

MIL-DTL-38999 Series IV Type
234-218 High-speed panel mount receptacles, PC tail

**"BETTER-THAN-QPL"
FEATURES AND BENEFITS**

- Secure breech-lock mating connector meets D38999 shock and vibe
- Glenair Signature Tin Zinc finish class is RoHS compliant and cadmium compatible
- Precision-machined key/keyway polarization for reliable mismatching protection
- Scoop-proof design prevents pin damage and short circuits
- Fully tooled for all MIL-STD-1560 insert arrangements
- Contact options include size #22D, #20, #16, and #12 (see High-Speed series for Size #8)
- 500 mating cycles exceeds MIL-DTL-38999 specification

HOW TO ORDER										
Sample Part Number	234-218	-00	NF	17	E	-	2	P	N	-909CP
Basic Part Number	234-218									
Connector Style	00 = Receptacle, wall-mount through holes HM = Receptacle, wall-mount w/metric helicoil HS = Receptacle, wall-mount w/standard helicoil CM = Receptacle, wall-mount with metric clinch nut CS = Receptacle, wall-mount with standard clinch nut									
Material/Finish	(See Table I)									
Shell Size	11, 13, 15, 17, 19, 21, 23, 25									
Contact Type	(See Table II)									
Ground Option	G = Common Ground - = None									
Insert Arrangement	PER MIL-STD-1560									
Insert Designator	P = Pin Contacts S = Socket Contact									
Alternate Key Positions	A, B, C, D, K, L, M, R, N = Normal, U = Universal (Glenair equivalent only)									
Optional Mod Code	909** = Supplies connector with contacts 1213 = Supplies connector with contacts per MIL-STD-1560									

TABLE I - MATERIAL/FINISH

Equiv Class	Sym	Material	Finish
W	NF	Aluminum Alloy	Cad/O.D. over Electroless Nickel
G*	MA**		Electroless Nickel, Matte
T*	MT		Nickel-PTFE
F	ME		Electroless Nickel
AA	MN		MegaNickel
V	TZ		Tin-Zinc
Z*	ZR		Zinc Ni, Black (Tri-Valent CR)
K*	Z1	Stainless Steel	Passivate
L*	ZL		Electrodeposited Nickel

* = Glenair Equivalent Only

** = Connectors for space applications must be ordered with "MA" finish and mod code "-186T" to conform to the thermal vacuum outgassing requirements of class G.

TABLE II - CONTACT STYLE

Sym	Description
C	Coax, 50 Ohm
C1	Coax, 75 Ohm
D	Differential Twinax
E*	El Ochito
P	Power
Q	Quadrax
T	Triax/Concentric Twinax
OMIT	Per Mil-Std-1560

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TABLE III - OCHITO POSITIONS
B = BLUE, R = RED, W = WHITE

SYM	Contact 1	Contact 2	Contact 3	Contact 4	Contact 5	Contact 6	Contact 7	Contact 8
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

TABLE IV - EL OCHITO MATING CONTACT

Mating Part Number	Protocols
WHITE-PIN 858-003	Use for gb ethernet and 10gb ethernet protocols
WHITE-SKT 858-004	Use for gb ethernet and 10gb ethernet protocols
BLUE-PIN 858-028	Use for USB 3.0 (90 Ohm)
BLUE-SKT 858-029	Use for USB 3.0 (90 Ohm)
RED-PIN 858-030	Use for all high-bandwidth 100 ohm differential lines
RED-SKT 858-031	Use for all high-bandwidth 100 ohm differential lines

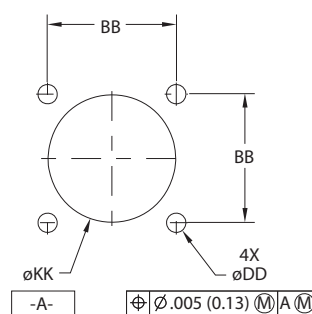
TABLE V - POLARIZING POSITIONS

	N	A	B	C	D	K	L	M	R	U
X	110°	100°	90°	80°	70°	120°	120°	120°	120°	N/A
Y	250°	260°	270°	280°	290°	255°	265°	275°	285°	N/A

TABLE VI

Contact Size	Pc Tail ØM
#23	.020 (0.51) .018 (0.46)
#22	.020 (0.51) .018 (0.46)
#20	.030 (0.76) .028 (0.71)
#16	.040 (1.02) .038 (0.97)
#12	.072 (1.83) .070 (1.78)

