



Specifications

Operating Temperature Range

-65 ° to + 200 (85 to + 392 °)

Durability

Minimum of 500 mating cycles.

Shock and Vibration Requirements

When tested as follows, the connector shall sustain no physical damage or electrical discontinuity exceeding one microsecond.

Standard Shock :

Pulse of an approximate half sine wave of 300g magnitude with duration of 3miliseconds applied in three axes.

Random Vibration

(without simulated accessory load) : 41.7 G RMS for 8 hours in two axes, totaling 16 hours at ambient temperature.

High Impact Shock : MIL-C-38999 I, II

When mounted as specified in MIL-S-901, Grade A, a drop of a 400 lb, Hammer from 1 foot, 3 feet and 5 feet applied to connector in three axes, totaling nine impacts.

Voltage Rating

	Altitude		Service Rating	
	ft.	m	M	
Sea Levels	-		1,300	2,300
50,000	15,240		800	1,000
70,000	21,336		800	1,000
100,000	30,480		800	1,000

Contact Current Rating and Retection

Contact Size	Current Rating	Contact Retention	
	DC Test Amperage	lb	N
22D	5.0	10	44.5
20	7.5	15	66.7
16	13.0	25	111.2
12	23.0	25	111.2

Materials and Finishes

	Receptacle	Grounded Plug
Shell	Aluminium alloy	Aluminium alloy
Insulator	High grade plastic	High grade plastic
Contacts	Copper alloy, gold plate	Copper alloy, gold plate
Grommet and Seal	Silicone base elastomer	Silicone base elastomer
Jam Nut	Aluminium alloy	-
Grounding Spring	-	Beryllium copper

Vibration :

· Sine

Frequency range of 10 to 2,000 Hz, in 20 minute sweeps, in 3 axes with the following variations :

- Duration : 12hours total, 4 hour cycles.

- Level : Displacement of 0.6 inch [1.5mm](10~100Hz) and acceleration of 30 G 's peak(100~2,000Hz) at ambient room temperature.

· Random

- (without simulated accessory load) : 49.5G RMS for 8 hours in two axes, totaling 16 hours at ambient temperature.

R. F. I & E. M. I

R. F. I & E. M. I attenuation at the specified frequency meet the requirements of MIL-C-38999.

R. F. I shielding effectiveness of mated connectors with

R. F. I backshells is measured in a triaxial radio frequency leakage fixture.

E. M. I shielding effectiveness is measured at the interface of mated connectors and tested by the MODE STIR procedure specified in method 3008 of MIL-STD-1344

- Corrosion-resistant shells of aluminium alloy with cadmium over nickel plating withstand a 500 hours salt spray exposure
- Rear release crimp snap-in contacts
- High contact density
- Standard MIL-C-39029 contacts, MIL-I-81969 application tools and MIL-STD-1560 insert density
- Special/custom capabilities
- 100% scoop-proof-Series and
- Lightweight/Low Profile - Series
- Operates under severe high temperature vibration testing through 200 engineered for high density circuitry - Series
- Interfacial seal helps prevent electrolytic erosion of contacts - Series
- Superior EMI shielding provides outstanding protection up to 65dB at 10GHz. - Series

Wire Stripping



Inch(mm)

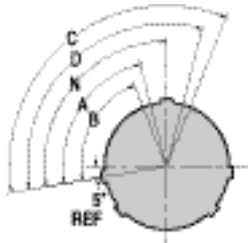
Wire Size	A
22D or 22M	.125(3.18)
20	.188(4.77)
16	.188(4.77)
12	.188(4.77)

MIL-C-38999 SERIES



Polarizing Positions

Series I

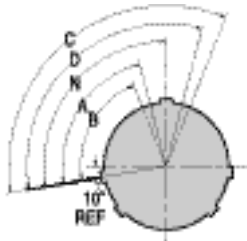


Front face receptacle (plug opposite). Insert arrangement does not rotate with master key-keyway. The master key is rotated to provide shell polarization; the minor keys remain fixed.

Angle of Rotation (Degrees)

Shell Size	Normal	A	B	C	D
9	95.	77.	-	-	113.
11	95.	81.	67.	123.	109.
13	95.	75.	63.	127.	115.
15	95.	74.	61.	129.	116.
17	95.	77.	65.	125.	113.
19	95.	77.	65.	125.	113.
21	95.	77.	65.	125.	113.
23	95.	80.	69.	121.	110.
25	95.	80.	69.	121.	110.

Series II



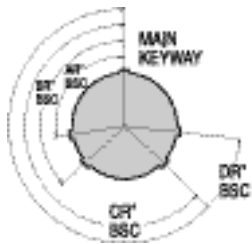
Front face receptacle (plug opposite). Insert arrangement does not rotate with master key-keyway. The master key is rotated to provide shell polarization; the minor keys remain fixed.

Angle of Rotation (Degrees)

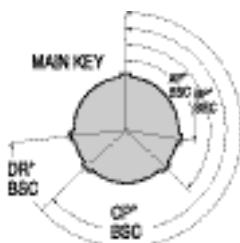
Shell Size	Normal	A	B	C	D
9	100.	82.	-	-	118.
11	100.	86.	72.	128.	114.
13	100.	80.	68.	132.	120.
15	100.	79.	66.	134.	121.
17	100.	82.	70.	130.	118.
19	100.	82.	70.	130.	118.
21	100.	82.	70.	130.	118.
23	100.	85.	74.	126.	115.
25	100.	85.	74.	126.	115.

Series III

RECEPTACLE
(Front face shown)



PLUG
(Front face shown)



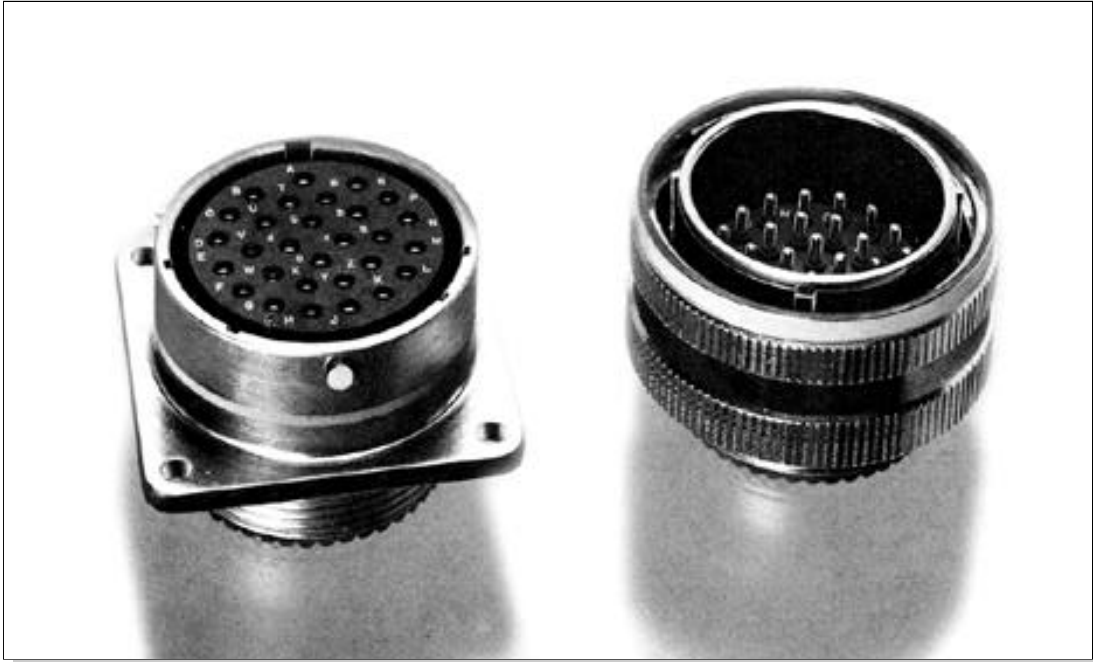
NOTES:

- All angles are BSC
- The insert arrangement does not rotate with main key/keyway
- All minor keys are rotated to provide shell polarization, the master key remains fixed at twelve o'clock position.
- Polarization is different from Series I and II

Shell Size	Key & Keyway Arrangement Identification Letter	Key Locations			
		AR. or AP. BSC	BR. or BP. BSC	CR. or CP. BSC	DR. or DP. BSC
9	N	105	140	215	265
	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
11 and 13 and 15	N	95	141	208	236
	A	113	156	182	292
	B	90	145	195	252
	C	53	156	220	255
	D	119	146	176	298
17 and 19	E	51	141	184	242
	N	80	142	196	293
	A	135	170	200	310
	B	49	169	200	244
	C	66	140	200	257
21 and 23 and 25	D	62	145	180	280
	E	79	153	197	272
	N	80	142	196	293
	A	135	170	200	310
23 and 25	B	49	169	200	244
	C	66	140	200	257
	D	62	145	180	280
25	E	79	153	197	272



MIL-C- 38999 Series I Connectors



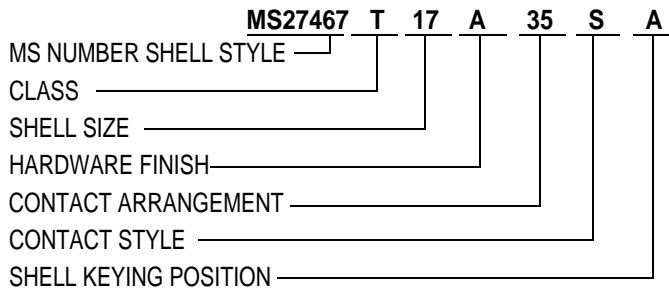
MIL-C-38999 Series I

Ordering Information And Specifications	- 4
MS 27466 (Wall Mounting Receptacle)	- 5
MS 27467 (EMI Grounding Plug)	- 5
MS 27468 (Jam Nut Receptacle)	- 6
MS 27496 (Box Mount Receptacle)	- 6
MS 27505 (Rear Box Mount Receptacle)	- 7
MS 27656 (Rear Wall Mount Receptacle)	- 7
Contacts, Sealing Plugs and Assembly Tools	- 8
MIL-C-38999 Series Hermetic Connectors	- 9

MIL-C-38999 SERIES I



Ordering Information And Specifications



MS Number Shell Style

- MS27466 - Wall Mounting Receptacle
- MS27468 - Jam Nut Receptacle
- MS27467 - Grounded plug
- MS27656 - Wall Mounting Receptacle (back panel mounting)
- MS27505 - Box Mounting Receptacle (back panel Class E)

Class

- E - Environment-resistant with accessory threads and teeth, except MS27505(without rear accessory) MS27466-Wall Mounting Receptacle
- P - Environment-resistant with straight potting cup accessories.
- T - Environment-resistant with accessory threads and teeth, except MS27505(without rear accessory) (Class T not applicable to MS27505)

Shell Size

A	B	C	D	E	F	G	H	J
9	11	13	15	17	19	21	23	25

Hardware Finish Standard

- A - Bright cadmium over electroless nickel plate, -85 to +302 (-65 to +150)
- B - Olive drab cadmium over electroless nickel plate, -85 to +347 (-65 to +175)
- F - Electroless nickel, -85 to +392 (-65 to +200)

Contacts Arrangement

MIL-C-38999 Series

Contacts Style

- P - Pin *A - Less Pin Contact
- S - Socket *B - Less Socket Contact

*Used only when other than power contacts are to be installed (i. e. shielded, thermocouple, etc.)

Shell Keying Position

A, B, C, D. (Not required for normal)

Note : To order MS connectors less standard power contacts, purchase order must state " Less Contacts. "

Operating Temperature Range

-65。 to +200 (85 to +392)

Durability

Minimum of 500 mating cycles.

Shock and Vibration Requirements

When tested as follows, the connector shall sustain no physical damage or electrical discontinuity exceeding one microsecond.

Standard Shock :

Pulse of an approximate half sine wave of 300g magnitude with duration of 3miliseconds applied in three axes.

Random Vibration

(without simulated accessory load) : 41.7 G RMS for 8 hours in two axes, totaling 16 hours at ambient temperature.

High Impact Shock : MIL-C-38999 I, II

When mounted as specified in MIL-S-901, Grade A, a drop of a 400 lb, Hammer from 1 foot, 3 feet and 5 feet applied to connector in three axes, totaling nine impacts.

Vibration :

· Sine

Frequency range of 10 to 2000 Hz, in 20 minute sweeps, in 3 axes with the following variations :

- Duration : 12hours total, 4 hour cycles.

