

D38999 II Series Electrical Connector



Introduction:

- In accordance with the GJB599B (MIL-DTL-38999M) series I standards
- Bayonet type quick connection
- The smallest volume,the lightest weight and the shortest shell in GJB599 series.
- EMI / RFI shielding
- The crimp contact is removable but not scoop proof design.It is recommended that receptacle assemble pin in narrow space.

Usage:The products are used for the circuit signal connection

Using environment:The product is light connector,which is suitable for the occasion where the environment is high strength vibration or harsh wind sand and moisture

Technical features:

Mechanical:

Shell: Aluminum , stainless steel

Shell material & plating:

Aluminum: Cadmium olive drab (B)

Nickel (F)

Stainless steel: Passivated (E)

Contact: Gold over cooper alloy ,including three types:solder,crimp and PCB

Endurance: ≥ 500 mating cycles

Vibration: Sine vibration: frequency:from 10 Hz to 2000 Hz

acceleration: 294m/s^2

Random vibration: frequency:from 10 Hz to 2000 Hz

power spectral density: $1\text{g}^2/\text{Hz}$

Shock:300g,3ms

Electrical:

Contact resistance and rated current

Contact size	working diameter(mm)	contact resistance (mΩ)	Rated current(A)
22D	Φ0.76	≤12	5
20#	Φ1.00	≤5	7.5
16#	Φ1.60	≤2.5	13
12#	Φ2.40	≤1.5	23
10#	Φ3.15	≤1.0	40

Voltage rating

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

Insulation resistance

At ambient temperature:≥5000MΩ,

At wet temperature:≥100MΩ

Shell continuity:

Aluminum shell

Cadmium olive drab (B) : ≤2.5mV

Nickel (F): ≤1.0 mV

Stainless steel shell: Passivated (E): ≤50mV

Environmental:

Temperature range:

Aluminum shell

B: -65 °C ~+175 °C

E 、 F: -65 °C ~+200 °C

Salt spray:

B: 500h

E 、 TA: 1000h

F: 48h/96h

FT: 96h

Relative humidity: At 40 °C, up to 98%

Working height: ≤30,480 m

How to order

Basic series	MS	27473	T	16	F	35	P	N	—H
Shell style:									
27473-plug 27484-Plug with RF shielding									
27472-Wall Mount Square Flange Receptacle (Front Panel mounted)									
27497-Wall Mount Square Flange Receptacle(Back Panel mounted)									
27513-Box Mount Square Flange Receptacle(Front Panel mounted)									
27508-Box Mount Square Flange Receptacle(Back Panel mounted)									
27474-Jam Nut Receptacle									
Class:									
T = With accessory thread (MS27472, 27473, 27474, 27484 & 27497)									
E = Same as T in line above except connector is kitted with E-Nut									
= No accessory thread, box mount (MS27499 & MS27508)									
= No accessory thread, box mount, long grommet (MS27513)									
Shell size: 09-11-13-15-17-19-21-23-25									
Finish:									
B: Olive drab cadmium F: Nickel S-passivated stainless steel									
Contact layout: See page 7-9									
Contact style:									
P-Pin S-socket									
PL-Long PCB tail pin SL-Long PCB tail socket									
PC-Long PCB tail pin SC-Long PCB tail socket									
Polarization(Keying):									
N=Normal (omitted in part number) A,B,C, D, or E									
—H—Solder contact (Only for solder connectors)									

