

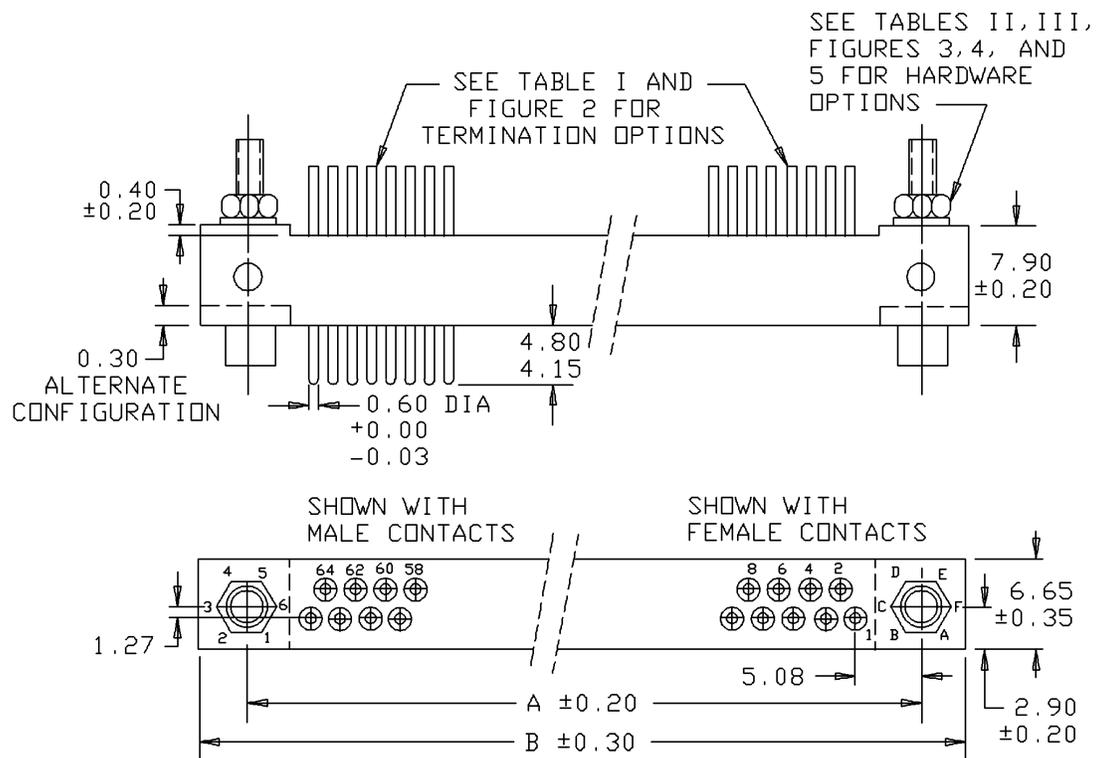
METRIC  
MIL-DTL-55302/159D  
8 July 2004  
SUPERSEDING  
MIL-C-55302/159C(CR)  
17 March 1995

DETAIL SPECIFICATION SHEET

CONNECTORS, PRINTED CIRCUIT SUBASSEMBLY AND ACCESSORIES,  
RECEPTACLE, 17, 29, 33, 41, 53, AND 65 CONTACT POSITIONS, FOR  
PRINTED WIRING BOARDS, 2.54 MM X 1.27 MM OFFSET GRID, METRIC

This specification is approved for used 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.

