

INCH-POUND

MIL-DTL-28748/18
w/AMENDMENT 2
12 August 2016
SUPERSEDING
MIL-DTL-28748/18
w/AMENDMENT 1
1 July 2011

DETAIL SPECIFICATION SHEET

CONNECTORS, ELECTRICAL, RECTANGULAR,
RACK AND PANEL, PRINTED WIRING BOARD (PWB) MOUNT,
STRAIGHT THROUGH, PIN CONTACTS, SIZE 22

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-28748.

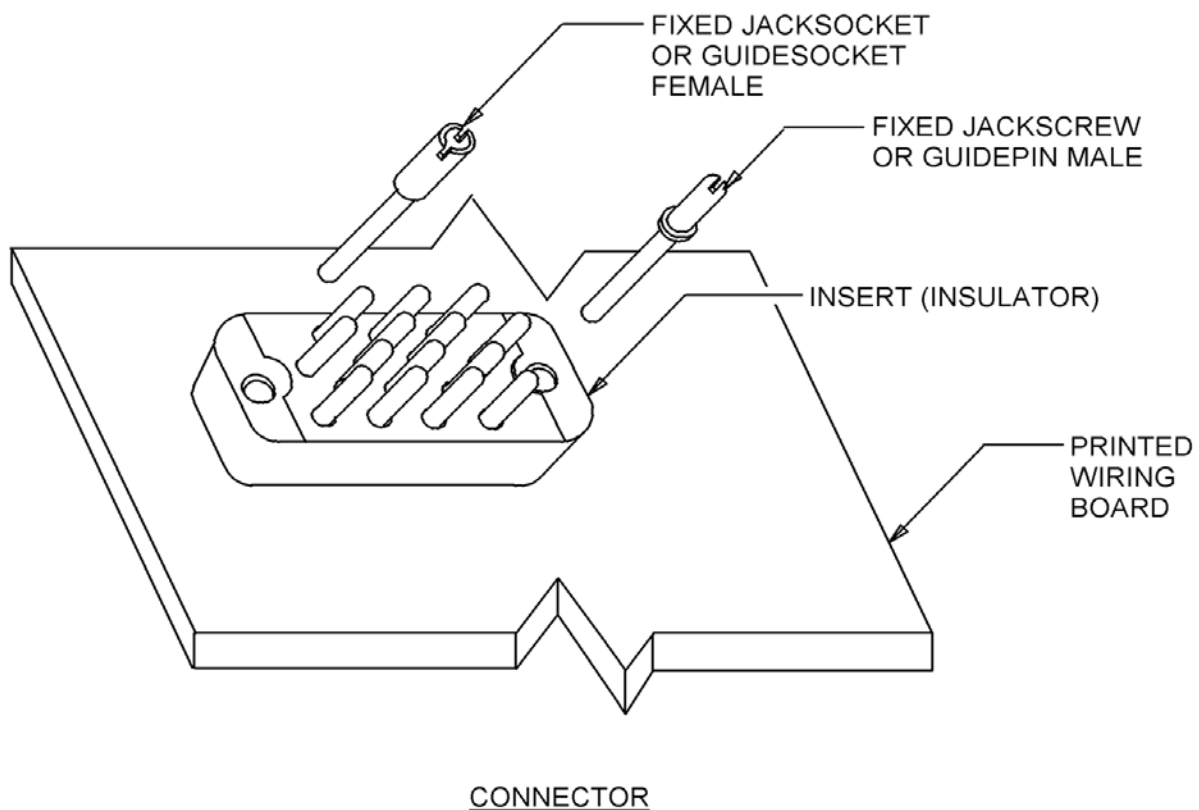


FIGURE 1. Connector with jackscrews and guidepin.