Crimp contact

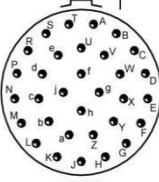
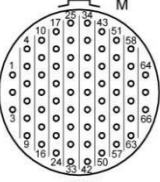
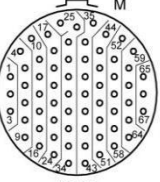
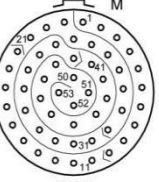
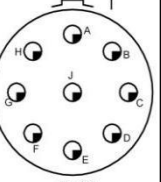
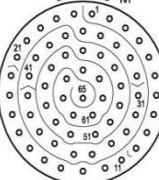
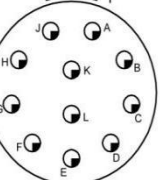
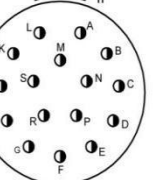
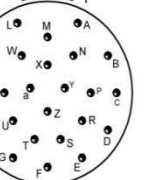
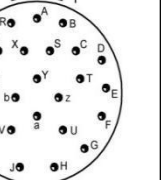
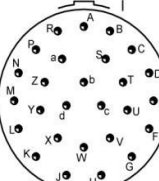
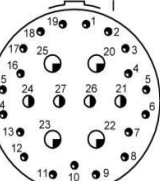
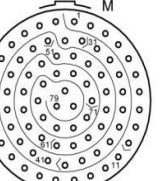
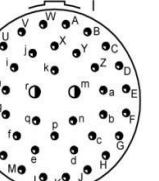
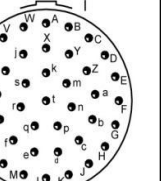
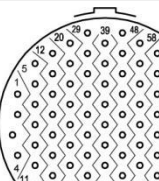
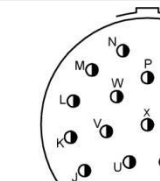
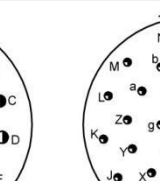
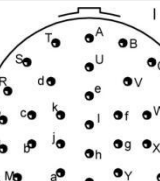
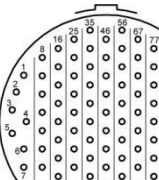
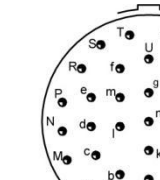
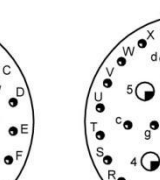
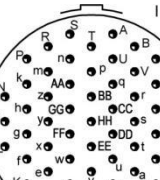
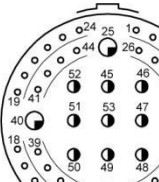
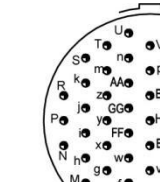
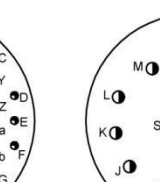
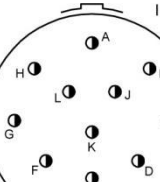
Contact Size	Work diameter	Pin Color	Socket Color	Crimp barrel Inner diameter (mm)	Crimp barrel outer diameter (mm)	Wire Section mm²	AWG	Wire insulation outer diameter (mm)	Insertion & extraction tools	Crimp tool
22D	Φ0.76	orange blue black	orange yellow grey	0.85	1.20	0.08 0.125 0.2 0.3	28 26 24 22	0.76~1.37	M81969/14-01	YJQ-02
20#	Φ1.00	orange- blue orange	orange green brown	1.17	1.78	0.2 0.3 0.5	24 22 20	1.02~2.11	M81969/14-10	YJQ-02 XCXY-01
16#	Φ1.60	orange blue yellow	orange green brown	1.68	2.62	0.5 0.8 1.0 1.2	20 18 16	1.65~2.77	M81969/14-03	XCXY-01
12#	Φ2.40	orange- blue green	orange green orange	2.49	3.84	2.0 3.0	14 12	2.46~3.61	M81969/14-04	XCXY-01
10#	Φ3.15	green red grey	green orange purple	3.40	4.65	4.8	10	3.42~4.12	M81969/14-05	XCXY-01 YTQ
8#	Φ3.60	—	—	4.55	6.4	8.37	8	6.4~6.9	M81969/14-12	YTQ

