RAINEON

南京睿宁电子科技有限公司

NANJING RAINEON ELECTRONIC TECHNOLOGY CO., LTD

PRODUCT CATALOGUE

Aviation Connectors | Interconnect Technology



WEBSITE
www.raineonconnector.com

E-MAIL
sales@raineonconnector.com

TEL / WECHAT
+86 18761044728

南京市玄武区孝陵卫街道卫柳营100号

No. 100 Weiliuying, Xiaolingwei Street, Xuanwu District,

Nanjing, Jiangsu 210014, China

Overview

- Short shell; compact and lightweight;
- Bayonet coupling system for quick lock and release;
- EMI/RFI shielding and shell conductivity;
- Good resistance to shock and vibration;
- Good fluid immersion performance;
- Widely used in aviation and military systems;
- Standards: MIL-DTL-38999, GJB599A-1993;
- Quality class: general military (J), to Q/Lk30003-2006, detail spec for GJB599A Series II environment-resistant quick-disconnect high-density miniature circular connectors.

Materials

- Shell: aluminium alloy, stainless steel, titanium alloy
  Finish: olive-drab cadmium (B), electroless nickel (F) stainless steel passivated (E), titanium alloy unplated (TT)
- Insulator: thermoplastic material
- Sealing ring: silicone elastomer
- Contacts: copper alloy
  Finish: gold over nickel

Mechanical

- Life: 500 mating cycles
- Shock: 2940 m/s 3ms
- Random vibration: 100 to 1000 Hz, 96 (m/s)²/ Hz
- Contact retention (min.): #22D: 44 N
  #20: 67N
  #16: 111N
  #12: 111N

Electrical

- Dielectric withstanding voltage (Vrms) (mated)

Service rating conditions	M	N	I	II
Sea level	1300	1000	1800	2300
21000m	800	600	1000	1000

- Insulation resistance: >= 5000 MOhm (500 VDC)
- Contact resistance (with silver-plated wire) and rated current:

Contact size	Contact diameter mm	Contact resistance mΩ	Rated current A
#22D	Φ0.762	14.6	5
#20	Φ1.02	7.3	7.5
#16	Φ1.588	3.8	13
#12	Φ2.39	1.8	23
#10	Φ3.18	1.0	33

- Shell-to-shell conductivity (with spring fingers, JY27484)
  Olive-drab cadmium (B): 2.5 mV
  Electroless nickel (F): 1 mV
  Stainless steel passivated (E), titanium alloy unplated (TT): 50 mV
- Shell-to-shell conductivity (without spring fingers, JY27473)
  200mV
- Shielding (with spring fingers, JY27484)
  100 MHz: 65 dB
  1 GHz: 45 dB

Environmental

- Temperature range: cadmium (B) -65 °C to +175 °C; nickel (F) -65 °C to +200 °C
  Stainless steel passivated (E) -65 °C to +200 °C; titanium alloy unplated (TT) -65 °C to +200 °C
- Salt spray: 1000 h (TT), 500 h (B, E), 48 h (F)
- Damp heat: GJB1217 test 1002 procedure II, 24 h per cycle, 10 cycles
- Fluid immersion: resistant to 12 fluids including hydraulic oil and coolant

Ordering Code

US military series designation:	MS	27497	T	14	B	35	P	N	-U
Our series designation:	JY	27497	T	14	B	35	P	N	-U
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)

(1) Series designation: MS = US military designation; JY = our designation.
(2) Shell style: 27472 - wall-mount square-flange front-mount receptacle
27473 - straight plug
27474 - nut-mount receptacle
27484 - shielded plug
27497 - wall-mount square-flange rear-mount receptacle
27508 - box-mount square-flange rear-mount receptacle
27513 - box-mount square-flange front-mount receptacle
(3) Class: T environment-resistant - wall-mount and nut-mount fixed connectors.
Shell tail with thread and accessory anti-rotation teeth (backshell mountable)
(for JY27473, JY27484, JY27474, JY27472, JY27497)
Class E environment-resistant - box-mount and bulkhead-mount fixed connectors.
No tail thread (for JY27508, JY27513)
(4) Shell size: 08, 10, 12, 14, 16, 18, 20, 22, 24
(5) Finish: B - olive-drab cadmium (conductive), -65 °C to +175 °C
F - electroless nickel (conductive), -65 °C to +200 °C
E - stainless steel passivated (conductive), -65 °C to +200 °C
TT - titanium alloy unplated (conductive), -65 °C to +200 °C
(6) Insulator contact arrangement: see the insulator arrangement drawings;
(7) Contact type: P - standard crimp pin, S - standard crimp socket
A - no pin or user-specified pin, B - no socket or user-specified socket
PH - solder-cup pin, SH - solder-cup socket
PC - short straight PCB pin, SC - short straight PCB socket
PL - long straight PCB pin, SL - long straight PCB socket
(8) Key / keyway position: N - standard (may be omitted), A, B, C, D
(9) Marking: U - left plug;
I - contact arrangement identified by numeric marking;
no marking - (right) plug, contact arrangement marking to GJB1611;

Note 1: in GJB599A and US MIL-C-38999 part numbering, apart from the series designation the two are identical;
Note 2: when the contact type is PC or SC, the standard key position "N" must be marked;
Note 3: for PCB connectors see the PCB hole drilling drawings;
Note 4: if backshells are ordered with the product, write "product part number + backshell part number"; backshells may also be ordered separately.
Note 5: bulkhead hermetic receptacles accept pin contacts only; the mating plugs must use socket contacts, and each bulkhead hermetic receptacle requires two plugs, i.e. a left plug and a (right) plug; the left plug is marked U, the (right) plug is not marked.
Note 6: receptacles are supplied without a gasket by default; if required, select one per the "gasket dimensions" table for the relevant series. Gaskets come in standard and conductive versions; state the gasket code and quantity when ordering.

