

INCH-POUND

MIL-DTL-28754/56A
25 September 2019
SUPERSEDING
MIL-C-28754/56 (NAVY)
29 April 1985

MILITARY SPECIFICATION SHEET

CONNECTORS, ELECTRICAL, MODULAR, TYPE IV, CONNECTOR,
100 PIN, OFFSET CONTACT TAILS ON .050 CENTERS (CERAMIC COMPATIBLE)

Reinstated after 25 September 2019 and may be used for new and existing designs and acquisitions.

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

The complete requirements for acquiring the connector described herein shall consist of this specification and the latest issue of MIL-DTL-28754.



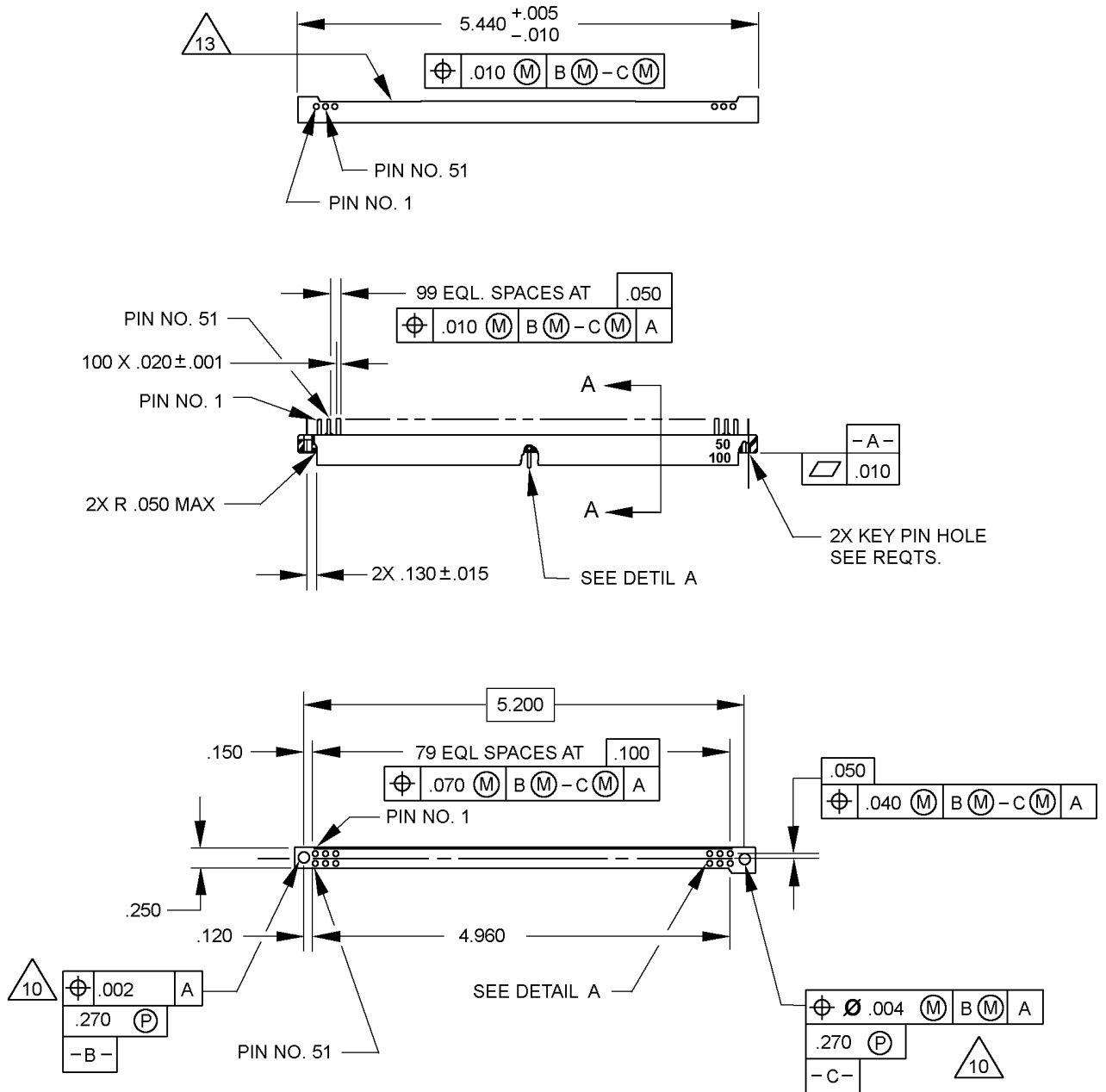
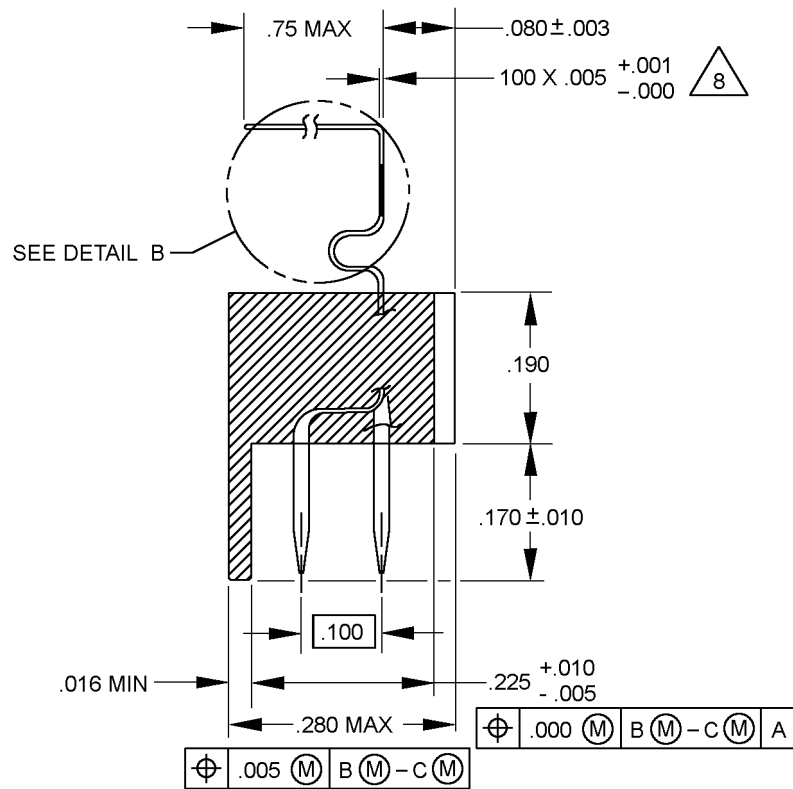