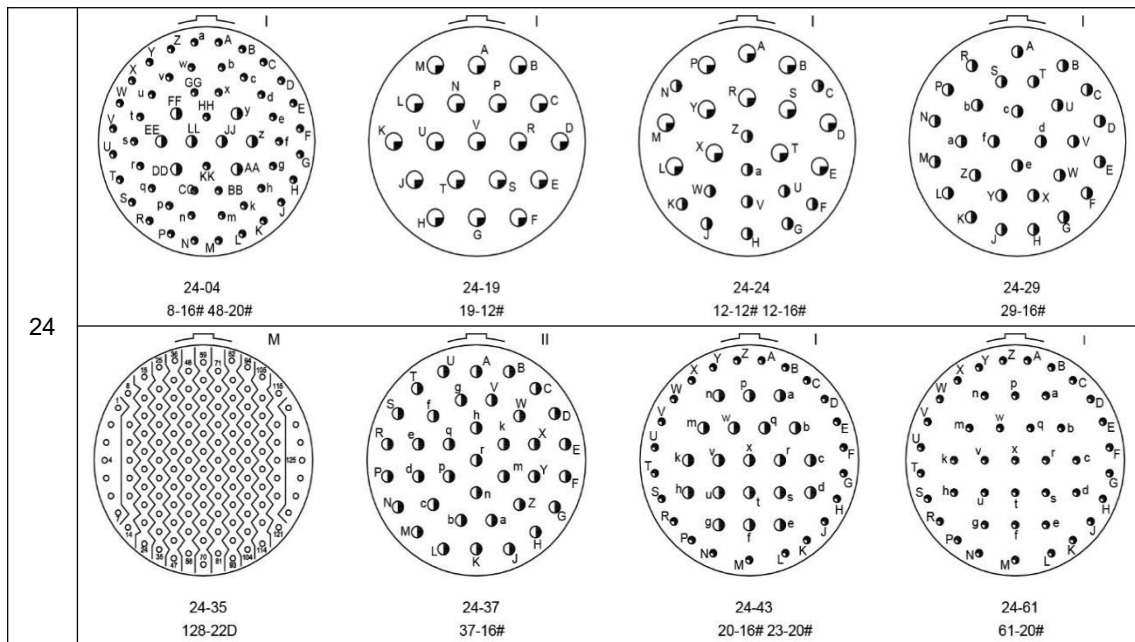
Solder contact

Solder contact size	Solder cup inner diameter	AWG
22D	Φ0.9	22
20#	Φ1.1	20
16#	Φ1.9	16
12#	Φ2.9	12
10#	Φ3.6	10
8#	Φ4.8	8

Contact layout

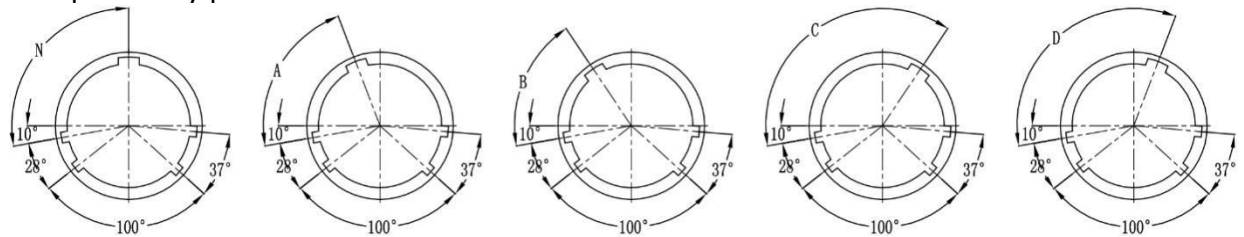
08	 08-02 2-20#	 08-03 3-20#	 08-07 7-22D	 08-10 1-12#	 08-35 6-22D	 08-44 4-22M	 08-98 3-20#	
10	 10-01 1-12#	 10-02 2-16#	 10-04 4-20#	 10-05 5-20#	 10-35 13-22D	 10-98 6-20#	 10-99 7-20#	
12	 12-02 2-12#	 12-03 3-16#	 12-04 4-16#	 12-05 2-16# 3-20#	 12-08 8-20#	 12-26 2-12# 6-22D	 12-35 22-22D	 12-98 10-20#
14	 14-03 2-12# 1-16#	 14-04 4-12#	 14-05 5-16#	 14-15 1-16# 14-20#	 14-18 18-20#	 14-19 19-20#		
	 14-31 1-12# 30-22D	 14-35 37-22D	 14-38 4-12#	 14-97 4-16# 8-20#				
16	 16-05 5-12#	 16-06 6-12#	 16-08 8-16#	 16-11 3-12# 8-20#	 16-26 26-20#	 16-30 3-10# 3-20#		
	 16-35 55-22D	 16-42 42-22D	 16-99 2-16# 21-20#					
18	 18-08 8-12#	 18-11 11-16#	 18-16a 16-16#	 18-28 2-16# 26-20#	 18-30 1-16# 29-20#			

18	 18-32 32-20#	 18-35 66-22D	 18-45 67-22D	 18-53 53-22D	 18-96 9-12#
	 20-02 65-22D	 20-11 11-12#	 20-16 16-16#	 20-24 24-20#	 20-25 25-20#
	 20-27 27-20#	 20-29 4-12# 4-16# 19-20#	 20-35 79-22D	 20-39 2-16# 37-20#	 20-41 41-20#
	 22-02 85-22D	 22-21 21-16#	 22-32 32-20#	 22-34 34-20#	
	 22-35 100-22D	 22-36 36-20#	 22-37 6-12# 31-20#	 22-53 53-20#	
22	 22-54 4-12# 9-16# 40-22D	 22-55 55-20#	 22-97 16-16#	 22-99 11-16#	

