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**Air Break Switch Wildlife Protection**

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**Document History**

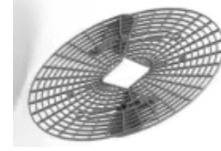
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072-85098	1	08/07/2023
072-85173	1	08/07/2023



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## Air Break Switch Wildlife Protection

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### 1. Introduction

This is a general specification that covers the minimum requirements for the air break switch wildlife protection kit 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 material.

### 2. Special Requirements

Samples shall be furnished as requested by LUMA Energy. Vendors that have supplied this 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. For products described in this specification as requiring qualification, awards will be made only for such products that, prior to the time for opening of bids, had been tested and/or approved by LUMA. 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. Wooden crates or packages must be clearly marked on the outside with LUMA Energy's purchase order, warehouse item number, and supplier's part number.
- 4.2. Packaging labels and tags shall be waterproof.

### 5. Compatible with:

See Table 1 for compatible manufacturers and models. These models are examples of the material(s) described in this document and does not represent a preference. LUMA will evaluate equally any model not listed here during any acquisition event.



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### **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)**

One (1) kit per package or as requested by LUMA Energy.

### **8. Acceptance Criteria**

- 8.1. Test required: certified by external laboratories.
- 8.2. The equipment/material shall be manufactured in accordance with the latest applicable standard specifications. When conflicts occur between purchaser's specifications and the standard specifications, the purchaser's specification shall prevail.
- 8.3. Latest applicable codes, standards, and other regulations:
  - a. ASTM A-153

### **9. Description**

- 9.1. Wildlife protection equipment to be used to protect air break switches from inadvertent animal and vegetation contact. This specification will describe the air break switch wildlife protection kit and the bus isolation animal barrier.

#### **9.2. Air Break Switch Wildlife Protection Kit**

- a. Kit shall include the following components:
  1. Two (2) Disconnect Switch Cover
  2. Six (6) Push Pins
  3. One (1) Self-fusing silicone tape roll
- b. The complete kit shall be rated 25 kV Phase-to-Ground.
- c. Switch Disconnect Cover
  1. Material shall be silicone rubber. Shall be flexible and hydrophobic. Resistant to UV exposure.
  2. Shall be suitable for installation over U-channel insulators mounting brackets. Additionally, one cover shall be able to overlap the other during installation.



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3. Each cover shall be manufactured with an opening at one end of the cover through which the insulator is installed. This opening shall come with removable rings to adapt to different insulators' diameters.
  4. Each cover shall be able to open at the side of the opening by spreading the columns. The covers shall have holes at this area to secure the cover from opening by the use of push pins.
- d. Push Pins
1. Shall be silicone rubber.
  2. Shall be able to enter through holes at cover and secure it from opening.
- e. Self-Fusing Tape
1. Used for fastening the overlap between the covers.
  2. Material shall be silicone rubber.
  3. Electrical Insulation Rating:
    - A. Single Wrap Phase-to-Ground Rating: 15 kV
    - B. Double Wrap Phase-to-Ground Rating: 30 kV
  4. Dimensions:
    - A. Thickness: 30 mil
    - B. Width: 2 inches
  5. Roll shall be long enough to wrap the overlap of the covers 4 to 5 times.

### 9.3. Bus Isolation Animal Barrier

- a. Circular mesh to prevent contact of animal wildlife with live parts of the switch.
- b. Material shall be crosslinked polyethylene or similar.
- c. Shall be suitable for installation on polymeric insulators. The equipment must provide a mechanism to secure the barrier to the insulator by means of non-conducting bolts or other similar means.
- d. Minimum voltage class shall be 25 kV.
- e. Shall accept insulators with core diameters from 1 in. to 4.5 in.
- f. Overall diameter shall be approximately 24 inches.



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g. Color shall be gray.

**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/material were found later to be defective.

**11. Warehouse Identification Table**

Warehouse Number	Asset Suite	Type	Compatible Manufacturer	Compatible individual catalog model	Kit catalog model
072-85098	85098	Disconnect Mount Cover	Midsun Group	E/DC-CVR-18	E/DISCONNECT CVR-KIT
		Push Pin		E/PUSH PINS	
		Self-Fusing Tape Roll		E/FTP-200-10-G	
072-85173	85173	Animal Barrier	TE Connectivity	BISG-G-60/115-02(S10)	N/A

**12. Proposal Information**

- 12.1. Submitted proposals must include:
  - a. Technical information
  - b. Table of Compliance completed by the bidder with reference (see Appendix 1).

— End of Specification —



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# **Appendix**



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### Appendix 1: Table of Compliance for Air Break Switch Wildlife Protection Kit

Criteria	Description	Pass/Fail (P / F)	Comments
Specification	The Proponent complies with the corresponding specification document (4350.320).		
Industry Standards	The Proponent complies with the industry standards established in the specification document (ASTM).		
Material	Silicone rubber		
Kit components	<ul style="list-style-type: none"> <li>Two (2) Disconnect Switch Cover</li> <li>Six (6) Push Pins</li> <li>One (1) Self-fusing silicone tape roll</li> </ul>		
Kit Electrical Rating	25 kV Ph-to-Ground		
<b>Switch Disconnect Cover</b>			
Material	Shall be flexible and hydrophobic. Resistant to UV exposure.		
Installation	Shall be suitable for installation over U-channel insulators mounting brackets. Additionally, one cover shall be able to overlap the other during installation.		
Form	<ul style="list-style-type: none"> <li>Each cover shall be manufactured with an opening at one end of the cover through which the insulator is installed. This opening shall come with removable rings to adapt to different insulators' diameters.</li> <li>Each cover shall be able to open at the side of the opening by spreading the columns.</li> </ul>		
<b>Push Pins</b>			
Installation	Shall be able to enter through holes at cover and secure it from opening.		
<b>Self-Fusing Tape Roll</b>			
Electrical insulation rating	<ul style="list-style-type: none"> <li>Single Wrap Phase-to-Ground Rating: 15 kV</li> <li>Double Wrap Phase-to-Ground Rating: 30 kV</li> </ul>		
Dimensions	<ul style="list-style-type: none"> <li>Thickness: 30 mil</li> <li>Width: 2 inches</li> <li>Roll shall be long enough to wrap the overlap of the covers 4 to 5 times.</li> </ul>		



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### Appendix 2: Table of Compliance for Bus Isolation Animal Barrier

Criteria	Description	Pass/Fail (P / F)	Comments
Specification	The Proponent complies with the corresponding specification document (4350.320).		
Industry Standards	The Proponent complies with the industry standards established in the specification document (ASTM).		
Material	Crosslinked polyethylene or similar Gray		
Installation	<ul style="list-style-type: none"><li>•Suitable for installation on polymeric insulators.</li><li>•The equipment must provide a mechanism to secure the barrier to the insulator by means of non-conducting bolts or other similar means.</li></ul>		
Dimensions	<ul style="list-style-type: none"><li>•Shall accept insulators with core diameters from 1 in. to 4.5 in.</li><li>•Overall diameter shall be approximately 24 inches.</li></ul>		
Electrical Rating	25 kV		











# 4350.320 Air Break Switch Wildlife Protection (08-07-2023)

Final Audit Report

2023-08-07

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