Suppression Protection

(All current output units 4-20 mA)

Setra's line of (4-20 mA output) Pressure Transmitters have been used with long transmission lines (up to 3 miles of rented telephone lines) and are increasingly being exposed to potential damage from lightning induced transients. Most telephone lines and long signal lines are protected by a primary protection system consisting of a carbon block spark gap device, the oldest and most common used protection method. It consists of two carbon block electrodes separated by a small air gap of between 0.003 and 0.004 inches. One electrode is connected to the cable conductor and the other to system ground. The gap breaks down when a transient is induced diverting the transient to ground. This is a low cost solution but the life of the carbon block device is not long. Another more costly solution is the gas tube protector. Metallic electrodes with gaps spaced 0.010 to 0.015 inches apart are enclosed in a gas filled glass tube. These have a longer life and higher current handling capability but the potential drawback of gas leakage.

The carbon block and the gas tube protectors are common primary protection devices. A secondary protection is advised for use with our transmitters. The metal oxide varistor (MOV) offers a simple low cost means to lower the voltage spike seen by the transmitter. The device is highly reliable, has a high energy capacity and fast response. By shunting any spike remaining to ground, the varistor will protect the transmitter from damage.

Harris Semiconductor is a manufacturer of these devices and has published an excellent reference on transient voltage suppression. This manual is available from your local Harris Semiconductor sales office, distributor, or by writing to:

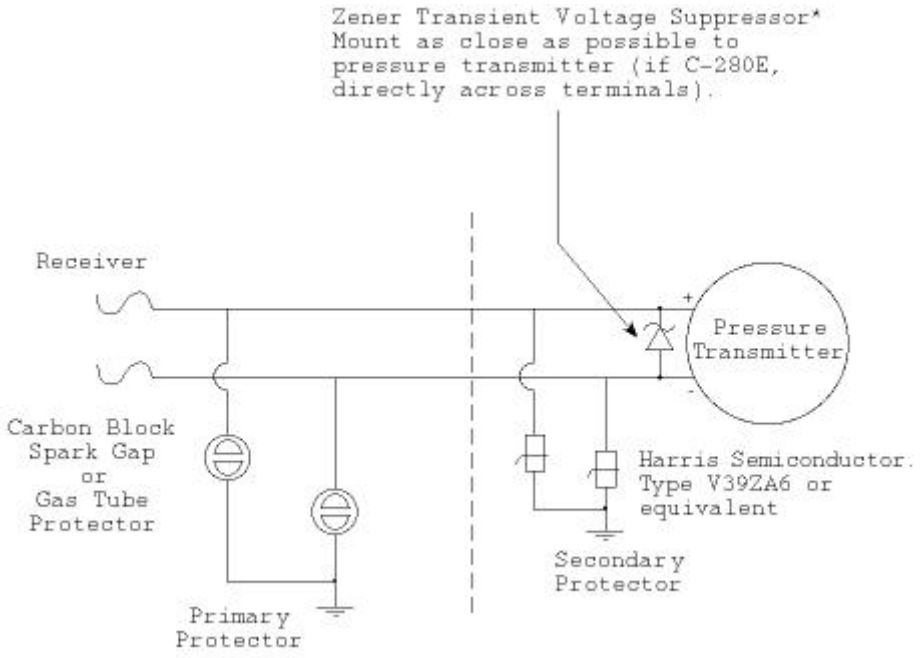
Harris Semiconductor
P.O. Box 883
Melbourne, FL 32902-0833

Ask for:

Publication 450.5 of the Electronic Data Library Entitled "Transient Voltage Suppression."

The accompanying diagram is intended as a generalized schematic showing the reliable positions of the primary protection devices, varistors and transmitters.

Note: The PT Housing has an internal ground available for connection of the varistors.



* Available from the following vendors:

General Semiconductor
10 Melville Park Road
Melville, NY 11747
Bob Fried (Local Representative)
(516) 847-3104
Order Part No. P6KE30A, 1.5KE30A or 5KP26A

Digikey
701 Brooks Avenue S.
Thief River Falls, MN 56701
1-800-344-4539
Order Part No. 6KE30A