

Features

Four adjustment pots provide versatility for all kinds of applications.

Universal range from 190-480VAC, 50 or 60Hz provides the versatility needed to handle global applications.

Diagnostic LEDs indicate trip status and provide simple troubleshooting.

Microcontroller-based circuitry provides better accuracy and higher reliability than analog designs.

Transient protection meets IEEE and IEC standards and permits operation under tough conditions.

Single-phase conditions are detected regardless of regenerated voltages.

Units have one NO and one NC (-14) or two NO (-15) output contacts.



MotorSaver
THREE-PHASE ELECTRIC
MOTOR PROTECTOR

**Model 460-14
Model 460-15**

**Three-Phase
Voltage Monitor**

**Engineered
Protection**

**Microcontroller
Based**

Protects 3-Phase Motors from:

- Loss of any phase
- Low voltage
- High voltage
- Voltage unbalance
- Phase reversal
- Rapid cycling

Standard Features:

- Isolated output contacts:
 - 1 NO and 1 NC (460-14)
 - 2 NO (460-15)
- 1-500 sec. variable restart delay
- 2-8% variable voltage unbalance
- 1-30 sec. variable trip delay
- 8 amp general purpose contacts
- Optional manual reset
- Compact design
- UL and cUL listed
- CE compliant
- Finger-safe terminals
- 5-year warranty
- Made in USA
- Surface or DIN rail mountable

The **Models 460-14 and 460-15** are designed to protect 3-phase loads from damaging power conditions. Its wide operating range, combined with UL, cUL and CE compliance, enables quick access to domestic and global markets.

A unique microcontroller-based voltage and phase-sensing circuit constantly monitors the 3-phase voltages 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 for a specified amount of time (restart delay). The trip and restart delays prevent nuisance tripping due to rapidly fluctuating power line conditions.

The Models 460-14 and 460-15 automatically sense whether they are connected to a 190-240V 60Hz system, a 440-480V 60Hz system, or a 380-416V 50Hz system. An adjustment is provided to set the nominal line voltage from 190-240 or 380-480VAC. Motor control is accomplished with one NO contactor and one NC contactor (Model 460-14) or two NO contactors (Model 460-15). Other adjustments include a 1-30 second trip delay, a 1-500 second restart delay, and a 2-8% voltage unbalance trip point adjustment.

Model 460-14 & 460-15

Three-Phase Voltage Monitor

Specifications

3-Phase Line Voltage..... 190-480VAC
(475-600VAC optional) Order # 460-575-14
(95-20VAC optional)

Frequency..... 50* or 60Hz

Low Voltage (% of set point)

•Trip..... 90% ±1%

•Reset..... 93% ±1%

High Voltage (% of set point)

•Trip..... 110% ±1%

•Reset..... 107% ±1%

Voltage Unbalance (NEMA)

•Trip..... 2-8% adjustable

•Reset..... Trip setting minus 1% (5-8%)
Trip setting minus .5% (2-4%)

Trip Delay Time

•Low, High and Unbalanced Voltage..... 1-30 seconds adjustable

•Single-phasing Faults..... 1 second fixed

Restart Delay Time

•After a Fault..... 1-500 seconds adjustable

•After a Complete Power Loss..... 1-500 seconds adjustable

Output Contact Rating

•1 Form A and 1 Form B (460-14)..... 8A General Purpose @ 240VAC
Pilot Duty 360VA @ 240VAC, B300

•2 Form A (460-15)..... 8A General Purpose @ 240VAC
Pilot Duty 360VA @ 240VAC, B300

Power Consumption..... 6 Watts (max)

Weight..... 14 oz.

Enclosure..... Polycarbonate

Terminal Torque..... 6 in.-lbs.

