

MIL-DTL-38999 I Series Electrical Connector

Brief Introduction

- Meet the US military standard: MIL-DTL-38999K
- Quick bayonet coupling, locking and releasing quickly
- Small size, light weight and high density
- EMI/RFI shielding
- Withstand strong vibration
- Removable crimp contact with scoop-proof design
- 5 key leading structure to avoid mismating
- Various receptacle mounting: Box mounting, wall-through mounting, front mounting, rear mounting and jam nut mounting



Technical Performance

Mechanical characteristic

Shell	Aluminum alloy/stainless steel
Plating	B class: olive green cadmium plating E class: stainless steel passive F class: electroless nickel plating
Insulator	Thermoset plastic
Grommet and seal	Silicon rubber
Contact	Gold-plated copper alloy, crimping, soldering, PCB
Vibration	Sinusoid vibration: frequency 10-2000Hz, acceleration: 294m/s ² Random vibration: frequency 100-1000Hz, power spectral density: 1g ² /Hz
Shock	At 3 ms half sinusoid, peak value of acceleration: 300g
Endurance	500 cycles

Environmental characteristic

Operating temperature	-65°C ~ +175°C (B class)
	-65°C ~ +200°C (E, F class)
Salt spray	B class 500h, E class 1000h, F class 48h
Relative humidity	98% at 40°C
Operating height	≤ 30480m
Fluid immersion	Hydraulic oil, Lubricating oil, Freezing liquid and other solvents

Electrical characteristics

EMI shielding	100MHz~1GHz:minimum attenuation 85dB 1GHz~10GHz:minimum attenuation 50dB
Insulation resistance	Normal \geq 5000M Ω Damp heat \geq 100M Ω
Electrical continuity between shells	B class \leq 2.5m Ω ;F class \leq 1.0m Ω ;E class \leq 50m Ω

Contact resistance and rating current

Contact size	Operating dia.(mm)	Contact resistance(m Ω)	Rating current(A)
22D	Φ 0.76	\leq 12	5
20#	Φ 1.00	\leq 5	7.5
16#	Φ 1.60	\leq 2.5	13
12#	Φ 2.40	\leq 1.5	23
10#	Φ 3.15	\leq 1.0	40

Withstanding voltage: V

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

*Different contact layouts have different service rating. Please see the contact layouts table.

How To Order

MS 27466 T 13 F 8 P A

(1) (2) (3) (4) (5) (6) (7) (8)

1:MS—Series Prefix

2:type: 27466-wall mounting receptacle (front mounting)

27656-wall mounting receptacle (rear mounting)

27496-box mounting flange receptacle (front mounting)

27505-box mounting flange receptacle (rear mounting)

27468-jam nut receptacle

27467-straight plug

3:Service class:T- with thread for backshell

E- without thread for back shell

4:Shell size :09-11-13-15-17-19-21-23-25

5:Shell plating: B-olive green cadmium plate

E-stainless steel passive

F-electroless nickel plating

L&Y Electronics

Web:www.lyelectronics.com

Email:info@lyelectronics.com

6:Contact arrangement : see contact arrangements for details

7:Contact type :P-Normal crimp type pin

S-Normal crimp type socket

PH-solder type pin

SH-solder type socket

PC-short straight PCB termination pin

PL-long straight PCB termination pin

SC- short straight PCB termination socket

SL- long straight PCB termination socket

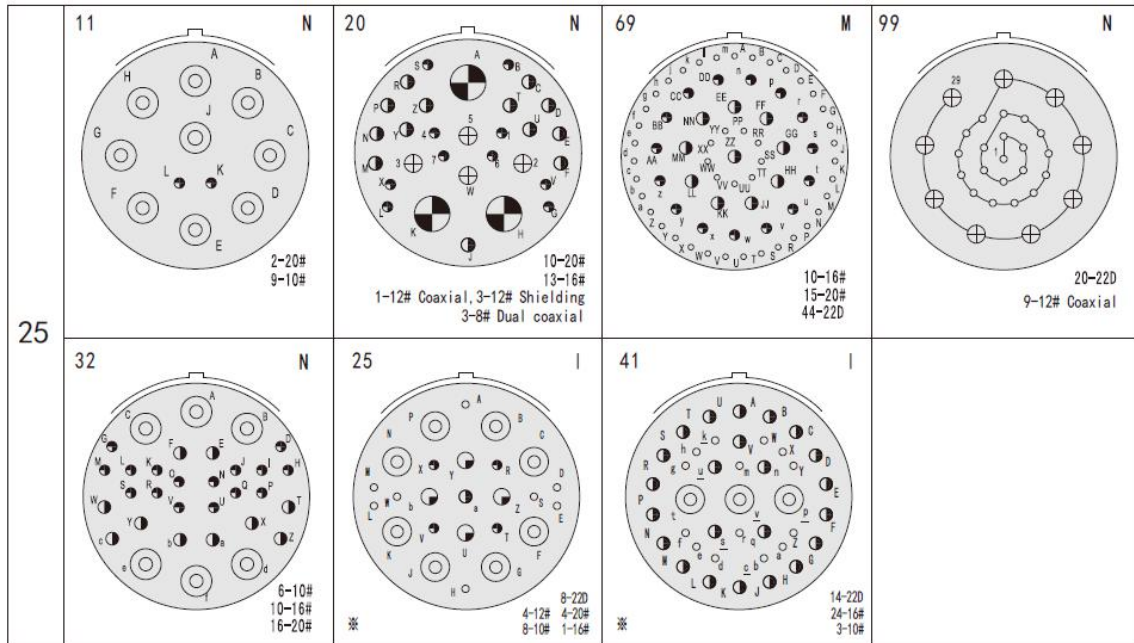
8:Key: N- normal key;A,B,C,D-Alternative

