## **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.

#### **Features & Benefits**

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

#### **Applications**

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



<sup>\*</sup>Note: 50 Hz will increase all delay timers by 20%.

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#### **Specifications**

**Frequency** 50\*/60 Hz Low Voltage

Functional Characteristics Voltage Unbalance (NEMA)

**Trip** 6% **Reset** 4.5%

**Trip Delay Time** 

Low Voltage, High Voltage 4 seconds Unbalance, Phasing Faults 2 seconds

**Restart Delay Time After a Fault** 

**or Complete Power Loss** Manual, 2–300 seconds adjustable

**Output Characteristics** 

**Output Contact Rating (DPDT - 2 Form C)** 

 Pilot Duty
 480 VA @ 240 V ac

 General Purpose
 10 A @ 240 V ac

**Temperature Range** -40° to 70 °C (-40° to 158 °F)

**Relative Humidity** Up to 95% non-condensing per IEC 68-2-3

**Terminal Torque** 7 in.-lbs. **Wire Size** 12–18 AWG

**Transient Protection (Internal)** IEC 61000-4-5; 1995 ±6 kV

**Dimensions H** 74.4 mm (2.93"); **W** 133.9 mm (5.27"); **D** 74.9 mm (2.95")

**Weight** 1.02 lb. (16.32 oz., 462.66 g)

Mounting Method #8 screws

#### **Certification & Compliance**

UL	UL 508 (File #E68520)
CSA	CSA 22.2 No. 14 (File#46510)

### **Ordering Information**

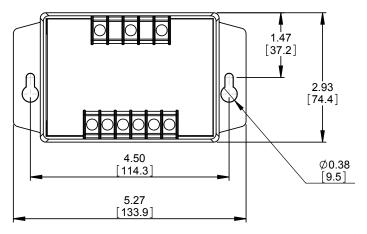
MODEL	LINE VOLTAGE	% OF SETPOINT				
		LOW VOLTAGE TRIP	LOW VOLTAGE RESET	HIGH VOLTAGE TRIP	HIGH VOLTAGE RESET	DESCRIPTION
250A	190–480 V ac	90%	93%	110%	107%	Provides high and low voltage protection at fixed percentage of nominal voltage.
250600	475–600 V ac	90%	93%	110%	107%	Provides high and low voltage 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.

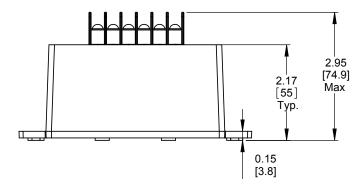


<sup>\*</sup>Note: 50 Hz will increase all delay timers by 20%.

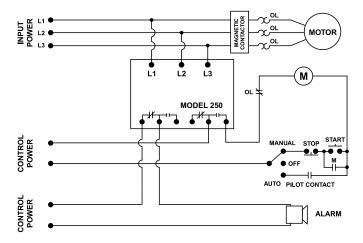
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#### **Dimensions Inches (mm)**





#### **Wiring Diagram**



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