

Amphenol 97 Series MIL-DTL-5015



MATES WITH ALL THREADED MIL-DTL-5015 CONNECTORS

The 97 series is a durable, cost-effective MIL-DTL-5015 available in a variety of shell styles, sizes, contacts, and layouts. Contacts are silver-plated with pre-tinned solder cups. These circular connectors are excellent for industrial applications including robotics, machine tools and welding.

- UL-approved & CSA-certified
- Also called MIL-C-5015 or MS

Note: MS-A version (blue insulator) is inactive for new military designs. The 97 series can be purchased under inactive military part numbers, so use caution. MIL-DTL-5015 uses a gray insulator. Obsolete MS-A connectors can be purchased with the original hard blue insulator or the newer sealed construction, using a soft neoprene insulator. For the neoprene insulator, add "-RES" as a suffix to the part number.

APPLICATIONS

Industrial, commercial and medical applications where cost-effective, general-duty connectors are required.

- Communications systems
- Conveyors
- Factory automation
- Industrial machinery
- Medical instrumentation
- Motors
- Mobile equipment
- Sensors
- Ships
- Trucks
- Trailers

FEATURES

- Cost-effective
- Solder termination
- UL-recognized and CSA-certified
- Wide selection of shell styles and insert patterns
- Wide variety of connector finishes
- Threaded coupling, hard dielectric inserts
- Solid or split-shell construction

TECHNICAL SPECIFICATIONS

MATERIALS & FINISHES

Shell	Aluminum alloy
Plating	Olive drab chromate or clear chromate coating over cadmium plating to QQ-P-416, Black zinc cobalt, electroless nickel or green zinc
Contacts	Brass or copper alloy
Platings	Silver plating to QQ-S-365 (solder contacts have tinned solder pot) Gold plating to MIL-G-45204
Insulator	Diallyl phthalate (Blue color)

ELECTRICAL DATA

Operating Voltage/Test Voltage

SERVICE RATING*	TEST VOLTAGE (RMS 60 cps)	SUGGESTED* OPERATING VOLTAGE		AIR SPACING NOM. (INCHES)	CREEPAGE DISTANCE NOM. (INCHES)
		DC	AC (rms)		
I	1,000	250	200	1/32	1/16
A	2,000	700	500	1/16	1/8
D	2,800	1,250	900	1/8	3/16
E	3,500	1,750	1,250	3/16	1/4
B	4,500	2,450	1,750	1/4	5/16

* Each insulator has a specific service rating. These numbers should be used by the designer only as a guide. The Service Ratings for each layout are listed on [pages 64-85](#).

97 series connectors show no evidence of breakdown when the given test voltages are applied between the two closest contacts and between the shell and the contacts closest to the shell for a period of one minute, per MIL-STD-1344 Method 3001.

Current Rating & Contact Resistance

CONTACT SIZE	TEST CURRENT (AMPS)	POTENTIAL DROP (MILLIVOLTS)
16	13	49
12	23	42
8	46	26
4	80	23
0	150	21

Maximum total current to be carried per connector in wire bundles as specified in MIL-W-5088. Contact resistance when tested to MIL-C-39029 will not exceed voltage drops listed in above table.

MECHANICAL

Wire Range Sizes	24 to 0 AWG
Contact Resistance	(See table above)
Insulation Resistance	> 5,000 megohms at 77°F (25°C) per MIL-DTL-5015, 3.18
Mating Life	100 cycles minimum per MIL-DTL-5015, 3.16
Salt Spray	MIL-STD-1344 Method 1001 Condition B minimum (Cadmium) 48 hour
Heat	+257°F (+125°C) for 60 hours, +185°F (+85°C) for 1,000 hours per MIL-DTL-5015, 4.6.14, minimum
Chemical Resistance	20 hour full immersion (unmated) in hydraulic fluid and lubricating oil per MIL-DTL-5015 minimum
Vibration	10 to 2,000Hz (15g's) 10 microseconds maximum discontinuity to MIL-STD-1344 Method 2005 per MIL-DTL-5015
Shock	50g 11 millisecond duration, three major axes 10 microseconds maximum discontinuity to MIL-DTL-5015, 3.13
Contact Type	Solder (hard silver or gold plating)
Number of Circuits	1 to 52 (↔ See pages 64-85)

TECHNICAL SPECIFICATIONS







Contact retention and separation forces to MIL-DTL-5015, 4.6.6 & 3.26 minimum.

