

SUPERVISORY CONTROL PROTECTOR TUBE KX-642

U S E S

Supervisory control systems are used in electric power stations for numerous control features, such as switching operations and remote meter readings as well as for signaling purposes. Most of these lines operate at rather low voltages and are commonly connected directly with switches, relays or meters mounted on the station switchboards.

Because of the exposure of such circuits to the power lines carrying extremely high voltages, there is considerable liability of over-voltage conditions being applied to the supervisory control system. These over voltages may reach magnitudes which are dangerous, both to the attendants and to the system insulation. The Westinghouse supervisory control protector tube, KX-642, has been designed as a safety gap which may be connected between the control system and ground. The tube, therefore, insures the continuous functioning of the control system while maintaining a continuous watch to drain off any voltage transients or surges to ground with no harm to the operator or circuit.

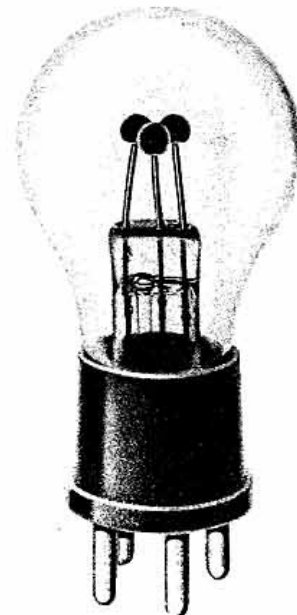
In addition to use in supervisory control circuits this tube may be used to protect other lines or circuits from high voltage switching or other transient surges whether they be of a temporary or extended nature. As a safety precaution it may be used to ground high voltage circuits when a meter fails, thus not exposing the operator to high voltage. Similarly the tube may be used to protect equipment such as, meters, low voltage condensers and relays. If the disturbance is of a transient nature and if the discharge current is not ex-

cessively high, the tube will function for many times. However, extremely heavy discharge currents may cause the tube to be destroyed, but in so doing it will maintain the discharge to ground until the protective fuses have a chance to isolate the line from high voltage.

D E S C R I P T I O N

The supervisory control protector tube consists of three graphite electrodes mounted in a gas filled bulb which is normally equipped with the industrial type of base. Due to the possibility of extremely high discharge currents, the industrial base is preferable to other types as its rugged pins enable it to safely carry the high peak currents, which may be encountered in service.

In the normal type of circuit, one of the electrodes is connected to ground while the other two connect individually with the two wires of the supervisory control circuit. The tube is designed to break-down with an A-C. voltage of not under 300 volts



KX-642 SUPERVISORY CONTROL
PROTECTOR TUBE

or over 500 volts r.m.s. In most applications it is used to protect A-C. lines of 115 volts or lower. However, it may be used also on a 230 volt A-C. line.

The circuit should also be equipped with suitable fuses so that the meter circuit will be opened in case a heavy discharge current is maintained.

TECHNICAL DATA AND RATINGS

Main Use	Protector Tube
Number of Electrodes	3
Breakdown Voltage A.C.-R.M.S.	300-500 volts
Maximum discharge current for 2 second periods	50 amperes
Maximum discharge current for 10 minute periods	7 amperes
Maximum A.C. operating voltage R.M.S.	230 volts
Typical operating line voltage A.C.-R.M.S.	115 volts
Average arc drop	20-30 volts D.C.
Maximum short circuit current at which tube will clear at first current zero:	
At 230 volts	10 amperes
At 115 volts	15 amperes
Maximum overall length	5 inches
Maximum diameter	2-3/16 inches
Base Type Number	Industrial #410
Socket Style Number	#766732

For prices and further information write to
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