

## 50R SERIES

### Single-phase voltage monitor

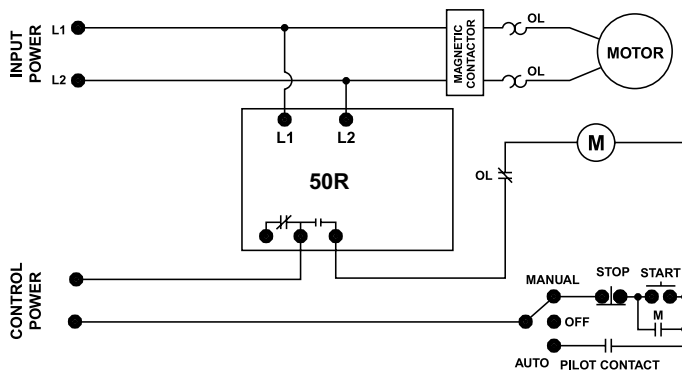


### Description

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.

### Wiring Diagram



### Features & Benefits

FEATURES	BENEFITS
<b>Proprietary voltage sensing circuitry</b>	Constant monitoring of single-phase power for a low voltage condition
<b>Adjustable trip delay (-3 models) and restart delay (-2 models) settings</b>	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
<b>High voltage detection (-9 models)</b>	Trips and resets at a fixed percentage of the setpoint: trip 110 %, reset 107 %.
<b>600 V rated relay contacts available on some models</b>	Eliminates the need for a control transformer to step voltage down to 120–240 V for a control circuit

### Ordering Information

MODEL	LINE VOLTAGE	DESCRIPTION
50R-100	95–120 V ac	Fixed trip and restart delay
50R-100-2	95–120 V ac	Fixed trip and variable restart delay (manual, 2–300s)
50R200	190–240 V ac	Fixed trip and restart delay
50R2002	190–240 V ac	Fixed trip and variable restart delay (manual, 2–300s)
50R2003	190–240 V ac	Fixed restart and variable trip delay (2–30s)
50R20029	190–240 V ac	Fixed trip and variable restart delay (manual, 2–300s) plus high voltage detection
50R400	380–480 V ac	Fixed trip and restart delay
50R4002	380–480 V ac	Fixed trip and variable restart delay (manual, 2–300s)
50R4003	380–480 V ac	Fixed restart and variable trip delay (2–30s)
50R40029	380–480 V ac	Fixed trip and variable restart delay (manual, 2–300s) plus high voltage detection

## 50R SERIES

### Specifications

#### Input Characteristics

##### Line Voltage

<b>50R-100</b>	95–120 V ac
<b>50R200</b>	190–240 V ac
<b>50R400</b>	380–480 V ac
<b>Frequency</b>	50*/60 Hz

#### Functional Characteristics

##### Low Voltage:

<b>Trip (% of setpoint)</b>	90 %
<b>Reset (% of setpoint)</b>	93 %
<b>Delay Time (Nominal)</b>	
<b>Trip</b>	4 seconds
<b>Restart (low voltage)</b>	2 seconds
<b>Restart (complete power loss)</b>	2 seconds

#### Output Characteristics

##### Output Contact Rating (SPDT - 1 Form C)

<b>50R-100, 50R200</b>	
<b>Pilot Duty</b>	480 VA @ 240 V ac
<b>General Purpose</b>	10 A @ 240 V ac
<b>50R400</b>	
<b>Pilot Duty</b>	470 VA @ 600 V ac

#### General Characteristics

##### Ambient Temperature Range

<b>Operating</b>	-20°C to 70 °C (-4 °F to 158 °F)
<b>Storage</b>	-40 °C to 80 °C (-40 °F to 176 °F)
<b>Maximum Input Power</b>	5 W
<b>Relative Humidity</b>	10–95 %, non-condensing per IEC 68-2-3
<b>Terminal</b>	
<b>Torque</b>	7 in.-lbs.
<b>Wire Size</b>	12–18AWG
<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, 3.5 kV input power and controls

##### Transient Protection (Internal)

IEC 61000-4-5; 1995 ±6 kV

##### Safety Marks

<b>UL</b>	UL 508 (File #E68520)
<b>CE</b>	IEC 60947-6-2

##### Dimensions

**H** 74.4 mm (2.93"); **W** 133.9 mm (5.27");  
**D** 74.9 mm (2.95")

<b>Weight</b>	0.98 lb. (15.68 oz., 444.52 g)
<b>Mounting Method</b>	#8 screws

### Special Options

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

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

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