sides of the panel) C- Square flange mounting bulkhead sealing adaptor (pins at both sides of the panel)						
Number of contacts	1~129 (see "Insert arrangement")						
Description marking	M1-gold plated contacts						
Shell plating	Shielding plating: D40-stainless steel, passive						
Polarization	None –N, (W)-W, (X)-X, (Y)-Y, (Z)-Z						

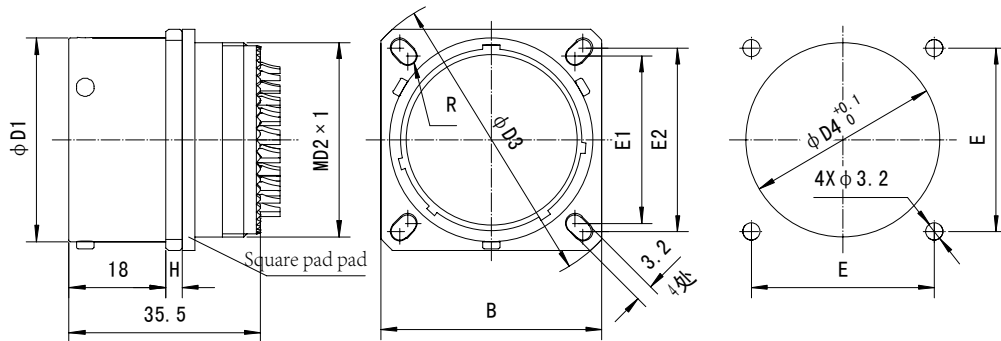
Outline dimensions

[AM923 Plug]



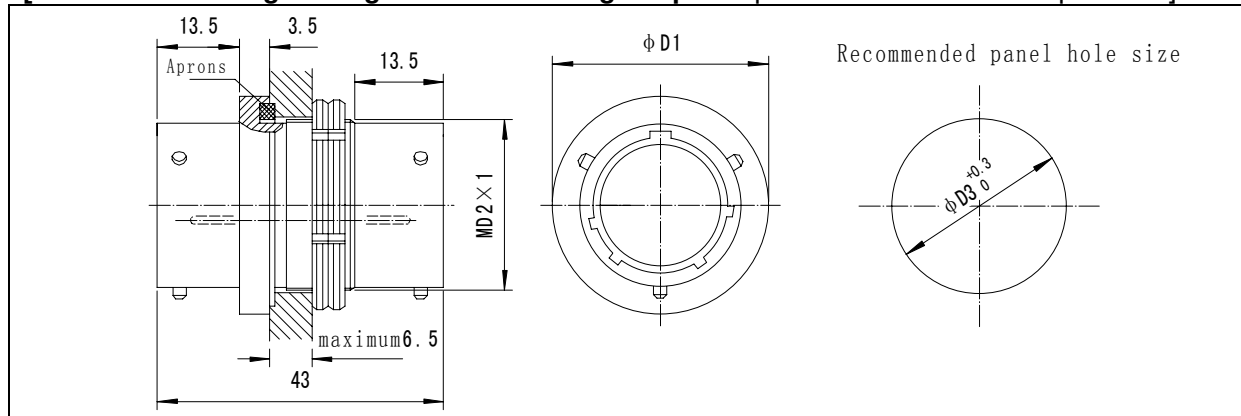
Shell size	D1	D2
12	20.0	12
14	23.0	14
18	27.2	18
22	30.5	22
24	33.5	24
27	37.0	27
30	40.0	30
33	43.0	33
36	46.0	36

[AM923 Square Flange receptacle]



