

**MOC 1  
Motor Overload Control  
Instruction Manual**

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## SPECIFICATIONS

Input Power	95 - 135 VAC, 1Ø, 50/60 HZ 195 - 260 VAC 1Ø, 50/60 HZ optional
Horsepower Range	1/8 to 3 HP, 1/4 to 5 HP optional
Enclosure	Open Chassis, NEMA 12, or NEMA 4
Ambient Temperature	10° to 40° C (50° to 104° F)
Mounting	Vertical preferred
Internal Adjustments	Ignore time (start-up) Overload trip point
Sensing Range	2 Amps to 15 Amps 4 Amps to 30 Amps optional
Start and Overload Contact Ratings	1/10 HP, 120 VAC, 3A, 240 VAC

## SUGGESTIONS BEFORE WIRING

### Wire Size and Type

#14 ga. or larger should be used for motor connections. Smaller wire may be used for all other connections. Insulation should be enough for operation at the motor controller line voltage.

### Code Requirements

A separate fused disconnect or circuit breaker must be supplied by user on the incoming power to the MOC 1. Suggested fuse size for the MOC 1, 1 Amp Slo-Blo.

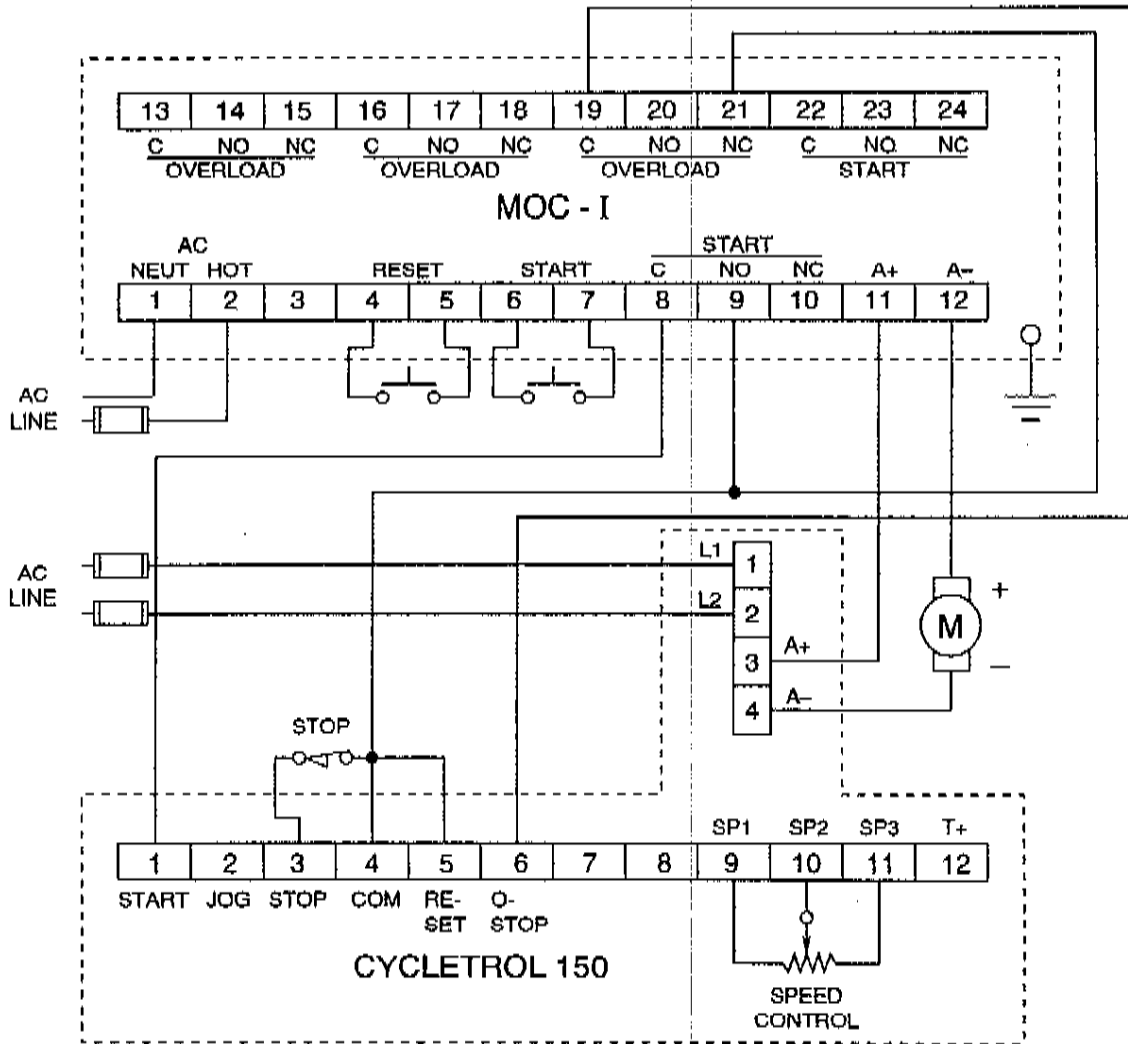
The MOC 1 plate or enclosure casting must be grounded.

