Cannon's MR waterproof connectors, designed to meet the requirements of MIL-C-5015, withstand conditions involving mud, ice, and water. They are particularly suited for missile ground support equipment, radar installations, heavy construction installations, and outdoor applications involving rapid transit, radio/tv stations, and marine equipment.

Maximum resistance to severe environmental conditions is assured by an O-ring seal around the mated insert faces, and a gland seal at the cable entry which provides a cable strain relief as well. When properly terminated to a jacketed cable, a mated pair of MR connectors can be immersed in depths of 150 feet in fresh water. For other immersion media consult factory.

The MR connector series is supplied with MIL-C-5015 resilient insulators and solder pot contacts. For crimp type contacts refer to the ordering information below. MS contact arrangements, coupling threads, and sizes are standard to MIL-C-5015. Simple maintenance under severe conditions is possible with a convenient, long, knurled coupling nut and endbell that can be easily removed by standard open end wrenches. Dust caps have attached bead chains to prevent kinking.

Operating temperature range of connectors −55°C (−67°F) to 125°C (257°F). The upper temperature is the maximum internal hot spot temperature resulting from any combination of electrical load and ambient temperature.

Performance and Material Specifications

MATERIALS

Shell — Aluminum alloy

Insulator — Synthetic elastomer

Contacts — Copper alloy

FINISHES

Shell — Clear anodized

Contacts — Silver plate

MECHANICAL FEATURES

Shell Styles
- 00 – Wall Mounting Receptacle
- 01 – Cable Connecting Receptacle
- 02 – Chassis Mounting Receptacle
- 06 – Cable Connecting Straight Plug

Shell Size — 14S thru 36

Coupling — Threaded

Cable Entry — 00, 01, and 06 accommodate cables from −3 (3/16") to −28 (1-3/4") in sixteenths of an inch. Shell style 02 requires no jacketed cable seal.

Polarization — Single keyway

ELECTRICAL DATA

Number of Contacts — 1 thru 66

TEST CURRENT

Maximum current ratings of contacts and maximum allowable voltage drop under test conditions when assembled as in service are shown below. Maximum total current to be carried per connector is the same as the allowable in wire bundles as specified in MIL-W-5088.

Contact Size	Test Current (Amps)	Potential Drop (millivolts)
16	20	21
12	35	20
8	60	12
4	110	10
0	200	10

HIGH POTENTIAL TEST VOLTAGE

MS connectors show no evidence of breakdown when the test voltage given below is applied between the two closest contacts and between the shell and the contact closest to the shell for a period of one minute.

MS Service Rating	Test Voltage (rms) 60 cps	Suggested Operating Voltage* DC	Suggested Operating Voltage* AC (rms)	Air Spacing nom. in.
Inst.	1000	250	200	—
A	2000	700	500	1/16
D	2800	1250	900	1/8
E	3500	1750	1250	3/16
B	4500	2450	1750	1/4
C	7000	4200	3000	5/16

*As indicated in MS Specifications and to be used by the designer only as a guide

How to Order

MR 06 28 12 P X 18 *

SERIES PREFIX
SHELL STYLE
SHELL SIZE
CONTACT ARRANGEMENTS
CONTACT TYPE
ALTERNATE INSERT POSITION
CABLE ENTRY
MODIFICATIONS

SERIES PREFIX
MR – Resilient Insulator

SHELL STYLE
- 00 – Wall Mounting Receptacle
- 01 – Cable Connecting Receptacle
- 02 – Chassis Mounting Receptacle
- 06 – Cable Connecting Straight Plug

SHELL SIZE
14S, 16S, 18, 20, 22, 24, 28, 32, and 36

CONTACT ARRANGEMENTS
1 to 56 contacts
(See pages 171-174 for MSE/R)

CONTACT TYPE
P for pin; S for socket

ALTERNATE INSERT POSITION
W, X, Y, and Z per MIL-C-5015

CABLE ENTRY
00, 01, and 06 shell styles accommodate cables from −3 (3/16") to −28 (1-3/4") graduated in sixteenths of an inch. The 02 shell style requires no jacketed cable seal.