Note:When using PC,SC contacts,normal polarization must be mark.

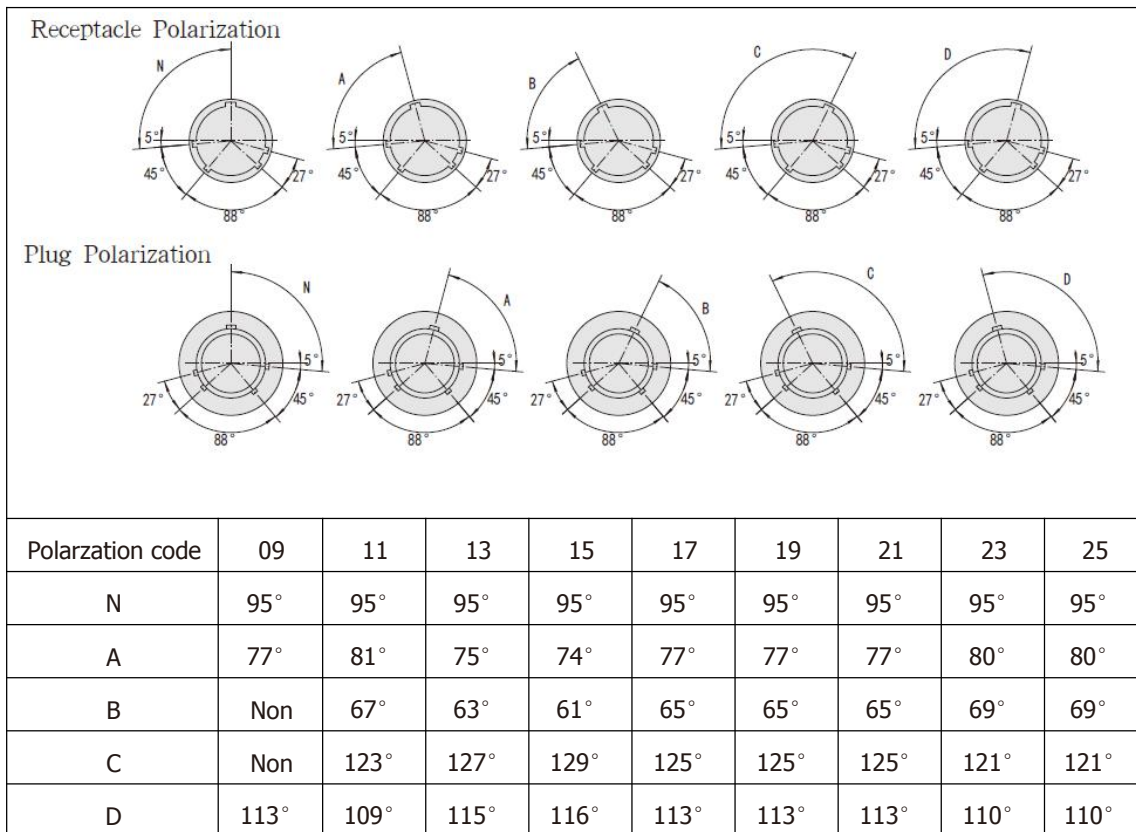
Contact Arrangement

Housing size 09	35 6-22D	98 3-20#	03 3-20#				
11	35 13-22D	98 6-20#	05 5-20#	04 4-20#	01 1-12#	99 7-20#	02 2-16#
13	35 22-22D	98 10-20#	08 8-20#	04 4-16#	03 3-16#	12 1-12# 11-22#	13 3-16# 10-22#
15	35 37-22D	19 19-20#	18 18-20#	05 5-16#	97 8-20# 4-16#	15 14-20# 1-16#	03 2-12# 1-16#
17	35 55-22D	26 26-20#	06 6-12#	08 8-16#	99 21-20# 2-16#		
	12 9-22D 3-12# Shielding	03 2-10# 1-16#	05 5-12#	21 17-22D 4-12#	30 3-10# 3-20#	42 42-22D	57 2-8# 1-16#
19	35 66-22D	32 32-20#	11 11-16#	28 26-20# 2-16#	30 29-20# 1-16#		
	45 67-22D	18 14-22D 4-8# Dual coaxial	96 9-12#	18a 4-8# 14-22D			

	<p>35 M</p> <p>79-22D</p>	<p>41 I</p> <p>41-20#</p>	<p>16 II</p> <p>16-16#</p>	<p>39 I</p> <p>37-20# 2-16#</p>	<p>11 II</p> <p>11-12#</p>
21	<p>27 I</p> <p>27-20#</p>	<p>25 I</p> <p>25-20#</p>	<p>24 I</p> <p>24-20#</p>	<p>15 I</p> <p>13-20# 2-8# Dual coaxial</p>	<p>02 M</p> <p>65-22D</p>
	<p>35 M</p> <p>100-22D#</p>	<p>55 I</p> <p>55-20#</p>	<p>53 I</p> <p>53-20#</p>	<p>36 I</p> <p>36-20#</p>	
23	<p>34 I</p> <p>34-20#</p>	<p>32 I</p> <p>32-20#</p>	<p>21 II</p> <p>21-16#</p>	<p>97 I</p> <p>16-16#</p>	
	<p>99 II</p> <p>11-16#</p>	<p>04 I</p> <p>4-8#</p>			
	<p>35 M</p> <p>128-22D</p>	<p>61 I</p> <p>61-20#</p>	<p>46 I</p> <p>40-20# 4-16# 2-8# Dual coaxial</p>	<p>29 I</p> <p>29-16#</p>	
25	<p>24 I</p> <p>12-16# 12-12#</p>	<p>43 I</p> <p>23-20# 20-16#</p>	<p>19 I</p> <p>19-12#</p>	<p>04 I</p> <p>48-20# 8-16#</p>	



