

Technical Specifications

[Materials & Finishes]

Shell	Aluminum alloy / Olive drab chromate coating over cadmium or nickel plating
Insulator	Synthetic rubber
Contact	Copper alloy / Gold plating
Gasket and Grommet	Synthetic rubber

[Electrical Data]

Operating Voltage Test Voltage

Service Rating	Test Altitude	Maximum Operating Voltage		Test Voltage	
		DC	AC (r.m.s.)	DC	AC (r.m.s.)
I	Sea Level	850	600	2,100	1,500
II	Sea Level	1,275	1,000	3,200	2,300
I	70,000 feet	-	300	535	375
II	70,000 feet	-	450	770	500

Current Rating

Contact Size	Rated Current (Amps)	Test Current (Amps)	Potential Drop (Millivolts)
20	7.5	7.5	<55
16	22.0	13.0	<50

Wire Range Size	24 to 16 AWG
Insulator Resistance	Min. 5000 MΩ at 77°F (+25°C)

[Mechanical]

Operating Temperature	-67°F (-55°C) to +257°F (+125°C)
Water Pressure	2 bar differential pressure, leakage ≤16 cm ³ /hr

Wire Sealing Range

Contact Size	AWG Wire Size	Insulation Outside Diameter Limit			
		Min.		Max.	
		Inches	mm	Inches	mm
20	24, 22 and 20	0.060	1.52	0.083	2.11
16	20, 18 and 16	0.066	1.68	0.109	2.77

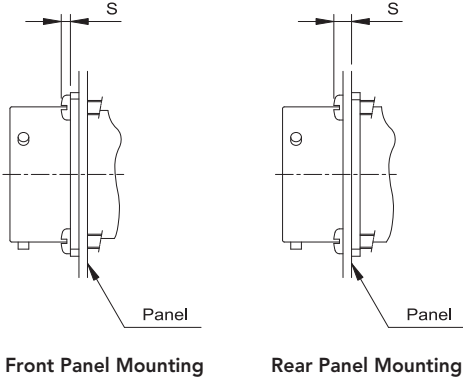
Durability	500 cycles of mating / unmating operations
Salt Spray	48 hours at environmental temperature. (Cadmium Plating)
Heat	+347°F (+175°C) for 1,000 hours.
Chemical Resistance	20 hour full immersion unmated in hydraulic fluid and lubricating oil.
Vibration	10 to 2,000Hz (15g's) 10 microseconds maximum discontinuity.
Shock	50g's, 11 ms duration, three major axes. 10 microseconds maximum discontinuity.
Contact Style	Solder
Number of Contact	2 to 61

Contact Retention

Contact Size	Axial Load Min.	
	Newtons	Lbs.
20	66.7	15
16	111.2	25

Technical Specifications

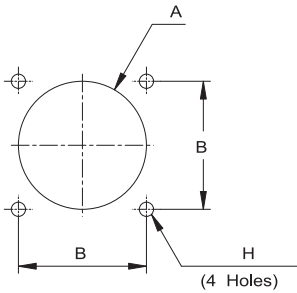
[Panel Mounting Data]



Max. Panel & Screw Head

Shell Size	MS3110	MS3112	MS3119
8	2.21	2.21	5.54
10	2.21	2.21	5.54
12	2.21	2.21	5.54
14	2.21	2.21	5.54
16	2.21	2.21	5.54
18	2.21	2.21	5.54
20	5.38	5.38	8.74
22	5.38	5.38	8.74
24	5.38	5.38	7.90

[Panel Cutout Dimensions]

