

METRIC

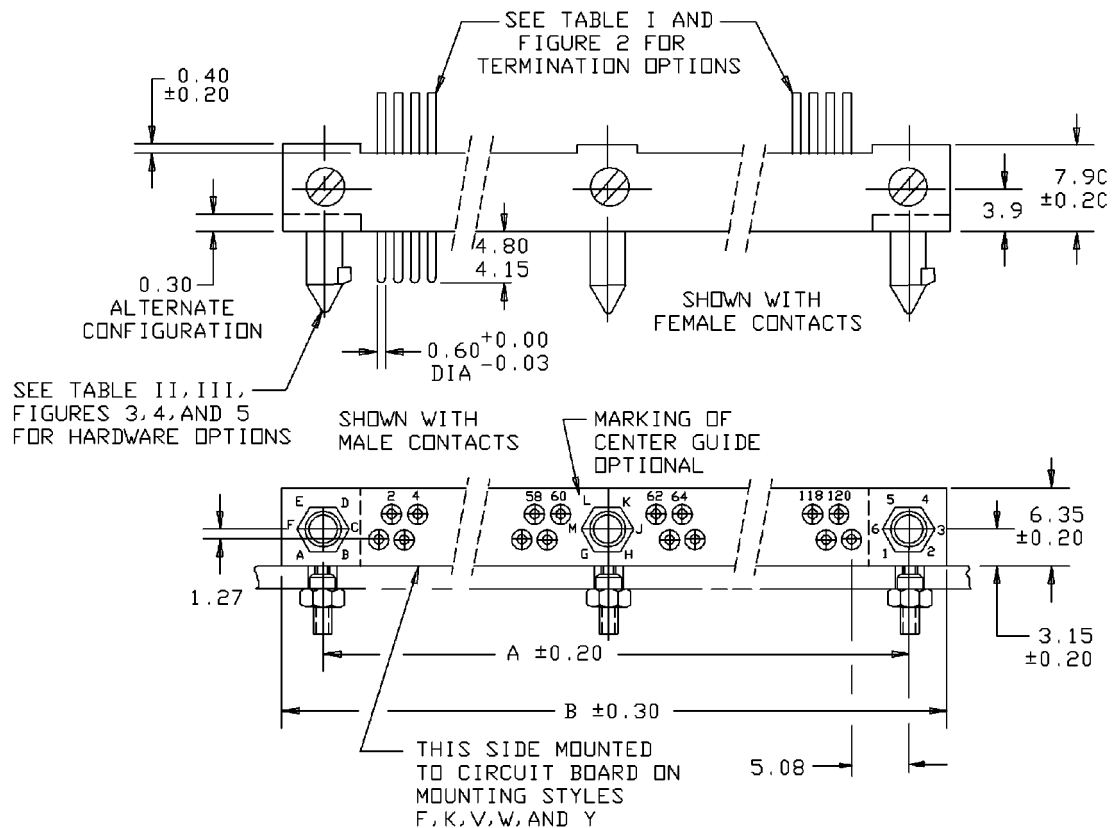
MIL-DTL-55302/163D
w/AMENDMENT 2
12 December 2014
SUPERSEDING
MIL-DTL-55302/163D
w/AMENDMENT 1
20 July 2011

DETAIL SPECIFICATION SHEET

CONNECTORS, PRINTED CIRCUIT SUBASSEMBLY AND ACCESSORIES,
PLUG, 72, 84, 96, AND 120 CONTACT POSITIONS, FOR
PRINTED WIRING BOARDS, 2.54 MM X 1.27 MM OFFSET GRID, METRIC

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-55302.



NOTE: Dimensions are in millimeters.

FIGURE 1. Connector receptacle.

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RECEPTACLE TERMINAL STYLES

REF	MALE CONTACTS	REF	FEMALE CONTACTS
C	RIGHT ANGLE DIP SOLDER 2.4 (.094 IN.) P.C. BOARD	E	RIGHT ANGLE DIP SOLDER 2.4 (.094 IN.) P.C. BOARD
B	RIGHT ANGLE DIP SOLDER	F	RIGHT ANGLE DIP SOLDER
G	RIGHT ANGLE DIP SOLDER 1.6 (.064 IN.) P.C. BOARD	J	RIGHT ANGLE DIP SOLDER 1.6 (.064 IN.) P.C. BOARD
P	RIGHT ANGLE DIP SOLDER 3.2 (.125 IN.) P.C. BOARD	Q	RIGHT ANGLE DIP SOLDER 3.2 (.125 IN.) P.C. BOARD

FIGURE 2. Connector termination styles.

