

MARC 73 Series Connectors

Service and Performance Data

MARC 73 Series Connectors meet or exceed the performance requirements of specification MIL-C-38999. Your sales representative or field engineer can supply detailed, cross-reference information. MARC 73 Series Connectors meet the following selected test parameters as specified below:

DESCRIPTION	TEST REQUIREMENTS
Contact Retention	Contacts are to withstand 10 lbs [44.48 N] axial load without axial displacement in excess of 0.012 [0.30] or damage to contacts or inserts when the axial load is applied to the mating end of the contacts in unmated plugs and receptacles at a rate of approximately 1 lb/sec. [4.45 N].
Contact Resistance	The potential drop across normally mated contacts shall not exceed 25 mv under room ambient and high temperature service conditions when measured as specified in MIL C-39029 with maximum rated current.
Dielectric Withstanding Voltage, Altitude and Sea Level	No evidence of dielectric breakdown or flashover when mated and unmated plugs are subjected to 645 and 180 volts RMS, respectively, at altitudes up to 70,000 feet [21,336 m] and 1000 volts RMS at sea level.
Insulation Resistance, Room and High Temp.	Insulation resistance of mated plugs and receptacles shall be 5000 megohms, minimum, at room temperature and 1000 megohms, minimum, at 257°F [+125°C] when measured per MIL-STD 202, Method 302, Test Condition B.
Coupling and Uncoupling	Plugs and receptacles shall withstand up to 500 cycles of engagement and separation without detrimental damage to plugs or receptacles or not satisfying subsequent tests.
Fluid Immersion	Mating and unmating forces shall not exceed 27 lbs [120.10 N] maximum, (15 shell size) after fully wired plugs and receptacles are immersed for 20 hours, each, in hydraulic fluid (MIL-H-5606) and high temperature lubricating oil (MIL-L-9236) followed by a one-hour dry.
Sweep Vibration, Mated	Mated connectors shall show no circuit interruptions greater than one microsecond during 12 hours vibration to include six sweeps in each axis at extreme temperatures of -85°F [-65°C] and 257°F [+125°C] per MIL-STD-202, Method 204, Test Condition D. Post inspection shall show no detrimental cracking, breaking, or loosening of parts.
Moisture Resistance	The insulation resistance of mated connectors shall exceed 1000 megohms after subjection to moisture resistance testing per MIL-STD-202, Method 106.
Altitude Breathing	The insulation resistance of wired and mated connectors shall be 5000 megohms, minimum, and there shall be no flashover or breakdown at test voltage of 1000 volts RMS after the third cycle and while immersed in 5% salt water solution at 68°F [20°C] and room ambient pressure at 68°F [20°C].
Salt Spray	Unmated plugs and receptacles shall show no excessive corrosion which would detrimentally affect the electrical and mechanical performance of the connectors after subjection to 24 hours exposure to salt spray atmosphere per MIL-STD-202, Method 101.

Service and Performance Data

I. Electrical — Electrical Ratings

Contact Size	Current Rating (Amperes, Max., 81°F [+27°C])	Dielectric Withstanding Voltage (RMS)	Working Voltage		Contact Resistance (Millivolts, Max.)
			Sea Level	110,000 Ft. Alt. ¹	
22 AWG	5	1000	750	300	8

¹ 110,000 ft = 33,528 m

Wire Range Accommodations

Wire Barrel Size	Wire Size (AWG)	O.D. of Finished Wire Range	Wire Nominal	Wire Spec. MIL-W-16878
22 AWG	26	.029 0.74 Min.	.031 0.79 Nom.	Type "E" or "ET"
	24	—	.036 0.91 Nom.	Type "ET"
	22	.044 1.12 Max.	.042 1.07 Nom.	Type "ET"