CONTACT SIZE	RETENTION AXIAL LOAD		SEPARATION FORCE MINIMUM	
	NEWTONS	LB	NEWTONS	LB
16	44	10	1	0.25
12	67	15	2	0.50
8	89	20	3	0.75
4	89	20	4	1.00
0	111	25	9	2.00

Polarization Integral key and keyway plus optional rotational polarization. ➡ See pages 75-85 for valid rotations

Approvals/Agency Listing UL# E115497; CSA LR69183 for 97 Series

COMPONENTS

	PLUGS	RECEPTACLES
Barrel/Shell		
Coupling Nut/Spring		
Insert Assembly		
Insert Retainer Spring		
Endbell		


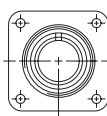
CREATE YOUR PART NUMBER USING THESE FIVE STEPS

STEP	1	2	3	4	5
	97	3106A	18-1	P	-946
SERIES PREFIX	SHELL STYLE	LAYOUT	CONTACT	ROTATION	PLATING


(example)

STEP 1: SELECT SHELL STYLE, PLUG OR RECEPTACLE


RECEPTACLES ← Mates with → PLUGS


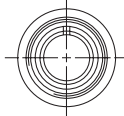
97-3100A
Wall Mount with Accessory Threads, Solid Endbell




97-3106A
Straight with Accessory Threads, Solid Endbell




97-3106B
Straight with Accessory Threads, Split Endbell


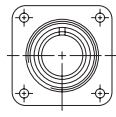
97-3101A
Cable Mount with Accessory Threads, Solid Endbell




97-3107A
Friction Fit Straight with Accessory Threads, Solid Endbell




97-3107B
Friction Fit Straight with Accessory Threads, Split Endbell

97-3102A
Box Mount with No Accessory Threads



97-3108A
Right Angle with Accessory Threads, Solid Endbell



97-3108B
Right Angle with Accessory Threads, Split Endbell

STEP 2: SELECT LAYOUT

⇒ See pages 64-85 for more information

8S-1	16S-1	18-3	18-29	20-25	22-20	24-22	28-20
10SL-3*	16S-4	18-4	18-30	20-27	22-22	24-24	28-21
10SL-4*	16S-5	18-5	18-31	20-29	22-23	24-25	32-5
12-5	16S-6	18-8	18-420	20-30	22-27	24-26	32-6
12S-1	16S-8	18-9	20A16	20-32	22-28	24-27	32-7
12S-2	16S-14	18-10	20A37	20-33	22-30	24-28	32-8
12S-3	16S-15	18-11	20-3	22-1	22-31	28-1	32-17
12SL-844	16S-16	18-12	20-4	22-2	22-32	28-2	32-414
12-5	16S-17	18-13	20-6	22-4	22-34	28-3	36-1
14S-1	16SA18	18-16	20-7	22-5	24-2	28-6	36-5
14S-2	16SA19	18-17	20-8	22-8	24-5	28-8	36-6
14S-4	16SA20	18-18	20-11	22-9	24-6	28-9	36-7
14S-5	16SA21	18-19	20-14	22-10	24-7	28-10	36-8
14S-6	16-7	18-20	20-15	22-11	24-9	28-11	36-9
14S-7	16-9	18-22	20-16	22-12	24-10	28-12	36-10
14S-9	16-10	18-23	20-17	22-13	24-11	28-13	36-11
14S-10	16-11	18-24	20-18	22-14	24-12	28-15	36-12
14S-11	16-12	18-25	20-19	22-15	24-16	28-16	36-15
14S-12	16-13	18-26	20-21	22-16	24-19	28-17	36-403
14S-13	18A31	18-27	20-23	22-18	24-20	28-18	
14S-14	18-1	18-28	20-24	22-19	24-21	28-19	

* Socket for plug only. Pin for receptacle only.

STEP 3: SELECT CONTACT

P = Pin S = Socket

STEP 4: SELECT ROTATION

⇒ See pages 75-85 (Omit for normal)

W, X, Y, Z

STEP 5: SELECT PLATING

CONTACTS

(Omit for silver plating)

426 = Gold over Silver
431 = Less Pre-filled Solder Cups

SHELL PLATING

(Omit for olive drab chromate over cadmium)

604 = Gray Anodized
608 = Black Anodized
621 = Non-conductive Black Alloy
624 = Olive Drab Zinc Alloy
639 = Clear Chromate over Cadmium
640 = Conductive Black Alloy
689 = Electroless Nickel

OTHER MODIFIERS

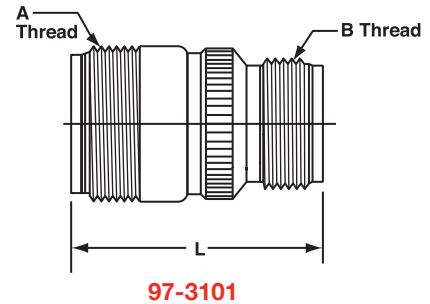
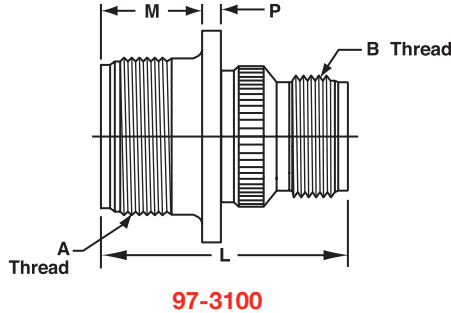
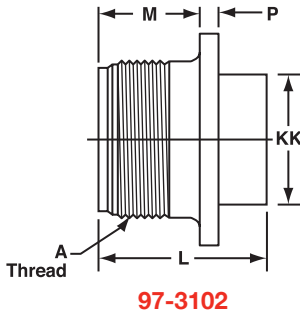
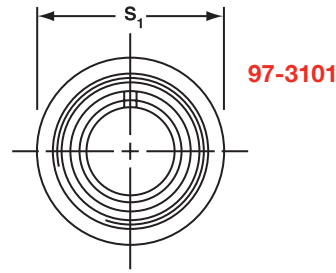
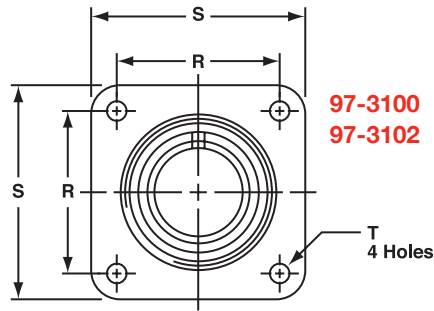
417 = Plug Seal O-Ring
438 = Plug Seal O-Ring and Potting Cup
940 = Add Cable Clamp and Bushing
946 = 431 + 621 Mod Codes Combined (RoHS)
947 = 431 + 689 Mod Codes Combined (RoHS)
955 = 431 + 640 Mod Codes Combined (RoHS)



