Proceedings of the Annual Sessions, SLAAS, 57 (2001) C-135

C-135: A low cost device protector for telephone-interfaced equipment

PCCPW Goonetilleke and DUJ Sonnadara*
Department of Physics, University of Colombo, Colombo 3

In Sri Lanka, most of the telecommunication line interfaced equipment can be damaged due to voltage surges associated with lightning strikes. Most such equipment include protection from high voltage surges up to some extent and they could be further protected by using expensive devices such as UPS', which may not be affordable to most users.

A low cost device was developed that could replace the expensive protection devices available in the local market. The main advantage of this device is that it can completely isolate the equipment from the telephone line resulting in no damage whatsoever to the equipment.

The constructed device is composed of two independent sub units, one that is connected to the telephone line and other to the equipment. The unit connected to the telephone line has two LEDs and an Opto transistor in addition to a few semi-conducting devices. One of the LEDs detects the ring signal and other transmits the data signal to the second unit. Opto transistor senses the data signal from the second unit connected to the equipment. Similarly the unit connected to the equipment contains an LED, an LDR and an Opto transistor. The LDR detects the ring signal and the LED sends the data signal to the first unit. Even for very high voltage surges, only the unit connected to the phone line can be damaged and it can be replaced at a cost less than Rs.100. The full device can be constructed for under Rs. 500 /- and it is capable of driving two or three loads in parallel.