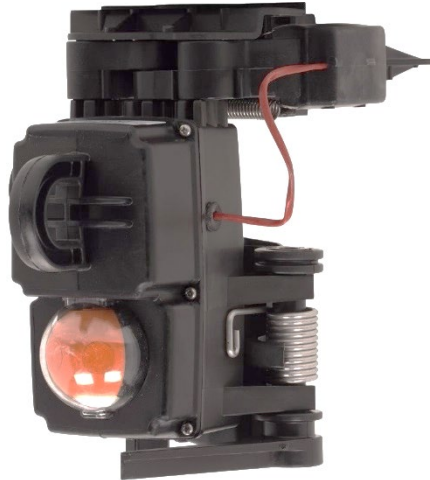


Faulted Circuit Indicators, Underground



1. Scope

This standard covers the requirements for underground faulted circuit indicators.

This standard applies to Seattle City Light (SCL) Stock No. 014658.

For overhead faulted circuit indicators, see SCL 6850.00.

2. Application

Faulted circuit indicators are attached to underground cable accessories, such as 200 A and 600 A elbows and indicate the passage of fault current by showing an orange, reflective target in its fisheye display.

Faulted circuit indicators can also be installed on cable terminations connected to pad-mounted distribution transformers and switchgear.

Faulted circuit indicators are self-powered and do not contain batteries.

Faulted circuit indicator response is initiated by a rapid rise of current of at least 100 A, in a fraction of a cycle, above the normal load current, followed by a loss of voltage. For example, if the load current is 150 A, it would need a total of at least 250 A measured in a rapid burst followed by loss of voltage.

The minimum pickup point for the fault indicator to signal a trip is 200 A. If a circuit is lightly loaded, 10 A, for example, the fault current must be at least 190 A in order to meet the minimum threshold of the fault indicator and operate.

If the total magnitude of the fault current plus the normal load current is less than 200 A, the faulted circuit indicator will not indicate a fault.

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3. Industry Standards

Faulted circuit indicators shall meet the applicable requirements of the latest revision of the following industry standards:

IEEE 495 – Guide for Testing Faulted Circuit Indicators

4. Requirements

Faulted circuit indicators shall have electrical ratings as shown in Table 4a.

Table 4a. Electrical Ratings

Power Requirements	Self-powered
Max. Operating Voltage	45 kV L-L
Trip Current	100 A rise from load current
Min. Pickup Level	200 A total (load plus fault current)
Fault Withstand Capability	25 kA (10 cycles)

Fault indication visual requirements shall be as shown in Table 4b.

Table 4b. Fault Indication Visual Requirements

Indication Style	Non-Directional
Indication Type	Mechanical Flag
Remote Display	None
Faulted Condition Color	Reflective Orange
Normal Condition Color	Black

Reset requirements shall be as shown in Table 4c.

Table 4c. Reset Requirements

Reset Type	Variable Trip Current
Reset Time	5 Minutes Max. at 2.0 A
Automatic Reset	Yes

Mounting shall be as shown in Table 4d.

Table 4d. Mounting Requirements

Cable outside diameter range, nominal	0.25-2.00 in
Hot stick installation capable	Yes

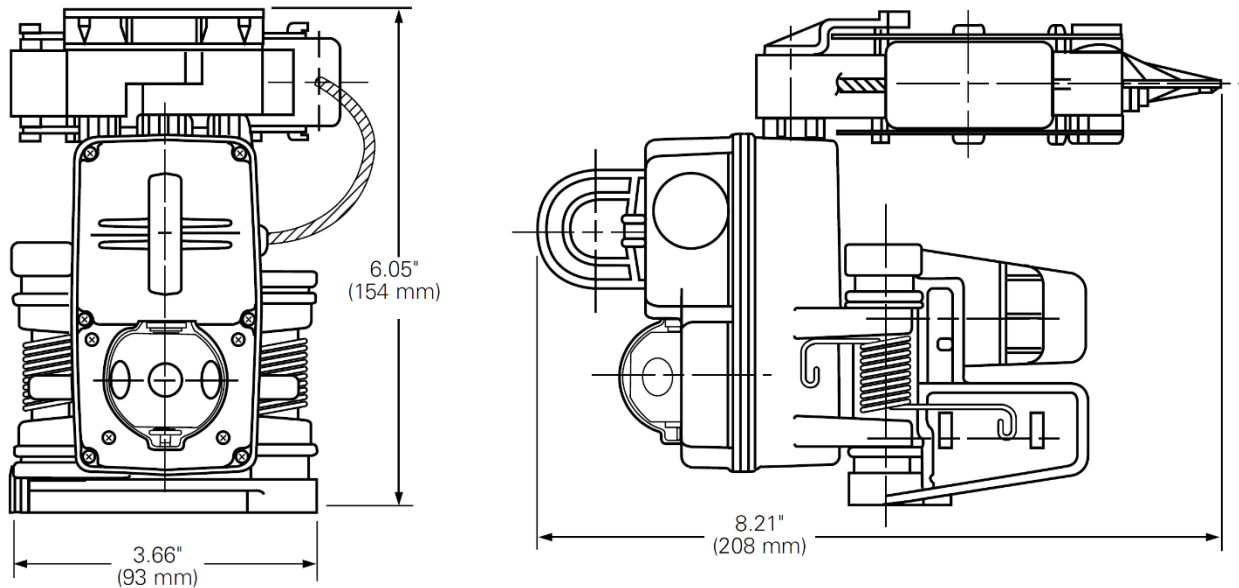
Other requirements shall be as shown in Table 4e.

Table 4e. Requirements, Other

Construction	Corrosion-Resistant and Submersible
Operating Temperature Range	-40 °C to +85 °C

Dimensions shall be as shown in Figure 4.

Figure 4. Faulted Current Indicator Dimensions



5. Packaging

Faulted circuit indicators shall be packaged to prevent damage during shipping, handling, and storage.

Each standard package shall be legibly marked with the following information:

- Manufacturer identification
- Product description
- SCL stock number
- Quantity

Each shipping container shall be legibly marked with the following information:

- SCL purchase order number

6. Issuance

Stock Unit: EA

7. Approved Manufacturers

Eaton Cooper Power Systems Division Catalog No. SCVT

8. References

SCL Material Standard 6850.00; "Faulted Circuit Indicators, Overhead"

9. Sources

Faulted Circuit Indicator Catalog Data CA320009EN; "S.T.A.R. PATHFINDER Variable Trip Current Reset Faulted Circuit Indicators," Cooper Power Series, February 2015

Fault Indicators Service Information Bulletin S320-77-1; "S.T.A.R. PATHFINDER Variable Trip Current Reset Faulted Circuit Indicator Installation Instructions," Cooper Power Systems, July 2004

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