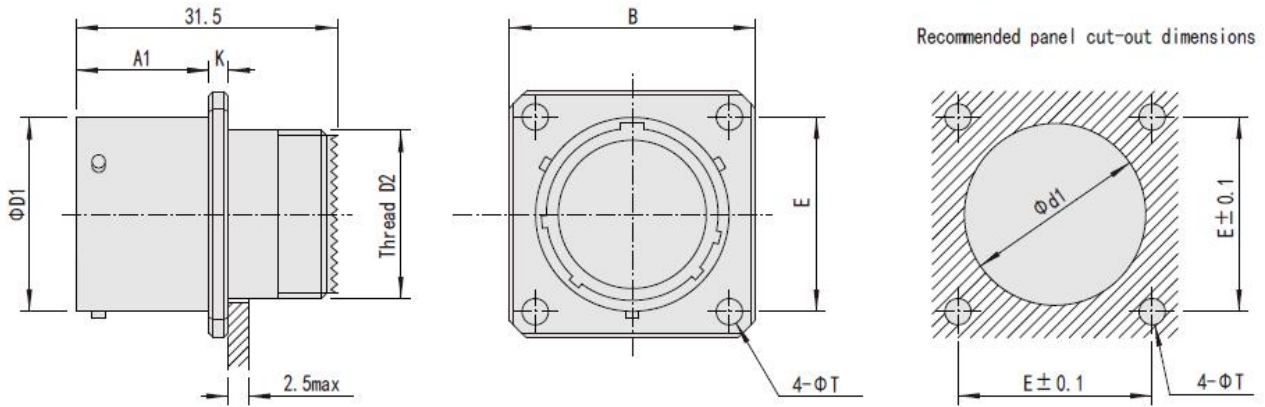
Polarization



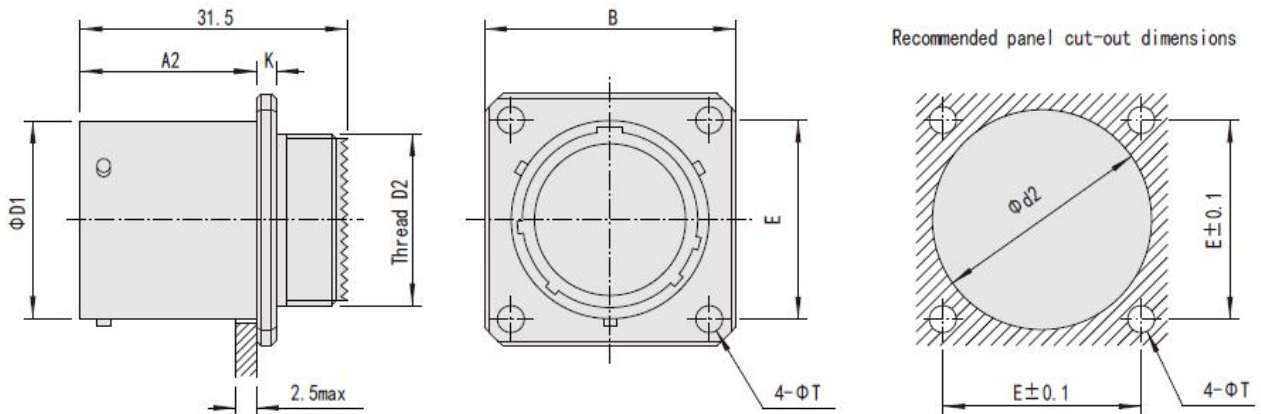
Outline Dimensions

