

Protection Relays Voltage Monitoring Relays

460-XXX-SP SERIES

Single-phase voltage monitor



Description

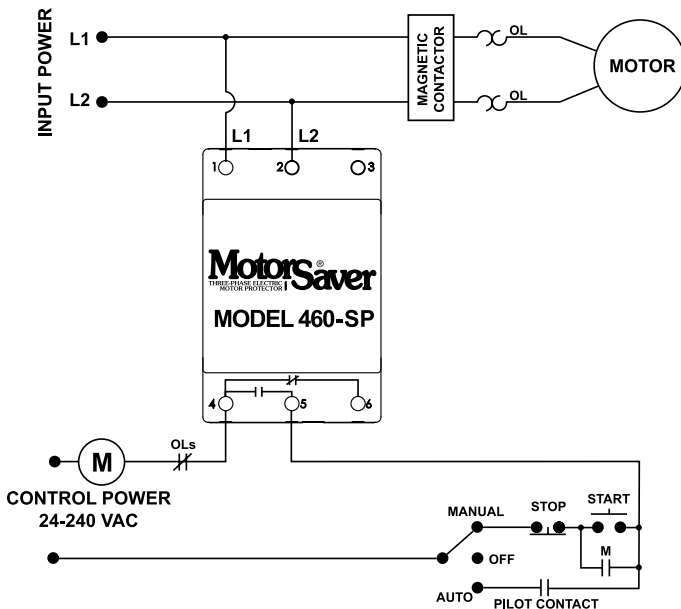
The 460-100-SP is used on 95-120VAC, 50*/60Hz single-phase motors and the 460-200-SP is used on 190-240VAC, 50*/60Hz single-phase motors to protect them from damaging high and low voltage conditions. An adjustment knob allows the user to set a 1-500 second restart delay. The variable restart delay is 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
Proprietary microcontroller based circuitry	Constant monitoring of voltage to detect harmful power line conditions, even before a motor starts
Fixed trip delay 4s	Prevents nuisance tripping due to rapidly fluctuating power line conditions
Adjustable restart delay (1-500s)	Allows staggered start up of multiple motors on the same system to prevent a low voltage condition
Advanced LED indication	Provides diagnostics which can be used for troubleshooting and to determine relay status
DIN rail or surface mountable	Allows flexibility for panel assembly

Wiring Diagram



Ordering Information

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

460-XXX-SP SERIES

Specifications

Input Characteristics

Line Voltage

460-100-SP	95-120VAC
460-200-SP	190-240VAC

Frequency	50*/60Hz
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Functional Characteristics

Low Voltage (% of setpoint):

Trip	90% ±1%
Reset	93% ±1%

High Voltage (% of setpoint)

Trip	110% ±1%
Reset	107% ±1%

Trip Delay Time

Low or High Voltage	4 seconds fixed
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Restart Delay Time

After a Fault	1-500 seconds adjustable
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After a Complete Power Loss	1-500 seconds adjustable
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Output Characteristics

Output Contact Rating (1 Form C)

Pilot Duty	480VA @ 240VAC, B300
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General Purpose	10A @ 240VAC
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General Characteristics

Ambient Temperature Range

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

Electrostatic Discharge (ESD)	IEC 61000-4-2, Level 3, 6kV contact, 8kV air
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Radio Frequency Immunity,

Radiated	150 MHz, 10V/m
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Fast Transient Burst	IEC 61000-4-4, Level 3, 3.5 kV input power and controls
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Surge

IEC	IEC 61000-4-5, Level 3, 4kV line-to-line; Level 4, 4kV line-to-ground C62.41 Surge and Ring Wave Compliance to a level of 6kV line-to-line Meets UL508 (2 x rated V +1000V for 1 min)
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ANSI/IEEE

Hi-potential Test

Safety Marks

UL	UL508 (File #E68520)
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CE	IEC 60947-6-2
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Enclosure	Polycarbonate
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Dimensions	H 88.9 mm (3.5"); W 52.93 mm (2.084");
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D 59.69 mm (2.35")

Weight	0.9 lb. (14.4 oz., 408.23 g)
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Mounting Method	35mm DIN rail or Surface Mount
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(#6 or #8 screws)

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