II. Mechanical — Durability: 500 Cycles Mate/Unmate.
Coupling/Uncoupling Forces and Tightening Torques:

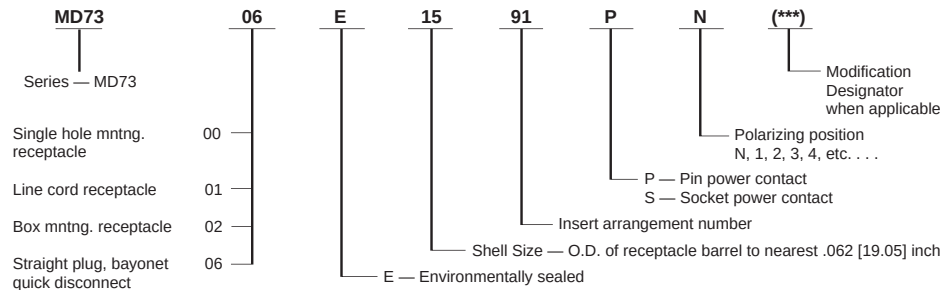
Shell Size	Coupling/ Uncoupling Force (In-Lbs.) Max.	Tightening Torque (In-Lbs.)	
		Retaining Nut	Mounting Nut
9	10 [44.48]	20 [2.26 N] Max.	30-45 [3.39 Nm – 5.08 Nm]
12	15 [66.72]	20 [2.26 N] Max.	40-55 [4.52 Nm – 6.21 Nm]
15	22 [97.86]	20 [2.26 N] Max.	55-70 [6.21 Nm – 7.91 Nm]
18	28 [124.55]	20 [2.26 N] Max.	70-85 [7.91 Nm – 9.60 Nm]

Operating Temperature: -67°F to 257°F [-55°C to +125°C].

Connector Mated Length: 2.217 [56.31] Max.

Part Number and Ordering Information

MARC 73 Series Connector part numbers indicate size, shape, insert layout, type of seal, style of contact and polarization.



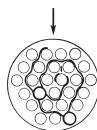
Notes: Pin contacts in plug; socket contacts in receptacle.

If P or S does not appear in the numbering system, no contacts will be supplied with order (order separately).

Contact Arrangements¹

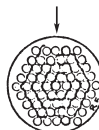
Insert Arrangement²
Number of Contacts
Contact Size

Shell Size 9



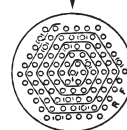
9-27³
27
22 AWG

Shell Size 12



12-61³
61
22 AWG

Shell Size 15



15-91³
91
22 AWG

¹ Views shown are front face views of receptacles. Front face view of plug is mirror image of that shown.

² Arrow (↑) indicates insert top or vertical position in relation to top or vertical position of housing.

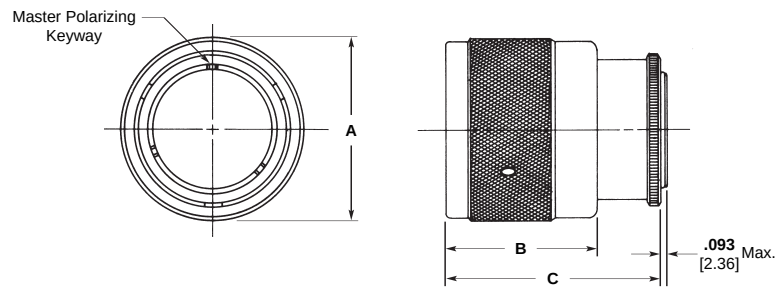
³ The 22 AWG contact arrangements will accommodate MIL-W-16878 Type ET, 22, 24, 26 AWG wire. Contact spacing is on 0.065 [1.65] centers.

