

# Protection Relays

## Voltage Monitoring Relays

### 102A SERIES

#### 3-Phase Voltage/Phase Monitor



#### Description

The 102A is a 3-phase, auto-ranging, dual-range voltage monitor that protects 190-400VAC, 50/60Hz motors regardless of size. The product provides a user selectable nominal voltage setpoint and the voltage monitor automatically selects between the 200V and 400V range.

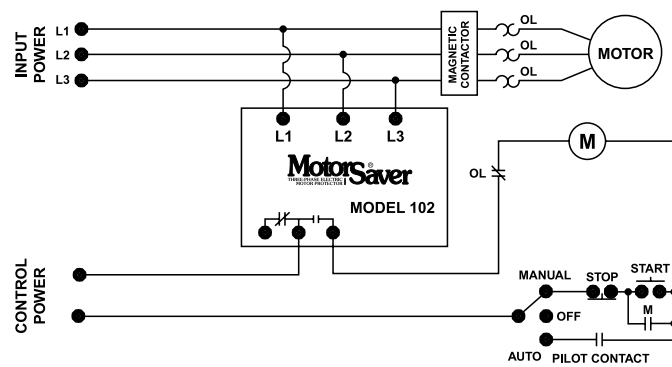
A unique microcontroller-based voltage and phase-sensing circuit constantly monitors the 3-phase voltages to detect harmful power line conditions. When a harmful condition is detected, the output relay is deactivated after a specified trip delay. The output relay reactivates after power line conditions return to acceptable levels. The Model 102A includes advanced single LED diagnostics. Five different light patterns distinguish between faults and normal conditions.

#### Features & Benefits

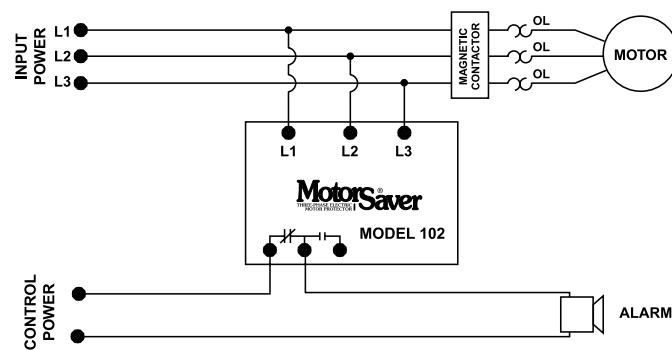
FEATURES	BENEFITS
<b>Proprietary microcontroller based circuitry</b>	Constant monitoring of single-phase, low voltage, high voltage (102A-9), voltage unbalance, phase reversal, harmful power line conditions.
<b>Auto-sensing wide voltage range</b>	Automatically senses system voltage between 190 - 480VAC. Saves setup time.
<b>Advanced LED diagnostics</b>	Quick visual indicator for cause of trip. LED indications include: normal operation, power-up restart delay, reverse-phase trip, unbalance/single-phase trip, high or low voltage trip
<b>Adjustable trip delay (102A2)</b>	Prevent nuisance tripping due to rapidly fluctuating power line conditions.

#### Wiring Diagram

102 WITH MOTOR CONTROL



102 WITH ALARM CONTROL



#### Ordering Information

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

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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>	480VA @ 240VAC
<b>General Purpose</b>	10A @ 240VAC

## General Characteristics

<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</b>	
<b>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, 6kV contact, 8kV air
<b>Fast Transient Burst</b>	IEC 61000-4-4, Level 3, 4kV input, 2kV input/output
<b>Transient Protection (Internal)</b>	IEC 61000-4-5; 1995 ±6kV
<b>Safety Marks</b>	
<b>UL</b>	UL508 (File #E68520)
<b>CSA</b>	22.2 No. 14 (File #46510)
<b>CE</b>	IEC 60947-6-2
<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: 50Hz will increase all delay timers by 20%.