

# High ampere overload Bay-O-Net fuse link



## General

Eaton protects both distribution apparatus from damaging currents and distribution systems from failed apparatus with its Cooper Power™ series high ampere overload Bay-O-Net fuse link found in Eaton's Cooper Power series silver-plated Bay-O-Net assemblies (see *Catalog CA132015EN Sidewall-Mounted and Cover-Mounted Bay-O-Net Fuse Assembly*).

High ampere overload links provide better heat dissipation when used at higher load current levels. These lower operating temperatures will extend Bay-O-Net applications to larger kVA units.

## Application

High current overload Bay-O-Net fuses were designed to allow the fusing of larger kVA distribution transformers, both single-phase and three-phase.

Its ideal use is in a two-fuse protection scheme with a current-limiting backup fuse. In this arrangement, secondary faults and overload currents are cleared by the Bay-O-Net fuse, and high level faults are cleared by the current-limiting fuse. The two fuses are connected in series and are coordinated so that the current-limiting fuse operates only upon internal transformer failure

(see *Catalog TD132002EN ELSP Current-Limiting Backup Fuse* to order an Eaton ELSP current-limiting back-up fuse). If the Bay-O-Net fuse will not be used in series with a current-limiting fuse, an isolation link is required (see *Catalog CA132012EN Isolation Link*).

The high ampere overload Bay-O-Net fuse is an integrated fuse link and cartridge design specially engineered to reduce operation temperatures. The Bay-O-Net fuse design allows the integral (link) cartridge to be easily field replaceable.

High ampere overload links should only be used in Eaton's Cooper Power series silver-plated Flapper™ valve Bay-O-Net fuse assemblies in order to ensure the intended operating characteristics.

## Installation

No special tools are required. A hotstick is used to remove the Bay-O-Net fuse cartridge holder from non-pressurized apparatus. The entire fuse cartridge is then replaced. No field installation of the fuse link into the cartridge is required. The fuse holder is then reinstalled into the apparatus using a hotstick. Refer to *Service Information MN132002EN 23 and 38 kV Bay-O-Net Fuse Re-Fusing Installation Instructions* for refusing instruction.

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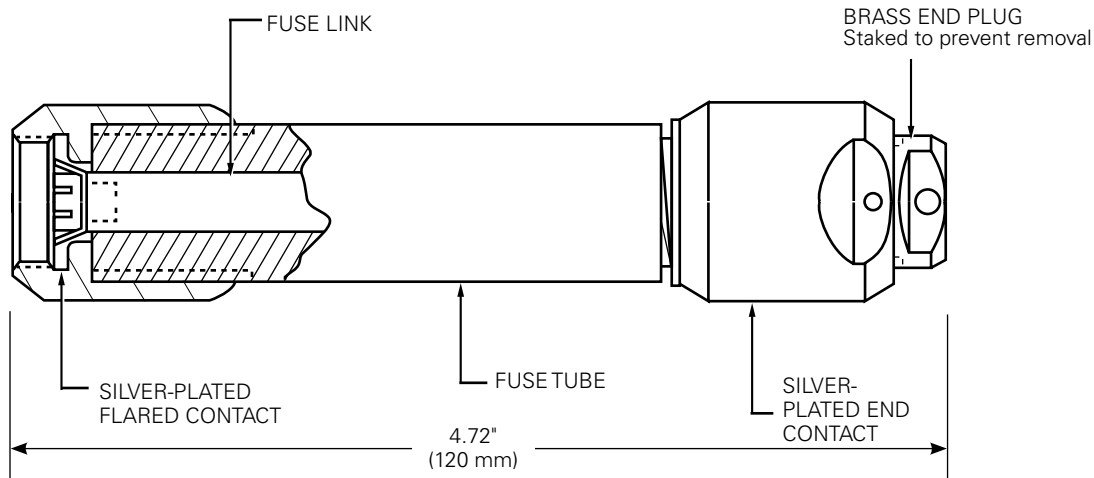


Figure 1. Cutaway drawing of 15.5 kV (maximum) high ampere overload Bay-O-Net fuse link with feature information.