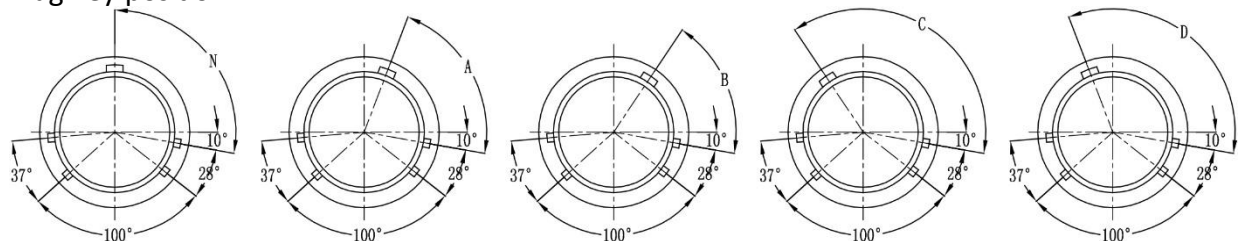


Alternation key position

Receptacle key position



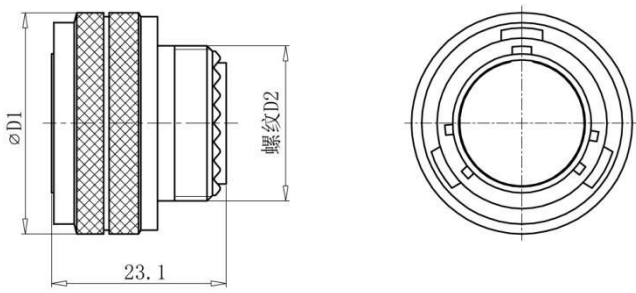
Plug key position



Key position	08	10	12	14	16	18	20	22	24
N	100°	100°	100°	100°	100°	100°	100°	100°	100°
A	82°	86°	80°	79°	82°	82°	82°	85°	85°
B	/	72°	68°	66°	70°	70°	70°	74°	74°
C	/	128°	132°	134°	130°	130°	130°	126°	126°
D	118°	114°	120°	121°	118°	118°	118°	115°	115°

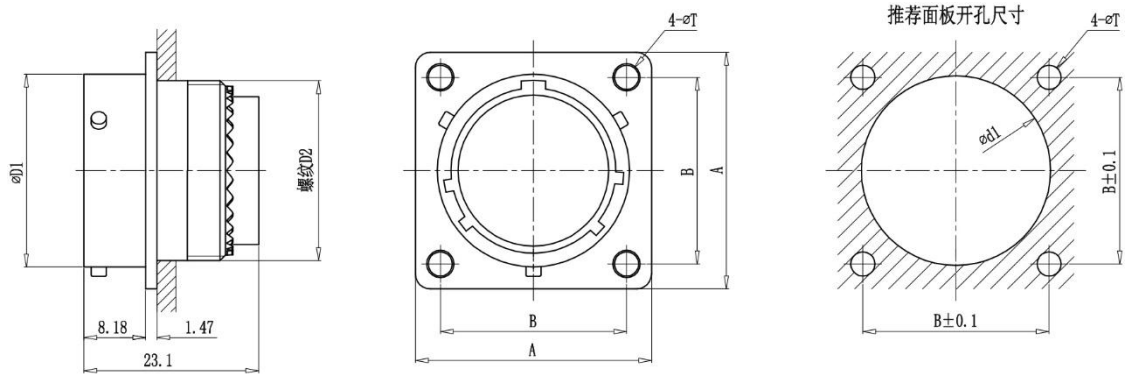
Dimension

MS27473/ MS27484 plug

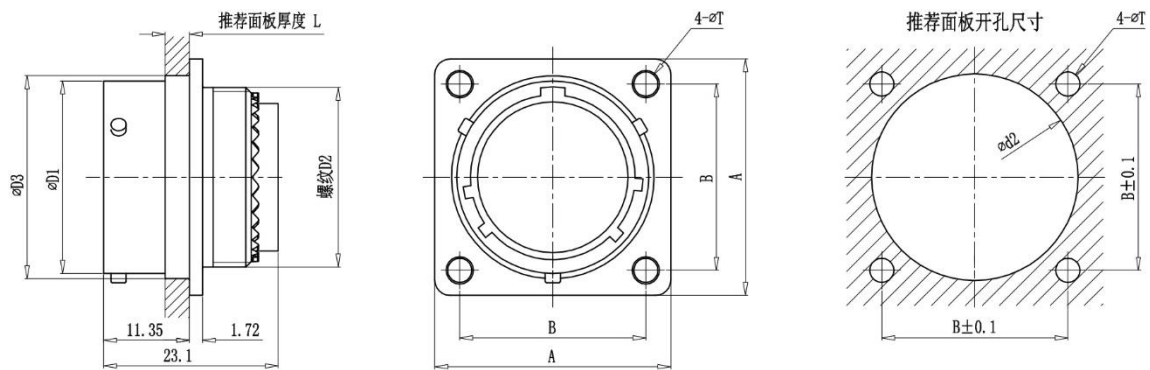
	Shell size	D1	Thread D2 UNEF-2A
	08	18.8	0.4375-28
	10	21.5	0.5625-24
	12	25.8	0.6875-24
	14	29.2	0.8125-20
	16	32.3	0.9375-20
	18	35.4	1.0625-18
	20	38.5	1.1875-18
	22	41.7	1.3125-18
	24	44.7	1.4375-18