### Mounting Suggestions

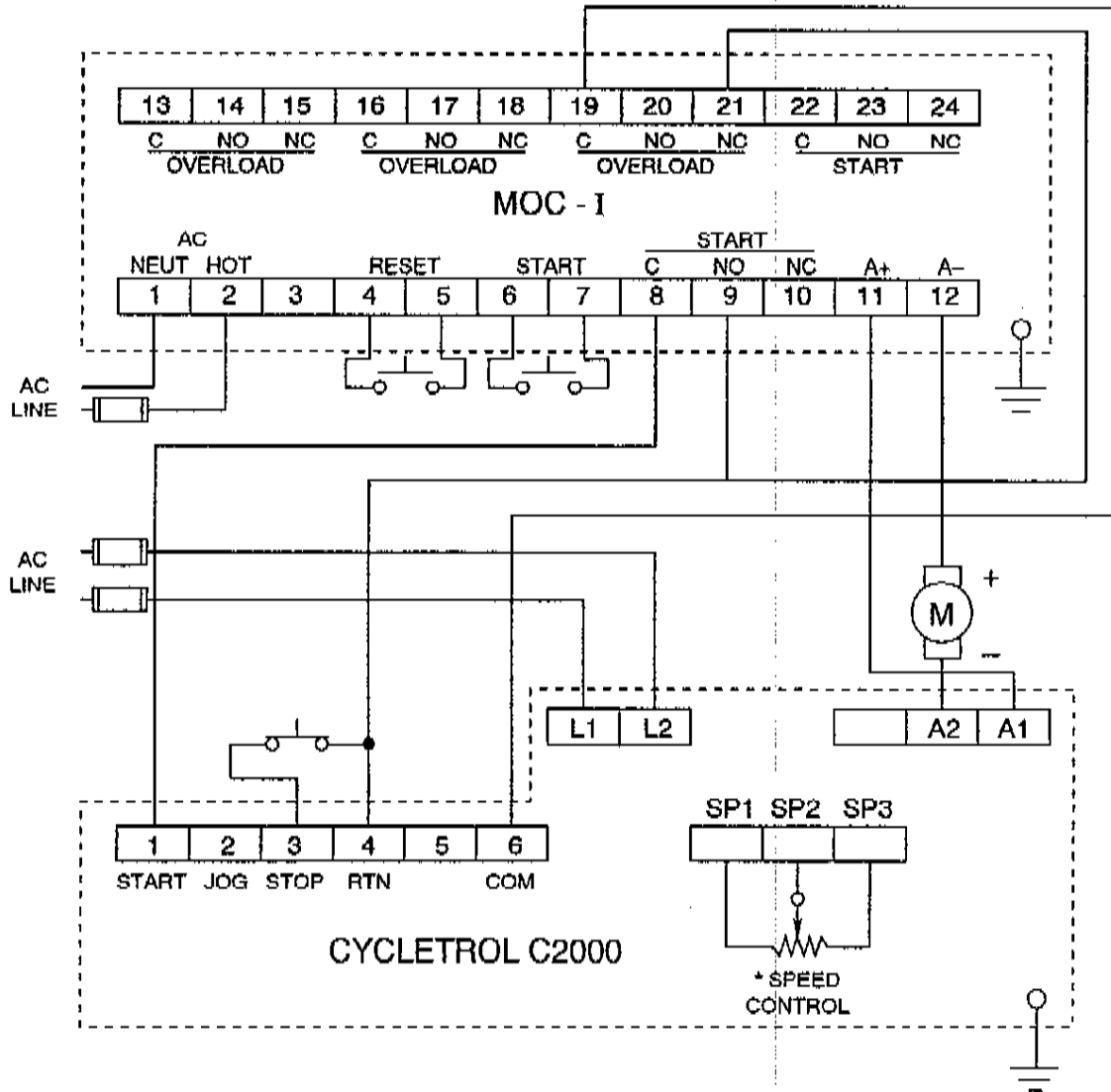
Vertical mounting in an area where air can circulate is recommended for coolest operation.