- Level : Displacement of 0.6 inch [1.5mm](10~100Hz) and acceleration of 30 G s peak(100~2000Hz) at ambient room temperature.

· Random

- (without simulated accessory load) : 49.5G RMS for 8 hours in two axes, totaling 16 hours at ambient temperature.

R. F. I & E. M. I

R. F. I & E. M. I attenuation at the specified frequency meet the requirements of MIL-C-38999.

R. F. I shielding effectiveness of mated connectors with

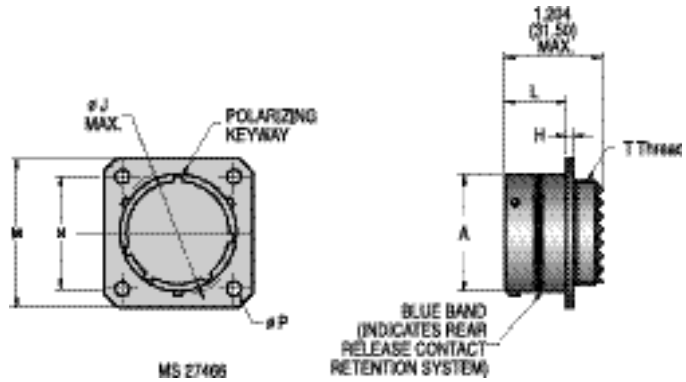
R. F. I backshells are measured in a triaxial radio frequency leakage fixture.

E. M. I shielding effectiveness is measured at the interface of mated connectors and tested by the MODE STIR procedure specified in method 3008 of MIL-STD-1344

MIL-C-38999 SERIES I



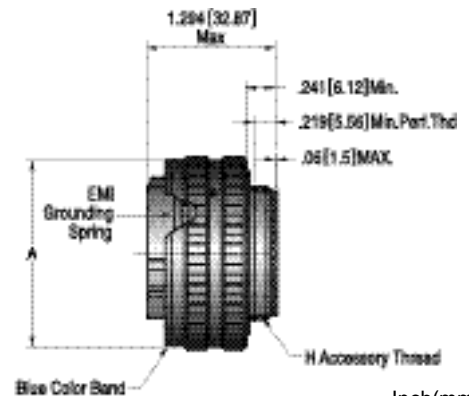
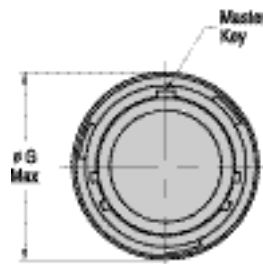
MS27466 Wall Mount Receptacle



Inch(mm)

Shell Size	A Dia. Max.	H Max.	J Dia Max.	L Max.	M Max.	N T.P.	P Dia. Max.	T Thread
9	.573(14.55)	.100(2.54)	.662(16.81)	.632(16.05)	.958(24.33)	.719(18.26)	.138(3.51)	7/16-28UNEF-2A
11	.701(17.81)	.100(2.54)	.810(20.57)	.632(16.05)	1.051(26.70)	.812(20.62)	.138(3.51)	9/16-24UNEF-2A
13	.851(21.62)	.100(2.54)	.960(24.38)	.632(16.05)	1.145(29.08)	.906(23.01)	.138(3.51)	11/16-24UNEF-2A
15	.976(24.79)	.100(2.54)	1.085(27.56)	.632(16.05)	1.239(31.47)	.969(24.61)	.138(3.51)	13/16-20UNEF-2A
17	1.101(27.97)	.100(2.54)	1.210(30.73)	.632(16.05)	1.332(33.83)	1.062(26.97)	.138(3.51)	15/16-20UNEF-2A
19	1.208(30.68)	.100(2.54)	1.317(33.45)	.632(16.05)	1.458(37.03)	1.156(29.36)	.138(3.51)	1-1/16-18UNEF-2A
21	1.333(33.86)	.130(3.30)	1.442(33.63)	.602(15.29)	1.582(40.18)	1.250(31.75)	.138(3.51)	1-3/16-18UNEF-2A
23	1.458(37.03)	.130(3.30)	1.567(39.80)	.602(15.29)	1.708(43.38)	1.375(34.93)	.157(3.99)	1-5/16-18UNEF-2A
25	1.583(40.21)	.130(3.30)	1.692(42.98)	.602(15.29)	1.832(46.53)	1.500(38.10)	.157(3.99)	1-7/16-18UNEF-2A

MS27467 EMI Grounding Plug



Inch(mm)

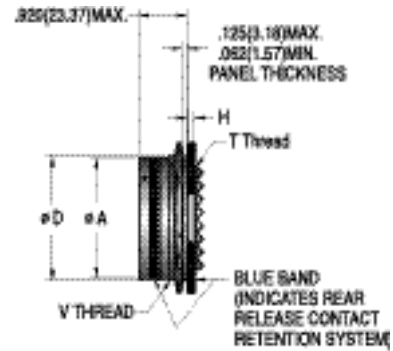
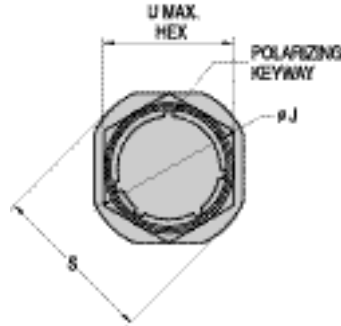
Shell Size	A Max.	G Max.	H Thread
9	.585(14.86)	.859(21.82)	7/16-28UNEF-2A
11	.717(18.21)	.984(24.99)	9/16-24UNEF-2A
13	.866(22.00)	1.156(29.36)	11/16-24UNEF-2A
15	.990(25.15)	1.281(32.54)	13/16-20UNEF-2A
17	1.115(28.32)	1.406(35.71)	15/16-20UNEF-2A
19	1.222(31.04)	1.516(38.51)	1-1/16-18UNEF-2A
21	1.347(34.21)	1.641(41.68)	1-3/16-18UNEF-2A
23	1.472(37.39)	1.766(44.86)	1-5/16-18UNEF-2A
25	1.597(40.56)	1.891(48.03)	1-7/16-18UNEF-2A

MIL-C-38999 Series I

MIL-C-38999 SERIES I



MS27468 Jam Nut Receptacle

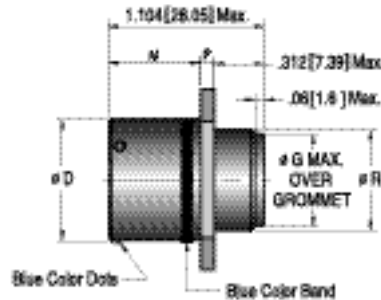
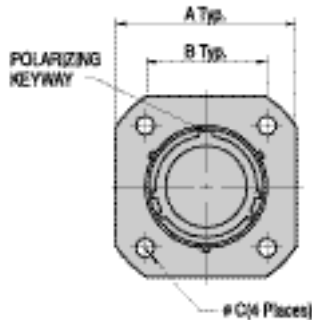


MS 27468

Inch(mm)

Shell Size	A Dia. Max.	D Max.	H Max.	J Dia. Max.	S Dia. Max.	T Thread	U Max. Hex.	V Thread Class 2A
9	.573(14.55)	.655(16.64)	.120(3.05)	.662(16.81)	1.204(30.58)	7/16-28UNEF-2A	.892(22.66)	11/16-24UNEF
11	.701(17.81)	.755(19.18)	.120(3.05)	.810(20.57)	1.391(35.33)	9/16-24UNEF-2A	1.017(25.83)	13/16-24UNEF
13	.851(21.62)	.942(23.93)	.120(3.05)	.960(24.38)	1.516(38.51)	11/16-24UNEF-2A	1.205(30.61)	1-20UNEF
15	.976(24.79)	1.066(27.08)	.120(3.05)	1.085(27.56)	1.641(41.68)	13/16-20UNEF-2A	1.329(33.76)	1-1/8-18UNEF
17	1.101(27.97)	1.191(30.25)	.120(3.05)	1.210(30.73)	1.766(44.86)	15/16-20UNEF-2A	1.455(36.96)	1-1/4-18UNEF
19	1.208(30.68)	1.316(33.43)	.151(3.84)	1.317(33.45)	1.954(49.63)	1-1/16-18UNEF-2A	1.579(40.11)	1-3/8-18UNEF
21	1.333(33.86)	1.441(36.60)	.151(3.84)	1.442(36.63)	2.078(52.78)	1-3/16-18UNEF-2A	1.705(43.1)	1-1/2-18UNEF
23	1.458(37.03)	1.566(39.78)	.151(3.84)	1.567(39.80)	2.204(55.98)	1-5/16-18UNEF-2A	1.829(46.46)	1-5/8-18UNEF
25	1.583(40.21)	1.691(42.95)	.151(3.84)	1.692(42.98)	2.328(59.13)	1-7/16-18UNEF-2A	2.017(51.23)	1-3/4-18UNS

MS27496 Box Mount Receptacle



MS27496

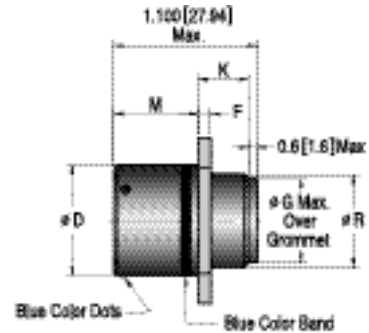
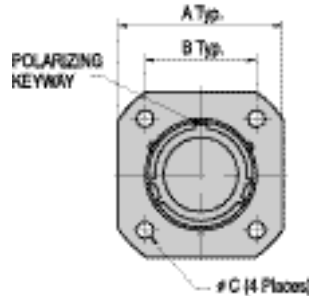
Inch(mm)

Shell Size	A ±.020 (±0.51)	B ±.004 (±0.10)	C +.010(+0.25) -0.005(-0.13)	D +.001(+0.03) -0.005(-0.13)	F +.015(+0.38) -0.000(-0.00)	G Max.	M +.000(+0.00) -0.005(-0.13)	R Max.
9	.938 23.83	.719 18.26	.128 3.25	.572 14.53	0.85 2.16	.299 7.60	.632 16.05	.469 11.92
11	1.031 26.19	.812 20.62	.128 3.25	.700 17.78	0.85 2.16	.427 10.85	.632 16.05	.594 15.09
13	1.125 28.58	.906 23.01	.128 3.25	.850 21.59	0.85 2.16	.541 13.75	.632 16.05	.719 18.27
15	1.129 30.96	.969 24.61	.128 3.25	.975 24.77	0.85 2.16	.666 16.92	.632 16.05	.844 21.44
17	1.312 33.32	1.062 26.97	.128 3.25	1.100 27.94	0.85 2.16	.791 20.10	.632 16.05	.969 24.62
19	1.438 36.53	1.156 29.36	.128 3.25	1.207 30.66	0.85 2.16	.897 22.79	.632 16.05	1.078 27.39
21	1.562 39.67	1.250 31.75	.128 3.25	1.332 33.83	.115 2.92	1.022 25.96	.602 15.29	1.203 30.56
23	1.688 42.88	1.375 34.93	.147 3.73	1.457 37.01	.115 2.92	1.147 29.14	.602 15.29	1.328 33.74
25	1.812 46.02	1.500 38.10	.147 3.73	1.582 40.18	.115 2.92	1.272 32.31	.602 15.29	1.453 36.91

MIL-C-38999 SERIES I



MS27505 Rear Box Mount Receptacle

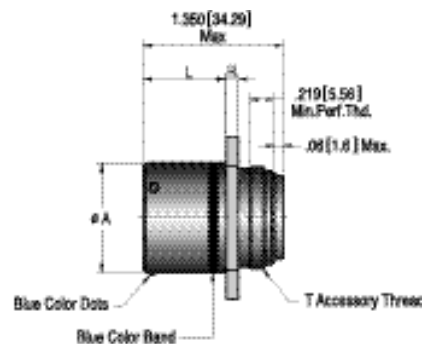
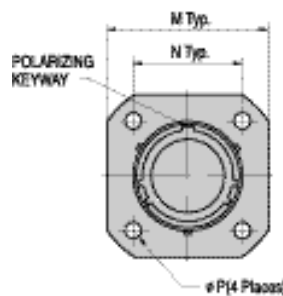