Table 1. Electrical Ratings and Characteristics

| Voltage (kV) | Maximum Single-Phase Interrupting Rating*                |   |
|--------------|--|---|
|              | Sidewall Mount Assembly (rms symmetrical) in Mineral Oil | Sidewall Mount Assembly (rms symmetrical) in Envirotemp™ FR3™ Fluid |
| 8.3          | 3500 A   | 2000 A  |
| 15.5         | 2500 A   | 2500 A  |
| 23.0         | ***  | ***   |

\* In Eaton's Cooper Power series Bay-O-Net assemblies only. Where available fault current exceeds rated value, coordinated current-limiting fusing, such as an ELSP (Catalog CA132013EN) or approved equivalent, must be provided.

\*\*\*Not rated for 23.0 kV

Table 2. High Ampere Overload Bay-O-Net Fuse Link

| Current Rating (A)        | Continuous Current Rating at 25°C* | Catalog Number** |
|---------------------------|------------------------------------|------------------|
| 65                        | 135                                | 4038361C03CB     |
| 100                       | 165                                | 4038361C04CB     |
| 125                       | 185                                | 4038361C05CB     |
| Shorting Bar (Solid link) | 200                                | 4038361C10CB     |

\* For current ratings at temperatures above 25 °C, refer to deration curves in Figure 2.

\*\* Catalog number is an integral element/cartridge/end plug design.

### Ordering information

To order a high ampere overload Bay-O-Net fuse link, determine the requirements of the application from Tables 3 and 4 and specify the fuse required from Table 2.

#### Method A

##### Using the Correlation Tables

Use the following correlation information (Tables 3 and 4) to complete Catalog Number 4038361C-CB.

For single-phase and three-phase applications, Eaton recommends its Cooper Power series ELSP current-limiting backup fuse (see *Catalog CA132013EN ELSP Current-Limiting Backup Fuse* for more information).

Correlation is based on IEEE Std C57.92™-1981 standard Loading Guide, IEEE Std C57.109™-1993 standard Through-Fault Guide and *Reference Data TD132004EN Pad-Mounted Transformer Fusing Philosophies*.

#### Method B

##### Using Time Current Curves

To determine or confirm the high ampere overload Bay-O-Net fuse that will coordinate with upstream and downstream requirements, use time-current characteristic curves and specify the fuse indicated from Table 2.

Deration curves for the high ampere overload links are shown in Figure 2. Long term overload curves for selected transformer ratings are also available upon request.

For full size TCC curves R240-91-53, long term overload curves, and further information regarding either of these ordering methods, contact your Eaton representative.

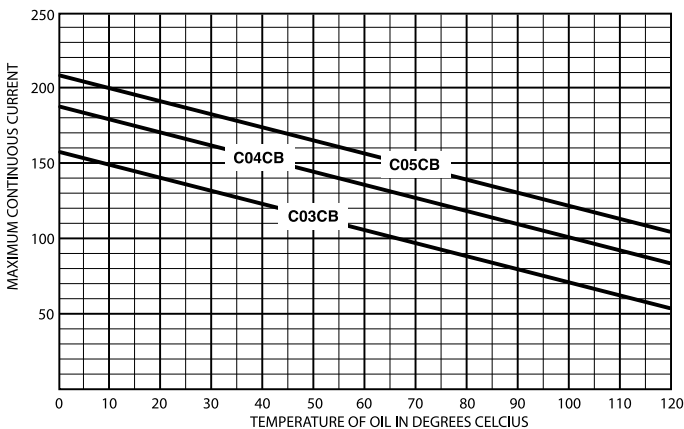


Figure 2. Deration curves for high ampere overload links.

**Table 3. Correlation Information  
Single-Phase Transformer (Phase-to-Ground) Applications**

| Transformer<br>kVA | Transformer Primary Voltage (kV) |          |          |          |          |         |         |         |       |       |       |       |
|--------------------|----------------------------------|----------|----------|----------|----------|---------|---------|---------|-------|-------|-------|-------|
|                    | 2.4                              | 4.16     | 4.8      | 7.2      | 7.62     | 8.32    | 12.0    | 12.47   | 13.2  | 13.8  | 14.4  |       |
| 100                | C03CB                            | *        | *        | *        | *        | *       | *       | *       | *     | *     | *     | *     |
| 167                | C04CB**                          | C03CB    | C03CB    | *        | *        | *       | *       | *       | *     | *     | *     | *     |
| 250                | C05CB***                         | C04CB    | C04CB    | *        | *        | *       | *       | *       | *     | *     | *     | *     |
| 333                |                                  | C05CB    | C04CB**  | C03CB**  | C03CB    | C03CB   | *       | *       | *     | *     | *     | *     |
| 500                |                                  | C05CB*** | C05CB*** | C04CB**  | C04CB    | C04CB   | C03CB   | C03CB   | C03CB | C03CB | C03CB | C03CB |
| 833                |                                  |          |          | C05CB*** | C05CB*** | C05CB** | C04CB** | C04CB** | C04CB | C04CB | C04CB | C04CB |

