

2M Series



SMALLER, LIGHTER-WEIGHT ALTERNATIVE FOR D3899 PERFORMANCE

Amphenol 2M micro-miniature connectors are a small, light-weight option for mil-spec performance that can withstand harsh environments. They are quick-mating and a variety of styles and options are available. For full product details, please see our specifications below.

- Intermateable with Glenair® Mighty Mouse

APPLICATIONS

- Headsets
- Tactical equipment
- Airframes
- Avionics boxes
- Handheld equipment



	2M801	2M803	2M804	2M805
Type	Dual-Start ACME Thread	Bayonet	Push-Pull	Tri-Start ACME Thread
# of Contacts	1 to 130	1 to 55	1 to 55	1 to 130
Coupling Type	Threaded Coupling 1-1/2 turns to fully mate	1/4 Turn Lock Bayonet	Push-Pull Quick-Disconnect	Tri-Start Thread Ratched
Sealing	MIL-STD-810 Method 512 1 Meter for 1 Hour	Splashproof	MIL-STD-810 Method 512 1 Meter for 1 Hour	MIL-STD-810 Method 512 1 Meter for 1 Hour
EMI-Shielding	Good	Fair	Very Good	Excellent
Mating Cycles	2000 Cycles	250 Cycles Aluminum; 500 Cycles Stainless Steel	2000 Cycles	500 Cycles
Electrical Performance	Size 12: 23A, 1800 VAC Size 16: 13A, 1800 VAC Size 20: 7.5A, 750 VAC Size 23: 5A, 500 VAC	Size 12: 23A, 1800 VAC Size 16: 13A, 1800 VAC Size 20: 7.5A, 750 VAC Size 23: 5A, 500 VAC	Size 12: 23A, 1800 VAC Size 16: 13A, 1800 VAC Size 20: 7.5A, 750 VAC Size 23: 5A, 500 VAC	Size 12: 23A, 1800 VAC Size 16: 13A, 1800 VAC Size 20: 7.5A, 750 VAC Size 23: 5A, 500 VAC
Shock & Vibration	37 g's Random Vibration; 300 g's Shock	37 g's Random Vibration; 300 g's Shock	37 g's Random Vibration; 300 g's Shock	37 g's Random Vibration; 300 g's Shock

MATERIALS AND FINISHES

Shell	Aluminum alloy 6061 T6, stainless steel passivated, 200C
Insert	Polyphenylene sulfide (PPS)
Contact Retention Clip	Beryllium copper, heat-treated, unplated
Contacts	50u" gold-plated copper alloy
Socket Contact Hood	Passivated stainless steel
Grommet & Seals	Fluorosilicone rubber
Adhesives	Epoxy film
Potting Compound for PCB & Solder Versions	High-strength epoxy

ELECTRICAL DATA

Contact Sizes 23, 20, 20HD, 16, & 12 AWG

Operating Voltage & Test Voltage (Mated Condition)

CONTACT SIZE	23	20	20HD	16	12
Sea Level VAC	500	1800	750	1800	1800
40,000 Feet VAC	100	325	150	1000	1000

Current Rating (Max)

CONTACT SIZE	AMPERES
23	5
20	7.5
16	13
12	23

Contact Resistance

CONTACT SIZE	MILLIVOLT DROP
23	73 @ 5A test current
20	55 @ 7.5A test current
16	49 @ 13A test current
12	42 @ 23A test current

Insulation Resistance 5,000 megaohms minimum

MECHANICAL

Operating Temperature	-67 F to +302 F (-55C to +150 C) aluminium -67 F to +392 F (-55C to +200 C) stainless steel
Sealing	1 meter for 1 hour (2M803 splashproof)

Insulation Strip Length

CONTACT SIZE	STRIP LENGTH
23	0.150 (3.81)
20	0.188 (2.54)
20HD	0.150 (3.81)
16	0.188 (2.54)
12	0.188 (2.54)

Mating Life	2000 cycles; 2M803 aluminum 250 cycles
Salt Spray	Plating C & M: 48-hours Plating MT, NF, ZN, ZNU, UCR: 500-hours
Fungus	Fungus inert
Vibration	37g
Gunfire Vibration	No discontinuity greater than 1 microseconds; no cracking, breaking or loosening of parts, plug shall not disengage from receptacle. Connectors meet electrical requirements after vibration test.
Shock	300 G, half-sine, 3ms, 3 axes
EMI-Shielding Effectiveness	55 dB min from 100 MHz to 1000 MHz
Contact Type	Crimp, solder or printed circuit
Number of Contacts	1 to 130

