

MIL-DTL-38999 Series III Type Environmental Connectors

233-218 PC tail receptacle with shielded contacts

HIGH-SPEED CONNECTORS

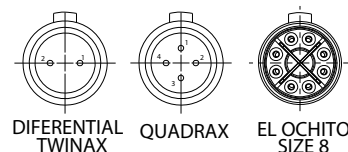
Part Number Development									
Sample Part Number	233-218								
Series / Basic Part No.	SuperNine® High-Speed PC tail wall mount receptacles with threaded standoffs								
Connector Style	-07= Receptacle, Jam-Nut -00 = Receptacle, Wall-Mount with Slotted Holes -CM = Receptacle, Wall Mount with Metric Clinch Nuts -CS = Receptacle, Wall Mount with Standard Clinch Nuts -HM = Receptacle, Wall Mount with Metric Helicoils -HS = Receptacle, Wall Mount with Standard Helicoils								
Material/Finish	NF = Cadmium Olive Drab MT = Nickel PTFE ME = Electroless Nickel ZR = Black Zinc Nickel								
Shell Size	9, 11, 13, 17, 19, 21, 23, 25								
Contact Type (Table I)	C = Coax C1 = Coax, 75 ohm D = Differential Twinax E = El Ochito ⁷ Q = Quadrax P = Power T = Triax/Concentric Twinax Omit = Per MIL-STD-1560 PCB footprints on pgs. C-15 thru C-17								
Ground Option	G = Common Ground - = None								
Insert Arrangement	Per MIL-STD-1560, see page C-5 and C-6								
Contact Style	P = Pin, PC Tail S = Socket, PC Tail								
Alternate Polarization*	A, B, C, D, E, N = Normal (IAW MIL-DTL-38999 Series III)								

*Refer to Section A for alternate key polarization options and recommended panel cutout dimensions

Table I: Contact Type					
Sym	Description	Glenair P/N	Wire Type	Grommet Follower	Application Notes
C	Size 16, contact for coax cable, per M39029/76 & /77;	Pin: 852-008-16-424 Skt: 852-009-16-428	RG174, RG316, RG179	N/A	Analog radio frequency or microwave applications
	Size 12, contact for coax cable, per M39029/102 & /103	Pin: 852-004-12-558 Skt: 852-005-12-559	RG174, RG316, RG179	N/A	
	Size 8, contact for coax cable, per M39029/59 & /60	Pin: 852-007-08-367 Skt: 852-006-08-366	M17 /95-RG180	859-042-02	
C1	Size 8, contact for 75 ohm coax cable	Pin: 852-056-01 Skt: 852-057-01	V73263, V75268, V76261	859-042-01	aerospace-grade digital video
D	Size 8, diff. twinax contact for 24 AWG twinax cable	Pin: 853-014-05 Skt: 853-013-05	M17 /176-00002	859-042-01	1553 databus / differential signal
E*	Size 8, El Ochito® contact for 26 AWG	White Pin: 858-003-02 Skt: 858-004-02	963-003-26	687-643-8-2	1G/10G Base-T Ethernet (white)
	Size 8, El Ochito® contact for 24/26-30 AWG Cable	Blue Pin: 858-028-02 Skt: 858-029-02	963-110 & 963-118	687-643-8-2	USB 3.0 (Blue)
	Size 8, El Ochito® contact for 26-30 AWG Cable	Red Pin: 858-030-02 Skt: 858-031-02	963-033-26	687-643-8-2	SATA 3.0 General High Speed (red)
Q	Size 8, contact for 24 AWG Quadrax	Pin: 854-001-02 Skt: 854-002-02	963-020	859-042-02	10/100Base-T ethernet
P	Size 8, power contact for 8 AWG	Pin: 850-014 Skt: 850-013	M22759/11 or equivalent	859-042-03	Power
T	Size 8, triax/concentric twinax for twinax cable	Pin: 853-003-08-625 Skt: 853-004-08-628	M17 /176-00002	859-042-01	1553 Databus

PC Tail Diameter	
Contact Size	PC Tail ØV
No. 22	.020 (0.51) .018 (0.46)
No. 20	.030 (0.76) .028 (0.71)
No. 16	.040 (1.02) .038 (0.97)
No. 12	.072 (1.78) .070 (1.78)
No. 8	.182 (4.62) .178 (4.52)

FIGURE 2: REFERENCE ORIENTATION OF INNER PINS RELATIVE TO CONNECTOR MAIN KEY/KEYWAY



* See Table II for Contact Positions. See Figure 2 for orientation of inner pins relative to connector main key/keyway.