NEED HELP? PEI engineers will help you solve your design challenges and build the perfect part for your application. Email us at sales@peigenesis.com or complete our online Technical Request at www.peigenesis.com/technical-support. To contact us by phone, please see the back cover for a complete listing of our branch offices and contact numbers.

DIMENSIONS

RECEPTACLE STYLES

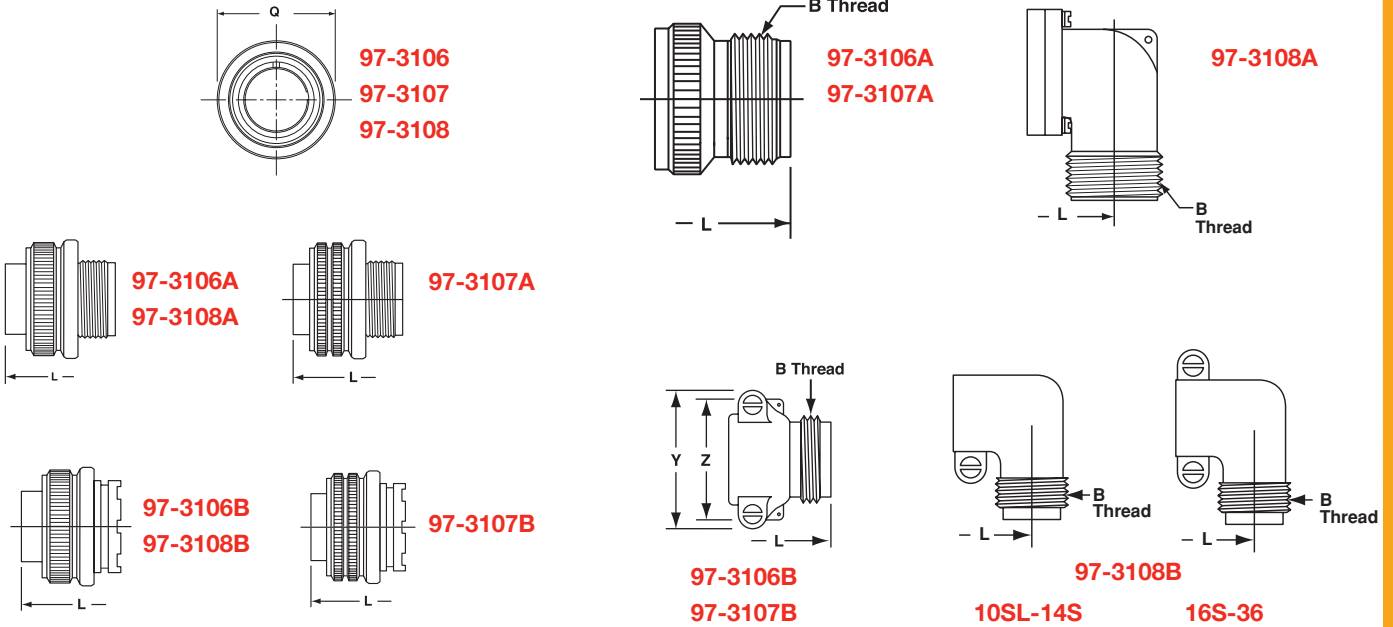


SHELL SIZE	97-3100A/97-3102A					A THREAD 2A	97-3102A		97-3100A	97-3101A		97-3100A/97-3101A B THREAD 2A
	M	P	R	S	T		L	KK	L	S ₁	L	
8S	0.56 (14.3)	0.078 (2.0)	0.59 (15.1)	0.88 (22.2)	0.120 (3.0)	1/2-28 UNEF	0.859 (21.8)	0.438 (11.1)	1.25 (31.8)	0.88 (22.2)	1.25 (31.8)	.5000-28 UNEF
10S	0.56 (14.3)	0.078 (2.0)	0.72 (18.3)	1.00 (25.4)	0.120 (3.0)	5/8-24 NEF	0.859 (21.8)	0.500 (12.7)	1.313 (33.3)	1.00 (25.4)	1.313 (33.3)	.5000-28 UNEF
10SL	0.56 (14.3)	0.078 (2.0)	0.72 (18.3)	1.00 (25.4)	0.120 (3.0)	5/8-24 NEF	0.953 (24.2)	0.688 (17.5)	1.281 (32.5)	1.00 (25.4)	1.281 (32.5)	.6250-24 UNEF
12S	0.56 (14.3)	0.078 (2.0)	0.81 (20.6)	1.09 (27.8)	0.120 (3.0)	3/4-20 UNEF	0.969 (24.6)	0.688 (17.5)	1.469 (37.3)	1.09 (27.8)	1.469 (37.3)	.6250-24 UNEF
12	0.75 (19.1)	0.078 (2.0)	0.81 (20.6)	1.09 (27.8)	0.120 (3.0)	3/4-20 UNEF	1.328 (33.7)	0.688 (17.5)	1.84 (46.8)	1.09 (27.8)	1.84 (46.8)	.6250-24 UNEF
12SL	0.56 (14.3)	0.078 (2.0)	0.81 (20.6)	1.09 (27.8)	0.120 (3.0)	3/4-20 UNEF	0.844 (21.4)	0.688 (17.5)	- (27.8)	1.09 (27.8)	- (27.8)	.6250-24 UNEF
14S	0.56 (14.3)	0.078 (2.0)	0.91 (23.0)	1.185 (30.1)	0.120 (3.0)	7/8-20 UNEF	0.953 (24.2)	0.750 (19.1)	1.469 (37.3)	1.16 (29.5)	1.469 (37.3)	.7500-20 UNEF