Contact Retention

CONTACT SIZE	MIN. POUNDS	MIN. NEWTONS
23	6	27
20	15	67
20HD	9	40
16	25	111
12	25	111

Contact Separation Force

CONTACT SIZE	MIN. OUNCES	MIN. NEWTONS
23	0.5	0.14
20	0.7	0.19
20HD	0.7	0.19
16	2.0	0.56
12	3.0	0.83

Coupling Torque

SHELL SIZE	INCH / POUNDS
5, 6, 7	8
8, 9	9
10	12
12, 13	16
14, 15	28
16, 17	24
21	32

Polarization	Dual-Start ACME Thread coupling, 3 keyways with optional keyway rotations, note insert remained fixed.
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All dimensions in inches (millimeters in parenthesis)

LAYOUTS BY NUMBER OF CONTACTS

Front face of pin inserts shown. (Sockets mirror image)

CONTACTS	1		2		
2M801	6-1	7-1	8-2	10-2	13-2
2M803	6-1	7-1	8-2	10-2	12-2
2M804	6-1	7-1	8-2	10-2	12-2
2M805	8-1	9-1	10-2	12-2	15-2
# OF CONTACTS & SIZE	1#16	1#12	2#16	2#12	2#12
DWV VOLTAGE (VAC)	1800	1800	1800	1800	1800

CONTACTS	3			4	
2M801	5-3	6-23	13-3	6-4	9-4
2M803	5-3	6-23	12-3	6-4	9-4
2M804	5-3	6-23	12-3	6-4	9-4
2M805	NA	8-23	15-3	8-4	11-4
# OF CONTACTS & SIZE	3#23	3#20HD	3#12	4#23	4#16
DWV VOLTAGE (VAC)	500	750	1800	500	1800

CONTACTS	5			6	
2M801	7-25	10-5	16-5	6-6	8-200
2M803	7-25	10-5	14-5	6-6	8-200
2M804	7-25	10-5	14-5	6-6	8-200
2M805	9-25	12-5	18-5	8-6	10-200
# OF CONTACTS & SIZE	5#20HD	5#16	5#12	6#23	4#23, 2#20
DWV VOLTAGE (VAC)	750	1800	1800	500	1000 (#20), 500 (#23)

CONTACTS	6 (CONT.)		7		
2M801	9-200	10-201	6-7	13-7	17-7
2M803	9-200	10-201	6-7	12-7	NA
2M804	9-200	10-201	6-7	12-7	NA
2M805	11-200	12-201	8-7	15-7	19-7
# OF CONTACTS & SIZE	4#23, 2#16	4#23, 2#12	7#23	7#16	7#12
DWV VOLTAGE (VAC)	1800 (#16), 500 (#23)	1800 (#12), 500 (#23)	500	1800	1800

CONTACTS	8			10		
2M801	8-28	13-200	7-10	9-201	9-210	10-202
2M803	8-28	12-200	7-10	9-201	9-210	10-202
2M804	8-28	12-200	7-10	9-201	9-210	10-202
2M805	10-28	15-200	9-10	11-201	11-210	12-202
# OF CONTACTS & SIZE	8#20HD	6#23, 2#12	10#23	8#23, 12#20	10#20HD	8#23, 2#16
DWV VOLTAGE (VAC)	750	1800 (#12), 500 (#23)	500	1000 (#700), 500 (#23)	750	1800 (#16), 500 (#23)

LAYOUTS BY NUMBER OF CONTACTS

Front face of pin inserts shown. (Sockets mirror image)

CONTACTS	12			13	
2M801	16-12	21-12	13-201	8-13	10-200
2M803	14-12	NA	12-201	8-13	10-200
2M804	14-12	NA	12-201	8-13	10-200
2M805	18-12	23-12	15-201	10-13	12-200
# OF CONTACTS & SIZE	12#16	12#12	10#23, 2#12	13#23	12#23, 1#12
DWV VOLTAGE (VAC)	1800	1800	1800(#12), 500(#23)	500	1800(#12), 500(#23)

CONTACTS	14	19	20	22	26
2M801	17-14	9-19	13-220	21-22	10-26
2M803	NA	9-19	12-220	NA	10-26
2M804	NA	9-19	12-220	NA	10-26
2M805	19-14	11-19	15-220	23-22	12-26
# OF CONTACTS & SIZE	14#16	19#23	20#20HD	22#16	26#23
DWV VOLTAGE (VAC)	1800	500	750	1800	500

CONTACTS	35	37	41	55	69
2M801	16-235	13-37	17-241	16-55	21-269
2M803	14-235	12-37	NA	14-55	NA
2M804	14-235	12-37	NA	14-55	NA
2M805	18-235	15-37	19-241	18-55	23-269
# OF CONTACTS & SIZE	35#20HD	37#23	41#20HD	55#23	69#20HD
DWV VOLTAGE (VAC)	750	500	750	500	750

CONTACTS	85	130
2M801	17-85	21-130
2M803	NA	NA
2M804	15-85	NA
2M805	19-85	23-130
# OF CONTACTS & SIZE	85#23	130#23
DWV VOLTAGE (VAC)	500	500

