

# Model LPVRB

## Three Phase Voltage Monitor

### Protection

Protects 3-power system loads from:

- Loss of any Phase
- Low Voltage
- High Voltage
- Voltage Unbalance
- Phase Reversal
- Rapid Cycling

### Additional Features

- Compact Design
- UL and cUL listed
- CE Compliant
- Finger Safe terminals
- Standard Surface or DIN Rail Mount
- Standard 1-500 Sec. Variable Restart Delay
- Standard 2-8 % Variable Voltage Unbalance
- One 10 Amp General purpose Form C relay
- Standard 1-30 % Variable Trip Delay
- Optional Manual Reset

### Trip Delay Time

- Low, high and Unbalance Voltage:
- 1-30 seconds adjustable

\* Note 50 Hz will increase all delay timers by 20 %

### Restart Delay Time

- After fault - 1 - 500 seconds
- After a Complete Power loss  
(When manual reset pins are shorted)

### Output Contact Rating: 1-Form C

- 10 A General purpose @ 240 VAC
- Pilot Duty 480 VA @ 240 VAC, B300

### Power Consumption: 6 Watts (max)

### Enclosure: Polycarbonate

### Wire Type:

Stranded or solid 12-20 AWG,  
one per terminal

### Specifications

- 3-phase Line Voltage: 190 - 480 VAC
- Frequency: 50\* or 60 Hz
- Low Voltage (% of set Point) \*
- Trip: 90 %  $\pm$  1 %
- Reset: 93 %  $\pm$  1 %
- High Voltage (% of set Point)
- Trip: 110 %  $\pm$  1 %
- Reset: 107 %  $\pm$  1 %
- Voltage Unbalance (NEMA)
- Trip: 2-8 %
- Reset: Trip setting minus 1 % (5-8 %)  
Trip setting minus .5 % (2-4 %)

### Standard Passed:

- Electrostatic Discharge (ESD)

### Radio Frequ. Immunity, Radiated:

- 150 MHz V/m, 10 V/m

### Fast Transient Burst:

- IEC 1000-4-5,
- Level 3, 3.5 kV input power & controls  
Surge: IEC 1000-4-5. Level 3,

### Surge:

- IEC 1000-4-5. Level 3,
- 4 kV line-to-line, Level 4, 4 kV line-to-ground



**Weight:** 14 oz.

**Terminal Torque:** 6 in. lbs.

### ANSI/IEEE

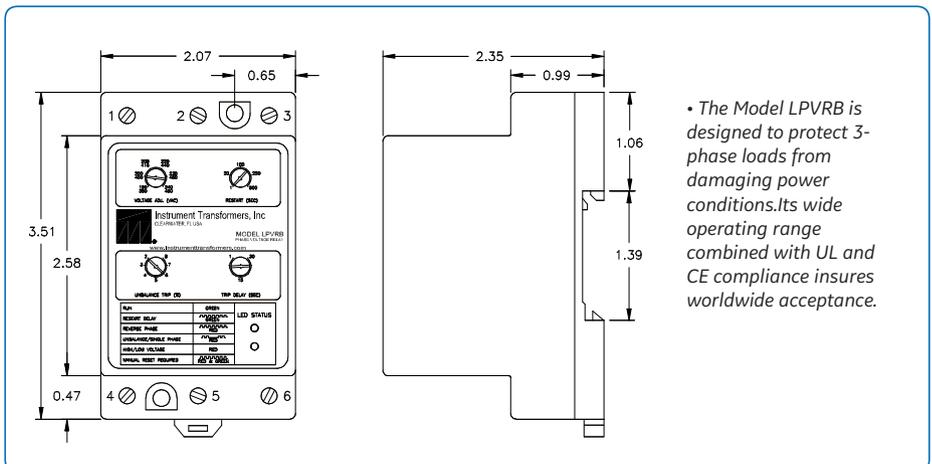
C62.41 Surge and Ring Wave  
Compliance to a level of 6 kV line-to-line

