

INCH-POUND

A-A-59213A
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SUPERSEDING
A-A-59213
18 May 1998

COMMERCIAL ITEM DESCRIPTION

SPLICE CONNECTORS

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

1. **SCOPE.** This commercial item description (CID) covers splice connectors, referred to herein as connectors, for providing pressure contact between current carrying conductors of an electrical wiring system. Connectors are for use as electrical connectors in dry locations and are not for grounding purposes in wet or damp locations.

2. **CLASSIFICATION.** The splice connectors covered by this CID shall be of the following types, classes, kinds, and styles:

2.1 **Type.** The connector shall be one of the following types (see [7.3\(b\)](#)):

Type I - Twist-on
Type II - Crimp or compression
Type III - Threaded or bearing

2.2 **Class.** The connector shall be one of the following classes (see [7.3\(c\)](#)):

Class 1 - Insulated
Class 2 - Uninsulated

2.3 **Kind.** The connector shall be one of the following kinds (see [7.3\(d\)](#)):

Kind AL - Aluminum to aluminum
Kind CU - Copper to copper
Kind AL-CU - Aluminum to copper

Beneficial comments, recommendations, additions, deletions, clarifications, etc. and any data that may improve this document should be sent to: STDZNMGT@dla.mil or Defense Supply Center Richmond (DSCR), ATTN: DSCR-VEB, 8000 Jefferson Davis Highway, Richmond, VA 23297-5616.

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2.4 Style. The connector shall be one of the following styles (see 7.3(e)):

- Style A - Butt connection
- Style C - Combined "T" and straight connection
- Style D - "T" connection
- Style E - Parallel connection
- Style F - Tap connection
- Style G - Pigtail connection

3. SALIENT CHARACTERISTICS

3.1 Description. The connectors shall provide contact between current carrying parts of an electrical wiring system. Unless otherwise specified herein, the connectors shall conform to standard manufacturing requirements for pressure type wire connectors.

3.1.1 Types. The types of connectors shall be as follows:

3.1.1.1 Type I. Type I connectors shall be class 1, kind CU, style G twist-on type connectors in which the pressure to provide contact between the current carrying conductors is applied by twist-on spring or equivalent device. Typical conductor capacities of type I connectors are provided in [table I](#).

TABLE I. Size of type I connectors (reference).

Typical conductor capacities - AWG #		
Common sizes	Minimum	Maximum
	2 - #18	2 - #12, 3 - #14
	2 - #14	4 - #12, 2 - #10
	2 - #12	4 - #10, 2 - #8
	2 - #10	3 - #8, 2 - #6

3.1.1.2 Type II. Type II connectors shall be crimp or compression type connectors in which the pressure to provide contact between the current carrying conductors is applied by crimp(s), or other means of deformation of the connector and conductors' junction interface and shall be class 1 or class 2. Type II, style E connectors shall be of the compression type only.

3.1.1.3 Type III. Type III connectors shall be slip-on type connectors in which the pressure to provide contact between the current carrying conductors is applied by a set screw, split bolt, or insulation piercing device and shall be class 1 or class 2.

3.1.2 Classes. The classes of connectors shall be as follows:

3.1.2.1 Class 1. Class 1 connectors shall be insulated connectors which, when applied to conductors, shall provide a fully insulated joint. An insulated connector shall be rated for either 300 volts or 600 volts (1,000 volts in signs and fixtures), as specified (see 7.3(f)).

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3.1.2.2 Class 2. Class 2 connectors shall be uninsulated connectors.

3.1.3 Kinds. Connector kinds shall be suitable for joining the conductor material combinations as follows:

3.1.3.1 Kind AL. Kind AL connectors shall be suitable for use in connecting aluminum to aluminum conductors or copper clad aluminum to copper or copper clad aluminum conductors.

3.1.3.2 Kind CU. Kind CU connectors shall be suitable for use in connecting copper to copper conductors.

3.1.3.3 Kind AL-CU. Kind AL-CU connectors shall be suitable for use in connecting aluminum to copper or copper clad aluminum conductors or copper clad aluminum to copper or copper clad aluminum conductors for dry locations only.

3.1.3.4 Oxide inhibitor. When specified (see 7.3(g)), an oxide inhibitor shall be provided with kind AL and kind AL-CU connectors to inhibit corrosion of aluminum conductor surfaces.

3.1.4 Styles. Styles shall be as described herein.

3.1.4.1 Style A. Style A connectors shall be suitable for use in providing a butt connection between conductors.

3.1.4.2 Style C. Style C connectors shall be suitable for use in providing a combined "T" connection and a straight (butt) connection between conductors.