Crimp contacts

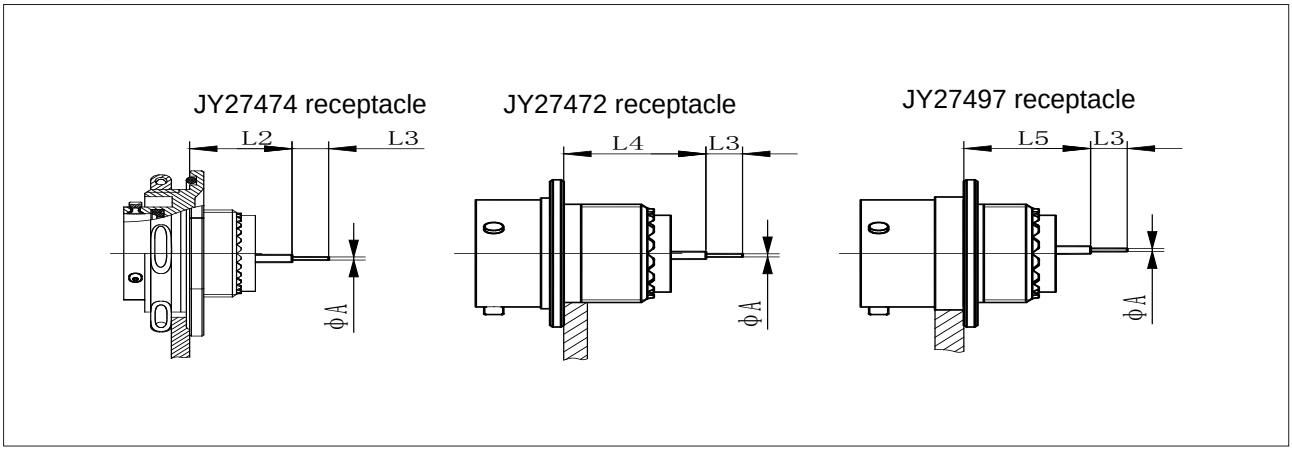
Contact size	Pin diameter (mm)	Crimp barrel ID (mm)	Crimp barrel OD (mm)	Wire cross-section area (mm²)	Equivalent AWG (AWG)	Wire insulation OD (mm)	Insertion/removal tool code
#22D	Φ0.76	0.85	1.2	0.125	26	0.76 to 1.37	M81969/14-01
				0.2	24		
				0.35	22		
#20	Φ1.02	1.17	1.78	0.2	24	1.02 to 2.11	M81969/14-10
				0.35	22		
				0.5	20		
#16	Φ1.59	1.68	2.62	0.5	20	1.65 to 2.77	M81969/14-03
				0.8			
				1.0	18		
				1.2	16		
#12	Φ2.39	2.49	3.84	2.0	14	2.46 to 3.61	M81969/14-04
				3.0	12		

Solder contacts

Contact size	Solder cup ID (mm)	Max. wire gauge (AWG)
#22D	Φ0.9	22
#20	Φ1.3	20
#16	Φ1.8	16
#12	Φ2.85	12

PCB Terminal Tail Dimensions

Straight PCB terminal receptacles and terminal tail dimensions



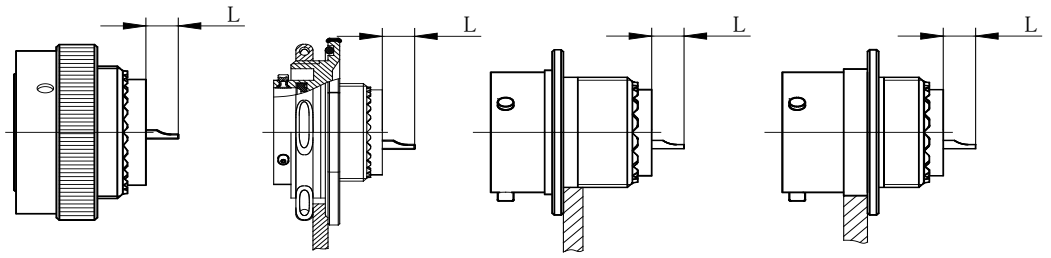
Straight PCB terminal contact sizes		L3	A
#22D	Long straight PCB terminal contact PL/SL	8.50	0.70
	Short straight PCB terminal contact PC/SC	4.00	
#20	Long straight PCB terminal contact PL/SL	8.50	0.70
	Short straight PCB terminal contact PC/SC	5.10	
#16	Long straight PCB terminal contact PL/SL	8.50	1.15
	Short straight PCB terminal contact PC/SC	5.10	

Length with different contact sizes fitted			Shell size 08, 10, 12, 14, 16, 18	Shell size 20, 22, 24
	Contacts fitted			
L2	#22D pin	Min.	12.57	11.87
		Max.	13.56	12.86
	#22D socket	Min.	12.24	11.54
		Max.	13.56	12.86
	#20 or #16 pin, socket	Min.	12.74	12.04
		Max.	13.73	13.03
L4	#22D pin	Min.	14.21	14.21
		Max.	15.38	15.38
	#22D socket	Min.	13.88	13.88
		Max.	15.38	15.38
	#20 or #16 pin, socket	Min.	14.38	14.38
		Max.	15.55	15.55
L5	#22D pin	Min.	12.60	12.60
		Max.	13.47	13.47
	#22D socket	Min.	12.27	12.27
		Max.	13.47	13.47
	#20 or #16 pin, socket	Min.	12.77	12.77
		Max.	13.64	13.64

Note: for GJB599 Series II PCB hole sizes see the PCB hole drilling drawing.