MS27505

Inch
mm

Shell Size	A ± .020 (± 0.51)	B ± .004 (± 0.10)	C +.010(+0.25) -.005(-0.13)	D +.001(+0.03) -.005(-0.13)	F +.015(+0.38) -.000(-0.00)	G Max.	K Max.	M +.000(+0.00) -.005(-0.13)	R Max.
9	.938 23.83	.719 18.26	.128 3.25	.572 14.53	0.85 2.16	.299 7.60	.219 5.57	.820 20.83	.547 13.90
11	1.031 26.19	.812 20.62	.128 3.25	.700 17.78	0.85 2.16	.427 10.85	.219 5.57	.820 20.83	.656 16.67
13	1.125 28.58	.906 23.01	.128 3.25	.850 21.59	0.85 2.16	.541 13.75	.219 5.57	.820 20.83	.828 21.04
15	1.129 30.96	.969 24.61	.128 3.25	.975 24.77	0.85 2.16	.666 16.92	.219 5.57	.820 20.83	.953 24.21
17	1.312 33.32	1.062 26.97	.128 3.25	1.100 27.94	0.85 2.16	.791 20.10	.219 5.57	.820 20.83	1.078 27.39
19	1.438 36.53	1.156 29.36	.128 3.25	1.207 30.66	0.85 2.16	.897 22.79	.219 5.57	.820 20.83	1.203 30.56
21	1.562 39.67	1.250 31.75	.128 3.25	1.332 33.83	.115 2.92	1.022 25.96	.250 6.35	.790 20.07	1.328 33.74
23	1.688 42.88	1.375 34.93	.147 3.73	1.457 37.01	.115 2.92	1.147 29.14	.250 6.35	.790 20.07	1.453 36.91
25	1.812 46.02	1.500 38.10	.147 3.73	1.582 40.18	.115 2.92	1.272 32.31	.250 6.35	.790 20.07	1.578 40.09

MS27656 Rear Wall Mount Receptacle



MS27656

Inch(mm)

Shell Size	A Dia. Max.	H Max.	L Max.	M Max.	N T.P.	P Dia. Max.	T Thread
9	.573(14.55)	.100(2.54)	.820(20.83)	.958(24.33)	.719(18.26)	.138(3.51)	7/16-28UNEF-2A
11	.701(17.81)	.100(2.54)	.820(20.83)	1.051(26.70)	.812(20.62)	.138(3.51)	9/16-24UNEF-2A
13	.851(21.62)	.100(2.54)	.820(20.83)	1.145(29.08)	.906(23.01)	.138(3.51)	11/16-24UNEF-2A
15	.976(24.79)	.100(2.54)	.820(20.83)	1.239(31.47)	.969(24.61)	.138(3.51)	13/16-20UNEF-2A
17	1.101(27.97)	.100(2.54)	.820(20.83)	1.332(33.83)	1.062(26.97)	.138(3.51)	15/16-20UNEF-2A
19	1.208(30.68)	.100(2.54)	.820(20.83)	1.458(37.03)	1.156(29.36)	.138(3.51)	1-1/16-18UNEF-2A
21	1.333(33.86)	.130(3.30)	.790(20.07)	1.582(40.18)	1.250(31.75)	.138(3.51)	1-3/16-18UNEF-2A
23	1.458(37.03)	.130(3.30)	.790(20.07)	1.708(43.38)	1.375(34.93)	.157(3.99)	1-5/16-18UNEF-2A
25	1.583(40.21)	.130(3.30)	.790(20.07)	1.832(46.53)	1.500(38.10)	.157(3.99)	1-7/16-18UNEF-2A

MIL-C-38999 SERIES I



Contacts, Sealing Plugs and Assembly Tools



Contact size	Wire Range		Socket Contacts	Pin Contacts	Sealing plugs
	AWG	mm ²	Military Part No.	Military Part No.	Military Part No.
22D	28-22	0.08-0.4	M3929/56-348	M3929/56-360	MS27488-22
20	24-20	0.2-0.6	M3929/56-351	M3929/56-363	MS27488-20
16	20-16	0.5-1.4	M3929/56-352	M3929/56-364	MS27488-16
12	14-12	2-3	M3929/56-353	M3929/56-365	MS27488-12

Crimping Tools

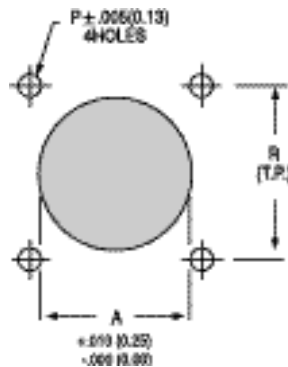
Contact size	Wire Range		Finished Wire Dia. Range		Contact Type	Crimping Tool	Turret or Positioner
	AWG	mm ²	Inch	mm ²			
22D	28-22	0-08-0.4	.030-.054	0.76-1.37	P	M22520/2-01	M22520/2-09
					S	M22520/2-01	M22520/2-07
20	24-20	0.2-0.6	.040-.083	1.02-2.11	P&S	M22520/1-01	M22520/1-04
16	20-16	0.5-1.4	.065-.109	1.34-2.62	P&S	M22520/1-01	M22520/1-04
12	14-12	2-3	.097-.142	2.46-4.01	P&S	M22520/1-01	M22520/1-04

Insertion/Extraction Tools

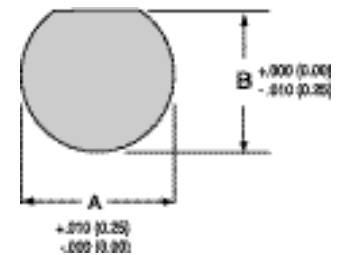
Contact Size	Color Code
22D	Gr./Wh.
20	Rd./Wh.
16	Bl./Wh.
12	Yel./Wh.

Panel Cutouts

Flange Mounted Receptacles



Jam Nut Receptacle



Shell Size	A Dia.	P Dia.	R	Mtg. Screw
9	.665(16.89)	.125(3.18)	.719(18.26)	#4
11	.812(20.62)	.125(3.18)	.812(20.62)	#4
13	.965(24.51)	.125(3.18)	.906(23.01)	#4
15	1.085(27.55)	.125(3.18)	.969(24.61)	#4
17	1.210(30.73)	.125(3.18)	1.062(26.97)	#4
19	1.322(33.57)	.125(3.18)	1.156(29.36)	#4
21	1.447(36.75)	.125(3.18)	1.250(31.75)	#4
23	1.569(39.85)	.152(3.86)	1.375(34.93)	#6
25	1.703(43.25)	.152(3.86)	1.500(38.10)	#6

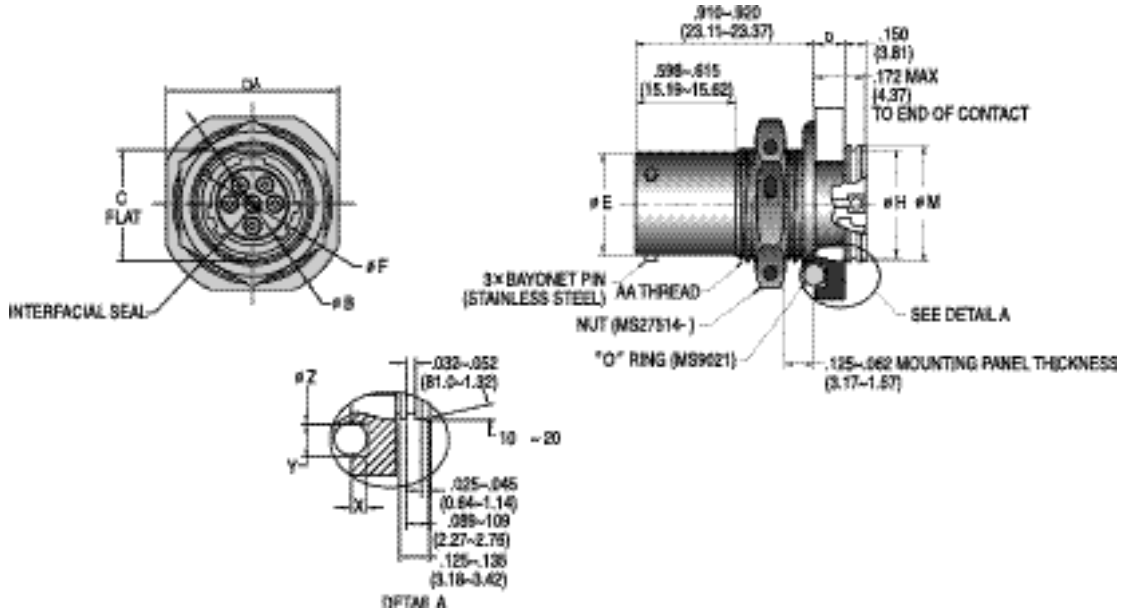
Shell Size	A Dia.	B Dia.
9	.700(17.18)	.670(17.02)
11	.825(20.96)	.770(19.59)
13	1.010(25.65)	.955(24.26)
15	1.135(28.83)	1.085(27.56)
17	1.260(32.00)	1.210(30.73)
19	1.385(35.18)	1.335(33.91)
21	1.510(38.35)	1.460(37.08)
23	1.635(41.53)	1.585(40.26)
25	1.760(44.70)	1.710(43.43)

