

# THREE PHASE VOLTAGE MONITOR

## Model LPVR



### APPLICATION:

Protection of three phase electrical equipment sensitive to damage due to loss of phase, improper phase sequence, or undervoltage.

### NOMINAL INPUT VOLTAGES:

120V, 240V, 380V, 480V, 575V

### FREQUENCY:

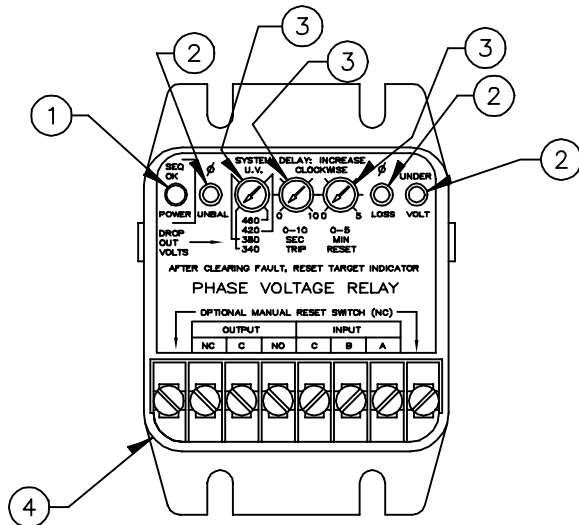
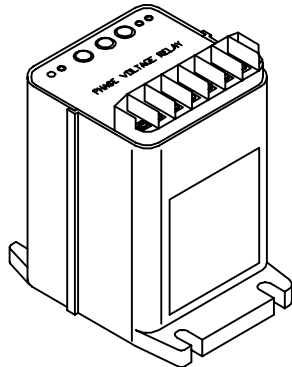
50 Hz, 60 Hz

### AMBIENT TEMPERATURE RANGE:

Operation: -30°C. to +60°C.

Storage: -55°C. to +85°C.

These Model LPVR Three Phase Voltage Monitors are designed to protect against phase loss, phase unbalance, phase reversal and undervoltage conditions in a power system. Electromechanical, manual reset diagnostic indicators show trip condition due to phase unbalance, phase loss or undervoltage. A green LED indicates that the power system has no fault present.



- ① GREEN LED INDICATOR:
  - Power system condition.
- ② ELECTROMECHANICAL DIAGNOSTIC INDICATORS:
  - Phase unbalance.
  - Phase loss.
  - Undervoltage.
- ③ ADJUSTABLE SYSTEM DELAYS:
  - Undervoltage trip point.
  - .05 - 10 second trip delay.
  - 1 sec.-5 minute reset delay.
- ④ TERMINAL BLOCK:
  - Automatic or manual reset.
  - Input Voltage - 120 to 575 Volts.
  - Output Contacts - Form C, 1 NO & 1 NC.

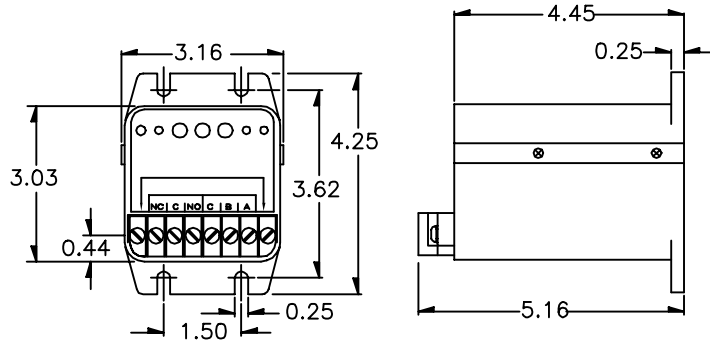
- Provides pre-start and running protection.
- Fully rated 600 Volt contacts.
- Diagnostic indicators continue to show cause of trip after voltage is removed.
- Adjustable undervoltage trip point settable from 75% to 95% of nominal.
- Adjustable trip delay from 50 milliseconds to 10 seconds.
- Adjustable reset delay from 1 second to 5 minutes.
- Operates at 6% phase unbalance, optional 10%.
- Operates with a 12.5% phase voltage loss.
- Automatic or manual reset, local or remote.
- Operational green LED indicator.
- Failsafe: Trip free contacts will not operate if a fault is present.
- Isolated Form "C" output contacts.
- Terminal screws are #6-32 nickel plated brass.
- Shipping Weight: 2.1 lbs.