16S	0.56 (14.3)	0.078 (2.0)	0.97 (24.6)	1.28 (32.5)	0.120 (3.0)	1-20 UNEF	0.953 (24.2)	0.875 (22.2)	1.469 (37.3)	1.28 (32.5)	1.469 (37.3)	.8750-20 UNEF
16	0.75 (19.1)	0.125 (3.2)	0.97 (24.6)	1.28 (32.5)	0.120 (3.0)	1-20 UNEF	1.375 (34.9)	0.875 (22.2)	1.891 (48.0)	1.28 (32.5)	1.891 (48.0)	.8750-20 UNEF
18	0.75 (19.1)	0.125 (3.2)	1.06 (27.0)	1.38 (34.9)	0.120 (3.0)	1 1/8-18 NEF	1.375 (34.9)	1.000 (25.4)	1.984 (50.4)	1.38 (34.9)	1.984 (50.4)	1.0000-20 UNEF
20	0.75 (19.1)	0.125 (3.2)	1.16 (29.4)	1.50 (38.1)	0.120 (3.0)	1 1/4-18 NEF	1.375 (34.9)	1.125 (28.6)	1.891 (48.0)	1.50 (38.1)	1.891 (48.0)	1.1875-18 UNEF
22	0.75 (19.1)	0.125 (3.2)	1.25 (31.8)	1.63 (41.3)	0.120 (3.0)	1 3/8-18 NEF	1.375 (34.9)	1.250 (31.8)	1.984 (50.4)	1.63 (41.3)	1.984 (50.4)	1.1875-18 UNEF
24	0.81 (20.6)	0.125 (3.2)	1.38 (34.9)	1.75 (44.5)	0.147 (3.7)	1 1/2-18 NEF	1.375 (34.9)	1.375 (34.9)	2.25 (57.2)	1.75 (44.5)	2.25 (57.2)	1.4375-18 UNEF
28	0.81 (20.6)	0.125 (3.2)	1.56 (39.7)	2.00 (50.8)	0.147 (3.7)	1 3/4-18 NS	1.375 (34.9)	1.625 (41.3)	2.25 (57.2)	2.00 (50.8)	2.25 (57.2)	1.4375-18 UNEF
32	0.88 (22.2)	0.125 (3.2)	1.75 (44.5)	2.25 (57.2)	0.173 (4.4)	2-18 NS	1.469 (37.3)	1.906 (48.4)	2.375 (60.3)	2.25 (57.2)	2.375 (60.3)	1.7500-18 UNS
36	0.88 (22.2)	0.125 (3.2)	1.94 (49.2)	2.50 (63.5)	0.173 (4.4)	2 1/4-16 UN	1.469 (37.3)	2.125 (54.0)	2.375 (60.3)	2.50 (63.5)	2.375 (60.3)	2.0000-18 UNS

All dimensions in inches (millimeters in parenthesis)

PLUG STYLES (BARREL ASSEMBLIES)