MIL-C-38999 SERIES I

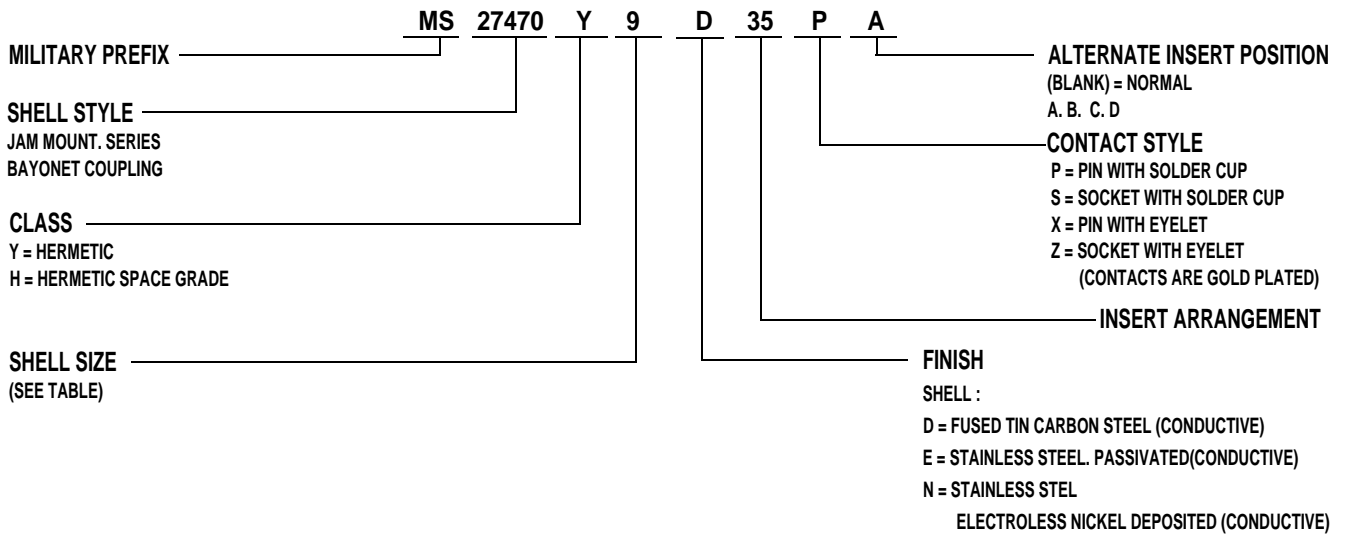
Hermetic Connectors



Hermetic Jam Nut Mounting - MS27470



EXPLANATION OF MS PART NUMBER



Shell Size	AA Thread Class 2A	□ A		ØB		C		D	ØE	ØF	ØH		ØM	X	Y	ØZ			
		(mm)	(in)	(mm)	(in)	(mm)	(in)				(mm)	(in)				(mm)	(in)		
9	.6875-24 UNEF	1.078	(27.38)	1.204	(30.58)	.655	(16.63)	.125	(3.17)	.573	(14.55)	.447	(11.35)	.613	(15.57)	.653	(16.58)	.783	(19.88)
		1.046	(26.57)	1.172	(29.77)	.645	(16.38)				.567	(14.40)	.441	(11.20)	.591	(15.01)	.642	(16.31)	.727
11	.8125-20 UNEF	1.266	(32.16)	1.391	(35.33)	.755	(19.17)	.093	(2.36)	.701	(17.81)	.575	(14.61)	.737	(18.72)	.777	(19.73)	.971	(24.66)
		1.234	(31.34)	1.359	(34.52)	.743	(18.92)				.695	(17.65)	.569	(14.45)	.715	(18.16)	.766	(19.45)	.960
13	1.000-20 UNEF	1.391	(35.33)	1.516	(38.51)	.942	(23.92)	.125	(3.17)	.851	(21.62)	.692	(17.57)	.863	(21.92)	.903	(22.93)	1.096	(27.84)
		1.359	(34.52)	1.484	(37.69)	.932	(23.67)				.845	(21.46)	.686	(17.42)	.841	(21.36)	.892	(22.65)	1.085
15	1.125-18 UNEF	1.516	(38.51)	1.641	(41.68)	1.066	(27.07)	.093	(2.36)	.976	(24.79)	.817	(20.75)	.989	(25.12)	1.029	(26.14)	1.221	(31.01)
		1.484	(37.69)	1.609	(40.87)	1.056	(26.82)				.970	(24.64)	.811	(20.59)	.967	(24.56)	1.018	(25.86)	1.210
17	1.250-18 UNEF	1.641	(41.68)	1.766	(44.85)	1.191	(30.25)	.156	(3.96)	1.101	(27.97)	.942	(23.93)	1.113	(28.27)	1.153	(29.28)	1.346	(34.19)
		1.609	(40.87)	1.734	(44.04)	1.181	(29.10)				1.095	(27.81)	.936	(23.77)	1.091	(27.71)	1.142	(29.00)	1.335
19	1.375-18 UNEF	1.828	(46.43)	1.954	(49.63)	1.316	(33.43)	.124	(3.15)	1.208	(30.68)	1.047	(26.59)	1.239	(31.47)	1.279	(32.48)	1.455	(36.96)
		1.796	(45.62)	1.922	(48.81)	1.306	(33.17)				1.202	(30.53)	1.041	(26.44)	1.217	(30.91)	1.268	(32.20)	1.444
21	1.500-18 UNEF	1.954	(49.63)	2.078	(52.78)	1.441	(36.60)	.156	(3.96)	1.333	(33.86)	1.172	(29.77)	1.363	(34.62)	1.403	(35.63)	1.580	(40.13)
		1.922	(48.82)	2.046	(51.97)	1.431	(36.35)				1.327	(33.70)	1.166	(29.62)	1.341	(34.06)	1.392	(35.35)	1.569
23	1.625-18 UNEF	2.078	(52.78)	2.204	(55.98)	1.266	(39.77)	.124	(3.15)	1.458	(37.03)	1.297	(32.94)	1.489	(37.82)	1.529	(38.83)	1.705	(43.31)
		2.046	(51.98)	2.172	(55.17)	1.556	(39.52)				1.452	(36.88)	1.291	(32.79)	1.467	(37.26)	1.518	(38.55)	1.694
25	1.750-18 UNS	2.204	(55.98)	2.328	(59.13)	1.691	(42.95)	.156	(3.96)	1.583	(40.21)	1.422	(36.12)	1.613	(40.97)	1.653	(41.98)	1.830	(46.20)
		2.172	(55.17)	2.296	(58.32)	1.681	(42.69)				1.577	(40.05)	1.416	(35.97)	1.591	(40.41)	1.642	(41.71)	1.819

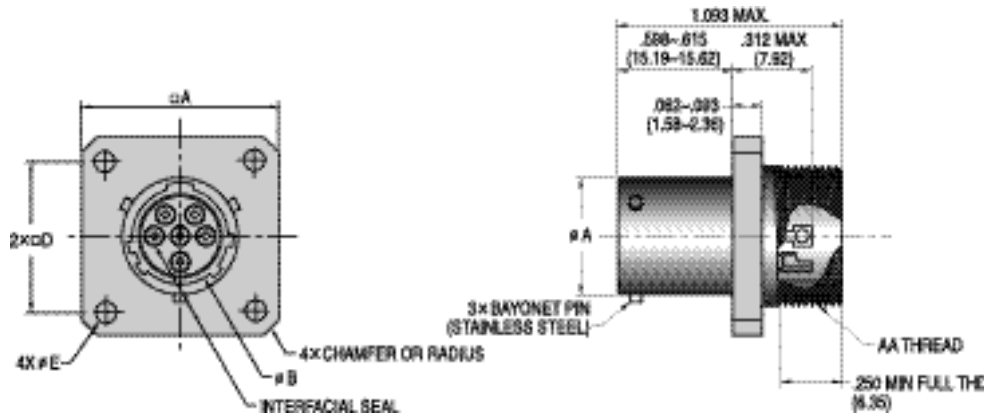
MIL-C-38999 Series I

MIL-C-38999 SERIES I

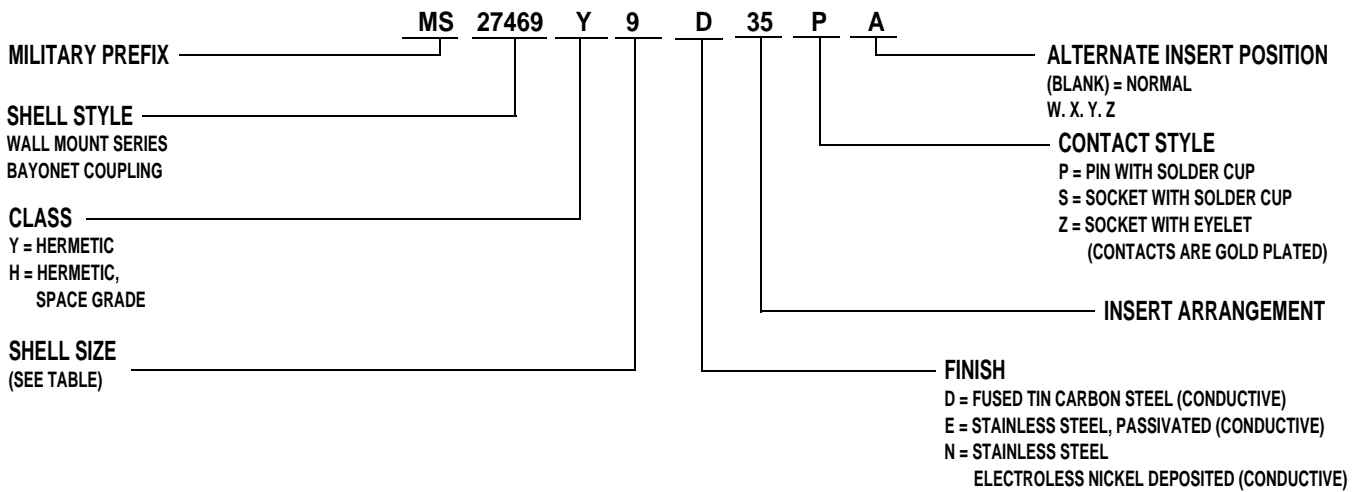
Hermetic Connectors



Hermetic Wall Mounting-MS27469



EXPLANATION OF MS PART NUMBER



Shell Size	BB Thread Class 2A	ØA		ØB		□C		□D BSC		ØE	
9	.6875-24 UNEF	.573	(14.55)	.447	(11.34)	.954	(24.23)	.719	(18.26)		
		.577	(14.40)	.441	(11.20)	.922	(23.42)				
11	.812-20 UNEF	.701	(17.81)	.575	(14.60)	1.047	(26.59)	.812	(20.62)		
		.695	(17.65)	.569	(14.45)	1.015	(25.78)				
13	.9375-20 UNEF	.851	(21.62)	.692	(17.58)	1.141	(28.98)	.906	(23.01)		
		.845	(21.46)	.686	(17.42)	1.109	(28.17)				
15	1.0625-18 UNEF	.976	(24.79)	.817	(20.75)	1.235	(31.37)	.969	(24.61)		
		.970	(24.64)	.811	(20.60)	1.296	(32.92)				
17	1.1875-18 UNEF	1.101	(27.97)	.942	(23.93)	1.328	(33.73)	1.062	(26.97)		
		1.095	(27.81)	.936	(23.77)	1.296	(32.92)				
19	1.3125-18 UNEF	1.208	(30.68)	1.047	(26.59)	1.454	(36.93)	1.156	(29.36)		
		1.202	(30.53)	1.041	(26.44)	1.422	(36.12)				
21	1.4375-18 UNEF	1.333	(33.68)	1.172	(29.77)	1.578	(40.08)	1.250	(31.75)		
		1.327	(33.70)	1.166	(29.62)	1.546	(39.27)				
23	1.5625-18 UNEF	1.458	(37.03)	1.297	(32.94)	1.74	(43.28)	1.375	(34.92)		
		1.452	(36.38)	1.291	(32.79)	1.672	(42.47)				
25	1.6875-18 UNEF	1.583	(40.21)	1.422	(36.12)	1.828	(46.43)	1.500	(38.10)		
		1.577	(40.05)	1.416	(35.97)	1.796	(45.62)				



Miniature MS Connectors

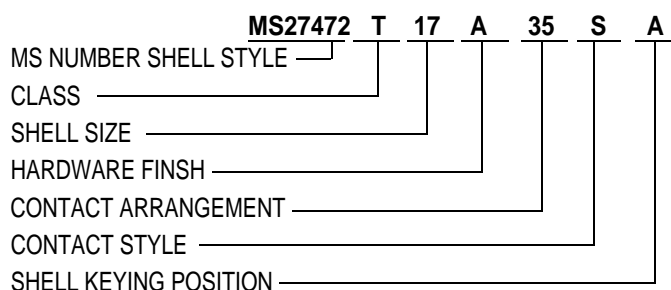


Ordering Information And Specifications	- 12
MS 27472 (Wall Mounting Receptacle)	- 13
MS 27473 (Straight Plug)	- 13
MS 27474 (Jam Nut Receptacle)	- 14
MS 27484 (Grounded Plug)	- 14
MS 27497 (Wall Mount Receptacle, Back Panel)	- 15
MS 27499 (Box Mounting Receptacle)	- 15
MS 27508 (Box Mount Receptacle, Back Panel)	- 16
MS 27513 (Box Mounting Receptacle)	- 16
MIL-C-38999 Series II Hermetic Connectors	- 17



Ordering Information And Specifications

MIL-C- 38999 Series II



MS Number Shell Style

- MS27472 - Wall Mounting Receptacle
- MS27473 - Straight plug
- MS27474 - Jam Nut Receptacle
- MS27484 - Grounded plug
- MS27497 - Wall Mounting Receptacle (back panel mounting)
- MS27513 - Box Mounting Receptacle (back panel Class E)
- MS27479 - Wall Mounting Receptacle (C Finish)-Inactive, use MS27472
- MS27473 - Straight plug (C Finish)-Inactive, use MS27473
- MS27474 - Jam Nut Receptacle (C Finish)-Inactive, use MS27474
- MS27499 - Box Mounting Receptacle (Class E)
- MS27513 - Box Mounting (back pannel mounting) (Class E)

Class

- E - Environment-resistant with accessory (without strain relief)
- P - Environment-resistant with straight potting cup accessories.
- T - Environment-resistant (without rear accessory). (Class T not applicable to MS27499, MS27513, and MS27508).

Shell Size

8 10 12 14 16 18 20 22 24

Hardware Finish Standard

- A - MIL-C-38999 Series
- B - MIL-C-38999 Series
- C - Anodize(non-conductive)
 - 85 to +392 (-65 to + 200)
 - Not applicable to MS27484
- F - MIL-C-38999 Series

Contact Arrangements

MIL-C-38999 Series

Contacts Style

- P - Pin
- S - Socket
- A - Less Pin Contact
- B - Less Socket Contact

Used only when other than power contacts are to be installed (i. e. shielded. thermocouple. etc.)

Shell Keying Position

A, B, C, D. (Not required for normal)

Operating Temperature Range

-65 ° to + 200 (85 to + 392)

Durability

Minimum of 500 mating cycles.

Shock and Vibration Requirements

When tested as follows the connector shall sustain no physical damage or electrical discontinuity exceeding one microsecond.

Standard Shock :

Pulse of an approximate half sine wave of 300g magnitude with duration of 3milliseconds applied in three axes.

Random Vibration

(without simulated accessory load) : 41.7 G RMS for 8 hours in two axes, totaling 16 hours at ambient temperature.

High Impact Shock : MIL-C-38999 Series I, II

When mounted as specified in MIL-S-901, Grade A, a drop of a 400 lb, Hammer from 1 foot, 3 feet and 5 feet applied to connector in three axes, totaling nine impacts.