CREATE YOUR PART NUMBER 2M804 PUSH-PULL QUICK DISCONNECT

1	2	3	5	6
2M804-001-06	NF	8-13	P	A
SHELL STYLE	PLATING	SHELL SIZE - LAYOUT	CONTACT TYPE	KEYING

STEP 1: SELECT SHELL STYLE, PLUG OR RECEPTACLE




2M804-003-00
Front Mount Jam Nut with Integral Backshell



2M804-004-00
Front Mount Jam Nut with Rear Accessory Threads



2M804-001-06
Plug with Integral Backshell



2M804-003-01
In-Line with Integral Backshell



2M804-004-01
In-Line with Rear Accessory Threads



2M804-002-06
Plug with Rear Accessory Thread



2M804-003-07
Rear Mount Jam Nut with Integral Backshell



2M804-004-07
Rear Mount Jam Nut with Rear Accessory Threads

STEP 2: SELECT CLASS

- C** = Aluminum/ Black Anodize (Non-Conductive) (RoHS)
- M** = Aluminum/ Electroless Nickel (RoHS)
- NF** = Aluminum/ Cadmium with Olive Drab Chromate
- MT** = Aluminum/ Nickel-PTFE (Duralon) (RoHS)
- Z1** = Stainless Steel/ Passivated
- ZN** = Aluminum/ Zinc-Nickel with Olive Drab Chromate
- ZNU** = Aluminum/ Zinc-Nickel with Black Chromate (RoHS)

STEP 3: SELECT LAYOUT

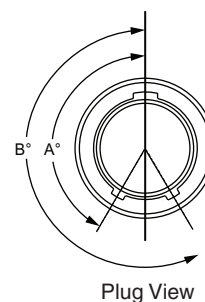
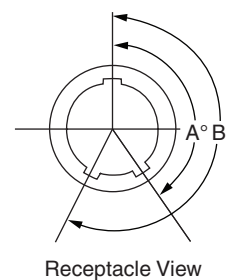
LAYOUT	# OF CONTACTS	CONTACT SIZE				
		23	20	20HD	16	12
5-3	3	3				
6-1	1				1	
6-4	4	4				
6-6	6	6				
6-7	7	7				
6-23	3			3		
7-1	1					1
7-10	10	10				
7-25	5			5		
8-2	2				2	
8-13	13	13				
8-28	8			8		
8-200	6	4	2			
9-4	4				4	
9-19	19	19				
9-200	6	4			2	
9-201	10	8	2			
9-210	10			10		
10-2	2					2
10-5	5				5	
10-26	26	26				
10-200	13	12				1
10-201	6	4				2
10-202	10	8			2	
12-2	2					2
12-3	3					3
12-7	7				7	
12-37	37	37				
12-200	8	6				2
12-201	12	10				2
12-220	20			20		
14-5	5					5
14-12	12				12	
14-55	55	55				
14-235	35			35		