Solder Terminal Tail Dimensions

JY27473 plug JY27474 receptacle JY27472 receptacle JY27497 receptacle



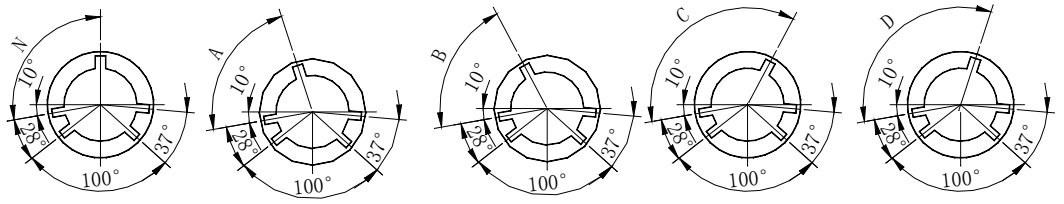
Contact size	Contact type	L
#22D	Pin / socket	3.5
#20	Pin / socket	3.5
#16	Pin / socket	4
#12	Pin / socket	4

Note: L is the distance from the contact solder-cup tail to the face of the grommet

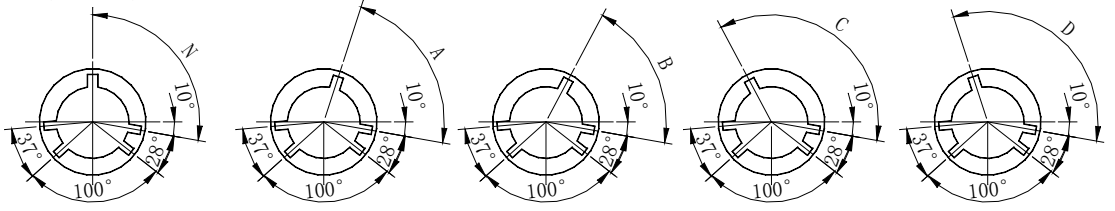
II Key / Keyway Positions

The position is set by the master key/keyway; the other minor key/keyway positions are unchanged

Receptacle mating-face view

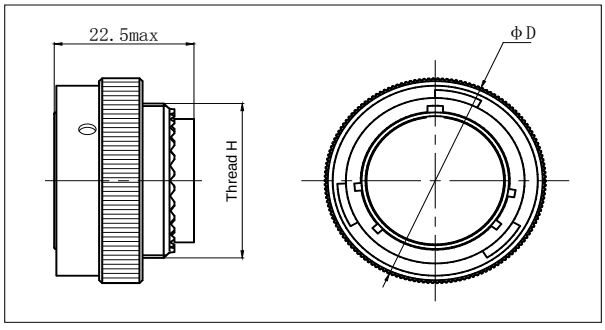


Plug mating-face view



Shell size	Angle in degrees (°)				
	N	A	B	C	D
08	100	82	—	—	118
10	100	86	72	128	114
12	100	80	68	132	120
14	100	79	66	134	121
16	100	82	70	130	118
18	100	82	70	130	118
20	100	82	70	130	118
22	100	85	74	126	115
24	100	85	74	126	115

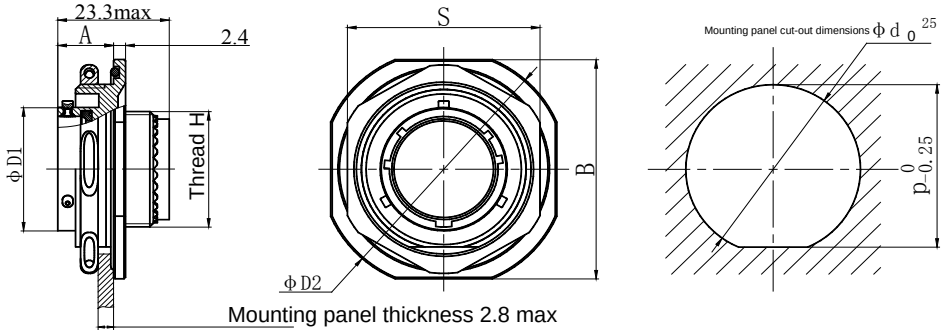
JY27473 / JY27484 plug



J	Y	2	7	4	7	3	–	T					

Shell size	D max		H
08	19.05	08	0.4375-28UNEF-2A
10	21. 82	10	0.5625-24UNEF-2A
12	26.19	12	0.6875-24UNEF-2A
14	29.36	14	0.8125-20UNEF-2A
16	32.54	16	0.9375-20UNEF-2A
18	35.71	18	1.0625-18UNEF-2A
20	38.90	20	1.1875-18UNEF-2A
22	41.68	22	1.3125-18UNEF-2A
24	44.86	24	1.4375-18UNEF-2A

