



**Pragati Electrocom Pvt. Ltd.**

## **TELEPHONE LINE PROTECTION**

Plug in surge arrestors for protecting communication network using line systems, have been designed using insulation pierced connections with built in-fail safe- overload protection and surges up to 10 KA (average) at 8/20 microseconds.

The device has been designed with four-stage protection extended with the combination of GD Tube, PTC, MOVs and Surge suppressor diodes. The devices are capable of operating in < 1 n sec. With operating temperature range of -25 C to +80C.

**Stage-I:** The GD Tube placed across the line at the subscriber end, as well across the earth, small extend total protection between line to earth, return to earth, live to return path. The fuse installed at the Telephone Exchange side shall blow-off to protect the Exchange.

**Stage-II:** The combination of two PTC's and three MOVs shall protect the Telephone Exchange in case of surge on the line if GD Tube fails to function, on all three routes i.e. line to earth, return to earth, and line to return path.

**Stage-III:** In case of non-functioning of first two stages the surge suppressor diode (Clamp Diode) shall clamp the surge signals resulting in the fuse blow-off thus extending protection to Telephone Exchange.

**Stage -IV:** The PTC is provided prior to MOV to create line impedance for safeguard of the MOV from blast in case of surges.

The coordination coil before the surge suppressor diode, provide line impedance for safeguard of suppressor diode.

The LED in CCT indicates the healthy and proper polarity of the line.

In case of short CCT at subscriber end, sufficient line impedance is maintained with the help of PTC and coordination coil for over-load protection of Telephone Exchange. Technically the GD Tube, MOV's and Surge Suppressor Diodes are voltage protection devices and PTC and Coordination Coil are current protection devices.

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**Operational Characteristics**

1. Nominal operating voltage: 110V AC / 175V DC,
2. Nominal current > 150 MA.
3. Impulse current (10/350 $\mu$ s) > 1 kA
4. Nominal discharge current  $I_{sn}$  (8/20 $\mu$ s) > 10 kA (between tip / ring to earth)
5. Maximum discharge current  $I_m$  (8/20 $\mu$ s) > 20 kA
6. Tested as per IT-UK-20. The system is available in block of 10 pair of balanced line protection magazine.

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