

# POWERSWITCH

1000 VDC TRACTION POWER  
CONTROL COMPONENTS

## 1000 VDC VOLTAGE SENSING RELAYS

COPPER RIDGE VOLTAGE SENSING RELAYS WERE DEVELOPED BY AN NMC AFFILIATE TO MONITOR THE VOLTAGE ON 1000VDC NO-LOAD BREAK TRACTION POWER DISCONNECTS. OPTICALLY ISOLATED VOLTAGE OF SPECIFIED VALUE APPLIED TO THE SENSE TERMINALS ENERGIZE INTERNAL RELAYS TO CLOSE TWO SETS OF NORMALLY OPEN DRY CONTACTS. THESE ISOLATED CONTACTS CAN BE CONNECTED TO TURN ON LOCAL OR REMOTE SIGNAL LIGHTS OR SCADA RELAYS TO INDICATE WHEN THE OCS OR THIRD RAIL VOLTAGE IS MORE THAN THE SET VALUE.

PART NUMBER **940150** CLOSSES BOTH N.O. RELAY CONTACTS WHEN THE SENSE VOLTAGE IS BETWEEN 50 AND 1000 VOLTS.

PART NUMBER **940190** IS SIMILAR EXCEPT THE N.O. CONTACT AT TERMINALS 3 & 4 IS CLOSED WHEN THE SENSE VOLTAGE IS BETWEEN 50 AND 1000 VOLTS AND THE OTHER INDEPENDENT N.O. CONTACT AT TERMINALS 5 & 6 IS CLOSED WHEN THE VOLTAGE IS LESS THAN 50 VOLTS. THIS VARIATION WAS CREATED TO PROVIDE FAIL-SAFE CONTROL OF VOLTAGE PRESENCE DETECTORS THAT HAVE A GREEN LIGHT TO INDICATE THE OCS POWER IS OFF IN ADDITION TO THE NORMAL RED LIGHT TO INDICATE WHEN HV POWER IS ON. OTHER FAILSAFE VERSIONS ARE AVAILABLE AS SHOWN ON NEXT PAGE.

## FEATURES

DUAL OPTO-COUPLED AND ELECTROMAGNETIC ISOLATION BETWEEN HV AND INDEPENDENT OUTPUT CONTACTS.

HIGH SENSE VOLTAGE INPUT IMPEDANCE, NO FUSES NEEDED.

ISOLATED DRY CONTACTS ARE NORMALLY OPEN FAIL SAFE.

OPERATES WITH EITHER AC OR DC CONTROL POWER.

## SPECIFICATIONS

INSULATION: HV TO OUTPUT, and HV TO INPUT  
5 kV DC For 1 Minute With No Leakage

SENSING INPUT CHARACTERISTICS:

Maximum Forward Voltage: +1000 VDC.

Maximum Reverse Voltage: -1000 VDC.

Minimum Input Impedance: 480,000 ohms.

Maximum Current Draw: 2 mA @ 1000 VDC.

OUTPUT RELAY:

Two Isolated Normally Open Dry Contacts

Max Switching Voltage = 220 VDC, 250 VAC

Rated Current = 3 Amps

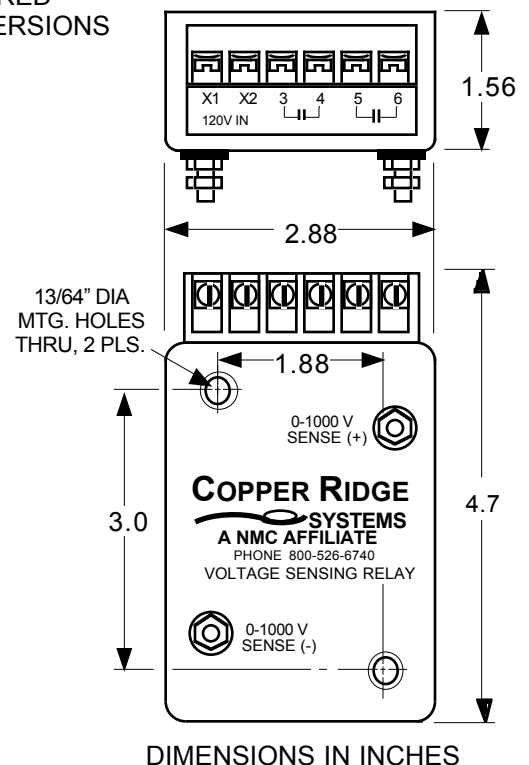
POWER INPUT:

120 Volts AC/DC, 10 Watts Maximum.

TERMINALS: HV - #8-32 Brass Studs.

LV - #6 Screws with Wire Clamps.

MOUNTING: (2) #10 x 2 inch long machine screws.



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