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TERMINAL STYLES

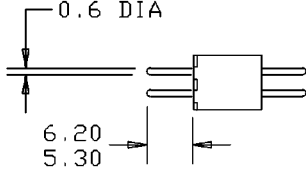
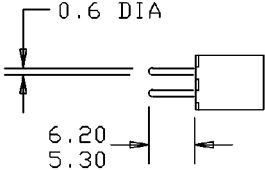
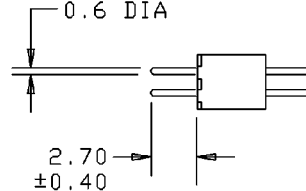
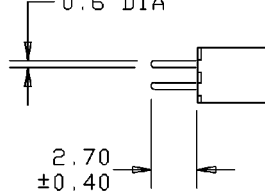
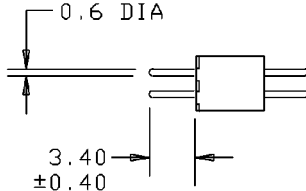
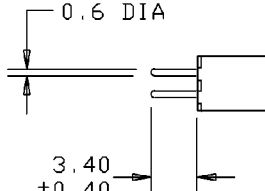
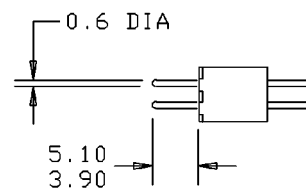
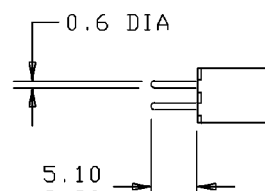
REF	MALE CONTACTS	REF	FEMALE CONTACTS
A	STRAIGHT DIP SOLDER 	D	STRAIGHT DIP SOLDER 
T	STRAIGHT DIP SOLDER  1.6 (.064 IN.) P.C. BOARD	U	STRAIGHT DIP SOLDER  1.6 (.064 IN.) P.C. BOARD
N	STRAIGHT DIP SOLDER  2.4 (.094 IN.) P.C. BOARD	Z	STRAIGHT DIP SOLDER  2.4 (.094 IN.) P.C. BOARD
V	STRAIGHT DIP SOLDER  3.2 (.125 IN.) P.C. BOARD	W	STRAIGHT DIP SOLDER  3.2 (.125 IN.) P.C. BOARD

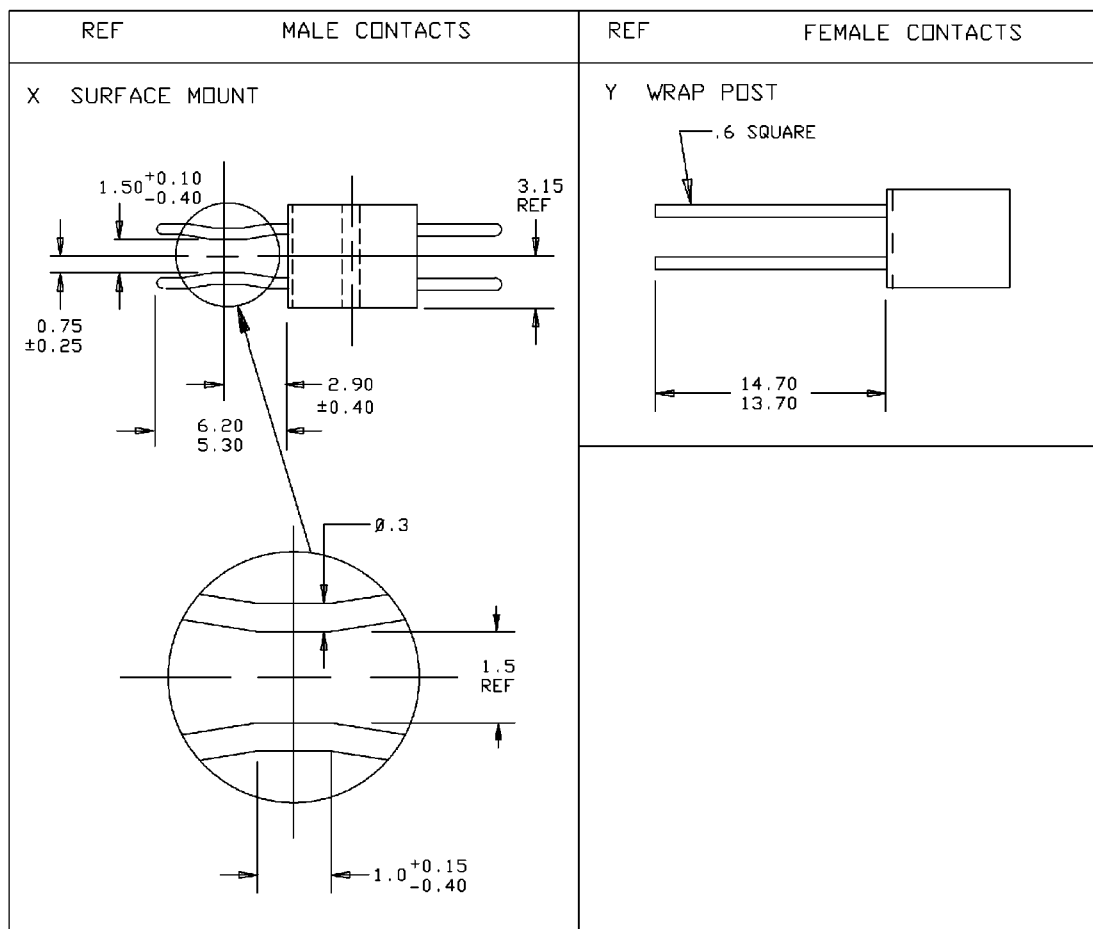
FIGURE 2. Connector termination styles – Continued.

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TERMINAL STYLES

REF	MALE CONTACTS	REF	FEMALE CONTACTS
R CRIMP	FOR 22, 24 AND 26 AWG.	K CRIMP	FOR 22, 24 AND 26 AWG.
M DOUBLE CRIMP	FOR 22, 24 AND 26 AWG.	H DOUBLE CRIMP	FOR 22, 24 AND 26 AWG.
S SOLDER CUP	FOR UP TO 22 AWG.	L SOLDER CUP	FOR UP TO 22 AWG.