Vibration :

· Sine

Frequency range of 10 to 2,000 Hz, in 20 minute sweeps, in 3 axes with the following variations :

- Duration : 12hours total, 4 hour cycles.
- Level : Displacement of 0.6 inch [1.5mm](10~100Hz) and acceleration of 30 G \$ peak(100~2,000Hz) at ambient room temperature.

· Random

(without simulated accessory load) : 49.5G RMS for 8 hours in two axes, totaling 16 hours at ambient temperature.

R. F. I & E. M. I

R. F. I & E. M. I attenuation at the specified frequency meet the requirements of MIL-C-38999.

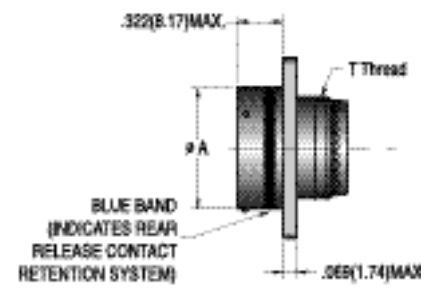
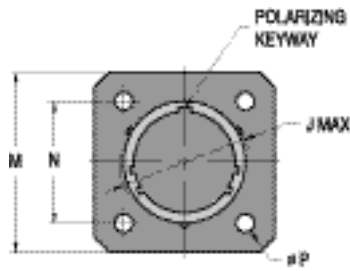
R. F. I shielding effectiveness of mated connectors with

R. F. I backshells is measured in a triaxial radio frequency leakage fixture.

E. M. I shielding effectiveness is measured at the interface of mated connectors and tested by the MODE STIR procedure specified in method 3008 of MIL-STD-1344



MS27472 Wall Mount Receptacle



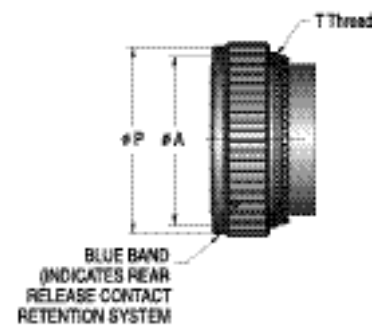
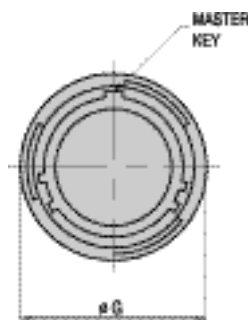
MS 27472

Inch(mm)

Shell Size	A Dia. Max.	J Dia Max.	M Max.	N T.P.	P ± .005 (0.13) - .010 (0.25)	T Thread
8	.474(12.04)	.563(14.30)	.828(21.03)	.594(15.09)	.125(3.18)	7/16-28UNEF-2A
10	.591(15.01)	.680(17.27)	.954(24.23)	.719(18.26)	.125(3.18)	9/16-24UNEF-2A
12	.751(19.08)	.859(21.82)	1.047(26.59)	.812(20.62)	.125(3.18)	11/16-24UNEF-2A
14	.876(22.25)	.984(24.99)	1.141(28.98)	.906(23.01)	.125(3.18)	13/16-20UNEF-2A
16	1.001(25.43)	1.108(28.14)	1.234(31.34)	.969(24.61)	.125(3.18)	15/16-20UNEF-2A
18	1.126(28.60)	1.233(31.32)	1.328(33.73)	1.062(26.97)	.125(3.18)	1-1/16-18UNEF-2A
20	1.251(31.78)	1.358(34.49)	1.453(36.91)	1.156(27.36)	.125(3.18)	1-3/16-18UNEF-2A
22	1.376(34.95)	1.483(37.67)	1.578(39.08)	1.250(31.76)	.125(3.18)	1-5/16-18UNEF-2A
24	1.501(38.13)	1.610(40.89)	1.703(43.26)	1.375(34.92)	.152(3.86)	1-7/16-18UNEF-2A

MIL-C-38999 Series II

MS27473 Straight Plug



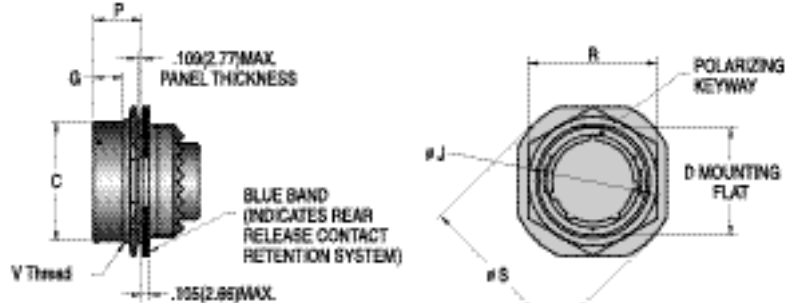
MS 27473

Inch(mm)

Shell Size	A Dia. Max.	G Dia. Max.	P Dia. Max.	T Thread
8	.485(12.32)	.749(19.02)	.630(16.00)	7/16-28UNEF-2A
10	.606(15.39)	.858(21.79)	.752(19.10)	9/16-24UNEF-2A
12	.765(19.43)	1.030(26.16)	.925(23.50)	11/16-24UNEF-2A
14	.890(22.61)	1.155(29.34)	1.050(26.67)	13/16-20UNEF-2A
16	1.014(25.76)	1.280(32.51)	1.172(29.77)	15/16-20UNEF-2A
18	1.140(28.96)	1.405(35.69)	1.304(33.12)	1-1/16-18UNEF-2A
20	1.264(32.11)	1.530(38.86)	1.435(36.45)	1-3/16-18UNEF-2A
22	1.389(35.28)	1.640(40.66)	1.560(39.62)	1-5/16-18UNEF-2A
24	1.514(38.46)	1.765(44.83)	1.688(42.88)	1-7/16-18UNEF-2A



MS27474 Jam Nut Receptacle



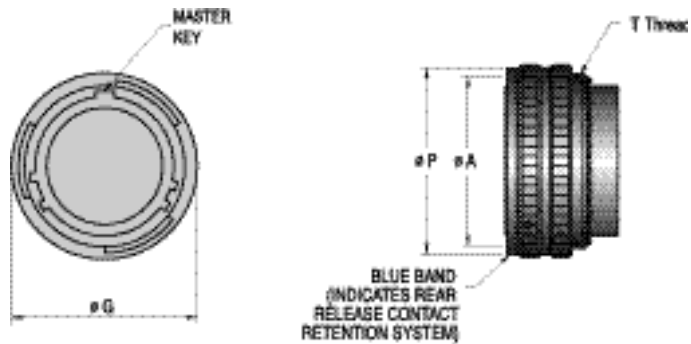
MS 27474

Inch(mm)

Shell Size	C Dia. Max.	D Max.	G Max.	J Dia. Max.	P Dia. Max.	R Max. Hex.	S Dia. Max.	T Thread	V Thread
8	.474(12.04)	.818(20.78)	.145(3.68)	.563(14.30)	.443(11.25)	1.079(27.41)	1.381(35.08)	7/16-28UNEF-2A	7/8-20UNEF-2A
10	.591(15.01)	.942(23.93)	.145(3.68)	.680(17.27)	.443(11.25)	1.205(30.61)	1.506(38.25)	9/16-24UNEF-2A	1-20UNEF-2A
12	.751(19.08)	1.066(27.08)	.145(3.68)	.895(21.82)	.443(11.25)	1.329(33.76)	1.631(41.43)	11/16-24UNEF-2A	1-1/8-18UNEF-2A
14	.876(22.25)	1.191(30.25)	.145(3.68)	.984(24.99)	.443(11.25)	1.455(36.96)	1.756(44.60)	13/16-20UNEF-2A	1-1/4-18UNEF-2A
16	1.001(25.43)	1.321(33.55)	.145(3.68)	1.108(28.14)	.443(11.25)	1.579(40.11)	1.944(49.38)	1-15/16-20UNEF-2A	1-3/8-18UNEF-2A
18	1.126(28.60)	1.441(36.60)	.145(3.68)	1.233(31.32)	.443(11.25)	1.705(43.31)	2.022(51.36)	1-1/16-18UNEF-2A	1-1/2-18UNEF-2A
20	1.251(31.78)	1.566(39.78)	.171(4.34)	1.358(34.49)	.469(11.91)	1.829(46.46)	2.147(54.53)	1-3/16-18UNEF-2A	1-5/8-18UNEF-2A
22	1.376(34.95)	1.691(42.95)	.171(4.34)	1.483(37.67)	.469(11.91)	2.017(51.23)	2.271(57.68)	1-5/16-18UNEF-2A	1-3/4-18UNS-2A
24	1.501(38.13)	1.816(46.13)	.171(4.34)	1.610(40.89)	.469(11.91)	2.142(54.41)	2.396(60.86)	1-7/16-18UNEF-2A	1-7/8-16UNS-2A

MIL-C-38999 Series II

MS27484 Grounded Plug



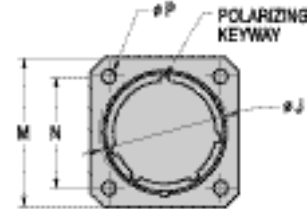
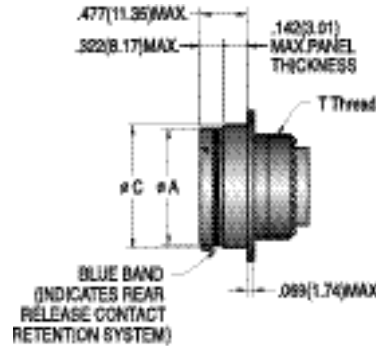
MS 27484

Inch(mm)

Shell Size	A Dia. Max.	G Max.	P Dia. Max.	T Thread
8	.485(12.32)	.749(19.02)	.630(16.00)	7/16-28UNEF-2A
10	.606(15.39)	.858(21.79)	.752(19.10)	9/16-24UNEF-2A
12	.765(19.43)	1.030(26.16)	.925(23.50)	11/16-24UNEF-2A
14	.890(22.61)	1.155(29.34)	1.050(26.67)	13/16-20UNEF-2A
16	1.014(25.76)	1.280(32.51)	1.172(29.77)	15/16-20UNEF-2A
18	1.140(28.96)	1.405(35.69)	1.304(33.12)	1-1/16-18UNEF-2A
20	1.264(32.11)	1.530(38.86)	1.435(36.45)	1-3/16-18UNEF-2A
22	1.389(35.28)	1.640(40.66)	1.560(39.62)	1-5/16-18UNEF-2A
24	1.514(38.46)	1.765(44.83)	1.688(42.88)	1-7/16-18UNEF-2A



MS27497 Wall Mount Receptacle, Back Panel

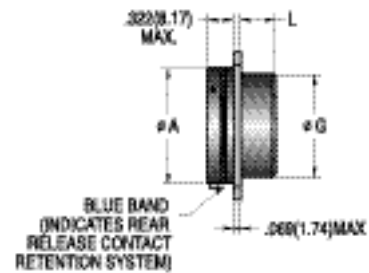
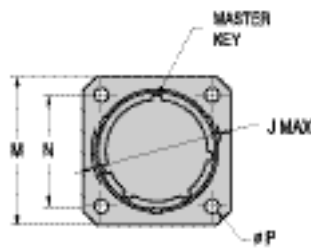


MS 27497

Inch(mm)

Shell Size	A Dia. Max.	C Dia. Max.	J Dia. Max.	M Max.	N T.P.	P +.005 (0.13) -0.010 (0.25)	T Thread
8	.474(12.04)	.522(13.26)	.563(14.30)	.828(21.03)	.594(15.09)	.125(3.18)	7/16-28UNEF-2A
10	.591(15.01)	.639(16.23)	.680(17.27)	.954(24.23)	.719(18.26)	.125(3.18)	9/16-24UNEF-2A
12	.751(19.08)	.808(20.52)	.859(21.82)	1.047(26.59)	.812(20.62)	.125(3.18)	11/16-24UNEF-2A
14	.876(22.25)	.935(23.75)	.984(24.99)	1.141(28.98)	.906(23.01)	.125(3.18)	13/16-20UNEF-2A
16	1.001(25.43)	1.058(26.87)	1.108(28.14)	1.234(31.34)	.969(24.61)	.125(3.18)	15/16-20UNEF-2A
18	1.126(28.60)	1.183(30.05)	1.233(31.32)	1.328(33.73)	1.062(26.97)	.125(3.18)	1-1/16-18UNEF-2A
20	1.251(31.78)	1.308(33.22)	1.358(34.49)	1.453(36.91)	1.156(29.36)	.125(3.18)	1-3/16-18UNEF-2A
22	1.376(34.95)	1.433(36.40)	1.483(37.67)	1.578(40.08)	1.250(31.75)	.125(3.18)	1-5/16-18UNEF-2A
24	1.501(38.13)	1.568(39.83)	1.610(40.89)	1.703(43.26)	1.375(34.93)	.152(3.86)	1-7/16-18UNEF-2A

