

# Voltage Monitoring Relays

## 102A Series

### 3-Phase Voltage/Phase Monitor



## Description

The 102A series is a three-phase, auto-ranging, dual-range voltage monitor that protects 190–600 V ac, 50\*/60 Hz motors regardless of size. This monitor provides a user-selectable nominal voltage setpoint and will automatically select between the 200 V and 400 V range. A unique microcontroller-based voltage and phase-sensing circuit 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 102A monitor includes advanced, single LED diagnostics with five different light patterns that distinguish between faults and normal conditions. LED indications include normal operation, power-up restart delay, reverse-phase trip, unbalance/single-phase trip, and high- or low-voltage trip.

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

## Features & Benefits

FEATURES	BENEFITS
<b>Proprietary microcontroller-based circuitry</b>	Constant monitoring of single-phase, low-voltage, high-voltage (102A-9), 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 (102A2)</b>	Prevents nuisance tripping due to rapidly fluctuating power line conditions

## Applications

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

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### Specifications

<b>Frequency</b>	50*/60Hz
<b>Functional Characteristics</b>	
<b>Low Voltage (% of setpoint)</b>	
<b>Trip</b>	90%
<b>Reset</b>	93%
<b>Voltage Unbalance (NEMA)</b>	
<b>Trip</b>	6%
<b>Reset</b>	4.5%
<b>Trip Delay Time</b>	
<b>Low/High Voltage</b>	4 seconds (standard)
<b>Unbalance &amp; Phasing Faults</b>	2 seconds
<b>Restart Delay Time</b>	
<b>After a Fault</b>	2 seconds (standard)
<b>After a Complete Power Loss</b>	2 seconds (standard)
<b>Output Characteristics</b>	
<b>Output Contact Rating (SPDT - 1 Form C)</b>	
<b>Pilot Duty</b>	480 VA @ 240 V ac
<b>General Purpose</b>	10 A @ 240 V ac
<b>General Characteristics</b>	
<b>Ambient Temperature Range</b>	
<b>Operating</b>	-40° to 70 °C (-40° to 158 °F)
<b>Storage</b>	-40° to 80 °C (-40° to 176 °F)
<b>Trip &amp; Reset Accuracy</b>	±1%
<b>Maximum Input Power</b>	5 W
<b>Terminal Torque</b>	7 in.-lbs.
<b>Wire Size</b>	12–18AWG
<b>Standards Passed</b>	
<b>Electrostatic Discharge (ESD)</b>	IEC 61000-4-2, Level 3, 6 kV contact, 8 kV air
<b>Fast Transient Burst</b>	IEC 61000-4-4, Level 3, 4k V input, 2 kV input/output
<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>	1.05 lbs. (16.8 oz., 476.27 g)
<b>Mounting Method</b>	#8 screws

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

### Certification & Compliance

<b>UL</b>	UL508 (File #E68520)
<b>CSA</b>	22.2 No. 14 (File #46510)
<b>CE</b>	IEC 60947-6-2

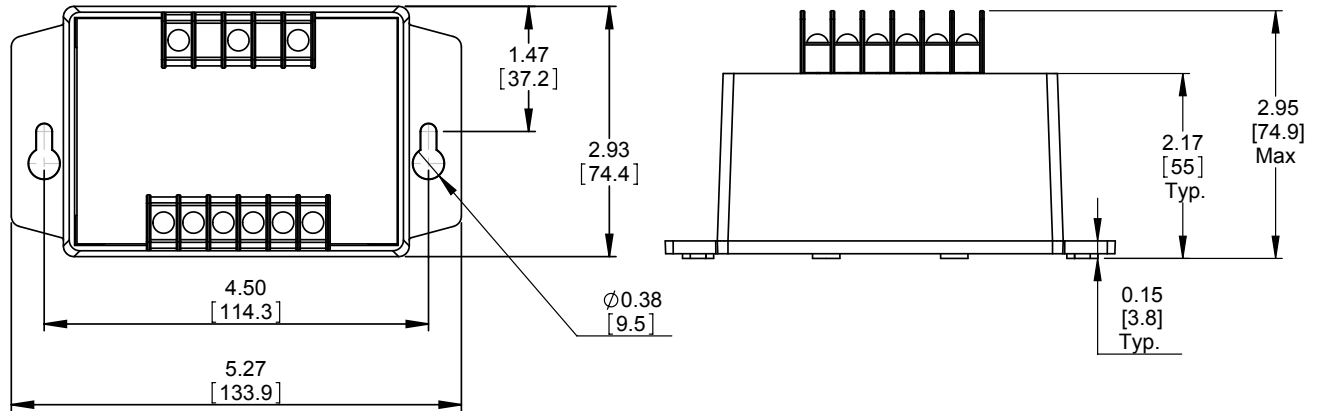
### Ordering Information

MODEL	LINE VOLTAGE	DESCRIPTION
102A	190–480 V ac	Fixed low voltage trip delay (4 sec), fixed restart delay (2 sec)
102A2	190–480 V ac	Has variable restart delay (manual or adjustable 2–300 seconds)
102A3	190–480 V ac	Has adjustable trip delay at 2–30 seconds (unbalance and phasing trip delays remain at 2 seconds).
102A-9	190–480 V ac	Has high voltage protection. High Voltage Trip is 110% of setpoint, reset is 107% of setpoint.
102600	475–600 V ac	Fixed low voltage trip delay (4 sec), fixed restart delay (2 sec)

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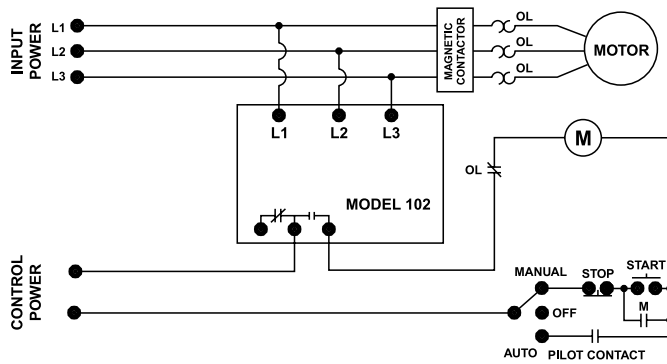
## 102A Series

### Dimensions Inches (mm)

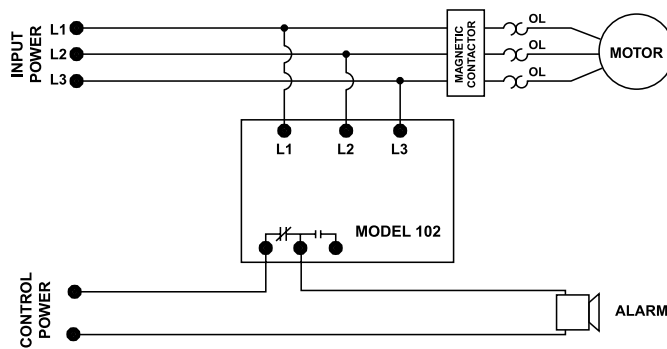


### Wiring Diagram

102 WITH MOTOR CONTROL



102 WITH ALARM CONTROL



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