JY27474 receptacle

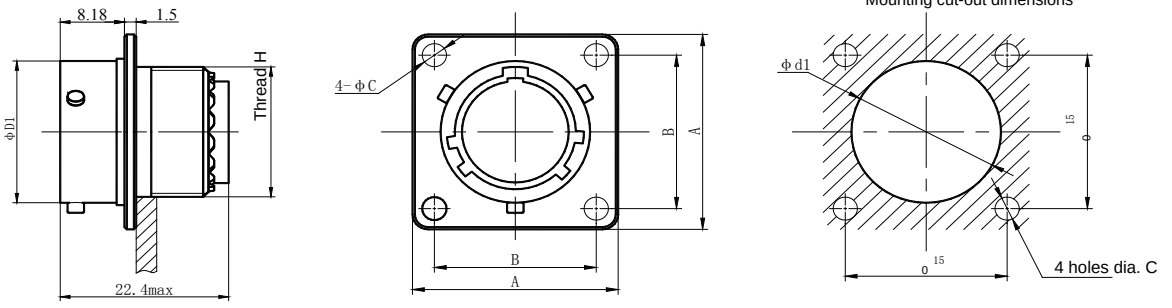


J	Y	2	7	4	7	4	–	T					

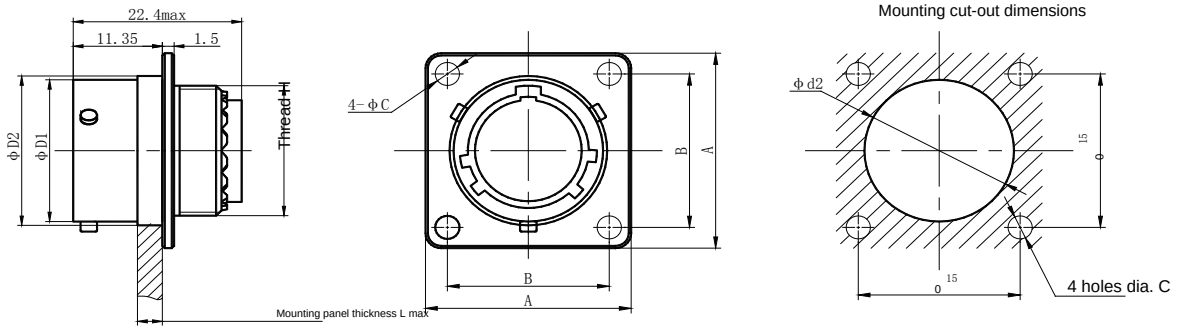
Shell size	D1	D2	A	B	S		d	P	H
08	12.00	34.95	11.2	31.8	27.40	08	22.48	21.08	0.4375-28UNEF-2A
10	15.00	38.10	11.2	35	30.61	10	25.65	24.26	0.5625-24UNEF-2A
12	19.05	41.28	11.2	38.2	33.75	12	28.83	27.53	0.6875-24UNEF-2A
14	22.20	44.45	11.2	41.35	36.96	14	32.01	30.68	0.8125-20UNEF-2A
16	25.40	49.23	11.2	45.3	40.10	16	35.18	33.86	0.9375-20UNEF-2A
18	28.6	51.21	11.2	48.1	43.31	18	38.35	37.06	1.0625-18UNEF-2A
20	31.75	54.38	11.9	51.3	46.45	20	41.53	40.03	1.1875-18UNEF-2A
22	34.95	57.53	11.9	54.4	51.23	22	44.70	43.21	1.3125-18UNEF-2A
24	38.10	60.71	11.9	57.6	54.41	24	47.88	46.38	1.4375-18UNEF-2A

JY27472 wall-mount square-flange front-mount receptacle
JY27497 wall-mount square-flange rear-mount receptacle