FIGURE 2. Connector termination styles – Continued.

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TERMINAL STYLES



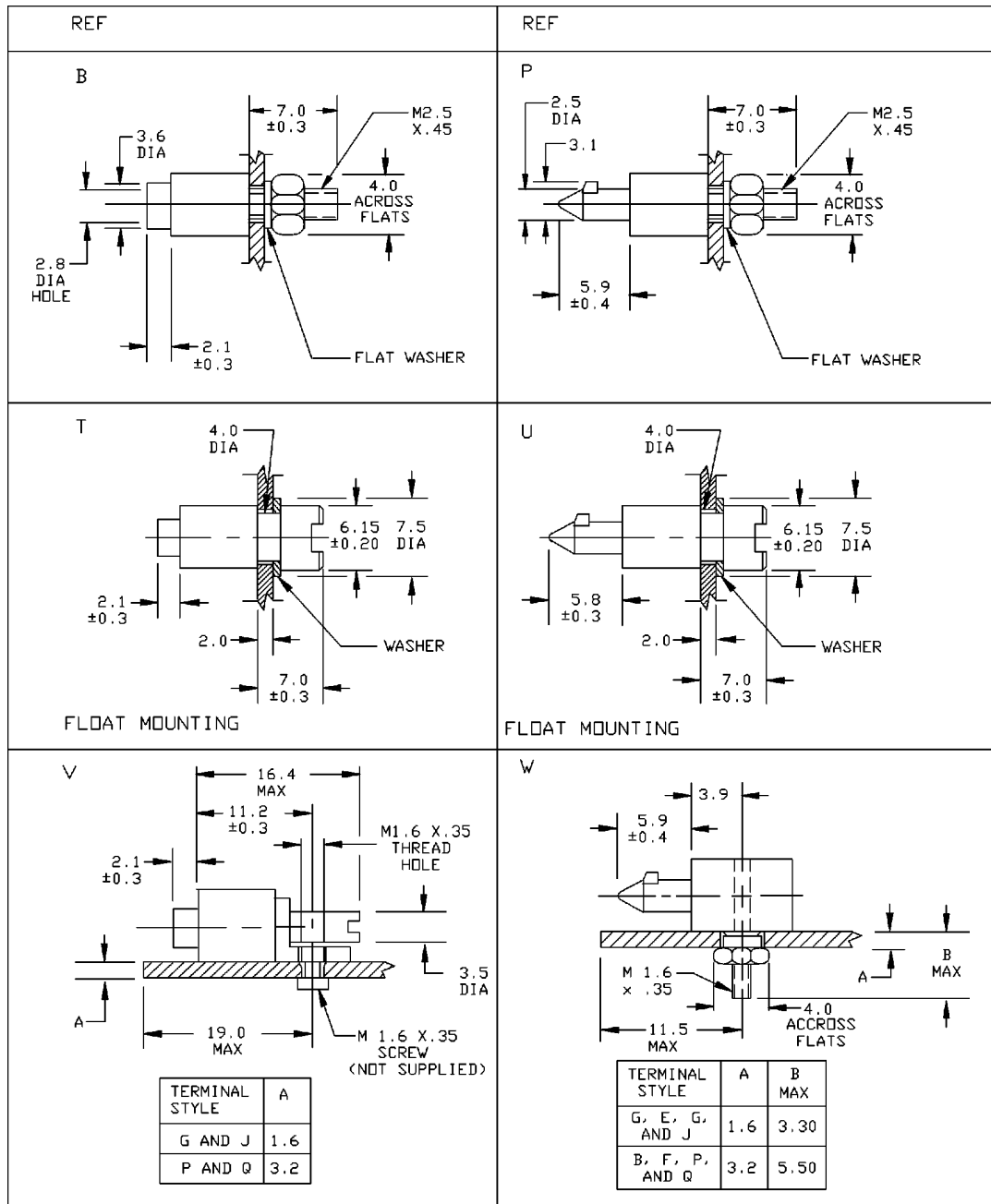
NOTE: Dimensions are in millimeters.

FIGURE 2. Connector termination styles – Continued.

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PLUG

MOUNTING STYLES



NOTE: Dimensions are in millimeters.

FIGURE 3. Mounting styles.