MS27499 Box Mounting Receptacle



MS 27499

Inch(mm)

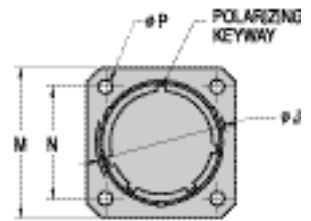
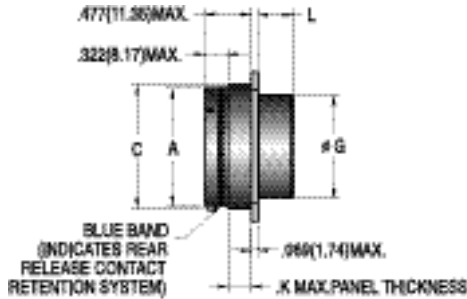
Shell Size	A Dia. Max.	G Dia. Max.	J Dia. Max.	L Max.	M Max.	N T.P.	P +.005 (0.13) -0.010 (0.25)
8	.474(12.04)	.421(10.69)	.563(14.30)	.312(7.92)	.828(21.03)	.594(15.09)	.125(3.18)
10	.591(15.01)	.542(13.77)	.680(17.27)	.312(7.92)	.954(24.23)	.719(18.26)	.125(3.18)
12	.751(19.08)	.667(16.94)	.859(21.82)	.312(7.92)	1.047(26.59)	.812(20.62)	.125(3.18)
14	.876(22.25)	.791(20.09)	.984(24.99)	.312(7.92)	1.141(28.98)	.906(23.01)	.125(3.18)
16	1.001(25.43)	.916(23.27)	1.108(28.14)	.312(7.92)	1.234(31.34)	.969(24.61)	.125(3.18)
18	1.126(28.60)	1.034(26.26)	1.233(31.32)	.312(7.92)	1.328(33.73)	1.062(26.97)	.125(3.18)
20	1.251(31.78)	1.158(29.41)	1.358(34.49)	.312(7.92)	1.453(36.91)	1.156(29.36)	.125(3.18)
22	1.376(34.95)	1.283(32.59)	1.483(37.67)	.312(7.92)	1.578(39.08)	1.250(31.76)	.125(3.18)
24	1.501(38.13)	1.408(35.76)	1.610(40.89)	.312(7.92)	1.703(43.26)	1.375(34.92)	.152(3.86)

MIL-C-38999 Series II

MIL-C-38999 SERIES II



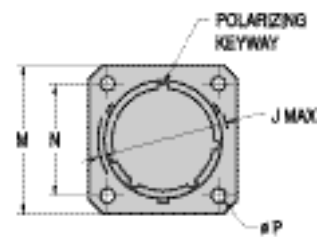
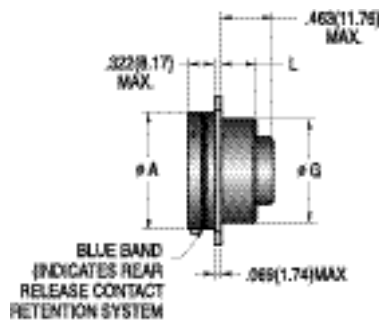
MS27508 Box Mount Receptacle, Back Panel



MS 27508

Shell Size	A Dia. Max.	C Dia. Max.	G Dia. Max.	J Dia. Max.	K Max.	L Max.	M Max.	N T.P.	P +0.005 (0.13) -0.010 (0.25)
									Inch(mm)
8	.474(12.04)	.522(13.26)	.421(10.69)	.563(14.30)	.147(3.73)	.185(4.70)	.828(21.03)	.594(15.09)	.125(3.18)
10	.591(15.01)	.639(16.23)	.542(13.77)	.680(17.27)	.152(3.86)	.185(4.70)	.954(24.23)	.719(18.26)	.125(3.18)
12	.751(19.08)	.808(20.52)	.667(16.94)	.859(21.82)	.152(3.86)	.185(4.70)	1.047(26.59)	.812(20.62)	.125(3.18)
14	.876(22.25)	.935(23.75)	.791(20.09)	.984(24.99)	.152(3.86)	.185(4.70)	1.141(28.98)	.906(23.01)	.125(3.18)
16	1.001(25.43)	1.058(26.87)	.916(23.27)	1.108(28.14)	.152(3.86)	.185(4.70)	1.234(31.34)	.969(24.61)	.125(3.18)
18	1.126(28.60)	1.183(30.05)	1.034(26.26)	1.233(31.32)	.152(3.86)	.185(4.70)	1.328(33.73)	1.062(26.97)	.125(3.18)
20	1.251(31.78)	1.308(33.22)	1.158(29.41)	1.358(34.49)	.179(4.55)	.185(4.70)	1.453(36.91)	1.156(27.36)	.125(3.18)
22	1.376(34.95)	1.433(36.40)	1.283(32.59)	1.483(37.67)	.179(4.55)	.185(4.70)	1.578(39.08)	1.250(31.76)	.125(3.18)
24	1.501(38.13)	1.568(39.83)	1.408(35.76)	1.610(40.89)	.179(4.55)	.185(4.70)	1.703(43.26)	1.375(34.92)	.152(3.86)

MS27513 Box Mounting Receptacle



MS 27513

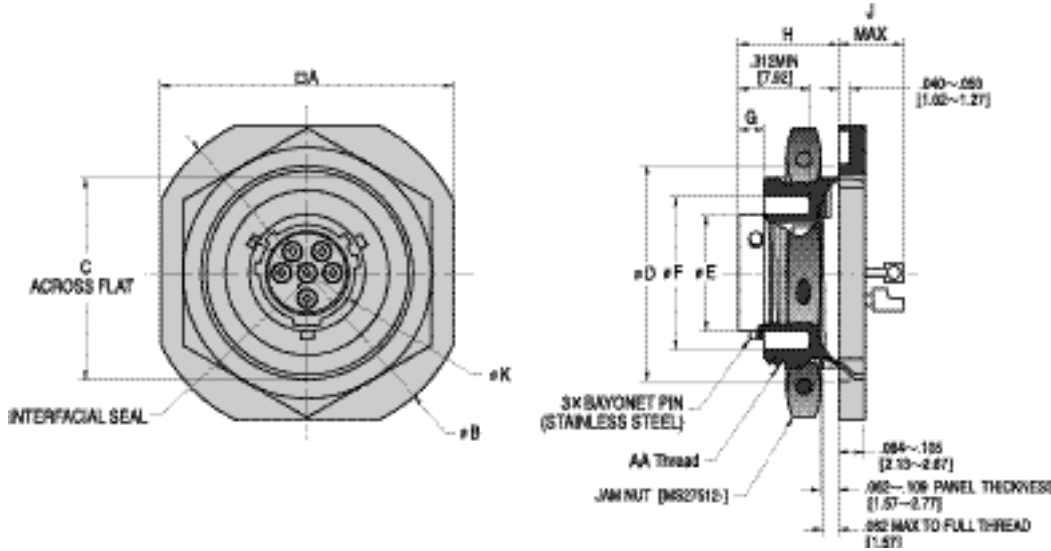
Shell Size	A Dia. Max.	G Dia. Max.	J Dia. Max.	L Dia. Max.	M Max.	N Max.	P +0.005 (0.13) -0.010 (0.25)
							Inch(mm)
8	.474(12.04)	.421(10.69)	.563(14.30)	.312(7.92)	.828(21.03)	.594(15.09)	.125(3.18)
10	.591(15.01)	.542(13.77)	.680(17.27)	.312(7.92)	.954(24.23)	.719(18.26)	.125(3.18)
12	.751(19.08)	.667(16.94)	.859(21.82)	.312(7.92)	1.047(26.59)	.812(20.62)	.125(3.18)
14	.876(22.25)	.791(20.09)	.984(24.99)	.312(7.92)	1.141(28.98)	.906(23.01)	.125(3.18)
16	1.001(25.43)	.916(23.27)	1.108(28.14)	.312(7.92)	1.234(31.34)	.969(24.61)	.125(3.18)
18	1.126(28.60)	1.034(26.26)	1.233(31.32)	.312(7.92)	1.328(33.73)	1.062(26.97)	.125(3.18)
20	1.251(31.78)	1.158(29.41)	1.358(34.49)	.312(7.92)	1.453(36.91)	1.156(27.36)	.125(3.18)
22	1.376(34.95)	1.283(32.59)	1.483(37.67)	.312(7.92)	1.578(39.08)	1.250(31.76)	.125(3.18)
24	1.501(38.13)	1.408(35.76)	1.610(40.89)	.312(7.92)	1.703(43.26)	1.375(34.92)	.152(3.86)

MIL-C-38999 SERIES II

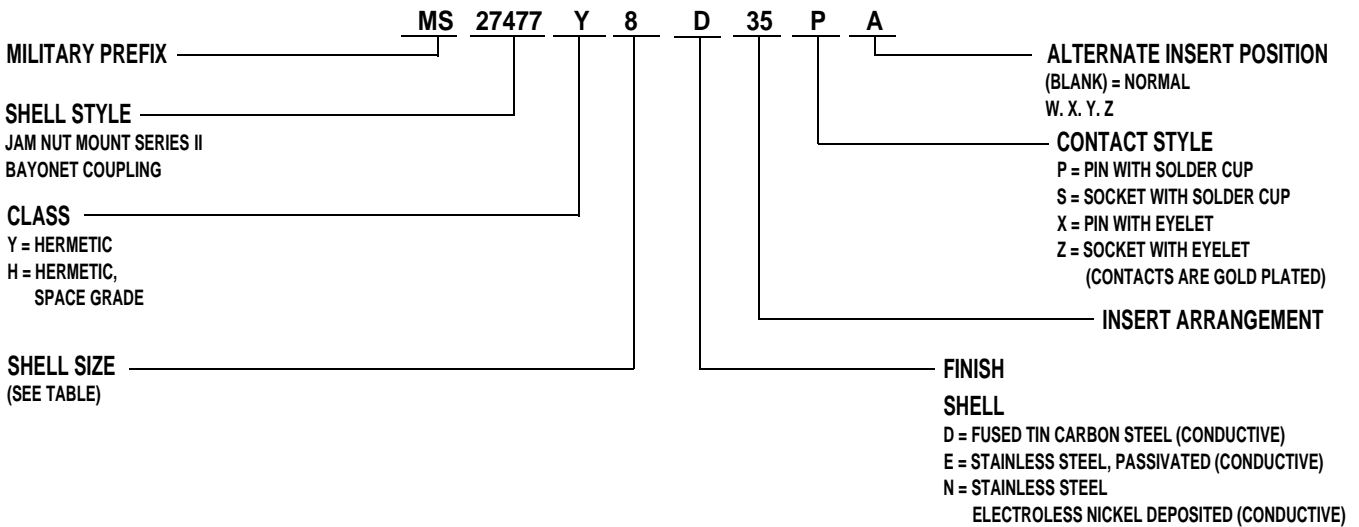
Hermetic Connectors



Jam Nut Mounting-MS27477



EXPLANATION OF MS PART NUMBER



Inch(mm)