STEP 4: SELECT CONTACT

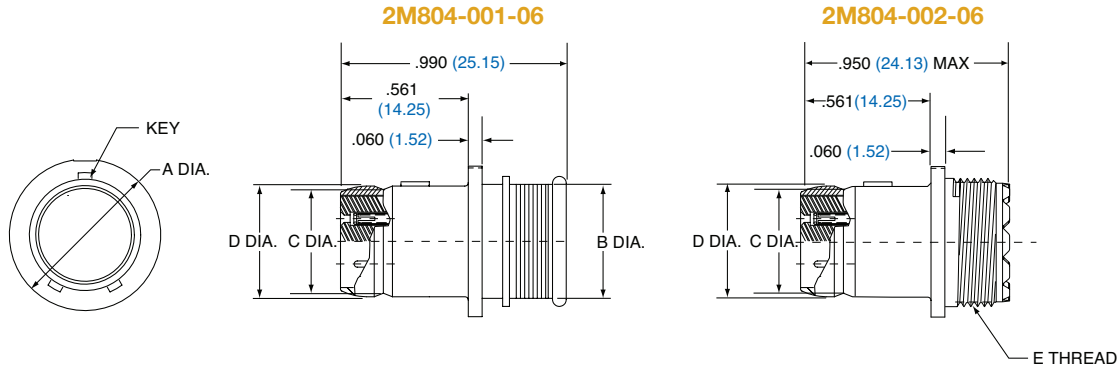
P = Pin **S** = Socket

STEP 5: SELECT KEYING

	A KEYWAY DEGREE	B KEYWAY DEGREE
OMIT FOR NORMAL	SINGLE MASTER KEYWAY	
A	150	210
B	75	210
C	95	230
D	140	275

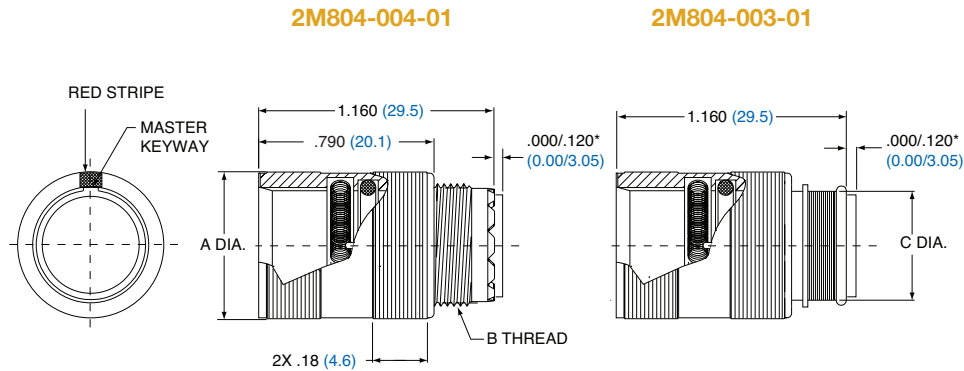


PLUG



SHELL SIZE	A DIA.		B DIA.		C DIA.		D DIA.		E THREAD
	IN.	MM.	IN.	MM.	IN.	MM.	IN.	MM.	
5	0.420	10.67	0.246	6.25	0.219	5.56	0.260	6.60	.2500-32 UNEF-2A
6	0.495	12.57	0.286	7.26	0.275	6.99	0.325	8.26	.3125-32 UNEF-2A
7	0.562	14.28	0.390	9.91	0.351	8.92	0.390	9.90	.4375-28 UNEF-2A
8	0.605	15.37	0.442	11.23	0.398	10.11	0.440	11.18	.5000-28 UNEF-2A
9	0.670	17.02	0.500	12.70	0.450	11.43	0.495	12.57	.5625-24 UNEF-2A
10	0.745	18.92	0.564	14.33	0.529	13.44	0.563	14.30	.6250-24 UNEF-2A
12	0.852	21.64	0.650	16.51	0.646	16.41	0.685	17.40	.6875-24 UNEF-2A
14	0.985	25.02	0.805	20.45	0.761	19.33	0.810	20.57	.9375-20 UNEF-2A

IN-LINE RECEPTACLE

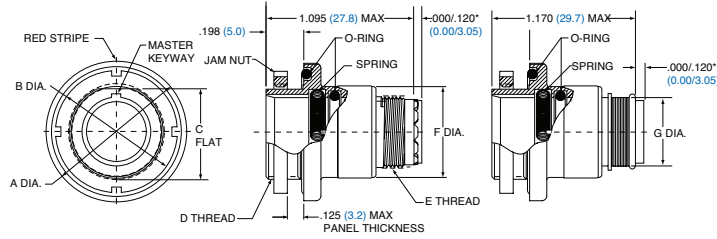


SHELL SIZE	A DIA.		B THREAD	C DIA.	
	IN.	MM.		IN.	MM.
5	0.450	11.43	.2500-32 UNEF-2A	0.246	6.25
6	0.520	13.21	.3125-32 UNEF-2A	0.286	7.26
7	0.580	14.73	.4375-28 UNEF-2A	0.390	9.91
8	0.603	15.32	.5000-28 UNEF-2A	0.442	11.23
9	0.695	17.65	.5625-24 UNEF-2A	0.500	12.70
10	0.735	18.67	.6250-24 UNEF-2A	0.564	14.33
12	0.880	22.35	.6875-24 UNEF-2A	0.650	16.51
14	1.010	25.65	.9375-20 UNEF-2A	0.805	20.45

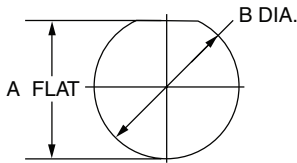
All dimensions in inches (millimeters in blue)

REAR MOUNT JAM NUT

2M804-004-07
2M804-003-07



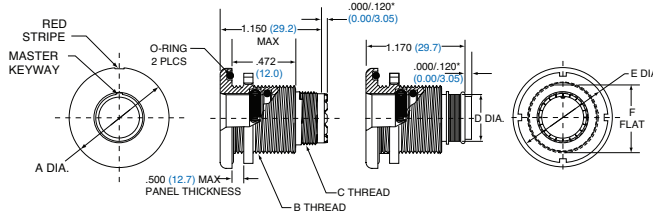
SHELL SIZE	A DIA.		B DIA.		C FLAT		D THREAD	E THREAD	F DIA.		G DIA.	
	IN.	MM.	IN.	MM.	IN.	MM.			IN.	MM.	IN.	MM.
5	0.775	19.69	0.562	14.27	0.415	10.54	.4375-32 UN-2A	.2500-32 UNEF-2A	0.450	11.43	0.235	5.97
6	0.830	21.08	0.625	15.87	0.467	14.40	.5000-32 UN-2A	.3125-32 UNEF-2A	0.520	13.21	0.286	7.26
7	0.910	23.11	0.750	19.05	0.594	15.09	.6250-28 UN-2A	.4375-28 UNEF-2A	0.580	14.73	0.390	9.91
8	0.955	24.26	0.750	19.05	0.594	15.09	.6250-28 UN-2A	.5000-28 UNEF-2A	0.603	15.32	0.442	11.23
9	1.000	25.40	0.812	20.62	0.655	16.64	.6875-28 UN-2A	.5625-24 UNEF-2A	0.695	17.65	0.500	12.70
10	1.085	27.48	0.875	22.22	0.721	18.31	.7500-28 UN-2A	.6250-24 UNEF-2A	0.735	18.67	0.564	14.33
12	1.180	29.97	1.000	25.40	0.843	21.41	.8750-28 UN-2A	.6875-24 UNEF-2A	0.880	22.35	0.650	16.51
14	1.370	34.80	1.125	28.57	0.968	24.59	1.0000-28 UN-2A	.9375-20 UNEF-2A	1.010	25.65	0.805	20.45