### TYPICAL WIRING DIAGRAMS

#### MOC 1 with Cycletrol 150



### MOC 1 with Cycletrol C2000

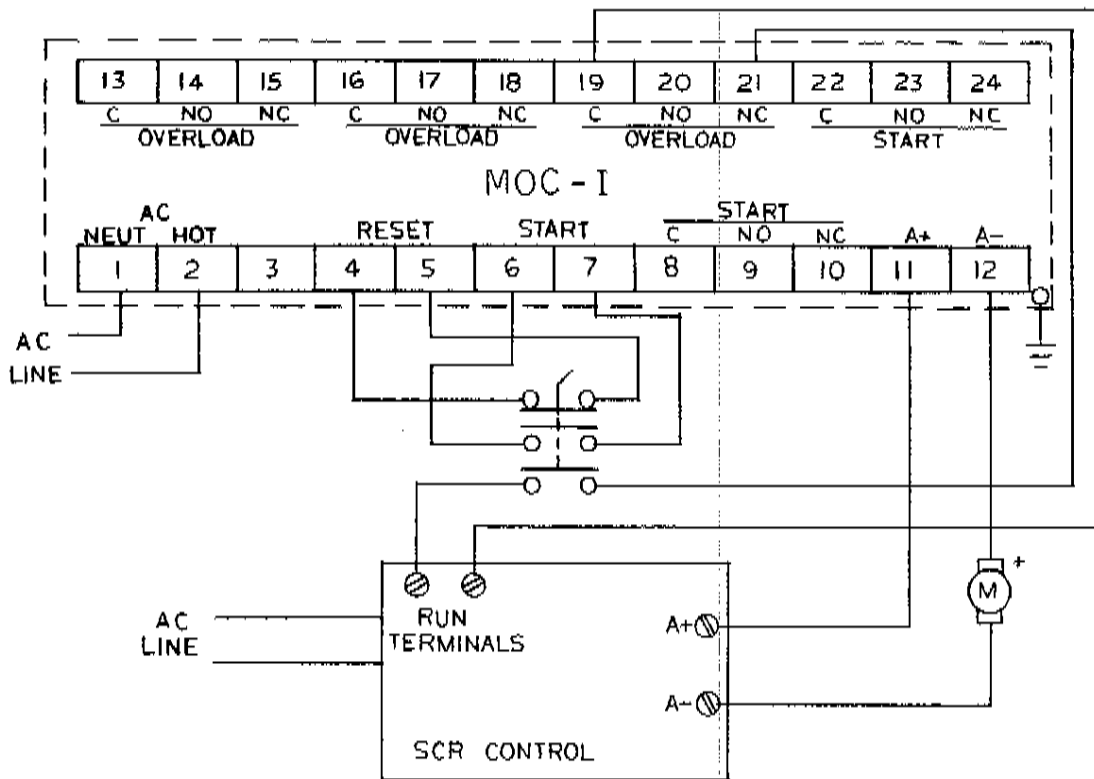


\* Chassis units only

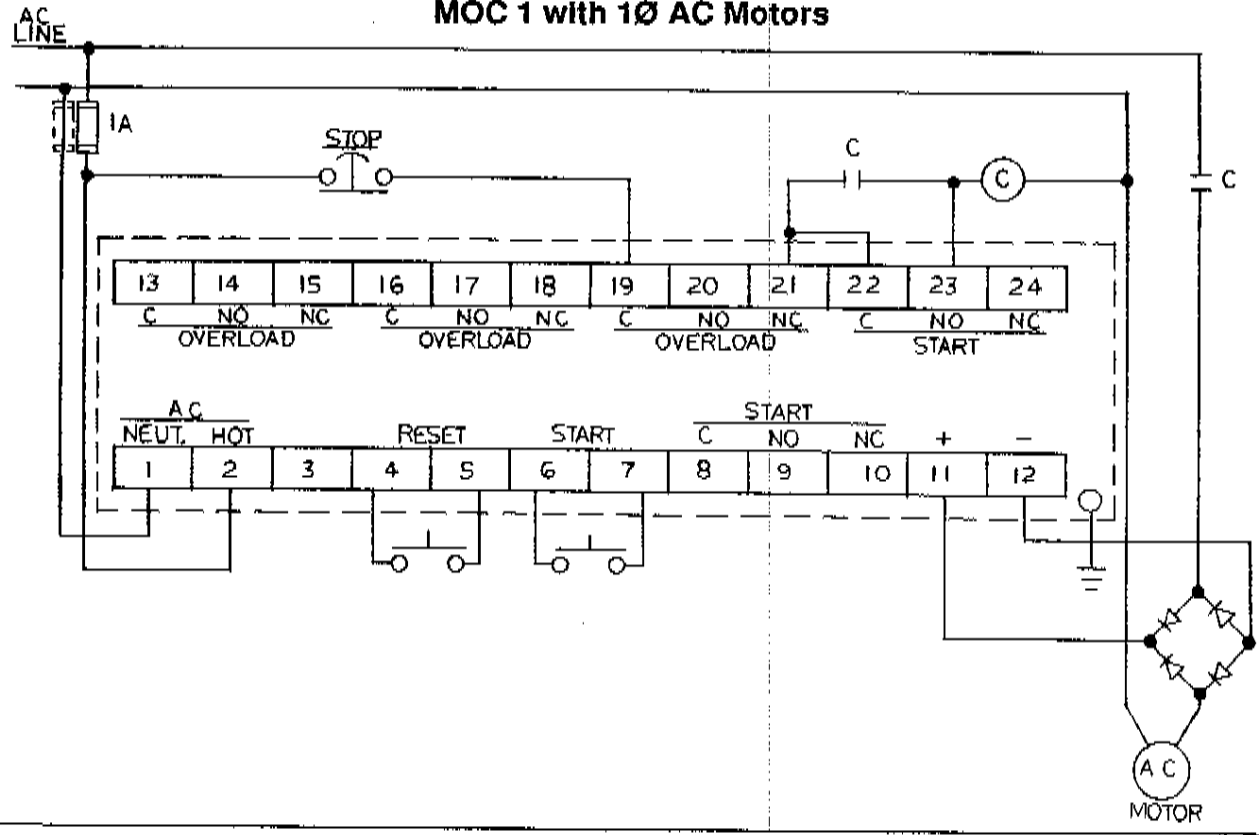
**NOTE:**

- For proper operation the W4 jumper on the C2000 must be intact.
- C2000 and MOC 1 not suitable for "Cycle-On-Demand" applications.
- Please refer to the C2000 Instruction Manual #176R0167 for details.

### Connections for Operation with Other SCR Controls and DC Motors



### MOC 1 with 1Ø AC Motors



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## WIRING

Mount the overload control vertically so that there is a free flow of air around it and so that it is protected from moisture, oil and electromagnetic noise. For optimum service, it should be located in a place with as little vibration and heat as possible.

With power off, connect AC lines to terminals 1 and 2, as shown on pages 2, 3, and 4. Connect a set of N.O. (normally open) contacts across terminals 4 and 5. Closure of these contacts will reset the control after an overload. Connect a pair of N.O. (normally open) contacts to terminals 6 and 7. A closure across these terminals will start the logic sequence and will generate the start relay outputs. (Terminals 8, 9, 10 and 22, 23, 24.) See wiring diagrams on pages 2 - 4 for suggestions as to how to interface your motor control equipment with this overload control.