FIGURE 1. Dimensions and configurations.



Inches	Mm	Inches	Mm	Inches	Mm	Inches	Mm	Inches	mm
.001	.03	.015	.38	.080	2.03	.170	4.31	.750	19.05
.002	.05	.016	.40	.100	2.54	.190	4.83	4.960	125.98
.003	.08	.020	.51	.120	3.05	.225	5.72	5.200	132.08
.004	.10	.040	1.02	.130	3.30	.230	5.84	5.440	138.18
.005	.13	.050	1.27	.145	3.68	.250	6.35		
.007	.18	.060	1.52	.150	3.81	.270	6.86		
.010	.25	.070	1.77	.160	4.06	.280	7.11		

FIGURE 1. Dimensions and configurations – Continued.

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only and are based upon 1.00 inch = 25.4mm.
3. Unless otherwise specified, tolerances are $\pm .005$ (.13 mm) inch for three place decimals, $\pm .01$ (.3 mm) inch for two place decimals and $\pm 2^\circ$ for angles.
4. Flash around blade contacts not to exceed .010 (.25 mm) inch from the surface of the insulator and shall be firmly attached.
5. Pin shield shall be marked with contact numbers 1, 50, 51 and 100 in contrasting color ink .06 (1.5 mm) inch high.
6. The carrier strip shall remain attached to the contact tails to facilitate shipping and may be tinned. It shall be scored at the point indicated to facilitate removal at final assembly. The carrier strip is not required to be continuous.
7. Single or multiple piece construction is optional provided that the end requirements of the drawing are met.
8. Dimension prior to solder coating.
9. Dimensions apply after plating.
10. See Table I for key pin hole size and body material.
11. Contact engagement length.
12. Shaded area shall be solder coated.
13. Connector shall be marked in approximate location shown with part number, manufacturer's number and date code with contrasting ink in characters .06 (1.5 mm) inch high.
14. Plating defects on the carrier strip above the score line are acceptable.

FIGURE 1. Dimensions and configuration – Continued.

REQUIREMENTS:

Dimensions and configuration: See Figure 1 and Table I.

Materials: Contacts shall be either copper alloy sheet or strip, UNS Number C72500, temper 1/4 hard minimum, in accordance with ASTM B 122/B122M or brass, ASTM B36/B36M, UNS number C26000, temper H02.

Connector body shall be either polyetherimide, Type GLT-20F or GLT-30F, molded thermoplastic in accordance with MIL-M-24519 or molding plastic, diallyl phthalate Type GDI-30F or Type SDG-F in accordance with ASTM D5948. Optional end block shall be aluminum alloy 6061-T6 in accordance with SAE AMS4150.

The pin shield shall be aluminum alloy 5052-H34 in accordance with SAE AMS4017, 6063-T6 in accordance with ASTM B241/B241M or ASTM B221, or molded thermoplastic type GLT-20F or GLT-30F, in accordance with MIL-M-24519. Pin shield thickness for molded thermoplastic shall be 0.020 (.51 mm) inch minimum.