MODIFICATIONS
- F0 – Less contacts
- A66 – Olive drab cadmium
- A105 – Clear cadmium
- F80 – Crimp contacts
- F111 – Stainless steel 303 hardware & link chain (F135)
- F135 – Stainless steel link chain
- F150 – Less dust cap and chain

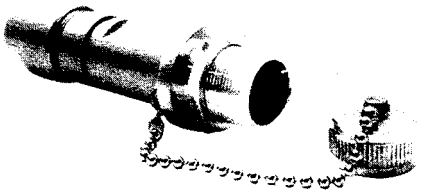
For other modifications, such as cable grips and peripheral ground adapters, consult the factory.

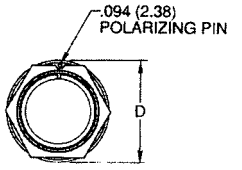
ITT Cannon

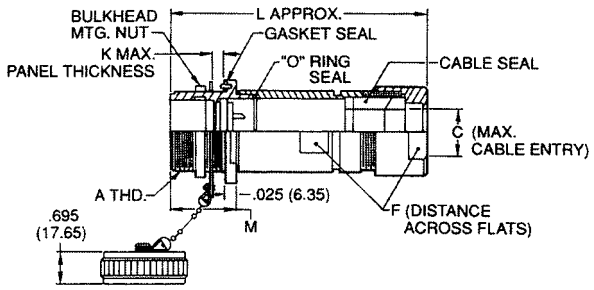
Dimensions are shown in inches (millimeters).
Dimensions subject to change.

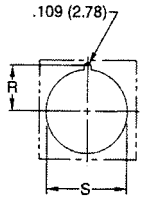
Wall Mounting Receptacle

MR00







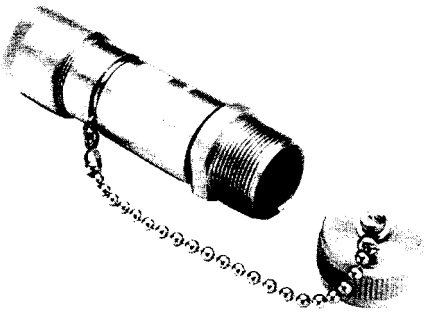


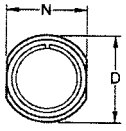
Panel Cutout

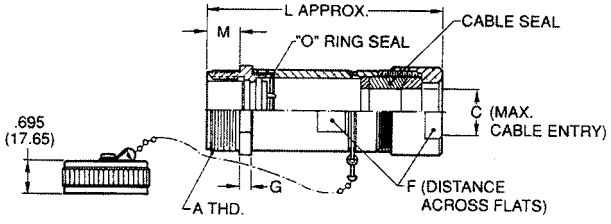
Shell Size	A Thread	C	D	F	K	L	M	R	S
14S	7/8-20NEF-2A	.187 to .480 (4.76 to 12.20)	1.375 (34.92)	.745 (18.92)	.156 (3.97)	4.125 (104.78)	1.063 (26.99)	.546 (13.89)	.906 (23.02)
16S	1-20NEF-2A	.250 to .563 (6.35 to 14.29)	1.500 (38.10)	.870 (22.10)	.156 (3.97)	4.250 (107.95)	1.063 (26.99)	.609 (15.47)	1.031 (26.19)
18	1-1/8-18NEF-2A	.250 to .750 (6.35 to 19.05)	1.625 (41.28)	.995 (25.27)	.250 (6.35)	5.063 (128.59)	1.406 (35.72)	.671 (17.06)	1.156 (29.37)
20	1-1/4-18NEF-2A	.250 to .750 (6.35 to 19.05)	1.750 (44.45)	.995 (25.27)	.250 (6.35)	5.188 (131.76)	1.406 (35.72)	.734 (18.64)	1.281 (32.54)
22	1-3/8-18NEF-2A	.250 to 1.000 (6.35 to 25.40)	1.875 (47.62)	1.245 (31.62)	.250 (6.35)	5.313 (134.94)	1.406 (35.72)	.796 (20.22)	1.406 (35.72)
24	1-1/2-18NEF-2A	.250 to 1.000 (6.35 to 25.40)	2.000 (50.80)	1.245 (31.62)	.219 (5.56)	5.438 (138.11)	1.406 (35.72)	.857 (21.82)	1.531 (38.89)
28	1-3/4-18NS-2A	.312 to 1.250 (7.94 to 31.75)	2.250 (57.15)	1.495 (37.97)	.219 (5.56)	5.563 (141.29)	1.406 (35.72)	.989 (24.99)	1.781 (45.24)
32	2-18NS-2A	.750 to 1.500 (19.05 to 38.10)	2.500 (63.50)	1.807 (45.90)	.219 (5.56)	5.688 (144.46)	1.406 (35.72)	1.109 (26.17)	2.031 (51.59)
36	2-1/4-16UN-2A	.750 to 1.750 (19.05 to 44.45)	2.750 (69.85)	2.058 (52.27)	.156 (3.97)	5.750 (146.05)	1.406 (35.72)	1.234 (31.34)	2.281 (57.94)