3.1.4.3 Style D. Style D connectors shall be suitable for use in providing a "T" connection to a straight through conductor.

3.1.4.4 Style E. Style E connectors shall be suitable for making a connection between parallel conductors.

3.1.4.5 Style F. Style F connectors shall be suitable for use in providing a parallel or Y-type connection to a straight through conductor.

3.1.4.6 Style G. Style G connectors shall be suitable for use in providing a pigtailed type connection between ends of conductors.

3.1.5 Aluminum conductor connections. Aluminum conductor connections shall have the following conductor size and use limitations:

Style A, C, D, E, F - AWG #12 and larger aluminum

Style G

Types II and III - AWG #12 through AWG #6

Type I - Not applicable

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3.1.6 Copper conductor connections. Copper conductor connections shall have conductor size and use limitations in accordance with UL 486A-486B, "Wire Connectors", and UL 486C, "Splicing Wire Connectors", unless otherwise specified herein.

3.2 Standard commercial product. The connectors shall, as a minimum, be in accordance with the requirements of this CID and shall be the manufacturer's standard commercial product. Additional or better features which are not specifically prohibited by this CID but which are a part of the manufacturer's standard commercial product, shall be included in the connectors being furnished. A standard commercial product is a product which has been sold or is being currently offered for sale on the commercial market through advertisements or manufacturer's catalogs, or brochures, and represents the latest production model.

3.3 Design and construction. The design and construction of the connectors shall be such as to prevent conditions which may be hazardous to personnel or deleterious to electrical circuitry and equipment.

3.3.1 Style G twist-on design. Style G twist-on connectors shall contain a tapered coil insert secured inside a closed end insulator. The coil shall be so designed that increasing pressure is exerted upon joining conductor surfaces as the insulator cap is tightened. The coil diameter and cap shall be designed so that the coil is free to expand or contract during or after wire insertion and during operation at rated loads. The coil shall be of a hard drawn, square cross section, spring steel wire with a corrosion-resistant finish. The insulator cap shall be of a flame-retardant material with a temperature rating of not less than 221 °F (105 °C). Type I connectors shall be restricted to use with copper (kind CU).

3.3.2 Connector size. Connector sizes shall be of adequate size and kind to accommodate the junction wire kinds and sizes specified (see 7.3(h) and [table I](#)). Solid wire sizes shall be limited to AWG #8 and smaller. Minimum conductor size shall be AWG #22.

4. REGULATORY REQUIREMENTS

4.1 Recovered materials. 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). Unless otherwise specified herein, all equipment, material, and articles incorporated in the work covered by this CID are to be new and fabricated using materials produced from recovered materials to the maximum extent possible without jeopardizing the intended use. The term "recovered materials" means materials which have been collected or recovered from solid waste and reprocessed to become a source of raw materials, as opposed to virgin raw materials. Unless otherwise specified, none of the above shall be interpreted to mean that the use of used or rebuilt products are allowed under this CID.

4.2 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 version of IEEE/ASTM SI 10, "American National Standard for Use of the International Systems of Units (SI): The Modern Metric System", and all other requirements of this CID including form, fit and function are met.

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If a product is manufactured to metric dimensions and these 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.

5. PRODUCT CONFORMANCE PROVISIONS

5.1 Product conformance. The products provided shall meet the salient characteristics of this CID, conform to the producer's own drawings, specifications, standards, and quality assurance practices, and be the same product offered for sale in the commercial marketplace. The government reserves the right to require proof of such conformance.