MARC 73 Series Connectors (Continued)

Configurations

MD73-06E

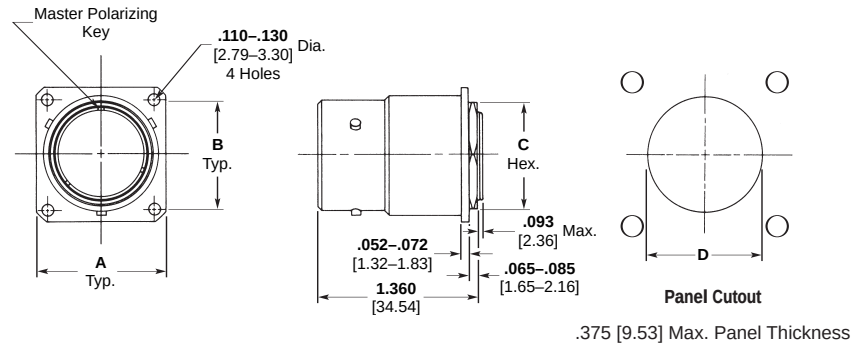
Straight Plug, Bayonet Coupling, Environmental and Non-Environmental (Mates with Receptacles 02, 00 and 01)



Shell Size	Dimensions		
	A	B (Max.)	C (Max.)
9	.813 20.65	1.000 25.40	1.288 32.72
12	1.000 25.40	1.000 25.40	1.288 32.72
15	1.125 28.58	1.000 25.40	1.288 32.72
18	1.594 40.49	1.000 25.40	1.288 32.72

MD73-02E

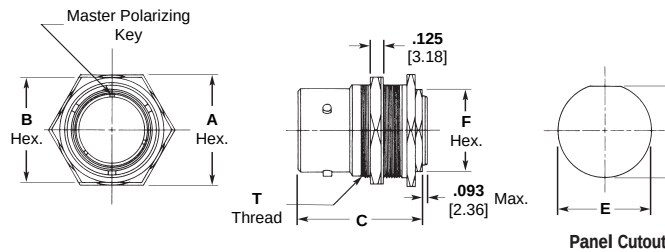
Receptacle, Box Mounting, Environmental and Non-Environmental (Mates with Plug, Type 06)



Shell Size	Dimensions			
	A	B	C	D
9	.875 22.23	.662 16.81	.562 14.27	.693-.697 17.60-17.70
12	1.000 25.40	.786 19.96	.75 19.05	.881-.885 22.38-22.48
15	1.125 28.58	.906 23.01	.875 22.23	1.006-1.011 25.55-25.68
18	1.344 34.14	1.062 26.97	1.125 28.58	1.250-1.260 31.75-32.00

MD73-00E

Receptacle, Single Hole Mounting, Environmental and Non-Environmental (Mates with Plug, Type 06)



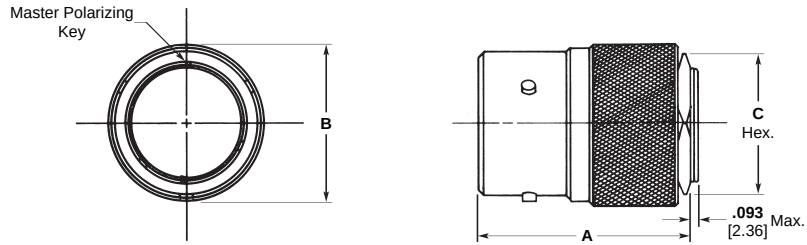
Shell Size	Dimensions						
	A	B	C	D	E	F	T (Class 2A)
9	.813 20.65	.75 19.05	1.360 34.54	.669-.673 16.99-17.09	.693-.697 17.60-17.70	.562 14.27	11/16-32UN
12	1.000 25.40	.937 23.80	1.360 34.54	.850-.856 21.59-21.74	.881-.885 22.38-22.48	.75 19.05	7/8-28UN
15	1.125 28.58	1.062 26.97	1.360 34.54	.975-.979 24.77-24.87	1.006-1.010 25.55-25.65	.875 22.23	1-28UN
18	1.625 41.28	1.375 34.93	1.360 34.54	1.212-1.216 30.78-30.89	1.251-1.255 31.78-31.88	1.125 28.58	1-1/4-28UN

MARC 73 Series Connectors (Continued)

Configurations (Continued)

