

Overhead Fault Indicators



1. Scope

This material standard covers the detailed requirements for single-phase overhead fault indicators.

Because product design engineers are constantly attempting improvements, overhead fault indicators are available in a wide variety of models and features. To be effective, field personnel require a clear understanding of the operating characteristics of each type of fault indicator on the system. For these reasons, to simplify training, operational work practices, and maintenance requirements, only one overhead fault indicator manufactured by one supplier shall be approved for purchase at a time (for this application). A thoughtful review should occur before changing technology.

2. Application

Fault indicators are intended for semi-permanent installation on 26.4 kV, three-phase, bare, overhead, distribution conductors for the purpose of aiding crews with locating faults.

Fault indicators are intended for installation at the following locations:

- Mid-point of the feeder near switches
- Feeder “getaways”
- Underground dips
- Un-fused laterals
- 3/4 point on long feeders

Fault indicators may be installed alone on one conductor or in sets of three on a circuit.

Units may be manually reset with Test/Reset magnet, Stock number 013006.

3. Industry Standard

Fault indicators shall meet the requirements of the following industry standard:

IEEE 495-1986 - Guide for Testing Faulted Circuit Indicators

4. Requirements

4.1 Electrical Parameters

Type:	Non-directional, fixed trip
Fixed trip point:	1200 A (steady state) +/- 10%
Trip speed:	1 cycle (at 4500 A)
	3 cycles (at 3000 A)
	12 cycles (at 1500 A)
Operating temperature range:	-40 to +85 degrees C
Operating voltage (maximum):	46 kV
Current withstand (minimum):	25 kA (10 cycles)

Fault indicators shall trip according to the time current characteristic curve shown in Figure 4.1.

MATERIAL STANDARD

Overhead Fault Indicators

standard number: **6850.00**

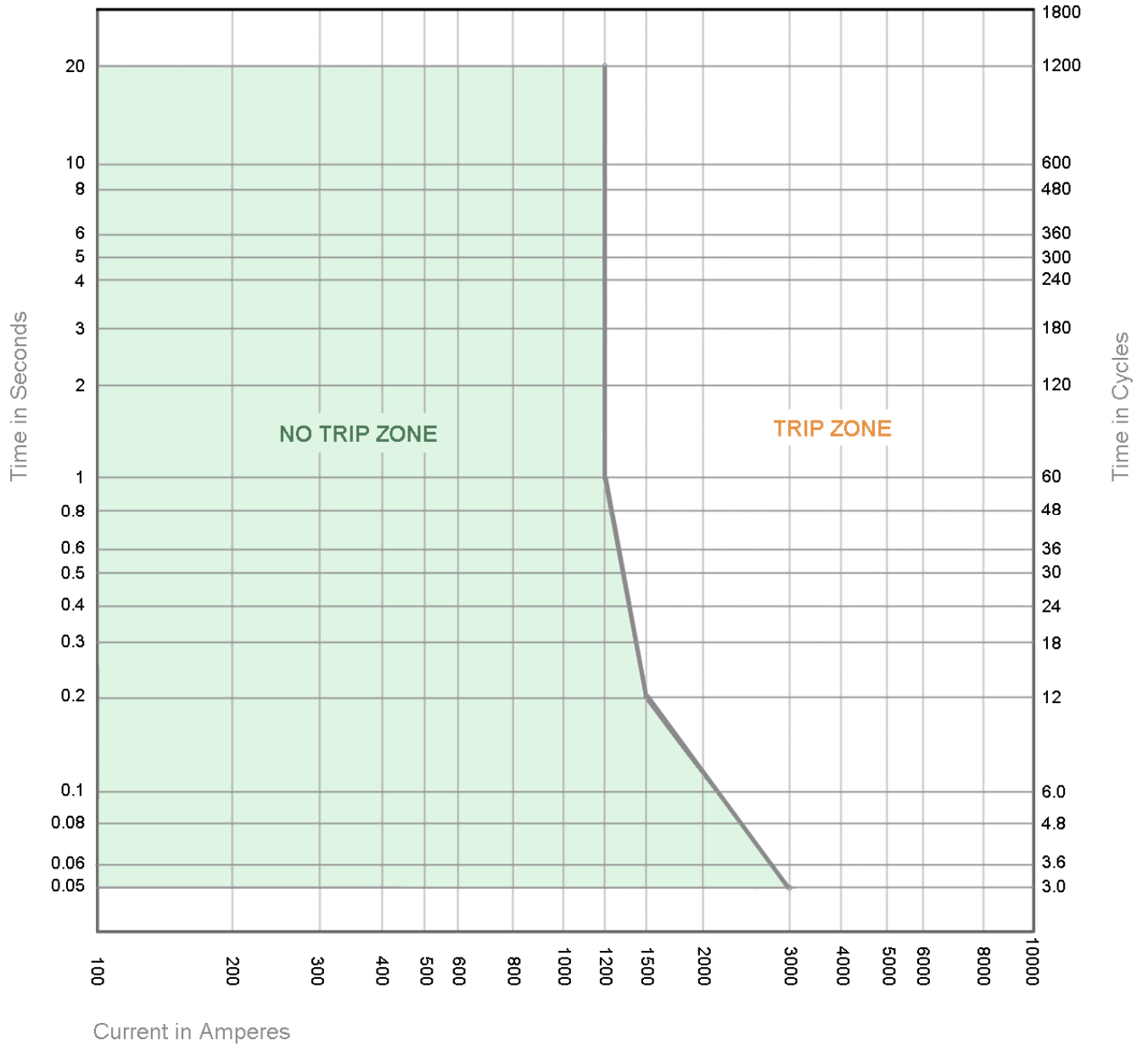
superseding: January 8, 2010

effective date: January 30, 2014

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4. Requirements, continued

Figure 4.1



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4. Requirements, continued**4.2 Indication***

Indication type:	High intensity light emitting diodes (LED)
Indication color:	Red, yellow, or both
Flashing frequency (minimum):	30 per minute
Visibility (day):	1000 feet
Visibility (night):	2000 feet

*Adequacy of indication based on SCL field tests and Standards review

4.3 Reset

Reset type:	Time
Time reset duration:	4 hours, +/- 1 hours
Manual reset capable:	Yes

4.4 Mounting

Wire diameter range low-end (maximum):	0.3 in
Wire diameter range high-end (minimum):	1.2 in
Hot stick installation capable:	Yes

4.5 Power Supply

Power supply type:	Lithium battery
Battery shelf life:	20 years
Battery replaceability:	Replaceable or non-replaceable
Low battery voltage indication:	Yes
Continuous flash life (minimum):	400 hours

5. Marking

Each fault indicator shall be marked with the last two digits of its year of manufacture.

Two digit year code marking shall be reflective (or on reflective background) in 3/4 + 1/4, - 1/16 inch high characters.

6. Packaging

Fault indicators shall be packaged fully assembled, one per cardboard box, complete with installation instructions.

Individual boxes shall be marked with manufacturer's name or symbol, product description, catalog number, year of manufacture, quantity contained, and Seattle City Light's Stock Number.

Shipping containers shall be marked with manufacturer's name or symbol, Seattle City Light's Purchase Order Number, and Seattle City Light's Stock Number.

7. Issuance

Stock Unit: EA

8. Approved Manufacturer

Stock Number	Description	Power Delivery Products Catalog Number
765872	Overhead fault Indicator	PDP 41-2001-271-1500A, Navigator LM
013006	Test/ reset magnet	49-6001-002

**9. References**

Shipek, John; SCL Standards Engineer, subject matter expert and originator of 6850.00 (john.shipek@seattle.gov)