

MIL-DTL-38999 Series I Type 231-206 Plug and receptacle connectors with integral banding porch

ENVIRONMENTAL CONNECTORS



“BETTER THAN QPL” FEATURES AND BENEFITS

- Improved, positive-lock, 3-point stainless-steel pin bayonet coupling with outstanding vibration and shock resistance
- Integral banding porch eliminates need for add-on accessories
- Plug ground fingers for advanced EMC
- Glenair signature Tin Zinc finish is RoHS compliant and cadmium compatible
- Precision-machined key/keyway polarization for reliable mismatching protection
- Expanded receptacle styles include Clinch-nut and Helicoil mounting, and In-Line configurations
- 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

POWER SPECIFICATIONS

- Max operating temperature is 200°C finish dependent
- Meets Mil-Spec service rating, insert dependent

HOW TO ORDER							
Sample Part Number	231-206	-G6	NF	17	-8	P	N
Basic Part Number	231-206						
Connector Style	(See Table II)						
Material/Finish	NF, MA, MT, ME, ZR, Z1, ZL, AB (See Table I)						
Connector Size	9, 11, 13, 15, 17, 19, 21, 23, 25						
Insert Arrangement	PER MIL-STD-1560						
Contact Style	(See Table III)						
Alternate Polarization	A, B, C, D, N = Normal, U = Universal						

TABLE I: MATERIAL/FINISH		
Sym	Material	Finish
NF	Aluminum Alloy	Cad/O.D. Over Electroless Nickel
MA		Electroless Nickel, Matte
ME		Electroless Nickel
MN		Tri-Nickel Alloy
MT		Nickel-PTFE
TZ		Tin Zinc Over Electroless Nickel
ZR		Zinc Ni, Black (Tri-Valent CR)
Z1	Stainless Steel	Passivate
ZL		Electrodeposited Nickel
AB	Marine Bronze	None (Clean Only)

TABLE II: CONNECTOR STYLE	
Sym	Description
G6	Plug, EMI Spring, (MS27467T)
07	Receptacle, Jam-nut (MS27468T)
D0	Receptacle, Wall-mount Front Panel, Standard Holes (MS27466T)
E0	Receptacle, Extended Wall-mount, Back Panel, Standard Holes (MS27656T)
CS	Receptacle, Wall-mount, Standard Clinch-nuts
CM	Receptacle, Wall-mount, Metric Clinch-nuts
HS	Receptacle, Wall-mount, Standard Helicoils
HM	Receptacle, Wall-mount, Metric Helicoils
05	Receptacle, In-Line

TABLE III - CONTACT STYLE	
Sym	Description
P	Pin, Gold, 500 Cycles
S	Socket, Gold, 500 Cycles
A	Pin Insert, Less Pin Contacts
B	Socket Insert, Less Socket Contacts

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CONTACT ARRANGEMENTS			
Shell Size	Contact Size	Number of Contacts	Insert Arrangement
9	22D	6	9-35
9	20	2	9-94
9	20	3	9-98
11	22D	13	11-35
11	20	4	11-4
11	20	5	11-5
11	20	6	11-98
11	20	7	11-99
11	16	2	11-2
13	22D	22	13-35
13	20	8	13-8
13	20	10	13-98
13	16	4	13-4
15	22D	37	15-35
15	20	18	15-18
15	20	19	15-19
15	16	5	15-5
17	22D	55	17-35
17	20	26	17-26
17	16	8	17-8
17	12	6	17-6
19	22D	66	19-35
19	22D	67	19-35

CONTACT ARRANGEMENTS			
Shell Size	Contact Size	Number of Contacts	Insert Arrangement
19	20	32	19-32
19	16	11	19-11
21	22D	79	21-35
21	20	24	21-24
21	20	25	21-25
21	20	27	21-27
21	20	41	21-41
21	16	16	21-16
21	12	11	21-11
23	22D	100	23-35
23	20	32	23-32
23	20	34	23-34
23	20	36	23-36
23	20	53	23-53
23	20	55	23-55
23	16	21	23-21
23	16	16	23-97
23	16	11	23-99
25	22D	128	25-35
25	20	61	25-61
25	16	29	25-29
25	16	37	25-37
25	12	19	25-19