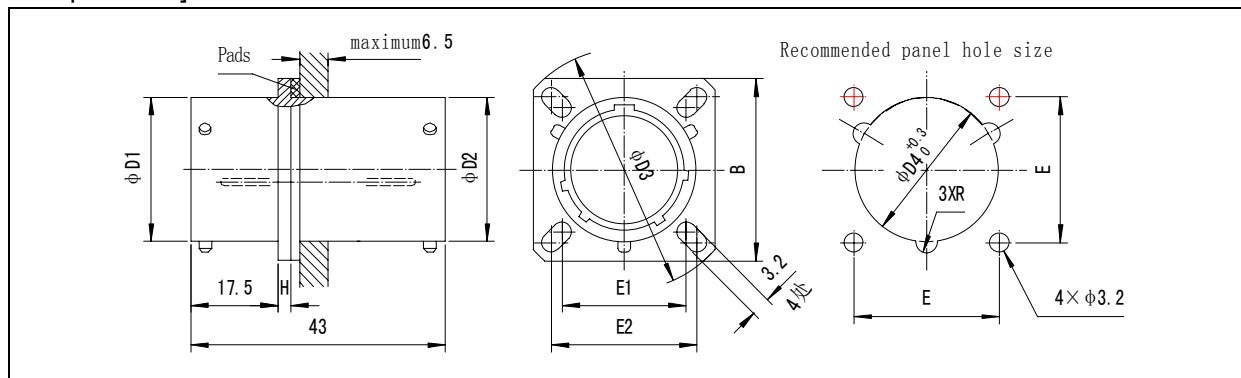
Shell size	D1	D2	H	D3	B	E1	E2	D4	E
12	13.7	12	2.5	30.04	23	14	17	12.1	14~17
14	15.7	14	2.5	32.87	25	16	19	14.1	16~19
18	19.7	18	2.5	36.4	27.5	18.5	21.5	18.1	18.5~21.5
22	23.7	22	2.5	39.94	30	21	24	22.1	21~24
24	25.7	24	2.5	42.77	32	23	26	24.1	23~26
27	28.7	27	3	46.06	34.5	25	28	27.1	25~28
30	31.7	30	3	48.32	36.5	27	30	30.1	27~30
33	34.7	33	3	52.96	39.5	29.5	32.5	33.1	29.5~32.5
36	37.7	36	3	55.08	41	31	34	36.1	31~34

[AM923-S-M Nut tightening bulkhead sealing adaptor (pins at both sides of the panel)]



Shell size	D1	D2	D3
12	27	16	16.5
14	27	18	18.5
18	31	22	22.5
22	36	27	27.5
24	36	27	28.2
27	39	30	31.2
30	42	33	34.2
33	45	36	37.2
36	48	39	40.2

[AM923C-M Square flange mounting bulkhead sealing adaptor (pins at both sides of the panel)]



Shell size	D1	D2	H	D3	B	E1	E2	D4	E	R
12	13.7	13.7	2.5	30.04	23	14	17	14	14~17	1.5
14	15.7	15.7	2.5	32.87	25	16	19	16	16~19	1.5
18	19.7	19.7	2.5	36.4	27.5	18.5	21.5	20	18.5~21.5	1.5
22	23.7	23.7	2.5	39.94	30	21	24	24	21~24	1.5
24	25.7	25.7	2.5	42.77	32	23	26	26	23~26	1.5
27	28.7	28.7	3	46.06	34.5	25	28	29	25~28	2.2
30	31.7	31.7	3	48.32	36.5	27	30	32	27~30	2.2
33	34.7	34.7	3	52.96	39.5	29.5	32.5	35	29.5~32.5	2.2
36	37.7	37.7	3	55.08	41	31	34	38	31~34	2.2

Layout (Mating interface view of pin insulator)

Shell number	7 N	2 I	3 I			
	12	 7-Φ0.635	 2-Φ1.5	 3-Φ1.0		
14	10 N	3 I	4 I	7 I	4-1 I	
	 10-Φ0.635	 3-Φ1.5	 4-Φ1.0	 7-Φ1.0	 2-Φ1.0 2-Φ1.5	
18	21 N	10 I	11 I	4 I	10-1 I	7 I
	 21-Φ0.635	 4-Φ1.5 6-Φ1.0	 11-Φ1.0	 4-Φ1.5	 10-Φ1.0	 7-Φ1.5
22	37 N	3 I	4 I	5 I	12 I	14 I
	 37-Φ0.635	 3-Φ3.0	 4-Φ3.0	 5-Φ3.0	 12-Φ1.5	 14-Φ1.0
24	19 I	8 I	10 I	1 I	14-1 I	
	 19-Φ1.0	 4-Φ3.0 4-Φ1.0	 10-Φ1.5	 1-Φ10	 14-Φ1.5	
24	46 I	14 I	19 I	26 I	19-1 I	14-1 I
	 46-Φ0.635	 8-Φ2.0 6-Φ1.0	 5-Φ1.5 14-Φ1.0	 26-Φ1.0	 19-Φ1.0	 14-Φ1.5
24	4 I	12 I	3 I	2 I		
	 4-Φ3.5	 4-Φ3.0 8-Φ1.0	 3-Φ3.5	 2-Φ3.5		

