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

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

Applications

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

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

Certification & Compliance

UL 508 (File #E68520)

CSA 22.2 No. 14 (File#46510)

Ordering Information

<table>
<thead>
<tr>
<th>MODEL</th>
<th>LINE VOLTAGE</th>
<th>% OF SETPOINT</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>250A</td>
<td>190–480 V ac</td>
<td>90% 93% 110% 107%</td>
<td>Provides high and low voltage protection at fixed percentage of nominal voltage.</td>
</tr>
<tr>
<td>250600</td>
<td>475–600 V ac</td>
<td>90% 93% 110% 107%</td>
<td>Provides high and low voltage protection at fixed percentage of nominal voltage.</td>
</tr>
<tr>
<td>250A-MET</td>
<td>190–480 V ac</td>
<td>85% 88% N/A N/A</td>
<td>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-energizes when a fault condition is detected. Right Form C only energizes during a reverse-phase condition. No high voltage protection.</td>
</tr>
<tr>
<td>250-100-MET</td>
<td>95–120 V ac</td>
<td>85% 88% N/A N/A</td>
<td>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-energizes when a fault condition is detected. Right Form C only energizes during a reverse-phase condition. No high voltage protection.</td>
</tr>
</tbody>
</table>
Voltage Monitoring Relays
250A Series

Dimensions Inches (mm)

Wiring Diagram

Disclaimer Notice – Information furnished is believed to be accurate and reliable. However, users should independently evaluate the suitability of and test each product selected for their own applications. Littelfuse products are not designed for, and may not be used in, all applications. Read complete Disclaimer Notice at www.littelfuse.com/product-disclaimer.