

INCH-POUND

MIL-DTL-83513/22D
 18 March 2009
 SUPERSEDING
 MIL-DTL-83513/22C
 27 February 2003

DETAIL SPECIFICATION SHEET

CONNECTORS, ELECTRICAL, RECTANGULAR, PLUG, MICROMINIATURE,
 POLARIZED SHELL, STRAIGHT, PIN CONTACTS, 2 ROW, SOLDER TYPE,
 9 THROUGH 37 CONTACTS, PRINTED CIRCUIT BOARD

This specification is approved for use by all Departments and
 Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall
 consist of this specification sheet and MIL-DTL-83513.

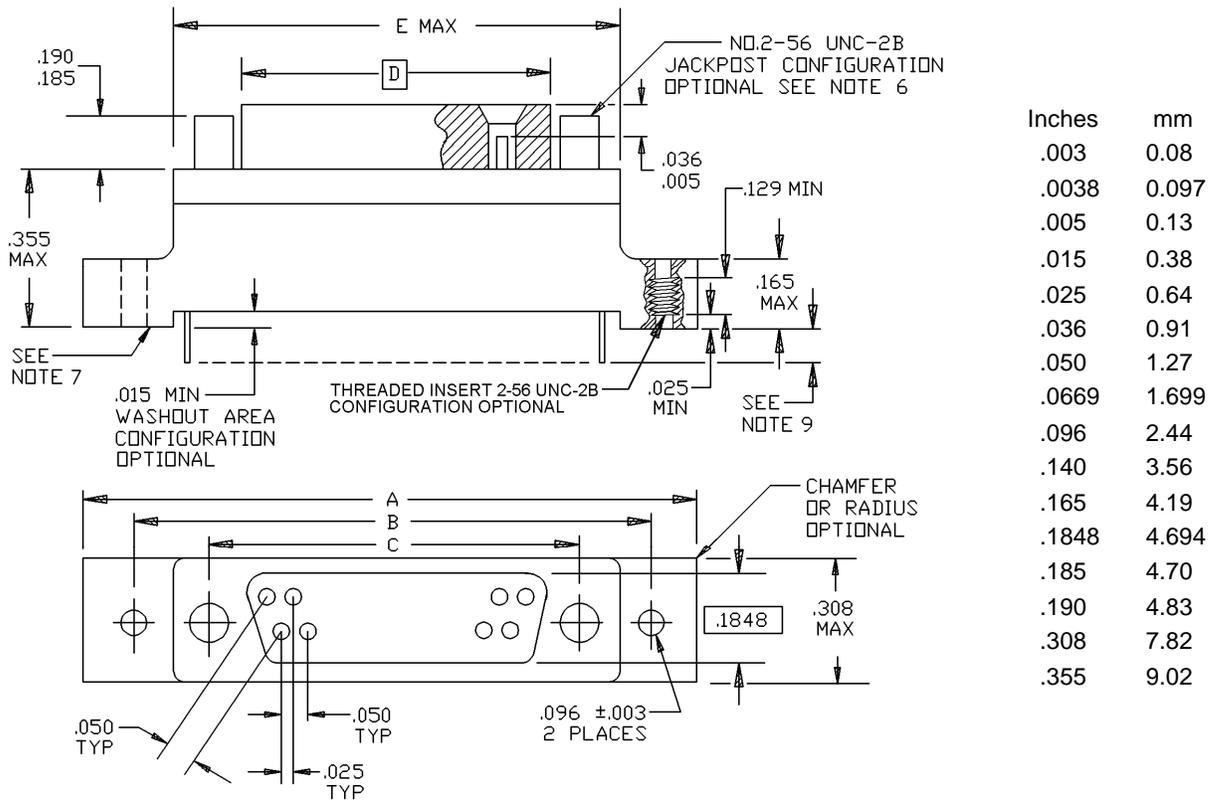
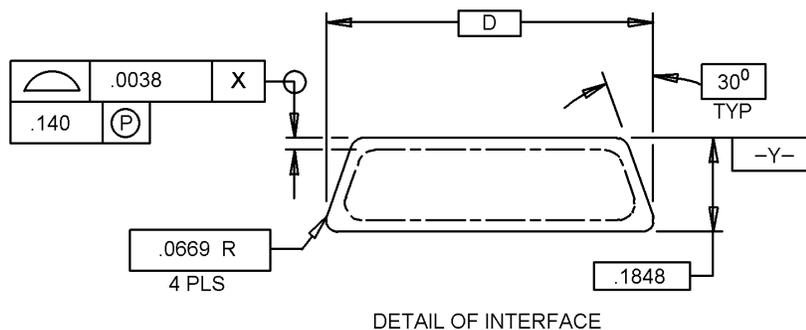


FIGURE 1. Connector plug, $.050$ spacing.

