# 3 Phase Voltage Monitor
## PLR Series
## Motor Protector


US Patent No. 6541954
ANSI Device # 27/32

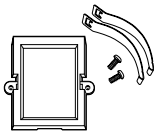
TEN YEAR 10 WARRANTY

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

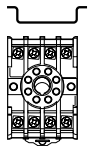
Approvals:

7

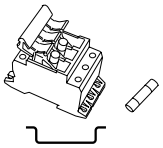
### Accessories



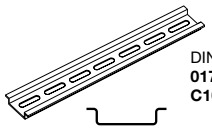
Panel mount kit
P/N: **BZ1**



Octal
8-pin socket
P/N: **OT08PC**



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



DIN rail P/Ns:
**017322005** (Steel)
**C103PM** (Al)

See accessory pages for specifications.

### Description

The PLR Series provides a cost effective means of preventing 3 phase 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. The PLR protects a motor against undervoltage operation. The adjustment knob sets the undervoltage trip point.

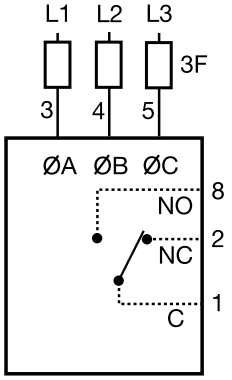
### Operation

The output relay is energized and the LED glows when all voltages are acceptable and the phase sequence is correct. Undervoltage must be sensed for a continuous dropout delay period before the relay de-energizes. Reset is automatic upon correction of the fault condition. The output relay will not energize if a fault condition is sensed as power is applied.

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

**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.

### Connection




2 Amp Fast Acting Fuses Recommended For Safety (Not Required)

F = Fuses
ØA = Phase A = L1
ØB = Phase B = L2
ØC = Phase C = L3
NO = Normally Open
NC = Normally Closed

Relay contacts are isolated. Dashed lines are internal connections.

### Ordering Table

| Voltage | Part Number |
|---|---|
| 95 ... 140 V AC | PLR120A |
| 190 ... 270 V AC | PLR240A |
| 340 ... 450 V AC | PLR380A |
| 380 ... 500 V AC | PLR480A |

PLR02B01 06.07.04

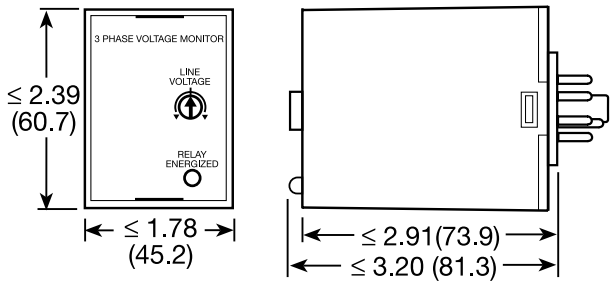
# 3 Phase Voltage Monitor
## PLR Series
## Motor Protector

### Technical Data

| | | |
|---|---|---|
| **Line Voltage** | | |
| Type | | 3 phase Delta or Wye with no connection to neutral |
| | | **Nominal Voltage** / **Undervoltage Dropout Adjustment Range** / **Line Voltage Max.** |
| | | 120 V AC / 85 ... 130 V AC / 143 V AC |
| | | 240 V AC / 170 ... 240 V AC / 270 V AC |
| | | 380 V AC / 310 ... 410 V AC / 480 V AC |
| | | 480 V AC / 350 ... 480 V AC / 530 V AC |
| Frequency | | 50 ... 60 Hz |
| Phase Sequence | | ABC |
| **Response Times** | | |
| Pull-in | | ≤ 400 ms |
| Drop-out | | ≤ 100 ms |
| Hysterisis | Pull-in/Drop-out | ≅ 2% |
| **Output** | | |
| Type | | Electromechanical relay, energized when all voltages are acceptable |
| Form | | Single pole double throw (SPDT) |
| Rating | | 5 A resistive at 240 V AC: 1/4 Hp at 120 V AC |
| Maximum Voltage | | 250 V AC |
| **Protection** | | |
| Surge | | IEEE C62.41-1991 Level B |
| Isolation Voltage | 120 & 240 V AC | ≥ 1500 V RMS input to output |
| | 380 & 480 V AC | ≥ 2500 V RMS input to output |
| **Mechanical** | | |
| Mounting | | Plug-in socket |
| Termination | | 8 pin, octal plug |
| **Environmental** | | |
| Operating Temperature | | 0°C ... +55°C |
| Storage Temperature | | -40°C ... +85°C |
| Weight | | ≅ 6 oz (170 g) |

7

### Mechanical View




Inches (Millimeters)