**Note:** Coordination recommendations are based on 12X transformer full load for 0.10s, 3X transformer full load for 10s, 200% of rated load at 2 hours and 160% of rated load at 7 hours. Overload protection based on 65 degrees rise transformers per IEEE Std C57.91™-1981 standard.

\* For additional application recommendations, refer to other Bay-O-Net link catalog sections (CA132009EN Current Sensing, CA132010ENDual Sensing, and CA132011EN Dual Element links).

\*\* The use of these fuses will provide 175% of rated load at 2 hours and 150% of rated load at 7 hours. The use of the next larger fuse is recommended for greater overload capacity. Contact your Eaton representative for specific overload capability.

\*\*\*The specified fuse provides slightly less than 175% of rated load at 2 hours and 150% of rated load at 7 hours. Contact your Eaton representative for specific overload capability.

**Table 4. Correlation Information  
Three-Phase Transformer (Phase-to-Phase) Applications**

| Transformer<br>kVA | Transformer Primary Voltage (kV) |          |          |          |          |          |          |          |          |          |         |       |
|--------------------|----------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|---------|-------|
|                    | 2.4                              | 4.16     | 4.8      | 8.32     | 12.0     | 12.47    | 13.2     | 13.8     | 14.4     | 20.8a    | 22.9a   | 24.9a |
| 150                | C03CB                            | *        | *        | *        | *        | *        | *        | *        | *        | *        | *       | *     |
| 225                | C04CB                            | *        | *        | *        | *        | *        | *        | *        | *        | *        | *       | *     |
| 300                | C04CB**                          | C03CB    | C03CB    | *        | *        | *        | *        | *        | *        | *        | *       | *     |
| 500                | C05CB***                         | C04CB**  | C04CB    | C03CB    | *        | *        | *        | *        | *        | *        | *       | *     |
| 750                |                                  | C05CB*** | C05CB    | C04CB    | C03CB    | C03CB    | *        | *        | *        | *        | *       | *     |
| 1000               |                                  |          | C05CB*** | C04CB**  | C04CB    | C04CB    | C03CB    | C03CB    | C03CB    | *        | *       | *     |
| 1500               |                                  |          |          | C05CB*** | C04CB**  | C04CB**  | C04CB    | C04CB    | C04CB    | C03CB    | C03CB   | C03CB |
| 2000               |                                  |          |          |          | C05CB*** | C05CB*** | C05CB    | C05CB    | C05CB    | C04CB    | C04CB   | C04CB |
| 2500               |                                  |          |          |          |          | C05CB*** | C05CB*** | C05CB*** | C05CB*** | C05CB*** | C04CB** | C04CB |

**Note:** Coordination recommendations are based on 12X transformer full load for 0.10s, 3X transformer full load for 10s, 200% of rated load at 2 hours and 160% of rated load at 7 hours. Overload protection based on 65 degrees rise transformers per IEEE Std C57.91™-1981 standard.

a. Recommended fuse is limited to gndY/gndY transformer with less than 50% delta loading.

\* For additional application recommendations, refer to other Bay-O-Net link catalog sections (CA132009EN Current Sensing, CA132010EN Dual Sensing, and CA132011EN Dual Element links).

\*\* The use of these fuses will provide 175% of rated load at 2 hours and 150% of rated load at 7 hours. The use of the next larger fuse is recommended for greater overload capacity. Contact your Eaton representative for specific overload capability.

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Publication No. CA132007EN

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For Eaton's Cooper Power series Bay-O-Net fuse link product information call 1-877-277-4636 or visit: [www.cooperpower.com](http://www.cooperpower.com).