

INSTALLATION INSTRUCTIONS FOR SYMCOM'S MOTORSAVER® MODEL 102A-9

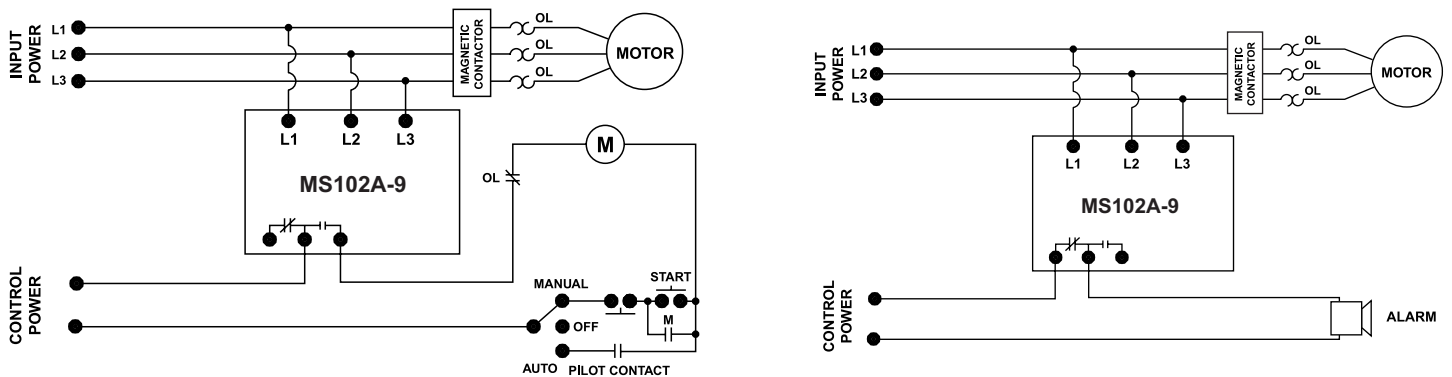
**BE SURE POWER IS DISCONNECTED PRIOR TO INSTALLATION!!
FOLLOW NATIONAL, STATE AND LOCAL CODES!**

CONNECTIONS

1. Mount the MotorSaver® in a convenient location in or near the motor control panel. 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 3-phase power to L1, L2 and L3 on MotorSaver's terminal strip.
3. Connect the output relay to the circuitry to be controlled (see Figure 1).

(A) To control a motor: Connect the normally open contact in series with the magnetic coil of the motor starter as shown in Figure 1a.

(B) To sound an alarm: Connect the normally closed contact in series with the alarm as shown in Figure 1b.



a) **FIGURE 1: TYPICAL WIRING DIAGRAMS** b)

SETTINGS

1. **LINE VOLTAGE ADJUSTMENT:** Rotate the LINE VOLTAGE ADJUSTMENT to the nominal three-phase line voltage feeding the motor to be protected.

POWER-UP

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

INDICATOR LIGHT DIAGNOSTICS

RUN	GREEN
RESTART DELAY	GREEN
REVERSE PHASE	RED
UNBALANCE / SINGLE PHASE	RED
HIGH / LOW VOLTAGE	RED

TROUBLESHOOTING

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

1. Turn off the 3-phase power. Swap any two leads: L1-L2, 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.
2. If the MotorSaver® still seems to be malfunctioning, measure the three line-to-line voltages. Calculate the average of the voltages. If the average voltage is $\pm 10\%$ of the voltage adjust setpoint, the MotorSaver® is functioning properly, saving your motor from abnormal power conditions.

SPECIFICATIONS	MODEL 102-A-9
Line Voltage Ranges	190 to 480 VAC
Frequency	50 - 60 Hz
Operating Points	
Low Voltage	
Trip (% of set point)	90%
Reset (% of set point)	93%
High Voltage	
Trip (% of set point)	110%
Reset (% of set point)	107%
Voltage Unbalance (NEMA)	
Trip	6%
Reset	4.5%
Trip Delay Time (Nominal)	
Low Voltage	4 Seconds
High Voltage	4 Seconds
Unbalance & Phasing Faults	2 Seconds
Restart Delay Time	
After a Fault	2 Seconds
From complete power loss	2 Seconds
Output Contact Rating	480 VA @ 240 VAC or 10 A General Purpose
Internal Transient Protection	2500 V for 10 mSeconds
Using IEC 1000-4-5:1995	
Power Consumption	5 Watts (Max.)
Weight	14 oz.

3. If the average of the three line voltages is within $\pm 10\%$, 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 = 460VAC, L2 - L3 = 466 VAC, L3 - L1 = 490 VAC

Average = $(460 + 466 + 490) / 3 = 472$

490 is the largest deviation from the average voltage.

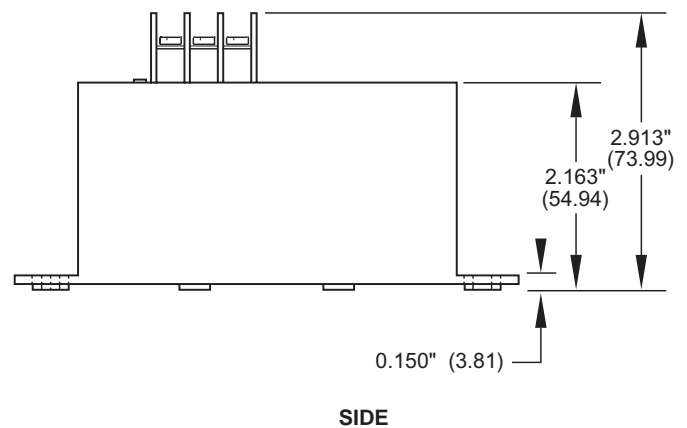
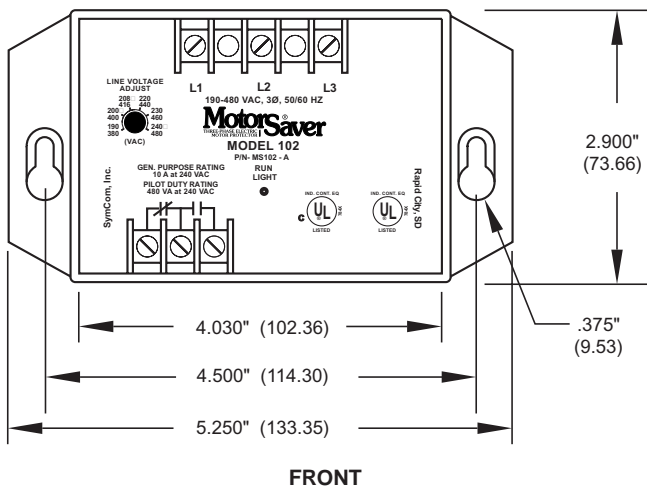
Max. deviation = $490 - 472 = 18$

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

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

4. 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.

DIMENSIONS FOR MODEL 102A-9



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.