15, 25, and 35 kV class deadfront elbow and parking stand molded rubber arrester installation instructions

Powering Business Worldwide

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Safety for life

Eaton meets or exceeds all applicable industry standards relating to product safety in its Cooper Power™ series products. We actively promote safe practices in the use and maintenance of our products through our service literature, instructional training programs, and the continuous efforts of all Eaton employees involved in product design, manufacture, marketing, and service.

We strongly urge that you always follow all locally-approved safety procedures and safety instructions when working around high-voltage lines and equipment, and support our "Safety For Life" mission.

Safety information

The instructions in this manual are not intended as a substitute for proper training or adequate experience in the safe operation of the equipment described. Only competent technicians who are familiar with this equipment should install, operate, and service it.

A competent technician has these qualifications:

- Is thoroughly familiar with these instructions.
- Is trained in industry-accepted high- and low-voltage safe operating practices and procedures.
- Is trained and authorized to energize, de-energize, clear, and ground power distribution equipment.
- Is trained in the care and use of protective equipment such as arc flash clothing, safety glasses, face shield, hard hat, rubber gloves, clampstick, hotstick, etc.

Following is important safety information. For safe installation and operation of this equipment, be sure to read and understand all cautions and warnings.

Hazard Statement Definitions

This manual may contain four types of hazard statements:

DANGER

Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

NOTICE

Indicates a potentially hazardous situation which, if not avoided, may result in equipment damage only.

Safety instructions

Following are general caution and warning statements that apply to this equipment. Additional statements, related to specific tasks and procedures, are located throughout the manual.

DANGER

Hazardous voltage. Contact with hazardous voltage will cause death or severe personal injury. Follow all locally-approved safety procedures when working around high- and low-voltage lines and equipment. G103.3

WARNING

Before installing, operating, maintaining, or testing this equipment, carefully read and understand the contents of this manual. Improper operation, handling, or maintenance can result in death, severe personal injury, and equipment damage. G101.0

WARNING

This equipment is not intended to protect human life. Follow all locally-approved procedures and safety practices when installing or operating this equipment. Failure to comply can result in death, severe personal injury, and equipment damage. G102.1

WARNING

Power distribution and transmission equipment must be properly selected for the intended application. It must be installed and serviced by competent personnel who have been trained and understand proper safety procedures. These instructions are written for such personnel and are not a substitute for adequate training and experience in safety procedures. Failure to properly select, install, or maintain power distribution and transmission equipment can result in death, severe personal injury, and equipment damage. G122.2

Product information

Introduction
Eaton's Cooper Power series deadfront elbow and parking stand molded rubber arresters provide overvoltage protection to underground systems. They protect both the equipment and the cable from surge damage.

Read this manual first
Read and understand the contents of this manual and follow all locally approved procedures and safety practices before installing or operating this equipment.

Acceptance and initial inspection
Each elbow and parking stand molded rubber arrester is completely assembled, inspected, and tested at the factory. It is in good condition when accepted by the carrier for shipment. Upon receipt of the molded rubber arrester, inspect it thoroughly for damage and loss of parts incurred during shipment. If damage or loss is discovered, file a claim with the carrier immediately.

Handling and storage
If the molded rubber arrester is to be stored for an appreciable time before installation provide a clean, dry storage area.

Quality standards
ISO 9001 Certified Quality Management System

Relevant Catalogs
CA235037EN 15, 25 and 35 kV deadfront elbow and parking stand arresters

Elbow arrester installation procedure

Application
The elbow arrester should be installed only on systems where the power frequency voltage at the arrester does not exceed the maximum continuous operating voltage (MCOV) values published in **Table 1**.

All of Eaton's Cooper Power series elbow arresters must be installed or removed from an energized bushing with a clampstick.

Note: Because the elbow arrester has a completely grounded case, it may be installed anywhere within the apparatus primary compartment. Determine the space requirements of the elbow arrester and ground lead before installation so that they do not restrict installation, operation, or removal of other devices.

Table 1. Commonly applied voltage ratings of parking stand molded rubber arrester

Nominal Voltage	Maximum Voltage Range B	Four-Wire Multigrounded Neutral Wye	Three-Wire Low Impedance Grounded	Three-Wire High Impedance Grounded
2400	2540	—	—	3 (2.55)
4160 Y/2400	4400 Y/2540	3 (2.55)	6 (5.1)	6 (5.1)
4160	4400	—	—	6 (5.1)
4800	5080	—	—	6 (5.1)
6900	7260	—	—	9 (7.65)
8320 Y/4800	8800 Y/5080	6 (5.1)	9 (7.65)	—
12 000 Y/6930	12 700 Y/7330	9 (7.65)	12 (10.2)	—
12 470 Y/7200	13 200 Y/7620	9 (7.65) or 10 (8.4)	15 (12.7)	—
13 200 Y/7620	13 970 Y/8070	10 (8.4)	15 (12.7)	—
13 800 Y/7970	14 520 Y/8380	10 (8.4) and 12 (10.2)	15 (12.7)	—
13 800	14 520	—	—	18 (15.3)
20 780 Y/12 000	22 000 Y/12 700	15 (12.7)	21 (17.0)	—
22 860 Y/13 200	24 200 Y/13 970	18 (15.3)	—	—
23 000	24 340	—	—	—
24 940 Y/14 400	26 400 Y/15 240	18 (15.3)	—	—
27 600 Y/15 935	29 255 Y/16 890	21 (17.0)	—	—

Installation on an energized or de-energized system

⚠ WARNING

High Voltage. All associated apparatus must be de-energized during hands-on installation or maintenance. Failure to comply may result in death or serious personal injury.