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LOCKING HARDWARE

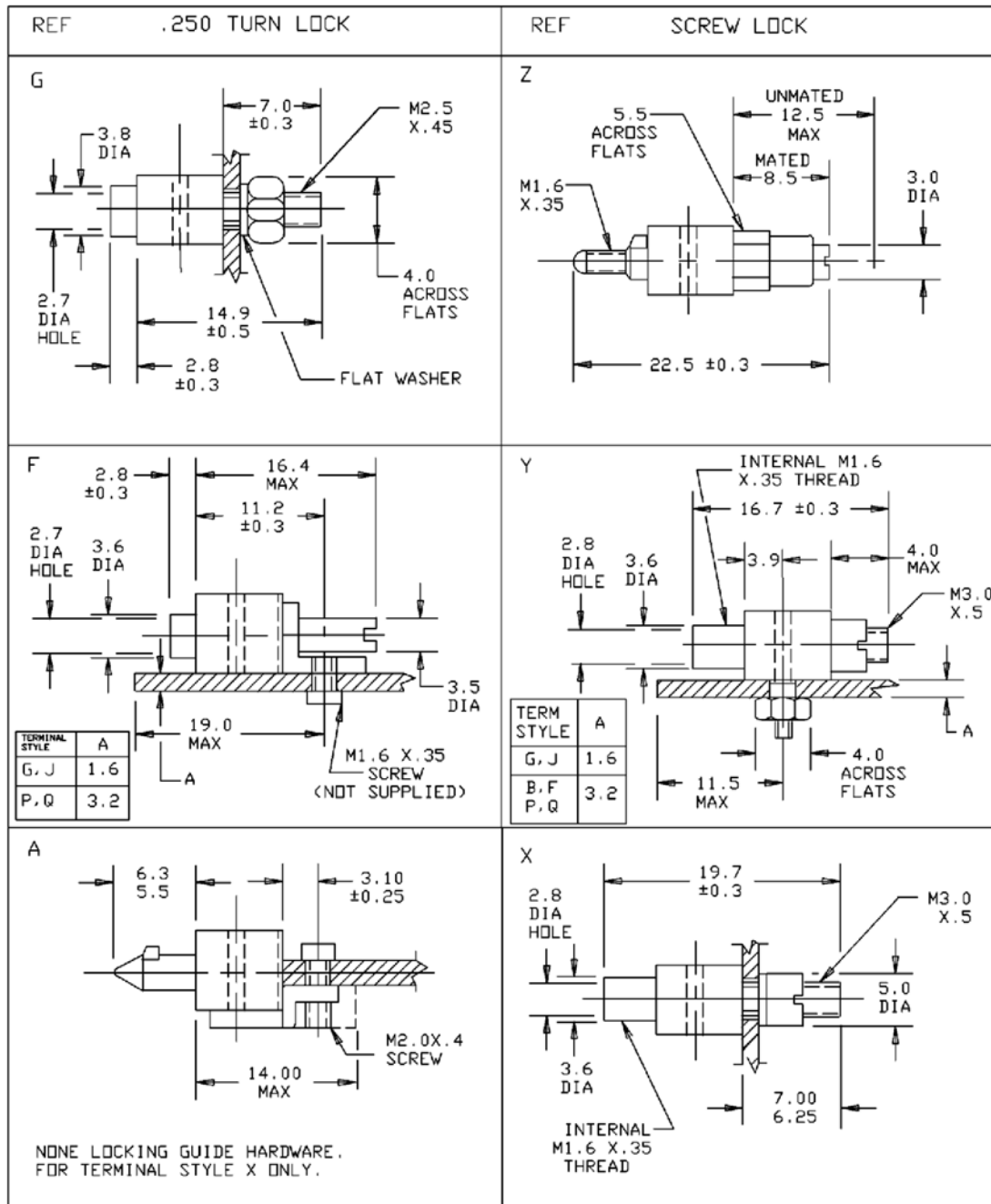
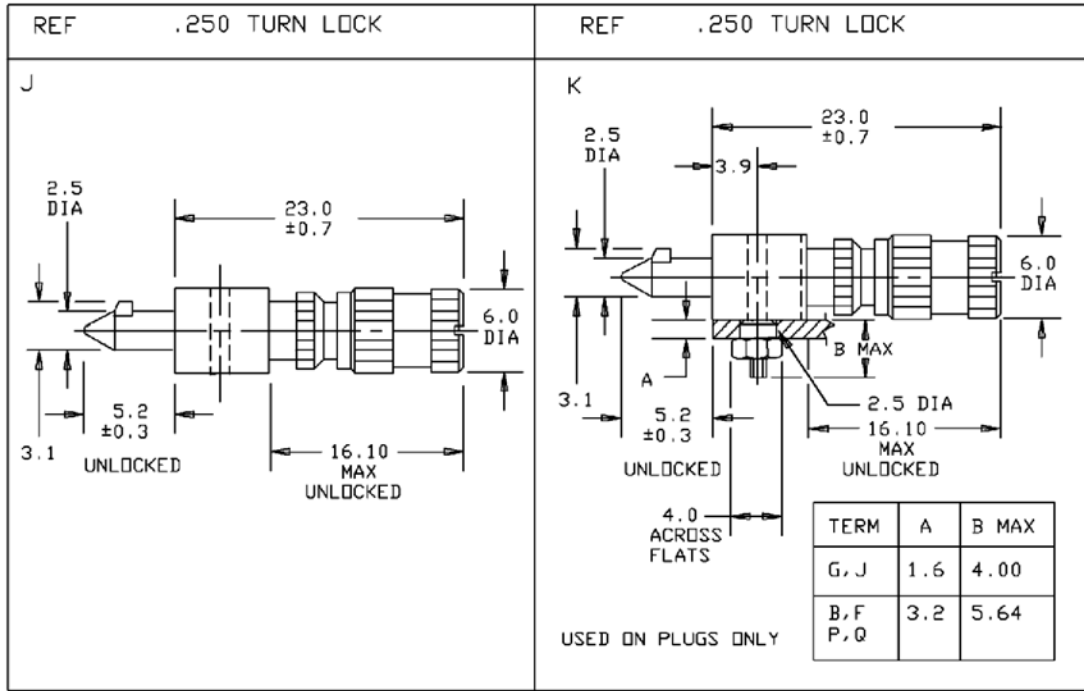


FIGURE 4. Locking hardware.