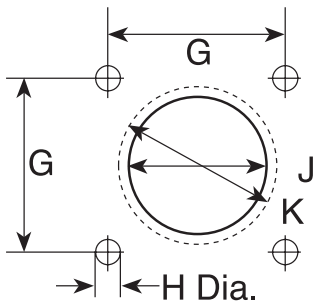
ENDBELL STYLES



SHELL SIZE	97-3106 97-3107 97-3108	97-3106A 97-3107A	97-3106B/97-3107B			97-3108A	97-3108B	B Thread 2A
	Q	L	L	Y	Z	L	L	
8S	0.75 (19.1)	1.25 (31.8)	-	-	-	-	-	.5000-28 UNEF
10S	0.88 (22.2)	1.31 (33.3)	-	-	-	1.25 (31.8)	1.38 (34.9)	.5000-28 UNEF
10SL	0.88 (22.2)	1.38 (35.1)	-	-	-	1.31 (33.3)	1.50 (38.1)	.6250-24 UNEF
12S	1.00 (25.4)	1.47 (37.3)	-	-	-	1.38 (34.9)	1.56 (39.7)	.6250-24 UNEF
12	1.00 (25.4)	1.84 (46.8)	-	-	-	1.22 (31.0)	1.88 (47.6)	.6250-24 UNEF
12SL	1.00 (25.4)	-	-	-	-	1.38 (34.9)	-	.7500-20 UNEF
14S	1.13 (28.6)	1.47 (37.3)	1.69 (42.9)	1.16 (29.4)	1.13 (28.6)	1.22 (31.0)	1.72 (43.7)	.7500-20 UNEF
16S	1.25 (31.8)	1.47 (37.3)	1.69 (42.9)	1.25 (31.8)	1.25 (31.8)	1.50 (38.1)	1.75 (44.5)	.8750-20 UNEF
16	1.25 (31.8)	1.89 (48.0)	-	-	-	1.94 (49.2)	2.13 (54.0)	.8750-20 UNEF
18	1.34 (34.1)	1.98 (50.4)	2.19 (55.6)	1.64 (41.7)	1.34 (34.1)	1.94 (49.2)	2.16 (54.8)	1.0000-20 UNEF
20	1.47 (37.3)	1.89 (48.0)	2.13 (54.0)	1.81 (46.0)	1.47 (37.3)	2.06 (52.4)	2.38 (60.3)	1.1875-18 UNEF
22	1.59 (40.5)	1.98 (50.3)	2.13 (54.0)	1.94 (49.2)	1.59 (40.5)	2.06 (52.4)	2.41 (61.1)	1.1875-18 UNEF
24	1.72 (43.7)	2.25 (57.2)	2.28 (57.9)	2.06 (52.4)	1.72 (43.7)	2.47 (62.7)	2.63 (66.7)	1.4375-18 UNEF
28	1.97 (50.0)	2.25 (57.2)	2.28 (57.9)	2.31 (58.8)	1.97 (50.0)	2.47 (62.7)	2.63 (66.7)	1.4375-18 UNEF
32	2.22 (56.4)	2.38 (60.3)	2.31 (58.8)	2.59 (65.9)	2.22 (56.4)	-	2.81 (71.4)	1.7500-18 UNS
36	2.47 (62.7)	2.38 (60.3)	2.34 (59.5)	2.84 (72.2)	2.47 (62.7)	-	2.84 (72.2)	2.0000-18 UNS

All dimensions in inches (millimeters in parenthesis)

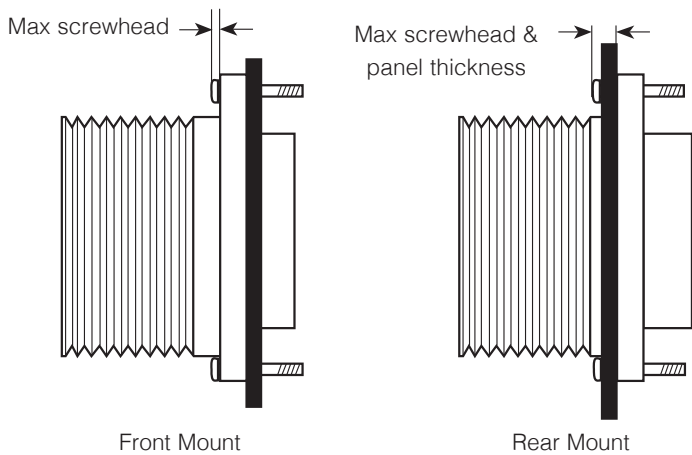
PANEL CUTOUTS



Dimension J is flange in front of panel.
Dimension K is flange at rear of panel.
See sealing screws on [page 366](#).

SHELL SIZE	FLANGE STYLE 0-2-6B			
	G	MOUNTING HOLE DIAMETER	FRONT MOUNT	REAR MOUNT
		H	J	K
8S	0.594 (15.1)	0.134 (3.4)	0.396 (10.1)	0.603 (15.4)
10S/10SL	0.717 (18.2)	0.134 (3.4)	0.646 (16.4)	0.728 (18.5)
12S/12SL/12	0.811 (20.6)	0.134 (3.4)	0.646 (16.4)	0.854 (21.7)
14S	0.906 (23.0)	0.134 (3.4)	0.776 (19.7)	0.980 (24.9)
16S/16	0.969 (24.6)	0.134 (3.4)	0.902 (22.9)	1.091 (27.7)
18	1.063 (27.0)	0.134 (3.4)	1.028 (26.1)	1.224 (31.1)
20	1.157 (29.4)	0.134 (3.4)	1.161 (29.5)	1.358 (34.5)
22	1.252 (31.8)	0.134 (3.4)	1.287 (32.7)	1.488 (37.8)
24	1.374 (34.9)	0.154 (3.9)	1.417 (36.0)	1.626 (41.3)
28	1.563 (39.7)	0.154 (3.9)	1.654 (42.0)	1.854 (47.1)
32	1.752 (44.5)	0.177 (4.5)	1.902 (48.3)	2.118 (53.8)
36	1.937 (49.2)	0.177 (4.5)	2.150 (54.6)	2.362 (60.0)
40	2.185 (55.5)	0.177 (4.5)	2.409 (61.2)	2.610 (66.3)

