
21 kV Intermediate Class, Polymer, Metal-Oxide Surge Arresters



1. Scope

This standard applies to 21 kV duty-cycle rating, intermediate class, polymer-housed, metal-oxide surge arresters.

This standard applies to SCL Stock No. 012593.

2. Application

Intermediate class surge arresters are intended for use on 26400GrdY/15240 V power systems in areas where the nominal fault duty is between 20 kA and 40 kA rms symmetrical. Arresters are installed on riser poles to protect underground cable and equipment.

In areas where the fault duty is less than 20 kA, refer to Seattle City Light (SCL) 6801.40, "21 kV, Heavy Duty Distribution Class, Polymer, Metal-Oxide Surge Arrester."

3. Industry Standards

Surge arresters shall meet the applicable requirements of the following national standard:

IEEE C62.11-1999, Standard for Metal-Oxide Surge Arresters for AC Power Circuits (> 1 kV)

Standards Coordinator
Muneer Shetab



Standards Supervisor
John Shipek

Unit Director
Andrew Strong

4. Electrical Requirements

Class (recognized by IEEE C62.11)	Intermediate
Type	Metal-oxide
Duty-Cycle Rating	21.0 kV rms
Maximum Continuous Operating Voltage (MCOV)	17.0 kV rms
Maximum Front-of-Wave Voltage Cresting in 0.5 Microseconds for 10 kA Wave	59.5 kV crest
Maximum Discharge Voltage for 8 X 20 Microsecond 5 kA Wave	51.3 kV crest
Maximum Discharge Voltage for 8 X 20 Microsecond 20 kA Wave	61.3 kV crest
Minimum Symmetrical RMS Fault-Current Withstand Rating	40 kA rms
Minimum Temporary Overvoltage Capability for Three Seconds at 60 Degrees Centigrade Ambient and No Prior Energy Absorption (Overvoltage/MCOV)	1.38 per unit

5. Construction

Housing Material:	Silicon rubber
Housing Material/ Hanger Bracket Color:	Gray
Ground Lead Isolator	Required
 Terminal – Top	Stainless steel stud with “L” bracket and eyebolt connector that accepts copper or aluminum conductors #6 AWG to 250 kcmil
 Terminal - Bottom	3/8-16 stainless steel stud with Penn Union STS-4, Burndy KF-23, or Dossert DGG-6 connector (Stock No. 668872), or approved equivalent
Nameplate	Required per IEEE C62.11-1999, Section 10.1 Identification data

6. Marking and Packaging

Surge arresters shall be packaged fully assembled, one per cardboard box.

Each package shall be legibly marked with:

- Manufacturer name or symbol
- Product description
- Quantity contained
- Seattle City Light stock number

Shipping containers shall be legibly marked with:

- Manufacturer name or symbol
- Seattle City Light purchase order number

A packing slip shall be included with each shipment.

7. Issuance

Stock Unit: EA

8. Approved Manufacturer

Approved Manufacturer	Catalog No.
Cooper Power Systems	UIAA021017A101NL27

9. Sources

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Cooper Power Systems 235-102; UltraSIL Polymer-Housed VariSTAR Type UI Intermediate-Class Surge Arresters

Eaton/Cooper Power Series, Surge Arresters Catalog Data CA235012EN; "UltraSIL Polymer-Housed VariSTAR Type UI Intermediate-Class Surge Arresters", June 2015