COOPER Power Systems

Surge Arresters

Service Information

UltraSIL™ Transmission Line Surge Arrester Installation Instructions

S235-89-1

Contents

PRODUCT INFORMATION

Introduction

The Cooper Power Systems UltraSIL™ Transmission Line Surge Arresters provide overvoltage protection to overhead transmission and distribution systems.

Read This Manual First

Read and understand the contents of this manual and follow all locally approved procedures and safety practices before installing or operating this equipment.

Additional Information

These instructions cannot cover all details or variations in the equipment, procedures, or process described nor provide directions for meeting every possible contingency during installation, operation, or maintenance. For additional information, contact your representative.

Acceptance and Initial Inspection

Each transmission line surge arrester is in good condition when accepted by the carrier for shipment. Upon receipt, inspect the shipping container for signs of damage. Unpack the arrester and inspect it thoroughly for damage incurred during shipment. If damage is discovered, file a claim with the carrier immediately.

Handling and Storage

Be careful during handling and storage of the transmission line surge arrester to minimize the possibility of damage. If the arrester is to be stored for any length of time prior to installation, provide a clean, dry storage area.

Standards

ISO 9001:2000 Certified Quality Management System

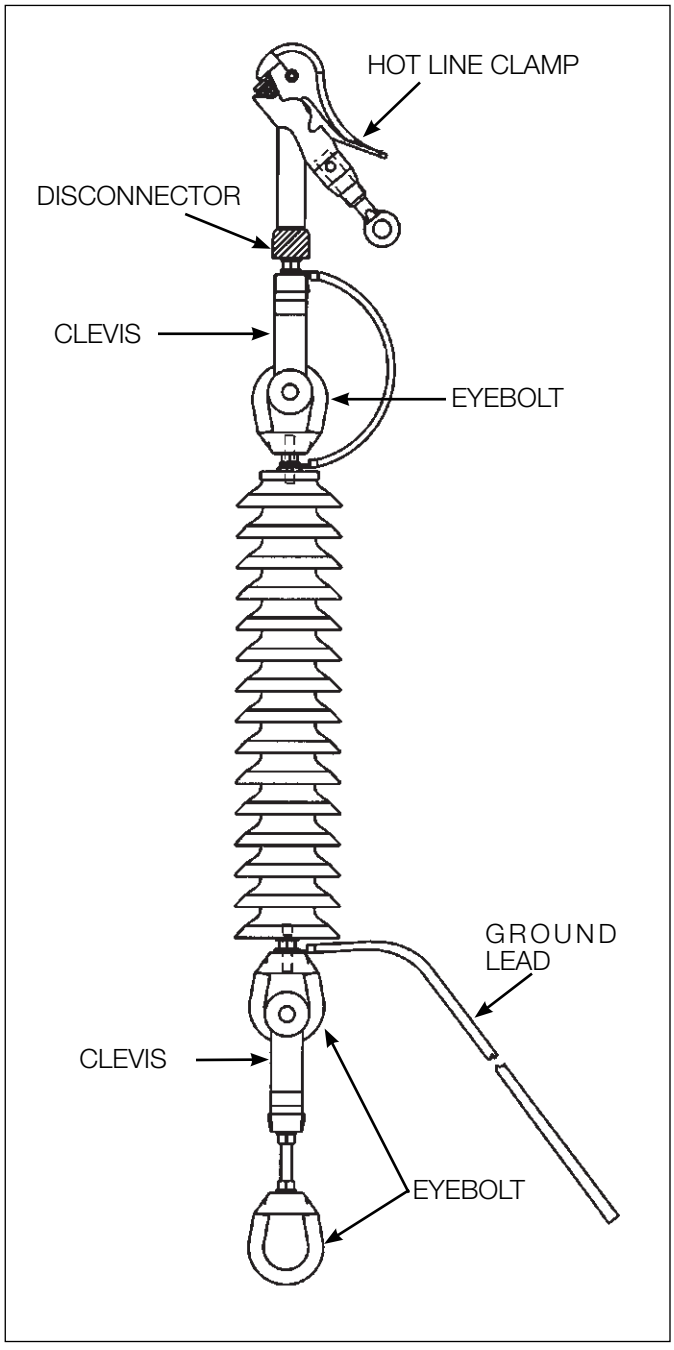

Figure 1.
UltraSIL Housed Typical Configuration Transmission Line Arrester

SAFETY FOR LIFE

Cooper Power Systems products meet or exceed all applicable industry standards relating to product safety. We actively promote safe practices in the use and maintenance of our products through our service literature, instructional training programs, and the continuous efforts of all Cooper Power Systems employees involved in product design, manufacture, marketing and service.