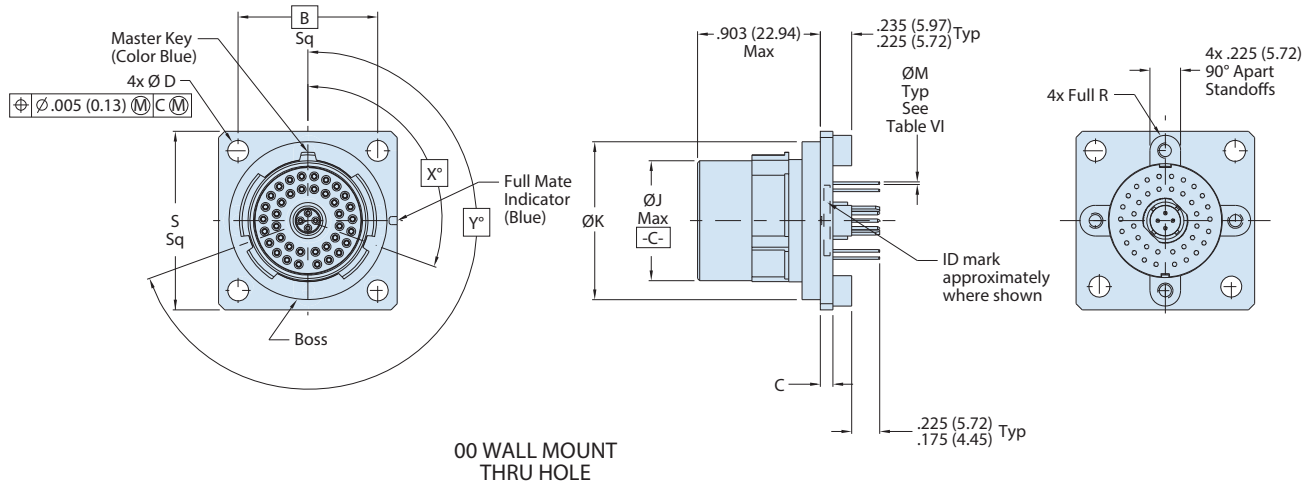
TABLE VII - PANEL CUTOUT



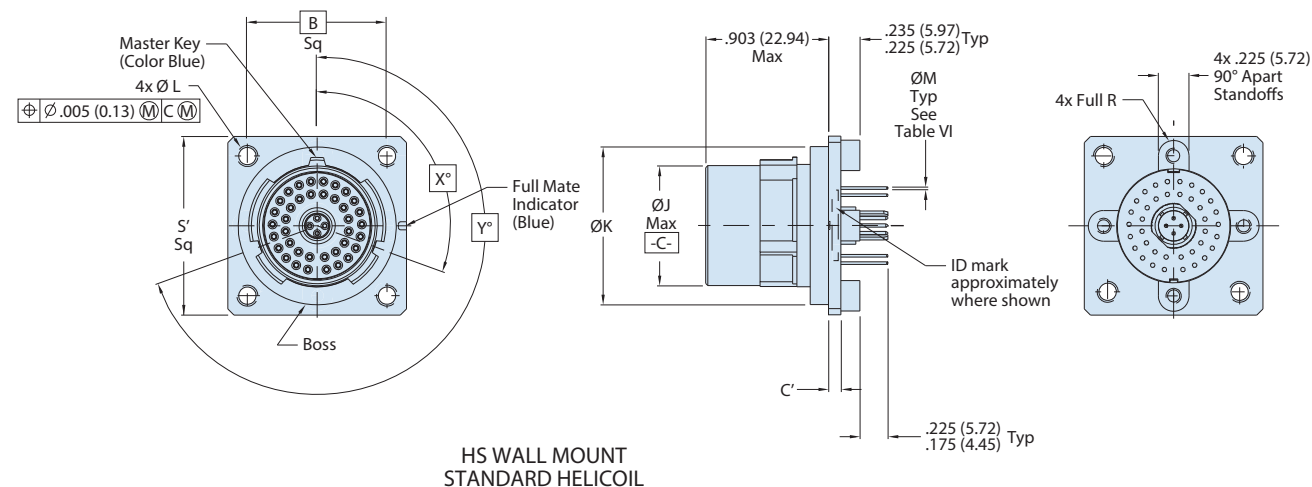
Shell Size	Shell Size Code	ØKK Min	BB Bsc	ØDD
11	B	0.796 (20.22)	0.812 (20.62)	.133 (3.38)/.123 (3.12)
13	C	0.922 (23.42)	0.906 (23.01)	
15	D	1.047 (26.59)	0.969 (24.61)	
17	E	1.219 (30.96)	1.062 (26.97)	
19	F	1.297 (32.94)	1.156 (29.36)	
21	G	1.422 (36.12)	1.250 (31.75)	
23	H	1.547 (39.29)	1.375 (34.93)	.159 (4.04)/.149 (3.78)
25	J	1.672 (42.47)	1.500 (38.10)	.155 (3.94)/.145 (3.68)

MIL-DTL-38999 Series IV Type
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WALL MOUNT RECEPTACLE 234-218 REF: MIL-DTL-38999/40