Cable Connecting Plug

MR01



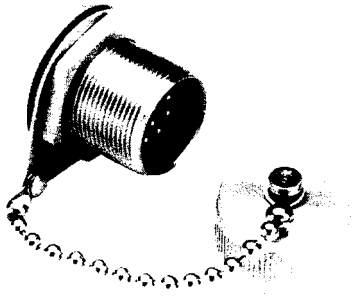


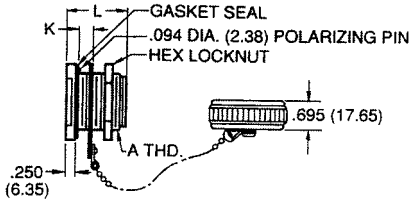


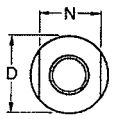
Shell Size	A Thread	C	D	F	G	L	M	N
14S	7/8-20NEF-2A	.187 to .480 (4.76 to 12.20)	1.094 (27.78)	.745 (18.92)	.180 (4.57)	3.656 (92.87)	.469 (11.91)	.875 (23.22)
16S	1-20NEF-2A	.250 to .563 (6.35 to 14.29)	1.219 (30.96)	.870 (22.10)	.250 (6.35)	4.000 (101.60)	.531 (13.49)	1.000 (25.40)
18	1-1/8-18NEF-2A	.250 to .750 (6.35 to 19.05)	1.344 (34.13)	.995 (25.27)	.250 (6.35)	4.625 (117.48)	.719 (18.26)	1.125 (28.58)
20	1-1/4-18NEF-2A	.250 to .750 (6.35 to 19.05)	1.469 (37.31)	.995 (25.27)	.250 (6.35)	4.750 (120.65)	.719 (18.26)	1.250 (31.75)
22	1-3/8-18NEF-2A	.250 to 1.000 (6.35 to 25.40)	1.594 (40.48)	1.245 (31.62)	.250 (6.35)	4.875 (123.83)	.719 (18.26)	1.375 (34.92)
24	1-1/2-18NEF-2A	.250 to 1.000 (6.35 to 25.40)	1.719 (43.66)	1.245 (31.62)	.250 (6.35)	5.000 (127.00)	.719 (18.26)	1.500 (38.10)
28	1-3/4-18NS-2A	.312 to 1.250 (7.94 to 31.75)	1.969 (50.01)	1.495 (37.97)	.250 (6.35)	5.125 (130.18)	.719 (18.26)	1.750 (44.45)
32	2-18NS-2A	.750 to 1.500 (19.05 to 38.10)	2.219 (56.36)	1.807 (45.90)	.250 (6.35)	5.250 (133.35)	.719 (18.26)	2.000 (50.80)
36	2-1/4-16UN-2A	.750 to 1.750 (19.05 to 44.45)	2.469 (62.71)	2.058 (52.27)	.250 (6.35)	5.375 (136.52)	.719 (18.26)	2.250 (57.15)