RECEPTACLE TERMINAL STYLES

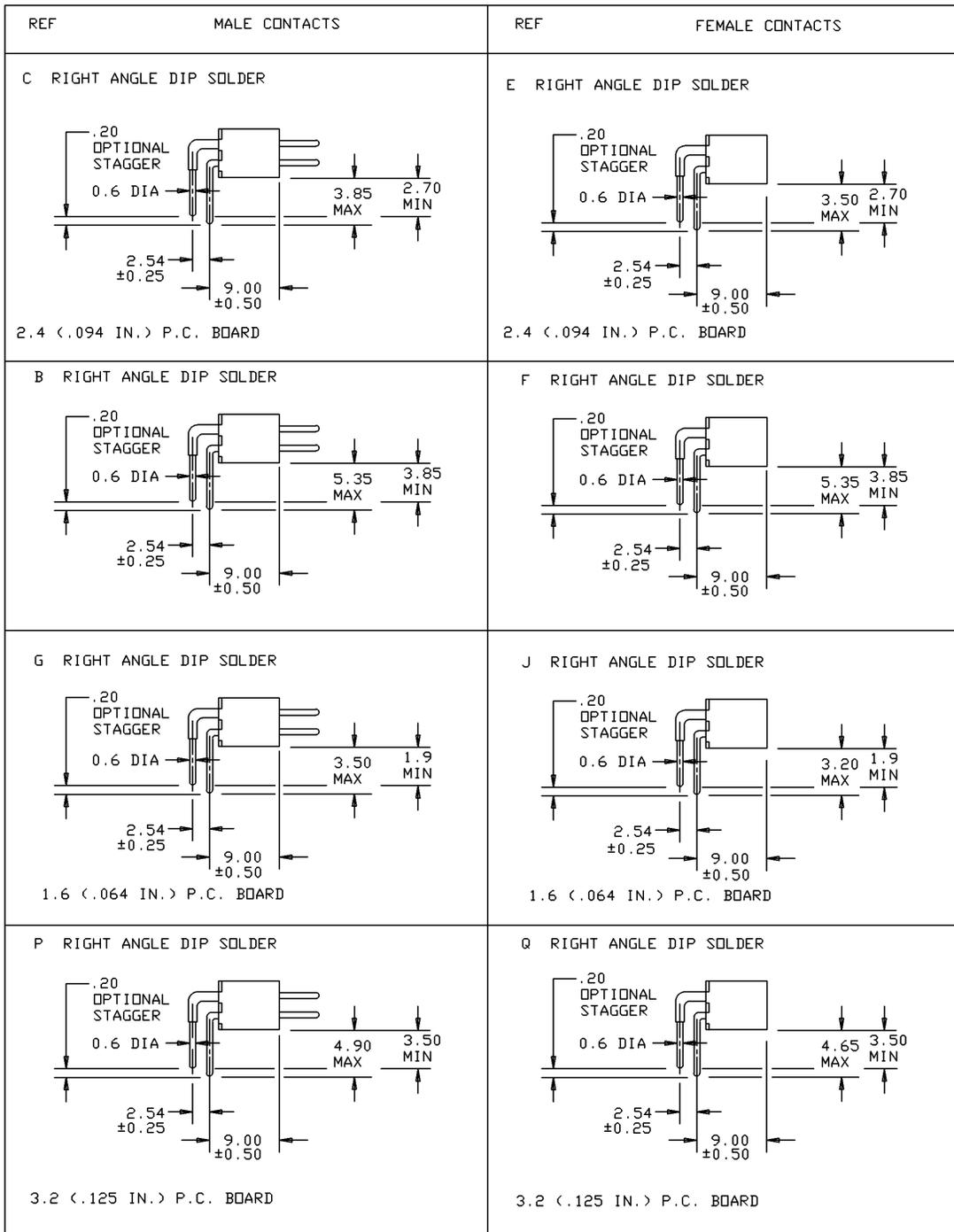


FIGURE 2. Connector termination styles.

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RECEPTACLE TERMINAL STYLES

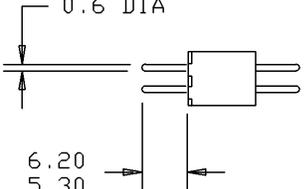
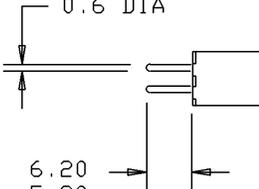
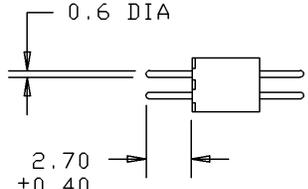
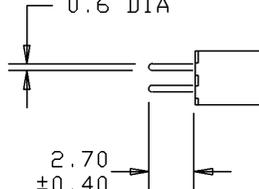
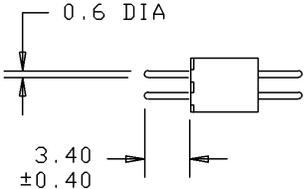
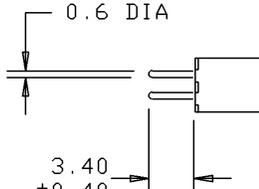
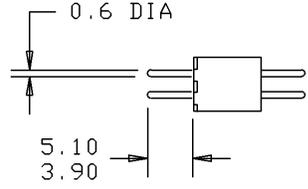
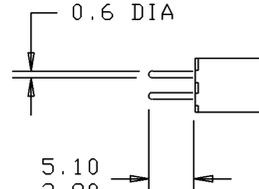
| REF | MALE CONTACTS   | REF | FEMALE CONTACTS  |
|-----|---|-----|--|
| A   | STRAIGHT DIP SOLDER<br>                                | D   | STRAIGHT DIP SOLDER<br>                                |
| T   | STRAIGHT DIP SOLDER<br><br>1.6 (.064 IN.) P.C. BOARD   | U   | STRAIGHT DIP SOLDER<br><br>1.6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