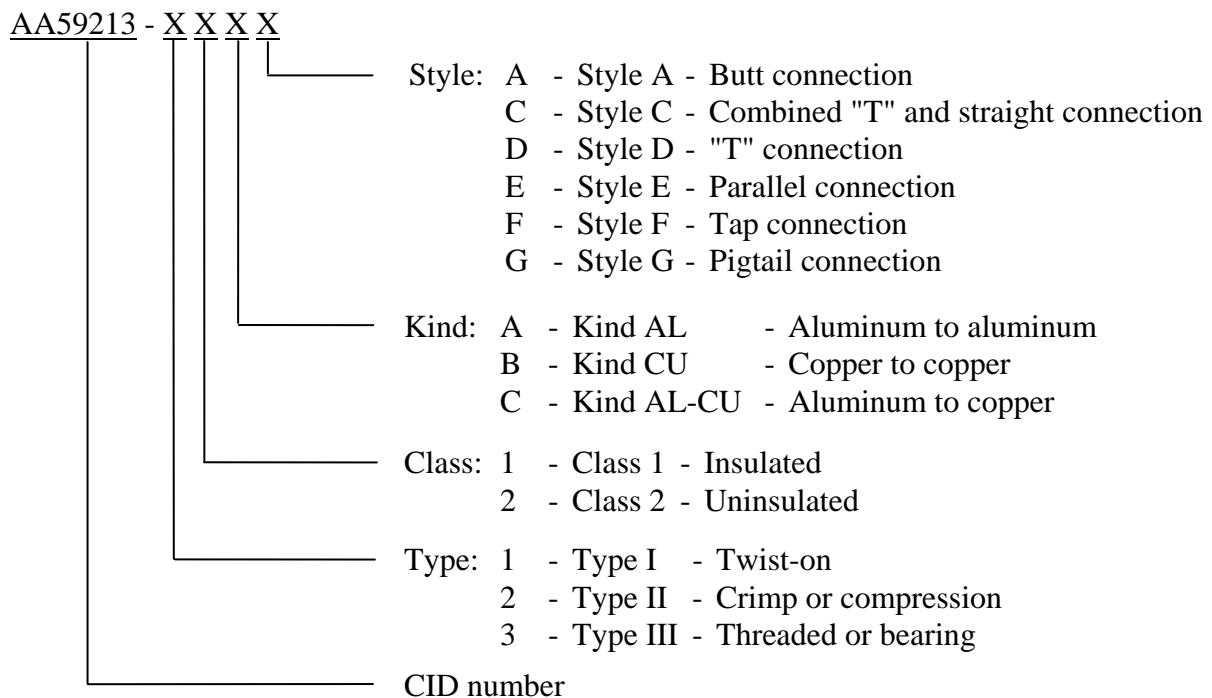
5.2 Market acceptability. The product offered must have been previously sold either to the government or on the commercial market.

6. PACKAGING

6.1 Preservation, packing, and marking. Preservation, packing, and marking shall be as specified in the acquisition order (see 7.3(i)).

7. NOTES

7.1 Part or identification number (PIN). The following PIN procedure is for government purposes and does not constitute a requirement for the contractor.



Example of reference part number: AA59213 - 11BG

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7.2 Sources of documents.

7.2.1 FAR. The FAR may be obtained from the Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954. Electronic copies of FAR documents may be obtained from <http://www.arnet.gov/far/>.

7.2.2 ASTM standards. Copies of ASTM standards may be obtained from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959. Electronic copies of ASTM standards may be obtained from <http://www.astm.org/>.

7.2.3 IEEE standards. Copies of IEEE standards may be obtained from IEEE, 445 Hoes Lane, Piscataway, NJ 08854-1331. Electronic copies of IEEE standards may be obtained from <http://www.ieee.org/>.

7.2.4 UL standards. Copies of UL standards may be obtained from Underwriter Laboratories Inc., 333 Pfingsten Road, Northbrook, IL 60062-2096. Electronic copies of UL standards may be obtained from <http://www.ul.com/>.

7.3 Ordering data. The acquisition order should specify the following information:

- a. CID document number, revision, and CID PIN.
- b. Type of connector (see [2.1](#)).
- c. Class of connector (see [2.2](#)).
- d. Kind of connector (see [2.3](#)).
- e. Style of connector (see [2.4](#)).
- f. Voltage rating required (see [3.1.2.1](#)).
- g. When an oxide inhibitor is provided (see [3.1.3.4](#)).
- h. Conductor wire kinds and sizes and combination (see [3.3.2](#)).
- i. Preservation, packing, and marking (see [6.1](#)).

7.4 Metric units. The values stated in either inch-pound units or SI units are to be regarded separately as standard. Within the text, the SI units are shown in brackets. The values stated in each system are not exact equivalents; therefore, each system should be used independently of the other. Combining values from the two systems may result in non-conformance with the standard.

7.5 Subject term (key word) listing.

current
electrical
pressure contact
wiring

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MILITARY INTERESTS:

Custodians:

Army - CR
Navy - YD
Air Force - 85
DLA - GS

Review Activities:

Navy - AS
Air Force - 03, 99

CIVIL AGENCY
COORDINATING ACTIVITY:

GSA - FAS

Preparing Activity:

DLA - GS4

(Project 5940-2009-001)

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 database at <http://assist.daps.dla.mil/>.