MD73-01E

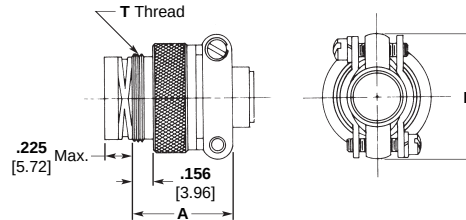
Receptacle, Line Cord,
Environmental (Mates with
Plug, Type 06)



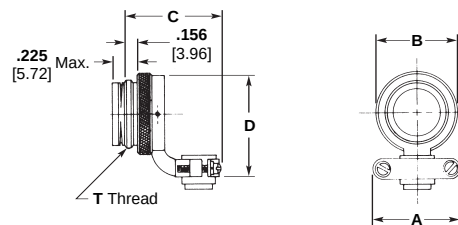
Shell Size	Dimensions		
	A	B (Max.)	C
9	1.360 34.54	.703 17.86	.562 14.27
12	1.360 34.54	.891 20.57	.75 19.05
15	1.360 34.54	1.016 25.81	.875 22.23
18	1.360 34.54	1.203 30.56	1.125 28.58

Accessories

Cable Clamps



Shell Size	Clamp Part No.	A	B	T Thd. 2A
9	086-0341-00N1	.704 17.88	.750 19.05	1/2-20 UNF
12	086-0342-00N1	.773 19.63	.932 23.67	11/16-24 UNEF
15	086-0343-00N1	.829 21.06	1.078 27.38	13/16-20 UNEF
18	086-0344-00N1	.890 22.61	1.250 31.75	1-28 UN



Shell Size	Clamp Part No.	A	B (Max.)	C (Max.)	D	T Thd. 2A
9	086-0337-00N1	.737 18.72	.600 15.24	1.100 27.94	.879 22.33	1/2-20 UNF
12	086-0338-00N1	.913 23.19	.785 19.94	1.250 31.75	1.067 27.10	11/16-24 UNEF
15	086-0339-00N1	1.048 26.62	.962 24.43	1.469 37.31	1.233 31.32	13/16-20 UNEF
18	086-0340-00N1	1.225 31.12	1.185 30.10	1.550 39.37	1.550 39.37	1-28 UN

MARC 73 Series Connectors (Continued)

Accessories (Continued)

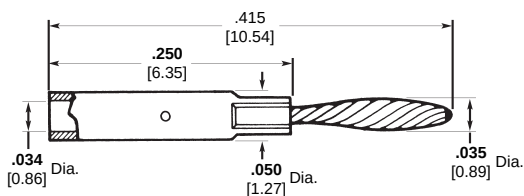
Contacts

Twist pin — 22 Pins and Sockets

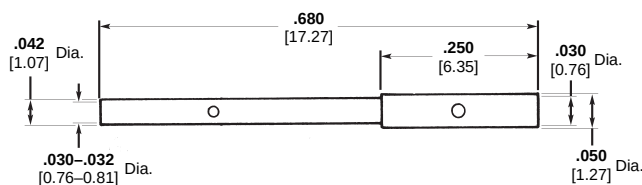
Copper alloy plated .000050 [0.00127]
gold over copper flash per MIL-G-45204,
Type II

Rating — 5 amps

Contact Resistance — .008 ohms
max.



Part Number 096-0526-0000

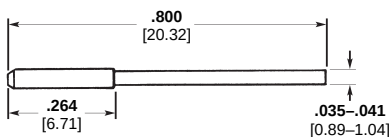


Part Number 096-0626-0001

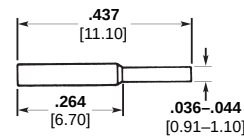
Engineering/Separation Forces —
6 oz. [1.67 N] max. / .502 [.139 N] min.

Durability — 2000 cycles

Contact Cavity Sealing Plugs



Part Number 086-0331-0000



Part Number 086-0330-0000

Contact Size	Sealing Plug	Filler Plug
22 AWG	086-0331-0000	086-0330-0000

Note: Sealing plug occupies insert and grommet cavities.
Filler plug occupies insert cavity only.