⚠ WARNING

The operator should always use personal protective equipment (insulated gloves, clampstick, and eye protection) whenever operating the elbow. The operator should always be in the best possible operating position, providing firm footing and enabling a secure grasp of the clampstick, while maintaining positive control of the elbow before, during, and immediately after operation. If there is any question regarding the operator's operating position, de-energize the elbow before operation. The operator should not be looking directly at the connector during the moment of circuit interruption or connection. Failure to comply could result in death or serious injury.

Note: Verify the elbow arrester has the proper interface and voltage rating for the application.

Note: When the elbow arrester is installed on an energized system, it must be positioned so that its grounded end points downward or at the adjacent ground plane. A clampstick should be utilized when installing an elbow arrester on an energized system.

Note: Excessive force on the ground lead may cause the ground plug to pull out from the arrester housing. Never handle the arrester by the ground lead.

Note: The bolt attaching the ground lead to the threaded plug is factory installed to the proper torque value. Do not remove or re-tighten.

Note: The ground lead is routed through the drain wire tab to ensure deadfront construction. Leave the ground lead running through the drain wire tab.

1. Attach the ground lead of the arrester to the system ground using 4 to 8 ft-lbs of torque. Leave the ground lead routed through the drain wire tab. This ensures deadfront contruction of the arrester even after an end of life event causing the arrester to expel its bottom plug.
2. Lubricate the arrester interface with the lubricant supplied.
3. If a connector is installed on an apparatus bushing, use a clampstick to remove the mating connector from the bushing. Install a mating connector on a parking stand bushing.
4. Using a clampstick, firmly grasp and pull the clampstick around the pulling eye of the arrester. Position the tip of the arrester probe just into the nose of the loadbreak bushing. Position the arrester so that its grounded end points downward or at an adjacent ground plane.
5. Thrust the arrester firmly onto the bushing.

Parking stand arrester installation procedure

Application information

The parking stand arrester should be installed only on systems where the power frequency voltage at the arrester does not exceed the maximum continuous operating voltage (MCOV) values published in **Table 1**.

⚠ WARNING

High voltage. When not in use, the parking stand arrester must be covered with an insulated protective cap or loadbreak temporary cap to keep the interface clean and dry. Failure to comply could result in death or serious injury.

Note: Because the parking stand arrester has a completely grounded case, it may be installed anywhere within the apparatus primary compartment. Determine the space requirements of the arrester and ground lead before installation, operation, or removal of other devices.

Installation Instructions

Note: Verify the parking stand arrester has the proper interface and voltage rating for the application.

Note: When the parking stand arrester is installed, it must be positioned so that its grounded end points downward or at an adjacent ground plane.

Note: Excessive force on the ground lead may cause the plug to separate from the arrester housing. Never handle the arrester by the attached ground lead.

Note: The bolt attaching the ground lead to the plug is factory installed to the proper torque value. Do not remove or re-tighten.

Note: The ground lead is routed through the drain wire tab to ensure deadfront construction. Leave the ground lead running through the drain wire tab.

1. Attach the ground lead of the parking stand arrester to system ground with 4 to 8 ft-lbs of torque. Leave the ground lead routed through the drain wire tab. This ensures deadfront contruction of the arrester even after an end of life event causing the arrester to expel its bottom plug.
2. Lubricate the bushing interface of arrester with lubricant supplied.

3. Grasp the eyebolt on the parking stand arrester with clampstick and install on parking stand bracket. Position the arrester so that its grounded end points downward or at an adjacent grounding plane.
4. Turn the eyebolt clockwise to ensure rigid mounting.
5. Grasp the pulling eye of loadbreak elbow to be installed on parking stand arrester with clampstick. Remove the loadbreak elbow from the bushing.
6. After positioning the elbow probe into the nosepiece of parking stand bushing, slowly insert the elbow into the bushing until a slight bump is felt.
7. Thrust the elbow firmly onto the arrester.
8. Cover any exposed bushings with insulated protective caps or loadbreak temporary caps depending on duration of service being performed.

Eaton
1000 Eaton Boulevard
Cleveland, OH 44122
United States
Eaton.com

Eaton's Power Systems Division
2300 Badger Drive
Waukesha, WI 53188
United States
Eaton.com/cooperpowerseries

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For Eaton's Cooper Power series product information, call 1-877-277-4636 or visit: www.eaton.com/cooperpowerseries.

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