Document Title:

Fuse Link, Buttonhead, 15 kV, Type K

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Specification	**Material Specification**	**4350.139**

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Management Approval (If apply)

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Related/Referenced Documents

N/A

Version History

Version	Date	Revision Comments
1	Mar. 09, 2022	Initial Release.
2	Jul. 06, 2022	General format revision
3	Feb. 06, 2023	Modified section 9.2. Removed item code 010-03169 and 010-03185. Added Cover Page.
4	Jul. 10, 2024	Modified Section 5, 11, and table of compliance

Item Version History

Warehouse Catalog	Item Version	Date
010-03201	8	07/10/2024
010-03227	7	07/10/2024
010-03243	7	07/10/2024
010-03268	7	07/10/2024
010-03284	7	07/10/2024
010-03300	8	07/10/2024
010-03326	7	07/10/2024

Warehouse Catalog	Item Version	Date
010-03342	7	07/10/2024
010-03383	7	07/10/2024
010-03441	8	07/10/2024
010-03466	7	07/10/2024
010-02419	7	07/10/2024
010-02450	7	07/10/2024

1. Introduction

This is a general specification that covers the minimum requirements for 15 kV, Type K fuse links with buttonhead to be used in the distribution 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. If required by LUMA, final drawings shall be submitted by the vendor before the manufacturing and shipping process for approval.

4. Compatible with

4.1. For reference models, see Table 1 in Section 12. 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.

5. Markings

5.1. Containers shall be marked outside with LUMA Energy's purchase order and item number.

5.2. Each fuse shall be marked with voltage & ampere ratings, and type as minimum.

5.3. Packaging labels and tags shall be waterproof.

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)

See table 1 for package or as requested by LUMA.

8. Acceptance Criteria

8.1. Test required: certified by external laboratories.

8.2. Product shall be manufactured in accordance with latest issue below (section 8.3). When conflicts occur between purchaser's specifications and the latest issue below, the purchaser's specifications shall prevail.

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

a. IEC 60282-2: for expulsion fuses designed for outdoors or indoors use on alternating current systems of 50 Hz and 60 Hz, and of rated voltages exceeding 1 kV.

b. IEEE C37.41-2016: for performing design tests for high-voltage (> 1kV) fuses, as well as for fuse disconnecting switches, are specified.

c. IEEE C37.42-2016: for high-voltage (> 1kV) Class A and Class B expulsion and current-limiting fuses.

8.4. If any other standard different from the ones indicated in this document are used, the supplier must provide information showing compatibility with the required ones.

9. Description

9.1. These fuse links are used to fit any standard make of open fuse cutout and for special loading situations, such as short-time overloads and cold load pick-ups.

9.2. Fuse element characteristics:

a. Shall be made of silver-alloy. Acceptable alloys are sterling silver, pure silver, and silver-tin.

b. It shall be swaged (crimped on 4 sides) on the lower terminal of the fuse element.

c. For fuse links rated up to 100 amperes, the fuse element shall be helically coiled to avoid possible damage from mechanical tension.

9.3. Shall be universal removable buttonhead fast type.

9.4. Link shall have a fiber sheath to ensure compliance with fault interrupting tests in accordance with ANSI standards-series 4 and 5.

9.5. Sheath shall be adequately affixed to buttonhead to prevent its removal during installation and to assist in low fault current interruptions.

9.6. Manufacturer shall guarantee the maximum tolerance for current in minimum melting curve shall not exceed 10 %.

10. Inspection

The acceptance of any 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/materials were found later to be defective.

11. Proposal Information

11.1. Submitted proposals must include:

a. Technical information, tests, and drawings.

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

12. Table 1: Warehouse and Asset Suite Identification Number

Item (Amp Rating)	Warehouse Catalog #	Asset Suite #	Pig Tail Length	Required Cutout Fuse-holder	Standard Package (Pallet)	S&C (Model)
8A	010-03201	55315	23” (58.4) cm	100A	10 (4,800)	265008R1
10A	010-03227	57140	23” (58.4) cm	100A	10 (4,800)	265010R1
15A	010-03243	57141	23” (58.4) cm	100A	10 (4,800)	265015R1
20A	010-03268	57142	23” (58.4) cm	100A	10 (4,800)	265020R1
25A	010-03284	57143	23” (58.4) cm	100A	10 (4,800)	265025R1
30A	010-03300	57144	23” (58.4) cm	100A	10 (4,800)	265030R1
40A	010-03326	57145	23” (58.4) cm	100A	10 (4,800)	265040R1
50A	010-03342	55873	23” (58.4) cm	100A	10 (4,800)	265050R1
65A	010-03383	55874	23” (58.4) cm	100A	10 (4,800)	265065R1
80A	010-03441	55875	23” (58.4) cm	100A	10 (4,800)	265080R1
100A	010-03466	55876	23” (58.4) cm	100A	10 (4,800)	265100R1
140A	010-02419	55305	23” (58.4) cm	200A	5	265140R2
200A	010-02450	55307	23” (58.4) cm	200A	3 (1,440)	265200R2

— 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 (4350.139).		
2	Industry Standards	The Proponent complies with the industry standards established in the specification document.		
3	Fuse Type	K		
4	Material	• Shall be made of silver-alloy. • It shall be swaged. • For fuse links rated up to 100 amperes, the fuse element shall be helically coiled.		
5	Product Requirement	• Operating Voltage: 15 kV • Fiber sheath to ensure compliance with fault interrupting tests. • Universal Removable Buttonhead Fast Type • Sheath shall be adequately affixed to Buttonhead.		
6	Amp Rating	See table 1 on section 12		

NOTE: This table is only a check list for reference. The compliance shall be with the complete document. Marking a PASS in the table won't be accepted as a compliance without the technical information required to certify it.

4350.139 Fuse-15kV-Type K (07-10-2024)

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