**00 WALL MOUNT
THRU HOLE**

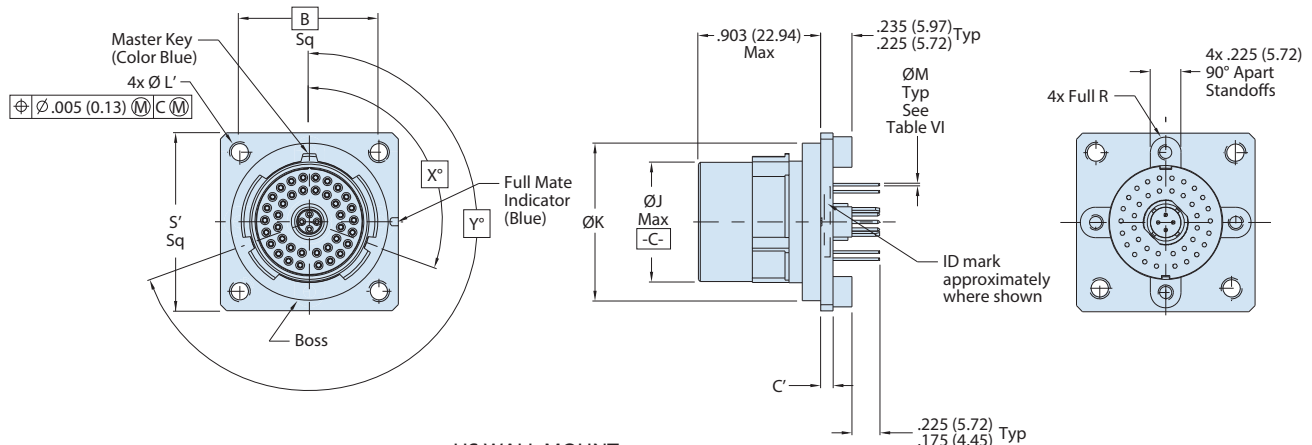


**HS WALL MOUNT
STANDARD HELICOIL**

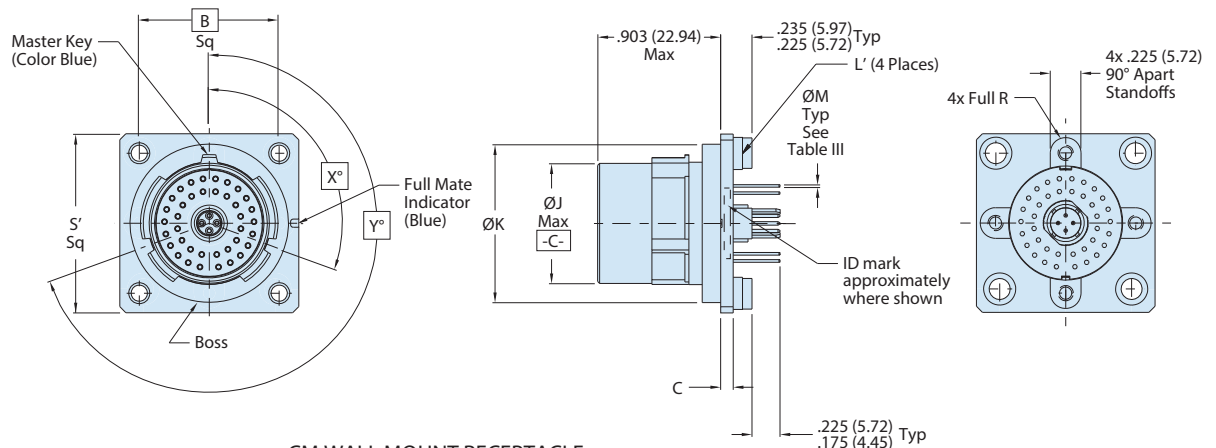
Shell Size	Shell Size Code	B Bsc	C	C'	Ø D	Ø J Max	Ø K	L Thread	L' Thread	S	S'	Ø T
11	B	.812 (20.62)	.102 (2.6) .083 (2.1)	.179 (4.5) .140 (3.6)	.138 (3.5) .122 (3.1)	.509 (12.93)	.793 (20.15) .778 (19.76)	.112-40 UNC	M3 X 0.5	1.051 (26.7) 1.008 (25.6)	1.202 (30.5) 1.162 (29.5)	.585 (14.9)
13	C	.906 (23.02)	.102 (2.6) .083 (2.1)		.138 (3.5) .122 (3.1)	.634 (16.10)	.913 (23.35) .904 (22.96)			1.146 (29.1) 1.102 (28.0)	1.296 (32.8) 1.256 (31.9)	.704 (17.9)
15	D	.969 (24.61)	.102 (2.6) .083 (2.1)		.138 (3.5) .122 (3.1)	.759 (19.28)	1.044 (26.52) 1.029 (26.13)			1.240 (31.5) 1.197 (30.4)	1.359 (34.5) 1.319 (33.5)	.861 (21.9)
17	E	1.062 (26.98)	.102 (2.6) .083 (2.1)		.138 (3.5) .122 (3.1)	.885 (22.48)	1.170 (29.72) 1.155 (29.33)			1.335 (33.9) 1.291 (32.8)	1.452 (36.9) 1.412 (35.9)	.980 (24.9)
19	F	1.156 (29.36)	.102 (2.6) .083 (2.1)		.138 (3.5) .122 (3.1)	1.009 (25.63)	1.294 (32.87) 1.279 (32.48)			1.461 (37.1) 1.417 (36.0)	1.546 (39.3) 1.506 (38.3)	1.097 (27.9)
21	G	1.250 (31.76)	.134 (3.4) .114 (2.9)		.138 (3.5) .122 (3.1)	1.134 (28.80)	1.419 (36.05) 1.404 (35.66)			1.583 (40.2) 1.539 (39.1)	1.640 (41.7) 1.600 (40.6)	1.215 (30.9)
23	H	1.375 (34.93)	.134 (3.4) .114 (2.9)	.190 (4.8) .170 (4.3)	.157 (4.0) .142 (3.6)	1.259 (31.98)	1.544 (39.22) 1.529 (38.83)	.138-32 UNC	M4 X 0.7	1.709 (43.4) 1.665 (42.3)	1.765 (44.8) 1.725 (43.8)	1.332 (33.8)
25	J	1.500 (38.10)	.134 (3.4) .114 (2.9)		.157 (4.0) .142 (3.6)	1.384 (35.15)	1.669 (42.40) 1.654 (42.01)			1.835 (46.6) 1.791 (45.5)	1.890 (48.0) 1.850 (47.0)	1.451 (36.9)