Wall mounting receptacle MS27466&MS27656

MS27466

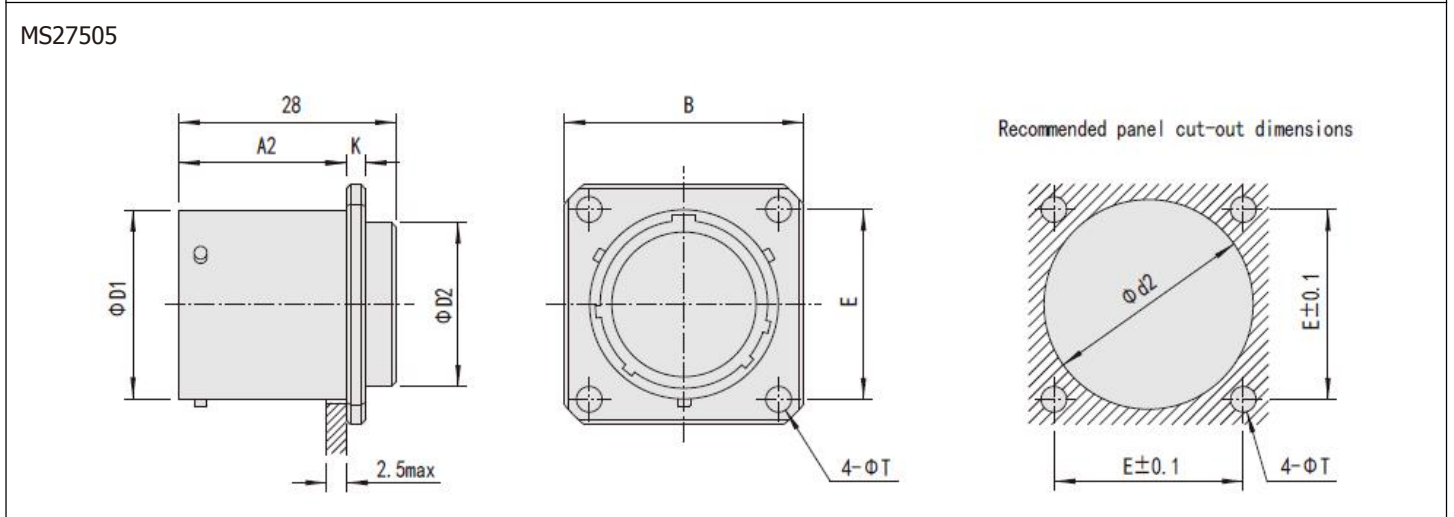
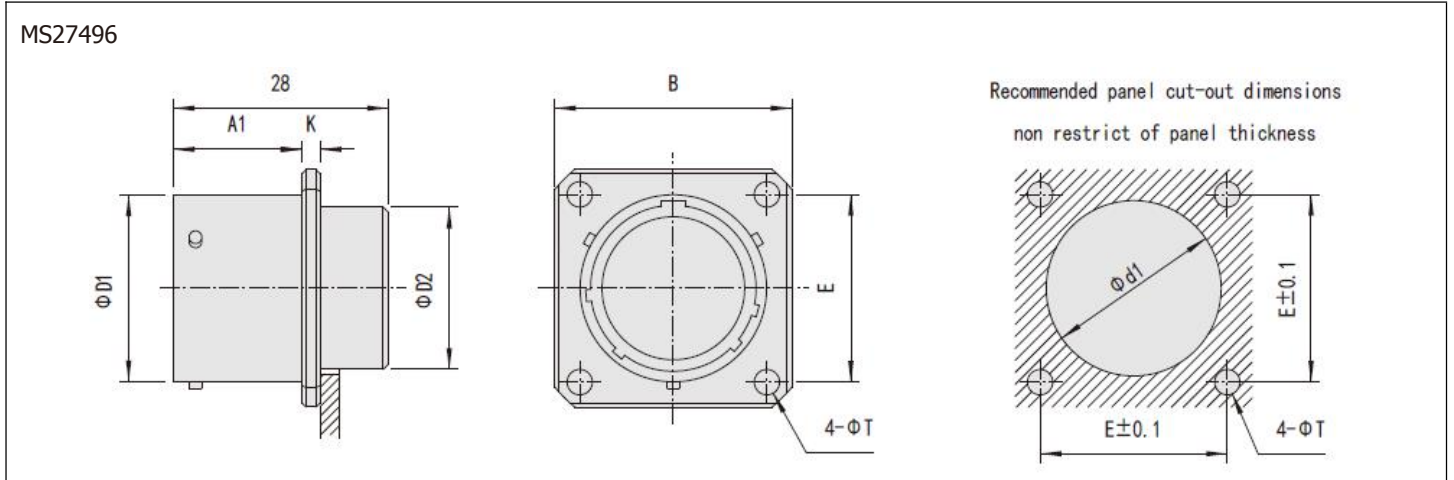


