

POLYMER-HOUSED ARRESTERS EVP - SERIES



Installation Instructions: 17-5156

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 surge arresters are designed to limit surge voltage by conducting the surge current to ground, and thus avoiding equipment damage. The arresters are of single pole design, suitable for outdoor use, and designed in accordance with the latest revision of industry standard IEEE C62.11 and IEC 60099-4.

Each EVP arrester contains a number of vertically stacked zinc oxide valve elements overwrapped with an epoxy-impregnated fiberglass filament wrap, contained within ESP® polymer weathershed housing(s). The metal end fittings attached to the housing(s) vary with the specific design ordered.

Three arresters are required for three-phase installation. With the exception of special multi-rated designs, arresters are shipped as a single assembled unit. Multi-rated arresters consist of separate units that must be stacked and bolted together in the field.

Application

WARNING

EVP 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 (U_r for IEC arresters) and maximum continuous operating voltage (U_c for IEC arresters) are not exactly the same on the nameplate and packaging labels.

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 (U_r for IEC arresters), and MCOV (U_c for IEC arresters) are identified on the arrester nameplate. The nameplate information should be checked against the shipping memorandum.

Line and Ground Connections

Line and ground hardware are shipped unassembled to the arrester and will be contained inside the carton or crate. Install supplied line and ground terminals to the arrester as indicated on the outline drawing. Connect the arrester ground to the apparatus ground and the main station ground, utilizing a reliable common ground network of low resistance. Line connections should not place excessive mechanical stress on the arrester.

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

Installation Location

Install the arrester electrically as close as practicable to the equipment to be protected. Keep the arrester connections short and direct. The footings of all outdoor piers or supports should extend below the frost line and be elevated above the ground line sufficiently to meet personnel safety requirements.

Altitude and Temperature

EVP-series arresters can be used from 0 to 12,000 feet (3600m) altitude. These arresters can be used in locations where the maximum temperature does not exceed 60° C and where the weighted average temperature does not exceed 45° C. The minimum operating temperature is -60° C.

Mounting

Ensure that all feet are firmly positioned before drawing down foundation bolts to avoid unnecessary stresses in the end fittings. Tighten the bolts firmly.

It is permissible to mount some lower voltage arresters horizontally. However, please consult your HPS sales representative to be sure that horizontal mounting is permissible for a particular arrester.

Single Rated Arresters

For base-mounted arresters, shim as necessary under all but one foot to obtain perpendicularity to the foundation.

Multi Rated Arresters

Special multi-rated arresters have two or more units, of which one or more of the units can be shorted by a supplied shorting bar to obtain an arrester voltage rating that is lower than the voltage rating of the arrester with the shorting bar removed. The shorting bar is connected to the arrester using terminals provided. The outline drawing supplied with the arrester indicates the locations for installation of the terminals.

CAUTION

Multi-unit arresters must be erected in the exact order identified on the outline drawing and on the nameplate attached to the lower end fitting of the bottom unit.

Carefully check that the unit is vertical, shimming under all but one foot if necessary. Repeat this procedure for additional units

Grading Rings

Depending on the arrester voltage rating and length, a grading ring may be required on the line end of the arrester. The outline drawing identifies the proper location to install the grading ring. Install the ring with the provided hardware. Grading rings are shipped on a separate pallet when required.

Discharge Counters

An insulating base is required when installing a discharge counter with arresters. Both of these are accessories and are available through your HPS sales person. 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

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

EVP arresters may be stored outdoors if suitable precautions are taken to prevent deterioration of the packing material. The arresters should be covered with a 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 that arresters to be stored outdoors be removed from their packing and be bolted (vertically) to a skid.

Packaging

Most EVP packaging is recyclable in accordance with federal, state and local regulations. Please adhere to all applicable regulations.

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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.