• Φ0.635 ○ Φ1.0 ◐ Φ1.5 ◑ Φ2.0 ◒ Φ2.5
 ◓ Φ3.0 ◔ Φ3.5 ◕ Φ4.5 ◖ Φ10 ◗ Φ12



APMA

27	66 N 66-Φ 0.635	12 I 8-Φ 2.0 4-Φ 1.5	15 I 2-Φ 2.0 13-Φ 1.5	19 I 2-Φ 3.0, 3-Φ 2.0 4-Φ 1.5, 10-Φ 1.0	22 I 6-Φ 2.0, 6-Φ 1.5 10-Φ 1.0	30 I 10-Φ 1.0
	1 I 1-Φ 12	6 I 2-Φ 3.5 4-Φ 1.5	24 I 24-Φ 1.0	32 I 32-Φ 1.0	12-1 I 12-Φ 2.0	
30	82 N 82-Φ 0.635	22 I 4-Φ 2.0 18-Φ 1.5	27 I 4-Φ 3.0, 2-Φ 2.0 4-Φ 1.5, 17-Φ 1.0	35 I 35-Φ 1.0	41 I 41-Φ 1.0	24 I 24-Φ 1.5
	30 I 30-Φ 1.0	16 I 16-Φ 2.0				
33	104 N 104-Φ 0.635	40 I 2-Φ 2.0, 4-Φ 1.5 36-Φ 1.0	41 I 10-Φ 1.5, 30-Φ 1.5	55 I 55-Φ 1.0	9 I 5-Φ 2.5, 4-Φ 3.5	37 I 37-Φ 1.0
	17 I 7-Φ 1.5, 4-Φ 3.0 6-Φ 3.5					

● Φ 0.635 ○ Φ 1.0 ◐ Φ 1.5 ◑ Φ 2.0 ◒ Φ 2.5
◓ Φ 3.0 ◔ Φ 3.5 ◕ Φ 4.5 ◖ Φ 10 ◗ Φ 12



36	Shell number	129 I 129-φ 0.635	2 I 2-φ 10	3 I 3-φ 4.5	4 I 4-φ 4.5	6 I 1-φ 10, 5-φ 2.0
	16 I 16-φ 3.0	35 I 4-φ 3.0, 13-φ 1.5 2-φ 2.0, 15-φ 1.0	36 I 12-φ 2.0, 6-φ 1.5 18-φ 1.0	37 I 37-φ 1.5	47 I 2-φ 3.0, 2-φ 2.0 4-φ 1.5, 39-φ 1.0	
	48 I 4-φ 2.0, 12-φ 1.5 32-φ 1.0	51 I 8-φ 1.5, 43-φ 1.0	62 I 62-φ 1.0	55 I 55-φ 1.0		



