

# INSTALLATION INSTRUCTIONS FOR SYMCOM'S MOTRSAVER MODEL 202

**BE SURE POWER IS DISCONNECTED PRIOR TO INSTALLATION!!  
FOLLOW NATIONAL, STATE AND LOCAL CODES!**

## CONNECTIONS

1. Mount the MotorSaver in a convenient location in or near the motor control panel using a 1/4" socket head cap screw (customer supplied). If the location is wet or dusty, then the MotorSaver should be mounted in a NEMA 4 or 12 enclosure.
2. Connect the three lines of the motor's three-phase power supply to L1, L2 and L3 using insulated 1/4" female, UL recognized quick connectors. (see Figure No. 1).
3. Connect the output relay to the circuitry to be controlled using insulated 1/4" female, UL recognized quick connectors. (see Figure No. 1).



(A) To control a motor: Connect the normally open contact in series with the magnetic coil of the motor starter as shown.

(B) To sound an alarm: Connect the normally closed contact in series with the alarm as shown.

**Figure No. 1: Typical Wiring Diagram**

## SETTINGS

1. **LINE VOLTAGE ADJUSTMENT:** Rotate the LINE VOLTAGE ADJUSTMENT to the nominal three-phase line voltage feeding the motor to be protected.
2. **TIME DELAY RESTART:** Rotate the RESTART DELAY to the desired position. The restart delay is the time between the MotorSaver seeing acceptable power and the MotorSaver closing its output contacts. For compressor applications, the restart delay should be set for the approximate time it takes for the head pressure to bleed off of the compressor. For other applications, the restart delay is typically set at 2 seconds. If the RESTART DELAY is in the MAN (manual) position, then the unit will not automatically restart until it is turned out of the MAN position. Setting multiple units at staggered restart delays will enable sequential starting on a complete power loss.

## POWER-UP

Turn on the power to the motor. During the restart delay the STATUS LIGHT will flash green. After the RESTART DELAY, the MotorSaver will energize its output contacts and the STATUS LIGHT will turn solid green. If the contacts do not energize and the STATUS LIGHT does not turn solid green, then see the TROUBLESHOOTING section.

**Congratulations!!! You have just installed the finest motor protection available!**

## TROUBLESHOOTING

If the output relay does not energize and the STATUS LIGHT does not turn solid green after waiting for the RESTART DELAY time, then:

1. If the STATUS LIGHT turns solid red, upon applying power, the 202 may be in the manual reset mode. Rotate the Restart Delay Adjustment clockwise 1/8 turn, above "2." You may be pointed at "Manual" or close enough to the Manual reset position that the unit will not automatically restart. If the light does not flash green, proceed to step 2.
2. If the STATUS LIGHT flashes red, turn off the three-phase power. Swap any two leads: L1-L2 or L2-L3 or L3-L1. You have a 50-50 chance of connecting L1, L2 and L3 up correctly the first time. Turn on the three-phase power.
3. If the MotorSaver still seems to be malfunctioning and the STATUS LIGHT is solid red, measure the three line-to-line voltages. Calculate the average of the voltages. If the average voltage is 7% above or 7% below the voltage adjust set point, the MotorSaver is functioning properly, saving your motor from abnormal power conditions.
4. If the average of the three line voltages is within  $\pm 7\%$ , calculate the voltage unbalance using the NEMA method shown below:

$$\% \text{ voltage unbalance} = (\text{max. deviation} / \text{Average of the three voltages}) \times 100$$

### EXAMPLE:

Find the largest deviation from the average voltage and divide it by the average for the NEMA unbalance.

$$L1 - L2 = 460\text{VAC}, L2 - L3 = 466 \text{ VAC}, L3 - L1 = 490 \text{ VAC}$$

$$\text{Average} = (460 + 466 + 490) / 3 = 472$$

490 is the largest deviation from the average voltage.

$$\text{Max. deviation} = 490 - 472 = 18$$

$$\% \text{ voltage unbalance} = (18 / 472) \times 100 = 3.8\%$$

If the percent voltage unbalance is greater than 4.5%, then MotorSaver is functioning properly, saving your motor from abnormal power conditions.

5. If the percent voltage unbalance is less than 4.5%, then contact SymCom at **1-800-843-8848 OR 1-605-348-5580** and we will be happy to help you.

## STATUS LIGHT

CONDITION	LIGHT OPERATION
Run	Solid Green
Restart Delay	Flashing Green
Reverse Phase	Flashing Red
Manual Reset or Fault	Solid Red

## DANGER!



**HAZARDOUS VOLTAGES MAY BE PRESENT DURING INSTALLATION.**  
Electrical shock can cause death or serious injury.



Installation should be done by qualified personnel following all national, state and local electrical codes.