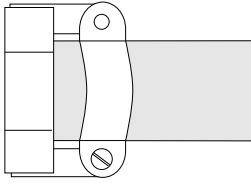
PANEL THICKNESS



SHELL SIZE	FRONT MOUNT	REAR MOUNT
8SL	.125 (3.18)	.187 (4.75)
10S		.187 (4.75)
10SL		.187 (4.75)
12S/12SL		.187 (4.75)
12		.125 (3.18)
14S		.187 (4.75)
16S		.187 (4.75)
16		.125 (3.18)
18		.125 (3.18)
20		.125 (3.18)
22		.125 (3.18)
24		.187 (4.75)
28		.187 (4.75)
32		.250 (6.35)
36		.250 (6.35)
40		.250 (6.35)

All dimensions in inches (millimeters in parenthesis)

MS3057-A CABLE CLAMP



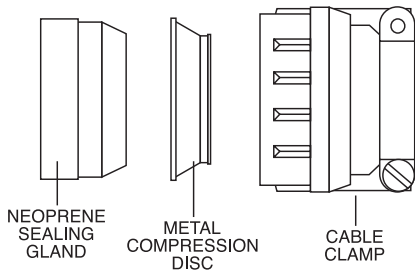
Standard MS3057 cable clamps have dual-clamping action to provide a balanced, positive hold on the wires and greatly reduce moisture transmission. This cable clamp accepts MS3420 bushings. MS3420 bushings can be nested to reduce the inside diameter to more closely match the diameter of the cable or wire bundle.

SHELL SIZE	THREAD CLASS 2B	STANDARD CLAMP				STANDARD CLAMP AND TELESCOPIC BUSHING		
		LOW-COST CAST ZINC	ALUMINUM W/ BRASS SCREWS	ALUMINUM W/ STAINLESS STEEL SCREWS	MAXIMUM CABLE DIAMETER INCH (MM)	LOW-COST ZINC WITH BUSHING	BUSHING INCLUDED	BUSHING ID INCH (MM)
8S/10S	1/2-28UNEF	-	MS3057-3A	M85049/41-3A	0.250 (6.35)	-	MS3420-3	0.130 (3.3)
12/12S/10SL	5/8-24UNEF	97-3057-1004**	MS3057-4A	M85049/41-4A	0.312 (7.92)	97-3057-1004-1	MS3420-4	0.220 (5.6)
12SL/14S	3/4-20UNEF	97-3057-1007**	MS3057-6A	M85049/41-6A	0.438 (11.10)	97-3057-1007-1	MS3420-6	0.312 (7.9)
16/16S	7/8-20UNEF	97-3057-1008**	MS3057-8A	M85049/41-8A	0.562 (14.27)	97-3057-1008-1	MS3420-8	0.437 (11.1)
18	1-20UNEF	97-3057-1010**	MS3057-10A	M85049/41-10A	0.625 (15.88)	97-3057-1010-1	MS3420-10	0.562 (14.3)
20/22	1 3/16-18UNEF	97-3057-1012**	MS3057-12A	M85049/41-12A	0.750 (19.0)	97-3057-1012-1	MS3420-12	0.625 (15.9)
24/28	1 7/16-18UNEF	97-3057-1016**	MS3057-16A	M85049/41-16A	0.938 (23.80)	97-3057-1016-1	MS3420-16, -12	0.625 (15.9)
32	1 3/4-18UNS	97-3057-1020**	MS3057-20A	M85049/41-20A	1.250 (31.75)	97-3057-1020-1	MS3420-20, -16	0.750 (19.0)
36	2-18UNS	97-3057-1024**	MS3057-24A	M85049/41-24A	1.375 (34.92)	97-3057-1024-1	MS3420-24, -20	0.937 (23.8)
40	2 1/4-16UNS	-	MS3057-28A	M85049/41-28A	1.625 (41.28)	-	-	-

Default is CAD OD.

MS3057-C WATERPROOF CABLE CLAMP

** Other platings are available. → See page 13 for alternate platings.



Standard MS3057-C waterproof cable clamp with mechanical strain relief for use with threaded endbells. Internal neoprene gland and compression ring will seal a broad range of round cable diameters as listed below. For reduction of cable diameters, order the appropriate MS3420A bushing in table.

