

DESCRIPTION & FEATURES

SA Surge Arrestors are recommended for all KNS weather instruments. These devices employ electrode gas tubes. They provide immediate protection by grounding both sides of a wire pair whenever a high voltage condition appears in either or both lines.

Under normal operating conditions the surge arrester is nonconducting and does not affect the operation of the instrument. However, if the voltage in either line rises to 300 volts, the gas in the tube ionizes, thus becoming a good electrical conductor. Surge currents in the lines are then harmlessly conducted to ground. Ionizing time is less than five microseconds. Once ionization occurs, the gas will remain ionized until the voltage across the gas tube drops to 30 volts at which point it will return to its normal state, ready to fire at the next surge of 300 or more volts.

The SA2x will accommodate both leads of the SLT wind speed anemometer or RLT rain gauge. The SA4x will accommodate the 3 leads of the DLT wind direction vane. It is recommended that a surge arrester be placed at the sensor side of the leads and a second surge arrester be placed where the sensor leads enter the building.



Pole Mount

INSTALLATION

Both the SA2P and the SA4P are furnished with a metal band clamp attached to the base. This allows the surge arrester to be mounted to the anemometer or wind vane supporting structure directly below the sensor it is to protect. The SA2W and SA4W are for wall mounting.

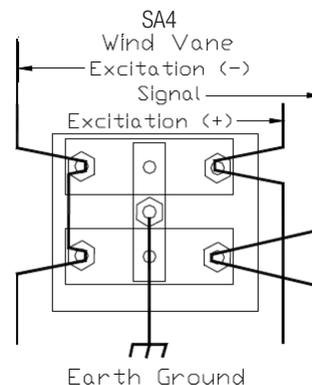
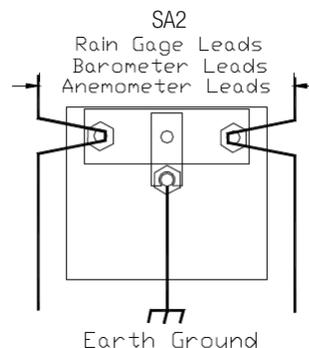
Remove the cover by loosening the hex head fastener in the center. Measure down the leads from the sensor a distance sufficient to permit the leads to be brought down beside the arrester base and then back up inside the case to the outside binding posts. Strip about 3/4" of insulation from each lead at this point. Take one turn of the bared section of lead wire a round the binding post under the post nut and washer. Tighten the binding nut firmly down on the wire loop. The lead wires continue down the mast and to the input terminals of the transmitter.

A good straight run ground connection must be provided from the center binding post to a good earth. If the transmitter is installed in a building, its earth ground, if it exists, can be used. It is recommended, that the electronics package be installed as close as possible to the ground connection to minimize inductance in the connecting cable. It is not recommended that a water pipe or power-line neutral be used for this purpose as they are not designed to dissipate a lightning bolt.

If the unit is installed in the field or in a location where a ground is not available, a copper or copper-clad rod should be driven into the ground at least eight feet. Since frozen soil is a poor conductor of electricity, the ground rod should extend three feet below the deepest frost line in your area. If the installation is in an area where this approach is not feasible, consult your instrument dealer for advice.

The type of soil influences the ability of the ground rod to dissipate energy. Clay and loam are best, sand or gravel is poor. Ground rods should be installed as vertically as possible, since surface soil generally has a lower conductivity than subsoil. Use at least a #12 conductor for this. Either solid or stranded wire may be used, but stranded is more flexible and has a somewhat greater current carrying capacity when very high frequency surges are involved. Where two surge arrestors are used together, they should be connected to the same ground conductor.

The SA2W and SA4W Surge Arrestors are installed the same way. The box is mounted to the wall using two screws.



ORDERING INFO

PART NUMBER

SA2P	2 Wire Pole Mounted Surge Arrestor
SA2W	2 Wire Wall Mounted Surge Arrestor
SA4P	4 Wire Pole Mounted Surge Arrestor
SA4W	4 Wire Wall Mounted Surge Arrestor