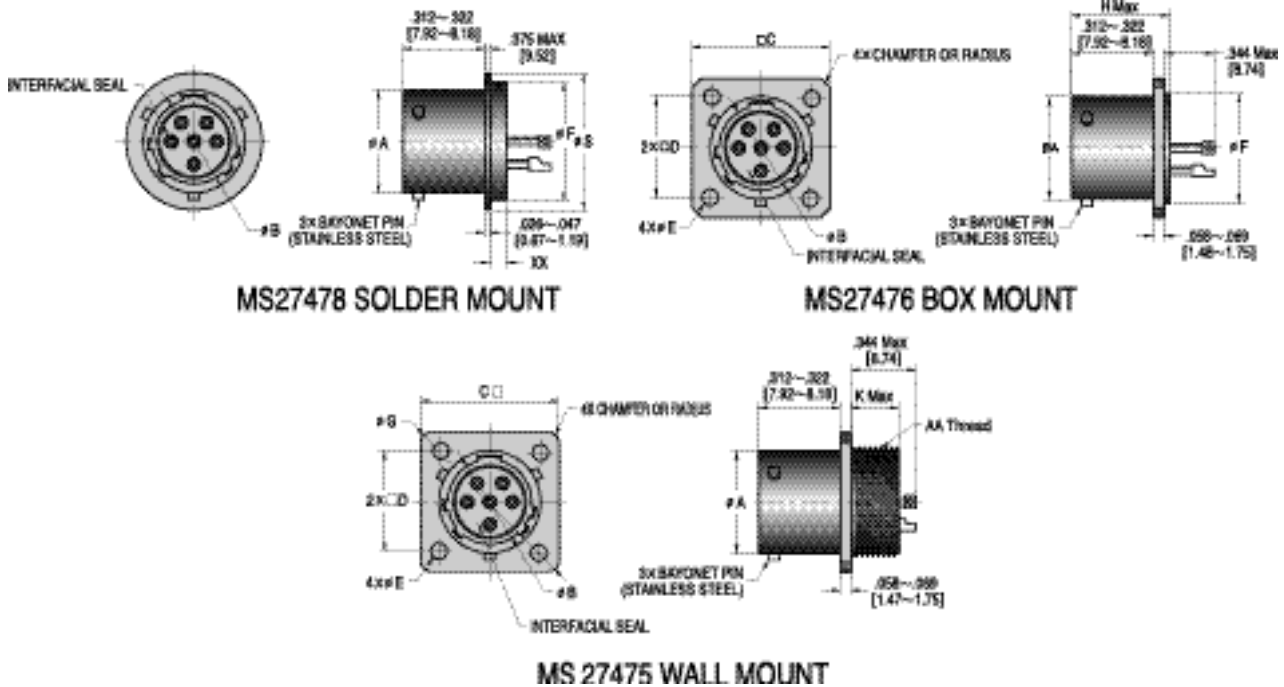
Shell Size	AA Thread Class 2A	RECOMMENDED PACKING O-RING	$\square A$		$\emptyset B$		C		$\emptyset D$		$\emptyset E$		G	$\emptyset F$		H		J	$\emptyset K$		
8	.875-20 UNEF	MS9021-022	1.266 (32.15)	1.391 (35.33)	1.359 (34.52)	.818 (20.77)	.971 (24.66)	.474 (12.04)	.474 (12.04)	.474 (12.04)	.474 (12.04)	.474 (12.04)	.474 (12.04)	.474 (12.04)	.474 (12.04)	.474 (12.04)	.474 (12.04)	.474 (12.04)	.474 (12.04)	.367 (9.32)	.361 (9.16)
10	1.000-20 UNEF	MS9021-024	1.391 (35.33)	1.516 (38.50)	1.484 (37.69)	.942 (23.93)	1.096 (27.84)	.591 (15.01)	.591 (15.01)	.591 (15.01)	.591 (15.01)	.591 (15.01)	.780 (19.81)	.780 (19.81)	.780 (19.81)	.780 (19.81)	.780 (19.81)	.780 (19.81)	.780 (19.81)	.495 (12.57)	.489 (12.42)
12	1.125-18 UNEF	MS9021-026	1.516 (38.51)	1.641 (41.68)	1.609 (40.87)	1.066 (27.07)	1.221 (31.01)	.751 (19.07)	.751 (19.07)	.751 (19.07)	.751 (19.07)	.751 (19.07)	.963 (24.46)	.963 (24.46)	.963 (24.46)	.963 (24.46)	.963 (24.46)	.963 (24.46)	.963 (24.46)	.612 (15.54)	.606 (15.39)
14	1.250-18 UNEF	MS9021-028	1.641 (41.68)	1.766 (44.85)	1.734 (44.04)	1.191 (30.25)	1.346 (34.19)	.876 (22.25)	.876 (22.25)	.876 (22.25)	.876 (22.25)	.876 (22.25)	1.088 (27.63)	1.088 (27.63)	1.088 (27.63)	1.088 (27.63)	1.088 (27.63)	1.088 (27.63)	1.088 (27.63)	.737 (18.72)	.731 (18.56)
16	1.375-18 UNEF	MS9021-029	1.797 (45.64)	1.954 (49.63)	1.922 (48.82)	1.321 (33.55)	1.483 (37.67)	1.001 (25.43)	1.001 (25.43)	1.001 (25.43)	1.001 (25.43)	1.222 (31.04)	1.222 (31.04)	1.222 (31.04)	1.222 (31.04)	1.222 (31.04)	1.222 (31.04)	1.222 (31.04)	1.222 (31.04)	.862 (21.89)	.856 (21.14)
18	1.500-18 UNEF	MS9021-030	1.906 (48.41)	2.032 (51.61)	2.000 (50.80)	1.441 (36.60)	1.608 (40.84)	1.126 (28.60)	1.126 (28.60)	1.126 (28.60)	1.126 (28.60)	1.333 (33.86)	1.333 (33.86)	1.333 (33.86)	1.333 (33.86)	1.333 (33.86)	1.333 (33.86)	1.333 (33.86)	1.333 (33.86)	.967 (24.56)	.961 (24.41)
20	1.625-18 UNEF	MS9021-031	2.032 (51.61)	2.157 (54.78)	2.125 (53.98)	1.566 (39.77)	1.733 (44.02)	1.251 (31.77)	1.251 (31.77)	1.251 (31.77)	1.251 (31.77)	1.458 (37.03)	1.458 (37.03)	1.458 (37.03)	1.458 (37.03)	1.458 (37.03)	1.458 (37.03)	1.458 (37.03)	1.458 (37.03)	1.092 (27.74)	1.086 (27.58)
22	1.750-18 UNS	MS9021-032	2.156 (54.76)	2.281 (57.94)	2.249 (57.12)	1.691 (42.95)	1.858 (47.19)	1.376 (34.95)	1.376 (34.95)	1.376 (34.95)	1.376 (34.95)	1.583 (40.21)	1.583 (40.21)	1.583 (40.21)	1.583 (40.21)	1.583 (40.21)	1.583 (40.21)	1.583 (40.21)	1.583 (40.21)	1.217 (30.91)	1.211 (30.76)
24	1.875-16 UNEF	MS9021-033	2.281 (57.94)	2.406 (61.11)	2.374 (60.30)	1.816 (46.13)	1.983 (50.37)	1.500 (38.12)	1.500 (38.12)	1.500 (38.12)	1.500 (38.12)	1.708 (43.38)	1.708 (43.38)	1.708 (43.38)	1.708 (43.38)	1.708 (43.38)	1.708 (43.38)	1.708 (43.38)	1.708 (43.38)	1.342 (34.09)	1.336 (33.93)

MIL-C-38999 SERIES II

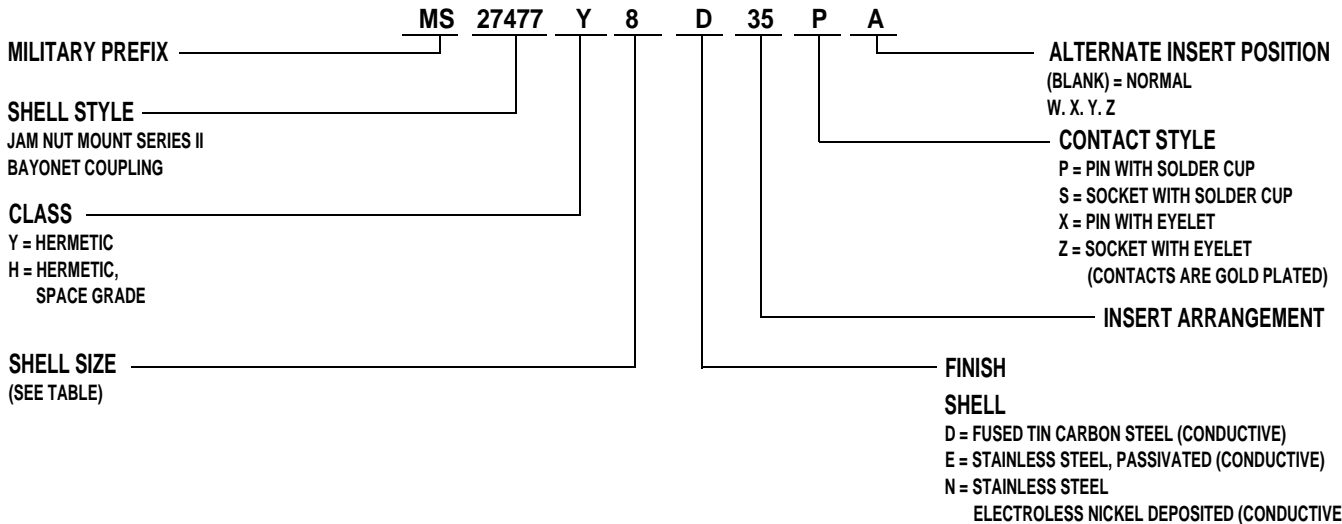
Hermetic Connectors



Bayonet Coupling



EXPLANATION OF MS PART NUMBER



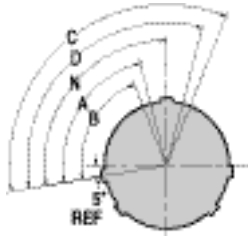
Shell Size	AA Thread CLASS 2A	ØA		ØB		□C Max	2x□D BSC		ØE	ØF	K Max	ØG Max	H Max	ØS	XX
8	.875-20 UNEF	.474 .468	(12.04) (11.88)	.367 .361	(9.32) (9.16)	.828	(21.03)	.594	(15.09)	.563 .557	(14.30) (14.14)	1.078	(27.38)	.698 .677	(17.73) (17.19)
10	.6875-24 UNEF	.591 .585	(15.01) (14.86)	.495 .489	(12.57) (12.42)	.954	(24.23)	.719	(18.26)	.673 .667	(17.09) (16.94)	1.256	(31.90)	.808 .787	(20.52) (19.99)
12	.8125-20 UNEF	.751 .745	(19.07) (18.92)	.612 .606	(15.54) (15.39)	1.047	(26.59)	.812	(20.62)	.782 .776	(19.86) (19.71)	1.391	(35.33)	.917 .896	(23.29) (22.76)
14	.9375-20 UNEF	.876 .870	(22.25) (22.09)	.737 .731	(18.72) (18.56)	1.141	(28.98)	.906	(23.01)	.907 .901	(23.03) (22.88)	1.516	(38.51)	1.042 1.021	(26.46) (25.93)
16	1.0625-18 UNEF	1.001 .995	(25.43) (25.27)	.862 .856	(21.89) (21.74)	1.234	(31.34)	.969	(24.61)	1.032 1.026	(26.21) (26.06)	1.541	(41.68)	1.167 1.146	(29.64) (29.11)
18	1.1875-18 UNEF	1.126 1.120	(28.60) (28.45)	.967 .961	(24.56) (24.41)	1.328	(33.73)	1.062	(26.97)	1.157 1.151	(29.38) (29.23)	1.766	(44.85)	1.292 1.271	(32.82) (32.28)
20	1.3125-18 UNEF	1.251 1.245	(31.77) (31.62)	1.092 1.086	(27.74) (27.58)	1.453	(36.91)	1.156	(29.36)	1.251 1.245	(31.77) (31.62)	1.891	(48.03)	1.386 1.365	(35.20) (34.67)
22	1.4375-18 UNEF	1.376 1.370	(34.95) (34.79)	1.217 1.211	(30.91) (30.76)	1.578	(40.08)	1.250	(31.75)	1.376 1.370	(34.95) (34.80)	2.016	(51.21)	1.511 1.490	(38.38) (37.84)
24	1.5625-18 UNEF	1.501 1.495	(38.12) (37.97)	1.342 1.336	(34.09) (33.93)	1.703	(43.26)	1.375	(34.93)	1.501 1.492	(38.12) (37.97)	2.204	(55.98)	1.636 1.615	(41.55) (41.02)

MIL-C-38999 Series II



Polarizing Positions

Series

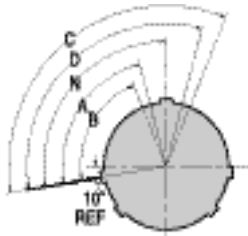


Front face of receptacle (plug opposite). Insert arrangement does not rotate with main key/keyway. The master key is rotated to provide shell polarization; the minor keys remain fixed.