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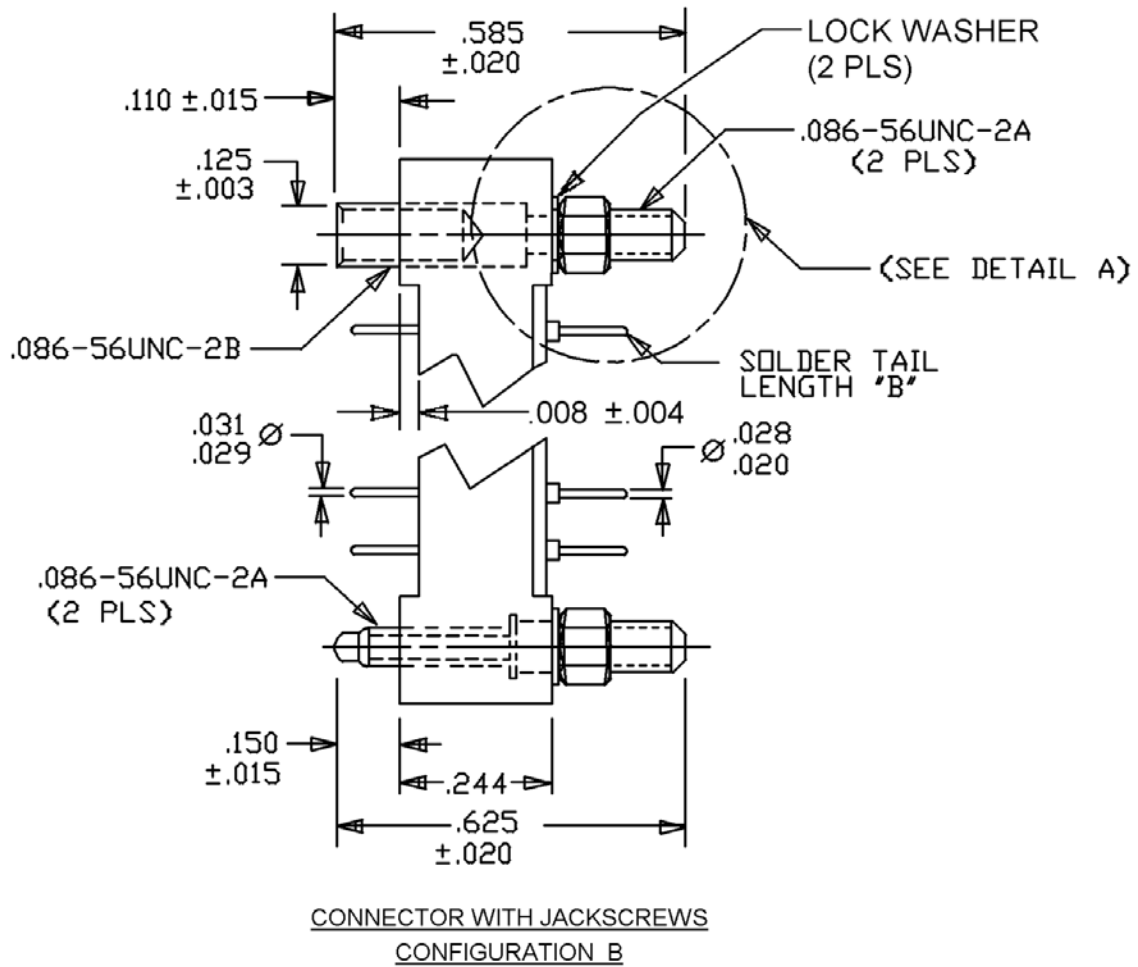
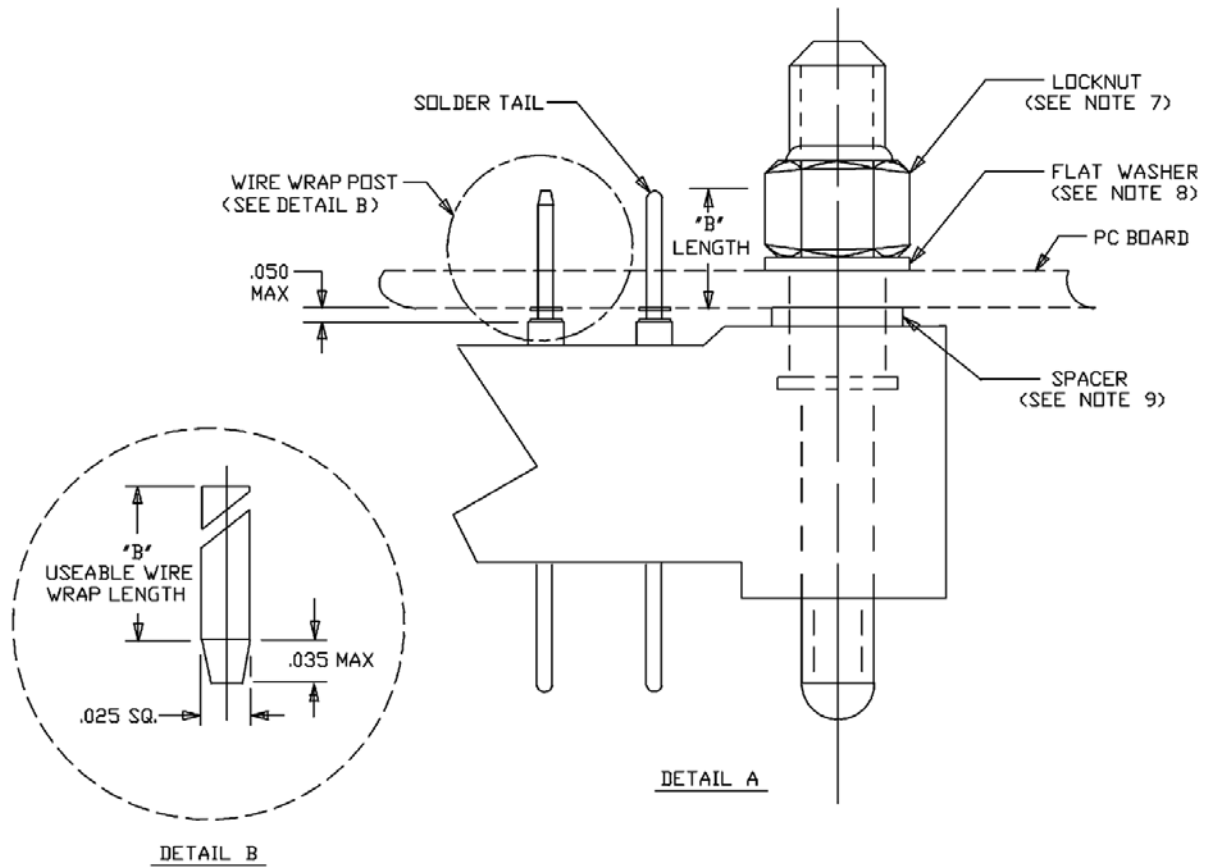


FIGURE 1. Connector with jackscrews and guidepin - Continued.

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Part or Identifying Number (PIN) designator	Termination tail style	"B" Length (mm)
1A	Straight solder	.093 (2.36)
1B	Straight solder	.125 (3.18)
1C	Straight solder	.156 (3.96)
1D	Straight solder	.187 (4.75)
1E	Wrap post	.260 (6.60)
1F	Wrap post	.390 (9.91)
1G	Wrap post	.550 (13.97)

FIGURE 1. Connector with jackscrews and guidepins - Continued.

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Inches	mm	Inches	mm
.003	0.08	.050	1.27
.004	0.10	.078	1.98
.005	0.13	.086	2.18
.008	0.20	.090	2.29
.015	0.38	.110	2.79
.020	0.51	.125	3.18
.025	0.64	.150	3.81
.028	0.71	.200	5.08
.029	0.74	.244	6.20
.031	0.79	.585	14.86
.035	0.89	.625	15.88

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for information only.
3. Unless otherwise specified tolerances is $\pm .020$ (0.50 mm).
4. Materials for guidepins and jackscrews shall be corrosion resistant steel in accordance with ASTM A276 class 304, 316, or ASTM A582/A582M, class 302, 303, 303Se.
5. Material for washer .020 inch (0.51 mm) may be either aluminum or corrosion resistant steel.
6. Finish for washers shall be passivated or anodized.
7. Locknut: Mounting hardware shall include stainless steel locknuts. The nuts may be all metal or designed with nylon inserts.
8. Washer .020 inch (0.51 mm) thick supplied with all sizes.
9. The mounting pad spacer shall be polyamide or vulcanized fiber .040 - .062 inch (1.02 - 1.58 mm) thick.

FIGURE 1. Connector with jackscrews and guidepin - Continued.

