

## 3 Phase Voltage Monitor PLR Series Motor Protector



- Protects Against: Phase Loss (On Startup), Phase Reversal, Undervoltage
- Used Where Moderate Voltage Unbalance Protection is Not Required
- Direct Replacement for Most Popular 3 Phase Monitors
- 8-Pin Octal Base Connection
- SPDT Isolated 5 A Relay Contacts

10  
YEAR  
WARRANTY

### Description

The PLR Series provides an excellent means of preventing motor startup during adverse voltage conditions. Proper A-B-C sequence must occur in order for the PLR's output contacts to energize. In addition, the relay will not energize when an undervoltage or phase loss condition is present.

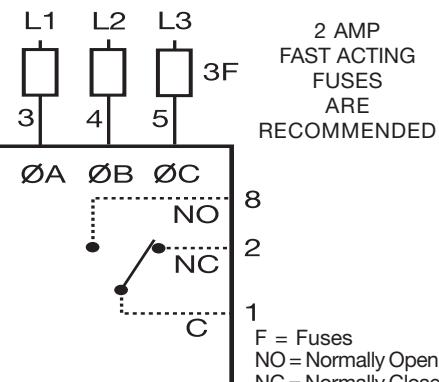
### Operation

Internal relay is energized and LED glows when phase sequence and voltages are acceptable. When properly adjusted, relay will de-energize if phase loss or undervoltage occurs. Reset is automatic upon correction of the fault.

**Field Adjustment:** Turn the adjustment knob fully counterclockwise and apply three-phase power. LED should now be ON. Increase adjustment until LED goes OFF. Decrease adjustment until LED glows again. If nuisance tripping occurs, decrease the adjustment slightly.

NEMA MG1 14:30, 14:35 IEEE C62.41-1991  
Level B AMSE A17.1 rule 210.6

■ Approvals:



Relay contacts are isolated. Dashed lines are internal connections.

**NOTE:** When properly adjusted and operating in an average system, a voltage unbalance of 10% or more is required for phase loss detection. When a phase is lost while the motor is running, a voltage will be induced into the open phase nearly equal in magnitude to the normal phase-to-phase voltage. This condition is known as regeneration. **When regenerated voltages are present, the voltage unbalance during single phasing may not exceed 10% for some motors.** The PLR Series may not provide protection under this condition. For systems that require superior phase loss protection, select the PLMU Series.

### Voltage

### Part Number

95 ... 140 V AC	PLR120A
190 ... 270 V AC	PLR240A
340 ... 450 V AC	PLR380A
380 ... 500 V AC	PLR480A

### Technical Data

#### Line Voltage

Type 3 phase Delta or Wye with no connection to neutral

Nominal Voltage	Undervoltage Dropout Adjustment Range	Calibration Frequency
120 V AC	85 ... 130 V AC	50 ... 60 Hz
240 V AC	170 ... 240 V AC	50 ... 60 Hz
380 V AC	310 ... 410 V AC	50 Hz
480 V AC	350 ... 480 V AC	50 ... 60 Hz

#### Phase Sequence

#### Response Times

Pull-in  $\leq 400$  ms

Drop-out  $\leq 1$  s

#### Output

Type Electromechanical relay, energized when all voltages are acceptable

Form Single pole double throw (SPDT)

Rating 5 A resistive at 240 V AC

Maximum Voltage 250 V AC

#### Protection

Surge IEEE C62.41-1991 Level B

Isolation Voltage 120 & 240 V AC  $\geq 1500$  V RMS input to output

380 & 480 V AC  $\geq 2500$  V RMS input to output

#### Mechanical

Mounting Plug-in socket

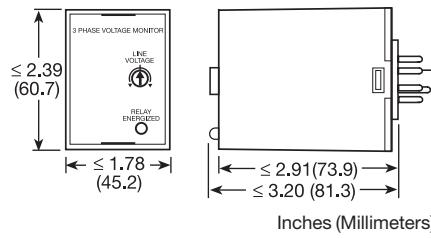
Termination 8-pin, octal plug

#### Environmental

Operating Temperature  $0^{\circ}\text{C} \dots +55^{\circ}\text{C}$

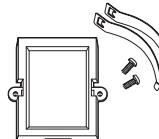
Storage Temperature  $-40^{\circ}\text{C} \dots +85^{\circ}\text{C}$

Weight  $\leq 6$  oz (170 g)

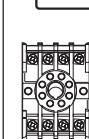


Inches (Millimeters)

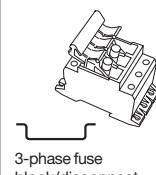
### Accessories



Panel mount kit  
P/N: BZ1



Octal  
8-pin socket  
P/N: OT08



3-phase fuse  
block/disconnect  
P/N: P0700-241  
2 AMP fuse  
P/N: P0600-11

DIN rail P/Ns:  
C103PM (Al)  
17322005 (Steel)

See accessory page at the end of this section.