



Document Title:
Ball Clevis Connector

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Department
Distribution

Version:
02

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Shared document with: Transmission & Distribution

**Select the Departments impacted by the document*

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N/A

Related/Referenced Documents

N/A

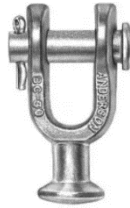
Version History

Version	Date	Revision Comments
1	Dec. 16, 2021	Initial Release.
2	Dec. 11, 2023	General format modifications. Document changed as shared between T&D for item 002-12241.



Item Version History

Warehouse Catalog #	Asset Suite #	Version	Date
002-12241	56588	5	12/11/2023



1. Introduction

This specification describes the minimum requirements for the ball clevis connector to be used in the distribution and transmission system in Puerto Rico. Further information will be provided by LUMA Energy at the time of order placement and will provide information on site specific conditions, quantity, and other requirements. This document includes the general electrical and mechanical characteristics of the equipment/material.

2. Special Requirements

Samples shall be furnished as requested by LUMA Energy. Vendors that have supplied this equipment/material to LUMA on previous orders will not have to furnish samples at bid opening. The equipment/material will be received at the LUMA's general warehouse (011) at Palo Seco, Puerto Rico. Shipping will include transportation and unloading at the indicated warehouse.

3. Literature

Descriptive and technical literature must be supplied by the vendor at time of bidding. This literature may include, but is not limited to details of material, drawings, documented testing, and instructions for use and installation. Failure to submit documents on time will cause bidder disqualification. Evidence of PREPA's and/or LUMA Energy's approval of the equipment/material shall be supplied by vendor if requested by LUMA Energy.

4. Markings

- 4.1. Coils shall be marked outside with LUMA Energy's purchase order and item number.
- 4.2. Packaging labels and tags shall be waterproof.

5. Compatible with

For compatible supplier/manufacturer and model see Table 1. These models are examples of the equipment/material described in this document and do not represent a preference. LUMA will evaluate equally any model not listed here during any acquisition event.

6. Packaging

All equipment/material shall be packaged and marked in such a way as to facilitate handling and protection from damage and that the receiving warehouse can readily identify it and send it, in one complete unit, to a field location without opening crates or boxes to sort items and/or parts.

7. Number Per Package (Logistics)

7.1. Twenty (20) units per box, one thousand eight hundred (1,800) per pallet, or as requested by LUMA Energy.

8. Acceptance Criteria

8.1. Test required: certified by external laboratories.

8.2. Latest applicable codes, standards, and other regulations:

- a. ANSI C29.2: Provides procedures for running tests to determine the characteristics of insulators used on electric power systems.
- b. ASTM A153: for zinc coating (hot dip galvanized) on iron and hardware, applies to hardware products such as castings, fasteners, rolled, pressed, and forged products, and miscellaneous threaded objects that will be centrifuged, spun, or otherwise handled to remove the excess zinc.

9. Description

9.1. This is used for linking the top unit of a ball & socket insulator to other associated hardware.

9.2. The material shall be as follow:

- a. Clevis connector and pin: shall be made from heat-treated forged-steel hot dip galvanized in accordance with ASTM A153.
- b. Cotter-pin: stainless steel 304 or 316.

9.3. The ball clevis connector shall have the following characteristics:

- a. Clevis opening: 15/16" (2.4 cm)
- b. Length from ball center to pin center line: 2-7/8" (7.3 cm) approximate
- c. Pin diameter: 5/8" (1.6 cm)
- d. Approximate weight: 1 lb. (0.4 kg)
- e. Minimum ultimate strength: 25,000 lbf. (111 kN)
- f. The fitting type shall comply with ANSI Class 52-3 and 52-5 suspension insulator.

10. Inspection

The acceptance of any material or equipment/material shall in no way relieve the vendor from his responsibility to meet all the requirements of this specification, and it would not prevent subsequent rejection if such equipment/material were found later to be defective.

11. Proposal Information

11.1. Submitted proposals must include:

- a. Technical information
- b. Table of Compliance completed by the bidder with reference (see Appendix 1).

12. Table 1: Warehouse and Asset Suite Identification Number

Warehouse Catalog #	Asset Suite #	Breaking Strength	Compatible Supplier/Manufacturer & Model
* 002-12241	56588	25,000 lbf. (111 kN)	Hubbell (BC30) PLP (BC30)

* Item 002-12241 is also used in the 38kV transmission system.

— End of Specification —



Appendix



Appendix 1: Table of Compliance

Line	Criteria	Description	Pass/Fail (P / F)	Comments
1	Specification	The Proponent complies with the corresponding specification document (4350.128)		
2	Industry Standards	The Proponent complies with the industry standards established in the specification document (ANSI, ASTM).		
3	Material	Clevis & Pin: HDG steel as per ASTM A153.		
		Cotter-Pin: Stainless Steel 304 or 316		
4	Dimensions	Clevis opening: 15/16"		
		Length from ball center to pin center line: 2-7/8"		
		Pin diameter: 5/8"		
5	Approximate Weight	1 lb.		
6	Minimum Ultimate Strength	25,000 lbf.		
7	Requirements	The fitting type shall comply with ANSI Class 52-3 and 52-5 suspension insulator.		












4350.128 Ball Clevis Connector (12-11-2023)


Final Audit Report


2023-12-11


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