15, 25, and 35 kV class standard M.O.V.E. and POSI-BREAK™ M.O.V.E. elbow arrester installation instructions
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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 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 a hazardous situation which, if not avoided, will result in death or serious injury.

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

**CAUTION**
Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

**CAUTION:** Indicates a hazardous situation which, if not avoided, could 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.

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**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. G122.3

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Eaton’s Cooper Power Systems products meet or exceed all applicable industry standards relating to product safety. 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’s Cooper Power Systems 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.
Introduction
Eaton’s Cooper Power Systems Standard M.O.V.E. and POSI-BREAK™ M.O.V.E. Elbow 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.

Additional information
These instructions cannot cover all details or variations in the equipment, procedures, or process described nor provide directions for meeting every possible contingency during installation, operation, or maintenance. When additional information is desired to satisfy a problem not covered sufficiently for the user’s purpose, please contact your Cooper Power Systems sales representative.

Acceptance and initial inspection
Each M.O.V.E. Elbow 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 a M.O.V.E. Elbow 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 M.O.V.E. Elbow Arrester is to be stored for an appreciable time before installation, provide a clean, dry storage area.
Installation procedure

Application

The M.O.V.E. 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. See Table 2.

All Eaton’s Cooper Power Systems M.O.V.E. Elbow Arresters must be installed or removed from an energized bushing with a clampstick.

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**Table 1. Electrical Apparatus Specifiers Catalog Section Number Reference**

<table>
<thead>
<tr>
<th>M.O.V.E. Arrester Design</th>
<th>Catalog Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard M.O.V.E.</td>
<td>235-65</td>
</tr>
<tr>
<td>POSI-BREAK M.O.V.E.</td>
<td>235-97</td>
</tr>
</tbody>
</table>

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

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**Table 2. Recommended M.O.V.E. Arrester Applications**

<table>
<thead>
<tr>
<th>Nominal Circuit Voltage (kV)</th>
<th>Maximum Voltage (kV)</th>
<th>Duty Cycle (MCOV Ratings) (kV)</th>
<th>Delta and Ungrounded Wye</th>
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</thead>
<tbody>
<tr>
<td>2.4</td>
<td>2.54</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>4.15 Y/2.4</td>
<td>4.4 Y/2.54</td>
<td>3 (2.55)</td>
<td>6 (5.1)</td>
</tr>
<tr>
<td>4.16</td>
<td>4.4</td>
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<td>—</td>
</tr>
<tr>
<td>4.8</td>
<td>5.08</td>
<td>—</td>
<td>6 (5.1)</td>
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<td>6.9</td>
<td>7.26</td>
<td>—</td>
<td>9 (7.65)</td>
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<td>8.8 Y/5.08</td>
<td>6 (5.1)</td>
<td>9 (7.65)</td>
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<tr>
<td>12.0 Y/6.93</td>
<td>12.7 Y/7.33</td>
<td>9 (7.65)</td>
<td>12 (10.2)</td>
</tr>
<tr>
<td>12.47 Y/7.2</td>
<td>13.2 Y/7.62</td>
<td>9 (7.65)</td>
<td>15 (12.7)</td>
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<td>10 (8.4)</td>
<td>15 (12.7)</td>
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<td>22.0 Y/12.7</td>
<td>15 (12.7)</td>
<td>21 (17.0)</td>
</tr>
</tbody>
</table>

1. Line-to-ground fault duration not to exceed 30 minutes. For longer durations, contact the factory for proper rating.
2. Use for high impedance grounded systems also.

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**Installation on an energized or de-energized system**

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**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.

**Note:** Verify the M.O.V.E. Elbow Arrester has the proper interface and voltage rating for the application.

**Note:** When the M.O.V.E. 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 a M.O.V.E. Elbow Arrester on an energized system.

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

**Note:** The nut attaching the ground lead to the threaded stud on the metal cap is factory installed to the proper torque value. Do not remove or retighten. Over torquing of the ground lead nut may cause the metal cap to separate from the arrester housing.
• Attach ground lead of the arrester (connected to the base of the arrester) to the system ground with 4 to 8 ft-lbs torque.

• Attach a grounded drain wire to the elbow arrester drain wire tab. This ensures that the arrester is grounded if the end cap is separated during a pressure relief event.

• Lubricate the arrester interface with the lubricant supplied.

• Use a clampstick to remove the mating connector from the apparatus bushing. Install mating connector on a parking stand bushing.

• Verify ground lead attachment.

• Grasp pulling the eye of the arrester firmly using a clampstick. 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.

• Thrust the arrester firmly onto the bushing.