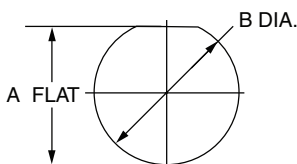
REAR MOUNT JAM NUT PANEL CUTOUT				
SHELL SIZE	A FLAT		B DIA.	
	IN. ±.002	MM. ± 0.05	IN. ±.005	MM. ± 0.13
5	0.423	10.74	0.448	11.38
6	0.475	12.07	0.510	12.95
7	0.602	15.29	0.635	16.13
8	0.602	15.29	0.635	16.13
9	0.663	16.84	0.698	17.73
10	0.729	18.82	0.760	19.30
12	0.851	21.62	0.885	22.48
14	0.976	24.79	1.010	25.65

FRONT MOUNT JAM NUT

2M804-004-00
2M804-003-00



SHELL SIZE	A DIA.		B THREAD	C THREAD	D DIA.		E DIA.		F FLAT.	
	IN.	MM.			IN.	MM.	IN.	MM.	IN.	MM.
5	0.830	21.08	.5000-32 UN-2A	.2500-32 UNEF-2A	0.246	6.25	0.625	15.87	0.470	11.94
6	0.885	22.48	.5625-32 UN-2A	.3125-32 UNEF-2A	0.286	7.26	0.688	17.47	0.530	13.46
7	0.955	25.27	.6875-28 UN-2A	.4375-28 UNEF-2A	0.390	9.91	0.812	20.62	0.663	16.84
8	0.955	25.27	.6875-28 UN-2A	.5000-28 UNEF-2A	0.442	11.23	0.812	20.62	0.663	16.84
9	1.075	27.31	.7500-28 UN-2A	.5625-24 UNEF-2A	0.500	12.70	0.875	22.22	0.720	18.29
10	1.140	28.95	.8125-28 UN-2A	.6250-24 UNEF-2A	0.564	14.33	0.938	23.82	0.780	19.81
12	1.340	34.04	1.0000-28 UN-2A	.6875-24 UNEF-2A	0.650	16.51	1.125	28.57	0.970	24.64
14	1.390	35.31	1.0625-20 UN-2A	.9375-20 UNEF-2A	0.805	20.45	1.188	30.18	1.020	25.91



FRONT MOUNT JAM NUT PANEL CUTOUT				
SHELL SIZE	A FLAT		B DIA.	
	IN. ±.002	MM. ± 0.05	IN. ±.005	MM. ± 0.13
5	0.477	12.12	0.510	12.95
6	0.537	13.64	0.573	14.55
7	0.670	17.02	0.698	17.73
8	0.670	17.02	0.698	17.73
9	0.727	18.47	0.760	19.30
10	0.787	20.19	0.823	20.90
12	0.977	24.82	1.010	25.65
14	1.027	26.09	1.073	27.25

All dimensions in inches (millimeters in blue)

SHRINK BOOTS FOR INTEGRAL ENDBELL

High Performance Elastomer

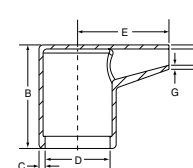
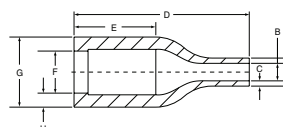
Pre-Coated with high-temperature adhesive

- Operating temperature -94 F to +302 F (-70 C to +150 C)
- Rated for 3000 hours of continuous operation at +302 F (+150 C)
- Excellent resistance to fuels, oils, and solvents
- Spec VG95343 Part 6

Zero Halogen

Low-Smoke, Zero-Halogen Toxicity Requirements

- Meets U.S. and E.U. standards
- Pre-coated with high-temperature adhesive
- Operating temperature -22 F to +257 F (-30 C to +125 C)
- Good resistance to fuels, oils, and solvents
- Spec NAVSEA 5617649