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LOCKING HARDWARE



NOTES:

1. Dimensions are in millimeters.
2. This is a metric design.
3. Unless otherwise specified, tolerance is ± 0.10 millimeter.
4. These connectors mate with MIL-DTL-55302/160.
5. See table II for mating.
6. Contact identification may be located adjacent to cavity on face or side and may be rotated 180°.
7. Crimp contacts are shipped not inserted into insulator.
8. Use crimp tool M22520/2-01 for R and K terminal styles with Daniels manufacturing positioner K547.
9. Use crimp tool M22520/2-01 for M and H terminal styles with Daniels manufacturing positioner K547 and K640.

FIGURE 4. Locking hardware – Continued.

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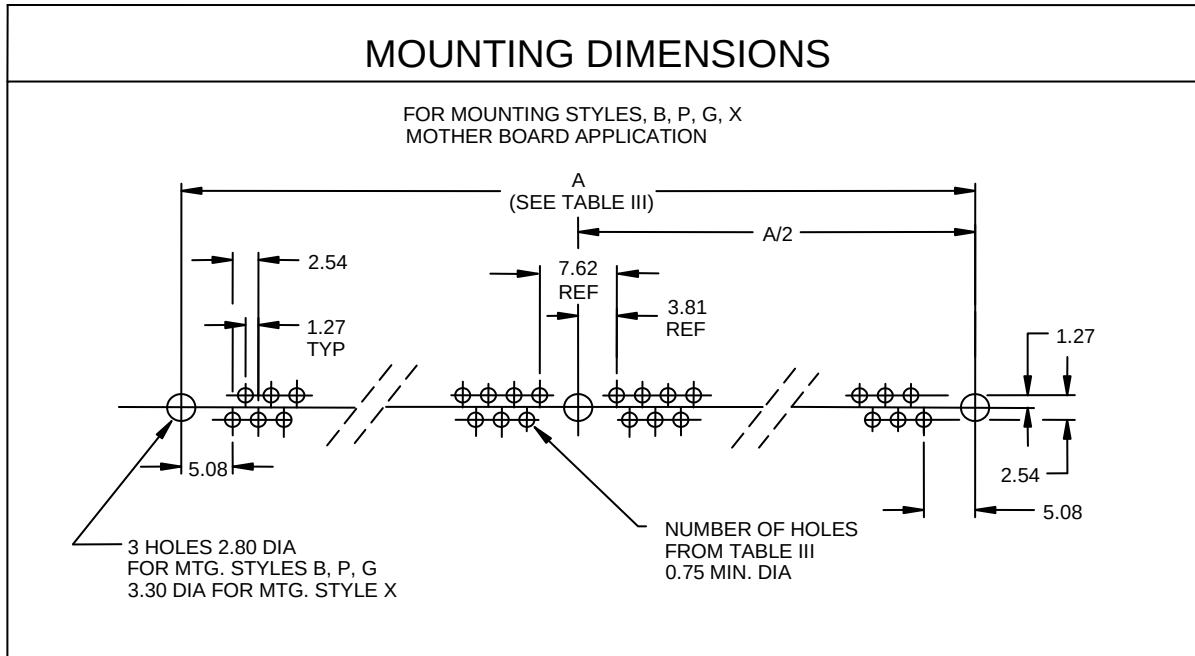


FIGURE 5. Mounting dimensions.

