

## 1 Scope

This specification establishes the materials, design, marking, installation, inspection, and performance requirements of ILSCO's mechanical connector system. Product families included within the mechanical wiring system are solderless lugs, splices, taps, clamps, lay-in connectors, split bolts, and neutral bars made from aluminum, copper, zinc, or bronze.

## 2 Materials

- 2.1 All mechanical connections shall use ILSCO's mechanical wiring connectors.
- 2.2 Connectors manufactured from aluminum shall be in compliance with ASTM B108 or B221.
- 2.3 Connectors manufactured from copper shall be in compliance with ASTM B124, B152, or B301.
- 2.4 Connectors manufactured from bronze shall be in compliance with ASTM B62, B98, or B505.
- 2.5 Connectors manufactured from zinc shall be in compliance with ASTM B86.
- 2.6 Aluminum connectors shall be plated with electro-tin plating in compliance with ASTM B545 and B571.
- 2.7 Copper and bronze connector designs requiring protective plating shall be plated with electro-tin plating in compliance with ASTM B-545 and B571 or bright dipped.
- 2.8 Wire binding screws shall be made with aluminum, steel, silicon bronze or brass.
- 2.9 Connectors shall be RoHS compliant.

## 3 Design

- 3.1 Connectors shall be capable of terminating conductors sized from 14 AWG to 1000 kcmil.
- 3.2 Aluminum connectors shall be dual rated for both copper and aluminum conductors at a minimum of 75-deg C.

- 3.3 Copper and bronze connectors shall be rated for copper conductors at 90-deg C.
- 3.4 Connectors shall be range taking; accepting various conductor sizes.
- 3.5 Connectors shall suitable for use in circuits rated up to 35kV when installed using proper high voltage spacing and insulation techniques.
- 3.6 Wire-way holes shall be sized for easy insertion of all class B/C conductors designed for the connector.
- 3.7 All wire binding screws shall be designed to withstand 110% of the recommended installation torque.

## 4 Marking

- 4.1 All connectors shall be clearly marked with the following information:
  - 4.1.1 ILSCO or ILSCO's inspection symbol, ⓘ
  - 4.1.2 Catalog number
  - 4.1.3 Conductor sizes accommodated
  - 4.1.4 Conductor types approved for use
  - 4.1.5 Maximum operating temperature
  - 4.1.6 Certification marking:
    - *UL Listing mark, and*
    - *CSA Certification mark*

## 5 Installation

- 5.1 Installation of connectors shall be made in accordance with information sheets provided with the connectors and available at [www.ilsco.com](http://www.ilsco.com).
- 5.2 Information sheets shall contain the required UL and CSA approved torque values.
- 5.3 Connectors shall be capable of installation during all types of weather events, humidity levels, and field conditions using standard industry tools and without special safety precautions or procedures.

## **6 Inspection**

- 6.1 Connector marking information shall be legible for inspection.
- 6.2 All connectors with blind wire-way holes shall indicate the strip length of the conductor insulation that shall be removed prior to installation.
- 6.3 All connectors, except those in 6.2, shall allow for post-installation verification of acceptable conductor insertion.

## **7 Performance**

- 7.1 Connectors used for power applications shall be Listed by Underwriters Laboratories (UL) per UL 486A-486B Standard for Wire Connectors.
- 7.2 Connectors used for power applications shall be Certified by either Canadian Standards Association (CSA) or UL per CSA C22.2 No. 65.
- 7.3 Connectors used for grounding applications shall be Listed by Underwriters Laboratories (UL) per ANSI/UL 467 Standard for Grounding and Bonding Equipment.
- 7.4 Connectors used for grounding applications shall be Certified by Canadian Standards Association (CSA) per CSA C22.2 No. 41 Bonding and Grounding of Electrical Equipment.
- 7.5 Connectors made from aluminum shall be UL Listed, per 7.1 and 7.3, and CSA Certified, per 7.2 and 7.4, with solid copper and aluminum conductors and stranded class B/C copper and aluminum conductors.
- 7.6 Connectors made from copper or bronze shall be UL Listed, per 7.1 and 7.3, and CSA Certified, per 7.2 and 7.4, with solid copper conductors and stranded class B/C copper conductors.