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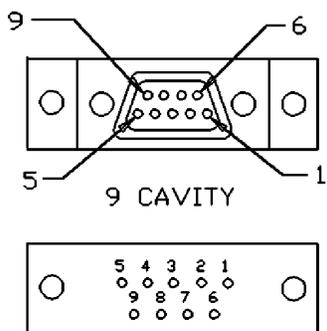
Number of contacts	A Max	B ±.007 (0.18 mm)	C ±.005 (0.13 mm)	D	E Max
9	1.390 (35.31)	1.150 (29.21)	.565 (14.35)	.3338 (8.478)	.885 (2.48)
15	1.390 (31.31)	1.150 (29.21)	.715 (18.16)	.4838 (12.289)	.945 (24.00)
21	1.690 (40.64)	1.450 (36.83)	.865 (21.97)	.6338 (16.099)	1.185 (30.10)
25	1.740 (44.20)	1.500 (38.10)	.965 (24.51)	.7338 (18.639)	1.275 (32.39)
31	2.040 (51.82)	1.800 (45.72)	1.115 (28.32)	.8838 (22.449)	1.575 (40.01)
37	2.340 (59.44)	2.100 (53.34)	1.265 (32.13)	1.0338 (26.259)	1.875 (47.63)

NOTES:

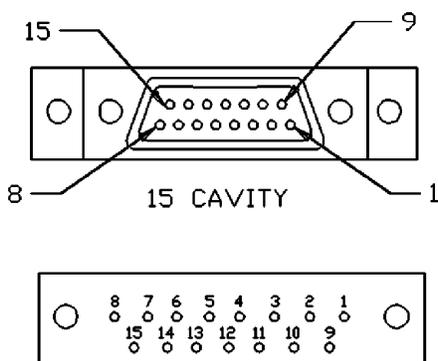
1. Dimensions are in inches.
2. Metric equivalents are given for information only.
3. Unless otherwise specified, tolerances are +.005 inch (0.13 mm).
4. Termination organization area to be optionally molded or filled with a potting fill material capable of passing the electrical and environmental requirements of MIL-DTL-83513. Plastic molding shall conform to type GDI-30F or type SDG-F in accordance with ASTM D5948 or GCT-30F in accordance with ASTM D5927 or MIL-M-24519 or GST-40F in accordance with ASTM D4067 or MIL-M-24519 or GLCP-30F or GLCP-50 in accordance with ASTM D5138 or MIL-M-24519.
5. Metal shell shall be of material in accordance with MIL-DTL-83513 for class M parts.
6. Jackpost (securely attached) when specified: Corrosion resistant steel in accordance with ASTM A484/A484M and ASTM A582/A582M, 300 series stainless steel, passivated in accordance with SAE-AMS-2700, type 2. Hardware will be attached in such a fashion as to not loosen during normal de-mating conditions, where as, the mating connector hardware does not exceed the following torque values: 2.5 inch pounds for #2-56 (arrangements A - G) and 4.5 inch pounds for #4-40 (arrangement H).
7. Separately molded plastic body (if used) shall conform to type GDI-30F or type SDG-F in accordance with ASTM D5948 or GCT-30F in accordance with ASTM D5927 or MIL-M-24519 or GST-40F in accordance with ASTM D4067 or MIL-M-24519 or GLCP-30F or GLCP-50 in accordance with ASTM D5138 or MIL-M-24519.
8. Wire termination pins shall conform to A-A-59551, number 24 AWG copper, except shall be tin-lead plated with a minimum of 3 percent lead.
9. Termination lengths available: .109 inch (2.77 mm), .140 inch (3.56 mm) or .172 inch (4.37 mm). The tolerance shall be +.015 inch (0.381 mm) for all termination lengths.
10. Threaded insert, when specified: Corrosion resistant steel in accordance with ASTM A484/A484M and ASTM A582/A582M, 300 series stainless steel, passivated in accordance with SAE-AMS-2700, type 2.

