

Fusing Equipment

Electrical Apparatus
240-49

High Ampere Overload Bay-O-Net Fuse Link

GENERAL

The Cooper Power Systems High Ampere Overload Bay-O-Net fuse link is used in the Cooper Power Systems silver-plated Bay-O-Net assemblies (see Section 240-40) to protect distribution apparatus from damaging currents and to protect distribution systems from failed apparatus.

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 Section 240-50 to order a Cooper Power Systems ELSP current-limiting back-up fuse). If the Bay-O-Net will not be used in series with a current-limiting fuse, an isolation link is required (see Section 240-47).

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 design allows the integral (link) cartridge to be easily field replaceable.

High Ampere Overload Links should only be used in silver-plated Flapper Bay-O-Net 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



Figure 1.
High Ampere Overload Bay-O-Net Fuse Link with integral cartridge.

holder is then reinstalled into the apparatus using a hotstick. Refer to Service Section S240-40-3 for refusing instruction.

ORDERING INFORMATION

To order a Cooper Power Systems 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, a Cooper Power Systems ELSP current-limiting backup fuse is recommended (see Section 240-50 for more information).

Correlation is based on **IEEE Standard C57.92TM** Loading Guide, **IEEE Standard C57.109TM** Through-Fault Guide and Fusing Application Guide CP7662A.

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 Cooper Power Systems Bay-O-Net assemblies only. Where available fault current exceeds rated value, coordinated current-limiting fusing, such as an ELSP (Section 240-50) or approved equivalent, must be provided.
*** Not rated for 23.0 kV

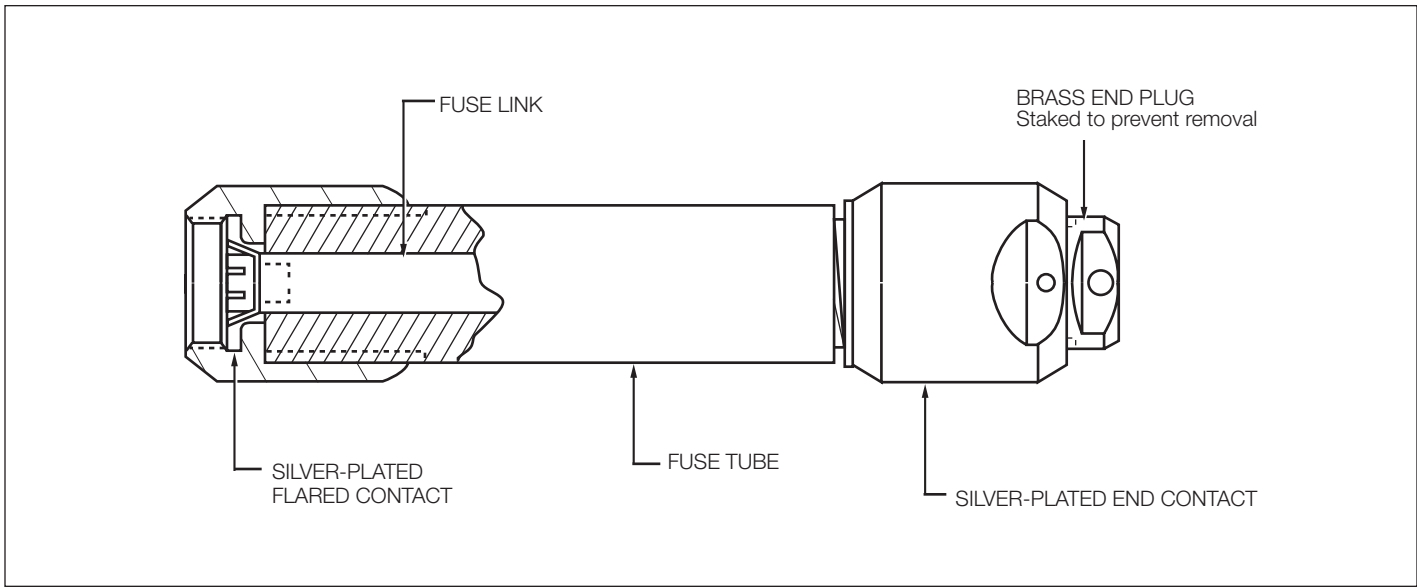


Figure 2. Cutaway drawing of High Ampere Overload Bay-O-Net Fuse Link with feature information.

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 3.
** Catalog number is an integral element/cartridge/end plug design.

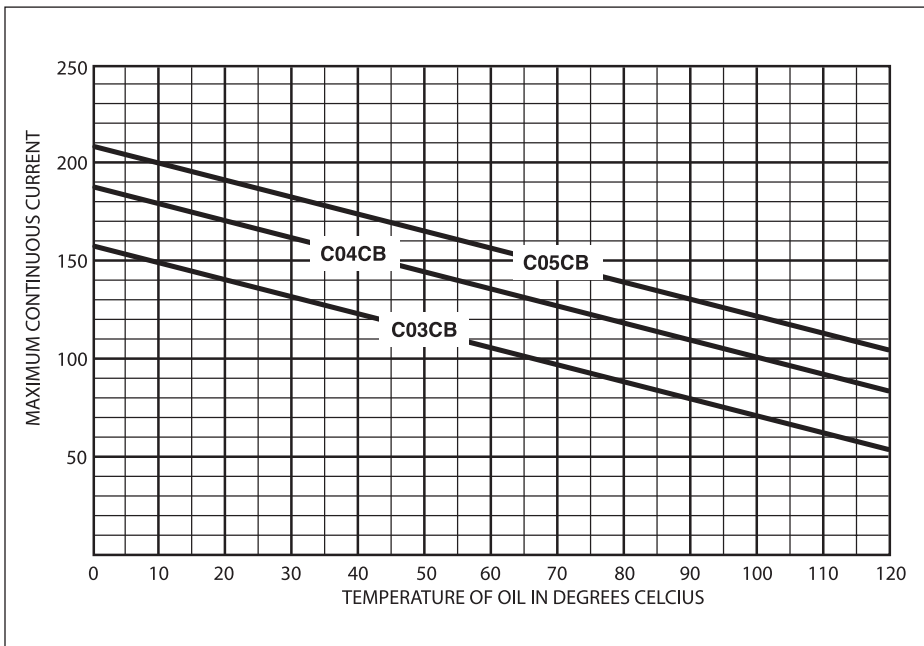


Figure 3. Deration curves for high ampere overload links.

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 3. 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 Cooper Power Systems representative.

TABLE 3
Correlation Information
Single-Phase Transformer (Phase-to-Ground) Applications

Transformer 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
833				C05CB***	C05CB***	C05CB**	C04CB**	C04CB**	C04CB	C04CB	C04CB

Notes: 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 C57.91**TM-1981.

* For additional application recommendations, refer to other Bay-O-Net link catalog sections (240-45 Current Sensing, 240-46 Dual Sensing, and 240-48 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 Cooper Power Systems 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 Cooper Power Systems representative for specific overload capability.

TABLE 4
Correlation Information
Three-Phase Transformer (Phase-to-Phase) Applications

Transformer 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	C04CB

Notes: 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 C57.91**TM-1981.

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 (240-45 Current Sensing, 240-46 Dual Sensing, and 240-48 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 Cooper Power Systems representative for specific overload capability.

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