

Data Center Solutions

Power & Grounding Connections



Connections Matter.

The importance of reliable and safe electrical connections in data centers.

Reliable. Redundant. Resilient.

Information and critical data elements are crucial to the successful operation of any organization today. At the core is the organizations mission-critical systems which require its power and network infrastructure layers to be reliable, redundant, and resilient (the 3-R's) and protect their data centers against potential power outages. IlSCO continues to develop products that deliver unsurpassed reliability, broadest versatility, and evolving solutions to meet the constantly changing requirements of the data center industry.

Make ILSCO your choice for reliable grounding methods, versatile application products, and dependable installation tooling when working with incoming power lines, switchgear, temporary lighting, uninterruptible power supply (UPS) systems, premises grounding and power terminations.

Because for ILSCO and Data Centers, Connections Matter!



Product-Application Matrix

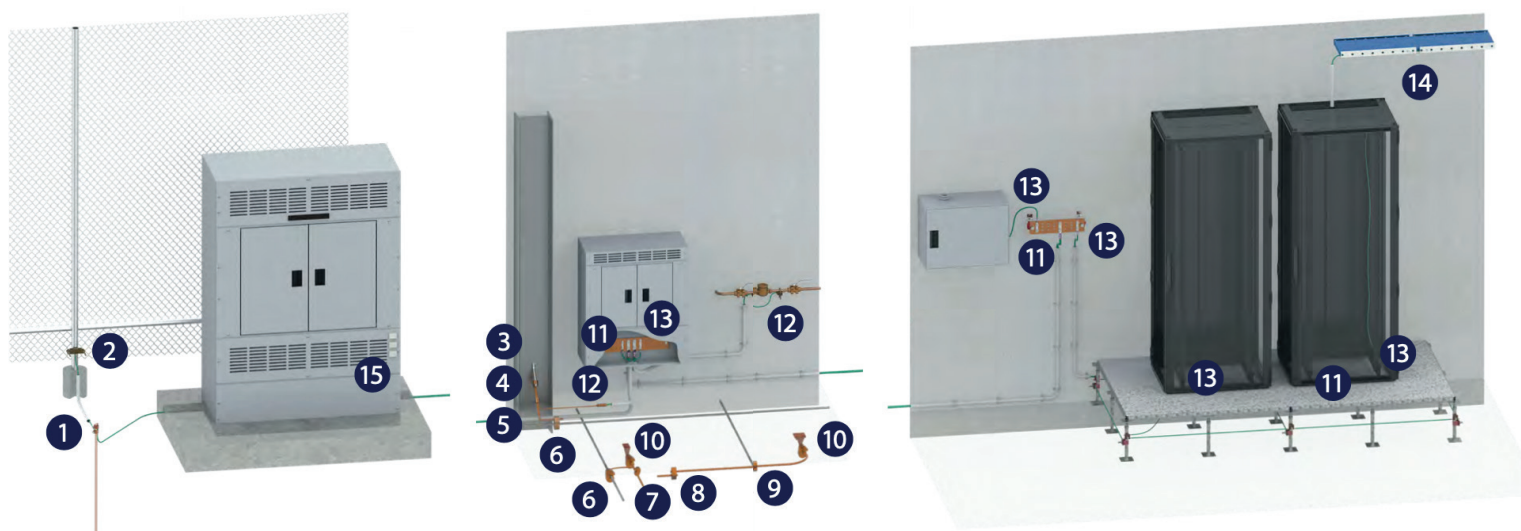
See where the ILSCO line of electrical connectors can be used in data centers.

**Transformer
Service Entrance**

**Power
Distribution**

**Backup
Power**

**Distributor Room
(Data Center)**



ILSCO GROUNDING PRODUCT FAMILIES

ILSCO Product Category	Service Entrance	Power Distribution	Backup Power	Distributor Room (Data Center)
Compression Lugs & Splices	●	●	●	●
Terminals				●
Compression Grounding	●	●	●	
Mechanical Grounding	●	●	●	●
Copper Bus Bar	●	●		●
Flexible Copper Braid	●	●	●	●
DE-OX Oxide Inhibitor	●	●	●	●
Installation Tools	●	●	●	●
Wire Management: Cable Ties, Heat Shrink		●		●
Temporary Jobsite Lighting	●	●	●	●

Power Grounding Solutions



ILSCO SureCrimp™ Compression Connectors

Reliability, inspectability and consistency. When you use ILSCO compression connectors you can be sure that ILSCO has your back. ILSCO's copper and aluminum SureCrimp connectors are Listed with TaskMaster Tools, and over 80 competitive compression tools, across all major conductor classes. Listed for current carrying and grounding & bonding applications, ILSCO's system design guarantees SureCrimp™ with an industry-first ten year warranty.



ILSCO SureCrimp™ Copper Compression Lugs & Splices

ILSCO offers a wide selection of the copper compression lugs and splices with over 9,000 configurations. ILSCO copper compression is tested with code conductors and fine stranded conductor which helps reduce the need for duplicate inventory.