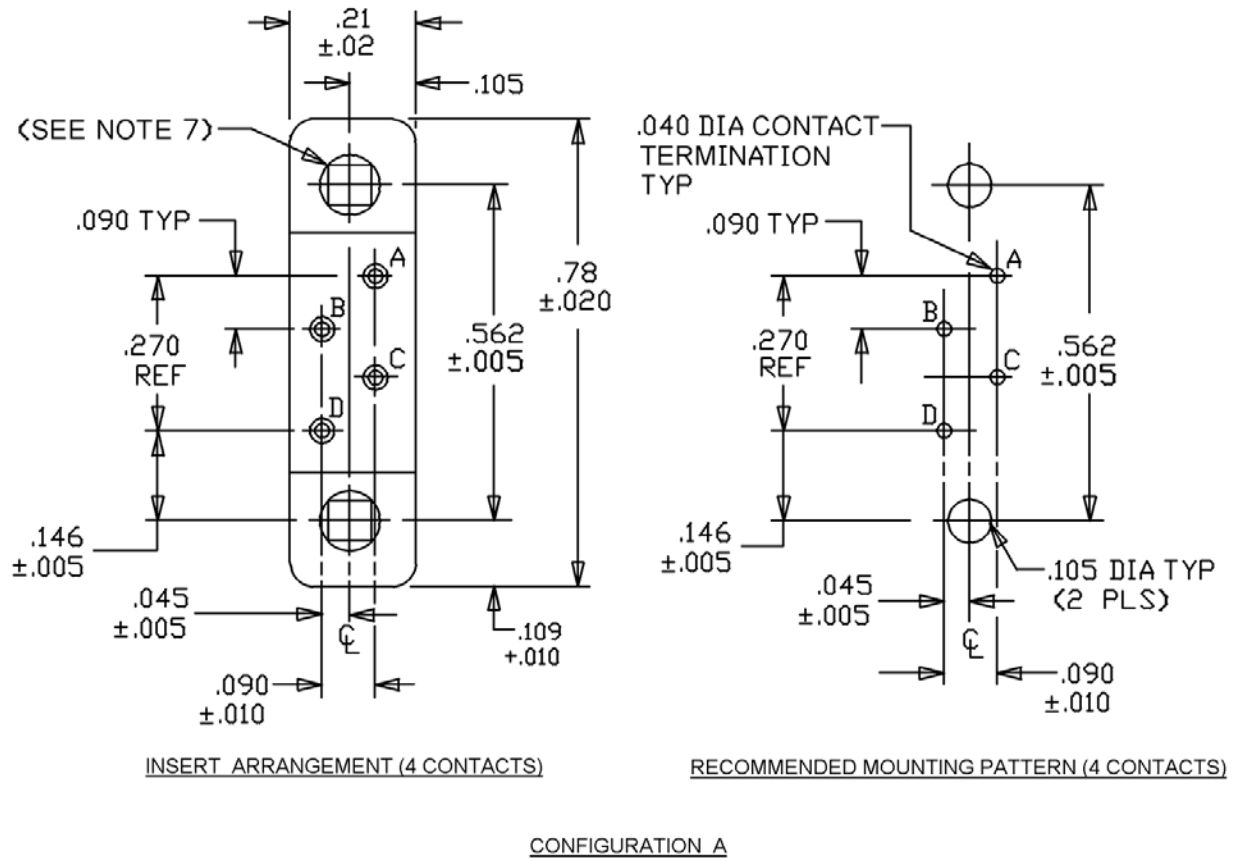


FIGURE 2. Insert arrangements.

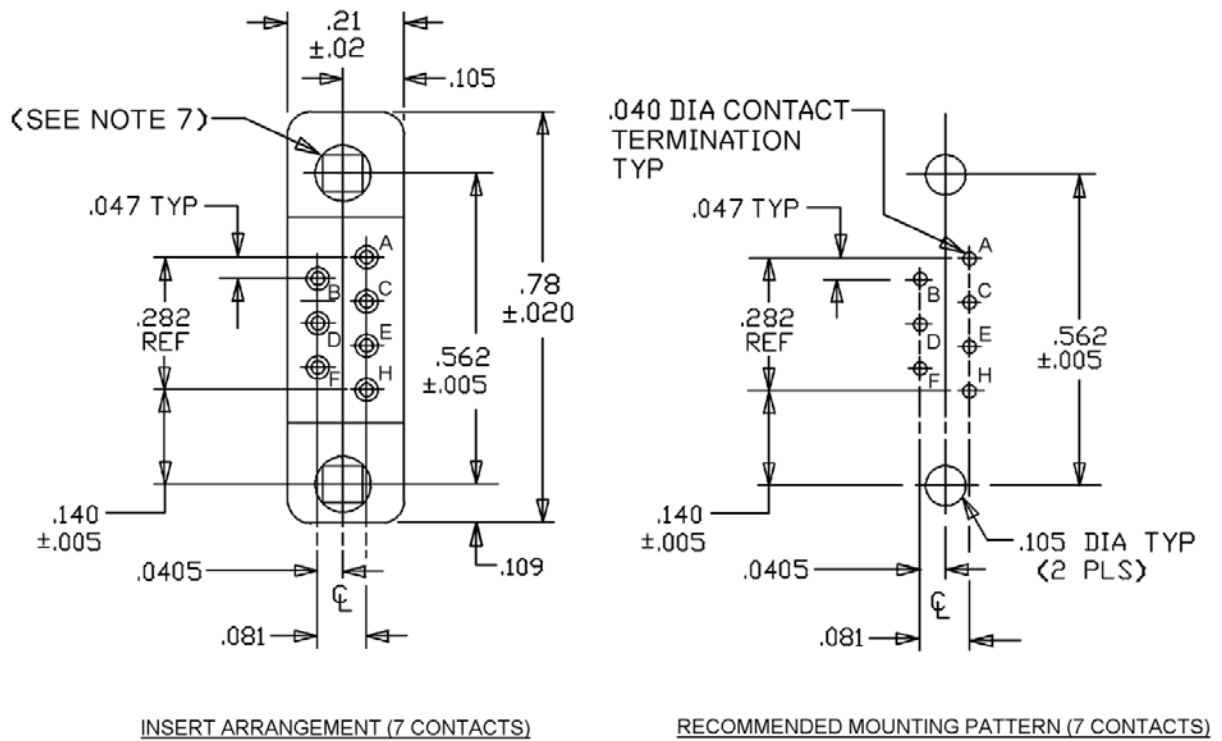


FIGURE 2. Insert arrangements - Continued.