MS27656



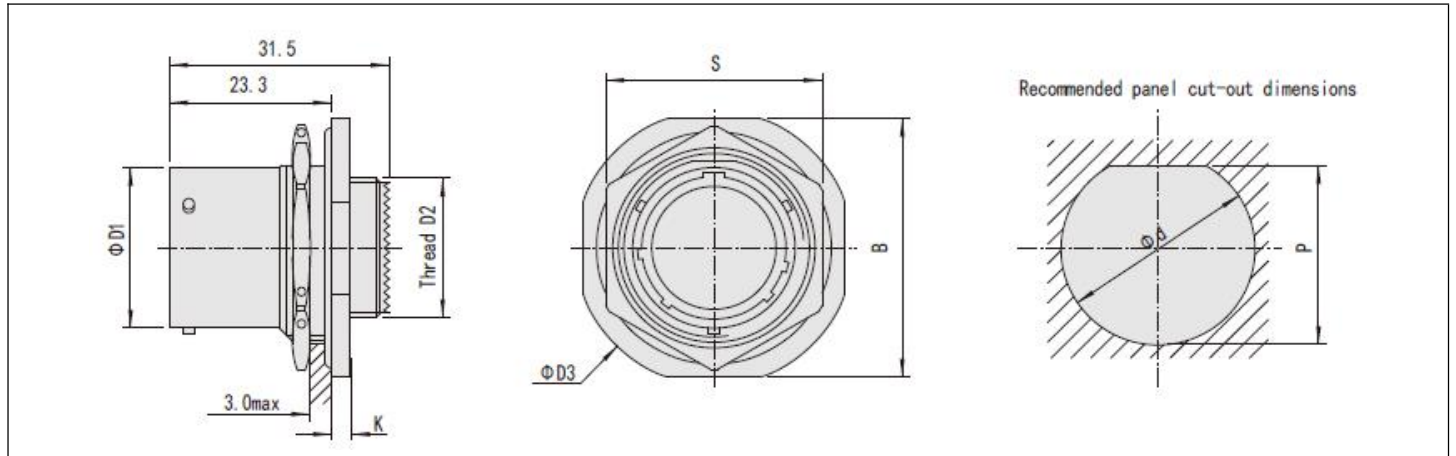
Shell size	D1	Thread D2 UNEF-2A	A1	A2	K	B	E	T	d 1	d 2
09	14.6	0.4375-28	16.1	20.9	2.4	23.8	18.26	3.2	12.5	16.7
11	17.8	0.5625-24	16.1	20.9	2.4	26.2	20.62	3.2	15.5	20.2
13	21.6	0.6875-24	16.1	20.9	2.4	28.6	23.02	3.2	19.5	24.5
15	24.8	0.8125-20	16.1	20.9	2.4	31.0	24.62	3.2	21.5	27.7
17	28.0	0.9375-20	16.1	20.9	2.4	33.3	26.98	3.2	25.0	30.9
19	30.7	1.0625-18	16.1	20.9	2.4	36.5	29.36	3.2	28.0	32.9
21	33.8	1.1875-18	15.3	20.1	3.1	39.7	31.76	3.2	31.5	36.2
23	37.0	1.3125-18	15.3	20.1	3.1	42.9	34.92	3.7	34.5	39.3
25	40.2	1.4375-18	15.3	20.1	3.1	46.0	38.10	3.7	37.5	42.5