See Appendix for PCB Footprints

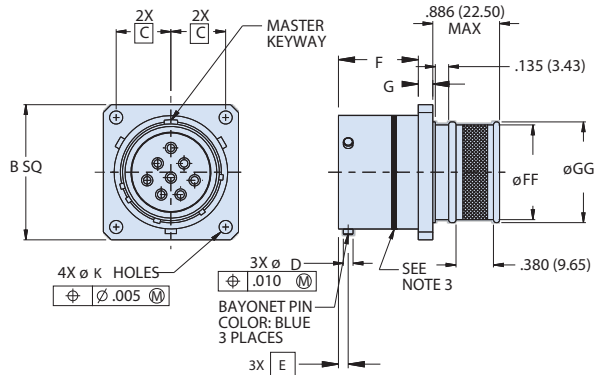
NOTES

- Material/finish:
 - Shell, barrel, coupling nut, Jam-nut - see Table I
 - Insulator - high-grade rigid dielectric
 - Seals, grommet - fluorosilicone blend
 - Contacts - copper alloy / gold
- Glenair's 231-206 connectors are designed to mate with any QPL manufacturer's MIL-DTL-38999, Series I connectors having the same shell size, insert arrangement, and polarization.
- Blue color band indicates rear release retention system.
- Connector is supplied with loose contacts (including spares), insertion/removal tool, and sealing plugs where indicated in Table III.
- Consult factory for crimp tools and/or accessory selection.
- Alternate polarization 'U' (universal) is a non-standard Mil-Spec option which allows for mating to any QPL manufacturer's MIL-DTL-38999, Series I connector having the same shell size, insert arrangement, and mating contact size. Universal connectors are intended for use in testing facilities only and should be highly evaluated before consideration in another environment.

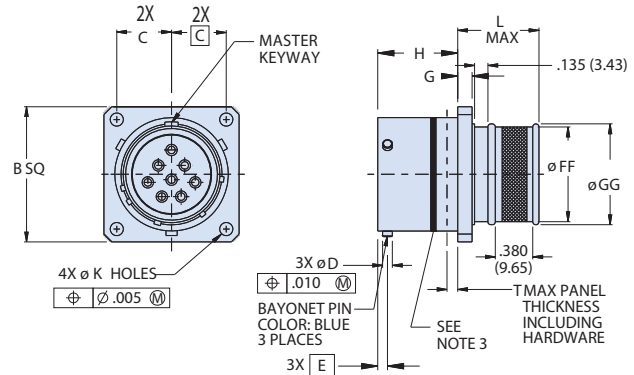
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ENVIRONMENTAL CONNECTORS

TABLE IV - WALL-MOUNT



D0 - WALL MOUNT FRONT PANEL RECEPTACLE
WITH STANDARD HOLES (MS27466T)
(SEE TABLE IV)

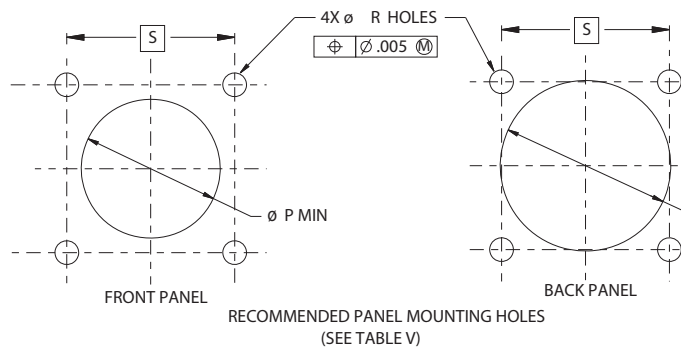


E0 - WALL MOUNT BACK PANEL RECEPTACLE
WITH STANDARD HOLES (MS27656T)
(SEE TABLE IV)

Shell Size Code	Shell Size	B SQ	C BSC	F	G	H	Ø K Holes	L MAX	Ø D	E BSC	T MAX	Ø FF	Ø GG
A	9	.958 (24.33) .918 (23.32)	.3595 (9.13)									.475 (12.07)	.538 (13.67)
B	11	1.051 (26.70) 1.011 (25.68)	.406 (10.31)									.600 (15.24)	.662 (16.81)
C	13	1.145 (29.08) 1.105 (28.07)	.453 (11.51)	.632 (16.05)	.100 (2.54)	.820 (20.83)		.986 (25.04)			.234 (5.94)	.700 (17.78)	.762 (19.35)
D	15	1.239 (31.47) 1.199 (30.45)	.4845 (12.31)	.627 (15.93)	.085 (2.16)	.815 (20.70)	.138 (3.51) .123 (3.12)		.084 (2.13) .076 (1.93)	.100 (2.54)		.835 (21.21) .898 (22.81)	
E	17	1.332 (33.83) 1.292 (32.82)	.531 (13.49)									.960 (24.38)	1.022 (25.96)
F	19	1.458 (37.03) 1.418 (36.02)	.578 (14.68)									1.062 (26.97)	1.125 (28.58)
G	21	1.582 (40.18) 1.542 (39.17)	.625 (15.88)	.602 (15.29)	.130 (3.30) .115 (2.92)	.790 (20.07) .785 (19.94)		1.016 (25.81)			.204 (5.18)	1.188 (30.18) 1.275 (32.39)	1.250 (31.75) 1.338 (33.99)
H	23	1.708 (43.38) 1.668 (42.37)	.6875 (17.46)				.157 (3.99) .142 (3.61)			.131 (3.33) .123 (3.12)	.109 (2.77)	.193 (4.90)	1.475 (37.47) 1.538 (39.07)
J	25	1.832 (46.53) 1.792 (45.52)	.750 (19.05)										