Angle of Rotation (Degrees)

Shell Size	Normal	A	B	C	D
9	95°	77°	-	-	113°
11	95°	81°	67°	123°	109°
13	95°	75°	63°	127°	115°
15	95°	74°	61°	129°	116°
17	95°	77°	65°	125°	113°
19	95°	77°	65°	125°	113°
21	95°	77°	65°	125°	113°
23	95°	80°	69°	121°	110°
25	95°	80°	69°	121°	110°

Series



Front face of receptacle (plug opposite). Insert arrangement does not rotate with main key/keyway. The master key is rotated to provide shell polarization; the minor keys remain fixed.

Angle of Rotation (Degrees)

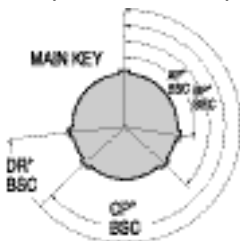
Shell Size	Normal	A	B	C	D
8	100°	82°	-	-	118°
10	100°	86°	72°	128°	114°
12	100°	80°	68°	132°	120°
14	100°	79°	66°	134°	121°
16	100°	82°	70°	130°	118°
18	100°	82°	70°	130°	118°
20	100°	82°	70°	130°	118°
22	100°	85°	74°	126°	115°
24	100°	85°	74°	126°	115°

Series

RECEPTACLE
(Front face shown)



PLUG
(Front face shown)



NOTES:

1. All angles are BSC
2. The insert arrangement does not rotate with main key/keyway
3. All minor keys are rotated to provide shell polarization, the master key remains fixed at twelve o'clock position.
4. Polarization is different from Series 9 and 11

Shell Size	Key & Keyway Arrangement Identification Letter	Key Locations			
		AR. or AP. BSC	BR. or BP. BSC	CR. or CP. BSC	DR. or DP. BSC
9	N	105	140	215	265
	A	102	132	248	320
	B	80	118	230	312
	C	35	140	205	275
	D	64	155	234	304
11 13 and 15	E	91	131	197	240
	N	95	141	208	236
	A	113	156	182	292
	B	90	145	195	252
	C	53	156	220	255
17 and 19	D	119	146	176	298
	E	51	141	184	242
	N	80	142	196	293
	A	135	170	200	310
	B	49	169	200	244
21 23 and 25	C	66	140	200	257
	D	62	145	180	280
	E	79	153	197	272
	N	80	142	196	293
	A	135	170	200	310
23 and 25	B	49	169	200	244
	C	66	140	200	257
	D	62	145	180	280
25	E	79	153	197	272

MIL-C-38999 Series II

MIL-C-38999 SERIES



Contact Arrangements (Engaging View Pin Insert)

* Socket insert only

** Pin insert only (Not available in socket insert Series and)

	Inactive			Inactive									
Series	9-0	9-88	9-30	-	11-6	10-35	11-88	10-60	11-66**	11-36	-	12-6	12-6
Series	9-0**	9-88	9-30	11-4	10-6	11-35	11-88	11-66**	11-36	12-3	-	12-6	12-6
No. of Contacts	8 #22M	8 #20	6 #20D	4 #20	6 #20	13 #22M	8 #20	7 #20	13 #22M	3 #16	4 #16	4 #20	13-6
Service Ratings	I	I	M	I	I	M	I	I	M	I	I	I	I
Series	13-06	13-32	13-35	15-15	15-15	15-18	15-18	15-18	15-18	15-35	15-35	14-37	14-37
Series	13-06	13-32**	13-35	14-15	14-15	14-15	14-15	14-15	14-15	14-35	14-35	14-37	14-37
No. of Contacts	10 #20	22 #22M	22 #22D	5 #16	5 #16	14 #20, 1 #16	18 #20	18 #20	18 #20	37 #22D	37 #22D	37 #22M	37 #22M
Service Ratings	I	M	M	I	I	I	I	I	I	M	M	M	M
Series	17-07	17-6	17-8	17-28	17-35	17-35	17-35	17-35	17-35	17-35	17-35	17-35	17-35
Series	14-07	16-6	16-8	16-28	16-35	16-35	16-35	16-35	16-35	16-35	16-35	16-35	16-35
No. of Contacts	8 #20, 4 #16	6 #12	6 #16	28 #20	52 #22D	52 #22D	52 #22D	52 #22D	52 #22D	52 #22D	52 #22D	52 #22D	52 #22D
Service Ratings	I	I	I	I	M	M	M	M	M	M	M	M	M
Series	18-28	18-30	18-11	18-32	18-35	18-35	18-35	18-35	18-35	18-35	18-35	18-35	18-35
Series	18-28**	18-30**	18-11	18-32	18-35	18-35	18-35	18-35	18-35	18-35	18-35	18-35	18-35
No. of Contacts	28 #20, 2 #16	29 #20, 1 #16	11 #16	52 #20	66 #22D	66 #22D	66 #22D	66 #22D	66 #22D	66 #22D	66 #22D	66 #22D	66 #22D
Service Ratings	I	I	I	I	M	M	M	M	M	M	M	M	M
Series	21-1	20-2	21-15	21-16	21-35	21-38	21-38	21-38	21-38	21-38	21-38	21-38	21-38
Series	21-1**	20-2	21-15	21-16	21-35	21-38	21-38	21-38	21-38	21-38	21-38	21-38	21-38
No. of Contacts	79 #22M	68 #22	11 #12	16 #16	79 #22D	37 #20, 2 #16	37 #20, 2 #16	37 #20, 2 #16	37 #20, 2 #16	37 #20, 2 #16	37 #20, 2 #16	37 #20, 2 #16	37 #20, 2 #16
Service Ratings	M	M	I	I	M	I	I	I	I	I	I	I	I
Series	21-75	21-1	22-2	23-21	22-32	22-32	22-32	22-32	22-32	22-32	22-32	22-32	22-32
Series	21-75**	21-1**	22-2**	23-21**	22-32	22-32	22-32	22-32	22-32	22-32	22-32	22-32	22-32
No. of Contacts	4 #8 Twill	153 #22M	85 #22M	21 #16	82 #20	82 #20	82 #20	82 #20	82 #20	82 #20	82 #20	82 #20	82 #20
Service Ratings	M	M	M	I	I	I	I	I	I	I	I	I	I

Please consult factory for availability of layouts not shown.

MIL-C-38999 Series II

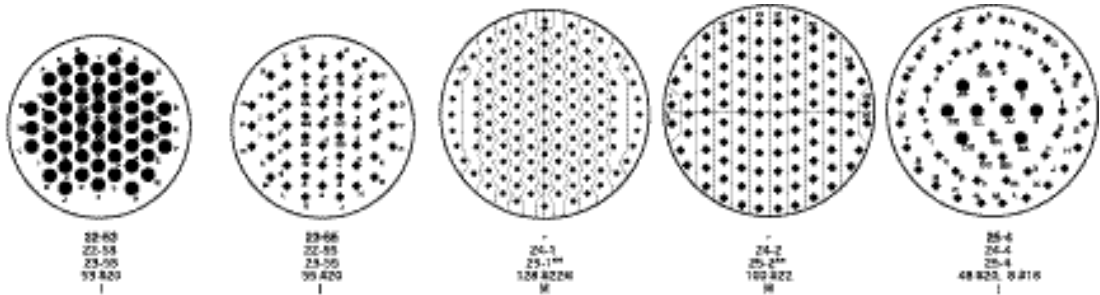
MIL-C-38999 SERIES



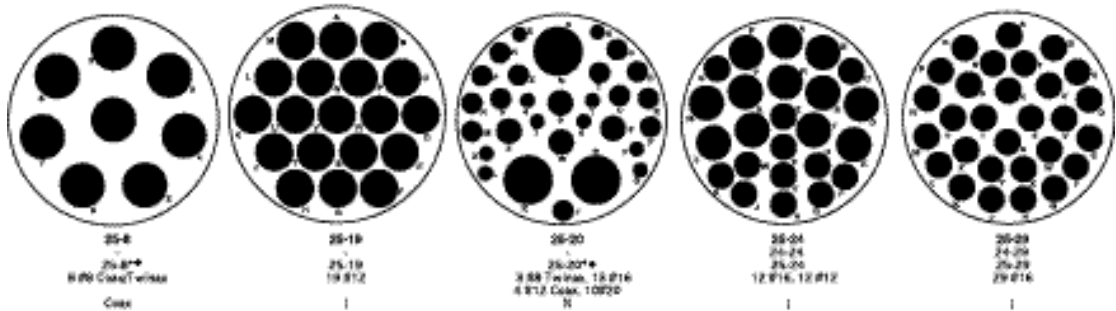
Contact Arrangements (Engaging View Pin Insert)

* Socket insert only

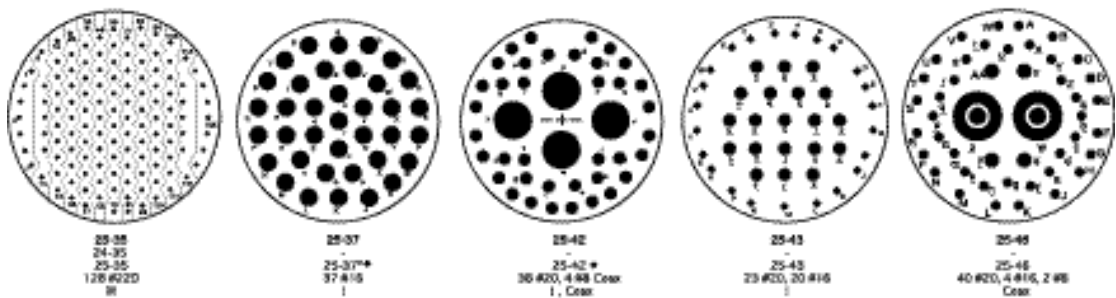
** Pin insert only (Not available in socket insert Series and)



Series
Series
Series
No. of Contacts
Service Ratings



Series
Series
Series
No. of Contacts
Service Ratings



Series
Series
Series
No. of Contacts
Service Ratings



Series
Series
Series
No. of Contacts
Service Ratings

MIL-C-38999 Series II

MIL-C-38999 SERIES



Contacts & Wire Size

Contacts - Pin (Series / / /)

MIL-C-39029/58



Contact Size	1	Color Bands 2	3	M39029 Military Part Number	Superseded Military Part Number
22D	Orange	Blue	Black	M39029/58-360	MS27493-22D
*22M	Orange	Blue	Black	M39029/58-361	MS27493-22M
*22	Orange	Blue	Black	M39029/58-362	MS27493-22
20	Orange	Blue	Black	M39029/58-363	MS27493-20
16	Orange	Blue	Black	M39029/58-364	MS27493-16
12	Orange	Blue	Black	M39029/58-365	MS27493-12

*Inactive for new design.

Contacts - Socket (Series)

MIL-C-39029/57



Contact Size	1	Color Bands 2	3	M39029 Military Part Number	Superseded Military Part Number
22D	Orange	Green	Yellow	M39029/57-354	MS27491-22D
*22M	Orange	Green	Green	M39029/57-355	MS27491-22M
*22	Orange	Green	Blue	M39029/57-356	MS27491-22
20	Orange	Green	Violet	M39029/57-357	MS27491-20
16	Orange	Green	Gray	M39029/57-358	MS27491-16
12	Orange	Green	White	M39029/57-359	MS27491-12

*Inactive for new design.

Contacts - Socket (Series &)

MIL-C-39029/56



Contact Size	1	Color Bands 2	3	M39029 Military Part Number	Superseded Military Part Number
22D	Orange	Yellow	Gray	M39029/56-348	MS27490-22D
20	Orange	Green	Brown	M39029/56-351	MS27490-22
16	Orange	Green	Red	M39029/56-352	MS27490-16
12	Orange	Green	Orange	M39029/56-353	MS27490-12

Wire Sizes and Diameters

Inch(mm)

Contact Size	Wire Size (AWG)	Finished wire outside dimensions	
		Minimum	Maximum
22D	28, 26, 24, 22	0.030(0.76)	0.054(1.37)
*22M	28, 26, 24	0.030(0.76)	0.050(1.27)
*22	26, 24, 22	0.034(0.86)	0.060(1.52)
20	24, 22, 20	0.040(1.02)	0.083(2.11)
16	20, 18, 16	0.065(1.65)	0.109(2.77)
12	14, 12	0.097(2.46)	0.142(3.61)
8	M17/095-RG-180**	0.135(3.43)	0.155(3.94)

*Inactive for new design.

**MIL-C-17

Connectors shall meet the requirements specified when:

- A full complement of wire of the applicable minimum of maximum insulation diameter is installed.
- Any combination of wire diameters not exceeding dimensions of (a), above can be used.

Note: Contacts for printed circuit and wire wrap applications are also available.