FIGURE 2. Connector termination styles – Continued.

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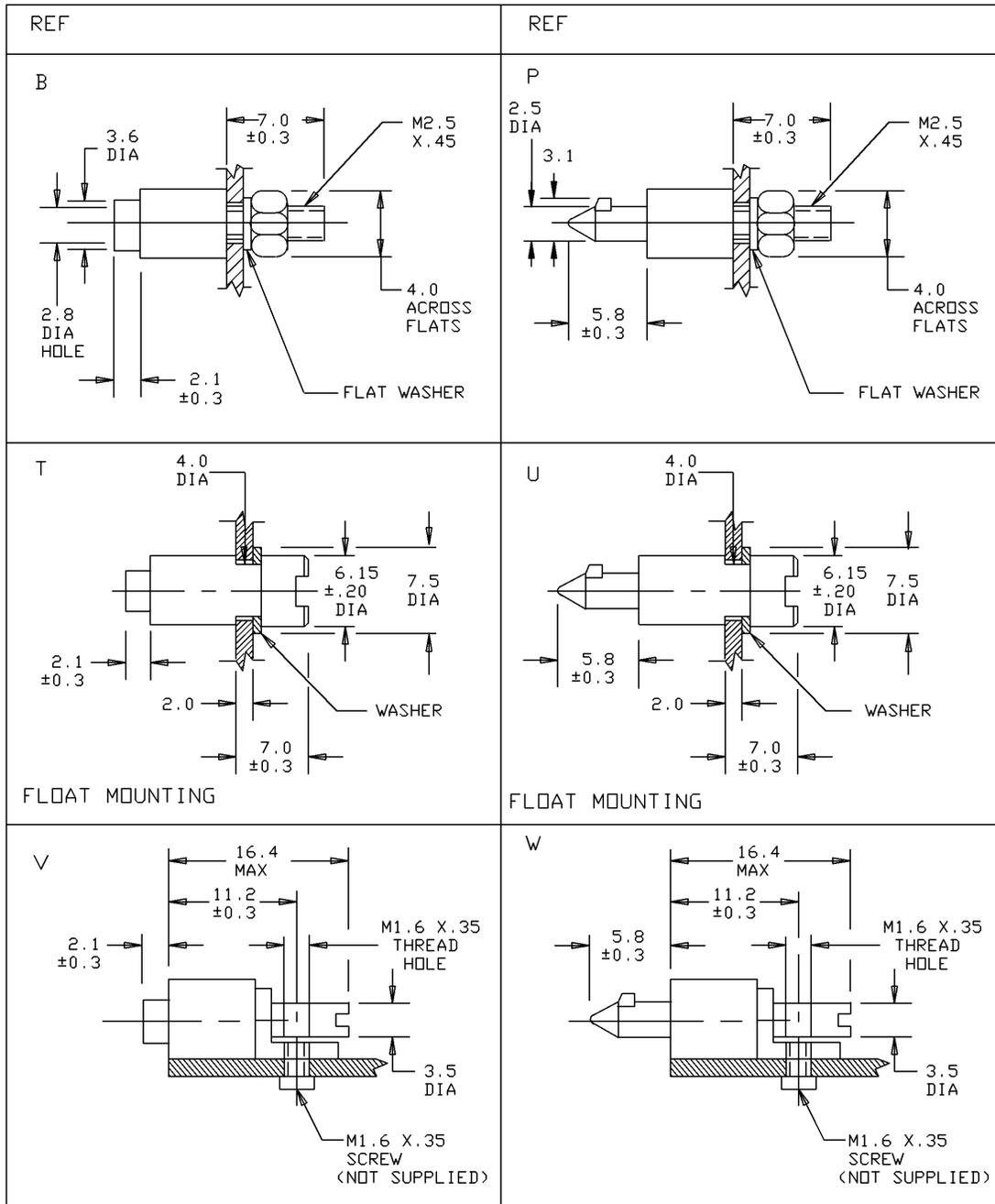
RECEPTACLE TERMINAL STYLES