MS27472 & MS27497 Wall mount square flange receptacle

27472-Wall Mount Square Flange Receptacle (Front Panel Mounted)



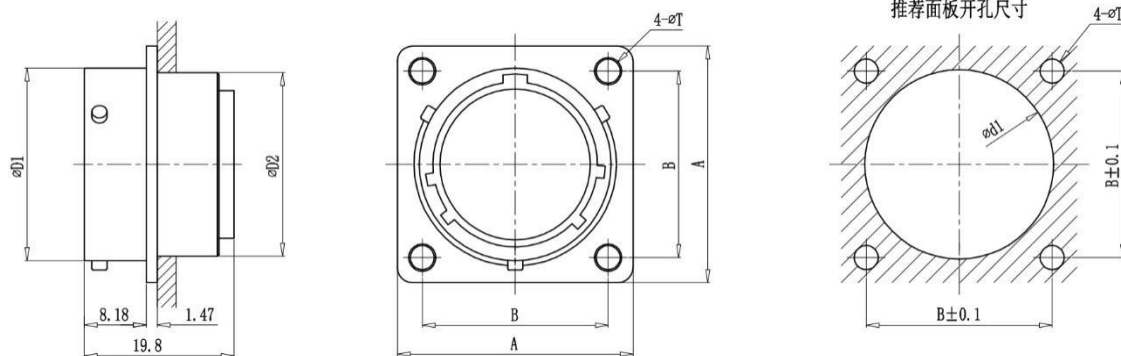
27497-Wall Mount Square Flange Receptacle (Back Panel Mounted)



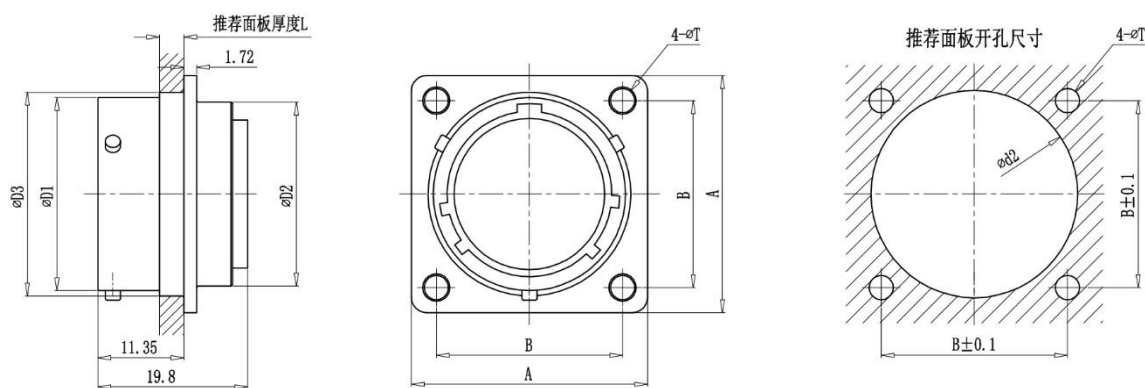
Shell size	D1	Thread D2 UNEF-2A	D3	L max	A	B	T	d1	d2
08	12.00	0.4375-28	13.20	2.0	21.00	15.09	3.2	12.5	14.2
10	15.00	0.5625-24	16.14	2.0	24.10	18.26	3.2	15.5	17.5
12	19.05	0.6875-24	20.50	2.0	26.50	20.62	3.2	19.5	21.3
14	22.23	0.8125-20	23.60	2.0	28.90	23.01	3.2	21.5	25.0
16	25.40	0.9375-20	26.80	2.0	31.21	24.61	3.2	25.0	27.3
18	28.58	1.0625-18	30.00	2.0	33.60	26.97	3.2	28.0	31.3
20	31.75	1.1875-18	33.20	2.5	36.80	29.36	3.2	31.5	34.5
22	34.93	1.3125-18	36.35	2.5	40.00	31.75	3.2	34.5	37.5
24	38.10	1.4375-18	39.50	2.5	43.10	34.93	3.9	37.5	40.6