JY27472 receptacle



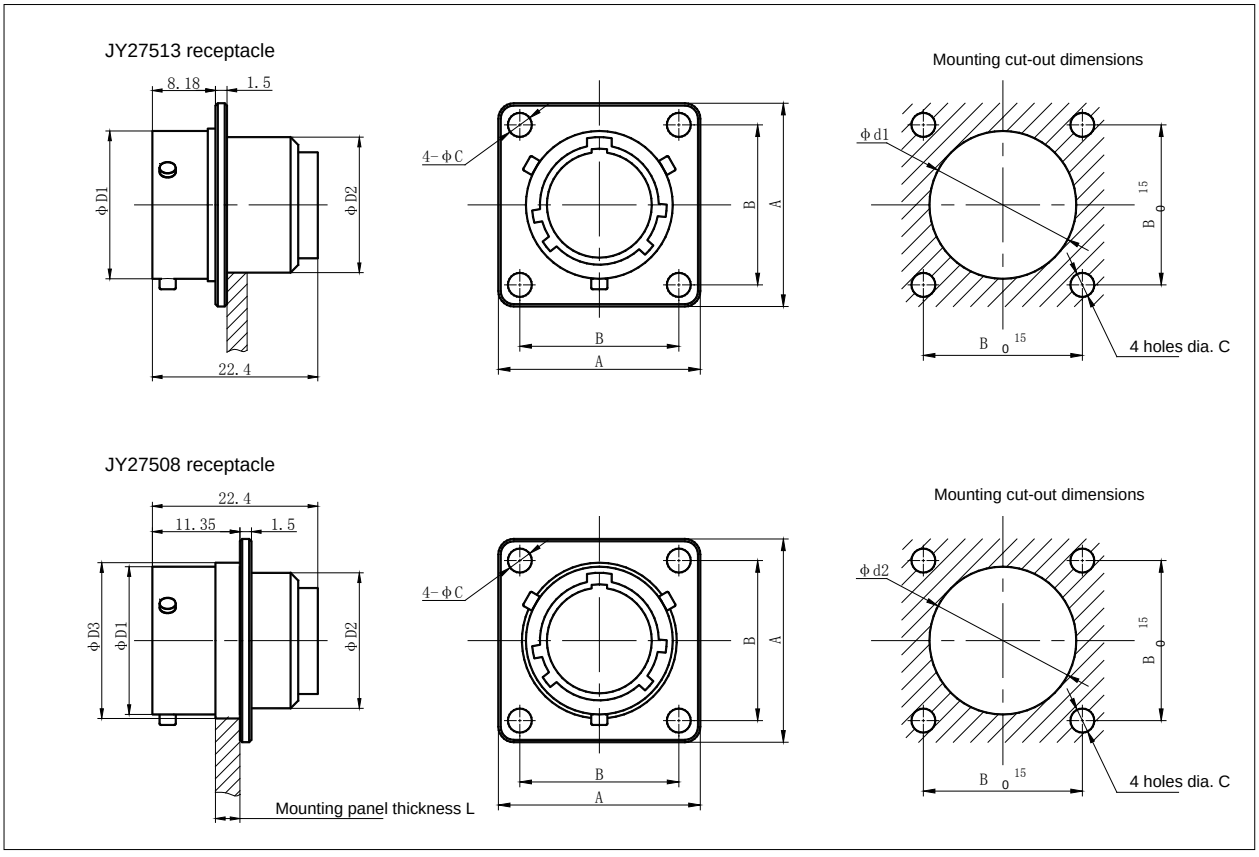
JY27497 receptacle



J	Y	2	7	4	7	2	-	T					

Shell size	A	B	C	D1	D2 max	L max		H UNEF-2A	d1 min	d2 min
08	21.00	15.09	3.20	12.00	13.50	3.71	08	0.4375-28	13.11	14.15
10	24.10	18.26	3.20	15.00	16.50	3.71	10	0.5625-24	15.88	17.32
12	26.50	20.62	3.20	19.05	21.00	3.71	12	0.6875-24	19.05	21.69
14	28.90	23.01	3.20	22.20	24.00	3.71	14	0.8125-20	23.01	24.87
16	31.21	24.61	3.20	25.4	27.00	3.71	16	0.9375-20	25.81	28.04
18	33.60	26.97	3.20	28.60	30.80	3.71	18	1.0625-18	28.98	31.22
20	36.80	29.36	3.20	31.75	33.00	3.71	20	1.1875-18	32.16	24.39
22	40.00	31.75	3.20	34.95	36.20	3.71	22	1.3125-18	34.93	37.57
24	43.10	34.93	3.70	38.10	40.00	3.71	24	1.4375-18	37.69	40.74

JY27513 box-mount square-flange front-mount receptacle
JY27508 box-mount square-flange rear-mount receptacle



J	Y	2	7	5	1	3	–	T					

Shell size	A	B	C	D1	D2		D3 max	L max	d1 min	d2 min
08	21.00	15.09	3.20	12.00	11.51	08	13.50	3.71	13.11	14.15
10	24.10	18.26	3.20	15.001	14.68	10	16.50	3.71	15.88	17.32
12	26.50	20.62	3.20	19.05	17.86	12	21.00	3.71	19.05	21.69
14	28.90	23.01	3.20	22.23	21.03	14	24.00	3.71	23.01	24.87
16	31.21	24.61	3.20	25.43	24.21	16	27.00	3.71	25.81	28.04
18	33.60	26.97	3.20	28.60	26.97	18	30.80	3.71	28.98	31.22
20	36.80	29.36	3.20	31.75	30.18	20	33.00	3.71	32.16	34.39
22	40.00	31.75	3.20	34.95	33.32	22	36.20	3.71	34.93	37.57
24	43.10	34.93	3.70	38.10	36.53	24	40.00	3.71	37.69	40.74

GJB599 Series II Environment-Resistant High-Density Miniature Circular Hermetic Connectors

Materials

- Shell: stainless steel

Finish: stainless steel passivated (E), stainless steel nickel-plated (N)

- Sealing dielectric: glass
- Sealing ring: silicone elastomer
- Contacts: copper alloy

Finish: gold over nickel

Environmental

- Temperature range:

Stainless steel passivated (E): -65 °C to +200 °C
Stainless steel nickel-plated (N): -65 °C to +200 °C

- Salt spray: 500 h (E), 48 h (N)
- Leak rate 1x10 ^{3}Pa · cm^{3}/s

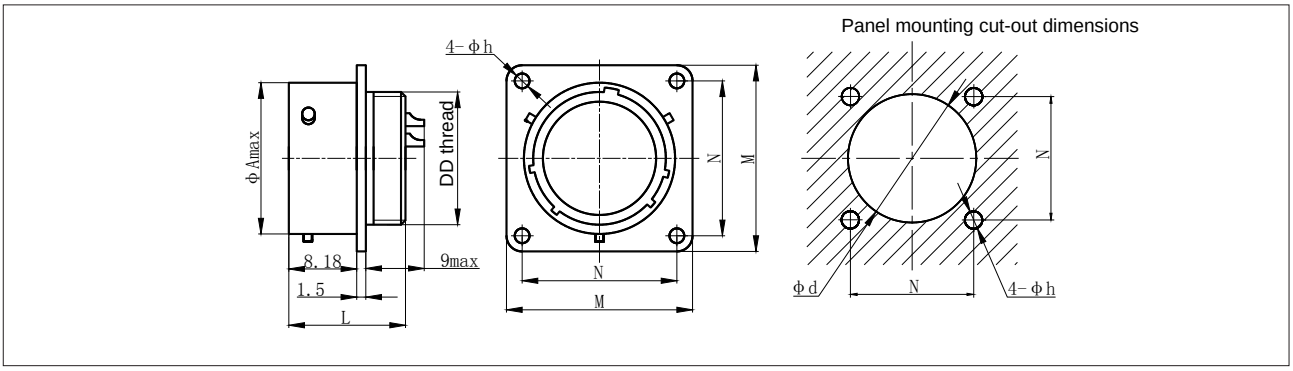
Ordering Code

US military series designation:	MS	27476	Y	14	E	35	P	N
Our series designation:	JY	27476	Y	14	E	35	P	N
	(1)	(2)	(3)	(4)	(5)	(6)	7.	8.