| REF | MALE CONTACTS  | REF | FEMALE CONTACTS  |
|-----|--|-----|--|
| S   | <p>SOLDER CUP</p> <p>1.0 DIA HOLE<br/>1.45 DIA<br/>6.1<br/>5.0</p> <p>FOR UP TO 22 AWG.</p>                                    | L   | <p>SOLDER CUP</p> <p>1.0 DIA HOLE<br/>1.45 DIA<br/>5.60<br/>4.65</p> <p>FOR UP TO 22 AWG.</p>                                  |
| M   | <p>DOUBLE CRIMP</p> <p>0.9 DIA HOLE<br/>1.8 DIA<br/>1.3 DIA<br/>1.5 DIA HOLE<br/>7.2<br/>6.0</p> <p>FOR 22, 24 AND 26 AWG.</p> | H   | <p>DOUBLE CRIMP</p> <p>0.9 DIA HOLE<br/>1.8 DIA<br/>1.3 DIA<br/>1.5 DIA HOLE<br/>7.2<br/>6.0</p> <p>FOR 22, 24 AND 26 AWG.</p> |
| R   | <p>CRIMP</p> <p>0.9 DIA HOLE<br/>1.3 DIA<br/>5.1<br/>3.9</p> <p>FOR 22, 24 AND 26 AWG.</p>                                     | K   | <p>CRIMP</p> <p>0.9 DIA HOLE<br/>1.3 DIA<br/>5.1<br/>3.9</p> <p>FOR 22, 24 AND 26 AWG.</p>                                     |
| Y   | <p>WRAP POST</p> <p>.6 SQUARE<br/>14.7<br/>13.6</p>  |     |  |

NOTE: Dimensions are in millimeters.

FIGURE 2. Connector termination styles – Continued.

RECEPTACLE MOUNTING STYLES



NOTE: Dimensions are in millimeters.

FIGURE 3. Mounting styles.

