

THREE PHASE VOLTAGE MONITOR

Model EI-SPVR2 Relay

Application: The EI-SPVR2 is designed to monitor Phase-to-Phase voltage for Three Phase electrical equipment that are sensitive to Phase-Loss, Phase-Unbalance, Phase-Reversal, Over-Voltage and Under-Voltage conditions.

The SPVR2 has a set of "Form C" contacts that change state if an abnormal condition exists for the duration of the adjustable time delay. The exception is that the unit will trip instantaneously any time it detects a Phase Reversal, or the Over-Voltage reaches 150% of rated voltage, or the voltage drops below 50% rated voltage after being in Under-Voltage alarm conditions for more than 1 sec.

Normal Input Voltage: 120 VAC, 208 VAC, 480 VAC, and 575 VAC Phase-to-Phase

Frequency: 60 Hz

Ambient Temperature Range: 0-40 Deg C.

Storage Temperature: -40 Deg. C to + 85 Deg. C

Weight: 2.5 lbs.

Standard Features:

- Power On Indication (LED).
- "Form C" contacts
- Phase-Reversal Protection with LED indication.
- Phase-Unbalance Protection (2% to 8% Adjustable) with LED indication.
- Phase-Loss Protection with LED indication.
- Under-Voltage Protection (80%) with LED indication.
- Over-Voltage Protection (115%) with LED indication.
- Adjustable Trip Time Delay (0 to 30 sec.)
- Adjustable Reset Time Delay, except for the 120V. (1 sec to 5 min.)
- Automatic Reset when condition clears and at Power Up
- Panel or Door Mounting Options
- Clear Cover
- Maintain Fault indication after Loss of Power.



Normal Voltage (Phase to Phase)	Frequency @ 60Hz	Operating Voltage Range
120	60 Hz	96-138
208	60 Hz	166-239
480	60 Hz	384-552
575	60 Hz	460-661

How to Order: EI SPVR2 - XXX - X

Model

Voltage Phase to Phase

"D" Indicates Door Mount, for
Panel Mount, leave blank

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A correctly installed SPVR2 Voltage Monitoring Relay will protect a three-phase power system from Phase Reversal, Phase unbalance, Phase Loss, Over Voltage and Under Voltage conditions. (See Note for 240 Volt Unit.)

When operating in a normal condition, the green "Normal" LED will be illuminated, and the relay contacts will be deenergized. In a Phase Reversal condition, the SPVR2 Relay will instantaneously change state and the "Normal" LED will extinguish. If power is still available on all three phases the red LEDs will flash in a counterclockwise direction. In a Phase-Unbalance (2%-8% adjustable), Phase-Loss, Under-Voltage (80% to 35% normal Voltage) or Over-Voltage (115% to 150% Normal-Voltage) condition the corresponding LED will illuminate, and the Trip Time Delay will begin.

If the condition has not cleared before exceeding the time delay, the relay contacts will change state and the "Normal" LED will extinguish.

SPVR2 will trip instantaneously if an Over-Voltage greater than 150% exists for more than 1 second.

The SPVR2 will trip instantaneously if an Under-Voltage condition exist for more than 1 sec. **AND** the voltage drops below 50%.

The SPVR2 will clear the fault and reset all time delays if a condition clears before reaching the time delay setting.

Under-Voltage: relay resets at 90% normal voltage.

Over-Voltage: relay resets at 107% normal voltage.

The SPVR2 is designed to be used in a system where changing the state of the relay contacts may interrupt/secure power being used to energize the relay. Once power is removed, the cause of the fault can be determined by depressing the "Trip Indication" pushbutton. (If done w/in 7 days of the trip and the unit has been powered up for a minimum of 4 hours.)

If power is still available after the unit trip, and the condition clears, the SPVR2 holds the contacts in the fault condition until the "Time Delay to Reset" expires. During this time, the green "Normal" LED will flash.

Any time the unit is powered up and the "Trip Indication" pushbutton is pressed, the SPVR2 will reset all faults and all-time delays.