MS27513 & MS27508 Box mount square flange receptacle

MS27513 Box Mount Square Flange Receptacle (Front Panel Mounted)

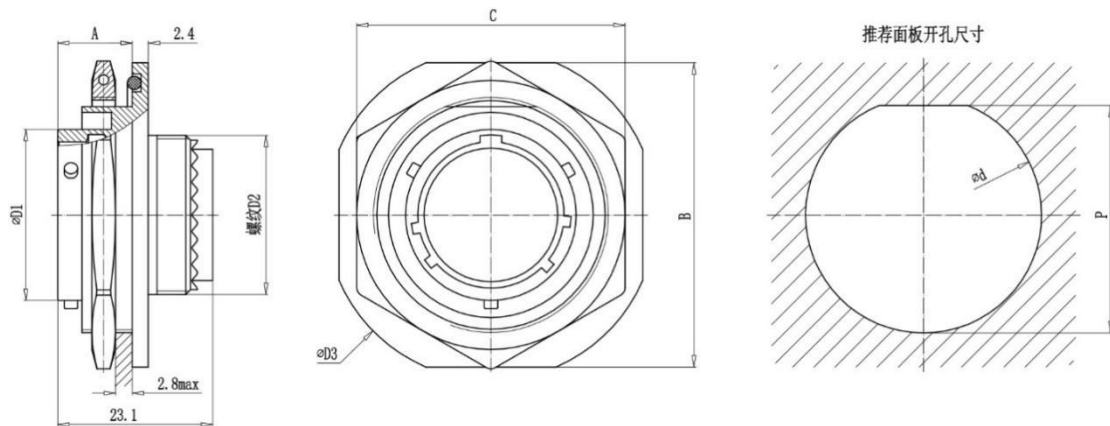


MS27508 Box Mount Square Flange Receptacle (Back Panel Mounted)



Shell number	D1	D2	D3	L max	A	B	T	d ₁	d ₂
08	12.00	11.51	13.20	2.0	21.00	15.09	3.2	12.5	14.2
10	15.00	14.68	16.14	2.0	24.10	18.26	3.2	15.5	17.5
12	19.05	17.86	20.50	2.0	26.50	20.62	3.2	19.5	21.3
14	22.23	21.03	23.60	2.0	28.90	23.01	3.2	21.5	25.0
16	25.40	24.21	26.80	2.0	31.21	24.61	3.2	25.0	27.3
18	28.58	26.97	30.00	2.0	33.60	26.97	3.2	28.0	31.3
20	31.75	30.18	33.20	2.5	36.80	29.36	3.2	31.5	34.5
22	34.93	33.32	36.35	2.5	40.00	31.75	3.2	34.5	37.5
24	38.10	36.53	39.50	2.5	43.10	34.93	3.9	37.5	40.6

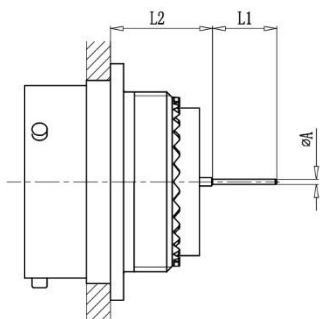
MS27474 Jam Nut receptacle



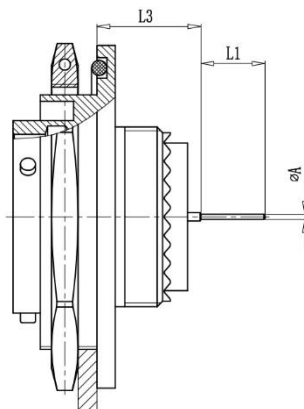
Shell number	D1	Thread D2 UNEF-2A	D3	B	A	C	d	P
08	12.00	0.4375 -28	34.95	31.75	11.1	27.9	22.46	21.08
10	15.00	0.5625 -24	38.10	34.95	11.1	30.5	25.58	24.26
12	19.05	0.6875 -24	41.28	38.10	11.1	33.6	28.80	27.53
14	22.23	0.8125 -20	44.45	41.28	11.1	36.8	32.01	30.73
16	25.40	0.9375 -20	49.23	45.24	11.1	40.0	35.15	33.86
18	28.58	1.0625 -18	51.21	48.00	11.1	43.2	38.28	37.06
20	31.75	1.1875 -18	54.38	51.21	11.8	46.3	41.50	40.03
22	34.93	1.3125 -18	57.53	54.36	11.8	51.0	44.68	43.21
24	38.10	1.4375 -18	60.71	57.53	11.8	54.4	47.85	46.38

