

**COMMITTEE G: Education & Training
Communication & Signal Division AAR**

A-5 Lightning Arrester *Approved January 1972*

Definition: A lightning arrester is a device for protecting circuits and apparatus against lightning or other abnormal voltage rises of short duration.

Symbol:



Description: The main component of a lightning arrester of the type described here is the spark gap. This gap is designed to permit a spark to jump across it when the voltage exceeds a specified value. Arresters may have one or more gaps.

Figure 1 and Figure 2 illustrate arresters with two binding posts and one spark gap.

An arrester of the spark gap type with 3 binding posts and 2 spark gaps is illustrated in Figure 3. The 2 outside binding posts are connected by a wire in the base of the arrester.

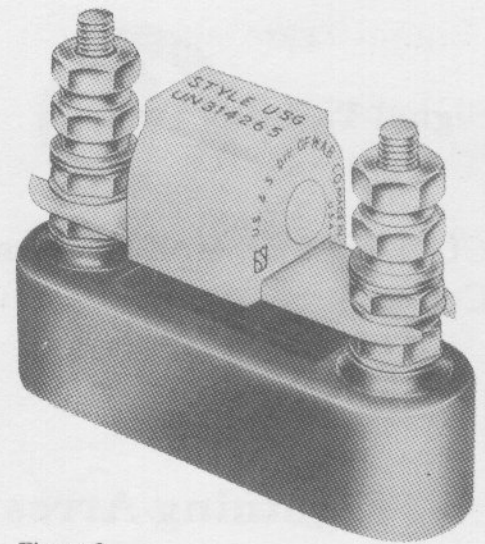


Figure 2

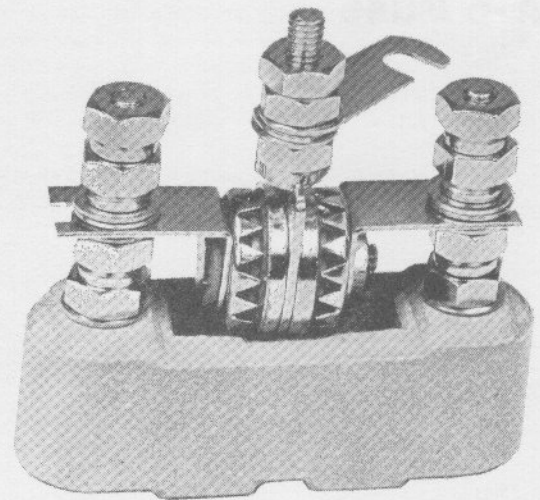


Figure 3

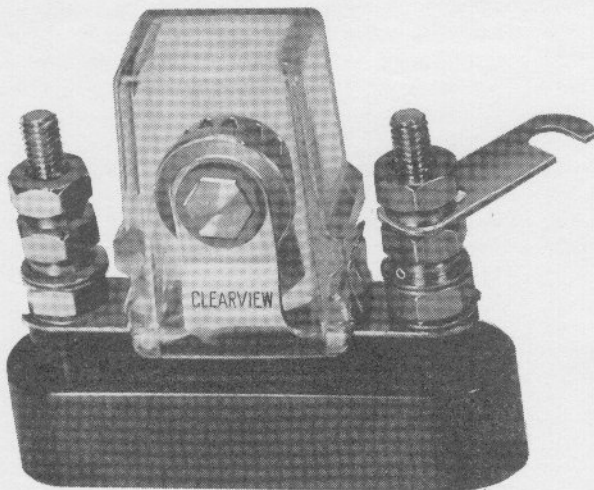


Figure 1

Purpose and application: Figures 1, 2, and 3 illustrate only three of the many spark gap type arresters manufactured. They all perform the same function. Lightning or other voltage rises of short duration (transients) often have the capability of destroying signal equipment or disrupting its operation. Lightning arresters protect the signal equipment from these surges. The arrester is built so that it allows normal voltage and current inputs to the signal equipment, but diverts all surges once the breakdown voltage is exceeded.

Lightning arresters may be connected as shown in Figures 4, 5, and 6.

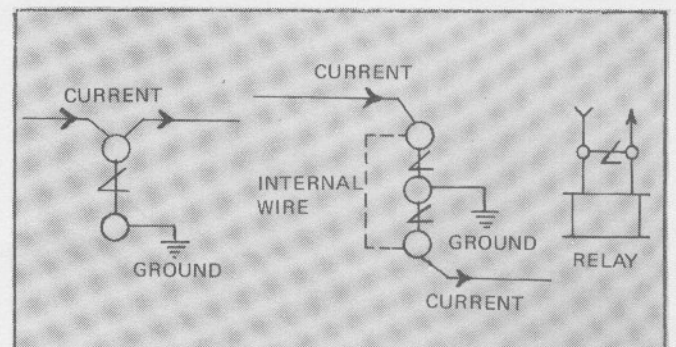


Figure 4

Figure 5

Figure 6

General Information: It is most important that you become familiar with your company's instructions and requirements.

Detailed Operation: None.