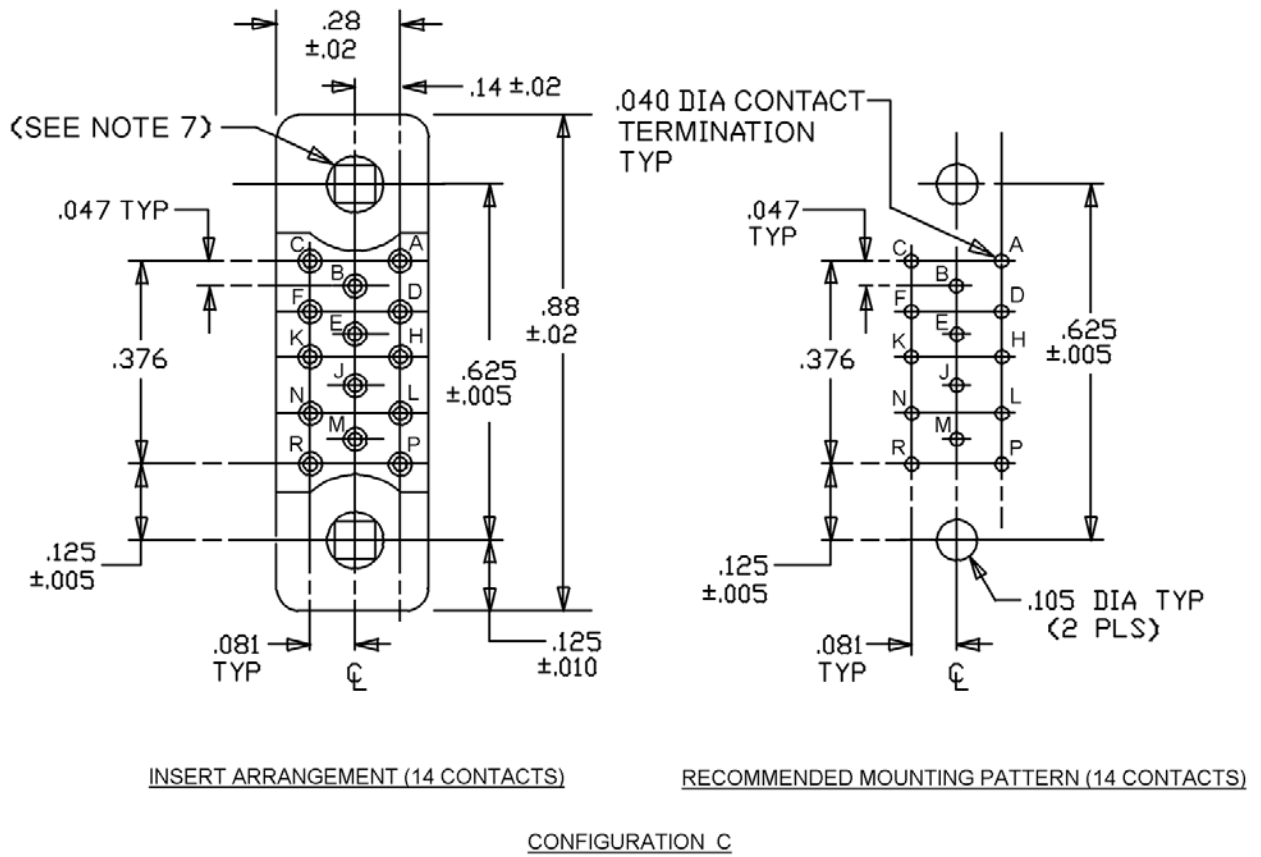


FIGURE 2. Insert arrangements - Continued.