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Example Code E7



Example Code E5

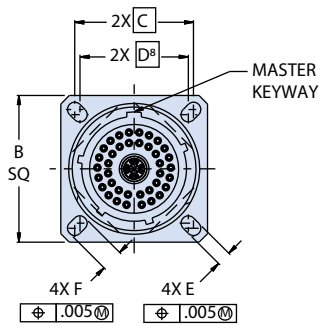
NOTES

- Coax contact mating interfaces shall be in accordance with the following:
 - size #16 per M39029/76 & /77
 - size #12 per M39029/102 & 103
 - size #8 per M39029/59 & 60
- Ground plane option only available for insert arrangements where all contacts are shielded type.
- See figure 2 for reference orientation of the inner pins relative to connector main keyway.
- Insert arrangement IAW MIL-STD-1560 and figure 1. Contact manufacturer for additional arrangement options
- Glenair 233-218 wall mount and jam-nut receptacle connectors should be mated to Glenair 233-217 or 233-224 plug with appropriate contacts to optimize performance.
- Glenair 233-218 receptacle connectors are designed to meet or exceed the applicable mechanical, dimensional, electrical, and environmental requirements of MIL-DTL-38999, D38999/20, D38999/24 and MIL-STD-1560 except as shown and/or noted. Receptacle mates with any QPL manufacturer's MIL-DTL-38999, Series III plug connector, D38999/26, having the same shell size, insert arrangement, polarization, and mating contact.
- El Ocho mating contact shall be in accordance with El Ocho contact configuration table
- Front panel mount only.
- For optimal El Ocho performance, see Glenair application note AN0002.
- Material/finish:
 - Shell, lockring, jam-nut: see part number development
 - Contacts: copper alloy / gold plated
 - Insulators: high grade rigid dielectric / N.A.
 - Seals: fluorosilicone blend / N.A.
 - Potting: epoxy / N.A.
 - O-ring: silver plated aluminum in fluorosilicone (cho-seal 1298 or equivalent)

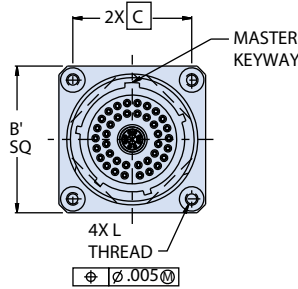
El Ocho Contact Configuration								
SYM	CAVITY A	CAVITY B	CAVITY C	CAVITY D	CAVITY E	CAVITY F	CAVITY G	CAVITY H
E	W	W	W	W	W	W	W	W
E2	B	W	W	W	W	W	W	W
E3	R	W	W	W	W	W	W	W
E4	B	B	W	W	W	W	W	W
E5	R	B	W	W	W	W	W	W
E6	R	R	W	W	W	W	W	W
E7	B	B	B	W	W	W	W	W
E8	R	B	B	W	W	W	W	W
E9	R	R	B	W	W	W	W	W
E10	R	R	R	W	W	W	W	W
E11	B	B	B	B	W	W	W	W
E12	R	B	B	B	W	W	W	W
E13	R	R	B	B	W	W	W	W
E14	R	R	R	B	W	W	W	W
E15	R	R	R	R	W	W	W	W
E16	B	B	B	B	B	W	W	W
E17	R	B	B	B	B	W	W	W
E18	R	R	B	B	B	W	W	W
E19	R	R	R	B	B	W	W	W
E20	R	R	R	R	B	W	W	W
E21	R	R	R	R	R	W	W	W
E22	B	B	B	B	B	B	W	W
E23	R	B	B	B	B	B	W	W
E24	R	R	B	B	B	B	W	W
E25	R	R	R	B	B	B	W	W
E26	R	R	R	R	B	B	W	W
E27	R	R	R	R	R	B	W	W
E28	R	R	R	R	R	R	W	W
E29	B	B	B	B	B	B	B	W
E30	R	B	B	B	B	B	B	W
E31	R	R	B	B	B	B	B	W
E32	R	R	R	B	B	B	B	W
E33	R	R	R	R	B	B	B	W
E34	R	R	R	R	R	B	B	W
E35	R	R	R	R	R	R	B	W
E36	R	R	R	R	R	R	R	W
E37	B	B	B	B	B	B	B	B
E38	R	B	B	B	B	B	B	B
E39	R	R	B	B	B	B	B	B
E40	R	R	R	B	B	B	B	B
E41	R	R	R	R	B	B	B	B
E42	R	R	R	R	R	B	B	B
E43	R	R	R	R	R	R	B	B
E44	R	R	R	R	R	R	R	B
E45	R	R	R	R	R	R	R	R