### Hi-Potential Test:

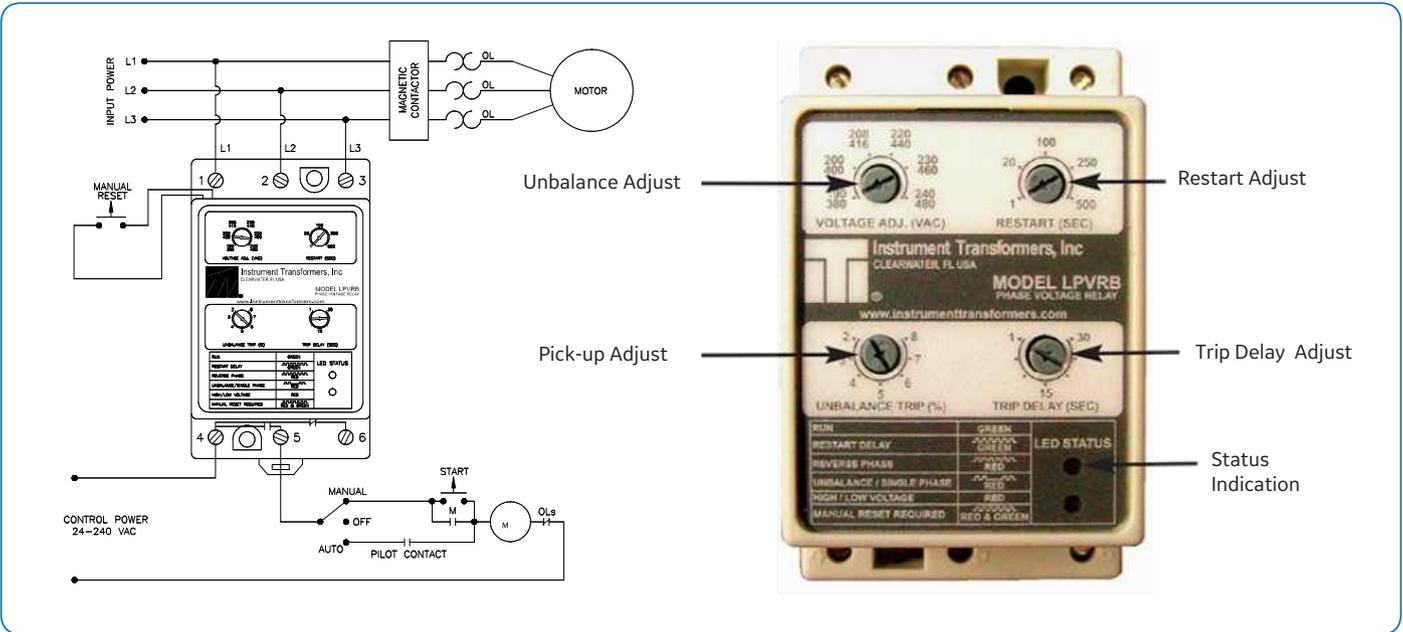
Meets UL508 (2 x rated V +1,000 V for 1 min)

### Class Protection:

IP20, NEMA 1 (Finger Safe)



## LPVRB Typical Wiring Diagram



## Features

Four adjustment pots provide versatility for all kinds of applications. Provides the versatility needed to handle global applications. Diagnostic LEDs indicate trip status and provide simple trouble shooting. Microcontroller based circuitry provides better accuracy and higher than analog designs. Transient protected to meet IEEE and IEC standards and operate under tough conditions. Will detect single phase condition regardless of regenerated voltages.

### Environmental:

- Ambient Operating: -20 °C to +70 °C (-4 to +158 ° F)
- Ambient Storage: -40 °C to + 85 °C (-4 to +176 ° F)
- Relative Humidity: 10-95 %, non-condensing per IEC 2-3

### Special Options:

- Manual Reset: External momentary push button required

**Safety Marks:** UL508, IEC 60947-6-2

## LPVRB

Model Number	Nominal Vac	Hz.
LPVRB	480 V/120 V	60
LPVRB	380 V/416 V	50
LPVRB-120	120 V	60

## LPVRB Operation with Options

A unique microcontroller-based voltage and phase sensing circuit constantly monitors the three phase voltages to detect harmful power line conditions. When a harmful condition is detected, the LPVRB's output relay is deactivated after a specified trip delay. The output relay reactivates after power line conditions return to an acceptable level for a specified amount of time (Restart Delay) or after a manual reset. The trip and restart delays prevent nuisance tripping due to rapidly fluctuating power line conditions.

The Model LPVRB automatically senses whether it is connected to a 190 to 240 V 60 Hz system, a 440 to 480 V 60 Hz system, or a 380 to 416 V 50 Hz system. An adjustment is provided to set the normal line voltage from 190-240 or 380-480 VAC. Other adjustments include a 1-30 second trip delay, a 1-500 second restart delay, and a 2-8 % voltage unbalance trip adjustment.

Two LEDs indicate the status of the Model LPVRB; Run Light, Under Voltage, Over Voltage, Phasing Fault/Reverse Phase, and Manual Reset. The LPVRB ships with a jumper installed for automatic restart. A connector with 12" wires is included for manual reset switch formation, item 7.1.

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