AM923 Series Accessories

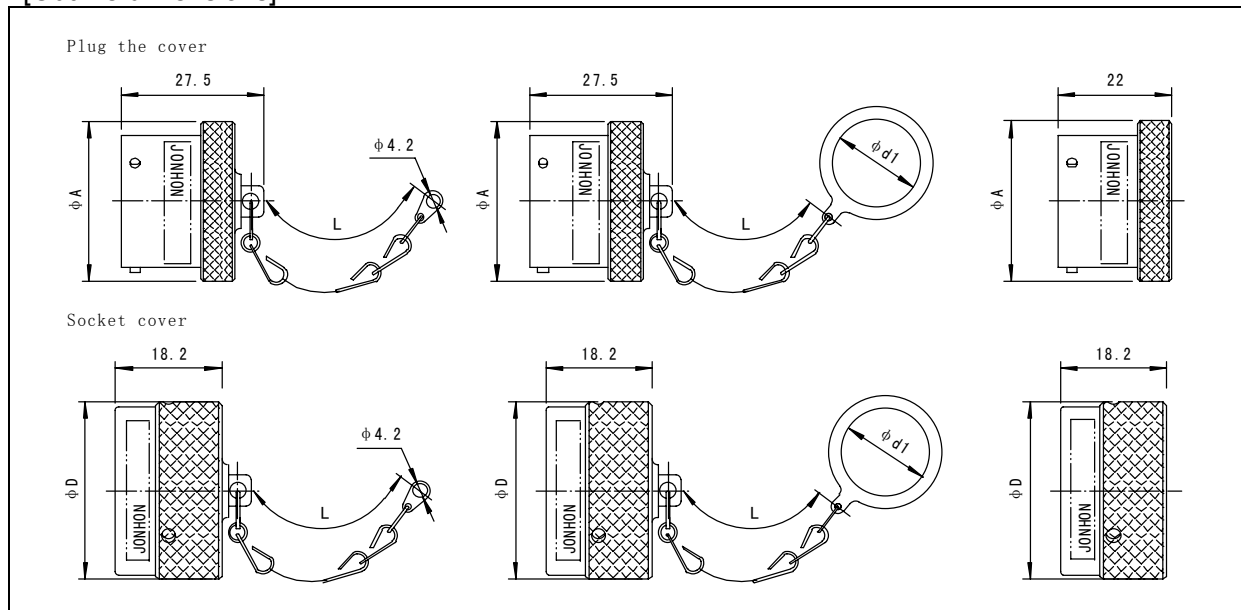
1. Plug and receptacle sealing caps

AM923 Series plugs and receptacle are capable of withstanding water depth of 1m after assembled with sealing caps.

[Designation]

Series	AM923	14	FJ	1	P13	A
Shell size	12-14-18-22-24-27-30-33-36					
Accessories marking	FJ					
Accessory type	1-receptacle sealing cap 2-plug sealing cap					
Shell plating	Shielding plating: P13-nickel plating on aluminum alloy P40-stainless steel, passive Non-shielding plating: E22-hard anodized plating on aluminum alloy					
Chain type	A-without chain N-stainless steel twisted chain with securing ring R-stainless steel twisted chain with securing blade					

[Outline dimensions]



Shell size		12	14	18	22	24	27	30	33	36
A	MAX	19.7	21.7	25.7	29.7	31.7	34.7	37.7	40.7	43.7
D	MAX	19	21	27.2	32	34	37	40	43	46
d1	MIN	12.1	14.1	18.1	22.1	24.1	27.1	30.1	33.1	36.1
d	MIN	16.1	18.1	22.1	27.1	27.1	30.1	33.1	36.1	39.1
L	MAX	200								

2. Cable accessories

Used to secure wires and sealing cables.

Straight and right angle types both with built-in pressing plate tightening cables or wires; Pressing plate also

can clamp shielding braid to realize shielding function.

Connectors are capable of withstanding water depth of 1m after assembled with sealing accessories.

[Designation]

[Designation]						
Series	AM923	14	FJ	3	P13	D1
Shell size	12-14-18-22-24-27-30-33-36					
Accessories marking	FJ					
Accessory type						
3- Straight sealing cable accessory, built-in pressing plate tightening the cable						
4- Straight non-sealing cable accessory, built-in pressing plate tightening the cable						
5- Right angle sealing cable accessory, built-in pressing plate tightening the cable						
6- Right angle non-sealing cable accessory, built-in pressing plate tightening the cable						

Shell plating

Shielding plating: P13-nickel plating on aluminum alloy
P40-stainless steel, passive