TABLE V - MOUNTING HOLES

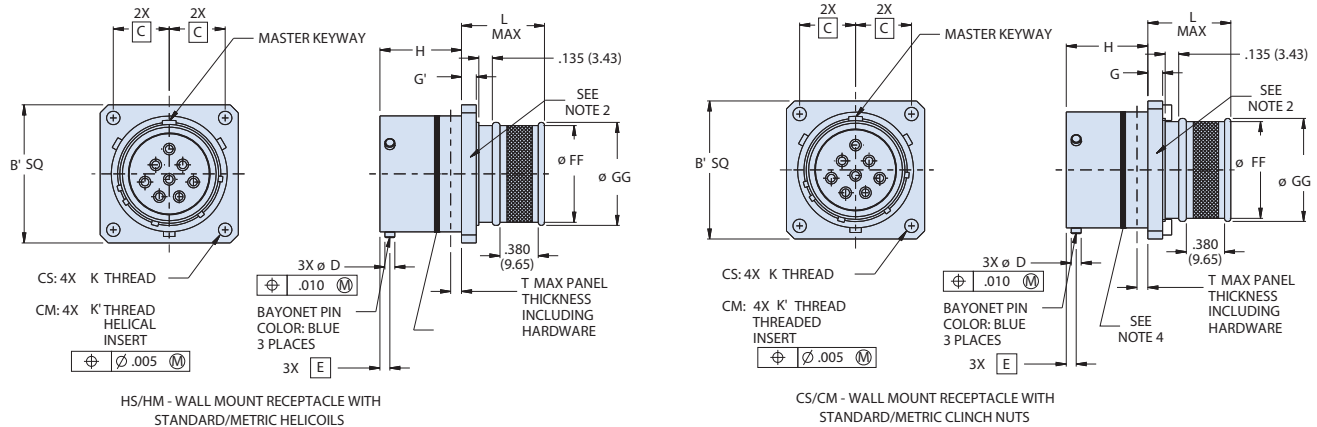
Shell Size Code	Shell Size	Ø N MIN	Ø P MIN	Ø R HOLES	S BSC
A	9	.656 (16.66)	.516 (13.11)		.719 (18.26)
B	11	.796 (20.22)	.625 (15.88)		.812 (20.62)
C	13	.922 (23.42)	.750 (19.05)		.906 (23.01)
D	15	1.047 (26.59)	.906 (23.01)	.133 (3.38) .123 (3.12)	.969 (24.61)
E	17	1.219 (30.96)	1.016 (25.81)		1.062 (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)



RECOMMENDED PANEL MOUNTING HOLES
(SEE TABLE V)

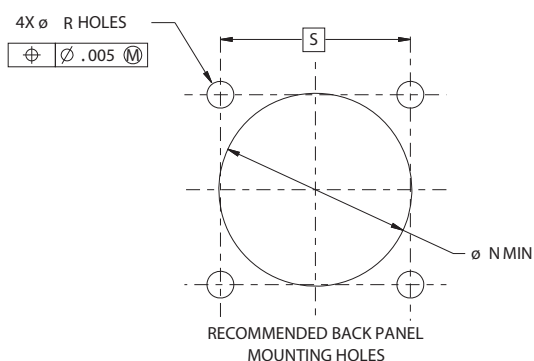
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TABLE VI - WALL-MOUNT, CLINCH-NUT AND HELICOIL