Wire Type..... Stranded or solid 12-20 AWG, one per terminal

Safety Marks

•UL..... UL508

•CE..... IEC 60947-6-2

Standards Passed

•Electrostatic Discharge (ESD)..... IEC 1000-4-2, Level 3, 6kV contact, 8kV air

•Radio Frequency Immunity, Radiated..... 150 MHz, 10V/m

•Fast Transient Burst..... IEC 1000-4-4, Level 3, 3.5kV input power & controls

Surge

•IEC..... IEC 1000-4-5, Level 3, 4kV line-to-line;

Level 4, 4kV line-to-ground

•ANSI/IEEE..... C62.41 Surge and Ring Wave Compliance
to a level of 6kV line-to-line

•Hi-potential Test..... Meets UL508 (2 x rated V + 1000V for 1 minute)

Environmental

Temperature Range..... Ambient Operating: -20° to 70°C (-4° to 158°F)

Ambient Storage: -40° to 80°C (-40° to 176°F)

Class of Protection..... IP20, NEMA 1 (finger safe)

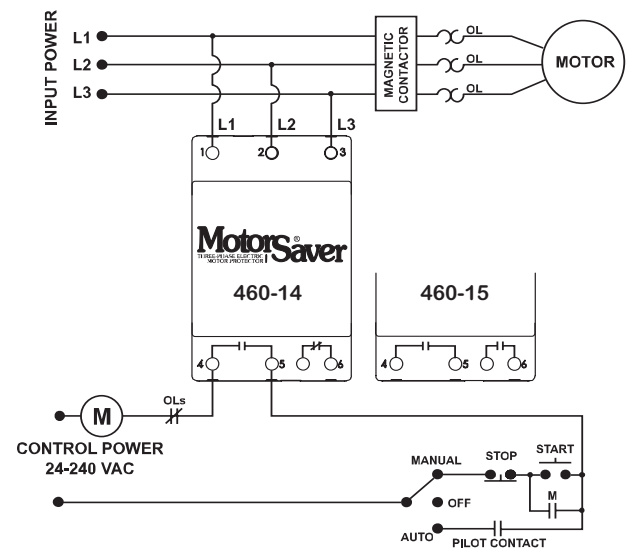
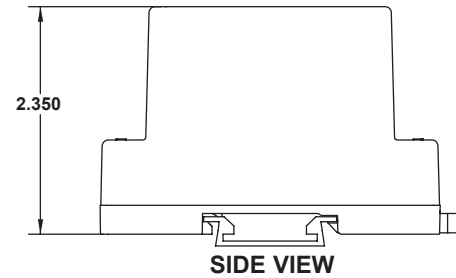
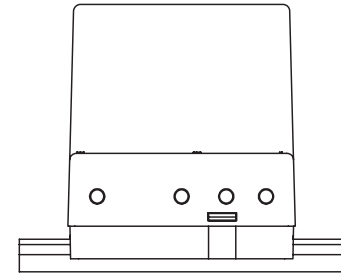
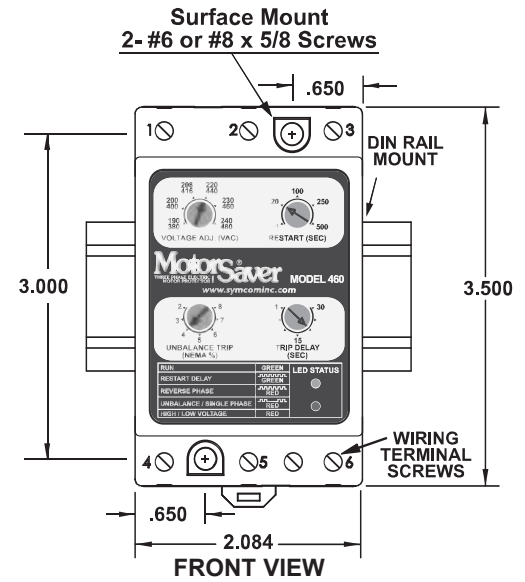
Relative Humidity..... 10-95%, non-condensing per IEC 68-2-3

Special Options

Manual Reset..... External momentary pushbutton required.

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

SymCom warrants its microcontroller based products against defects in material or workmanship for a period of five (5) years from the date of manufacture. All other products manufactured by SymCom shall be warranted against defects in material and workmanship for a period of two (2) years from the date of manufacture. For complete information on warranty, liability, terms, returns, and cancellations, please refer to the SymCom Terms and Conditions of Sale document.



TYPICAL WIRING DIAGRAM