We strongly urge that you always follow all locally approved safety procedures and safety instructions when working around high-voltage lines and equipment and support our “Safety For Life” mission.

SAFETY INFORMATION

The instructions in this manual are not intended as a substitute for proper training or adequate experience in the safe operation of the equipment described. Only competent technicians, who are familiar with this equipment should install, operate and service it.

A competent technician has these qualifications:

- *Is thoroughly familiar with these instructions.*
- *Is trained in industry-accepted high- and low-voltage safe operating practices and procedures.*
- *Is trained and authorized to energize, de-energize, clear, and ground power distribution equipment.*
- *Is trained in the care and use of protective equipment such as flash clothing, safety glasses, face shield, hard hat, rubber gloves, hotstick, etc.*

Following is important safety information. For safe installation and operation of this equipment, be sure to read and understand all cautions and warnings.

Hazard Statement Definitions

This manual may contain four types of hazard statements:

DANGER: Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

WARNING: Indicates a potentially hazardous situation which, if not avoided, could result In death or serious injury.

CAUTION: Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

CAUTION: Indicates a potentially hazardous situation which, if not avoided, may result in equipment damage only.

Safety Instructions

Following are general caution and warning statements that apply to this equipment. Additional statements, related to specific tasks and procedures, are located throughout the manual.

DANGER: Hazardous voltage. Contact with high voltage will cause death or severe personal injury. Follow all locally approved safety procedures when working around high- and low-voltage lines and equipment.

WARNING: Before installing, operating, maintaining, or testing this equipment, carefully read and understand the contents of this manual. Improper operation, handling or maintenance can result in death, severe personal injury, and equipment damage.

WARNING: This equipment is not intended to protect human life. Follow all locally approved procedures and safety practices when installing or operating this equipment. Failure to comply may result in death, severe personal injury and equipment damage.

WARNING: Power distribution equipment must be selected for the intended application. It must be installed and serviced by competent personnel who have been trained and understand proper safety procedures. These instructions are written for such personnel and are not a substitute for adequate training and experience in safety procedures. Failure to properly select, install or maintain this equipment can result in death, severe personal injury, and equipment damage.

CAUTION: Always handle surge arresters - p[acked or unpacked - very carefully. Do not drop, jar, or handle an arrester roughtly. Dropping jarring, and/or rough handling may damage the arrester internally and/or externally, making it incapable of adequately protecting the apparatus or circuit on which it is to be installed or it may cause failure upon energization.

CAUTION: Mark all electrical connections — ground and line — so that no mechanical stress is applied to the surge arrester. Mechanical stress may damage the arrester in such a manner that its service life is shortened significantly.

CAUTION: Never install a damaged arrester. A damaged arrester may misoperate violently, causing severe personal injuury and property damage.

WARNING: Do not install an arrester if the type, voltage rating, and MCOV data are not exactly the same on the nameplate and the carton label because the arrester may be incapable of adequately protecting the apparatus or circuit on which it is to be installed or it may fail upon energization should it have insufficient MCOV.

WARNING: Always consider an arrester to be energized until both the line and the ground leads have been disconnected from the circuit.

WARNING: Make all electrical connections - ground and line - so that no mechanical stress is applied to the surge arrester. Mechanical stress may damage the arrester.

INSTALLATION

NOTE: In the event that safety and operating procedures have not been established by your company, we suggest the following installation instructions.

- Install all mounting hardware on the arrester in accordance with the enclosed drawing.
- Make the ground lead as short as possible as well as the line lead (if applicable).
- De-energize the electrical system.
- Connect the ground lead to the arrester ground terminal in accordance with the enclosed drawing.

NOTE: Make the arrester ground connection as short and direct as possible to a solid, effective permanent, low-resistance ground. If the arrester has the optional ground lead disconnector, the lead must be flexible to allow the disconnector to operate properly.

- Connect the line lead of the arrester to the transmission line.
- Re-energize the electrical system.

REMOVING AND ARRESTER FROM A CIRCUIT

WARNING: Before performing any test on an arrester, contact Cooper Power Systems. Some test procedures may damage the arrester externally and/or internally, making it incapable of protecting the apparatus or the circuit on which it is installed, or shortening its service life significantly.

NOTE: In the event that safety and operating procedures have not been established by your company, we suggest the following instructions.

- De-energize the electrical system.
- Disconnect the arrester line lead from the circuit.

NOTE: A small amount of static charge may be retained in an arrester when it is removed from an energized circuit.

- Disconnect the arrester ground lead from the circuit.
- Re-energize the electrical system.

FIELD TESTING

All UltraSIL™ Housed Arresters have passed a complete series of production tests prior to shipment; therefore, no field testing of new units is required.

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