Shell Size Code	Shell Size	B' SQ	C BSC	G	G'	H	K	K' Thread	L MAX	øD	E BSC	T MAX	øFF	øGG
A	9	1.094 (27.79) 1.054 (26.77)	.3595 (9.13)										.475 (12.07) .600 (15.24)	.538 (13.67) .662 (16.81)
B	11	1.187 (30.15) 1.147 (29.13)	.406 (10.31)										.700 (17.78) .835 (21.21)	.762 (19.35) .898 (22.81)
C	13	1.281 (32.54) 1.241 (31.52)	.453 (11.51)	.100 (2.54)	.179 (4.55)	.820 (20.83)	.112-40 UNC-3B	M3X0.5	.986 (25.04)	.084 (2.13) .076 (1.93)	.100 (2.54)	.234 (5.94)	.762 (19.35) .835 (21.21)	.762 (19.35) .898 (22.81)
D	15	1.344 (34.14) 1.304 (33.12)	.4845 (12.31)	.085 (2.16)	.140 (3.56)	.815 (20.70)							.960 (24.38) 1.062 (26.97)	1.022 (25.96) 1.125 (28.58)
E	17	1.437 (36.50) 1.397 (35.48)	.531 (13.49)											
F	19	1.531 (38.89) 1.491 (37.87)	.578 (14.68)											
G	21	1.625 (41.28) 1.585 (40.26)	.625 (15.88)	.130 (3.30) .115 (2.92)	.190 (4.83) .170 (4.32)	.790 (20.07) .785 (19.94)	.138-32 UNC-3B	M4X0.7	1.016 (25.81)			.204 (5.18)	1.188 (30.18) 1.275 (32.39)	1.250 (31.75) 1.338 (33.99)
H	23	1.750 (44.45) 1.710 (43.43)	.6875 (17.46)											
J	25	1.875 (47.63) 1.835 (46.61)	.750 (19.05)										1.475 (37.47) 1.538 (39.07)	1.538 (39.07)

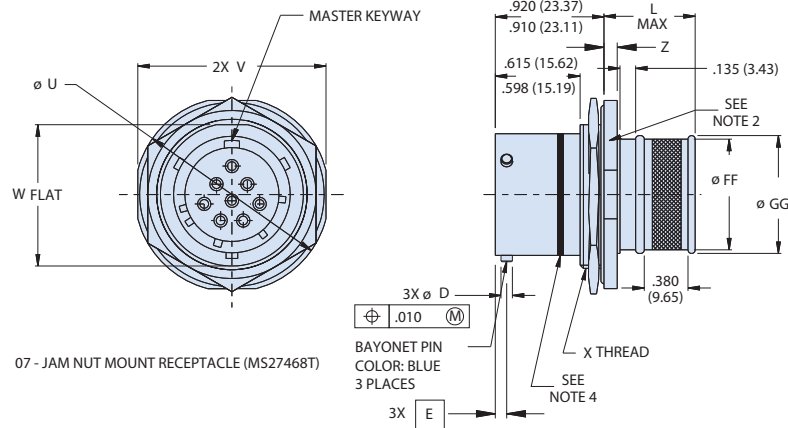
TABLE VII - MOUNTING HOLES



Shell Size Code	Shell Size	øN MIN	øR HOLES	S BSC
A	9	.656 (16.66)	.133 (3.38) .123 (3.12)	.719 (18.26)
B	11	.796 (20.22)		.812 (20.62)
C	13	.922 (23.42)		.906 (23.01)
D	15	1.047 (26.59)		.969 (24.61)
E	17	1.219 (30.96)		1.062 (26.97)
F	19	1.297 (32.94)		1.156 (29.36)
G	21	1.422 (36.12)		1.250 (31.75)
H	23	1.547 (39.29)	.159 (4.04) .149 (3.78)	1.375 (34.92)
J	25	1.672 (42.47)	.155 (3.94) .145 (3.68)	1.500 (38.10)

MIL-DTL-38999 Series I Type
231-206 Plug and receptacle connectors with integral banding porch