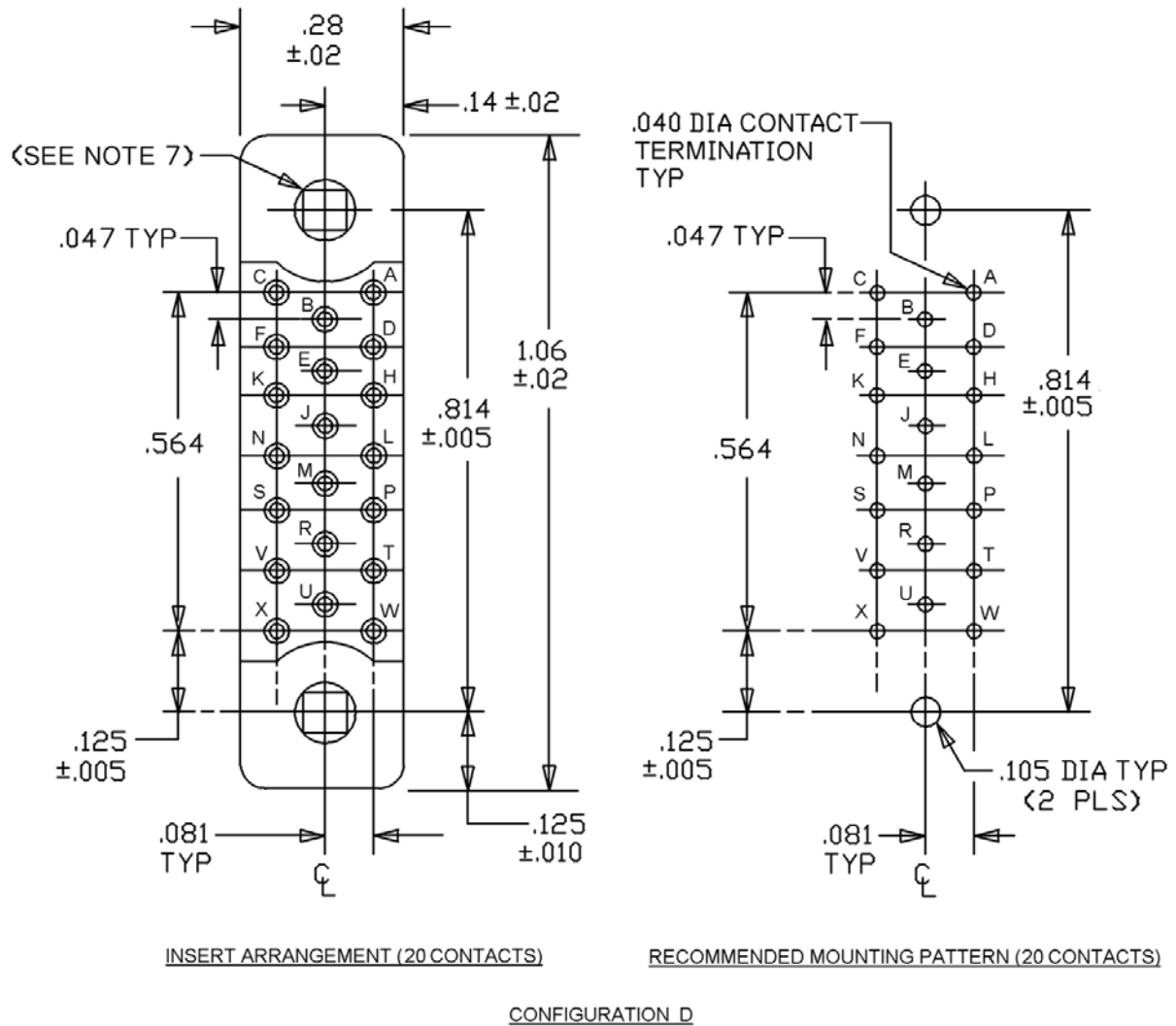
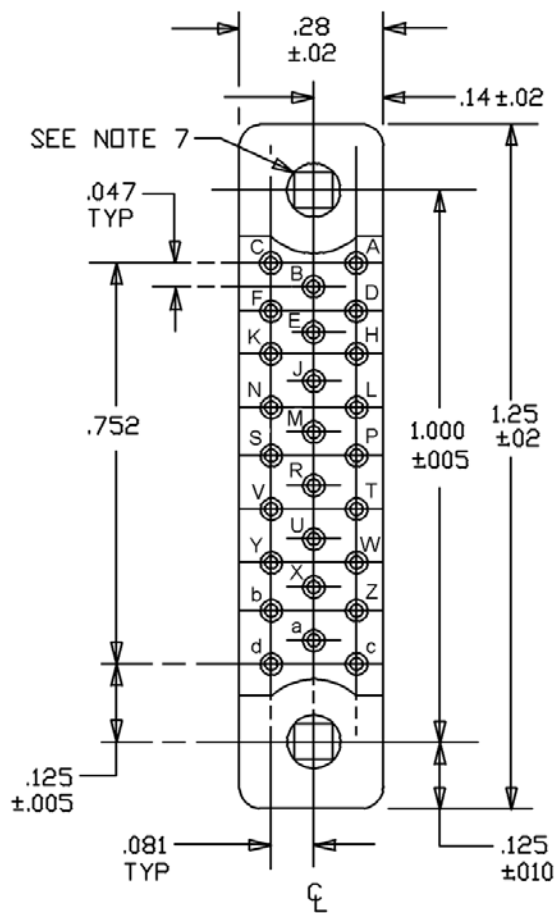
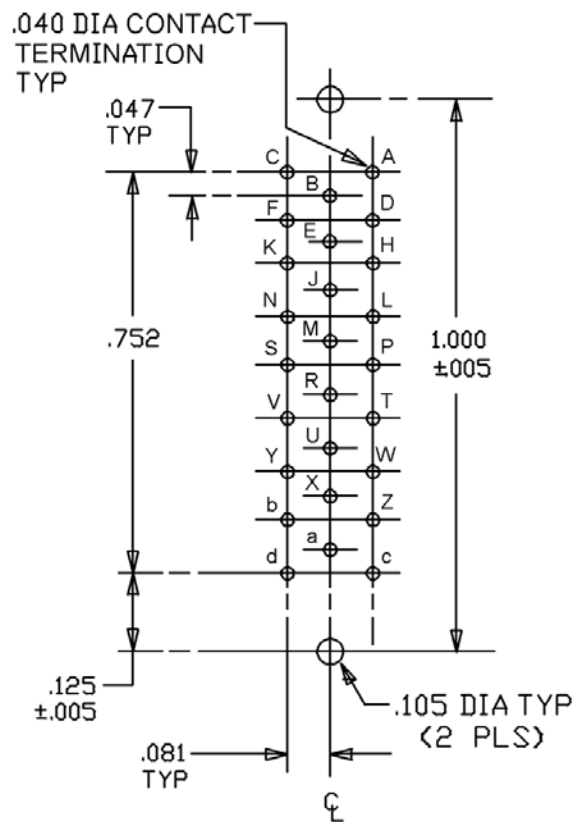


FIGURE 2. Insert arrangements - Continued.



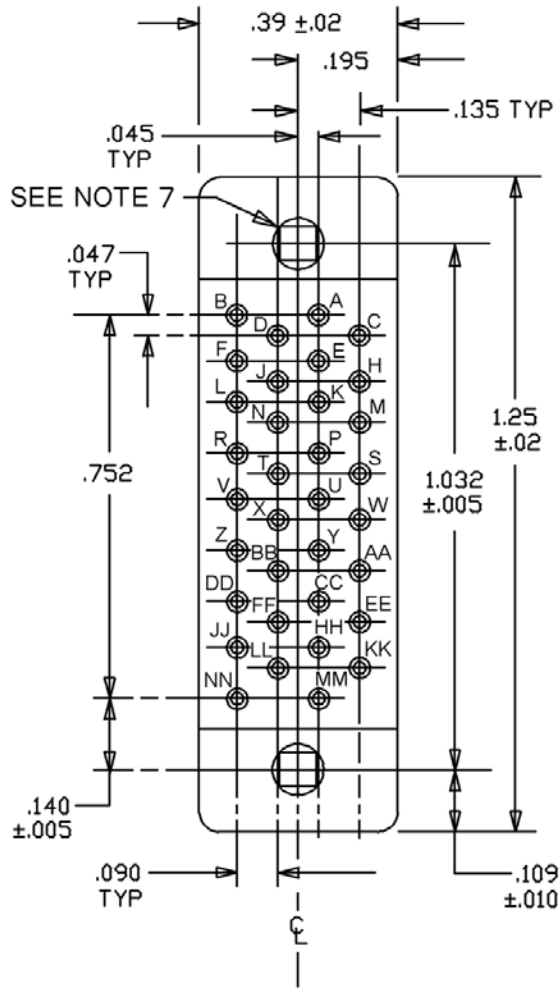
INSERT ARRANGEMENT (26 CONTACTS)