Non-shielding plating: E22-hard anodized plating on aluminum alloy

Cable entry code

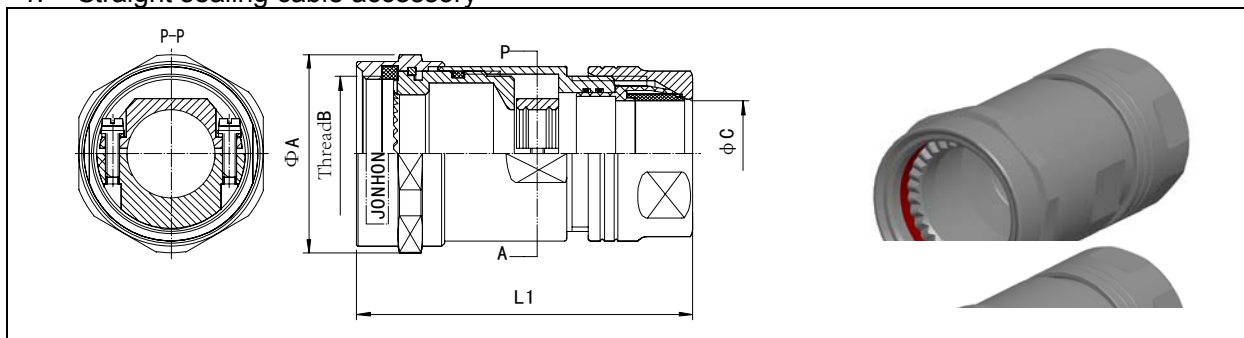
Sealing accessory: D1, D2...

Non-sealing accessory: blank

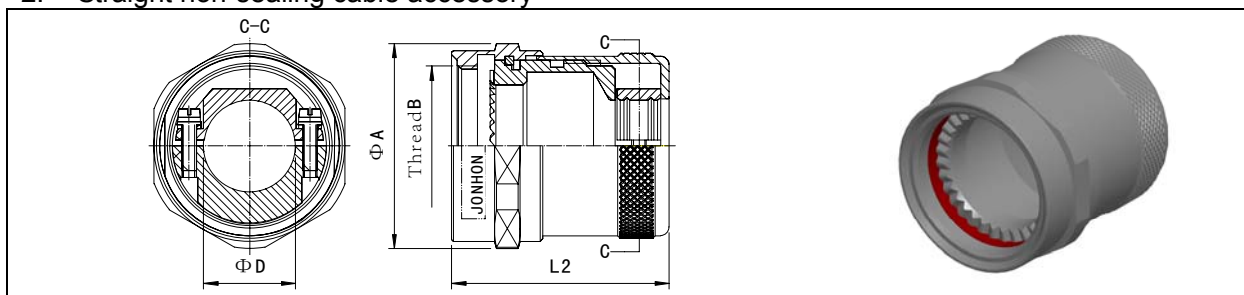
Note: right angle cable accessories are not applicable for insert arrangements of 22-1, 27-1, 36-2, 36-3, 36-4 and 36-6. Any request, please contact our marketing office.

[Outline dimensions]