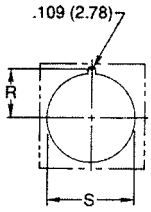
Chassis Mounting Receptacle

MR02







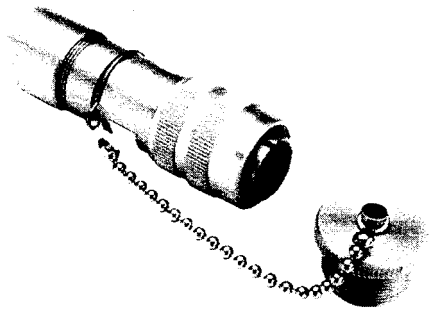


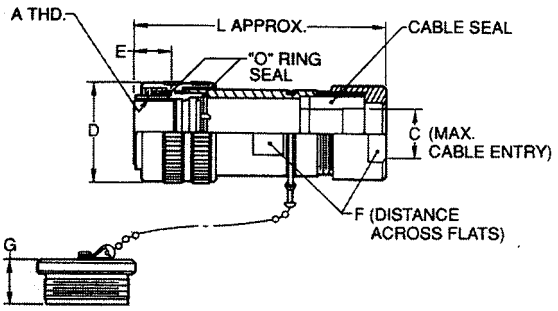
Panel Cutout

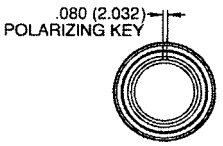
Shell Size	A Thread	D	K	L	N	R	S
14S	7/8-20NEF-2A	1.375 (34.92)	.156 (3.97)	1.063 (26.99)	1.125 (28.56)	.546 (13.87)	.906 (23.02)
16S	1-20NEF-2A	1.500 (38.10)	.156 (3.97)	1.063 (26.99)	1.250 (31.75)	.609 (15.47)	1.031 (26.19)
18	1-1/8-18NEF-2A	1.625 (41.28)	.250 (6.35)	1.406 (35.72)	1-375 (34.92)	.671 (17.04)	1.156 (29.37)
20	1-1/4-18NEF-2A	1.750 (44.45)	.250 (6.35)	1.406 (35.72)	1.438 (36.51)	.734 (18.64)	1.281 (32.54)
22	1-3/8-18NEF-2A	1.875 (47.62)	.250 (6.35)	1.406 (35.72)	1.500 (38.10)	.796 (20.22)	1.406 (35.72)
24	1-1/2-18NEF-2A	2.000 (50.80)	.219 (5.56)	1.406 (35.72)	1.625 (41.28)	.859 (21.82)	1.531 (38.89)
28	1-3/4-18NS-2A	2.250 (57.15)	.219 (5.56)	1.406 (35.72)	1.750 (44.45)	.984 (24.99)	1.781 (45.24)
32	2-18NS-2A	2.500 (63.50)	.219 (5.56)	1.406 (35.72)	2.000 (50.80)	1.109 (28.17)	2.031 (51.59)
36	2-1/4-16UN-2A	2.750 (69.85)	.156 (3.97)	1.406 (35.72)	2.375 (60.32)	1.234 (31.34)	2.281 (57.94)

Cord Connecting Straight Plug

MR06







Shell Size	A Thread	C	D	E	F	G	L
14S	7/8-20NEF-2B	.187 to .480 (4.76 to 12.20)	1.125 (28.58)	.531 (13.49)	.745 (18.92)	.712 (18.09)	3.750 (95.25)
16S	1-20NEF-2B	.250 to .563 (6.35 to 14.29)	1.250 (31.75)	.531 (13.49)	.870 (22.10)	.712 (18.09)	3.875 (98.42)
18	1-1/8-18NEF-2B	.250 to .750 (6.35 to 19.05)	1.375 (34.92)	.718 (18.24)	.995 (25.27)	.900 (22.86)	4.563 (115.89)
20	1-1/4-18NEF-2B	.250 to .750 (6.35 to 19.05)	1.500 (38.10)	.718 (18.24)	.995 (25.27)	.900 (22.86)	4.688 (119.06)
22	1-3/8-18NEF-2B	.250 to 1.000 (6.35 to 25.40)	1.625 (41.28)	.718 (18.24)	1.245 (31.62)	.900 (22.86)	4.813 (122.24)
24	1-1/2-18NEF-2B	.250 to 1.000 (6.35 to 25.40)	1.750 (44.45)	.718 (18.24)	1.245 (31.62)	.900 (22.86)	4.938 (125.41)
28	1-3/4-18NS-2B	.312 to 1.250 (7.94 to 31.75)	2.000 (50.80)	.718 (18.24)	1.495 (37.97)	.900 (22.86)	5.063 (128.59)
32	2-18NS-2B	.750 to 1.500 (19.05 to 38.10)	2.250 (57.15)	.718 (18.24)	1.807 (45.90)	.900 (22.86)	5.188 (131.76)
36	2-1/4-16UN-2B	.750 to 1.750 (19.05 to 44.45)	2.500 (63.50)	.718 (18.24)	2.058 (52.27)	.900 (22.86)	5.313 (134.94)