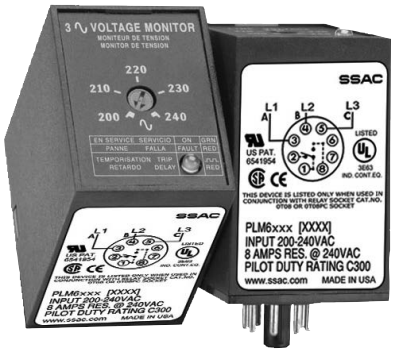

The PLM Series continuously measures the voltage of each of the three phases. The PLM Series uses a microcontroller circuit design that senses undervoltage, voltage unbalance, phase loss, and phase reversal. Protection is assured when regenerated voltages are present. Both delta and wye systems can be monitored; no connection to neutral is required.

For more information see:
Appendix B, page 165, Figure 8 for dimensional drawing.
Appendix C, page 168, Figure 13 for connection diagram.

Features:

- Protects against phase loss & reversal; & under & unbalanced voltages
- 8-pin plug-in base
- Adjustable low voltage trip point
- Factory fixed unbalance & trip delay
- Line voltages 200 to 480VAC in 3 ranges
- Isolated, 10A, SPDT output contacts
- ASME A17.1 rule 210.6
- NEMA MG1 14:30, 14:35
- IEEE C62.41-1991 Level B

Approvals:

Auxiliary Products:

- **Panel mount kit:** P/N: BZ1
- **Octal 8-pin socket:** P/N: OT08PC
- **3-phase fuse block/disconnect:** P/N: FH3P
- **2 Amp fuse:** P/N: P0600-11
- **DIN rail:** P/N: C103PM (Al)

Available Models:

PLM6405	PLM9405
PLM6502	PLM9502
PLM6805	PLM9805
PLM8405	PLM9820
PLM8805	

If desired part number is not listed, please call us to see if it is technically possible to build.

Operation

The output relay is energized and the LED glows green when all voltages are acceptable and the phase sequence is correct. Under and unbalanced voltages must be sensed for a continuous trip 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. The LED flashes red during the trip delay, then glows red when the output de-energizes. The LED flashes green/red if phase reversal is sensed.

Field Adjustment:

Set voltage adjustment knob at the desired operating line voltage for the equipment. This adjustment automatically sets the undervoltage trip point. Apply power. If the PLM fails to energize, (LED glows red) check wiring of all 3 phases, voltage, and phase sequence. If phase sequence is incorrect, the LED flashes green/red. To correct this, swap any two line voltage connections at the mounting socket. No further adjustment should be required.

Order Table:

PLM **X** **X** **X**

- **Line Voltage**
  - 6 - 240VAC
  - 8 - 380VAC
  - 9 - 480VAC
- **Voltage Unbalanced**
  - Fixed - Specify - 4-8% in 1% increments
- **Trip Delay**
  - Fixed - Specify from 2-20s in 1s increments using two digits

Specifications

Line Voltage

Type . . . . . 3-phase delta or wye with no connection to neutral

Operating Voltage:	Model	Adj. Line Voltage Range	Line Voltage Max.
	240	200-240VAC	270VAC
	380	360-430VAC	480VAC
	480	400-480VAC	530VAC

AC Line Frequency . . . . . 50/100 Hz
Phase Sequence . . . . . ABC
Power Consumption . . . . . ≅ 2W for 240V units
≅ 3W for 380 - 480V units

Low Voltage & Voltage Unbalance

Type . . . . . Voltage detection with delayed trip & automatic reset

Low Voltage — Trip Voltage. . . . . 88 - 92% of adjusted line voltage
Reset Voltage . . . . . Plus 3% of trip voltage
Voltage Unbalance — Trip Unbalance . . . . Factory fixed from 4 - 8%
Reset on Balance . . -0.7% unbalance typical
Trip Delay — Range . . . . . Factory fixed from 2 - 20s
Tolerance . . . . . ±15%

Phase Reversal & Phase Loss

Response Time: Phase Reversal . . . . . ≤ 200ms
Phase Loss. . . . . ≤ 200ms
Phase Loss. . . . . ≥ 35% unbalance
Reset. . . . . Automatic

Output

Type . . . . . Electromechanical relay
Form. . . . . Isolated, SPDT
Rating . . . . . 10A resistive @ 240VAC, 277VAC max; 1/2 Hp @ 240VAC; 1/4 Hp @ 120VAC
Life . . . . . Mechanical - 1 x 10^7; Electrical - 1 x 10^5

Protection

Surge . . . . . IEEE C62.41-1991 Level B
Isolation Voltage. . . . . ≥ 2500V RMS input to output

Mechanical

Mounting* . . . . . 8-pin plug-in socket rated 600VAC
Dimensions . . . . . 3.2 x 2.39 x 1.78 in. (81.3 x 60.7 x 45.2 mm)

Environmental

Operating/Storage Temperature. . . . . -40° to 60°C / -40° to 85°C
Weight . . . . . ≅ 4.4 oz (125 g)

*CAUTION: Select an octal socket rated for 600VAC operation.