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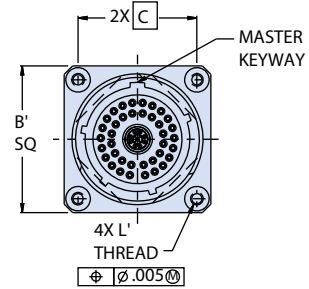
00, CM, CS, HM, HS - WALL MOUNT RECEPTACLES



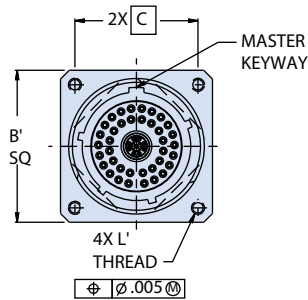
00 - WALL MOUNT RECEPTACLE WITH SLOTTED HOLES



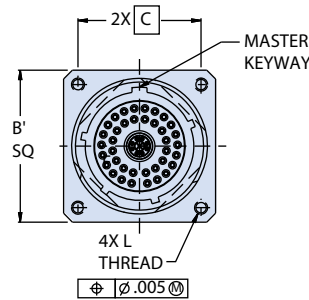
CS - WALL MOUNT RECEPTACLE WITH STANDARD CLINCH NUTS



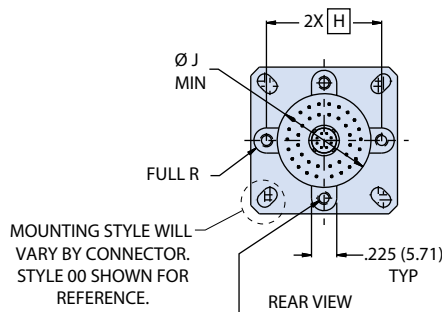
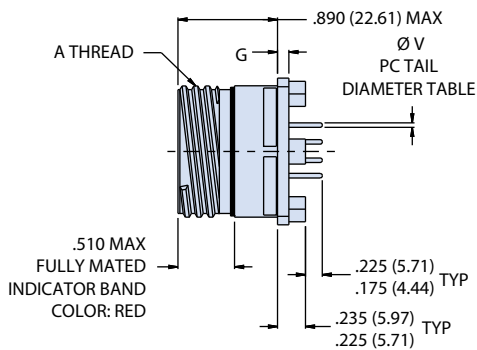
CM - WALL MOUNT RECEPTACLE WITH METRIC CLINCH NUTS



HM - WALL MOUNT RECEPTACLE WITH METRIC HELICOILS



HS - WALL MOUNT RECEPTACLE WITH STANDARD HELICOIL

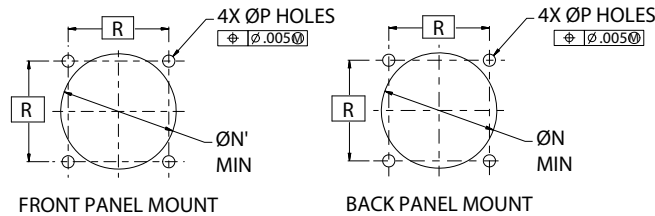


SHELL STYLE 00, CS & HS 4X #4-40 UNC-2B X .156 MIN THD DP @ 90° APART	SHELL STYLE CM & HM 4X M3 X 0.5 X .156 MIN THD DP @ 90° APART
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MIL-DTL-38999 Series III Type Environmental Connectors
233-218 PC tail receptacle with shielded contacts