RECEPTACLE LOCKING HARDWARE

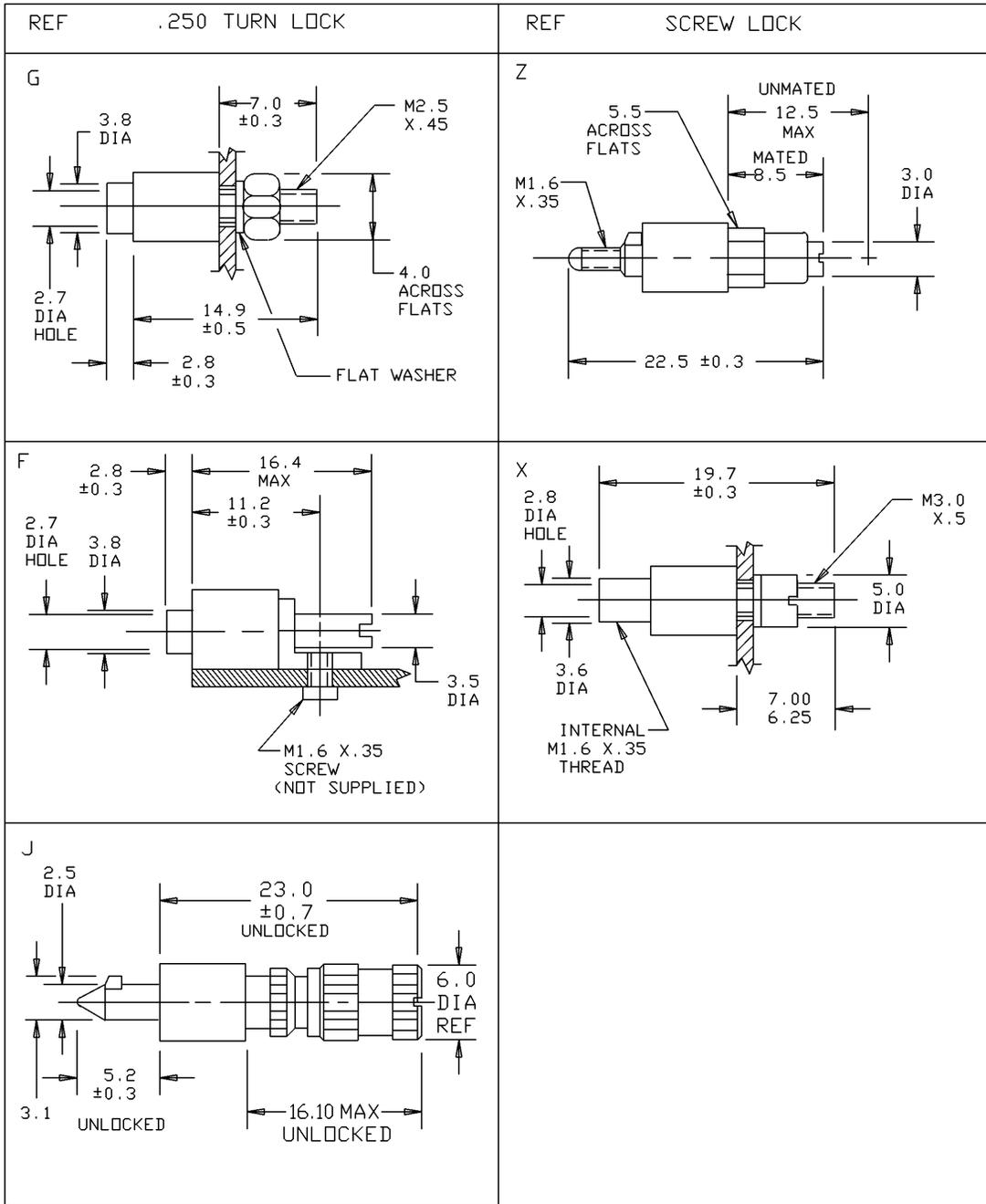


FIGURE 4. Locking hardware.

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NOTES:

1. Dimensions are in millimeters.
2. This is a metric design.
3. Unless otherwise specified, tolerance is  $\pm 0.10$  millimeter.
4. These connectors mate with MIL-DTL-55302/162.
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.