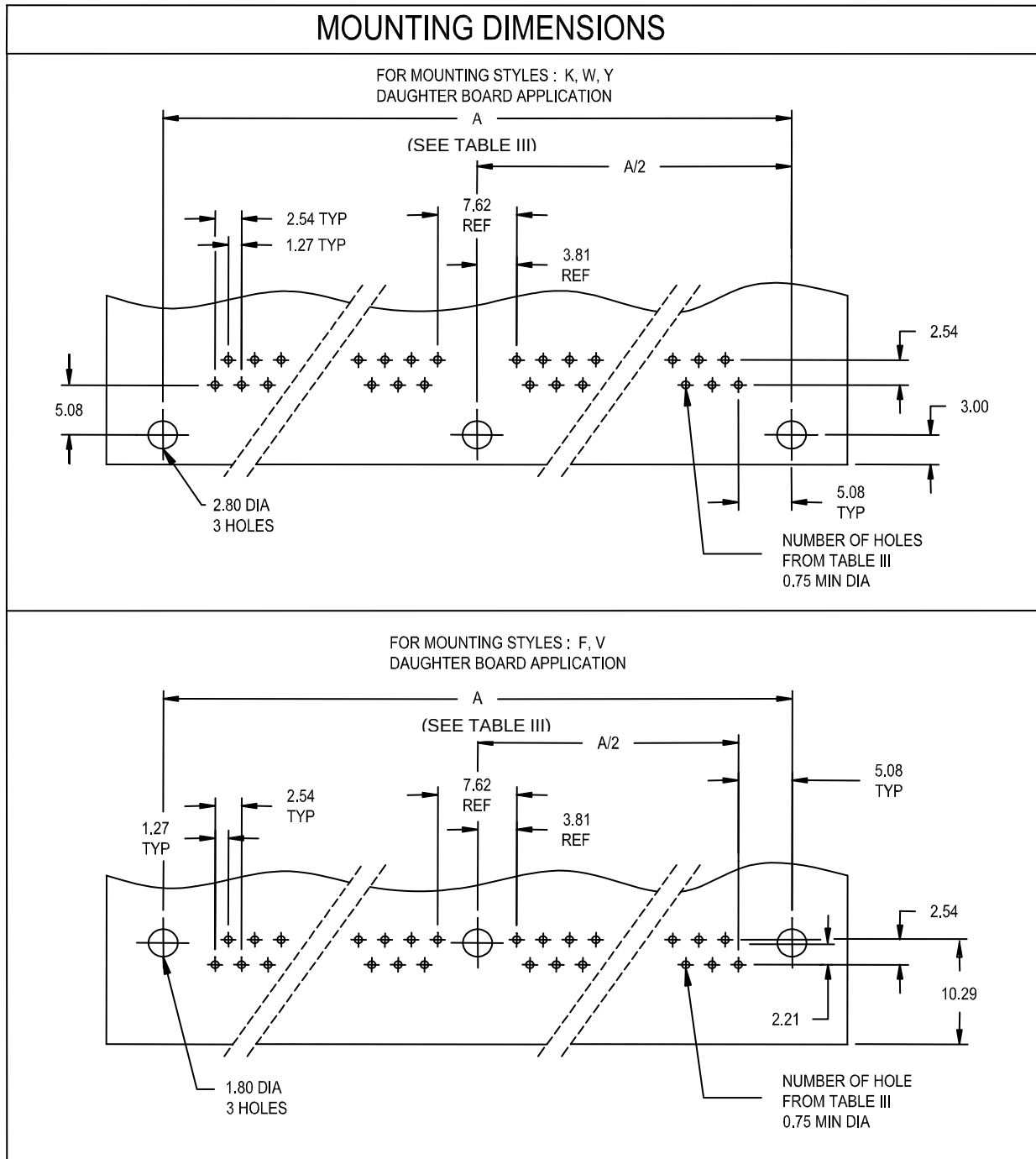


FIGURE 5. Mounting dimensions – Continued.