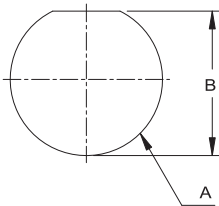


Box & Wall Mounting Receptacle

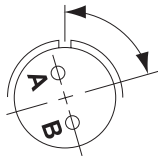
Shell Size	A dia. +0.25 / - 0.00	B(TP)	H dia. ±0.13
8	15.70	15.09	3.18
10	18.67	18.26	3.18
12	21.82	20.26	3.18
14	25.02	23.01	3.18
16	28.27	24.61	3.18
18	31.37	26.97	3.18
20	34.57	29.43	3.18
22	37.72	31.75	3.18
24	40.92	34.93	3.94

Jam Nut Receptacle

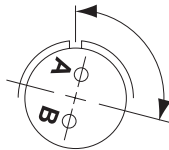
Shell Size	A dia. +0.25 / -0.00	B +0.00 / -0.25
8	14.68	13.8
10	17.7	17.0
12	22.5	21.1
14	25.6	24.3
16	28.8	27.5
18	32.0	30.7
20	35.2	33.9
22	38.3	37.1
24	41.5	40.0



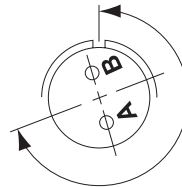
Insert Arrangement & Alternate Positioning



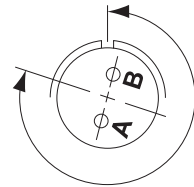
Position W



Position X



Position Y



Position Z

View looking into front face of pin insert or rear of socket insert.

Shell Size	Layout	Service Rating	Total Contacts	Contact Size			Alternate Position Degrees			
				20	16	12	W	X	Y	Z
8	2	I	2	2			58	122	-	-
	3	I	3	3			60	210	-	-
	4	I	4	4			45	-	-	-
	33	I	3	3			90	-	-	-
10	6	I	6	6			90	-	-	-
	98	I	6	6			90	180	240	270
12	3	II	3		3		-	-	180	-
	8	I	8	8			90	112	203	292
	10	I	10	10			60	155	270	295
14	5	II	5		5		40	92	184	273
	12	I	12	8	4		43	90	-	-
	15	I	15	14	1		17	110	155	234
	18	I	18	18			15	90	180	270
	19	I	19	19			30	165	315	-
16	8	II	8		8		54	152	180	331
	23	I	23	22	1		158	270	-	-
	26	I	26	26			60	-	275	338

Shell Size	Layout	Service Rating	Total Contacts	Contact Size			Alternate Position Degrees			
				20	16	12	W	X	Y	Z
8	11	II	11		11		62	119	241	340
	30	I	30	29	1		180	193	285	350
	32	I	32	32			85	138	222	265
10	16	II	16		16		238	318	333	347
	24	I	24	24			70	145	215	290
	27	I	27	27			72	144	216	288
12	39	I	39	37	2		83	144	252	333
	41	I	41	41			45	126	225	-
	21	II	21		21		16	135	175	349
14	32	I	32	32			72	145	215	288
	34	I	34	34			62	142	218	298
	41	I	41	27	14		39	135	264	-
16	55	I	55	55			30	142	226	314
	31	I	31		31		90	225	255	-
	61	I	61	61			90	180	270	324

Contact Arrangement

Front face of pin insert illustrated.

○ ●
20 16

CONTACT LEGEND

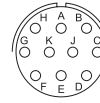
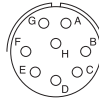
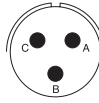
Shell Size 8

Shell Size 10



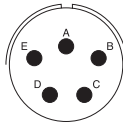
Insert Arrangement	8-2	8-3	8-4	8-33	10-6	10-98
Contact Size - No. of Contacts	#20-2	#20-3	#20-4	#20-3	#20-6	#20-6
Service Rating	I	I	I	I	I	I

Shell Size 12

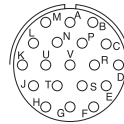
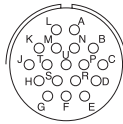


Insert Arrangement	12-3	12-8	12-10
Contact Size - No. of Contacts	#16-3	#20-8	#20-10
Service Rating	II	I	I