MIL-DTL-38999 Series IV Type
234-218 High-speed panel mount receptacles, PC tail

WALL MOUNT RECEPTACLE 234-218 REF: MIL-DTL-38999/40



**HS WALL MOUNT
METRIC HELICOIL**



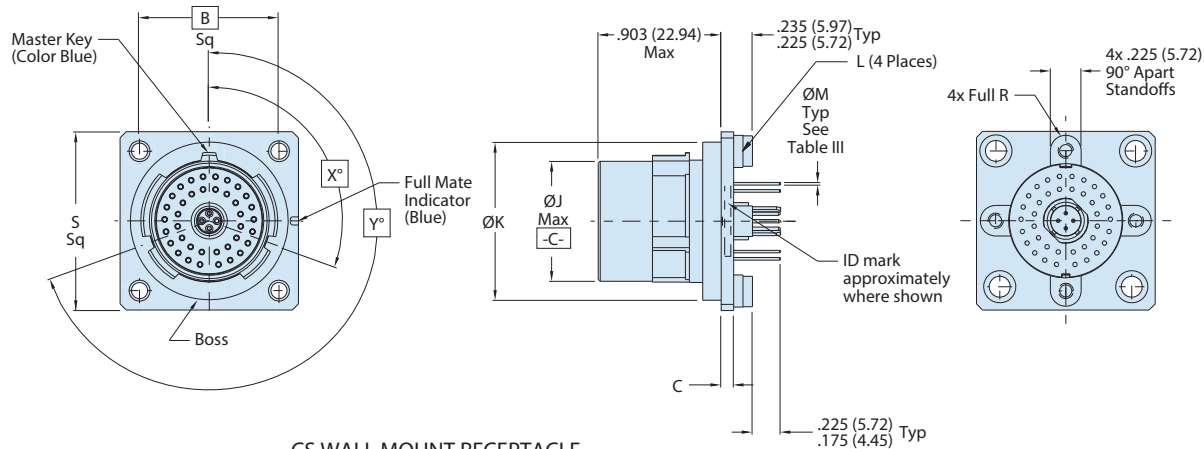
**CM WALL MOUNT RECEPTACLE
WITH METRIC CLINCH NUTS**
Consult manufacturer

Shell Size	Shell Size Code	B Bsc	C	C'	Ø D	Ø J Max	Ø K	L Thread	L' Thread	S	S'	Ø T
11	B	.812 (20.62)	.102 (2.6) .083 (2.1)	.179 (4.5) .140 (3.6)	.138 (3.5) .122 (3.1)	.509 (12.93)	.793 (20.15) .778 (19.76)	.112-40 UNC	M3 X 0.5	1.051 (26.7) 1.008 (25.6)	1.202 (30.5) 1.162 (29.5)	.585 (14.9)
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MIL-DTL-38999 Series IV Type

234-218 High-speed panel mount receptacles, PC tail

WALL MOUNT RECEPTACLE 234-218 REF: MIL-DTL-38999/40



**CS WALL MOUNT RECEPTACLE
WITH STANDARD CLINCH NUTS**
Consult manufacturer

Shell Size	Shell Size Code	B Bsc	C	C'	Ø D	Ø J Max	Ø K	L Thread	L' Thread	S	S'	Ø T
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**MIL-DTL-38999 Series IV Type
234-218 High-speed panel mount receptacles, PC tail insert arrangements**