Box mounting flange receptacle MS27496&MS27505



Shell size	D1	D2	A1	A2	K	B	E	T	d 1	d 2
09	14.6	11.2	16.1	20.9	2.4	23.8	18.26	3.2	12.5	16.7
11	17.8	14.5	16.1	20.9	2.4	26.2	20.62	3.2	15.5	20.2
13	21.6	18.0	16.1	20.9	2.4	28.6	23.02	3.2	19.5	24.5
15	24.8	20.5	16.1	20.9	2.4	31.0	24.62	3.2	21.5	27.7
17	28.0	23.8	16.1	20.9	2.4	33.3	26.98	3.2	25.0	30.9
19	30.7	26.5	16.1	20.9	2.4	36.5	29.36	3.2	28.0	32.9
21	33.8	29.7	15.3	20.1	3.1	39.7	31.76	3.2	31.5	36.2
23	37.0	32.8	15.3	20.1	3.1	42.9	34.92	3.7	34.5	39.3
25	40.2	36.0	15.3	20.1	3.1	46.0	38.10	3.7	37.5	42.5

Jam nut receptacle MS27468

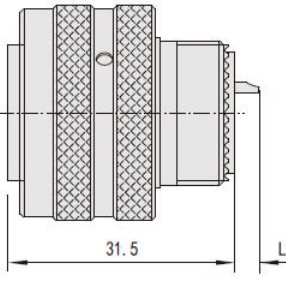
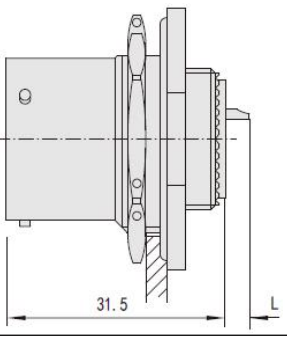
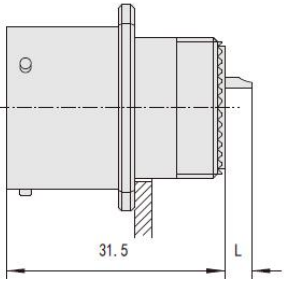
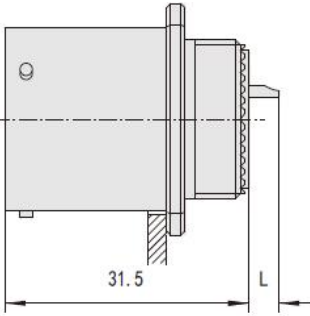
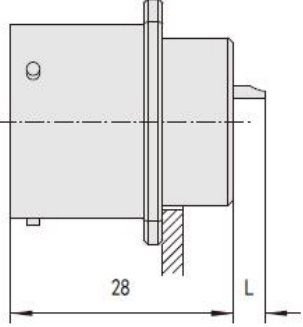
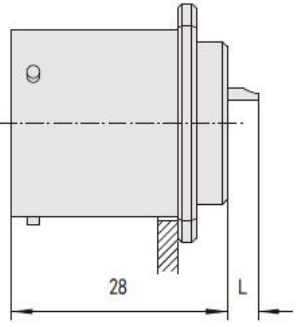


Shell size	D1	Thread D2 UNEF-2A	D3	K	B	S	d	P
09	14.6	0.4375-28	30.2	2.8	27.0	22.3	17.7	17.0
11	17.8	0.5625-24	35.0	2.8	31.8	25.5	21.0	19.6
13	21.6	0.6875-24	28.1	2.8	35.0	30.2	25.6	24.3
15	24.8	0.8125-20	41.3	2.8	38.1	33.4	28.8	27.6
17	28.0	0.9375-20	44.5	2.8	41.3	36.6	32.0	30.7
19	30.7	1.0625-18	49.3	3.6	46.0	39.7	35.2	33.9
21	33.8	1.1875-18	52.4	3.6	49.2	42.9	38.3	37.1
23	37.0	1.3125-18	55.6	3.6	52.4	46.1	41.5	40.0
25	40.2	1.4375-18	58.8	3.6	55.6	50.8	44.7	43.4

Plug MS27467

Shell Size	D1	Thread D2 UNEF-2A
09	21.7	0.4375-28
11	25.0	0.5625-24
13	28.2	0.6875-24
15	31.3	0.8125-20
17	34.4	0.9375-20
19	37.4	1.0625-18
21	40.5	1.1875-18
23	44.0	1.3125-18
25	46.8	1.4375-18

