

FAIL SAFE DEVICE

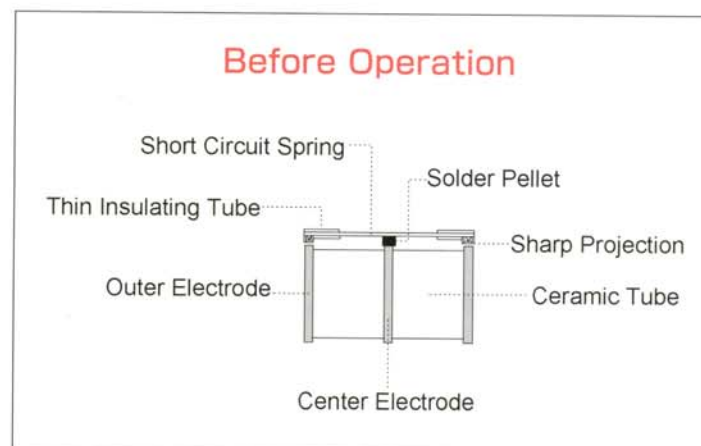
Purpose

Gas Tube Arresters are typically used to quickly and safely protect modern telecommunications equipment from damage caused by transient surge voltages. Lightning and equipment switching operations are two common causes of these short duration surge voltages. Gas Tube Arrester operation does not generate any significant heat during these events which normally last a few microseconds or less.

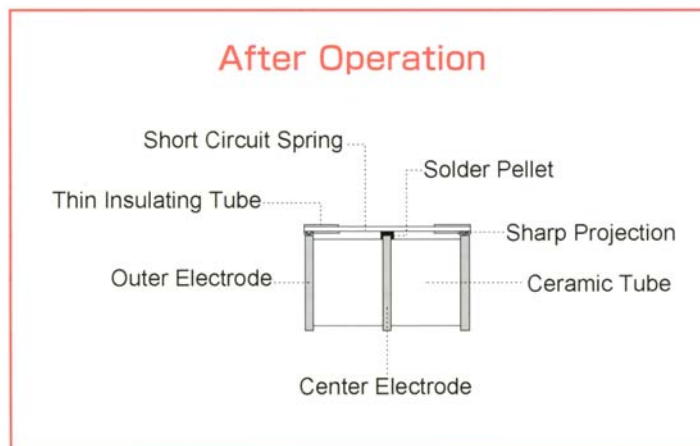
However, surge voltages can also be caused by crossover from power supply lines and last significantly longer. Gas Tube Operation may continue for extended periods and generate significant thermal energy. To prevent heat caused damage to the arrester magazine or the terminal block and to eliminate any possible fire hazard, a Gas Tube Arrester equipped with back-up short circuit mechanism known as a Fail Safe Device may be employed.

Operation

The Fail Safe Device is a short circuit spring that is mounted on the center electrode of the Gas Tube Arrester. Prior to operation, a solder pellet installed between the spring and the center electrode of the Gas Tube Arrester and thin insulating tubes covering sharp projections at each end of the short circuit spring force the Fail Safe Device to “float” 0.1-0.5 mm above the outer electrodes of the Gas Tube Arrester.



When prolonged discharge operation causes the temperature of the Gas Tube Arrester to rise to the melting point of the solder pellet, the short circuit spring moves closer to the Gas Tube Arrester and its tension forces the projections through the thin insulation making contact with both Gas Tube Arrester outer electrodes. This process permanently short-circuits all three electrodes creating a low resistance path to ground that will conduct the fault current without generating significant heat.



Fail Safe Activation Time

Fail Safe Device Activation Times vary from model to model. See the Gas Tube Arrester Specifications for details.

Installation

Care should be taken when installing Gas Tube Arresters equipped with Fail Safe Devices into arrester magazines, printed circuit boards, etc. because too much downward pressure may force the short circuit spring projections through the thin insulation creating a shorted condition.