460-XXX-SP SERIES

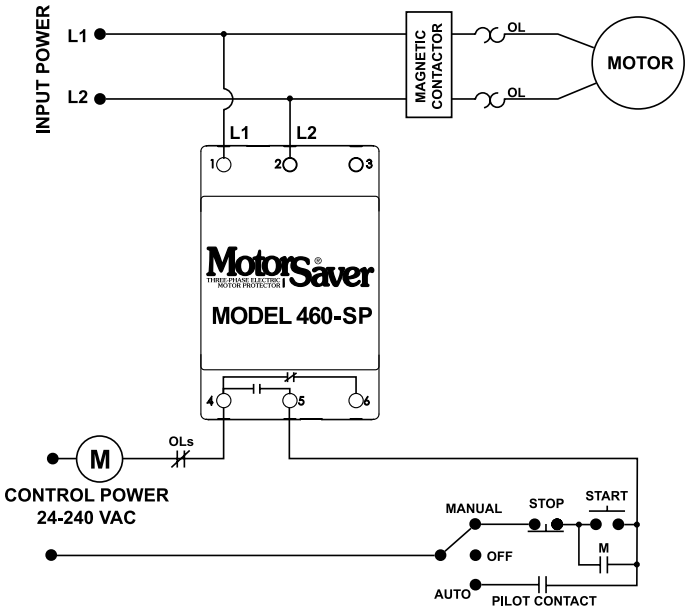
Single-phase voltage monitor

Description

The 460-100-SP is used on 95–120 V ac, 50*/60 Hz single-phase motors and the 460-200-SP is used on 190–240 V ac, 50*/60 Hz 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.

Wiring Diagram



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 4 s	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

Ordering Information

MODEL	LINE VOTAGE
460-100-SP	95–120 V ac
460-200-SP	190–240 V ac

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Specifications

Input Characteristics

Line Voltage	
460-100-SP	95–120 V ac
460-200-SP	190–240 V ac
Frequency	50*/60 Hz

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
Restart Delay Time	
After a Fault	1–500 seconds adjustable
After a Complete Power Loss	1–500 seconds adjustable

Output Characteristics

Output Contact Rating (1 Form C)	
Pilot Duty	480 VA @ 240 V ac, B300
General Purpose	10 A @ 240 V ac

General Characteristics

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

Standards Passed

Electrostatic Discharge (ESD)	IEC 61000-4-2, Level 3, 6 kV contact, 8 kV air
Radio Frequency Immunity, Radiated	150 MHz, 10 V/m
Fast Transient Burst	IEC 61000-4-4, Level 3, 3.5 kV input power and controls
Surge	
IEC	IEC 61000-4-5, Level 3, 4 kV line-to-line; Level 4, 4 kV line-to-ground
ANSI/IEEE	C62.41 Surge and Ring Wave Compliance to a level of 6 kV line-to-line
Hi-potential Test	Meets UL 508 (2 x rated V +1000 V for 1 min)
Safety Marks	
UL	UL 508 (File #E68520)
Enclosure	Polycarbonate
Dimensions	**H** 88.9 mm (3.5"); **W** 52.93 mm (2.084"); **D** 59.69 mm (2.35")
Weight	0.9 lb. (14.4 oz., 408.23 g)
Mounting Method	35 mm DIN rail or Surface Mount (#6 or #8 screws)

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