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
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

Revised: 07/14/2023

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)
Trip & Reset Accuracy	±1%
Maximum Input Power	5 W
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

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Certification & Compliance

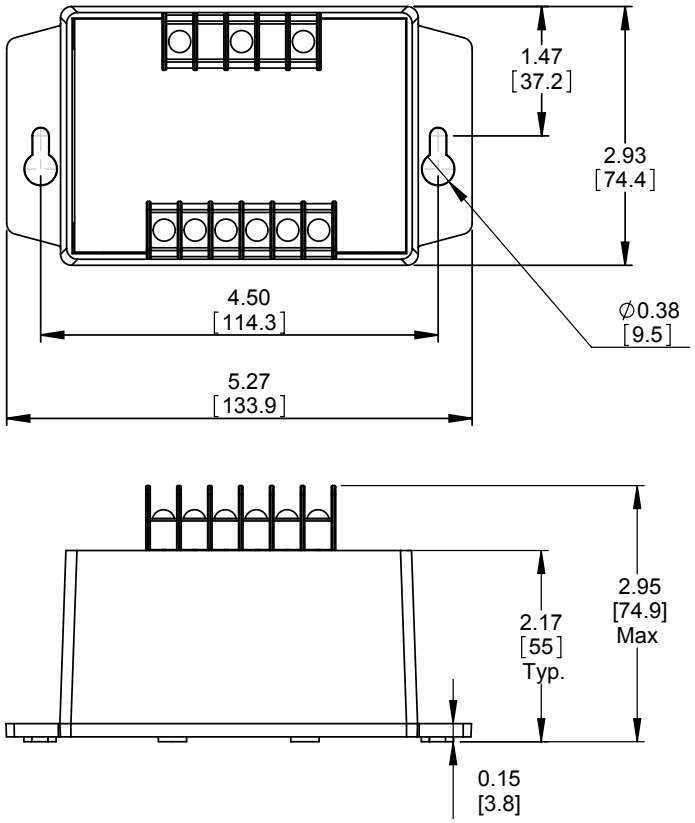
UL	UL 508 (File #E68520)
CSA	CSA 22.2 No. 14 (File#46510)

Ordering Information

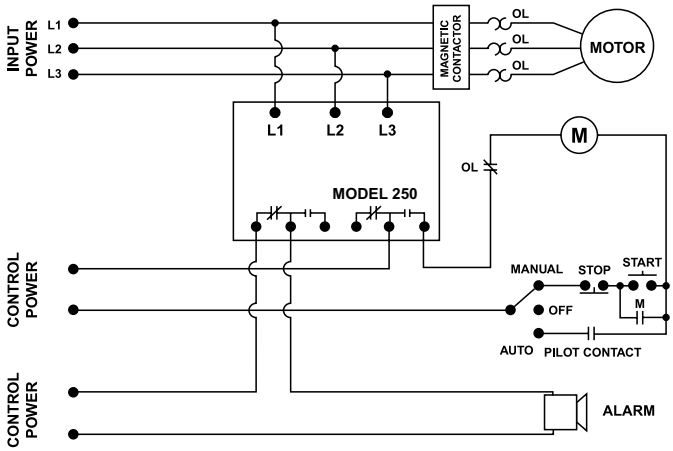
MODEL	LINE VOLTAGE	% OF SETPOINT				DESCRIPTION
		LOW VOLTAGE TRIP	LOW VOLTAGE RESET	HIGH VOLTAGE TRIP	HIGH VOLTAGE RESET	
250A	190–480 V ac	90%	93%	110%	107%	Provides high and low voltage protection at fixed percentage of nominal voltage.
250600	475–600 V ac	90%	93%	110%	107%	Provides high and low voltage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

Revised: 07/14/2023

Dimensions Inches (mm)



Wiring Diagram



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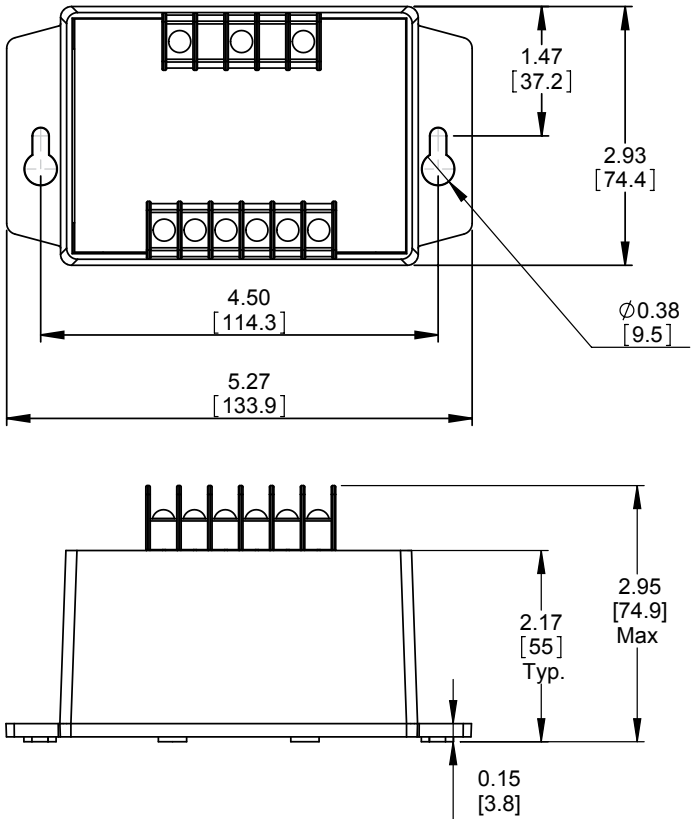

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