HIGH-SPEED CONNECTORS

Dimensions																						
Shell Size Code	Shell Size	A Thd -0.1P-0.3L- TS-2A	B Sq	B' Sq	C Bsc ⁸	D Bsc	E	F	G	G'	H Bsc	Ø J Min	L Thd	L' Thd								
A	9	.6250	.949 (24.10) .925 (23.50)	1.094 (27.79) 1.054 (26.77)	.719 (18.26)	.594 (15.09)	.136 (3.45) .120 (3.05)	.224 (5.69) .208 (5.28)	.122 (3.10) .083 (2.11)	.179 (4.56)	.594 (15.09)	.340 (8.64)	.112-40 UNC	M3X0.5								
B	11	.7500	1.043 (26.49) 1.019 (25.88)	1.187 (30.15) 1.147 (29.13)	.812 (20.62)	.719 (18.26)		.202 (5.13) .186 (4.72)			.719 (18.26) .812 (20.62)	.468 (11.89) .572 (14.53)										
C	13	.8750	1.138 (28.91) 1.114 (28.30)	1.281 (32.54) 1.241 (31.52)	.906 (23.01)	.812 (20.62)		.181 (4.60) .165 (4.19)			.906 (23.01) 1.030 (26.16)	.705 (17.91) .830 (21.08)										
D	15	1.0000	1.232 (31.29) 1.208 (30.68)	1.344 (34.14) 1.304 (33.12)	.969 (24.61)	.906 (23.01)		.202 (5.13) .186 (4.72)			1.150 (29.21) 1.221 (31.01)	.934 (23.72) 1.055 (26.80)										
E	17	1.1875	1.323 (33.60) 1.299 (32.99)	1.437 (36.50) 1.397 (35.48)	1.062 (26.97)	.969 (24.61)		.153 (3.89)			.114 (2.90)	.190 (4.83)			1.360 (34.54)	1.160 (29.46)	.138-32 UNC	M4X0.7				
F	19	1.2500	1.449 (36.80) 1.425 (36.20)	1.531 (38.89) 1.491 (37.87)	1.156 (29.36)	1.062 (26.97)													1.250 (31.75)	1.156 (29.36)	1.156 (29.36)	1.156 (29.36)
G	21	1.3750	1.575 (40.00) 1.551 (39.40)	1.625 (41.28) 1.585 (40.26)	1.250 (31.75)	1.156 (29.36)																
H	23	1.5000	1.701 (43.21) 1.677 (42.60)	1.750 (44.45) 1.710 (43.43)	1.375 (34.92)	1.250 (31.75)		.162 (4.11)			.250 (6.35)	.170 (4.32)			1.475 (37.47)	1.307 (33.20)	.138-32 UNC	M4X0.7				
J	25	1.6250	1.823 (46.30) 1.799 (45.69)	1.875 (47.63) 1.835 (46.61)	1.500 (38.10)	1.375 (34.92)	.146 (3.71)	.234 (5.94)														



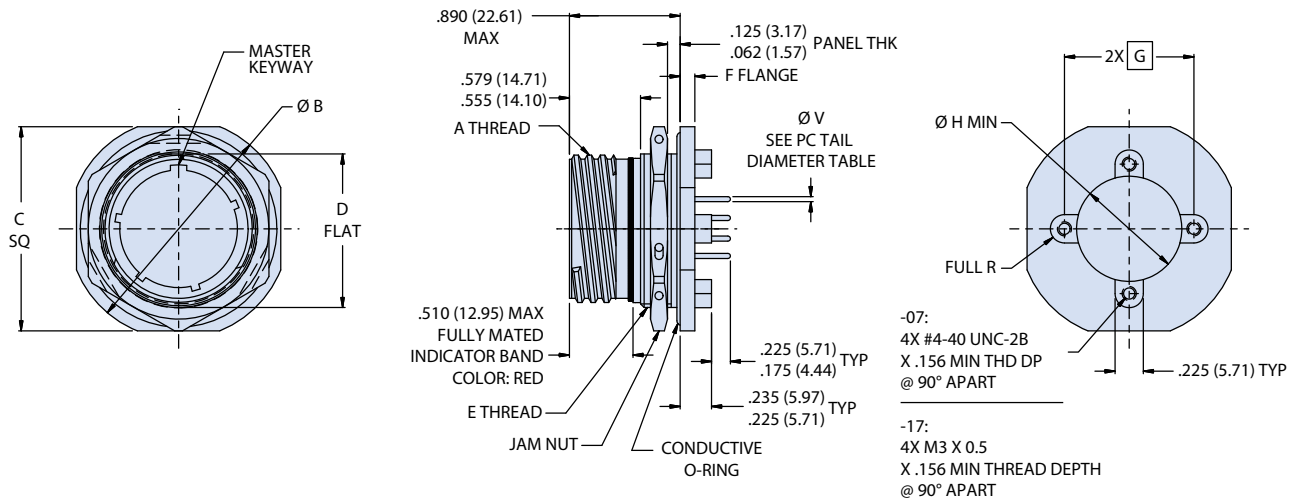
RECOMMENDED MOUNTING HOLES FOR WALL MOUNT RECEPTACLES

Wall Mount Mounting Hole Dimensions					
Shell Size Code	Shell Size	ØN Min	ØN' Min ⁸	ØP Holes	R Bsc
A	9	.656 (16.66)	.516 (13.11)	.133 (3.38) .123 (3.12)	.719 (18.26)
B	11	.796 (20.22)	.625 (15.88)		.812 (20.62)
C	13	.922 (23.42)	.750 (19.05)		.906 (23.01)
D	15	1.047 (26.59)	.906 (23.01)		.969 (24.61)
E	17	1.219 (30.96)	1.016 (25.81)		1.062 (26.97)
F	19	1.297 (32.94)	1.141 (28.98)		1.156 (29.36)
G	21	1.422 (36.12)	1.266 (32.16)		1.250 (31.75)
H	23	1.547 (39.29)	1.375 (34.92)	.159 (4.04) .149 (3.78)	1.375 (34.92)
J	25	1.672 (42.47)	1.484 (37.69)	.155 (3.94) .145 (3.68)	1.500 (38.10)