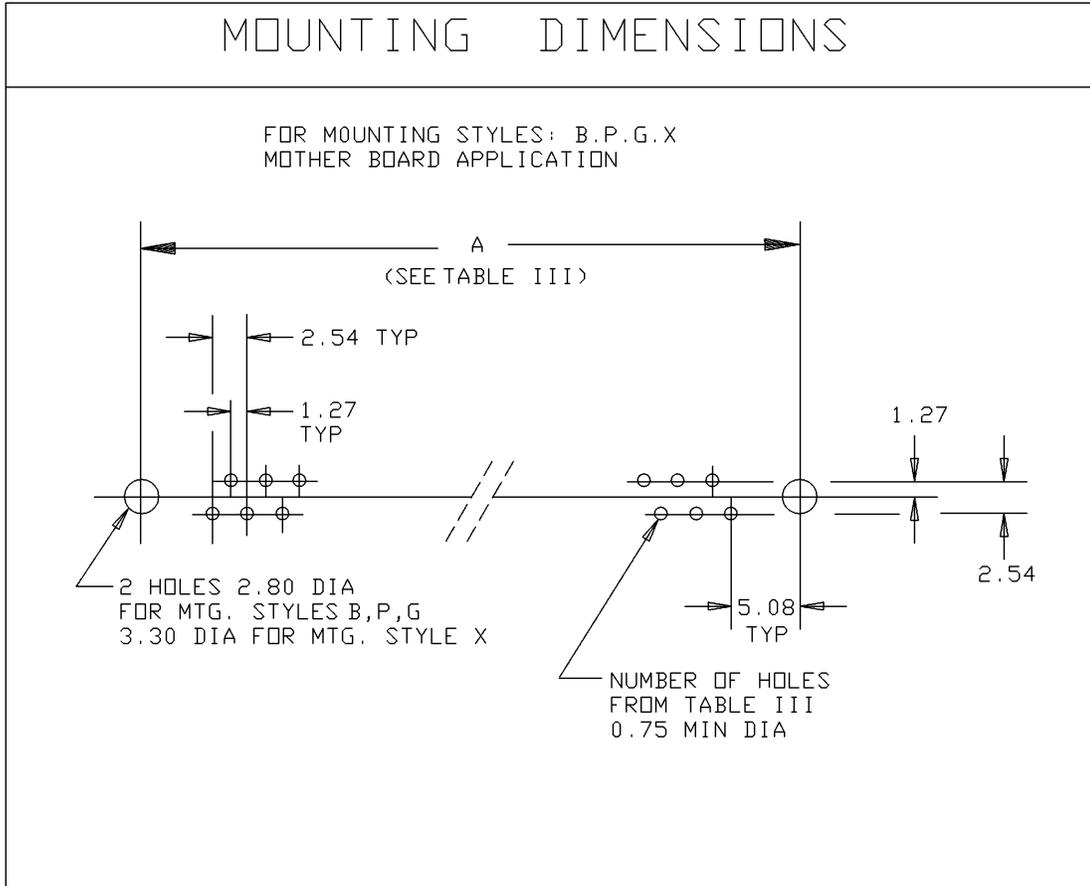


FIGURE 5. Mounting dimensions.