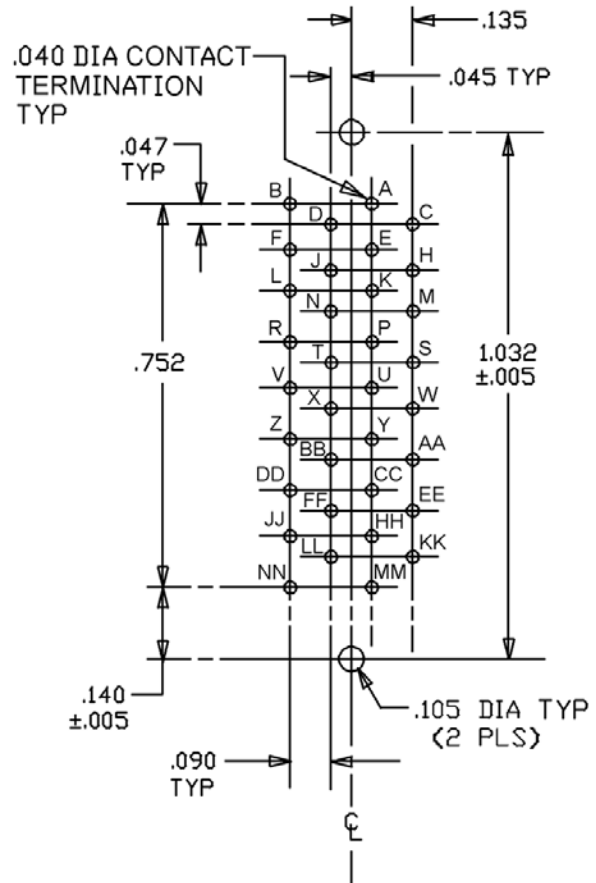
RECOMMENDED MOUNTING PATTERN (26 CONTACTS)

CONFIGURATION E

FIGURE 2. Insert arrangements - Continued.



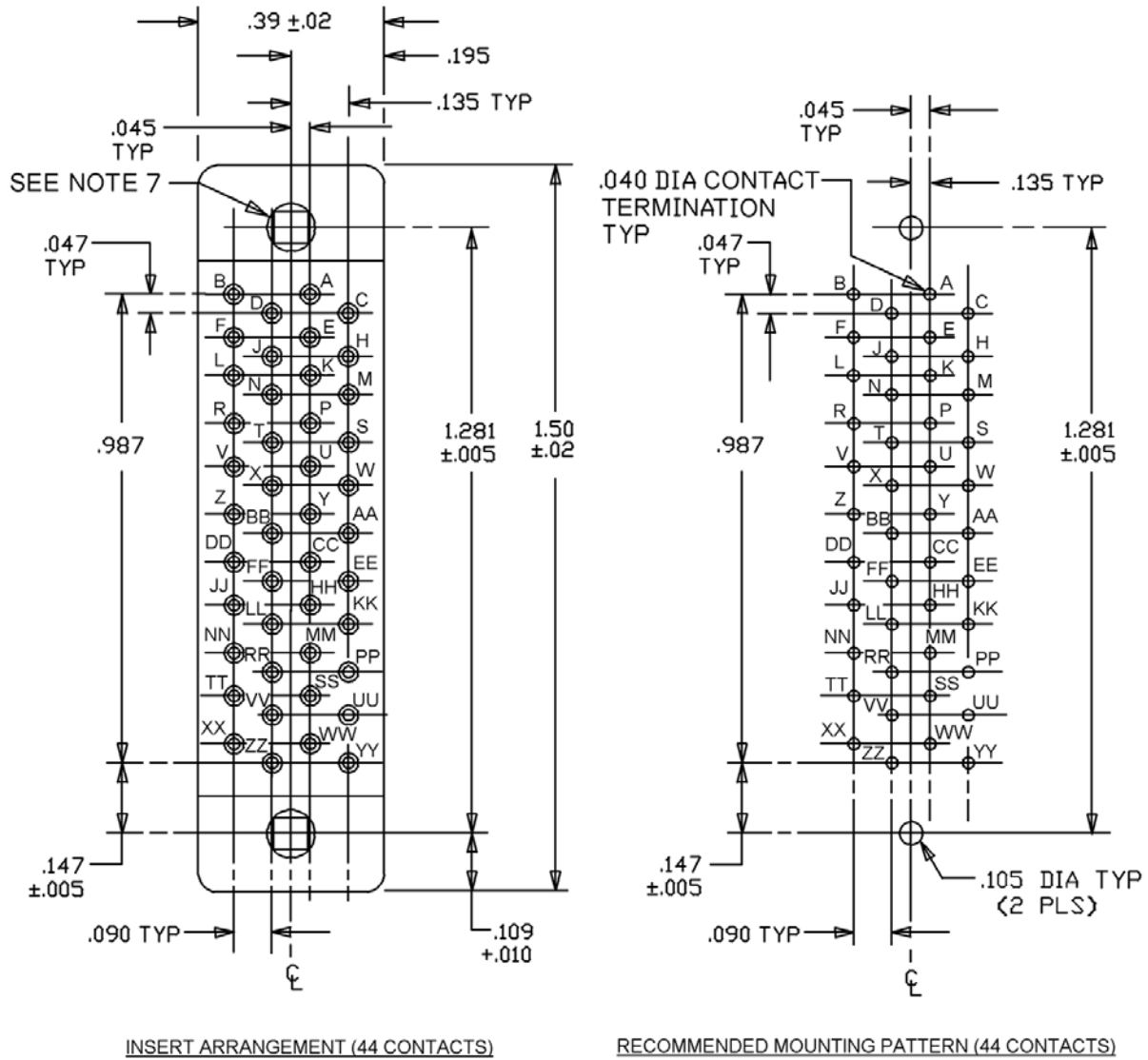
INSERT ARRANGEMENT (34 CONTACTS)



RECOMMENDED MOUNTING PATTERN (34 CONTACTS)