## START-UP PROCEDURE

Check to be sure that both trim potentiometers are rotated fully clockwise. (See illustration on page 7 for the location of these trim potentiometers.) The extreme ends of rotation of the trim pots can be identified by listening for a very faint click as you try to rotate the control screw past the stops. If it is not practical to hear a click, rotate clockwise 25 turns to assure location.

- 1.) Apply AC to the MOC 1. The control is ready for operation if the green LED is ON.
- 2.) Press the start button. The yellow LED should come ON for about 2 seconds and turn OFF. The motor should start and stay running.
- 3.) It will now be necessary to subject the motor to the maximum normal load and establish the Trip Point.

The Trip Point is established by loading the motor to the maximum normal load, then turning the load trim pot counter clockwise until the MOC trips into the overload condition, causing the overload relay to pull up and the red LED to light. The load trim pot is then adjusted clockwise to set the desired trip point at some value higher than the maximum normal load. Care should be taken in selecting the trip point. Keep in mind that loads may change as the machine wears. Also note that the response time decreases as loading beyond the trip point increases.

Having established the trip point setting, we can now set the inrush ignore time. This time must be set to a slightly longer time than the motor takes to accelerate to speed in worse case conditions. Set the trim pot to a somewhat longer time than you judge necessary. Then alternately start the motor, turn the trim pot counter clock-wise until tripping occurs. Then turn the trim pot clockwise to establish a reliable margin.

The unit should be now operative and ready for continuous running.