D38999 II series receptacle with PCB contacts

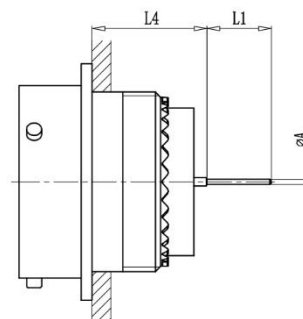
MS27497 receptacle



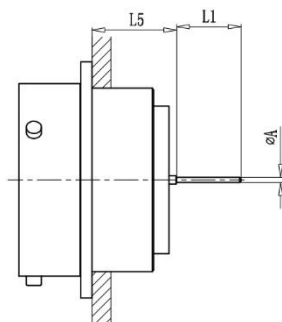
MS27474 receptacle



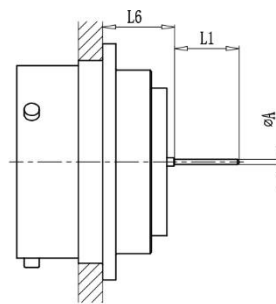
MS27472 receptacle



MS27513receptacle



MS 27508 receptacle

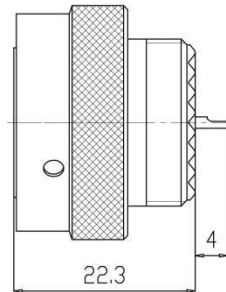


PCB contact size		L1	A
22D	Long PCB tail contact	8.5	0.7
	Short PCB tail contact	4.0	
20#	Long PCB tail contact	8.5	0.7
	Short PCB tail contact	5.1	
16#	Long PCB tail contact	8.5	1.15
	Short PCB tail contact	5.1	

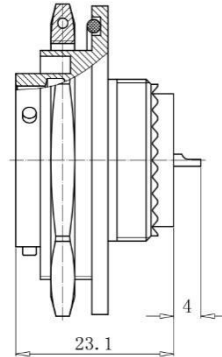
Different specification contact		Shell size	Shell size
		08 10 12 14 16 18	20 22 24
L2	16# , 20#or 22D Pin and socket	13.40~13.60	13.40~13.60
L3	16# or 20#or 22D Pin and socket	13.65~13.85	12.95~13.15
L4	16#or 20#or22D Pin and socket	15.10~15.30	15.10~15.30
L5	16# or 20#or 22D Pin and socket	11.10~11.30	11.10~11.30
L6	16# or 20#or 22D Pin and socket	9.40~9.60	9.40~9.60

