INSTRUCTIONS

GEH-3286A
Supersedes GEH-3285, GEH-3286

ALUGARD® INTERMEDIATE SURGE ARRESTERS

MODEL 9L12L- SERIES
RATED 3 THROUGH 120 KV

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 FOR THIS TYPE OF EQUIPMENT.

DESCRIPTION

The ALUGARD ® Intermediate Arrester consists of a stack of one or more arrester units connected in series, the number depending on the voltage and operating conditions of the circuit. Terminals for line and ground connections are furnished.

Three single-pole arresters are required for a three-phase installation. They are suitable for indoor or outdoor service for altitutes of 0-10,000 feet.

Each arrester unit consists essentially of a permanently sealed porcelain housing equipped with pressure relief, and containing a number of THYRITE valve disks and Alurite gap elements in series. Metal fittings cemented on the housing provide means for bolting the arrester units together or to a foundation. Arrester units of the 9L12L series may not be used in series with other units bearing model numbers 9LA2D, E, F, G, H or 9L12H.

The stainless steel unit nameplate on one *bottom bolting lug* of each individual unit applies to the arrester unit only. The main arrester nameplate shows the model number and voltage rating of the completely assembled arrester. It is fastened in place with one of the foundation mounting bolts.

APPLICATION

Arresters are designed to limit surge voltages to a safe value by discharging the surge current to ground, and to interrupt the power-frequency follow current. The ability to interrupt power follow current is limited to applications where the power-frequency voltage at the arrester never exceeds the arrester's rating.

The best protection willbe obtained by installing the arresters as close as possible to the apparatus being protected. Line and ground connections should be short and direct. The arrester ground should be connected to the apparatus grounds and to the main station ground, utilizing a reliable common ground network of low resistance.

INSTALLATION

INITIAL INSPECTION

ALUGARD Intermediate Arresters are designed to withstand severe shipping shocks and vibration. In addition, each unit is shipped in a carefully designed container. If the carton shows signs of rough handling, upon receipt the porcelain housing should be inspected for chips or cracks. If damage is apparent, the arrester should not be installed. Claims for such damage should be registered with the common carrier.

FOUNDATION

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.

CLEARANCES

The term "clearance" means the distance between any part of the arrester at line potential, and any object at ground potential or other phase potential. The clearances given on the outline drawing packed with each arrester are the minimum recommended. The arrangement of the foundation plan can be modified if desired.

ASSEMBLY

Install the base unit on the foundation, using care to see that it is perpendicular, shimming under one or two feet if necessary. It is important that all three feet rest solidly on the foundation before the foundation bolts are drawn down to avoid unnecessary stresses on the end fittings. Tighten the bolts firmly. The opening for pressure-relief should be oriented so as to minimize damage to adjacent equipment by incandescent gases in the remote event of arrester failure.

Select the next unit carefully (if it is a multi-unit arrester) by reference to the outline drawing, and bolt it securely to the base unit. The end fittings are carefully affixed at the factory to assure parallelism, so no further shimming should be required provided it was carefully done when the base unit was installed.

Be sure to install the grading ring (if required) as called for on the outline drawing.

SUSPENSION MOUNTING

ALUGARD Intermediate Arresters may be suspension mounted if the line connection is made to the top of the arrester. Suspension cap, Model 9L12HAW709, is available for this purpose.

ENERGIZING THE ARRESTERS

Connection to the line should be made through a suitable line connector. Line connections should be made in such a manner that no excessive mechanical stress is placed on the arrester. When connecting the arrester to an energized line, it is imperative that a quick, positive, continuous action be made to avoid possible damage to the arrester.

CAUTION: 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 AND MAINTENANCE

Before inspecting or handling the arrester, disconnect the arrester from line and, as a safety precaution, ground the line end. *Remove this temporary ground before reconnecting the arrester to the line.*

ALUGARD Intermediate Arresters require no special care. They may be hot-washed, subject to the usual care and techniques used in hot-washing insulation to avoid external flashover.

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

PORCELAIN TOP UNITS

Porcelain top arresters with center line terminals are available and are particularly suited for use in metal cubicles. These arresters can be mounted in any position when installed in a reasonably clean and dry indoor location.

DISCHARGE COUNTERS

An insulating base is required when installing a discharge counter with arresters. Both of these are accessories and are described in Handbook Section 5920. Install the discharge counter and insulating base as shown on the outline drawing furnished with the counter.

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