FIGURE 1. Connector plug, .050 spacing - Continued.

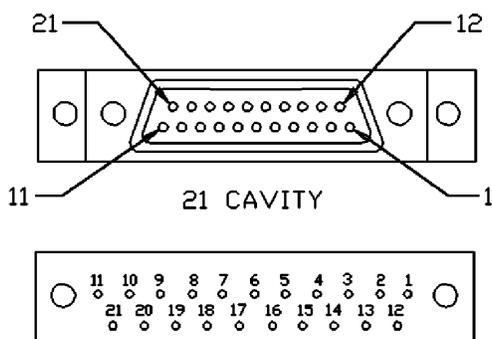
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TERMINATION VIEW - VERTICAL MOUNT



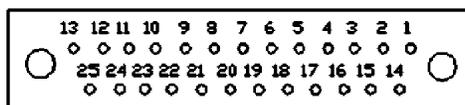
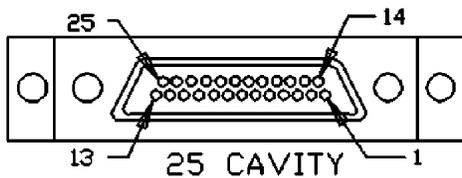
TERMINATION VIEW - VERTICAL MOUNT



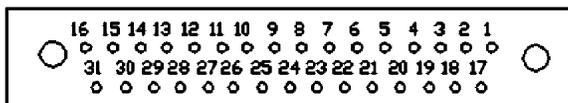
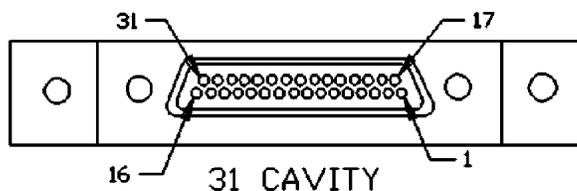
TERMINATION VIEW - VERTICAL MOUNT

NOTE: Engaging face of pin insert shown, cavity identification numbers are for reference only and do not appear on the part.

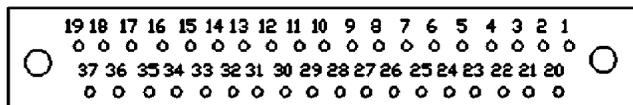
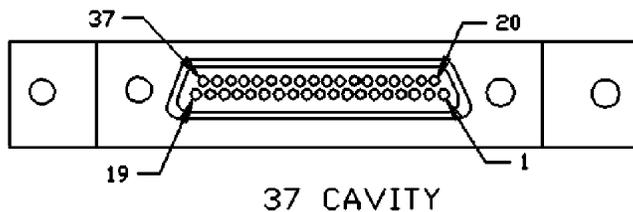
FIGURE 2. Insert arrangement.



TERMINATION VIEW - VERTICAL MOUNT



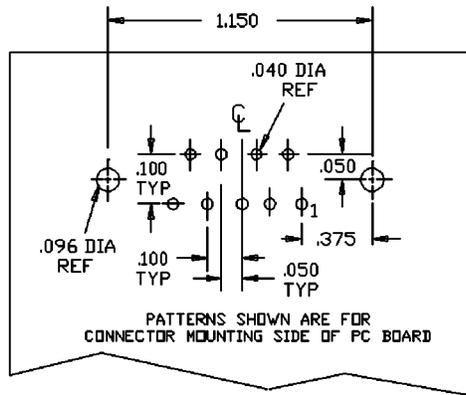
TERMINATION VIEW - VERTICAL MOUNT



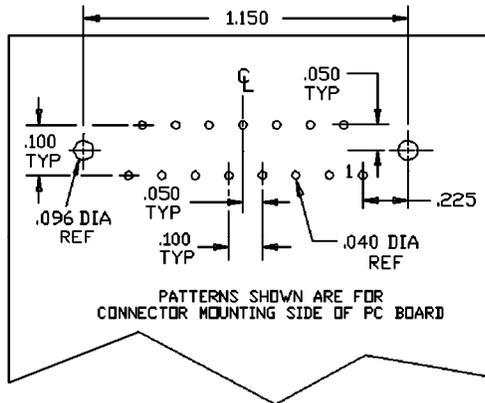
TERMINATION VIEW - VERTICAL MOUNT

NOTE: Engaging face of pin insert shown, cavity identification numbers are for reference only and do not appear on the part.