(1) Series designation: MS = US military designation; JY = our designation.
(2) Shell style: 27475 - wall-mount square-flange glass-sintered hermetic receptacle
27476 - box-mount glass-sintered hermetic receptacle
27477 - nut-mount glass-sintered hermetic receptacle
27478 - solder-mount glass-sintered hermetic receptacle
(3) Class: Y - hermetic
(4) Shell size: 08, 10, 12, 14, 16, 18, 20, 22, 24
(5) Finish: N - stainless steel nickel-plated
E - stainless steel passivated
(6) Insulator contact arrangement: see page 87
(7) Contact type: P - solder pin
S - solder socket
X - pin contact with solder eyelet
Z - socket contact with solder eyelet

(8) Key / keyway position: N - standard (may be omitted), A, B, C, D
Note 1: in the part numbering, apart from the series designation, this is identical to US MIL-C-38999.
Note 2: if backshells are ordered with the product, write "product part number + backshell part number"; backshells may also be ordered separately.

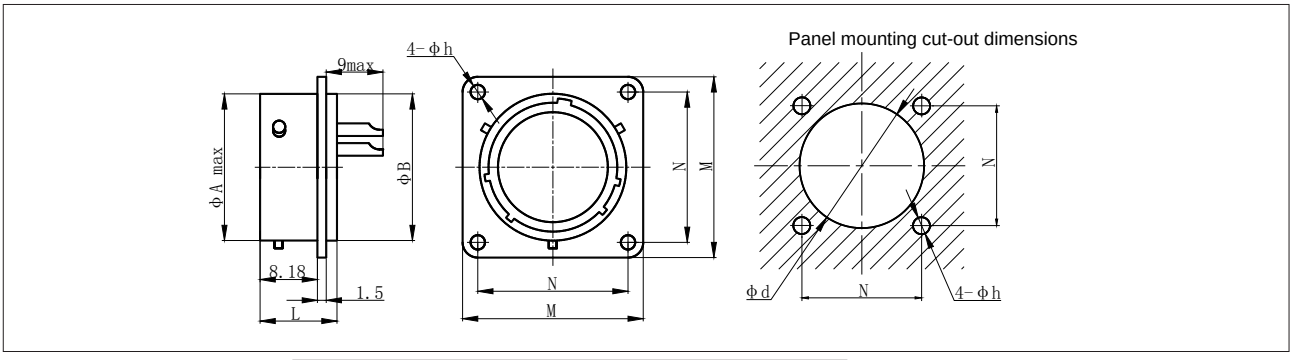
JY27475 wall-mount square-flange hermetic receptacle



J	Y	2	7	4	7	5	Y						

Shell size	ΦA max	L	M	N		Φh	DD thread UNEF-2A	Φd
8	12.00	15.90	21.00	15.09	8	3.20	0.5625-24	15.5
10	15.00	15.90	24.10	18.26	10	3.20	0.6875-24	19.5
12	19.05	15.90	26.50	20.62	12	3.20	0.8125-20	21.5
14	22.20	15.90	28.90	23.01	14	3.20	0.9375-20	25.0
16	25.40	15.90	31.21	24.61	16	3.20	1.0625-18	28.0
18	28.60	15.90	33.60	26.97	18	3.20	1.1875-18	31.5
20	31.75	15.90	36.80	29.36	20	3.20	1.3125-18	34.5
22	34.95	19.10	40.00	31.75	22	3.20	1.4375-18	37.5
24	38.10	19.10	43.10	34.93	24	3.70	1.5625-18	40.7