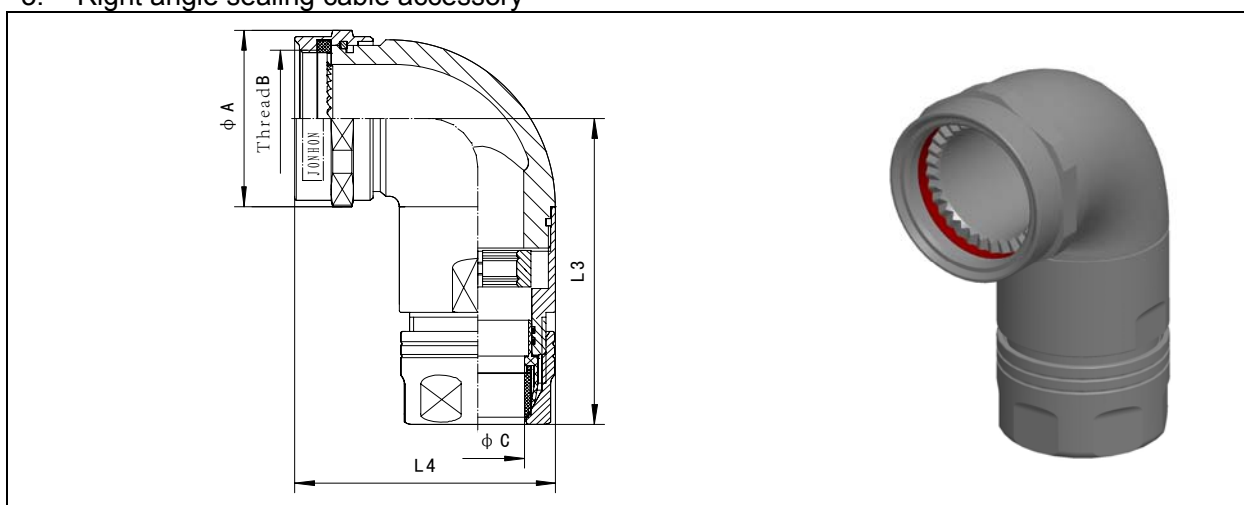
1. Straight sealing cable accessory



2. Straight non-sealing cable accessory



3. Right angle sealing cable accessory



4. Right angle non-sealing cable accessory

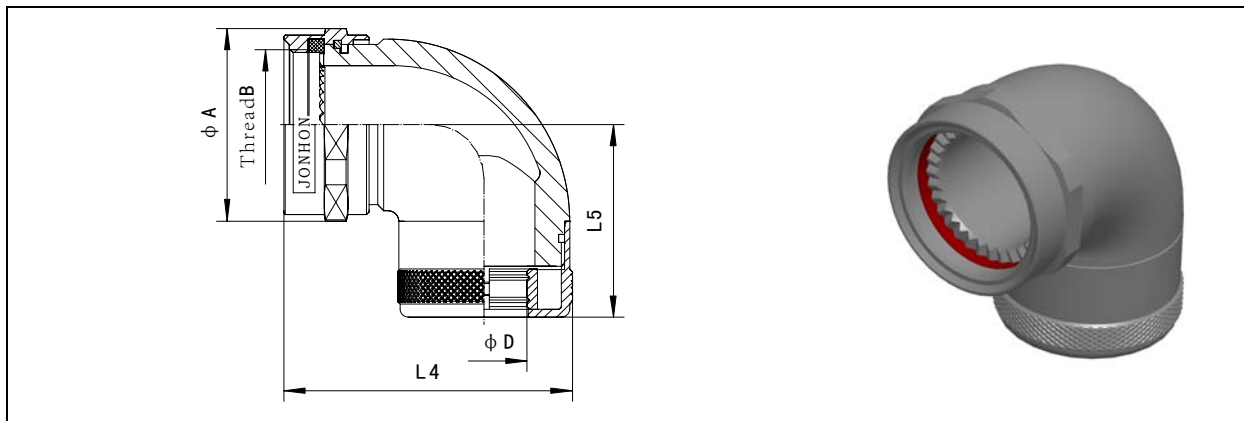


Table 1

Shell size	A	Thread B	L1 MAX	L2 MAX	L3 MAX	L4 MAX	L5 MAX	Sealing accessories Cable entry dia. C code	Non-sealing accessories Cable entry dia. D (MAX)
12	19	M12×1	47.4	28	53.7	39.2	27.6	D1、D2	4
14	22.2	M14×1	49.4	29.5	56.2	40.7	30.1	D1、D2	7
18	25.4	M18×1	51.9	31	57.7	44.2	31.6	D1、D2、D3	10
22	29.6	M22×1	57	32.5	60.7	48	34	D1、D2、D3	12
24	32.8	M24×1	59	35	63.7	51.7	37.5	D1、D2、D3	14
27	36	M27×1	64	38.1	65.2	54.5	39	D1、D2、D3	16
30	39.2	M30×1	67.2	41	66.7	56.7	40.5	D1、D2、D3	19
33	42.4	M33×1	70.3	44.1	68.7	59.2	42.5	D1、D2、D3	22
36	45.6	M36×1	72.4	46.2	70.2	64.7	44	D1、D2、D3	25

Table 2

Shell size	Cable entry code	Cable entry dimension range (C)
12	D1	3.5~5.5
	D2	2~4.5
14	D1	5~7.5
	D2	3.5~5.5
18	D1	7.5~10.5
	D2	5~7.5
	D3	3.5~5.5
22	D1	8.5~12
	D2	2.5~10.5
	D3	5~7.5
24	D1	10.5~15
	D2	8.5~12
	D3	2.5~10.5
27	D1	13.5~18
	D2	10.5~15
	D3	8.5~12

30	D1	16.5~21
	D2	13.5~18
	D3	10.5~15
33	D1	18.5~23.5
	D2	16.5~21
	D3	13.5~18
36	D1	21.5~26.5
	D2	18.5~23.5
	D3	16.5~21