BOOT SIZE	SHELL SIZE	HIGH-PERFORMANCE ELASTOMER				ZERO-HALOGEN				STRAIGHT BOOT CABLE RANGE		RIGHT ANGLE BOOT CABLE RANGE	
		STRAIGHT		RIGHT ANGLE		STRAIGHT		RIGHT ANGLE		MAX.	MIN.	MAX.	MIN.
		IN.	MM.	IN.	MM.	IN.	MM.	IN.	MM.	IN.	MM.	IN.	MM.
1	5	2M809S060-1	2M809A060-1	2M809S060-1H	2M809A060-1H *	0.350	9.0	0.080	2.0	0.240	6.0	0.080	2.0
2	6, 7	2M809S060-2	2M809A060-2	2M809S060-2H	2M809A060-2H	0.650	16.5	0.150	3.8	0.650	16.5	0.100	2.5
3	8, 9	2M809S060-3	2M809A060-3	2M809S060-3H	2M809A060-3H	0.920	23.4	0.220	5.6	0.920	23.3	0.220	5.6
4	10, 12	2M809S060-4	2M809A060-4	2M809S060-4H	2M809A060-4H	1.120	28.4	0.260	6.6	1.120	28.5	0.250	6.3
5	14	2M809S060-5	2M809A060-5	2M809S060-5H	2M809A060-5H	1.220	31.0	0.280	7.1	1.220	30.9	0.280	7.1

* Size 1 Zero-halogen right-angle supplied less lip, see graphic

METAL DUSTCAPS



SHELL SIZE FOR 2M804	METAL DUSTCAPS WITH NYLON ROPE LANYARD			
	FOR PLUGS WITH RING ATTACHMENT	FOR FLANGED RECEPTACLES WITH RING ATTACHMENT	FOR JAM NUT RECEPTACLES REAR MOUNT WITH LARGE RING ATTACHMENT	FOR JAM NUT RECEPTACLES FRONT MOUNT WITH LARGE RING ATTACHMENT
5	2M809-198-XX5-G02-4	2M667-202-XX5-G01-3R	2M667-202-XX5-G14-4R	2M667-202-XX5-G16-4R
6	2M809-198-XX6-G02-4	2M667-202-XX6-G01-3R	2M667-202-XX6-G15-4R	2M667-202-XX6-G16-4R
7	2M809-198-XX7-G02-4	2M667-202-XX7-G01-3R	2M667-202-XX7-G16-4R	2M667-202-XX7-G18-4R
8	2M809-198-XX8-G02-4	2M667-202-XX8-G01-3R	2M667-202-XX8-G16-4R	2M667-202-XX8-G18-4R
9	2M809-198-XX9-G02-4	2M667-202-XX9-G02-3R	2M667-202-XX9-G17-4R	2M667-202-XX9-G19-4R
10	2M809-198-XX10-G02-5	2M667-202-XX10-G02-3R	2M667-202-XX10-G18-4R	2M667-202-XX10-G19-4R
12	2M809-198-XX12-G02-5	2M667-202-XX12-G02-3R	2M667-202-XX12-G19-4R	2M667-202-XX12-G20-4R
14	2M809-198-XX14-G02-6	2M667-202-XX14-G02-3R	2M667-202-XX14-G20-4R	2M667-202-XX14-G20-4R

- C** Aluminum/ Black Anodize (Non-Conductive) (RoHS)
- M** Aluminum/ Electroless Nickel (RoHS)
- NF** Aluminum/ Cadmium with Olive Drab Chromate
- MT** Aluminum/ Nickel-PTFE (Duralon) (RoHS)

- Z1** Stainless Steel/ Passivated
 - ZN** Aluminum/ Zinc-Nickel with Olive Drab Chromate
 - ZNU** Aluminum/ Zinc-Nickel with Black Chromate (RoHS)
- REPLACE XX WITH PLATING CODE**

RUBBER DUSTCAPS



SHELL SIZE FOR 2M804	RUBBER NON-CONDUCTIVE DUSTCAPS WITH NYLON ROPE LANYARD		
	FOR PLUG WITH RING ATTACHMENT	FOR FLANGED RECEPTACLE WITH RING ATTACHMENT	FOR JAM NUT RECEPTACLES FRONT MOUNT WITH LARGE RING ATTACHMENT
5	2M809-083-5G4-02	2M809-087-5G4-15	2M809-087-5G4-08
6	2M809-083-6G4-02	2M809-087-6G4-08	2M809-087-6G4-16
7	2M809-083-7G4-02	2M809-087-7G4-17	2M809-087-7G4-18
8	2M809-083-8G4-02	2M809-087-8G4-17	2M809-087-8G4-18
9	2M809-083-9G4-02	2M809-087-9G4-18	2M809-087-9G4-10
10	2M809-083-10G5-02	2M809-087-10G4-10	2M809-087-10G4-25
12	2M809-083-12G5-02	2M809-087-12G4-19	2M809-087-12G4-12
14	2M809-083-14G6-02	2M809-087-14G4-12	2M809-087-14G4-20