D38999 II series solder product dimension

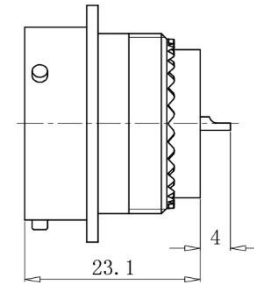
MS27473 Plug



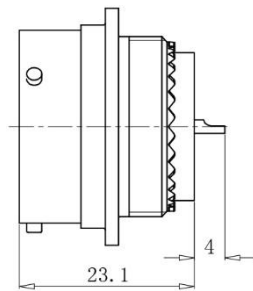
MS27474 Receptacle



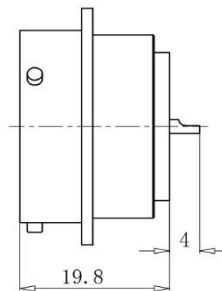
MS27472 Receptacle



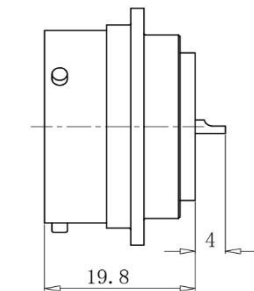
MS27497 Receptacle



MS27513 Receptacle



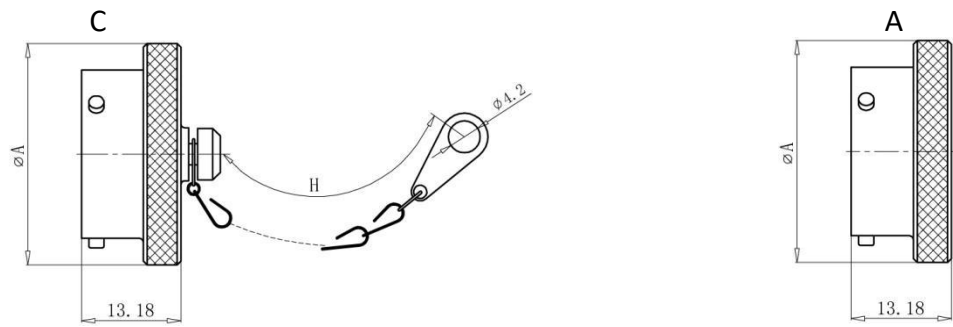
MS27508 Receptacle



Plug and receptacle caps

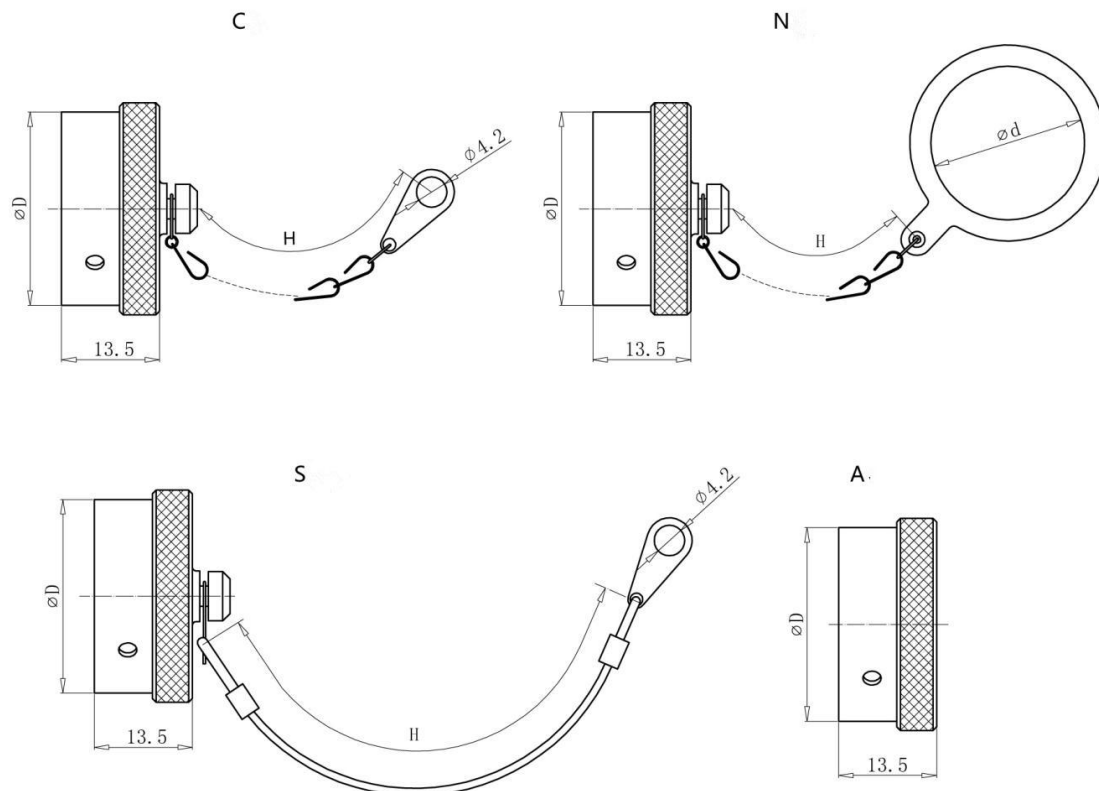
Basic series	MS	27510	F	11	C	L
Cap style:						
27510-Plug cap						
27511-Receptacle cap						
Finsh:						
B:Olive green cadmium						
F:Nickel						
S:Stainless steel						
Shell size: 08-10-12-14-16-18-20-22-24						
Accessories:						
A-without rope N-With stainless steel rope and ring						
C, S-With stainless steel rope and eyelet						
R-With nylon rope and eyelet E-With nylon rope and ring						
Rope length:						
With specification-standard length						
L-rope length of 127mm						

MS27510 plug cap dimension



Shell size	08	10	12	14	16	18	20	22	24
A max	18.2	21.5	25.4	28.7	31.7	35	38.1	41.4	44.4
H max	76.2	76.2	88.9	88.9	88.9	88.9	101.6	101.6	101.6

MS27511 receptacle cap dimension



Shell size	08	10	12	14	16	18	20	22	24
D max	16.0	19.0	23.5	26.7	29.8	33.1	36.5	39.5	42.9
d min	22.8	26.0	29.0	32.5	35.5	38.6	42.0	45.0	48.5
H max	76.2	76.2	88.9	88.9	88.9	88.9	101.6	101.6	101.6