FIGURE 1 - INSERT ARRANGEMENTS

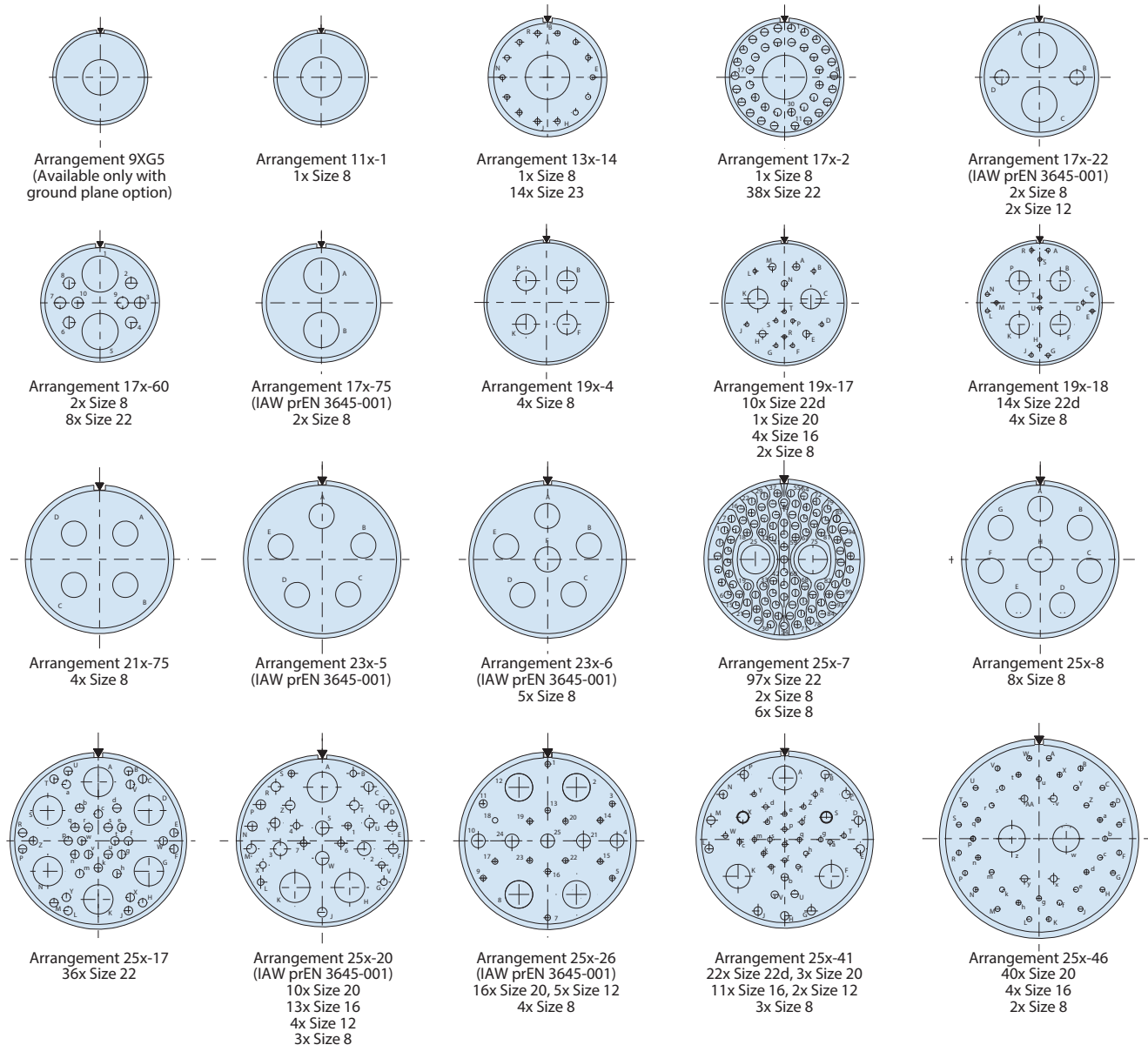
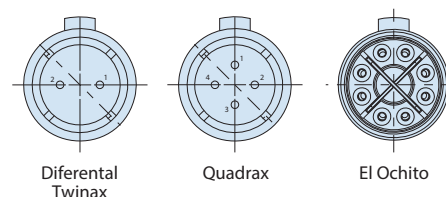


Figure 1
Insert arrangements, mating
face of pin insert shown.
Replace X with C, D, E, Q or T
(See Table VI)

FIGURE 2 - CONTACT INNER PIN ORIENTATION

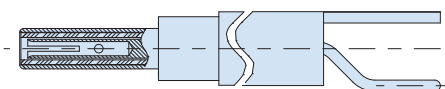


MIL-DTL-38999 Series IV Type

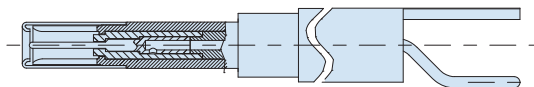
234-218 High-speed panel mount receptacles, PC tail contact options

COAX CONTACTS

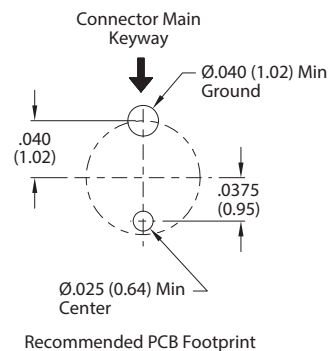
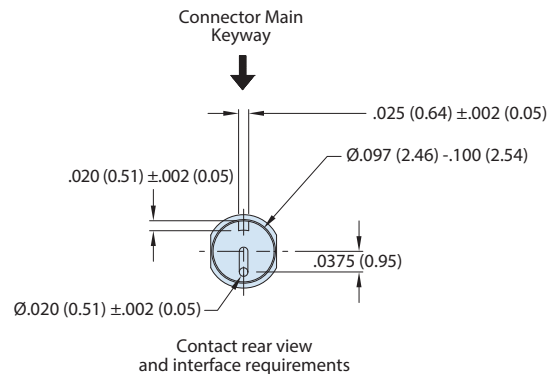
COAX CONTACTS



Size #16 Coax Contact, Pin, PC Tail Detail
Interface per M39029/76
Note: Max usable frequency of 700 Mhz



Size #16 Coax Contact, Socket, PC Tail Detail
Interface per M39029/77
Note: Max usable frequency of 700 Mhz