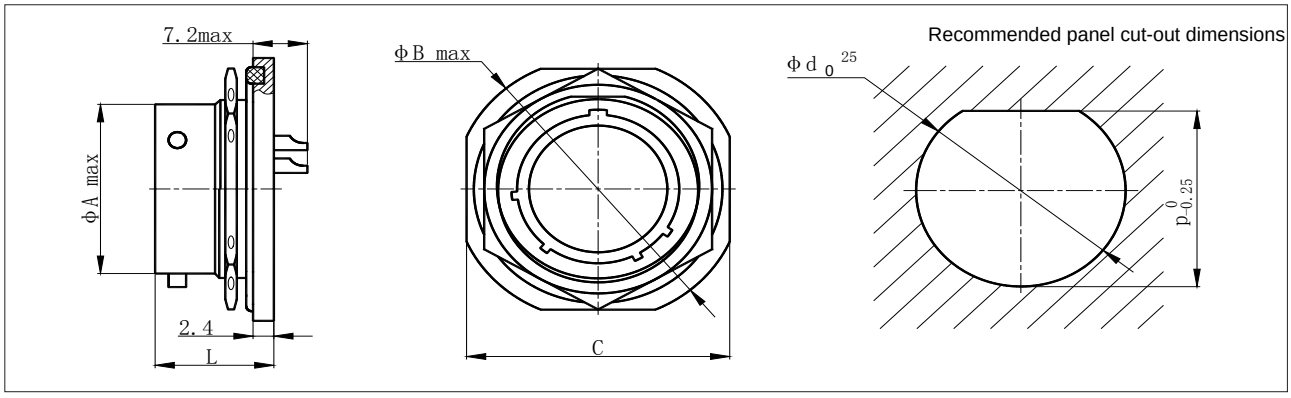
JY27476 box-mount hermetic receptacle



J	Y	2	7	4	7	6	Y						

Shell size	ΦA max	L max	M		N	Φh	ΦB	Φd
8	12.00	11.50	21.00	8	15.09	3.20	14.27	15.3
10	15	11.50	24.10	10	18.26	3.20	17.07	18.1
12	19.05	11.50	26.50	12	20.62	3.20	19.84	20.8
14	22.20	11.50	28.90	14	23.01	3.20	23.01	24.0
16	25.40	11.50	31.21	16	24.61	3.20	26.91	27.2
18	28.60	11.50	33.60	18	26.97	3.20	29.36	30.4
20	31.75	11.50	36.80	20	29.36	3.20	31.75	32.8
22	34.95	11.50	40.00	22	31.75	3.20	34.93	35.9
24	38.10	12.30	43.10	24	34.93	3.70	38.10	39.1

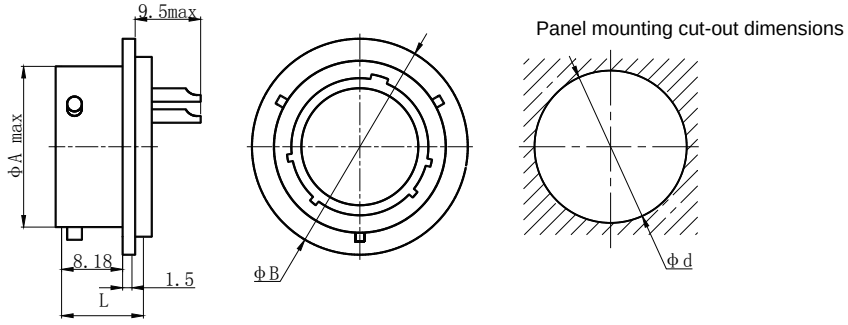
JY27477 nut-mount hermetic receptacle



J	Y	2	7	4	7	7	Y						

Shell size	ΦA max	ΦB max	L		C	Φd	p
8	12.00	34.95	13.5	8	31.80	22.48	21.08
10	15.00	38.10	13.5	10	35.00	25.65	24.26
12	19.05	41.28	13.5	12	38.20	28.83	27.53
14	22.20	44.45	13.5	14	41.35	32.01	30.68
16	25.40	49.23	13.5	16	45.30	35.18	33.86
18	28.60	51.21	13.5	18	48.10	38.35	37.06
20	31.75	54.38	14.2	20	51.30	41.53	40.03
22	34.95	57.53	14.2	22	54.40	44.70	43.21
24	38.10	60.71	14.2	24	57.60	47.88	46.38

JY27478 solder-mount hermetic receptacle



J	Y	2	7	4	7	8	Y						

Shell size	ΦA max		ΦB	L	Φd
8	12.00	8	17.45	12.0	14.8
10	15.00	10	20.24	12.0	17.6
12	19.05	12	23.01	12.0	20.3
14	22.20	14	26.19	12.0	23.5
16	25.40	16	29.36	12.0	26.7
18	28.60	18	32.54	12.0	29.9
20	31.75	20	34.93	12.0	32.3
22	34.95	22	38.10	12.8	35.4
24	38.10	24	41.28	12.8	38.6

Protective Cap Ordering Code

JY27510 B 10 C L

(1) (2) (3) (4) (5)

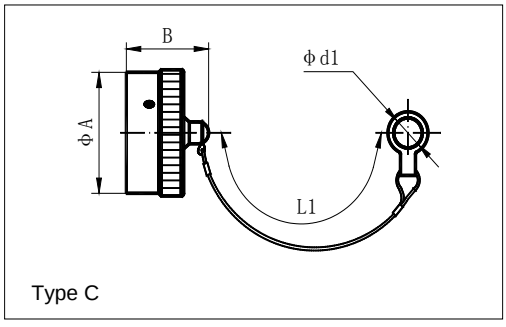
(1) Basic series number: JY27510 - for plugs (not for JY27484 plugs)
JY27511 - for receptacles

(2) B - olive-drab cadmium
F - nickel-plated
E - stainless steel passivated
TT - titanium alloy unplated

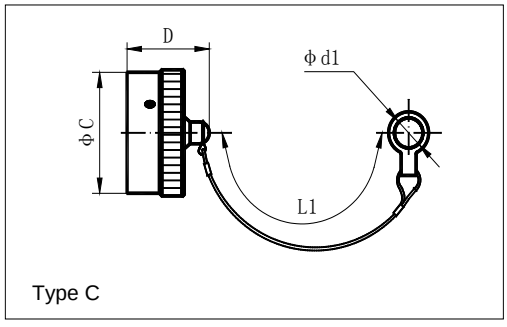
(3) 08 10 12 14 16 18 20 22 24

(4) Type: C - metal chain with eyelet
N - metal chain with ring (JY27511 only)
R - lanyard
A - no chain