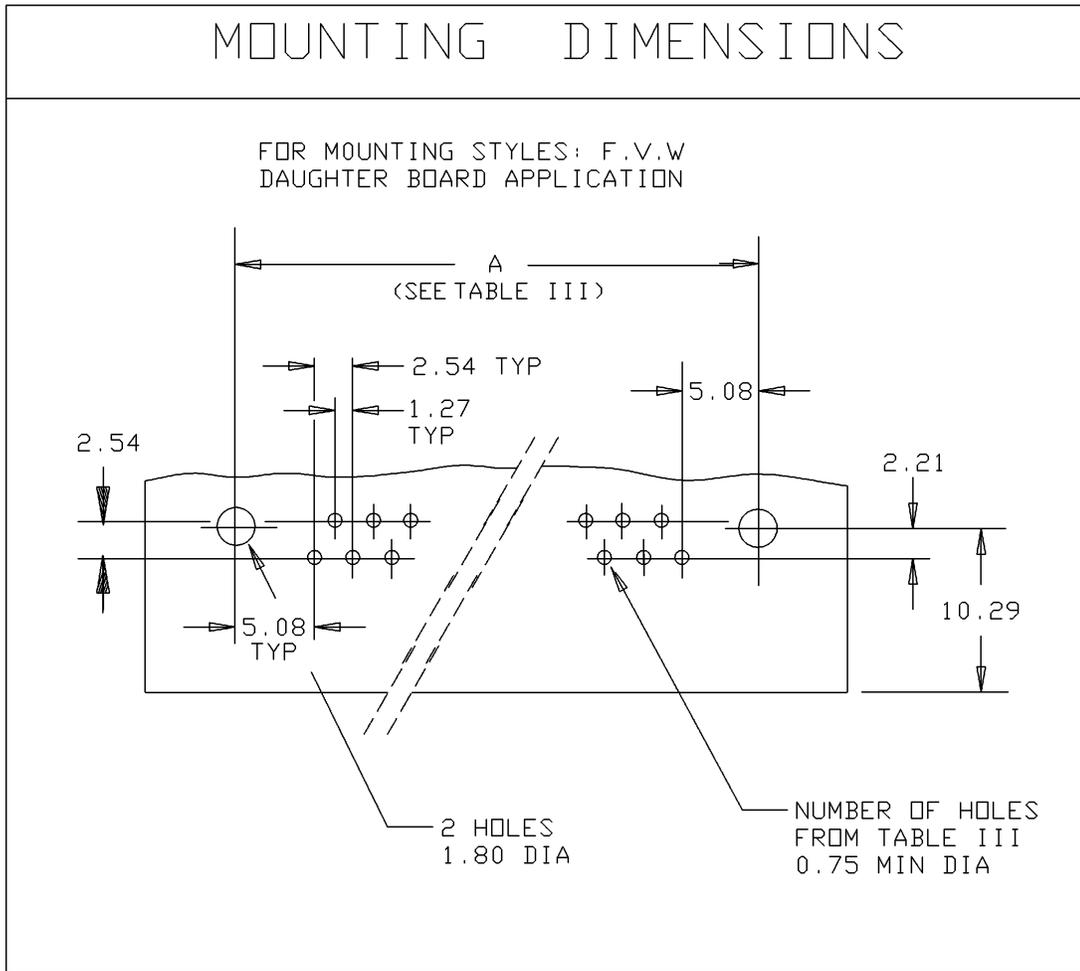
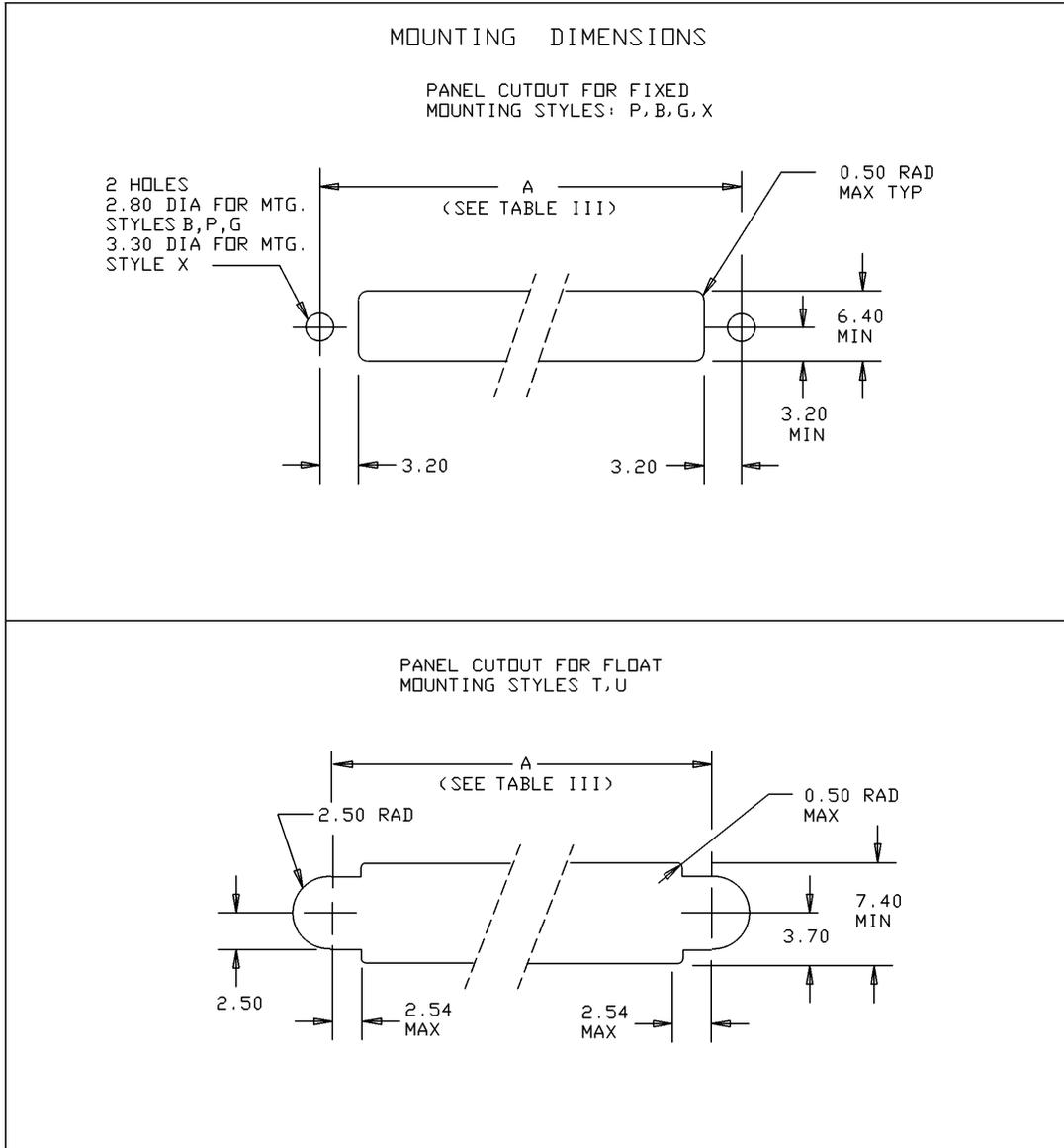


FIGURE 5. Mounting dimensions – Continued.