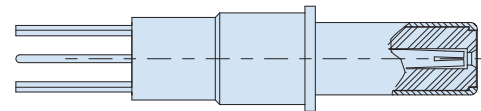
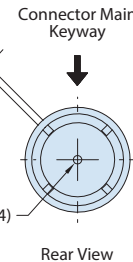
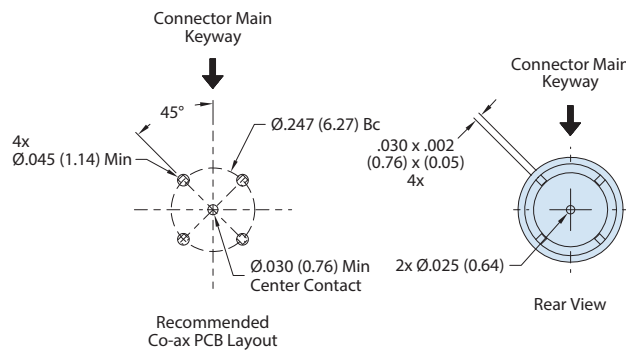
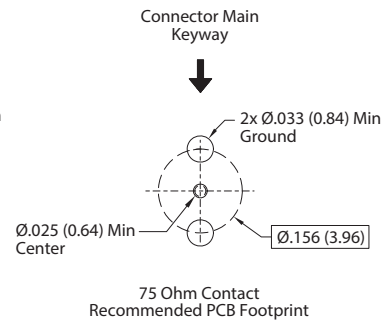
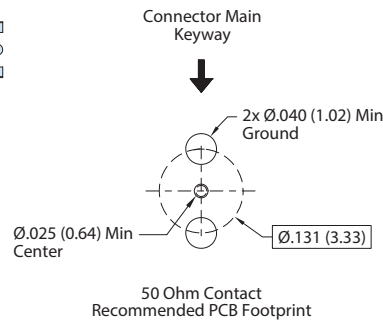
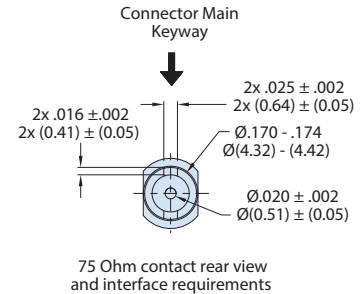
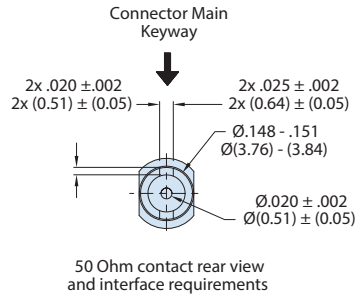
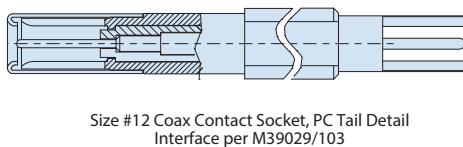
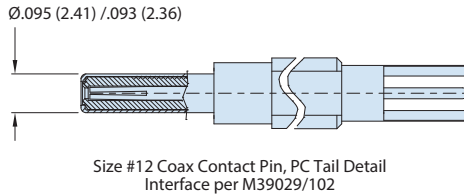
NOTES

- Material/Finish
 - Shell - See Table I
 - Contacts - Copper Alloy / Gold Plated
 - Insulators - High Grade Rigid Dielectric for common ground option - Al Alloy/ Mfg Option
 - Seals - Fluorosilicone Blend.
 - Potting - Epoxy.
- Glenair's 234-218 receptacle connector is designed to meet or exceed the applicable mechanical, dimensional, electrical, and environmental requirements of MIL-DTL-38999, D38999/20, 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.
- Glenair's 233-218 receptacle connector should be mated to Glenair's 233-217 plug with appropriate contacts to optimize performance.
- Insert arrangement is in accordance with MIL-STD-1560 and figure 1. Contact manufacturer for additional arrangement options.
- Insert arrangement is shown for reference only. Pin interface shown.
- See figure 2 for reference orientation of the inner pins relative to connector main keyway.
- Ground plane option only available for insert arrangements where all contacts are shielded type.
- 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, 50 Ohm Per M39029/59 & 60
 - Size #8, 75 Ohm Per 852-056 & -057
- El Ochito mating contact shall be in accordance with Table III. El Ochito color type configuration position shall be per Table III.
- For optimal performance, see Glenair application note AN0002.

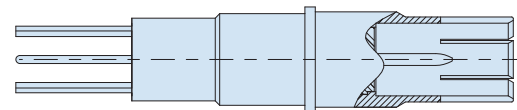
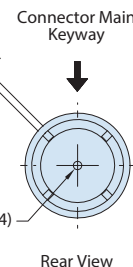
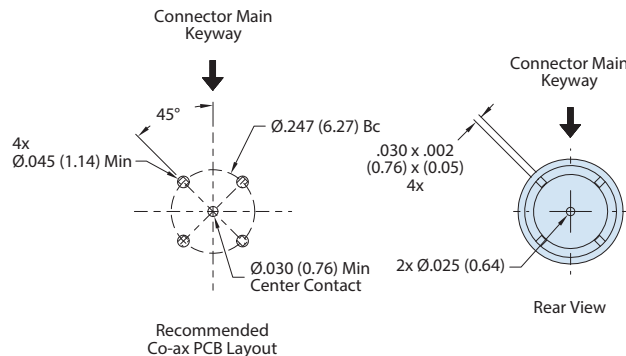
**MIL-DTL-38999 Series IV Type
234-218 High-speed panel mount receptacles, PC tail contact options**