Plating: Contacts shall be finished on all exposed surfaces. The contact engagement length indicated shall be finished with gold plate, MIL-DTL-45204, Type II, Grade C, Class 1 or equivalent, over nickel plating, SAE-AMS-QQ-N-290, Class 1, 0.000050 (0.00013 mm) inch minimum thickness.

Plating requirements for connector solder tails shall be as follows:

Steps 1, 2, 4, 5, 7 – Clean prior to plating in accordance with SAE-AMS-P-81728. SAE-AMS-P-81728 states cleanliness requirements prior to plating.

Step 3 – Nickel Sulfamate underplate in accordance with SAE-AMS-QQ-N-290, Class 1, to 50 microinches, (1.27 μ m) min.

Step 6 – Tin-lead plate (90% Sn – 10% Pb), SAE-AMS-P-81728, 0.0003 – 0.0005 inch (0.0076 – 0.0127 mm) thickness.

Step 8 – Form.

Step 9 – Fuse/reflow with peanut oil as suggested. Quality assurance of SAE AMS-P-81728 shall apply. No sign of dewet or poor solderability will be accepted.

Step 10 – Avoid chlorinated solvents in rinse.

Step 11 – Selectively solder coat the leads as shown in the shaded area with in accordance with J-STD-006, SN60 or SN63, to a thickness of 0.0005 – 0.003 (0.0127 – 0.076 mm) inch. Use flux, in accordance with J-STD-004, type RMA, as required.

All aluminum alloy parts shall be anodic coated in accordance with MIL-A-8625, Type III, Class 2, black.

Key pin holes: For M28754/56-02 material, .095 $\pm$.001 (2.41 $\pm$.03 mm) inch diameter x .150 (3.81 mm) inch deep.

For M28754/56-01 material, .114 $\pm$.000-.005 (2.90 $\pm$.00-.13 mm) inch diameter x .150 (3.81 mm) inch deep.

C'bore .134 $\pm$.005-.000 (3.40 $\pm$.13-.00 mm) inch dia x .020 $\pm$.005-.000 (.51 x $\pm$.13 -.00 mm) inch deep.

Three equally spaced 0.010 (.25 mm) inch rad beads x .150 (3.81 mm) inch deep around the periphery of the .114 (2.90 mm) inch diameter shall be utilized.

Electrical requirements:

Dielectric withstanding voltage: The connector shall meet the requirements of test procedure EIA-364-20, method B, test condition I for 600 VAC (RMS) 60 Hz, or 850 VDC. The point of measurement shall be between adjacent contacts.

Low level (dry circuit): Voltage drop shall not exceed 36 millivolts. Wire size is not acceptable.

Contact resistance: Voltage drop shall not exceed 36 millivolts. Current Rating, 3 Amp.

Temperature rating: -55°C to +125°C.

Voltage rating: 300 Volts, AC (RMS), at sea level.

Durability: In accordance with MIL-DTL-28754 and shall not exceed 36 millivolts.

Solderability: In accordance with MIL-DTL-28754.

Military part number: M28754/56- (Dash number from Table I).

TABLE I

DASH NUMBER	KEY PIN HOLE SIZE INCH (MM)	BODY MATERIAL
01	.114+.000-.005 (2.90+.00-.13)	Type GD1-30F or SDG-F
02	.095 ± .001 (2.41 ± .03)	Type GLT-20F or GLT-30F
CONFIGURATION 1		
03	.114+.000-.005 (2.90+.00-.13)	Type GD1-30F or SDG-F
04	.095 ± .001 (2.41 ± .03)	Type GLT-20F or GLT-30F

Warning: The GLT-20F or GLT-30F may be susceptible to stress cracking when exposed to certain cleaning solvents.

First article testing: Perform the applicable tests as specified in MIL-DTL-28754 and the appendix thereto.

Number of units to be inspected: Twelve (12) of each dash number to be qualified shall be inspected.

Supersession data: Supersedes Naval Electronic Systems Command Drawing Number 0102-691-1 and - 5, Code Identification Number 28687.

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-28754, this document references the following:

MIL-A-8625
MIL-DTL-45204
MIL-M-24519
SAE AMS4150
SAE AMS4017
ASTM B36/B36M
ASTM B122/B122
ASTM B221
ASTM B241/B241M
ASTM D5948
EIA-364-20
SAE-AMS-P-81728
SAE-AMS-QQ-N-290
J-STD-004
J-STD-006

CONCLUDING MATERIAL

Custodians:
Navy – AS
Air Force – 85
DLA - CC

Preparing Activity:
DLA – CC

(Project 5935-2019-122)

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/>.