SHELL SIZE	PART NUMBER	WIRE DIAMETER INCHES (MM)		OPTIONAL BUSHINGS	
		MAX.	MIN.	PART NUMBER	MAX. WIRE DIA. (MM)
8S/10S	MS3057-3C	0.219 (5.56)	0.095 (2.41)	MS3420-3A	0.125 (3.17)
10SL/12/12S	MS3057-4C	0.312 (7.93)	0.188 (4.80)	MS3420-4A	0.219 (5.56)
12SL/14S	MS3057-6C	0.438 (11.12)	0.281 (7.10)	MS3420-6A MS3420-4A	0.312 (7.93) 0.219 (5.56)
16/16S	MS3057-8C	0.530 (13.48)	0.312 (7.90)	MS3420-8A MS3420-6A	0.438 (11.10) 0.312 (7.93)
18	MS3057-10C	0.625 (15.87)	0.375 (9.50)	MS3420-10A MS3420-6A	0.438 (11.10) 0.312 (7.93)
20/22	MS3057-12C	0.750 (19.00)	0.500 (12.70)	MS3420-12A MS3420-8A	0.540 (13.74) 0.438 (11.10)
24/28	MS3057-16C	0.940 (23.80)	0.625 (15.90)	MS3420-16A MS3420-12A MS3420-8A	0.750 (19.00) 0.540 (13.74) 0.438 (11.10)
32	MS3057-20C	1.25 (31.75)	0.921 (23.40)	MS3420-20A MS3420-16A MS3420-12A	0.938 (23.80) 0.750 (19.00) 0.540 (13.74)
36	MS3057-24C	1.38 (35.00)	1.00 (25.40)	MS3420-24A MS3420-18A MS3420-16A	1.12 (28.50) 0.938 (23.80) 0.750 (19.00)
40	MS3057-28C	1.62 (41.25)	1.25 (31.80)	MS3420-28A MS3420-20A MS3420-16A	1.25 (31.75) 0.940 (23.80) 0.750 (19.00)

All dimensions in inches (millimeters in parenthesis)

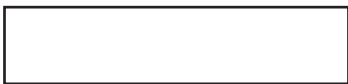
MS3420 TELESCOPING BUSHINGS



For use with style-A cable clamps and AIT/MS style-E/F endbells to resist dust, dirt, and oil. Bushings can be nested, one inside the other, to reduce the inside diameter to better seal against the cable jacket. Each bushing will accept the next smallest bushing.

SHELL SIZE	1ST BUSHING PART NUMBER	INSIDE DIAMETER	2ND NESTED BUSHING	INSIDE DIAMETER	FITS IN CABLE CLAMP
8S/10S	MS3420-3	.130 (3.30)	NONE	-	MS3057-3A
10SL	MS3420-4	.220 (5.59)	NONE	-	MS3057-4A
12/12S	MS3420-4	.220 (5.59)	NONE	-	MS3057-4A
14S	MS3420-6	.312 (7.92)	NONE	-	MS3057-6A
16S	MS3420-8	.437 (11.10)	NONE	-	MS3057-8A
16	MS3420-8	.437 (11.10)	NONE	-	MS3057-8A
18	MS3420-10	.562 (14.30)	NONE	-	MS3057-10A
20	MS3420-12	.625 (15.90)	NONE	-	MS3057-12A
22	MS3420-12	.625 (15.90)	NONE	-	MS3057-12A
24	MS3420-16	.750 (19.05)	MS3420-12	.625 (15.90)	MS3057-16A
28	MS3420-16	.750 (19.05)	MS3420-12	.625 (15.90)	MS3057-16A
32	MS3420-20	.937 (23.80)	MS3420-16	.750 (19.05)	MS3057-20A
36	MS3420-24	1.250 (31.75)	MS3420-20	.937 (23.80)	MS3057-24A
40	MS3420-28	1.375 (34.92)	MS3420-24	1.250 (31.75)	SE96-28A4

MS3420-A REDUCTION BUSHINGS



For use with MS3057-C cable clamps (style-C) to reduce the wire sealing diameter. Bushings can be nested, one inside the other, to progressively reduce the inside diameter of the cable clamp. The column labeled "reduction bushings" shows the acceptable nesting options for each clamp. → See page 17

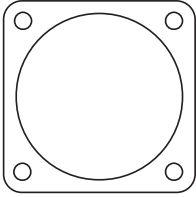


9767 CABLE CLAMPS

9767 waterproof cable clamp with mechanical strain relief. An internal neoprene gland seal bushing and compression washer will seal a broad range of round cable diameters as listed below.

SHELL SIZE	CABLE CLAMP PART NUMBER	MAX. CABLE OUTSIDE DIAMETER		MIN. CABLE OUTSIDE DIAMETER		THREAD CLASS 2B UNEF
		INCHES	MM	INCHES	MM	
10SL/12S/12	9767-12-4	0.219	5.55	0.100	2.54	5/8-24
12SL/14S	9767-14-4	0.219	5.55	0.100	2.54	3/4-20
12SL/14S	9767-14-6	0.344	8.73	0.176	4.47	3/4-20
16S/16	9767-16-4	0.219	5.55	0.100	2.54	7/8-20
16S/16	9767-16-6	0.344	8.73	0.176	4.47	7/8-20
16S/16	9767-16-8	0.438	11.12	0.177	4.50	7/8-20
18	9767-18-6	0.344	8.73	0.176	4.47	1-20
18	9767-18-8	0.438	11.12	0.177	4.50	1-20
18	9767-18-10	0.563	14.29	0.292	7.42	1-20
20/22	9767-22-8	0.438	11.12	0.177	4.50	1-3/16-18
20/22	9767-22-10	0.563	14.29	0.292	7.42	1-3/16-18
20/22	9767-22-12	0.688	17.46	0.370	9.40	1-3/16-18
24/28	9767-28-10	0.563	14.29	0.292	7.42	1-7/16-18
24/28	9767-28-12	0.688	17.46	0.370	9.40	1-7/16-18
24/28	9767-28-16	0.844	21.43	0.536	13.61	1-7/16-18
32	9767-32-20	1.031	26.19	0.590	14.99	1-3/4-18UNS
36	9767-36-16	0.844	21.43	0.536	13.61	2-18UNS