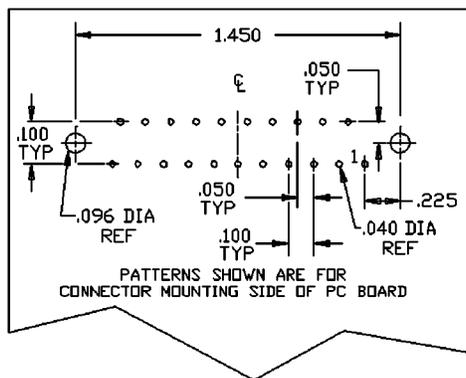
FIGURE 2. Insert arrangement - Continued.



9 CONTACT PLUG

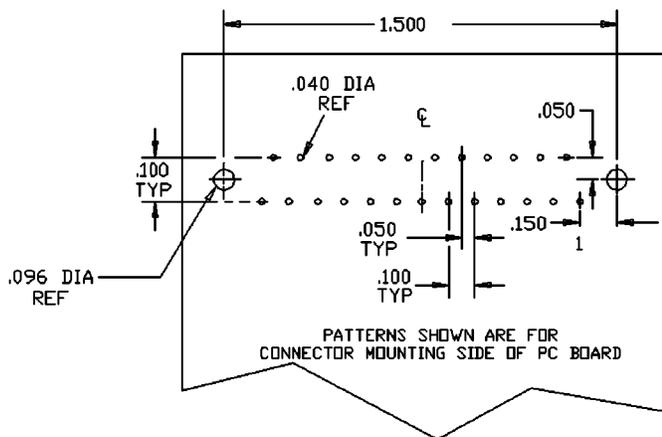


15 CONTACT PLUG

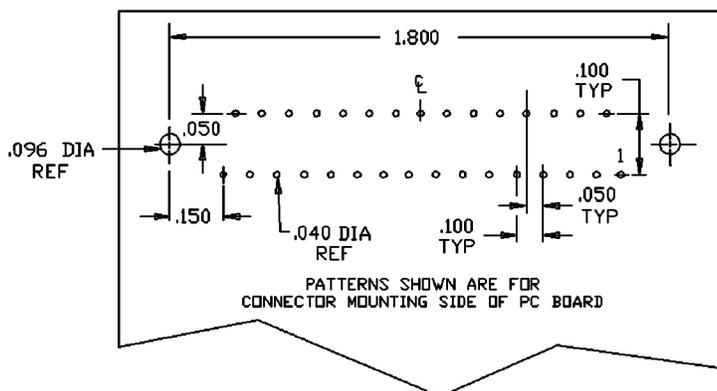


21 CONTACT PLUG

FIGURE 3. Layout arrangement.

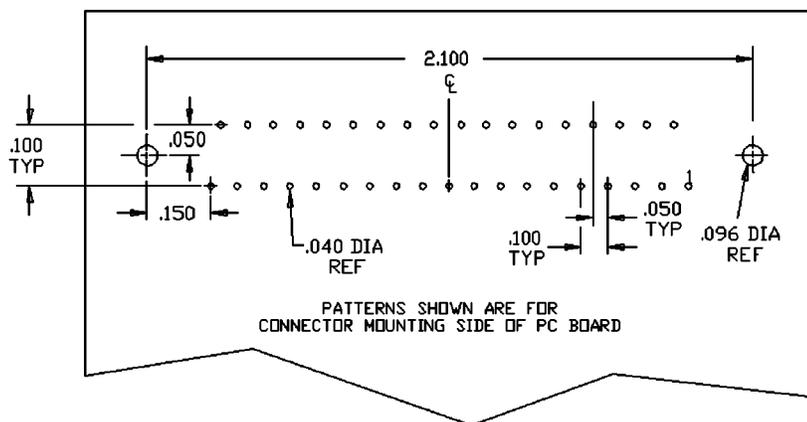


25 CONTACT PLUG



31 CONTACT PLUG

Inches	mm
.040	1.02
.050	1.27
.096	2.44
.100	2.54
.150	3.81
.225	5.72
.375	9.53
1.150	29.21
1.450	36.83
1.500	38.10
1.800	45.72
2.100	53.34