STRAIN RELIEF CABLE CLAMP WITH ROTATABLE COUPLING

SHELL SIZE	PART NUMBER	THREAD SIZE 2B	CABLE ENTRY DIA.
5	2M620MS065-XX05	.2500-32 UNEF	0.11
6	2M620MS065-XX06	.3125-32 UNEF	0.17
7	2M620MS065-XX07	.4375-28 UNEF	0.23
8	2M620MS065-XX08	.5000-28 UNEF	0.30
9	2M620MS065-XX09	.5625-24 UNEF	0.30
10	2M620MS065-XX10	.6250-24 UNEF	0.36
12	2M620MS065-XX12	.6875-24 UNEF	0.42
14	2M620MS065-XX14	.9375-20 UNEF	0.48

- C** Aluminum/ Black Anodize (Non-Conductive) (RoHS)
M Aluminum/ Electroless Nickel (RoHS)
NF Aluminum/ Cadmium with Olive Drab Chromate
MT Aluminum/ Nickel-PTFE (Duralon) (RoHS)
Z1 Stainless Steel/ Passivated
ZN Aluminum/ Zinc-Nickel with Olive Drab Chromate
ZNU Aluminum/ Zinc-Nickel with Black Chromate (RoHS)

REPLACE **XX** WITH PLATING CODE

All Dimensions in inches (millimeters in parenthesis).

ADDITIONAL BACKSHELLS

	DESCRIPTION	PART NUMBER PREFIX	STRAIGHT	90°	45°
	Thread-On BAND-IT Adapter	2M440MS135	X		
		2M440ML135		X	
		2M440MK135			X
	Low-Profile BAND-IT Adapter	2M440MS134	X		
	Environmental Backshell	2M370MS038	X		
		2M370MA038		X	
		2M370MB038			X
	EMI Backshell	2M380MS137	X		
		2M380MA137		X	
		2M380MB137			X
	Environmental EMI Backshell	2M390MS077	X		
		2M390MA077		X	
		2M390MB077			X

PINS



CONTACT SIZE AWG	WIRE SIZE AWG	PIN CONTACT	COLOR BANDS			WIRE STRIP LENGTH	WIRE SEALING RANGE		WIRE HOLE FILLER	HAND-CRIMP TOOL	POSITIONER (LOCATOR)	PLASTIC INSERTION/EXTRACTION TOOL	METAL INSERTION TOOL	METAL EXTRACTION TOOL
			1	2	3		MIN.	MAX.						
23	22,24,26,& 28	2M809-001	N/A	N/A	N/A	0.15 (3.81)	0.024 (.609)	0.052 (1.32)	2M809-155 (Black)	M22520/2-01	K1461-1	2M809-088	DAK225-22	DRK225-22
	26,28, & 30	2M809-042	Blue	N/A	N/A	0.15 (3.81)	0.024 (.609)	0.052 (1.32)			2M809-057			
20HD	20,22, & 24	2M809-204	N/A	N/A	N/A	0.15 (3.81)	0.040 (1.02)	0.083 (2.11)	MS27488-20-2 (Red)	M22520/2-01	2M809-206	2M809-203	N/A	N/A
20	20,22, & 24	M39029/58-363	Orange	Blue	Orange	.188 (4.77)	0.040 (1.02)	0.083 (2.11)	MS27488-20-2 (Red)	M22520/1-01	M22520/1-04	M81969/14-10	11-008674-020	11-008675-020
16	16,18, & 20	M39029/58-364	Orange	Blue	Yellow	.188 (4.77)	0.065 (1.65)	0.109 (2.77)	MS27488-16-2 (Green)	M22520/1-01	M22520/1-04	M81969/14-03	11-008674-016	11-008675-016
12	12 & 14	M39029/58-365	Orange	Blue	Green	.188 (4.77)	0.097 (2.46)	0.142 (.361)	MS27488-12-2 (Orange)	M22520/1-01	M22520/1-04	M81969/14-04	11-008674-012	11-008675-012