GASKETS



Synthetic rubber gaskets are used to ensure a moisture-tight seal between a receptacle and the panel. Gaskets are available for front or rear panel mounting of style 3100 and 3102 connectors. Gasket thickness is approximately .031 inches (1 mm) for nonconductive and low-temperature types.

Conductive shielding gaskets contain an imbedded metal screen for EMI/RFI shielding in addition to moisture sealing. Gaskets are available for front or rear panel mounting of connectors. Gasket thickness is .020 inches (.5 mm).

SHELL SIZE	NON-CONDUCTIVE	CONDUCTIVE	LOW-TEMPERATURE -67°F (-55°C)
8S	10-040450-008	10-040450-08S	10-036675-008
10S/10SL	10-040450-010	10-040450-10S	10-036675-010
12/12S	10-040450-012	10-040450-12S	10-036675-012
14S	10-040450-014	10-040450-14S	10-036675-014
16S	10-040450-016	10-040450-16S	10-036675-016
16	10-040450-016	10-040450-16S	10-036675-016
18	10-040450-018	10-040450-18S	10-036675-018
20	10-040450-020	10-040450-20S	10-036675-020
22	10-040450-022	10-040450-22S	10-036675-022
24	10-040450-024	10-040450-24S	10-036675-024
28	10-040450-028	10-040450-28S	10-036675-028
32	10-040450-032	10-040450-32S	10-036675-032
36	10-040450-036	10-040450-36S	10-036675-036
40	10-040450-040	10-040450-40S	10-036675-040

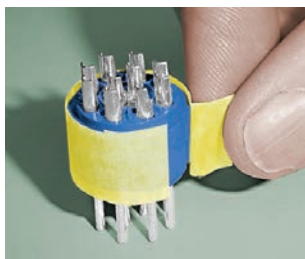
METAL DUST CAPS WITH SASH CHAIN & DUMMY RECEPTACLES

Metal dust caps are used to protect the contacts when the connectors are left unmated. Dust caps come with metal chain lanyards.

Dummy receptacles are for front or rear panel mounting. The center of the dummy receptacle is closed. Dummy receptacles mount on the same centers and have the same outside dimensions as a 97-3102A receptacle. A version with a clearance hole through the middle of the connector is also available. Call for ordering information.

SHELL SIZE	DUST CAPS		
	PLUG CAP	RECEPTACLE	DUMMY RECEPTACLES
8S	MS25042-8*	MS25043-8*	MS3105-8S
10S/10SL	MS25042-10*	MS25043-10*	MS3105-10S
12/12S/12SL	MS25042-12*	MS25043-12*	MS3105-12S
14S	MS25042-14*	MS25043-14*	MS3105-14S
16S	MS25042-16*	MS25043-16*	MS3105-16S
16	MS25042-16*	MS25043-16*	MS3105-16
18	MS25042-18*	MS25043-18*	MS3105-18
20	MS25042-20*	MS25043-20*	MS3105-20
22	MS25042-22*	MS25043-22*	MS3105-22
24	MS25042-24*	MS25043-24*	MS3105-24
28	MS25042-28*	MS25043-28*	MS3105-28
32	MS25042-32*	MS25043-32*	MS3105-32
36	MS25042-36*	MS25043-36*	MS3105-36
40	MS25042-40*	MS25043-40*	MS3105-40

*Contact us for other platings. *D = Olive drab chromate over cadmium DA = Anodized
See contact information below.

READ THESE INSTRUCTIONS PRIOR TO ASSEMBLY.

STEP 1: Open both shell kit and insert kit.



STEP 2: Remove yellow tape from insert, being careful not to allow front and rear insulators to come apart.



STEP 3: Insert insulator assembly into shell or barrel, aligning the key and keyway until rear of the insert is positioned just below the retaining spring ring ridge.



STEP 4: Insert the retainer spring ring into the ridge by working one end in first, then working around the ring until it snaps into place.



STEP 5: For barrels, add coupling nut to barrel and slide rear accessories on to cable.



STEP 6: Solder wires onto proper contacts.



STEP 7: Thread endbell onto barrel/shell. Slide cable clamp down the cable and thread onto the endbell. Tighten endbell and cable clamp using endbell accessory tools → See page 114.



STEP 8: Tighten cable clamp screws appropriately for the specific wire/cable in use.