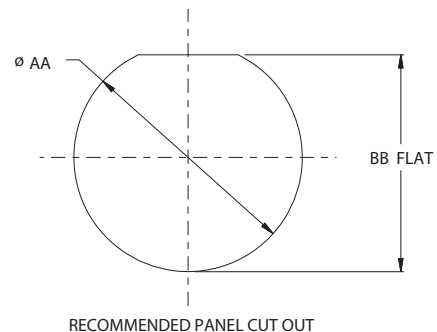
TABLE VIII - JAM-NUT MOUNT



Shell Size Code	Shell Size	ϕU	V	W FLAT	X THREAD	Z	L MAX	ϕD	E BSC	ϕFF	ϕGG
A	9	1.204 (30.58) 1.172 (29.77)	1.078 (27.38) 1.046 (26.57)	.655 (16.64) .645 (16.38)	.6875-24 UNEF-2A	.120 (3.05) .099 (2.51)	1.006 (25.55)	.084 (2.13) .076 (1.93)	.100 (2.54)	.475 (12.07)	.538 (13.67)
B	11	1.391 (35.33) 1.359 (34.52)	1.266 (32.16) 1.234 (31.34)	.755 (19.18) .745 (18.92)	.8125-20 UNEF-2A					.600 (15.24)	.662 (16.81)
C	13	1.516 (38.51) 1.484 (37.69)	1.391 (35.33) 1.359 (34.52)	.942 (23.93) .932 (23.67)	1.000-20 UNEF-2A					.700 (17.78)	.762 (19.35)
D	15	1.641 (41.68) 1.609 (40.87)	1.516 (38.51) 1.484 (37.69)	1.066 (27.08) 1.056 (26.82)	1.1250-18 UNEF-2A					.835 (21.21)	.898 (22.81)
E	17	1.766 (44.86) 1.734 (44.04)	1.641 (41.68) 1.609 (40.87)	1.191 (30.25) 1.181 (30.00)	1.2500-18 UNEF-2A					.960 (24.38)	1.022 (25.96)
F	19	1.954 (49.63) 1.922 (48.82)	1.828 (46.43) 1.796 (45.62)	1.316 (33.43) 1.306 (33.17)	1.3750-18 UNEF-2A	.151 (3.84) .130 (3.30)	1.037 (26.34)	.131 (3.33) .123 (3.12)	.109 (2.77)	1.062 (26.97)	1.125 (28.58)
G	21	2.078 (52.78) 2.046 (51.97)	1.954 (49.63) 1.922 (48.82)	1.441 (36.60) 1.431 (36.35)	1.5000-18 UNEF-2A					1.188 (30.18)	1.250 (31.75)
H	23	2.204 (55.98) 2.172 (55.17)	2.078 (52.78) 2.046 (51.97)	1.566 (39.78) 1.556 (39.52)	1.6250-18 UNEF-2A					1.275 (32.39)	1.338 (33.99)
J	25	2.328 (59.13) 2.296 (58.32)	2.204 (55.98) 2.172 (55.17)	1.691 (42.95) 1.681 (42.70)	1.7500-18 UNEF-2A					1.475 (37.47)	1.538 (39.07)

TABLE IX - PANEL-MOUNT

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



MIL-DTL-38999 Series I Type
231-206 Plug and receptacle connectors with integral banding porch

TABLE X - IN-LINE

		Shell Size Code	Shell Size	F	G	øD	E BSC	øM MAX	øFF	øGG
	A	9						.859 (21.82)	.475 (12.07)	.538 (13.67)
	B	11						.984 (24.99)	.600 (15.24)	.662 (16.81)
	C	13	.632 (16.05)	.100 (2.54)				1.156 (29.36)	.700 (17.78)	.762 (19.35)
	D	15	.627 (15.93)	.085 (2.16)	.084 (2.13)	.076 (1.93)	.100 (2.54)	1.281 (32.54)	.835 (21.21)	.898 (22.81)
	E	17						1.406 (35.71)	.960 (24.38)	1.022 (25.96)
	F	19						1.516 (38.51)	1.062 (26.97)	1.125 (28.58)
	G	21						1.641 (41.68)	1.188 (30.18)	1.250 (31.75)
	H	23	.602 (15.29)	.130 (3.30)				1.766 (44.86)	1.275 (32.39)	1.338 (33.99)
	J	25	.597 (15.16)	.115 (2.92)	.131 (3.33)	.123 (3.12)	.109 (2.77)	1.891 (48.03)	1.475 (37.47)	1.538 (39.07)

TABLE XI - PLUG

		øCC	øDD MAX	øHH	øJJ
A	9	.791 (20.09); .780 (19.81)	.859 (21.82)	.410 (10.41)	.460 (11.68)
B	11	.916 (23.27); .905 (22.99)	.984 (24.99)	.525 (13.34)	.575 (14.60)
C	13	1.072 (27.23); 1.061 (26.95)	1.156 (29.36)	.650 (16.51)	.700 (17.78)
D	15	1.197 (30.40); 1.186 (30.12)	1.281 (32.54)	.775 (19.68)	.825 (20.96)
E	17	1.312 (33.32); 1.301 (33.05)	1.406 (35.71)	.900 (22.86)	.950 (24.13)
F	19	1.433 (36.40); 1.422 (36.12)	1.516 (38.51)	1.025 (26.03)	1.075 (27.30)
G	21	1.555 (39.50); 1.544 (39.22)	1.641 (41.68)	1.125 (28.58)	1.175 (29.85)
H	23	1.678 (42.62); 1.667 (42.34)	1.766 (44.86)	1.275 (32.39)	1.325 (33.65)
J	25	1.804 (45.82); 1.793 (45.54)	1.891 (48.03)	1.390 (35.31)	1.445 (36.70)