SOCKETS

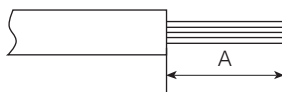


CONTACT SIZE AWG	WIRE SIZE AWG	PIN CONTACT	COLOR BANDS			WIRE STRIP LENGTH	WIRE SEALING RANGE		WIRE HOLE FILLER	HAND-CRIMP TOOL	POSITIONER (LOCATOR)	PLASTIC INSERTION/EXTRACTION TOOL	METAL INSERTION TOOL	METAL EXTRACTION TOOL
			1	2	3		MIN.	MAX.						
23	22,24,26,& 28	2M809-002	N/A	N/A	N/A	0.15 (3.81)	0.024 (.609)	0.052 (1.32)	2M809-155 (Black)	M22520/2-01	K1461-1	2M809-088	DAK225-22	DRK225-22
	26,28, & 30	2M809-043	Blue	N/A	N/A	0.15 (3.81)	0.024 (.609)	0.052 (1.32)			2M809-057			
20HD	20,22, & 24	2M809-205	N/A	N/A	N/A	0.15 (3.81)	0.040 (1.02)	0.083 (2.11)	MS27488-20-2 (Red)	M22520/2-01	2M809-206	2M809-203	N/A	N/A
20	20,22, & 24	M39029/57-357	Orange	Green	Violet	.188 (4.77)	0.040 (1.02)	0.083 (2.11)	MS27488-20-2 (Red)	M22520/1-01	M22520/1-04	M81969/14-10	11-008674-020	11-008675-020
16	16,18, & 20	M39029/57-358	Orange	Green	Gray	.188 (4.77)	0.065 (1.65)	0.109 (2.77)	MS27488-16-2 (Green)	M22520/1-01	M22520/1-04	M81969/14-03	11-008674-016	11-008675-016
12	12 & 14	M39029/57-359	Orange	Green	White	.188 (4.77)	0.097 (2.46)	0.142 (.361)	MS27488-12-2 (Orange)	M22520/1-01	M22520/1-04	M81969/14-04	11-008674-012	11-008675-012

All dimensions in inches

WIRE STRIPPING

Strip insulation from the end of wire to be crimped. (See table for proper stripping dimensions.) Do not cut or damage wire strands.



CONTACT SIZE	A
23, 20HD	.150 (3.18)
20	.188 (4.77)
16	.188 (4.77)
12	.188 (4.77)

CONTACT CRIMPING



STEP 1: Insert wire into rear of contact. Wire insulation must press against rear of contact. Wire must be visible through inspection hole.

STEP 2: M22520 series crimp tool and locator is recommended. See Contact and Tool Table on pages 182 and 183 for choice of turret head and selection setting according to contact size, part number and wire gauge size.

STEP 3: Insert contact and wire into tool jaws. To crimp, squeeze handles together fully until ratchet releases and allows handles to expand; otherwise, contact cannot be extracted from tool jaws. Maintain slight insertion pressure on wire while crimping contact to wire.

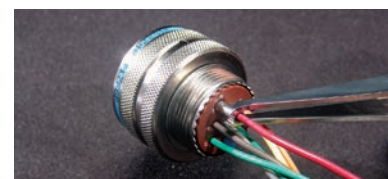
CONTACT INSERTION



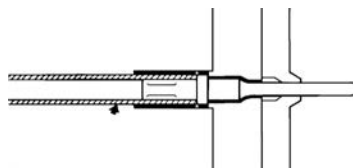
STEP 1: Remove hardware from plug or receptacle and slip over wire bundle in proper order for reassembly.



STEP 2: Using proper plastic or metal insertion tool for corresponding contact, position wire in tip of the tool so that the tool tip presses against the contact shoulder.



STEP 3: Press tool against contact shoulder and, with firm and even pressure, insert wired contact and tool tip into center contact cavity.



STEP 4: When contact bottoms, a slight "click" can be heard as tines of metal retaining clip snap into place behind contact shoulder.



STEP 5: Remove tool and pull back lightly on wire to make sure contact is properly seated. Repeat operation with remainder of contacts to be inserted, beginning with the center cavity and working outward in alternating rows.

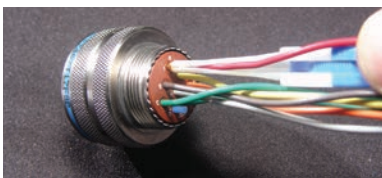


STEP 6: After all contacts are inserted, fill any empty cavities with wire sealing plugs. Reassemble plug or receptacle hardware.

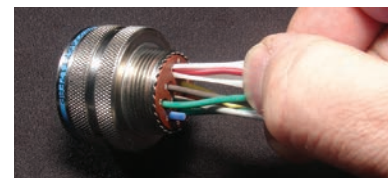
CONTACT EXTRACTION



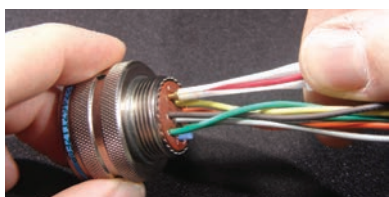
STEP 1: Remove hardware from plug or receptacle and slide hardware back along wire bundle.



STEP 2: Using plastic or metal extraction tool with proper color code corresponding to contact size, place wire in tool.



STEP 3: Insert tool into contact cavity until tool tip bottoms against the contact shoulder, expanding clip retaining tines.



STEP 4: Hold wire firmly in tool and extract wired contact and tool. Repeat operation for all contacts to be extracted.



STEP 5: Fill any empty cavities with wire sealing plugs. Reassemble plug or receptacle hardware.

All dimensions in inches