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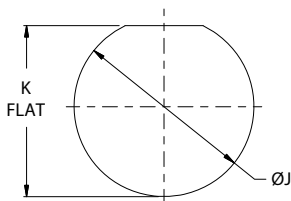
233-218 PC tail receptacle with shielded contacts

07 - JAM-NUT MOUNT RECEPTACLE



HIGH-SPEED CONNECTORS

Dimensions									
Shell Size Code	Shell Size	A Thd -0.1P-0.3L-TS-2A	ØB	C Sq	D Flat	E Thd ISO Metric	F	G Bsc	Ø H
A	9	.6250	1.200 (30.48) 1.178 (29.92)	1.078 (27.38) 1.048 (26.62)	0.654 (16.61) 0.645 (16.38)	M17 X 1.0-6g	0.122 (3.10) 0.083 (2.11)	0.594 (15.09)	0.340 (8.64)
B	11	.7500	1.386 (35.20) 1.362 (34.59)	1.268 (32.21) 1.236 (31.39)	0.755 (19.18) 0.745 (18.92)	M20 X 1.0-6g		0.719 (18.26)	0.468 (11.89)
C	13	.8750	1.512 (38.40) 1.488 (37.80)	1.390 (35.31) 1.484 (37.69)	0.942 (23.93) 0.932 (23.67)	M25 X 1.0-6g		0.812 (20.62)	0.572 (14.53)
D	15	1.0000	1.638 (41.61) 1.614 (41.00)	1.516 (38.51) 1.484 (37.69)	1.066 (27.08) 1.056 (26.82)	M28 X 1.0-6g		0.906 (23.01)	0.705 (17.91)
E	17	1.1875	1.764 (44.81) 1.740 (44.20)	1.642 (41.71) 1.610 (40.89)	1.191 (30.25) 1.181 (30.00)	M32 X 1.0-6g		1.030 (26.16)	0.830 (21.08)
F	19	1.2500	1.949 (49.50) 1.925 (48.90)	1.827 (46.41) 1.795 (45.59)	1.316 (33.43) 1.306 (33.17)	M35 X 1.0-6g	0.153 (3.89) 0.114 (2.90)	1.150 (29.21)	0.934 (23.72)
G	21	1.3750	2.075 (52.71) 2.051 (52.10)	1.953 (49.61) 1.921 (48.79)	1.441 (36.60) 1.431 (36.35)	M38 X 1.0-6g		1.221 (31.01)	1.055 (26.80)
H	23	1.5000	2.201 (55.91) 2.177 (55.30)	2.079 (52.81) 2.047 (51.99)	1.566 (39.78) 1.556 (39.52)	M41 X 1.0-6g		1.360 (34.54)	1.160 (29.46)
J	25	1.6250	2.323 (59.00) 2.299 (58.39)	2.205 (56.01) 2.173 (55.19)	1.691 (42.95) 1.681 (42.70)	M44 X 1.0-6g		1.475 (37.47)	1.307 (33.20)



RECOMMENDED PANEL CUT-OUT

Jam-Nut Mount Mounting Hole Dimensions							
Shell Size Code	Shell Size	ØJ	ØK Flat	Shell Size Code	Shell Size	ØJ	ØK Flat
A	9	.703 (17.86)	.661 (16.79)	E	17	1.270 (32.26)	1.210 (30.73)
		.693 (17.60)	.654 (16.61)			1.260 (32.00)	1.200 (30.48)
B	11	.835 (21.21)	.771 (19.58)	F	19	1.395 (35.43)	1.335 (33.91)
		.825 (20.96)	.761 (19.33)			1.385 (35.18)	1.325 (33.65)
C	13	1.020 (25.91)	.955 (24.26)	G	21	1.520 (38.61)	1.460 (37.08)
		1.010 (25.65)	.945 (24.00)			1.510 (38.35)	1.450 (36.83)
D	15	1.145 (29.08)	1.085 (27.56)	H	23	1.645 (41.78)	1.585 (40.26)
		1.135 (28.83)	1.075 (27.30)			1.635 (41.53)	1.575 (40.00)
J	25	1.770 (44.96)	1.710 (43.43)	J	25	1.770 (44.96)	1.710 (43.43)
		1.760 (44.70)	1.700 (43.18)			1.760 (44.70)	1.700 (43.18)