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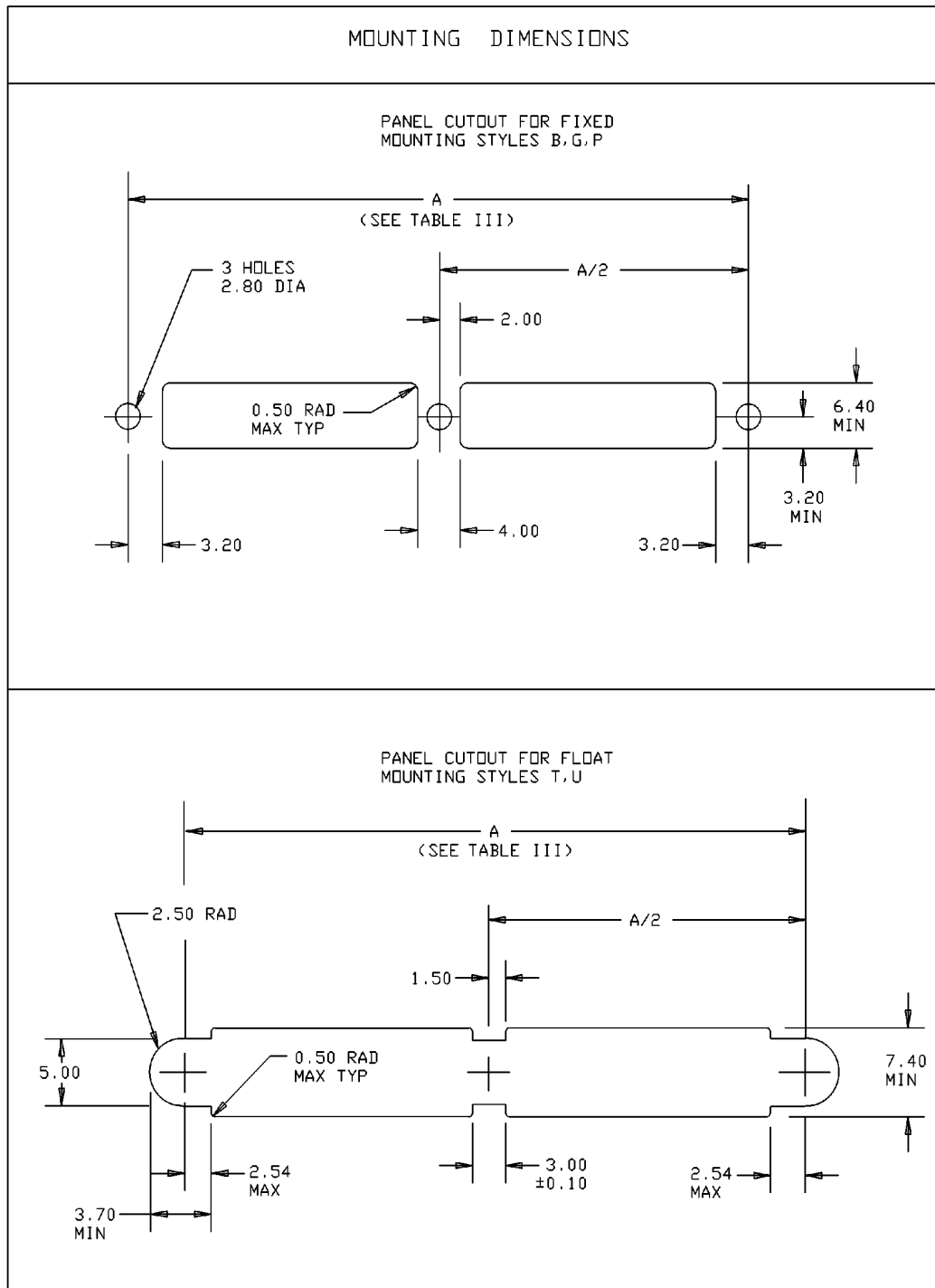
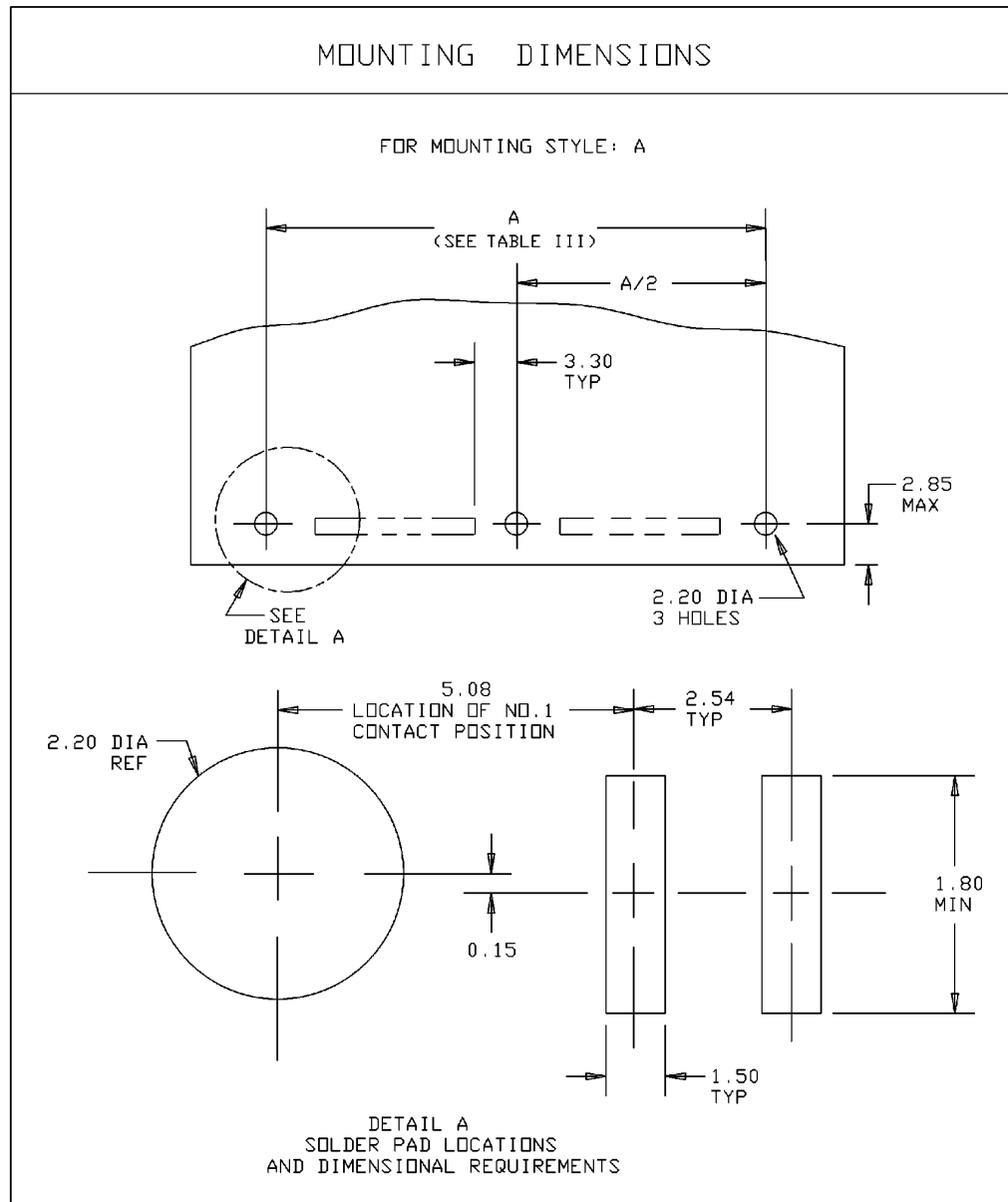


FIGURE 5. Mounting dimensions – Continued.

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NOTES:

1. For plugs only. The printed circuit may be extended to 19.00 max from the center of mounting holes to serve as a pin protector.
2. Tolerances are noncumulative.
3. Dimensions are in millimeters.

FIGURE 5. Mounting dimensions – Continued.

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TABLE I. Number of contacts.

Number of contacts	Dimension (in millimeters)	
	A	B
72	106.7	114.7
84	121.9	129.9
96	137.2	145.2
120	167.6	175.5

TABLE II. Mating references.