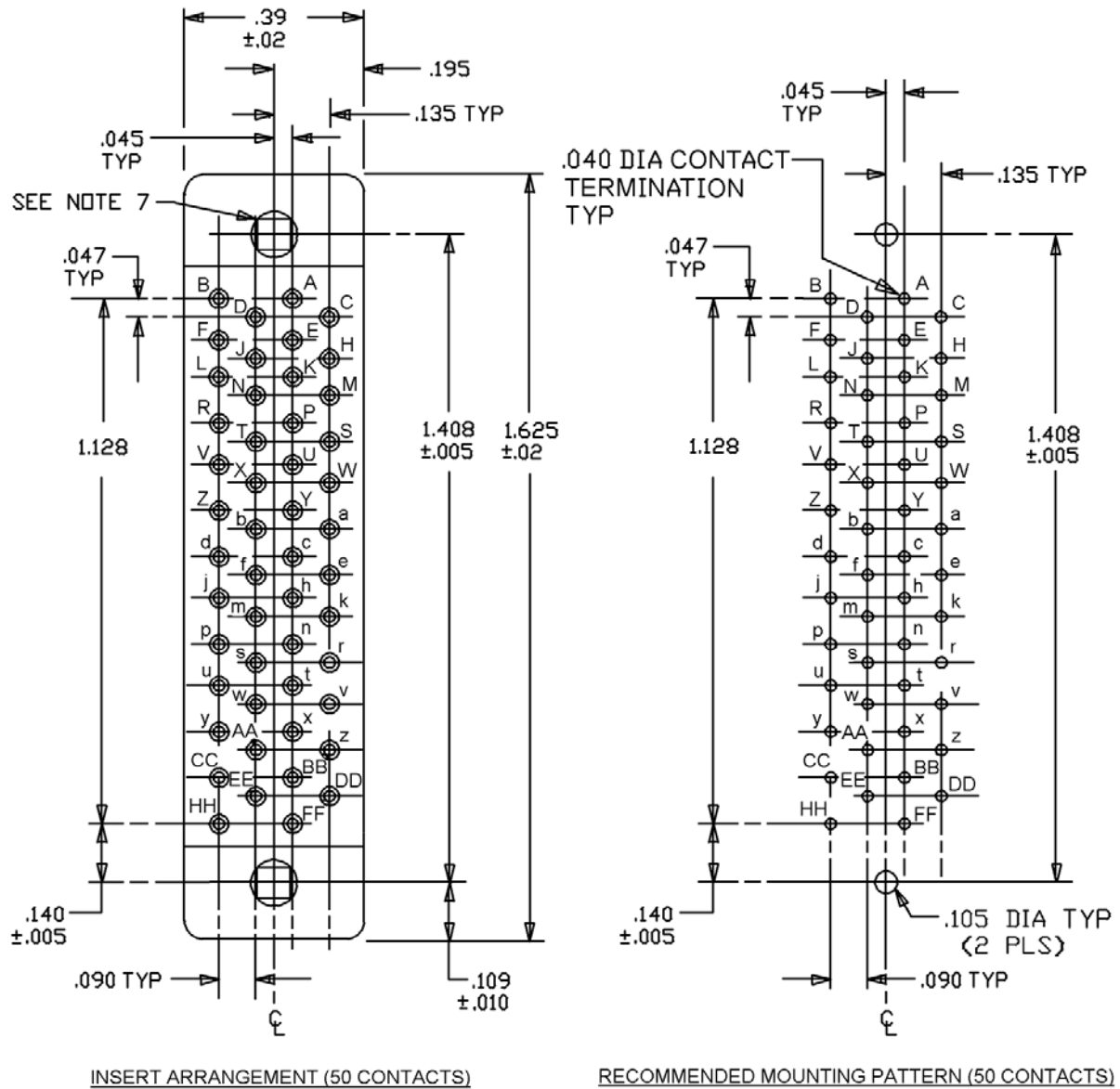
CONFIGURATION F

FIGURE 2. Insert arrangements - Continued.



CONFIGURATION G

FIGURE 2. Insert arrangements - Continued.



CONFIGURATION H

FIGURE 2. Insert arrangements - Continued.

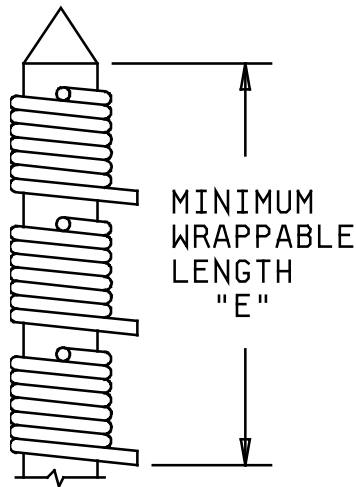
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Inches	mm	Inches	mm
.005	0.13	.28	7.1
.010	0.25	.282	7.16
.02	0.5	.376	9.55
.020	0.51	.39	9.91
.040	1.02	.562	14.27
.0405	1.029	.564	14.33
.045	1.14	.625	15.88
.047	1.19	.752	19.10
.081	2.06	.78	19.8
.090	2.29	.814	20.68
.105	2.67	.88	22.4
.109	2.77	.987	25.07
.125	3.18	1.000	25.40
.135	3.43	1.032	26.21
.140	3.56	1.06	26.9
.14	3.6	1.128	28.65
.146	3.71	1.25	31.8
.147	3.73	1.281	32.54
.195	4.95	1.408	35.76
.21	5.3	1.50	38.1
.270	6.86	1.625	41.28

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for information only.
3. Unless otherwise specified tolerance is ± 0.015 (0.38 mm).
4. Tolerance between any two adjacent contact centers shall be ± 0.004 (0.10 mm). Tolerance between any two contact centers, other than adjacent centers, shall be ± 0.006 (0.15 mm).
5. Insert material in accordance with MIL-DTL-28748.
6. Contact identification may be located on either side of the contact hole but shall appear on the front and rear of each insert.
7. Hole configuration is optional. Design shall incorporate an anti-rotation feature on either the front or rear face of the insulator.

FIGURE 2. Insert arrangements - Continued.



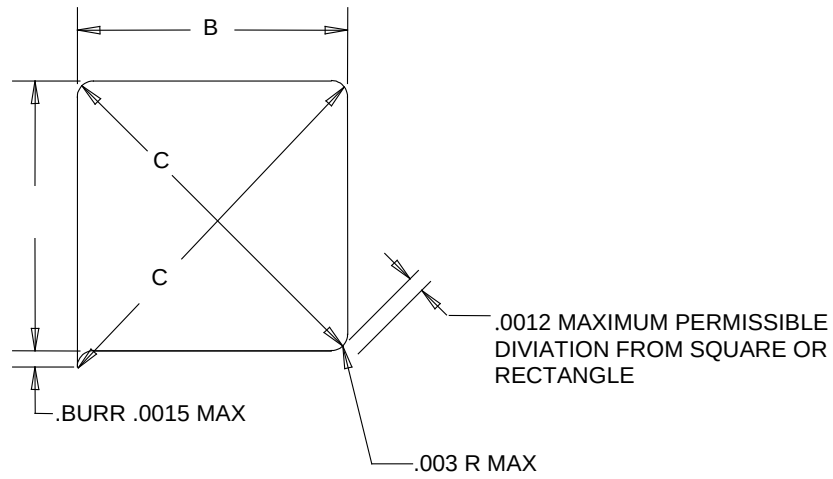
Number of wrapped corrections	E length	
	Wire gage 28 (mm)	Wire gage 26 (mm)
1	.219 (5.56)	.226 (5.74)
2	.388 (9.86)	.402 (10.21)
3	.557 (14.15)	.578 (14.68)

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for information only.
3. Wire wrap posts shall have beveled tips to facilitate wire wrap tools and shall have sharp edges.