Notes:

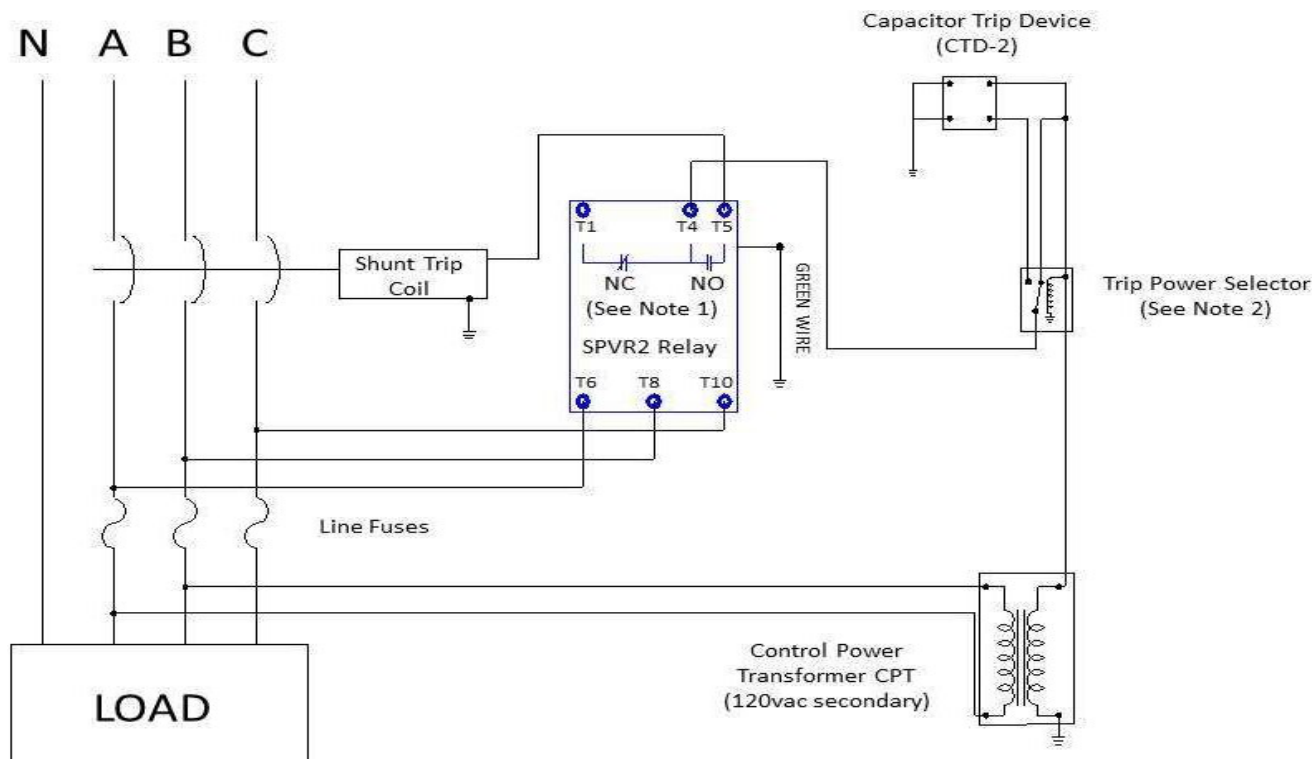
1. The SPVR2 240 does not detect Phase-Unbalance.
2. The green Ground wire coming out of the right side of the unit **MUST** be tied directly to Ground for proper operation of the unit.



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Notes:

- 1) Relay Contacts shown in the de-energized (no alarm) condition.
- 2) Power Select Relay not required if only DC power is used for the Shunt Trip Coil operation.
- 3) Green Wire must be grounded for proper Relay Operation.