NOTES:

1. Dimensions are in millimeters.
2. Tolerances are noncumulative.

FIGURE 5. Mounting dimensions – Continued.

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TABLE I. Number of contacts.

| Number of contacts | Dimension (in millimeters) |       |
|--------------------|----------------------------|-------|
|                    | A                          | B     |
| 17                 | 30.50                      | 38.50 |
| 29                 | 45.70                      | 53.70 |
| 33                 | 50.80                      | 58.80 |
| 41                 | 60.90                      | 58.90 |
| 53                 | 76.20                      | 84.20 |
| 65                 | 91.40                      | 99.40 |

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-55302/162.

TABLE III. Mounting references.

| Number of contacts | A     |
|--------------------|-------|
| 17                 | 30.50 |
| 29                 | 45.70 |
| 33                 | 50.80 |
| 41                 | 60.90 |
| 53                 | 76.20 |
| 65                 | 91.40 |

## 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, B16, B124, B453, or B455; nickel plated in accordance with SAE-AMS-QQ-N-290 or AISI 300 series stainless steel or equivalent in accordance with ASTM A582, passivated in accordance with SAE-AMS-QQ-P-35.

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

Mating surface (pin and wire): Gold in accordance with ASTM B488, class 1.27, type II, code C 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 ASTM B488, type III, code A, class 0.254 minimum thickness or gold in accordance with ASTM B488, type II, code C, class 0.51 over nickel in accordance with SAE-AMS-QQ-N-290, 30 to 150 microinches thick. Solderable areas must meet the requirements of MIL-STD-202, method 208.

All other surfaces: Gold in accordance with ASTM B488, type II, code C, class 0.127 minimum over nickel in accordance with SAE-AMS-QQ-N-290, 30-150 microinches.

Contact identification: See figure 1.

### 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.

Contact rating: 5 amperes per line.

Durability: 2,000 cycles minimum.

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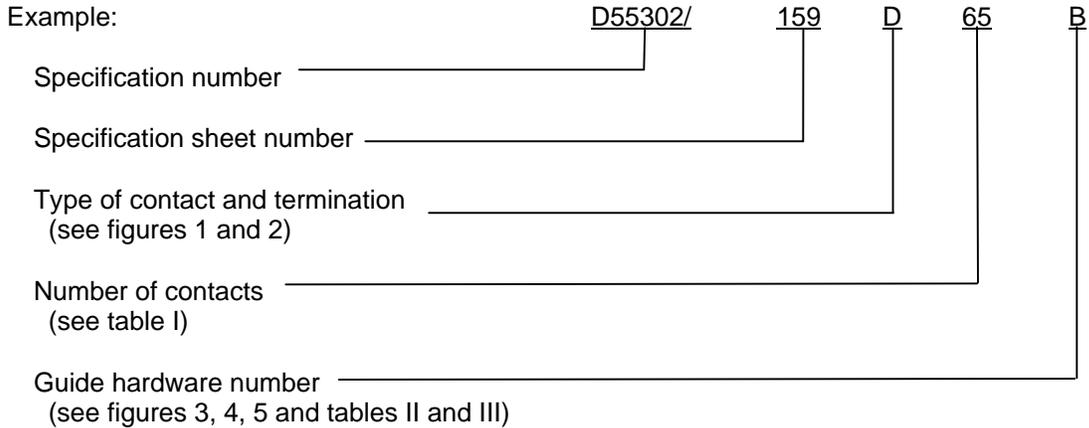
Dielectric withstanding voltage:

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):



Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extent of the changes.

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

|                   |           |                  |
|-------------------|-----------|------------------|
| MIL-DTL-55302/162 | ASTM B36  | ASTM B488        |
| MIL-STD-202       | ASTM B124 | ASTM D5948       |
| ASTM A582         | ASTM B453 | SAE-AMS-QQ-N-290 |
| ASTM B16          | ASTM B455 | SAE-AMS-QQ-P-35  |

CONCLUDING MATERIAL

Custodians:  
Army - CR  
DLA - CC

Preparing activity:  
DLA - CC

(Project 5935-4605-001)

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

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsible can change, you should verify the currency of the information above using the ASSIST Online database at <http://www.dodssp.daps.mil>.