11-202-B




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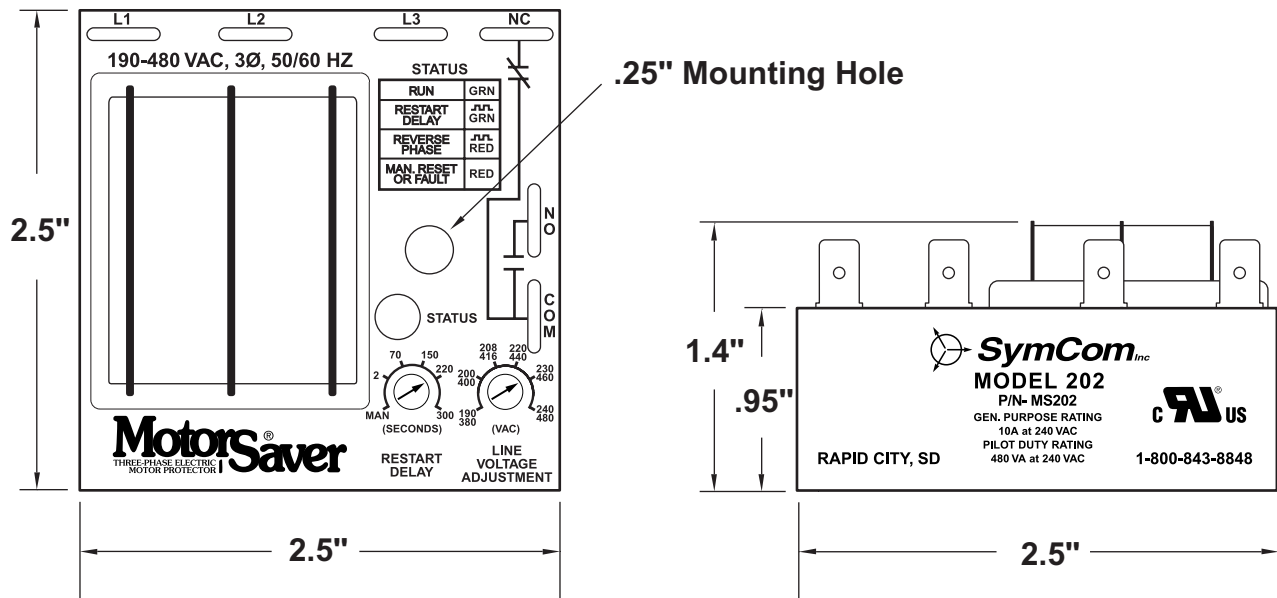
222 Disk Drive, Rapid City, SD 57701  
(800) 843-8848 [www.symcom.com](http://www.symcom.com)

# Specifications

**3-Phase Line Voltage** .....190 to 480 VAC ± 10%  
**Frequency** ..... \*50 or 60 Hz  
**Phase Sequence** .....ABC  
**Nominal Voltage Set Points** .....190, 200, 208, 220, 230, 240  
 .....380, 400, 416, 440, 460, 480  
**Low Voltage (% of set point)**  
 •Trip .....90%  
 •Reset .....93%  
**High Voltage (% of set point)**  
 •Trip .....110%  
 •Reset .....107%  
**Voltage Unbalance (NEMA)**  
 •Trip .....6%  
 •Reset .....4.5%  
**Trip Delay Time**  
 •High and Low Voltage.....4 seconds  
 •Unbalance & Phasing Faults .....2 seconds  
 \*Note: 50 Hz will increase all delay timers by 20%.

**Restart Delay Time**  
 •After a fault or complete power loss..MAN, 2-300 seconds adjustable  
**Output Contact Rating**  
 •SPDT .....480 VA @ 240 VAC Pilot Duty  
 or 10A @240 VAC Gen. Purpose  
**Transient Protection** .....IEC 1000-4-5, ±4kV  
**Power Consumption** .....5 Watts (Max.)  
**Weight** .....8 oz.  
**Trip & Reset Accuracy**.....± 1%  
**Repeatability**.....± 0.5%  
**Input to Output Dielectric** .....1960 Vrms min.  
**Termination**.....0.25" Male Quick Connect  
**Humidity** .....95% Relative Non Condensing  
**Operating Temperature** .....-40 to +70° C  
**CE Pending**  
**UL Recognized** .....File # E68520 

## DIMENSIONS FOR MODEL 202



## WARRANTY

Seller warrants to the buyer that products furnished will be free from defects in material and workmanship, exclusive of corrosion, for a period of five years from the date of shipment from its factory, provided said products have been installed, maintained and operated in conformance with any applicable specifications and recommendations of the Seller. The Seller's liability under this warranty shall be limited to the replacement within the aforesaid time of any defective work or material limited at the Seller's factory and shall not be liable for any labor or other repair costs made outside the Seller's factory without the written consent of the Seller. The Seller shall be liable for no other damages or losses. The warranty described in this paragraph shall be IN LIEU OF ANY OTHER WARRANTY EXPRESSED OR IMPLIED INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.