ILSCO SureCrimp™ Aluminum Compression Lugs & Splices

ILSCO's aluminum compression connectors are dual rated for use with aluminum and copper code conductors. The aluminum compression connectors are tin plated and pre-filled with DE-OX oxide inhibitor which seals out the environment, reducing the risk of galvanic corrosion and giving you a tough long lasting connection.



PermaGround™ Grounding and Bonding

ILSCO's PermaGround® system serves to protect by offering a safe and reliable connection. Our versatile compression connectors meet all grounding and bonding requirements of national and local electrical codes. Design versatility enables the installer freedom to customize grids for unique site requirements. PermaGround delivers safe installation and labor savings compared to exothermic.

Power Grounding Solutions

Mechanical Grounding & Bonding

Mechanical grounding solutions from ILSCO offer safe and reliable connections which are designed to meet both national and local building codes. Whether the installation is above grade, or below grade our connectors have long term effectiveness against weather and soil corrosion.



Grounding Bus Bar

Custom designed and manufactured to your specifications and requirements. IlSCO mechanical grounding connectors are designed for long term durability and fast installation. High quality metals ensure a secure connection in extreme conditions. The innovative T-Slot bus bar is designed to ensure maximum performance while remaining compact for tight installations.



Flex Braid

ILSCO manufactures high quality flexible braid electrical connectors for power and grounding applications. Flex braid connectors are ideal for grounding electrical cabinet doors and in situations where vibration exists. This includes generators, turbines, motors, substations, transformers, and datacenters. ILSCO flex braids consist of high quality tin-plated copper braid with seamless copper tube ferrule stamped on the ends. The ferrules have rounded smooth edges to prevent chaffing of braid strands.



Grounding Accessories

Establishing secure bonds for electrical systems often requires more than an outstanding lug or splice. By using additional products like ILSCO DE-OX contractors can eliminate corrosion risks. Additionally, special types of environments may require unique types of connections. ILSCO's wide product assortment means that you can make connections which are designed to work as part of a system - achieving high quality bonds.



Power Tools, Temp-Lighting, and Wire Management Accessories



Temporary Job Site Lighting

Bergen Industries is a recognized leader in the design and manufacturing of construction and maintenance lighting and electrical products for over 40 years. We have standard and custom lighting solutions to fit many different industry needs. Our products are made strong and perform efficiently to handle the demands of commercial use.



Wire Management

When wires become entangled they are safety hazards, for both the equipment and those working on the electrical system. ILSCO and Gardner Bender offer a variety of products for protection and neatness. As the needs of professional electricians change in managing wire and cable, ILSCO and Gardner Bender continues to deliver innovative solutions.



TaskMaster™ Cutting and Crimping Powered & Hydraulic Tools

HARD WORKING

Ultra-durable ILSCO TaskMaster cutters, crimpers and pumps are precisely engineered – and rigorously tested – to endure grueling use and harsh environments while delivering the power, speed, efficiency and ergonomics that make any job faster and easier. Rest assured, these rugged TaskMaster tools will provide outstanding performance with consistent results, so you can get every job done, right on time, for years to come.

LONGER LASTING

From solid body designs and robust components to innovative features that protect from wear and extend life, TaskMaster tools have what it takes to hang tough, day after day – even on the long, hard jobs.

MINIMAL MAINTENANCE

To maximize work time and your company's bottom line, TaskMaster tools are built to minimize maintenance time and costs. The durable components require fewer replacements and the life cycle between reconditionings is much longer. When maintenance is due, no-hassle servicing features make it fast and easy.

Testing & Certifications

UL 486 and UL 467 Rated, plus additional testing completed by Telcordia

Application and Description:

Network Equipment - Building Systems (NEBS) - the most common set of safety, spatial and environmental design guidelines applied to telecommunications equipment in the United States.



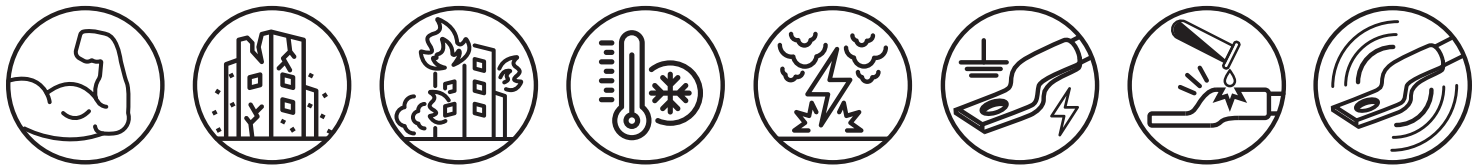
Testing Agency:

The foremost testing agency and facility is Telcordia Technologies, the agency that maintains the best guidelines. Telcordia tested and certified ILSCO connectors and splices to Level III the most stringent guidelines in their unique, highly accurate test facility.



