

# Voltage Monitoring Relays

## 250A Series

### 3-Phase Voltage/Phase Monitor



### Description

The 250A series is a three-phase, auto-ranging, dual-range voltage monitor that protects 190–480 V ac, 50\*/60 Hz motors regardless of their size. This monitor offers protection from low- and high-voltage, voltage unbalance, single-phase, and phase reversal. The 250A provides a user-selectable nominal voltage setpoint and will automatically select between the 200 V and 400 V range. This monitor also features adjustable or manual restart delay.

This unique microcontroller-based voltage and phase-sensing device constantly monitors the three-phase voltages to detect harmful power line conditions. When a harmful condition is detected, the output relay is deactivated after a specified trip delay. The output relay reactivates after power line conditions return to acceptable levels. The 250A monitor includes advanced, single LED diagnostics. Five different light patterns distinguish between faults and normal conditions. LED indications include normal operation, power-up restart delay, reverse-phase trip, unbalance/single-phase trip, and high/low voltage trip.

\*Note: 50 Hz will increase all delay timers by 20%.

### Features & Benefits

FEATURES	BENEFITS
<b>Proprietary microcontroller-based circuitry</b>	Constant monitoring of single-phase, low-voltage, voltage unbalance, phase reversal, harmful power line conditions
<b>Auto-sensing wide voltage range</b>	Automatically senses system voltage between 190–480 V ac. Saves setup time
<b>Advanced LED diagnostics</b>	Quick visual indicator for cause of trip
<b>Adjustable trip delay</b>	Prevents nuisance tripping due to rapidly fluctuating power line conditions
<b>DPDT relay output</b>	Allows for versatility to meet wide application needs
<b>Manual reset</b>	Allows for inspection of equipment before system is re-energized

### Applications

- Fan motors
- Air conditioners
- Compressors
- Heat, well, and sump pumps
- Small conveyer motors

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### Specifications

<b>Frequency</b>	50*/60 Hz Low Voltage
<b>Functional Characteristics</b>	
<b>Voltage Unbalance (NEMA)</b>	
Trip	6%
Reset	4.5%
<b>Trip Delay Time</b>	
Low Voltage, High Voltage	4 seconds
Unbalance, Phasing Faults	2 seconds
<b>Restart Delay Time After a Fault or Complete Power Loss</b>	Manual, 2–300 seconds adjustable
<b>Output Characteristics</b>	
<b>Output Contact Rating (DPDT - 2 Form C)</b>	
Pilot Duty	480 VA @ 240 V ac
General Purpose	10 A @ 240 V ac
<b>Temperature Range</b>	-40° to 70 °C (-40° to 158 °F)
<b>Trip &amp; Reset Accuracy</b>	±1%
<b>Maximum Input Power</b>	5 W
<b>Relative Humidity</b>	Up to 95% non-condensing per IEC 68-2-3
<b>Terminal Torque</b>	7 in.-lbs.
<b>Wire Size</b>	12–18 AWG
<b>Transient Protection (Internal)</b>	IEC 61000-4-5; 1995 ±6 kV
<b>Dimensions</b>	<b>H</b> 74.4 mm (2.93"); <b>W</b> 133.9 mm (5.27"); <b>D</b> 74.9 mm (2.95")
<b>Weight</b>	1.02 lb. (16.32 oz., 462.66 g)
<b>Mounting Method</b>	#8 screws

\*Note: 50 Hz will increase all delay timers by 20%.

### Certification & Compliance

<b>UL</b>	UL 508 (File #E68520)
<b>CSA</b>	CSA 22.2 No. 14 (File#46510)

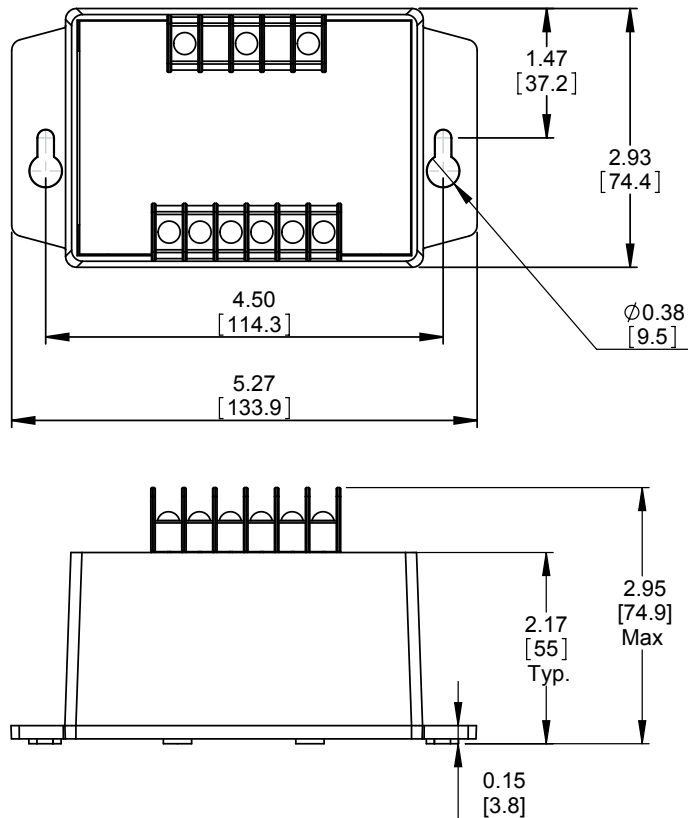
### Ordering Information

MODEL	LINE VOLTAGE	% OF SETPOINT				DESCRIPTION
		LOW VOLTAGE TRIP	LOW VOLTAGE RESET	HIGH VOLTAGE TRIP	HIGH VOLTAGE RESET	
250A	190–480 V ac	90%	93%	110%	107%	Provides high and low voltage protection at fixed percentage of nominal voltage.
250600	475–600 V ac	90%	93%	110%	107%	Provides high and low voltage protection at fixed percentage of nominal voltage.
250A-MET	190–480 V ac	85%	88%	N/A	N/A	Designed for use with Fire Control Panels. Has 2 Form C contacts that operate independently. Left Form C energizes when voltage conditions are good and de-energize when a fault condition is detected. Right Form C only energizes during a reverse-phase condition. No high voltage protection.
250-100-MET	95–120 V ac	85%	88%	N/A	N/A	Designed for use with Fire Control Panels. Has 2 Form C contacts that operate independently. Left Form C energizes when voltage conditions are good and de-energize when a fault condition is detected. Right Form C only energizes during a reverse-phase condition. No high voltage protection.

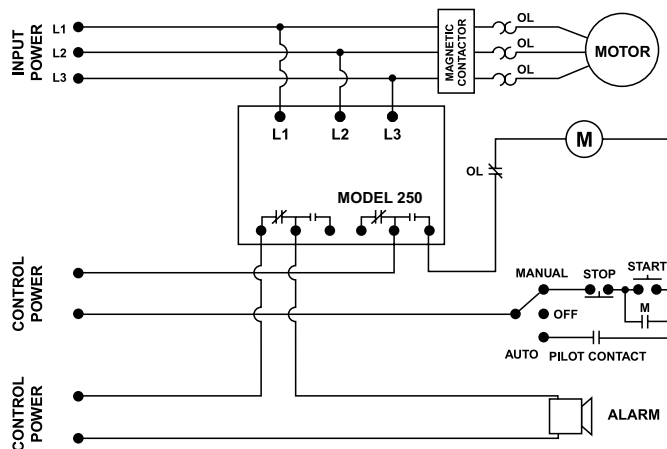
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### Dimensions Inches (mm)



### Wiring Diagram



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