AVAILABLE WITH THE FOLLOWING 3 PHASE VOLTAGES

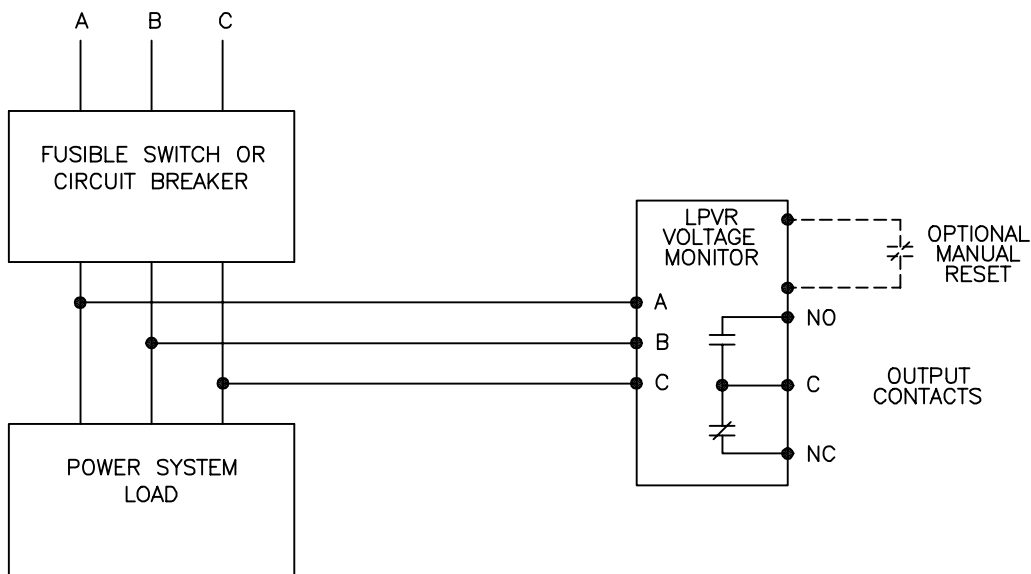
| MODEL NUMBER | NOMINAL RATING | VOLTAGE RANGE | FREQ. |
|--------------|----------------|---------------|-------|
| LPVR 120     | 120            | 90 - 125      | 60 Hz |
| LPVR 240     | 240            | 180 - 250     | 60 Hz |
| LPVR 480     | 480            | 360 - 500     | 60 Hz |
| LPVR 575     | 575            | 430 - 600     | 60 Hz |
| LPVR 400     | 380            | 285 - 400     | 50 Hz |

| OUTPUT CONTACT RATINGS |                    |             |              |
|------------------------|--------------------|-------------|--------------|
| VOLTAGE                | CONTINUOUS CURRENT | MAKE RATING | BREAK RATING |
| 120V ac                | 10A                | 3160 VA     | 316 VA       |
| 240V ac                | 10A                | 4800 VA     | 480 VA       |
| 380V ac                | 10A                | 4800 VA     | 480 VA       |
| 480V ac                | 10A                | 4800 VA     | 480 VA       |
| 575V ac                | 3A                 | 4800 VA     | 480 VA       |

## LPVR DIMENSIONS



## LPVR TYPICAL WIRING DIAGRAM



## LPVR OPERATION

The LED will light when there is no fault present and the output relay contacts have been transferred. The operator should be aware that the LED will not light until after any reset time delay has been satisfied and the output contacts transfer. Under a fault condition the LED will be off and one of the electromechanical indicators will be extended. The tripped indicator will show which fault caused the output relay to drop out. The indicator can be manually reset at any time without affecting the operation of the relay. However, the fault must be corrected before the output relay will re-energize. An additional fault will not cause an additional indicator to trip.

The unit allows the operator an adjustable trip delay that is effective on all faults once the device has been energized. The operator can also adjust the reset delay. The full delay will become effective after the device has been energized for more than 50 seconds. If a fault occurs in less than 50 seconds after power is applied the reset time delay will be proportionally shorter. This delay takes precedence over manual reset.

The device is shipped from the factory in the automatic reset configuration. For manual reset the operator must connect a normally closed set of contacts to the indicated terminals on the LPVR. After the selected reset time delay has been satisfied and any fault has been corrected the device can be reset by momentarily opening the contacts.

If a fault is present when the power circuit is closed the output contacts will not be energized. This is true for all fault conditions and any combination of operator selected time delays.

This device can be mounted inside a cabinet and will retain the shutdown fault indication after the power disconnect is operated to permit safe entry into the cabinet. These electromechanical fault indicators must be manually reset. Other similar devices use LED fault indicators which lose intelligence when the power is disconnected to open the cabinet door.