

# 460-XXX-SP SERIES

## Single-phase voltage monitor



### Description

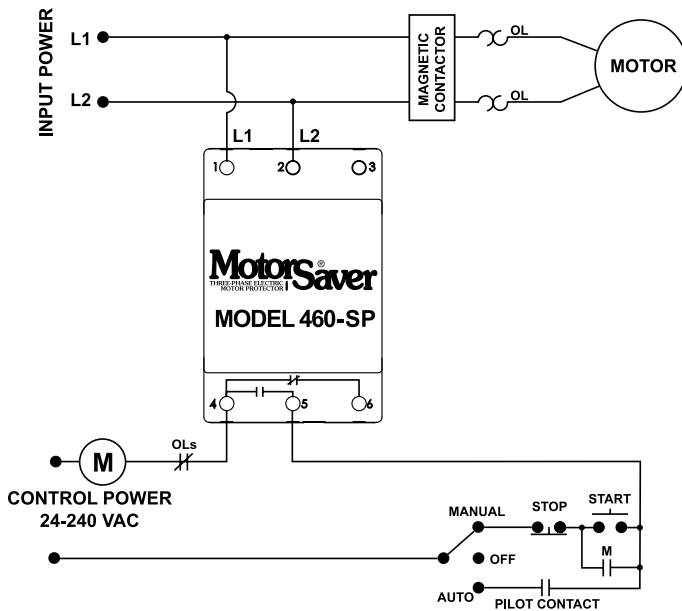
The 460-100-SP is used on 95-120VAC, 50\*/60Hz single-phase motors and the 460-200-SP is used on 190-240VAC, 50\*/60Hz single-phase motors to protect them from damaging high and low voltage conditions. An adjustment knob allows the user to set a 1-500 second restart delay. The variable restart delay is also a power-up delay and can be utilized to stagger-start motors on the same system.

A unique microcontroller-based, voltage-sensing circuit constantly monitors the voltage to detect harmful power line conditions. 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

FEATURES	BENEFITS
<b>Proprietary microcontroller based circuitry</b>	Constant monitoring of voltage to detect harmful power line conditions, even before a motor starts
<b>Fixed trip delay 4s</b>	Prevents nuisance tripping due to rapidly fluctuating power line conditions
<b>Adjustable restart delay (1-500s)</b>	Allows staggered start up of multiple motors on the same system to prevent a low voltage condition
<b>Advanced LED indication</b>	Provides diagnostics which can be used for troubleshooting and to determine relay status
<b>DIN rail or surface mountable</b>	Allows flexibility for panel assembly

### Wiring Diagram



### Ordering Information

MODEL	LINE VOTAGE
460-100-SP	95-120VAC
460-200-SP	190-240VAC

## 460-XXX-SP SERIES

### Specifications

#### Input Characteristics

##### Line Voltage

<b>460-100-SP</b>	95-120VAC
<b>460-200-SP</b>	190-240VAC

<b>Frequency</b>	50*/60Hz
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#### Functional Characteristics

##### Low Voltage (% of setpoint):

<b>Trip</b>	90% ±1%
<b>Reset</b>	93% ±1%

##### High Voltage (% of setpoint)

<b>Trip</b>	110% ±1%
<b>Reset</b>	107% ±1%

##### Trip Delay Time

<b>Low or High Voltage</b>	4 seconds fixed
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##### Restart Delay Time

<b>After a Fault</b>	1-500 seconds adjustable
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<b>After a Complete Power Loss</b>	1-500 seconds adjustable
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#### Output Characteristics

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

<b>Pilot Duty</b>	480VA @ 240VAC, B300
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<b>General Purpose</b>	10A @ 240VAC
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#### General Characteristics

##### Ambient Temperature Range

<b>Operating</b>	-40° to 70°C (-40° to 158°F)
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<b>Storage</b>	-40° to 80°C (-40° to 176°F)
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<b>Maximum Input Power</b>	6 W
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<b>Class of Protection</b>	IP20, NEMA 1 (finger safe)
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<b>Relative Humidity</b>	10-95%, non-condensing per IEC 68-2-3
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<b>Terminal Torque</b>	4.5 in.-lbs.
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<b>Wire Type</b>	Stranded or solid 12-20 AWG, one per terminal
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#### Standards Passed

<b>Electrostatic Discharge (ESD)</b>	IEC 61000-4-2, Level 3, 6kV contact, 8kV air
<b>Radio Frequency Immunity, Radiated</b>	150 MHz, 10V/m
<b>Fast Transient Burst</b>	IEC 61000-4-4, Level 3, 3.5 kV input power and controls

#### Surge

<b>IEC</b>	IEC 61000-4-5, Level 3, 4kV line-to-line; Level 4, 4kV line-to-ground
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#### ANSI/IEEE

<b>ANSI/IEEE</b>	C62.41 Surge and Ring Wave Compliance to a level of 6kV line-to-line
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#### Hi-potential Test

<b>Hi-potential Test</b>	Meets UL508 (2 x rated V +1000V for 1 min)
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#### Safety Marks

<b>UL</b>	UL508 (File #E68520)
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<b>CE</b>	IEC 60947-6-2
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<b>Enclosure</b>	Polycarbonate
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<b>Dimensions</b>	<b>H</b> 88.9 mm (3.5"); <b>W</b> 52.93 mm (2.084");
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	<b>D</b> 59.69 mm (2.35")
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<b>Weight</b>	0.9 lb. (14.4 oz., 408.23 g)
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<b>Mounting Method</b>	35mm DIN rail or Surface Mount (#6 or #8 screws)
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\*Note: 50 Hz will increase all delay timers by 20%