Shell Size 14

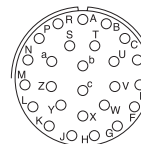
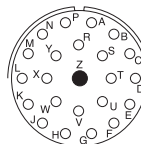
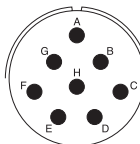


Insert Arrangement	14-5	14-12	14-15
Contact Size - No. of Contacts	#16-5	#20-8, #16-4	#20-14, #16-1
Service Rating	II	I	I



Insert Arrangement	14-18	14-19
Contact Size - No. of Contacts	#20-18	#20-19
Service Rating	I	I

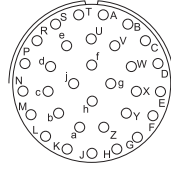
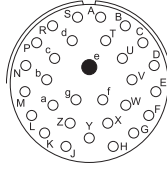
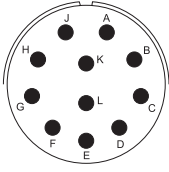
Shell Size 16



Insert Arrangement	16-8	16-23	16-26
Contact Size - No. of Contacts	#16-8	#20-22, #16-1	#20-26
Service Rating	II	I	I

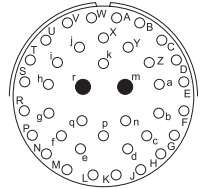
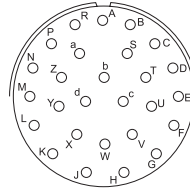
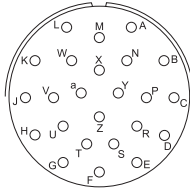
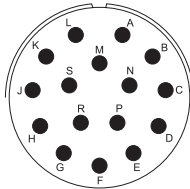
Contact Arrangement

Shell Size 18

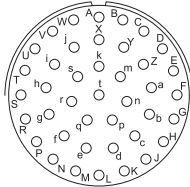


Insert Arrangement	18-11	18-30	18-32
Contact Size - No. of Contacts	#16-11	#20-29, #16-1	#20-32
Service Rating			

Shell Size 20

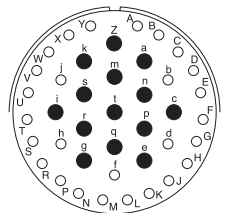
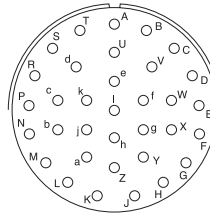
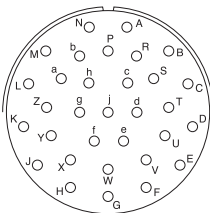
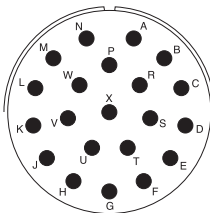


Insert Arrangement	20-16	20-24	20-27	20-39
Contact Size - No. of Contacts	#16-16	#20-24	#20-27	#20-37, #16-2
Service Rating				



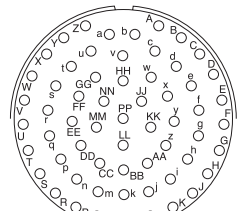
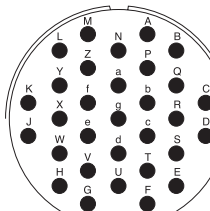
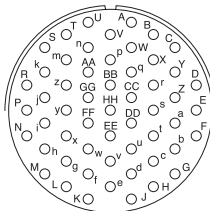
Insert Arrangement	20-41
Contact Size - No. of Contacts	#20-41
Service Rating	

Shell Size 22



Insert Arrangement	22-21	22-32	22-34	22-41
Contact Size - No. of Contacts	#16-21	#20-32	#20-34	#20-27, #16-14
Service Rating				

Shell Size 24



Insert Arrangement	22-55	24-31	24-61
Contact Size - No. of Contacts	#20-55	#16-31	#20-61
Service Rating			