

INCH-POUND

A-A-50505A
10 July 2015
SUPERSEDING
A-A-50505
8 November 1991

COMMERCIAL ITEM DESCRIPTION

CONNECTOR ASSEMBLY, ELECTRICAL, IN-LINE

The General Services Administration has authorized the use of this commercial item description, for all federal agencies.

1. **SCOPE.** This CID covers an electrical three phase, three pole, polarized, 600 volt, in-line connector for surface or submarine shore to ship power use. Both male and female assemblies are to be capable of attaching to existing Navy 3/C THOF-500 MCM cable.

2. SALIENT CHARACTERISTICS

2.1. **Requirements.** The connectors shall be rated for a three pole, three phase ungrounded 600 volt, Delta electrical distribution system. The connectors shall be rated for an alternating current (ac) load of 500 amperes, 60 Hertz, and shall be capable of attachment to a 3/C THOF-500 MCM Navy cable. The connectors shall be designed for an in-line, quick lock slide sleeve, type of connector. The connectors shall, as a minimum, consist of mating male and female plugs, protective caps with chains, grommets, clamps, couplings, set screws, sleeves, raceways and other hardware parts as needed to effect a completed connection. The connectors shall be of a design that allows field assembly, and shall be manufactured to be water tight, when assembled with mating receptacle or protective cover cap.

2.2. **Material.** The connectors shall be constructed of molded neoprene and shall have rubber coated manganese bronze shells. The current carrying contact material shall be copper conforming to ASTM B301/B301M, alloy no. C14500 or C18700. Current carrying parts shall be silver plated, in accordance with Grade A or Grade D and Class S of ASTM B700.

2.3. **Contact resistance test.** Mated units shall be tested to comply with MIL-STD-202-307. The connectors shall show no contact resistance above the limits shown in table I. The following details shall apply:

- a. Test current: 300 amperes (A) through each bus lug.
- b. Number of measurements: Three (minimum) to determine average millivolt drop.

TABLE I. Contact resistance.

Test current per phase (ampere)	A	B	C
	Contact millivolt drop (max)	Millivolt drop after salt spray and durability (max)	Contact and cable crimp millivolt drop (max)
300	8	11	11

Comments, suggestions, or questions on this document should be addressed to: DLA Land & Maritime, Attn: VAI, P.O. Box 3990, Columbus, Ohio, 43218-3990 or emailed to RFconnectors@dla.mil. Since contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at <https://assist.dla.mil/>.

FSC 5935



2.4. Dielectric withstanding voltage test. Mated connectors shall be tested per MIL-STD-202-301 for 1 minute. The following details shall apply:

- a. Nature of potential: alternating current (ac).
- b. Magnitude of voltage: 2500 volts (V) root mean square (rms).
- c. Points of application: The potential shall be applied between each phase and metal part and between each phase and all adjacent phases.

2.5. Pull-out strength test. Individual connectors, attached to the 3/C THOF-500 MCM Navy cable, shall have sufficient force applied to pull the cable out of the connector. The force required to pull out shall not be less than 1500 pounds.

2.6. Engaging and disengaging forces test. Engaging and disengaging forces shall not exceed 50 pounds.

2.7. Metric products. Products manufactured to metric dimensions will be considered on an equal basis with those manufactured using inch-pound units, provided they fall within specified tolerances using conversion tables contained in the latest revision of FED-STD-376, and all other requirements of this CID are met. If a product is manufactured to metric dimensions and those dimensions exceed the tolerances specified in the inch/pound units, a request should be made to the contracting officer to determine if the product is acceptable. The contracting officer has the option of accepting or rejecting the product.

3. REGULATORY REQUIREMENTS. The offeror/contractor is encouraged to use recovered materials to the maximum extent practicable, in accordance with paragraph 23.403 of the Federal Acquisition Regulation (FAR).

4. PRODUCT CONFORMANCE PROVISIONS

4.1. Responsibility for tests. Unless otherwise specified in the contract, the contractor is responsible for the performance of all test requirements as specified herein. Unless disapproved by the Government, except as otherwise specified in the contract, the contractor may use his own or any other facilities suitable for the performance of the test requirements specified herein.

4.2. Quality conformance tests. The quality conformance tests shall be performed on sample connectors selected in accordance with the inspection lot and sampling requirements. This inspection shall include examination and operational tests as specified herein.

4.3. Inspection lot. All units offered to the Government at one time shall be considered a lot for purposes of inspection. A sample unit shall be one complete connector (male and female).

4.4. Examination. Each sample selected in accordance with the inspection lot and sampling requirements shall be examined for compliance with the salient characteristics requirements specified herein. This element of inspection shall encompass all visual examinations and dimensional measurements. Noncompliance with any specified requirements or presence of one or more defects preventing or lessening maximum efficiency shall constitute cause for rejection.

4.5. Contractor certification. The contractor shall certify, and maintain substantiating evidence, that the product offered meets the salient characteristics of this CID and that the product conforms to the producer's own drawings, specifications, standards, and quality assurance practices. The government reserves the right to require proof of such conformance for under the provisions of the contract.

5. PACKAGING. Unless otherwise specified in the contract or order, the preservation, packing, and marking shall be in accordance with ASTM D3951.

6. NOTES

6.1. Identification marking. The connectors shall be clearly and permanently marked for identification with the following information as a minimum:

- a. Manufacturer's identification.
- b. Contract number.
- c. Serial number (alpha-numeric sequence at option of contractor).
- d. Field assembly instructions.
- e. Phase rotation identification (A, B, C).

Marking shall be on identification/information plates or directly on the item at the option of the manufacturer.

6.2. Source of documents.

6.2.1. Government documents.

FEDERAL STANDARD

FED-STD-376 - Preferred Metric Units for General Use by the Federal Government

DEPARTMENT OF DEFENSE SPECIFICATIONS

MIL-STD-202-301 - Method 301, Dielectric Withstanding Voltage
MIL-STD-202-307 - Method 307, Contact Resistance

(Copies of these documents are available online at <http://quicksearch.dla.mil>.)

6.2.2. Non-Government publications.

ASTM INTERNATIONAL

ASTM D3951 - Standard Practice for Commercial Packaging
ASTM B301/B301M - Standard Specification for Free-Cutting Copper Rod, Bar, Wire, and Shapes
ASTM B700 - Standard Specification for Electrodeposited Coatings of Silver for Engineering Use

(Copies of these documents are available online at <http://www.astm.org>.)

6.3. Possible sources of supply:

- a. Crouse-Hinds Molded Products, Cooper Industries (CAGE: 90129) – Joy In-Line Shore/Power Connectors, Assembly Numbers X8998-1 (NSN: 5935-01-333-2868) and X8998-2 (NSN: 5935-01-333-2427).

Competition is not limited to this product, but may be a better or equal product of another manufacturer.

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

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CONCLUDING MATERIAL

Custodians:

Navy – YD
Air Force - 99

Preparing activity:

DLA – CC

(Project 5935-2015-147)

Review Activity:

Air Force - 85

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