

PROTECTA*LITE® ARRESTER SERIES

Installation Instructions: 17-5124

CAUTION

The equipment covered by these instructions should be installed and serviced only by competent personnel familiar with good safety practices. This instruction is written for such personnel and is not intended as a substitute for adequate training and experience in safe procedures.

WARNING

Prior to installing this product, check the nameplate information to verify that it is the correct product for the application. Verify that the nameplate information corresponds to the information provided on the outline drawing.

Introduction

Hubbell Power Systems Protecta*Lite® surge arresters are specially designed to mitigate outages caused by lightning related flashovers. By doing so, the arrester safely diverts lightning surges to ground in a controlled manner. The arresters covered by these installation instructions are suitable for outdoor use, and designed in accordance with the latest revision of industry standard IEEE C62.11 and/or IEC 60099-4. Due to the variability of application requirements, a multitude of arrester types are utilized to meet customer specific protection requirements. The common thread between all arresters lies at the heart of each assembly with the use of vertically stacked MOV blocks.

Application

WARNING

Protecta*Lite® arresters must be applied where the continuous phase-to-ground voltage at the arrester location does not exceed the arrester continuous voltage capability as indicated on the nameplate. Arrester physical size may not determine the voltage rating. Do not install arrester if type, rated voltage (Ur for IEC arresters) and maximum continuous operating voltage (Uc for IEC arresters) are not exactly the same on the nameplate and packaging labels.

Packaging

Protecta*Lite® arresters are packaged in various forms depending on the arrester design, hardware requirements and order quantity. Most arresters are packed in wooden crates. Smaller designs may be packaged in cardboard boxes. Hardware and mounting accessories will be assembled to the arrester when practical. All other hardware will be contained within the box or crate in a mesh bag. Designs that include an insulator will typically be packaged in a separate crate. Select designs include the insulator in the same crate with the arrester and hardware.

Grading and corona rings: Grading rings and corona rings (where applicable) are shipped separately, strapped to a wooden pallet or packed in a fully enclosed wooden crate.

Initial Inspection

Rough handling can result in damage to the surge arrester. Arresters should be carefully removed from the carton or crate for inspection. If damage is apparent, do not install the arrester. Claims for shipping damage should be registered immediately with the common carrier.

The arrester model number, rated voltage (Ur for IEC arresters) and MCOV (Uc for IEC arresters) are identified on the arrester nameplate. When applicable a serial number is also included on the nameplate. The nameplate information should be verified against the shipping memorandum.

Installation

The arrester should remain in its original shipping container, for additional support and protection, prior to installation. Review the nameplate and verify the arrester voltage rating is correct for the application. If there is any discrepancy, do not proceed with installation until the issue has been resolved.

An outline drawing of each Protecta*Lite® assembly is included with every shipment. Before installation review the drawing and ensure all components necessary are available for assembly and installation. The outline drawing details proper installation of required hardware and accessories. Standard tools carried by linemen are all that is necessary for assembly and installation of Protecta*Lite® arresters.

Install supplied line and ground terminals to the arrester as indicated on the outline drawing. Connect the arrester ground to the apparatus ground, utilizing a reliable common ground network of low resistance. Line connections should not place excessive mechanical stress on the arrester. During assembly please refer to these maximum recommended torque values.

Stud Size	Maximum Recommended Tightening Torque
3/8"	20 ft-lb (27 Nm)
1/2"	40 ft-lb (54 Nm)
5/8"	90 ft-lb (122 Nm)
3/4"	125 ft-lb (170 Nm)

Mounting

Protecta*Lite® arresters are not intended to experience excessive cantilever loading. Exercise care in handling arresters and arrester units; while being especially careful with longer units. Do not drop, throw or otherwise abuse the arresters.

All Protecta*Lite® assemblies are equipped with a disconnecter unless specifically requested. This device functions to physically disconnect a damaged or failed arrester from the transmission or distribution line to prevent lockout. To perform this function in a controlled, predictable, and rapid manner, the disconnecter housing is designed to fracture near the midpoint, around its full circumference. Because of this integral fracture zone, care must be taken to avoid excessive cantilever moments on the disconnecter housing during installation. Excessive cantilever loads may cause damage to the unit, which can lead to mechanical failure of the disconnecter on a functional arrester.

Excessive loading can usually be avoided by being sure to not assemble the unit with the disconnecter in a constant cantilever application. Make all necessary position and alignment adjustments before tightening the disconnecter or ground end chain and lead wire. If a bracket is assembled to it, the disconnecter can be assembled to the bracket to check for proper alignment but it should be removed before bending or otherwise adjusting the bracket. Do not attempt to bend or otherwise adjust a bracket by applying force to the disconnecter. Do not allow bracket spring back, which could apply cantilever moment to the disconnecter.

Disconnecter Preparation

Certain assemblies are required to be shipped with a restraint on the disconnecter. Any shipping restraint must be completely removed prior to installation. A warning label is typically used to identify the restraint. Failure to remove the restraint could hinder successful operation of the disconnecter. If you have any questions, contact Hubbell for assistance prior to installation.

Grading And Corona Rings

Depending on voltage rating, the Protecta*Lite® arrester may require a grading or corona ring. The ring(s) should always be placed on the line end side of the arrester. The outline drawing identifies the proper location of the grading ring. Install the ring(s) as indicated with the bolts provided.

Discharge Counters

An insulating base or standoff insulator is typically required when installing a discharge counter with Protecta*Lite arresters. Both accessories can be included with a Protecta*Lite arrester. Install the discharge counter and insulating bases as shown on outline drawings.

WARNING

Always be certain that the ground connection is firmly made before connecting the arrester to an energized line. If an insulating unit is used at the ground end to permit use of a discharge counter, the discharge counter must be connected (or the insulating unit shorted out) before connecting the arrester to an energized line.

Periodic Inspection, Maintenance And Removal

Protecta*Lite™ arresters require no routine maintenance. If maintenance or handling of the arrester is deemed necessary, certain precautions should be taken. Before inspecting or handling, disconnect the arrester from the line. When a metal-oxide arrester is disconnected from an energized line, it is possible for a small amount of static charge to be retained by the arrester. As a precautionary measure, install a temporary ground on the line end of the arrester after it is disconnected from the line. This will ensure that any retained charge is discharged to ground. Remove the temporary ground before the arrester is re-installed.

These arresters do not require testing, and no test that applies power voltage in excess of maximum arrester voltage rating should be made without consulting Hubbell. There is no single field test that will indicate the complete operating characteristics of the arrester.

Storage

All Hubbell arresters are designed for outdoor use, and may be stored outdoors if suitable precautions are taken to prevent deterioration of the packing material. The arresters may be covered with a polyethylene or other waterproof covering to keep them dry, clean, and free from litter until used. In climates where outdoor temperature and humidity extremes rapidly deteriorate the packing material, it is recommended the arresters be stored indoors.

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These instructions do not purport to cover all details or variations in equipment nor to provide for every possible contingency to be met in connection with installation, operation or maintenance. Should further information be desired or should particular problems arise which are not covered sufficiently for the purchaser's purposes, the matter should be referred to Hubbell Power Systems, Inc.

