

Features

Four adjustment pots provide versatility for all kinds of applications.

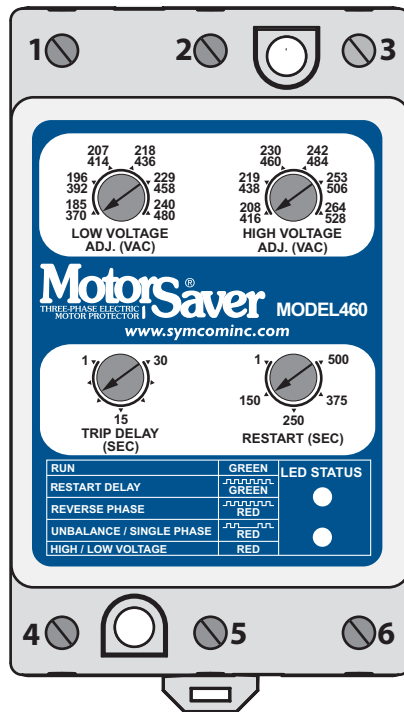
Universal range from 190-480VAC 50 or 60Hz provides the versatility needed to handle global applications.

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.



Motorsaver
THREE-PHASE ELECTRIC
MOTOR PROTECTOR

**Model
460-VBM**

**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

Additional Features:

- Compact design
- UL and cUL listed
- CE compliant
- Finger-safe terminals
- 5-year warranty
- Made in USA
- Surface or DIN rail mountable
- Standard 1-500 sec. variable restart delay
- Standard 1-30 sec. variable trip delay
- One 10 amp general purpose form C relay

The **Model 460-VBM** is designed to protect 3-phase loads from damaging power conditions. The 460-VBM's wide operating range combined with UL 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 Model 460-VBM automatically senses whether it is connected to a 190-240V 60Hz system, a 440-480V 60Hz system, or a 380-416V 50Hz system. Adjustments are provided to set the low voltage and high voltage trip points. Other adjustments include a 1-30 second trip delay and a 1-500 second restart delay.

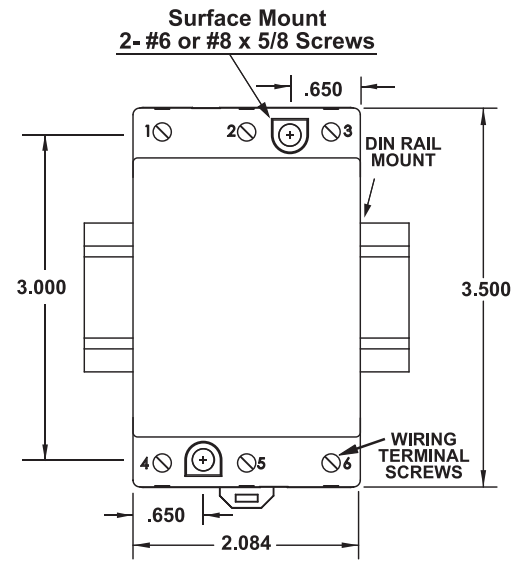
Model 460-VBM Three-Phase Voltage Monitor

SPECIFICATIONS

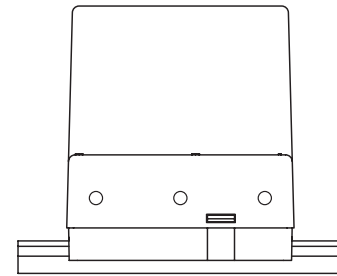
3-Phase Line Voltage	190-480VAC
Frequency	50* or 60Hz
Low Voltage	
Trip	185-480VAC
Reset	Trip Setting plus 3%
High Voltage	
Trip	208-528VAC
Reset	Trip Setting minus 3%
Voltage Unbalance (NEMA)	
Trip	6%
Reset	5%
Trip Delay Time	
Low, High and Unbalanced Voltage	1-30 Seconds Adjustable
Single-phasing Faults	1 Second
Restart Delay Time	
After a fault or complete power loss	1-500 Seconds
Output Contact Rating - SPDT	
Pilot Duty	480VA @ 24VAC
General Purpose	10A @ 240VAC
Power Consumption	6 Watts (maximum)
Weight	14 oz
Enclosure	Polycarbonate
Terminal	
Torque	6 in.-lbs. Max.
Wire AWG	12 - 20 AWG
Safety Marks	
UL	UL508 (File # E68520)
CE	IEC 60947-6-2
Standards Passed	
Electrostatic Discharge (ESD)	IEC 1000-4-2, Level 3, 6 kV contact, 8 kV air
Radio Frequency Immunity, Radiated	159 MHz, 10 V/m
Fast Transient Burst	IEC 1000-4-4, Level 3, 3.5 kV input power and controls
Surge	
IEC	IEC 1000-4-5, 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 UL508 (2 x rated V +1000V for 1 minute)
Environmental	
Temperature Range	Ambient Operating: -20° - 70°C (-4° - 158°F) Ambient Storage: -40° - 80°C (-40° - 176°F)
Class of Protection	IP20, NEMA 1 (finger safe)
Relative Humidity	10-95%, non-condensing per IEC 68-2-3

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

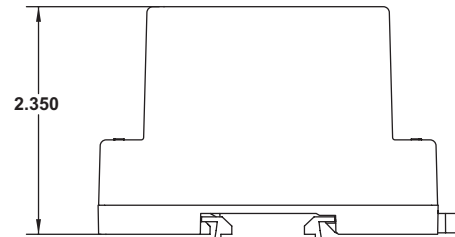
SymCom warrants its microcontroller based products against defects in material or workmanship for a period of five (5) years from the date of manufacture. All other products manufactured by SymCom shall be warranted against defects in material and workmanship for a period of two (2) years from the date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



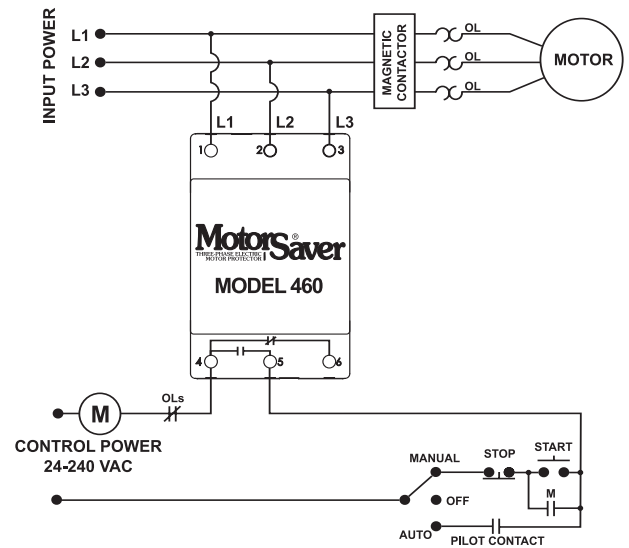
FRONT VIEW



BOTTOM VIEW



SIDE VIEW



TYPICAL WIRING DIAGRAM