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PLMU11

Voltage Monitor





8-PIN

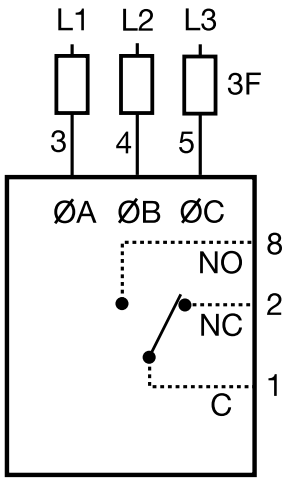
Description

The PLMU11 continuously measures the voltage of each of the three phases to provide protection for 3-phase motors and sensitive loads. Its microcontroller senses under and overvoltage, voltage unbalance, phase loss, and phase reversal. Protection is provided even when regenerated voltages are present. Universal voltage operation and standard base connection allows the PLMU11 to replace hundreds of competitive part numbers.

Operation

Upon application of power, a 0.6s random start delay begins and the PLMU11 measures the voltage levels and line frequency and selects the voltage range. The output relay is energized and the LED glows green when all voltages are acceptable and the phase sequence is correct. LED flashes green during trip delay, glows red when output de-energizes. Undervoltage, overvoltage, and voltage unbalance must be sensed for continuous trip delay before the relay de-energizes. Re-energization is automatic upon fault correction. The output relay will not energize if a fault condition is sensed as 3-phase input voltage is applied. The LED alternately flashes red/green when phase reversal is sensed. Line voltage is selected with the knob, setting the over and under voltage trip points. Voltage range is automatically selected by the microcontroller.

Wiring Diagram



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

2A fast acting fuses recommended for safety (not required).

Relay contacts are isolated

LED Indicator	
Steady Green	Energized
Steady Red	De-engergized (tripped on fault)
Flashing Green	Trip Delay
Alternate Flashing Red/Green	Phase Reversal

Features & Benefits

FEATURES	BENEFITS
Quick octal 8-pin mounting	Small footprint with universal mounting: ideal replacement for hundreds of competitive part numbers.
Proprietary microcontroller based circuitry	Constant monitoring of single-phase, low voltage, high voltage, voltage unbalance, phase reversal.
LED diagnostics	Quick visual indicator for cause of trip. LED indications include: normal operation, trip delay, phase reveral, fault
Isolated, 10A, SPDT output contacts	Allows control of loads for AC voltages
Simple 3-wire connection for delta or wye systems	Allows flexibility across wide range of systems
ASME A17.1 Rule 210.6	Complies with safety codes for elevators, escalators, moving walkways
NEMA MG1 14:30, 14:35	Complies with safety codes for motors and generators
IEEE C62.41-1991 Level B	Complies with safety codes for surge and voltage protection

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PLMU11

Accessories



BZ1 Front Panel Mount Kit
Provides an easy method of through-the-panel mounting of 8-pin or 11-pin plug-in timers, flashers, and other controls.



OT08PC Octal 8-pin Socket
8-pin 35mm DIN rail or surface mount. Rated at 10A @ 600VAC. Surface mounted with two #6 screws or snaps onto a 35 mm DIN rail.



LPSM003ZXID (Indicating), LPSM003Z (Non-indicating) Fuse Holders
Littelfuse POWR-SAFE Dead Front holders provide optimum protection to personnel for Class CC and Midget-Style fuses. 600 VAC/DC



0KLK002.T Midget Fuse (2 Amp)
10 x 38 fast acting, high-interrupting capacity, current-limiting type fuse. 600 Vac/500 Vdc



C103PM (AL) DIN Rail
35 mm aluminum DIN rail available in a 36 in. (91.4 cm) length.

Specifications

Line Voltage

Type	3-phase delta or wye with no connection to neutral
Line Voltage	200 to 480VAC ±15%, 50/60 Hz ±2 Hz
Adjustable Voltage Ranges (Automatic Range Selection)	200 to 240VAC, 50/60 Hz 340 to 420VAC, 50 Hz 400 to 480VAC, 60 Hz
Maximum Voltage	552VAC
Phase Sequence	ABC
Power Consumption	≤ 5W

Overvoltage, Undervoltage, & Voltage Unbalance

Type	Voltage detection with delayed trip and automatic reset
Overvoltage & Undervoltage	
Undervoltage Trip Point	88 - 92% of adjusted line voltage
Reset Voltage	+2% of trip voltage
Overvoltage Trip Point	109 - 113% of adjusted line voltage
Reset Voltage	-2% of trip voltage
Voltage Unbalance Trip Point	Adjustable from 2 - 10%
Reset on Balance (%)	

Selected Unbalance	2	3	4	5	6	7	8	9	10
Reset	1.5	2.5	3.5	4.5	5.4	6.3	7.2	8.1	9

Trip Delay Range	Adjustable from 0.25 - 30s
Severe Unbalance - 2X Selected Unbalance	0.25 - 2s; disabled when the trip delay is less than 2s
Random Start Delay	≅ 0.6s
Phase Reversal & Phase Loss Trip Time	≤ 150ms
Phase Loss Setpoint	≥ 15% unbalance
Reset Type	Automatic
Output Type	Energized when voltages are acceptable
Type	Electromechanical relay
Form	Isolated, SPDT
Rating	10A resistive @ 240VAC; 1/4 hp @ 125VAC; 1/3 hp @ 250VAC; max. 277VAC
Life	Mechanical - 1 x 10^6 ; Electrical - 1 x 10^5

Protection

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

Mechanical

Mounting*	Plug-in socket rated 600VAC
Termination	Octal 8-pin plug-in
Dimensions	**H** 77.0 mm (3.03"); **W** 60.7 mm (2.39"); **D** 45.2 mm (1.78")

Environmental

Operating/Storage Temperature	-40° to 60°C / -40° to 85°C
Weight	≅ 8.6 oz (244 g)

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

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