FIGURE 3. Wrappable length (typical connection).

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Inches	mm
.0012	0.030
.0015	0.038
.003	0.08

A (mm)	B (mm)	C (mm)	Parallelism (mm)	Straightness Inch/inch (mm)
.025 (0.64) nominal .022 (0.56) min	.025 (0.64) nominal .022 (0.56) min	.0355 (0.902) max .0325 (0.826) min	.002 (0.05)	.005 (0.13)

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for information only.

FIGURE 4. Wrappost geometry.

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REQUIREMENTS:

Dimensions and configuration: See figures 1, 2, 3, and 4.

Mating connector: See MIL-DTL-28748/8.

Contacts: Contacts shall be in accordance with MIL-DTL-28748.

Solder tail: "B" length (see table I).

Solder tail finish:

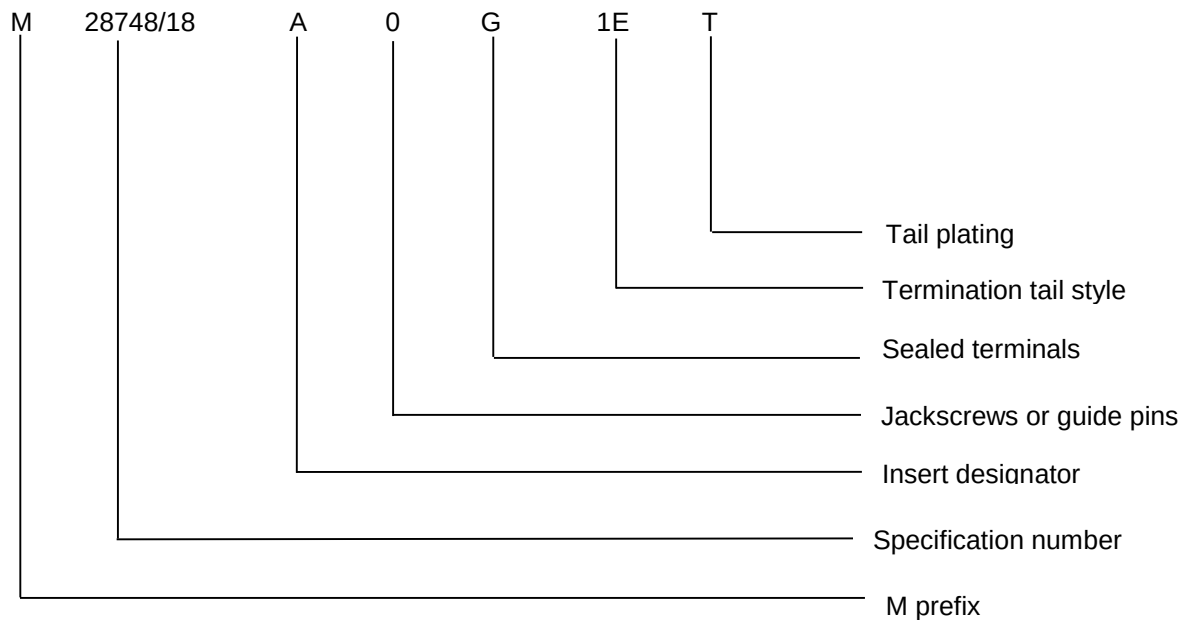
- a. Tin/lead in accordance with SAE-AMS-P-81728, 50 to 97 percent tin, 100 micro inches (2.54μm) minimum or hot solder dip in accordance with J-STD-006 63 percent tin, 100 micro inches (2.54μm) minimum over 50 to 100 microinches (1.27 to 2.54μm) of nickel in accordance with SAE-AMS-QQ-N-290, class 1.
- b. Gold in accordance with MIL-DTL-45204 type II, grade C, class 0 (30 microinches) min of gold over 50 to 100 microinches (1.27 to 2.54μm) of nickel in accordance with SAE-AMS-QQ-N-290, class 1.

Contact sealants: Sealants used to back seal contact cavities to prevent entry of cleaning solutions, conformal coatings, etc.

Solderless wrappost contacts: Geometry parallelism and tip configuration shall be in accordance with figures 3 and 4.

Solderless wrappost contact wire accommodation: 26 or 28 AWG solid.

Part or Identifying Number (PIN): As shown in the following example: The number zero (0) is used to indicate which parts are not included (see table I for permissible PINS).



<u>Insert designator</u>		<u>Number of contact positions</u>
A	-	4
B	-	7
C	-	14
D	-	20
E	-	26
F	-	34
G	-	44
H	-	50

Jackscrews
or
guidepins:

F - fixed jackscrews, configuration B, figure 1.
G - guidepins, configuration A figure 1.
0 - none included.

Jack and guide location: The jackscrew female (turning or fixed) or guide socket shall be located by the A pin contact.

Seal: Manufacturer may supply sealed terminals when no seal is specified.

S - sealed
0 - No seal

Termination tail style:

1A - Straight solder tails .093 inch (2.36 mm).
1B - Straight solder tails .125 inch (3.18 mm).
1C - Straight solder tails .156 inch (3.96 mm).
1D - Straight solder tails .187 inch (4.75 mm).
1E - Wrap post tails .260 inch (6.60 mm).
1F - Wrap post tails .390 inch (9.91 mm).
1G - Wrap post tails .550 inch (13.97 mm).

Tail plating:

T - Tin/lead
G - Gold

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Permissible PINs are specified in table I.

TABLE I. Permissible PINs. 1/

M prefix and specification number	Insert designator	Jackscrews or guide pins	Sealed terminals	Solder tail plating	Solder tail length
M28748/18	A	F - fixed G – Guide pin 0 - none	S - sealed 0 - no seal	T - tin/lead G - gold	1A
	B				1B
	C				1C
	D				1D
	E				1E
	F				1F
	G				1G
	H				

1/ The number zero (0) is used to indicate which parts are not included.

Qualification: Qualification is not required for this specification sheet.

First article testing (FAT): FAT shall be in accordance with MIL-DTL-28748, 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.

Referenced documents: In addition to MIL-DTL-28748, this document references the following:

MIL-DTL-28748/8
MIL-DTL-45204
ASTM A276
ASTM A582/A582M
J-STD-006
SAE-AMS-P-81728
SAE-AMS-QQ-N-290

CONCLUDING MATERIAL

Custodians:
Army - CR
Navy - EC
Air Force - 85
DLA - CC

Preparing activity:
DLA-CC

(Project 5935-2016-163)

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