Test Scope:

The subject areas included physical strength, earthquake and fire resistance, thermal protection, lighting surges, grounding, corrosion resistance, and vibration. Testing was performed with both code and flex type conductors. Approved crimping tools include ILSCO as well as competitor tools.



Standards:

TR-NWT-001075	Generic Requirements for Outside Plant Bonding and Grounding System Hardware
GR-1089-CORE	Electromagnetic Compatibility and Electrical Safety - Generic Criteria for Network Telecommunications Equipment
GR-63-CORE	Network Equipment-Building Systems (NEBS) Requirements: Physical Protection

Test Results:

Many, but not all, of the test criteria and results are listed below. A complete test report with applicable photos is available upon written request.



TR-1075 General Requirements

- 2.1.1 Listing** *Criteria Met*
- 2.1.2 Packaging** *Criteria Met*
- 2.1.3 Sample Preparation** *Criteria Met*
- 2.2.1 Plating** *Criteria Met*
- 2.2.2 Visual Inspection:** R4-2 (13) When examined under magnification of 10X, the bonding and grounding hardware systems shall be free of flash, cracks, plating flaws, in functional areas (pinholes and blisters) and foreign materials.
- Results:** No flaws were noted to the surface of the connectors.
- 2.3.1 Tensile:** R4-3 (14) The bonding and grounding systems hardware secured to their conductive element shall remain firmly attached and fully engaged, with no slippage, under the stress of a sustained load with 100 lbs for one minute minimum in an axially direction away from the conductive element.
- Results:** Samples were tested in an Instron so as to apply the weight in a slowly increasing manner until 100 lbs was reached, at which time it was held for a period of one minute. All samples were able to hold the 100 lbs without visual slippage.

- 2.3.2 Vibration:** R4-4 (15) Harmonic motion having an amplitude of 0.03 inches minimum, 0.06 inches maximum total excursion, the frequency being varied uniformly between the limits of 10 and 55 Hz every minute for a period of two hours in each of the three mutually perpendicular directions. Following the vibration test, the connection resistance was tested.
- Results:** After the vibration tests were completed, the connection resistances were measured and found to meet the criteria:
- 2.4.1 Temperature and Humidity** *Criteria Met*
- 2.4.2 Hydrogen Sulfide Exposure** *Criteria Met*
- 2.4.3 Salt Fog** *Criteria Met*
- 2.4.4 Stress Corrosion Cracking** *Criteria Met*
- 2.4.5 Pullout** *Criteria Met*
- 2.5.1 AC Fault** *Criteria Met*
- 2.5.2 Resistance** *Criteria Met*
- 2.5.3 Lightning Surge:** R4-24 (35) The connectors shall be attached to the terminals of an impulse generator and the 20Ka, 8/20 microsecond current shall be applied.
- R4-25 (36) There shall be no arcing.
- R4-26 (37) After current test, the connectors shall pass pullout
- R4-27 (38) After current test, requirements for resistance shall be met
- Results:** Pullout was done on the connectors following the Lightning Surge test, and no problem was encountered. Resistance measurements were also recorded and all samples were within milliohms tolerance.

- 3.1.1 Bonding & Grounding Conductors** *Criteria Met*
- 3.1.2 Connections** *Criteria Met*
- 3.1.3 Connectors** *Criteria Met*
- 4.2.1 Packaged Equipment Shock Criteria** *Criteria Met*
- 4.2.1 Unpackaged Equipment Shock Criteria** *Criteria Met*
- 4.3.1 Earthquake Physical Performance:** R4-68 (110) Connectors shall be constructed to sustain the waveform testing of Section 5.4.1 of GR-63 "Earthquake Test Methods", without permanent structural or mechanical damage.
- Results:** Connector samples were attached to the shaker table using listed nuts and bolts sized for the hole of the connector. The samples were subjected to a zone 4 earthquake motion in all three axes. The samples were able to withstand the motion without structural or mechanical damage.
- 4.3.2 Earthquake Functional Performance** *Criteria Met*
- 3.1.2 Office Vibration Physical Performance** *Criteria Met*
- 3.1.3 Office Vibration Functional Performance** *Criteria Met*



SURECRIMP® SYSTEM GUARANTEE

The safety and reliability of a compression connection depends on the quality of the system design – the SureCrimp connector, ILSCO application die and TaskMaster tool that connects them. ILSCO's system design is guaranteed to provide a permanent, reliable, consistent and inspectable connection that is backed up by an industry-first **TEN (10) YEAR WARRANTY**. And our SureCrimp connectors have been tested and certified to UL and CSA for power, grounding and bonding applications with the TaskMaster tools.

Plus, our die taking TaskMaster crimpers can crimp both our circular AND non-circular connectors, which competitor tools can't do.
Performance. Versatility. Simplicity. SureCrimp Guaranteed.