COAX CONTACTS

COAX CONTACTS



SIZE #8 CO-AX PIN, PC TAIL DETAIL
C = Interface Per M39029/60 (50 Ohm)
C1 = Interface Per 852-056 (75 Ohm)



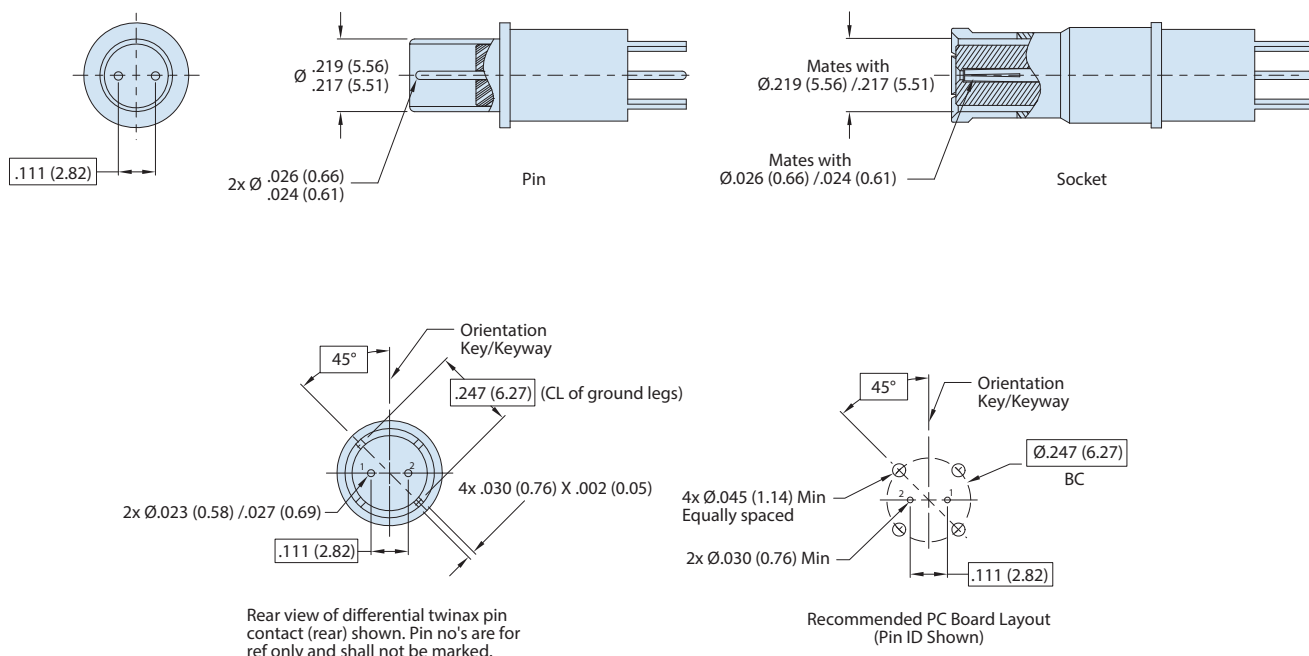
SIZE #8 CO-AX SOCKET, PC TAIL DETAIL
C = Interface Per M39029/59 (50 Ohm)
C1 = Interface Per 852-057 (75 Ohm)

MIL-DTL-38999 Series IV Type

234-218 High-speed panel mount receptacles, PC tail contact options

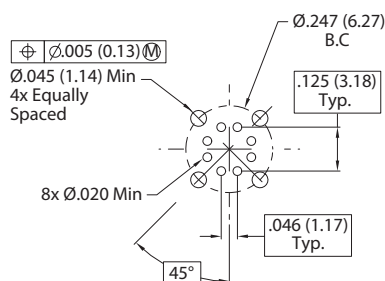
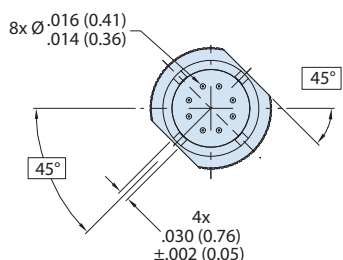
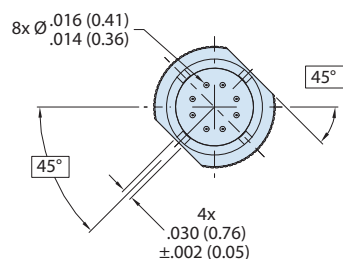
TWINAX CONTACTS

DIFFERENTIAL TWINAX CONTACT DETAILS

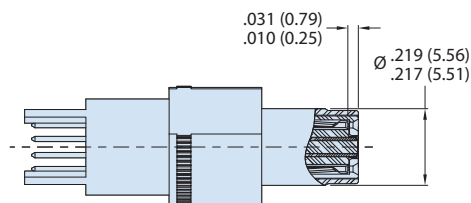


MIL-DTL-38999 Series IV Type
234-218 High-speed panel mount receptacles, PC tail contact options