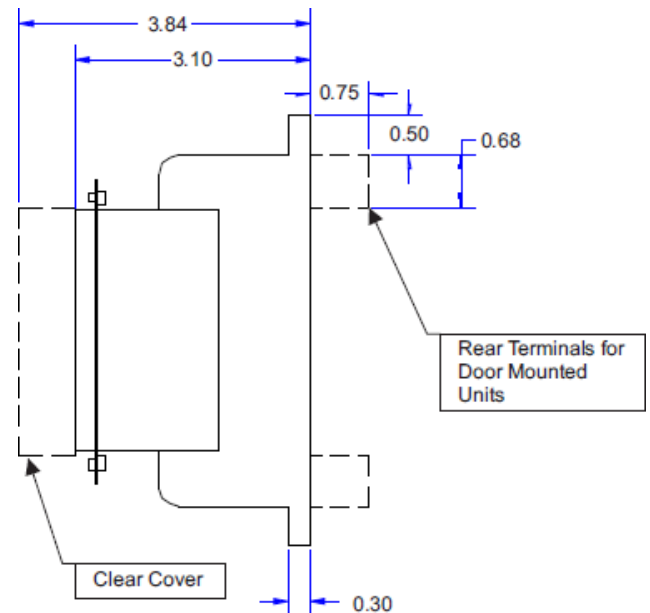
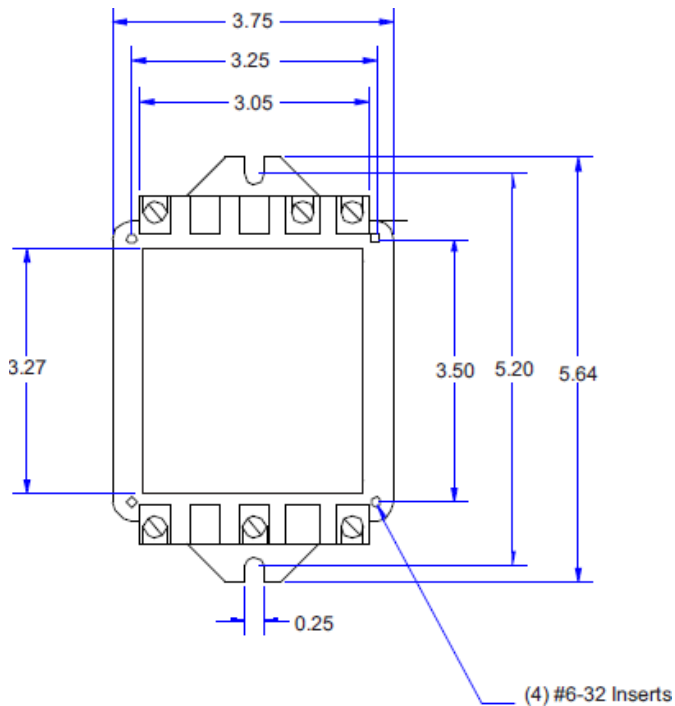
Contact Ratings:

RESISTIVE LOAD P.F.=1	16A at 250 VAC 16A at 30 VDC
INDUCTIVE LOAD P.F. =0.4	8A at 250 VAC 8A at 30 VDC

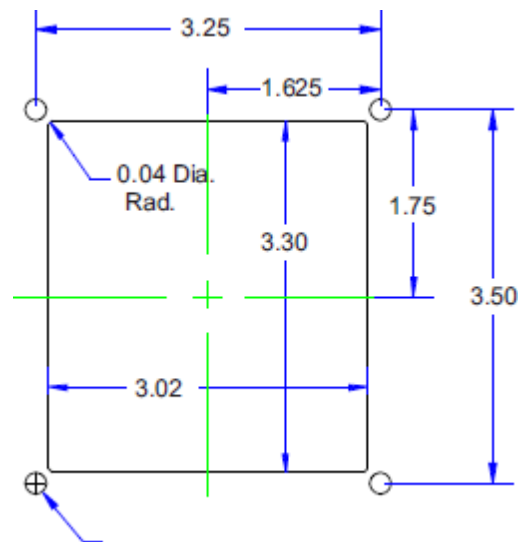
SPVR2	Voltage Phase-to-Phase	Phase-to-Ground
SPVR2-120	120	69
SPVR2-208	208	120
SPVR2-480	480	277
SPVR2-575	575	332

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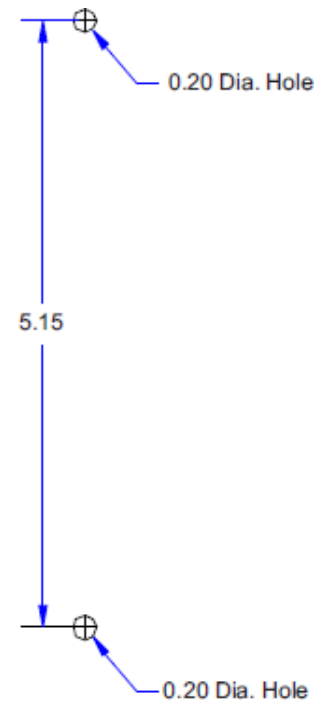
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Suggested mounting for Door Mount Relay



Suggested mounting for Panel Mount Relay



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