37 CONTACT PLUG

NOTE: Dimensions are in inches. Metric equivalents are given for information only.

FIGURE 3. Layout arrangement - Continued.

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REQUIREMENTS:

Dimensions and configurations: See figures 1, 2, and 3.

Current rating, maximum: 3 amperes per contact.

Materials:

Termination organization area: Potting fill material capable of passing the electrical and environmental requirements of MIL-DTL-83513.

Shell: The requirements for shell materials shall be in accordance with MIL-DTL-83513.

Plastic body or plastic molding: Shall conform to the requirements of GDI-30F or type SDG-F in accordance with ASTM D5948 or GCT-30F in accordance with ASTM D5927 or MIL-M-24519 or GST-40F in accordance with ASTM D4067 or MIL-M-24519 or GLCP-30F or GLCP-50 in accordance with ASTM D5138 or MIL-M-24519.

Jackpost: Corrosion resistant steel in accordance with ASTM A484/A484M and ASTM A582/A582M, 300 series stainless steel, passivated in accordance with SAE-AMS-2700, type 2.

Wire termination pins: Wire termination pins shall conform to A-A-59551, no. 24 AWG copper, except shall be tin-lead plated with a minimum of 3 percent lead.

Mating connector: Shall conform to MIL-DTL-83513/2 and MIL-DTL-83513/4.

Plating of termination leads: Solder dipping of termination leads will be accomplished in SN60 PB40 or SN63 PB37 in accordance with J-STD-006.

Part or Identifying Number (PIN): PIN shall consist of the letter M, the basic number of the specification sheet, a letter from the insert, a numerical code for the termination length, and a letter code for the shell finish and hardware column.

<p>M83513/22-</p> <hr style="width: 100%;"/> <p>Specification sheet number</p>	<p>D</p> <hr style="width: 100%;"/> <p>Insert arrangements (see figure 2)</p> <p>A = 9</p> <p>B = 15</p> <p>C = 21</p> <p>D = 25</p> <p>E = 31</p> <p>F = 37</p>	<p>01</p> <hr style="width: 100%;"/> <p>Termination length</p> <p>01 = .109</p> <p>02 = .140</p> <p>03 = .172</p>	<p>A</p> <hr style="width: 100%;"/> <p>Shell finish (interface critical)</p> <p>A = Pure electrodeposited aluminum</p> <p>C = Cadmium</p> <p>K = Zinc nickel</p> <p>N = electroless nickel (space applications only)</p> <p>P = Passivated Stainless Steel</p> <p>T = Nickel fluorocarbon polymer</p>	<p>P</p> <hr style="width: 100%;"/> <p>Hardware</p> <p>N = No hardware or threaded insert</p> <p>P = jackpost attach</p> <p>T = threaded insert</p> <p>W = jackpost and threaded insert</p>
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Changes from previous issue: The margins of this specification are marked with vertical lines to indicate where changes from previous issue were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the last previous issue.

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Referenced documents. In addition to MIL-DTL-83513, this document references the following:

MIL-DTL-83513/2	ASTM A484/A484M	A-A-59551
MIL-DTL-83513/4	ASTM A582/A582M	J-STD-006
MIL-M-24519	ASTM D4067	SAE-AMS-2700
	ASTM D5138	
	ASTM D5927	
	ASTM D5948	

CONCLUDING MATERIAL

Custodians:

Army - CR
Navy - EC
Air Force - 85
NASA - NA
DLA - CC

Preparing activity:
DLA - CC

(Project: 5935-2007-070)

Review activities:

Army - AT, CR4, MI
Navy - AS, CG, MC, SH
Air Force - 99

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