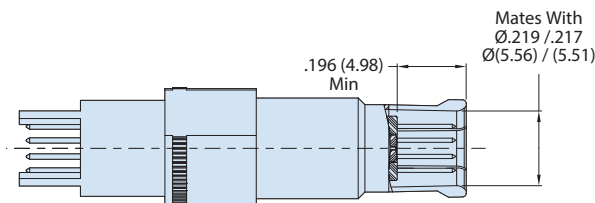
EL OCHITO CONTACTS



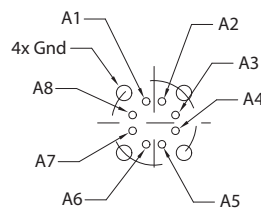
Recommended PC Board Layout
 (See Detail A for pin assignment)
 For optimal performance, see
 Glenair application note AN0002



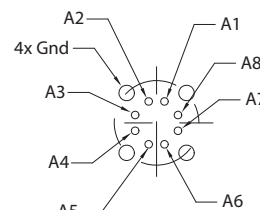
Size #8 El Ochito Pin, Pc Tail Detail
 White Insert - For Ethernet Applications



Size #8 El Ochito Socket, PC Tail Detail
 White Insert - For Ethernet Applications



PC Tail Pin Assignment
 (For Ochito Pin Contact)



PC Tail Pin Assignment
 (For Ochito Skt Contact)

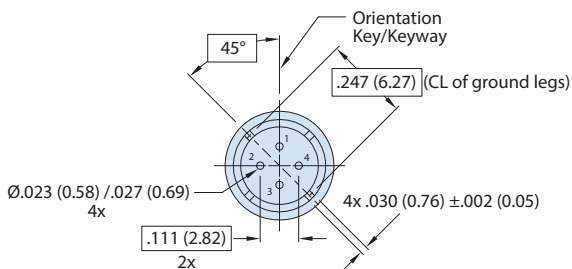
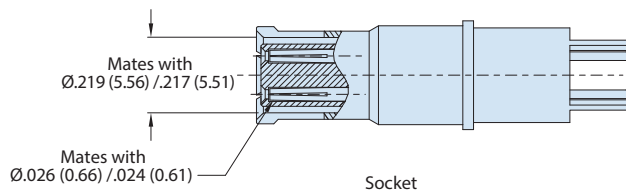
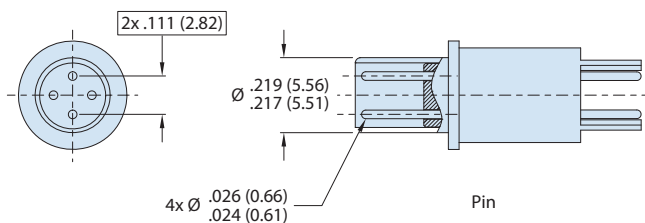
DETAIL A (TYP)

MIL-DTL-38999 Series IV Type

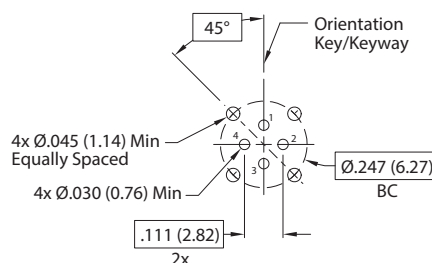
234-218 High-speed panel mount receptacles, PC tail contact options

QUADRAX CONTACTS

QUADRAX CONTACT DETAILS



Rear view of differential quadrax pin contact (rear) shown. Pin no's are for ref only and shall not be marked. (Ref: differential pairs: 1 & 3; 2 & 4)



Recommended PC Board Layout (Pin ID shown)

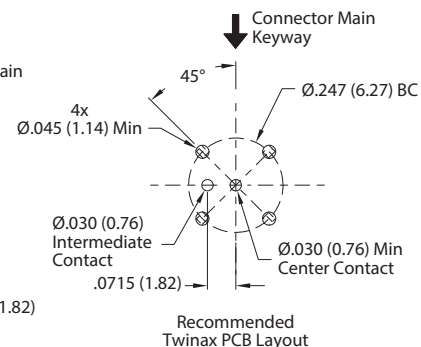
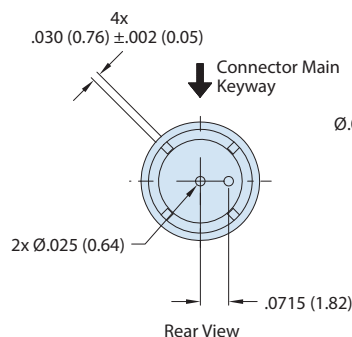
MIL-DTL-38999 Series IV Type
234-218 High-speed panel mount receptacles, PC tail contact options

TRIAX / CONCENTRIC TWINAX CONTACTS

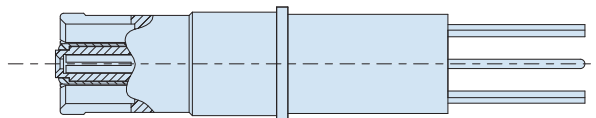
TRIAX / CONCENTRIC TWINAX PIN



Size #8 Concentric Twinax Pin, PC Tail Detail
 Interface per M39029/90 and/113



TRIAX / CONCENTRIC TWINAX SOCKET



Size #8 Concentric Twinax Socket, PC Tail Detail
 Interface per M39029/91 and/114