Type	Will only mate with (see note)	Locking method
B	P,U,W	None
F	J,K	Push 1/4 turn
G	J,K	Push 1/4 turn
J	F,G	Push 1/4 turn
P	B,T,V	None
T	P,U,W	None
U	B,T,V	None
V	P,U,W	None
W	B,T,V	None
X	Z	Screw
Z	X,Y	Screw

NOTE: These connectors mate with MIL-DTL-55302/160.

TABLE III. Mounting references.

Number of contacts	A
72	106.70
84	121.90
96	137.20
120	167.60

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REQUIREMENTS

Design and construction:

Dimensions and configuration: See figures 1 through 5 and tables I, II and III.

Material:

Insulators: Diallyl phthalate in accordance with ASTM D5948.

Guides and hardware: Brass in accordance with ASTM B36/B36M, ASTM B16/B16M, ASTM B124/B124M, ASTM B453/B453M, or ASTM B455; nickel plated in accordance with SAE AMS-QQ-N-290 or AISI 300 series stainless steel or equivalent in accordance with ASTM A582/A582M, passivated in accordance with SAE AMS2700.

Plating: Plating in accordance with MIL-DTL-55302 or as noted.

Mating surface (pin and wire): Gold in accordance with MIL-DTL-45204, type II, grade C, class 1 or equivalent, over nickel in accordance with SAE AMS-QQ-N-290, 30-150 microinches.

Terminations: Solderable areas (including crimp barrels and wire wrap terminations) shall be gold in accordance with MIL-DTL-45204, type III, grade A, 10 microinches minimum thickness or equivalent or gold in accordance with MIL-DTL-45204, type II, grade C, 20 microinches over nickel in accordance with SAE AMS-QQ-N-290, 30 to 150 microinches thick or equivalent. Solderable areas must meet the requirements of MIL-STD-202, method 208.

All other surfaces: Gold in accordance with MIL-DTL-45204, type II, grade C, 5 microinches minimum or equivalent over nickel in accordance with SAE AMS-QQ-N-290, 30-150 microinches.

Contact identification: See figure 1 and table I.

Contact separation forces:

Minimum force: 0.14 newton (0.50 ounce) with a 0.5800 millimeter (.0228 inch) +0.005, -0.00 diameter pin after being cycled 3 times.

Note: Steel pin test surface roughness to be 0.025-0.25 micron rms.

Unmating: The maximum force of a connector assembly shall not exceed 0.53 newton (1.90 ounces) multiplied by the number of contact positions.

Mating: The maximum force of a connector assembly shall not exceed 0.70 newton (2.5 ounces) multiplied by the number of contact positions.

Contact retention minimum: functional value 22.2 newtons (5 pounds); destructive test 35.3 newtons (8 pounds) maximum design and qualification value.

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Contact rating: 5 amperes per line.

Durability: 2,000 cycles minimum.

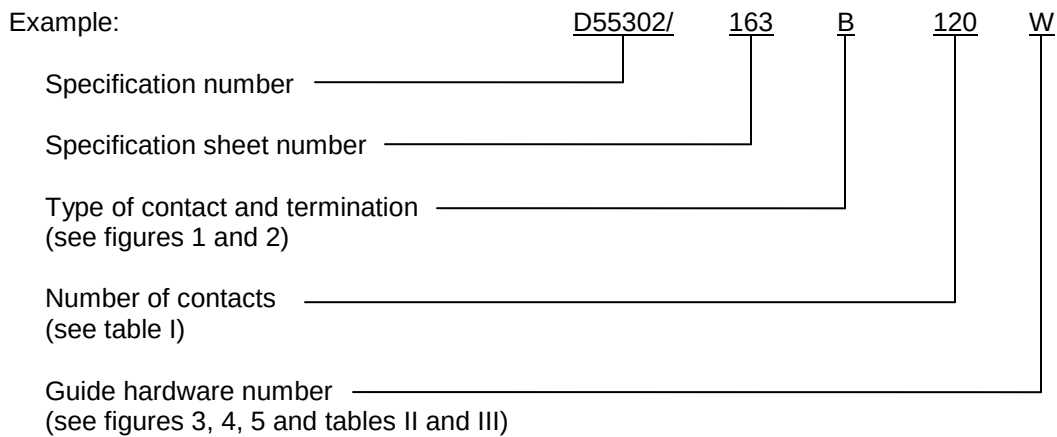
Dielectric withstanding voltage:

Sea level: 1,400 V ac rms test.

High altitude: 300 V ac rms test.

Keying: Rotation of guides, 6 positions each, 36 possible combinations.

Connector Part or Identifying Number (PIN):



Qualification: Qualification is not required for this specification sheet.

First article testing (FAT): FAT shall be in accordance with MIL-DTL-55302, qualification inspection.

Amendment notations. The margins of this specification are marked with vertical lines to indicate modifications generated by this amendment. 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.

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Referenced documents. In addition to MIL-DTL-55302, this document references the following:

MIL-DTL-55302/160
MIL-DTL-45204
MIL-STD-202
ASTM A582/A582M
ASTM B16/B16M
ASTM B36/B36M
ASTM B124/B124M
ASTM B453/B453M
ASTM B455
ASTM D5948
SAE AMS-QQ-N-290
SAE AMS2700

CONCLUDING MATERIAL

Custodians:
Army – CR
DLA – CC

Preparing activity:
DLA – CC

(Project 5935-2015-007)

Review activities:
Army – AR, AT, AV, CR4, MI

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