Soldering products outline dimension

<p>MS27467 plug</p> 		<p>MS27468 receptacle</p> 		<p>MS27466 receptacle</p> 	
<p>MS27656 receptacle</p> 		<p>MS27496 receptacle</p> 		<p>MS27505 receptacle</p> 	
Soldering contact size	L	Inner dia. Of soldering cup	AWG		
22D	4	φ0.9	22		
20#	4	Φ1.1	20		
16#	4	Φ1.9	16		
12#	4	Φ2.9	12		
10#	6	Φ3.6	10		
8#	6	Φ4.8	8		

Standard Rear Accessories(MIL-C-85049)

How To Order

M85049/ 27 14 N

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

(1)Basic series:M85049

(2)Type:27-A type back nut

49-B type straight cable clamp

47-C type elbow cable clamp

62-D type screen-termination accessory(part number plus“T”)

62-heatshrink boot accessory

(3)Shell size:08,10,12,14,16,18,20,22,24

(4)Shell plating:W-olive green cadmium plating

N-electroless nickel plating

S-stainless steel passive

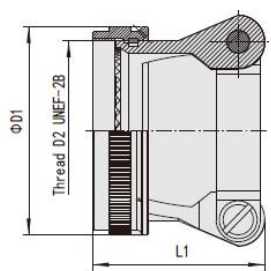
Outline Dimensions

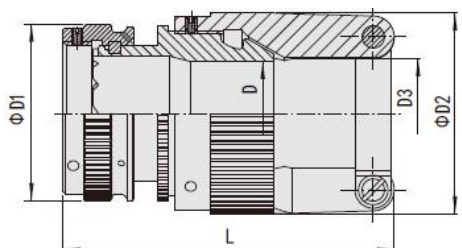
		M85049/27	M85049/49		M85049/47			M85049/62		
		Back nut	Straight cable clamp		Elbow cable clamp			Backshell for shielding termination		
Shell Size		08	10	12	14	16	18	20	22	24
D1	max	15.6	18.6	21.8	25.0	28.2	31.0	34.2	37.3	40.5
D2	max	7.9	10.8	13.6	16.9	20.1	22.4	25.6	28.8	31.9
D3	min	2.49	3.87	4.83	6.6	7.19	8.26	8.71	9.68	10.62
	max	5.94	5.94	8.33	11.61	15.6	16.1	17.73	20.9	21.66
D4	min	3.2	4.0	4.8	5.5	6.4	7.9	9.5	10.3	14.3
	max	6.4	9.5	11.1	14.3	15.9	19.1	22.2	23.8	25.4

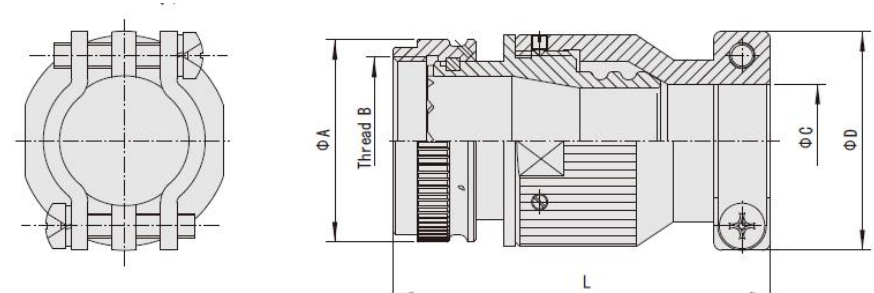
D5	max	7.0	9.7	12.8	14.9	18.0	20.0	23.2	26.3	28.9
D6	max	17.0	19.9	23.1	26.3	29.5	32.5	35.7	38.9	42.0
D7	max	16.9	19.9	23.1	26.3	29.5	32.3	35.5	38.6	41.8
F	max	20.0	20.0	23.4	26.6	30.6	34.0	35.8	39.0	40.6
L1	max	23.4	23.4	23.4	27.8	27.8	27.8	27.8	29.9	29.9
L2	max	29.0	32.0	33.5	36.5	38.5	41.5	44.5	46.0	48.0
L3	max	25.0	26.0	27.5	31.0	32.5	34.0	34.5	36.5	43.5
L4	max	31.2	31.2	31.2	33.2	33.2	33.2	36.2	36.2	36.2

<p>M85049/62-backshell for heat shrink sleeve</p>	Part No.	D1	D2	D3
	M85049/62-08N	16.9	7.9	11.6
	M85049/62-10N	19.9	10.9	14.7
	M85049/62-12N	23.1	13.7	17.6
	M85049/62-14N	26.3	16.9	21.2
	M85049/62-16N	29.5	20.1	24.4
	M85049/62-18N	32.3	22.5	26.4
	M85049/62-20N	35.5	25.4	30.9
	M85049/62-22N	38.6	28.5	33.8
	M85049/62-24N	41.8	31.6	36.9

