**Description**

The 50R series single-phase voltage monitor has a voltage-sensing circuit which constantly monitors the single-phase power for a low voltage condition. Single-phase motors on fans, compressors, air conditioners, heat pumps, well pumps, sump pumps and small conveyor motors are all applicable to the 50R Series.

When a harmful condition is detected, the MotorSaver’s output relay is deactivated after a specified trip delay. The output relay reactivates after power line conditions return to an acceptable level and a specified amount of time has elapsed (restart delay). The trip delay prevents nuisance tripping due to rapidly fluctuating power line conditions.

**Features & Benefits**

<table>
<thead>
<tr>
<th>FEATURES</th>
<th>BENEFITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proprietary voltage sensing circuitry</td>
<td>Constant monitoring of single-phase power for a low voltage condition</td>
</tr>
<tr>
<td>Adjustable trip delay (-3 models) and restart delay (-2 models) settings</td>
<td>Prevent nuisance tripping due to rapidly fluctuating power line conditions and allows staggered start up of multiple motors, after a fault, to prevent a low voltage condition</td>
</tr>
<tr>
<td>High voltage detection (-9 models)</td>
<td>Trips and resets at a fixed percentage of the setpoint: trip 110 %, reset 107 %</td>
</tr>
<tr>
<td>600 V rated relay contacts available on some models</td>
<td>Eliminates the need for a control transformer to step voltage down to 120–240 V for a control circuit</td>
</tr>
</tbody>
</table>

**Ordering Information**

<table>
<thead>
<tr>
<th>MODEL</th>
<th>LINE VOTAGE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>50R-100</td>
<td>95–120 V ac</td>
<td>Fixed trip and restart delay</td>
</tr>
<tr>
<td>50R-100-2</td>
<td>95–120 V ac</td>
<td>Fixed trip and variable restart delay (manual, 2–300s)</td>
</tr>
<tr>
<td>50R200</td>
<td>190–240 V ac</td>
<td>Fixed trip and restart delay</td>
</tr>
<tr>
<td>50R2002</td>
<td>190–240 V ac</td>
<td>Fixed trip and variable restart delay (manual, 2–300s)</td>
</tr>
<tr>
<td>50R2003</td>
<td>190–240 V ac</td>
<td>Fixed restart and variable trip delay (2–30s)</td>
</tr>
<tr>
<td>50R20029</td>
<td>190–240 V ac</td>
<td>Fixed trip and variable restart delay (manual, 2–300s) plus high voltage detection</td>
</tr>
<tr>
<td>50R400</td>
<td>380–480 V ac</td>
<td>Fixed trip and restart delay</td>
</tr>
<tr>
<td>50R4002</td>
<td>380–480 V ac</td>
<td>Fixed trip and variable restart delay (manual, 2–300s)</td>
</tr>
<tr>
<td>50R4003</td>
<td>380–480 V ac</td>
<td>Fixed restart and variable trip delay (2–30s)</td>
</tr>
<tr>
<td>50R40029</td>
<td>380–480 V ac</td>
<td>Fixed trip and variable restart delay (manual, 2–300s) plus high voltage detection</td>
</tr>
</tbody>
</table>
## Specifications

### Input Characteristics

<table>
<thead>
<tr>
<th>Line Voltage</th>
<th>Range</th>
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<td>50R-100</td>
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<tr>
<td>50R400</td>
<td>380–480 V ac</td>
</tr>
</tbody>
</table>

### Frequency

50*/60 Hz

### Functional Characteristics

#### Low Voltage:

- **Trip (% of setpoint):** 90 %
- **Reset (% of setpoint):** 93 %
- **Delay Time (Nominal):**
  - **Trip:** 4 seconds
  - **Restart (low voltage):** 2 seconds
  - **Restart (complete power loss):** 2 seconds

### Output Characteristics

#### Output Contact Rating

(60 V, 1 Form C)

- **50R-100, 50R200:**
  - **Pilot Duty:** 480 VA @ 240 V ac
  - **General Purpose:** 10 A @ 240 V ac
- **50R400:**
  - **Pilot Duty:** 470 VA @ 600 V ac

### General Characteristics

#### Ambient Temperature Range

- **Operating:** -20°C to 70 °C (-4 °F to 158 °F)
- **Storage:** -40 °C to 80 °C (-40 °F to 176 °F)

#### Maximum Input Power

5 W

#### Relative Humidity

10–95 %, non-condensing per IEC 68-2-3

#### Terminal

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

#### Electrostatic Discharge (ESD)

- **IEC 61000-4-2, Level 3:** 6 kV contact, 8 kV air
- **Fast Transient Burst:**
  - **IEC 61000-4-4, Level 3:** 3.5 kV input power and controls

#### Transient Protection

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

#### Safety Marks

- **UL:** UL 508 (File #E68520)
- **CE:** IEC 60947-6-2

#### Dimensions

- **H:** 74.4 mm (2.93”)
- **W:** 133.9 mm (5.27”)
- **D:** 74.9 mm (2.95”)

#### Weight

0.98 lb. (15.68 oz., 444.52 g)

#### Mounting Method

#8 screws

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### Special Options

- **Opt. 2: Variable Restart Delay:** Manual, 2–300 seconds
- **Opt. 3: Variable Trip Delay:** 2–30 seconds
- **Opt. 9: High Voltage Detection Operating Points**
  - **Trip (% of Setpoint):** 110 %
  - **Reset (% of Setpoint):** 107 %

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