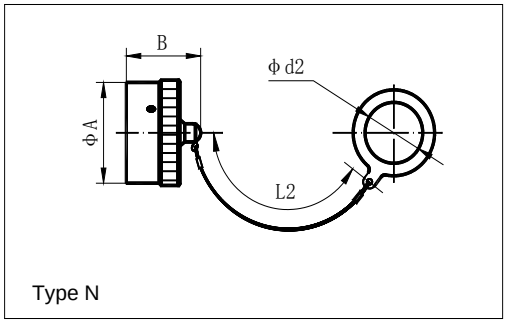
(5) L - 127.00 (standard, may be omitted)
L1, L2 see table below



Receptacle protective cap



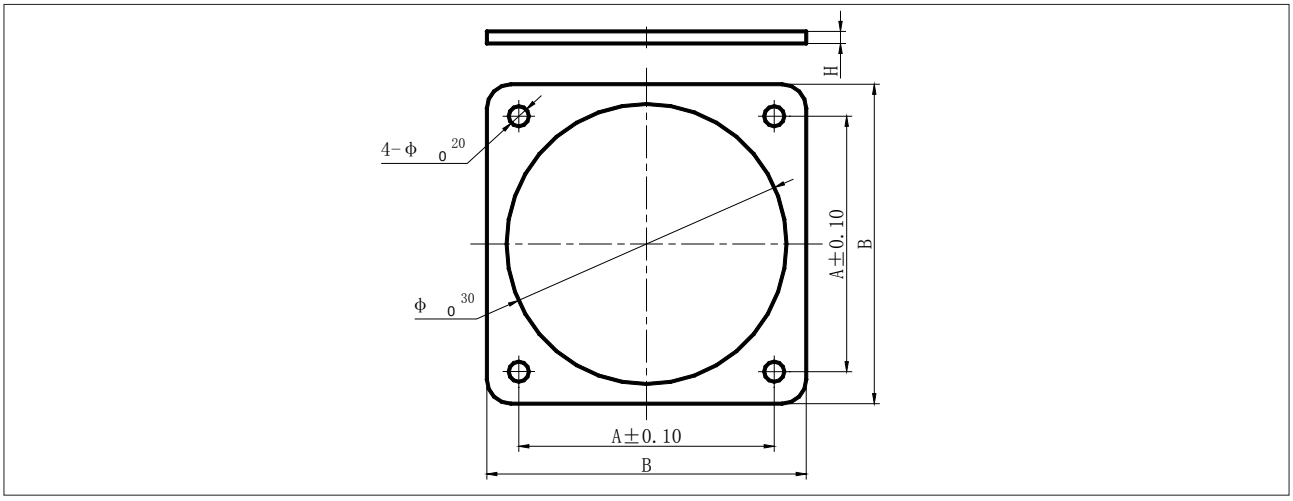
Plug protective cap



Receptacle protective cap

Shell size	Amax	Bmax	Cmax	Dmax	d1min	d2min	L1	L2
08	16.0	20.8	12.0	20.8	4.2	13.5	77	77
10	19.1		15.0			18.5		
12	23.5		19.1			20.5	90	90
14	26.7		22.2			23.5		
16	29.8		25.4			26.5		
18	33.3		28.6			37.5		
20	36.6		31.8			32.5	102	102
22	39.8		35.0			43.5		
24	43.2		38.1			45.5		

J599 Series II Gasket Dimensions



For shell size	Front-mount standard gasket code	Front-mount conductive gasket code	A	B	C	D		H
						Standard gasket	Conductive gasket	
08	Lk7.854.1279	Lk7.757.147	15.09	20.7	11.5	2.5	3.2	1.5
10	Lk7.854.1280	Lk7.757.148	18.26	23.8	14.5	2.5	3.2	1.5
12	Lk7.854.1281	Lk7.757.149	20.62	26.2	17.5	2.5	3.2	1.5
14	Lk7.854.1282	Lk7.757.150	23.01	28.6	21.0	2.5	3.2	1.5
16	Lk7.854.1283	Lk7.757.151	24.61	30.96	24.0	2.5	3.2	1.5
18	Lk7.854.1284	Lk7.757.152	26.97	33.3	27.0	2.5	3.2	1.5
20	Lk7.854.1285	Lk7.757.153	29.36	36.5	30.0	2.5	3.2	1.5
22	Lk7.854.1286	Lk7.757.154	31.75	39.7	33.2	2.5	3.2	1.5
24	Lk7.854.1287	Lk7.757.155	34.93	42.9	36.5	3.0	3.7	1.5

For shell size	Rear-mount standard gasket code	Rear-mount conductive gasket code	A	B	C	D		H
						Standard gasket	Conductive gasket	
08	Lk7.854.1288	Lk7.757.156	15.09	20.7	13.0	2.5	3.2	1.5
10	Lk7.854.1289	Lk7.757.157	18.26	23.8	16.0	2.5	3.2	1.5
12	Lk7.854.1290	Lk7.757.158	20.62	26.2	20.2	2.5	3.2	1.5
14	Lk7.854.1291	Lk7.757.159	23.01	28.6	23.5	2.5	3.2	1.5
16	Lk7.854.1292	Lk7.757.160	24.61	30.96	26.5	2.5	3.2	1.5
18	Lk7.854.1293	Lk7.757.161	26.97	33.3	29.8	2.5	3.2	1.5
20	Lk7.854.1294	Lk7.757.162	29.36	36.5	33.0	2.5	3.2	1.5
22	Lk7.854.1295	Lk7.757.163	31.75	39.7	36.2	2.5	3.2	1.5
24	Lk7.854.1296	Lk7.757.164	34.93	42.9	39.5	3.0	3.7	1.5

Series II backshells are common to Series I.