<p>M85049/49H-soldering straight cable clamp</p>	Part No.	A max	C	L max	D
	M85049/49H-08N	18.0	20.0	26.4	2.49~5.94
	M85049/49H-10N	22.0	21.0	27.9	3.87~5.94
	M85049/49H-12N	25.1	23.4	29.4	4.83~8.33
	M85049/49H-14N	29.0	26.6	30.9	6.6~11.61
	M85049/49H-16N	32.1	30.6	33.1	7.19~15.6
	M85049/49H-18N	35.1	34.0	36.2	8.26~16.1
	M85049/49H-20N	38.1	35.8	39.4	8.71~17.73
	M85049/49H-22N	41.1	39.0	42.5	9.68~20.9
	M85049/49H-24N	44.1	40.6	44.6	10.62~21.66

<p>M85049/49-X X N(short)</p> 	Part No.	D1	Thread D2	L1	Lead-out dia.
	M85049/49-10N(short)	19.5	0.5625-24	20.8	5.1~10
	M85049/49-12N(short)	22.6	0.6875-24	19	6.7~12.9
	M85049/49-14N(short)	25.8	0.8125-20	25.2	8.4~16
	M85049/49-16N(short)	29	0.9375-20	25.3	9.2~18.5
	M85049/49-18N(short)	32.2	1.0625-18	26.7	10~21.5
	M85049/49-20N(short)	35.3	1.1875-18	26.8	11.2~24.75
	M85049/49-22N(short)	38.5	1.3125-18	32	11.6~22.6

<p>M85049/62-NB shielding straight cable clamping backshell</p> 	Part No.	D	D1	D2	D3	L
	M85049/62-08NB	6.5	16.3	19.4	6.8	39.0
	M85049/62-10NB	9.7	19.5	22.5	9.2	39.0
	M85049/62-12NB	12.8	22.6	25.7	12.6	39.0
	M85049/62-14NB	14.9	25.8	28.9	16	45.0
	M85049/62-16NB	18	29.0	32.1	17.5	45.0
	M85049/62-18NB	20	32.2	35.3	21.5	46.5
	M85049/62-20NB	23.2	35.3	38.4	24.8	51.3
	M85049/62-22NB	26.3	38.5	41.6	22.6	56.6
	M85049/62-24NB	28.9	41.7	44.8	23.1	57.3

<p>M85049/62-X X NC- X X</p> <p>Shielding clamping cable accessory</p> 					
Part No.	A	Thread B UNEF	C	D	L
M85049/62-08NC-08	16.3	0.4375-28	8	20	39.7
M85049/62-10NC-08	19.5	0.5625-24	8	20	39.7

M85049/62-10NC-10			10	20	40.7
M85049/62-12NC-10	22.6	0.6875-24	10	20	40.7
M85049/62-12NC-12			12	25	47.4
M85049/62-14NC-12	25.8	0.8125-20	12	25	47.4
M85049/62-14NC-14			14	27	47.4
M85049/62-14NC-16			16	27	47.4
M85049/62-16NC-16	29	0.9375-20	16	27	47.4
M85049/62-16NC-19			19	32	47.4
M85049/62-18NC-19	32.2	1.0625-18	19	32	47.4
M85049/62-18NC-22			22	33	47.4
M85049/62-20NC-22	35.3	1.1875-18	22	33	47.4
M85049/62-20NC-25			25	36.5	47.4
M85049/62-22NC-25	38.5	1.3125-18	25	36.5	47.4
M85049/62-22NC-28			28	40	47.4
M85049/62-24NC-28	41.7	1.4375-18	28	40	47.4
M85049/62-24NC-31			31	44	47.4

Protective caps for plug and receptacle

MS 27501 F 11 C L

(1) (2) (3) (4) (5) (6)

(1)Basic series:MS

(2)Type:MS27501-protective cap for plug

MS27502-protective cap for receptacle

(3) Shell plating:B-olive green cadmium plating

F-electroless nickel plating

(4) Shell size:09,11,13,15,17,19,21,23,25

(5)Fixing type:A-without chain

N-stainless steel chain with ring

S-stainless steel string with connecting lug

C-stainless steel chain with connecting lug

R-nylon cord with connecting plate

L&Y Electronics

Web:www.lyelectronics.com

Email:info@lyelectronics.com

E-nylon cord with ring

(6)Length:no mark-standard length

L-127mm of chain length

M-152.4mm of chain length(MS27501)

N-177.8mm of chain length(MS27501)

Outline Dimensions

