

INCH-POUND

MIL-C-28731D
 AMENDMENT 3
29 July 1993
 SUPERSEDING
 AMENDMENT 2
 11 October 1991

MILITARY SPECIFICATION SHEET

CONNECTORS, ELECTRICAL, RECTANGULAR,
 REMOVABLE CONTACT, FORMED BLADE, FORK TYPE
 (FOR RACK AND PANEL AND OTHER APPLICATIONS)
 GENERAL SPECIFICATIONS FOR

This amendment forms a part of MIL-C-28731D, dated 11 October 1991, and is approved for use by all Departments and Agencies of the Department of Defense

PAGE 1

2.1, following MIL-C-22529/17, add,

"MIL-M-24519 - Molding plastics, Electrical, Thermoplastic "

PAGE 2

* 2.1, following FED-STD-66, delete

"O-T-634 - Trichloroethylene Technical."

PAGE 3

3.3.5, delete and substitute:

"3.3.5 Insert material Unless otherwise specified (see 3.1), insert material shall be a diallyl phthalate in accordance with MIL-M-14, type SDG-F, GDI-30F, or polyester thermoplastic conforming to MIL-M-24519 (reground material shall not be used)."

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* TABLE I, delete and substitute

" TABLE I. Contact resistance.

Wire size AWG	Test current (amperes)	Maximum potential drop (mV)	Contact resistance (maximum) (mΩ)
18	8.5	51.0	6.0
20	7.5	45.0	6.0
22	5.0	40.0	8.0
24	3.0	26.0	8.7
26	2.0	24.0	12.0
28	1.5	22.0	14.7
30	1.0	20.0	20.0

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After 3.21, add new paragraph 3.22 as follows

"3.22 Resistance to soldering heat. Connectors shall withstand the tests specified in 4.7.16

* "3.23, Resistance to solvents Delete in its entirety.

Table III, Applicable specification column, Plastic Add "MIL-M-24519"

After 4.1.1, add new paragraph as follows

"4.1.2 Assembly plants Assembly plants must be listed on or approved for listing on the applicable Qualified Parts List. The qualified connector manufacturer shall certify that the assembly plant is approved for the distribution of the manufacturer's parts. The assembly plant shall use only piece parts supplied by the qualified connector manufacturer. No testing other than visual examination is required of certified piece parts obtained from the qualified manufacturer, except when there is cause for rejection. All assemblies produced at the assembly plant shall be subjected to examination of product to assure that the assembly process conforms with that established at the qualified manufacturing plant. Quality control requirements, including Government inspection surveillance, shall be the same as required for the qualified connector manufacturer.

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* 4.5.1.2, delete and substitute

"4.5.1.2 Connectors - group qualification When submitting a group of connectors for qualification, samples from the applicable specification sheet, having the largest number of contacts, shall qualify. Connectors listed on the other specification sheets having lesser contacts that are of the same design, construction, and materials. Completely assembled connectors (plugs and receptacles), with the maximum number of contacts and accessories to obtain an assembly with the maximum possible weight shall be subjected to the inspections specified in table IV. For connectors of the same family but with a smaller number of contacts, two plugs and receptacles for each connector with a smaller number of contacts shall be subjected to the inspections specified in table IV, group 1. These samples shall be alternately equipped with available accessories (shields, clamps, jackscrews, etc.) so that each available feature is tested.

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* TABLE IV, delete and substitute

* TABLE IV. Qualification inspection - Connectors.

Inspection	Requirement paragraph	Test method paragraph	Groups 1/		Conditions
			1	2	
Visual and mechanical inspection	3 1, 3 3, 3 4, through 3.4.5, 3.5, 3.20, and 3 2	4.7.1	X	X	All connectors
Insulation resistance	3 6	4.7.2	X	-----	Unmated
Temperature cycling	3 7	4 7.3	X	-----	Mated
Dielectric withstanding voltage	3 8	4 7 4	X	-----	Unmated
Contact retention	3 9	4 7.5	X	-----	Unmated
Vibration	3.10	4 7.6	X	-----	Unmated
Mechanical shock	3.11	4.7 7	-----	X	Mated
Mating and unmating forces	3 12	4 7 8	-----	X	Mated or unmated
Humidity	3 13	4 7 9	X	-----	Unmated
Durability	3.14	4 7.10	X	-----	Mated or unmated
S pray	3 15	4 7 11	X	-----	Mated
Contact resistance	3 16	4 7.12	X	-----	Mated
Resistance to soldering heat 2/	3 22	4.7.16	-----	X	Unmated

/ For group qualification, three samples of the largest size and one sample of each smaller size shall be subject to group 1 and group 2 tests.

/ For solder type terminations only."

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After 4.7.15, add new paragraph 4.7.16 as follows.

"4.7.16 Resistance to soldering heat (see 3.22). All connectors with solder terminations shall be tested in accordance with method 210 of MIL-STD-202, condition C.

- a. The applicable wire size properly prepared shall be inserted into the contact termination. A minimum of seven contacts shall be tested.
- b. An appropriately prepared resistance soldering iron with an appropriate tip shall be applied to the lower portion of the terminal configuration where the wire enters the termination
- c. The solder shall be applied in the normal manner.
- d. The resistance soldering iron shall be applied to the system. The wattage shall be adjusted as to allow a proper solder fillet to be formed, or for a 4 second minimum time limit, whichever is more.
- e. After application, the soldering iron shall be removed and a visual and mechanical inspection performed
- f. Visual inspection shall be a 1X magnification. The connector shall show no evidence of distortion or damage to any area of the connector housing. The contact shall meet the contact retention requirements (4.7.5.) The contact shall not interface with normal floating conditions as applicable and shall meet applicable location dimensions

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* 4 7.17, Resistance to solvents Delete in its entirety

The margins of this amendment are marked with an asterisk to indicate where changes (additions, modifications, corrections, deletions) from the previous amendment 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 amendment.

CONCLUDING MATERIAL

Custodians:

Army - CR
Navy - EC
Air Force - 85

Review activities

Army - AR, AT, MI
Navy - AS, OS, SH
Air Force - 11, 99
DLA - ES

Preparing activity:

Navy - EC

Agent

DLA - ES

(Project 5935-3949)