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### **Motor Will Not Start**

If the green LED is ON, the power supply is working. Give the control a start contact closure and the yellow LED should light up and the start relay should pull up. If not, check for a fault in start switch wiring. If the relay does pull in, visually inspect the relay contacts to see that they are in good condition. Check wiring in output circuit of start relay. If nothing is found, consult the factory.

### **Nuisance Tripping**

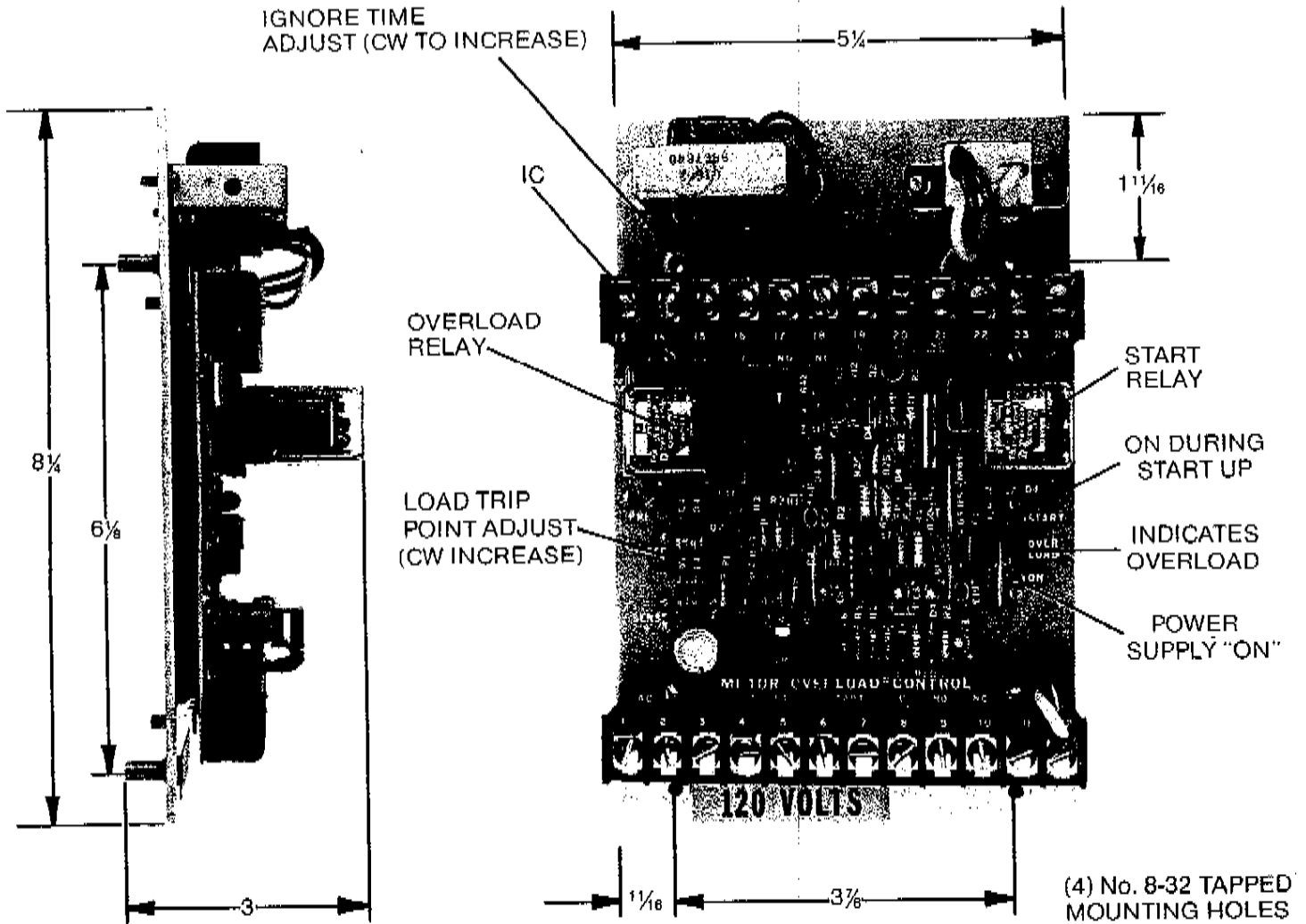
- 1.) Load was higher than anticipated or something had changed.
- 2.) Trip point set too close to maximum normal load.
- 3.) Time delay is set too short for the acceleration time required. This will be characterized by tripping immediately after start up.

### **Overload Will Not Cause Control to Trip**

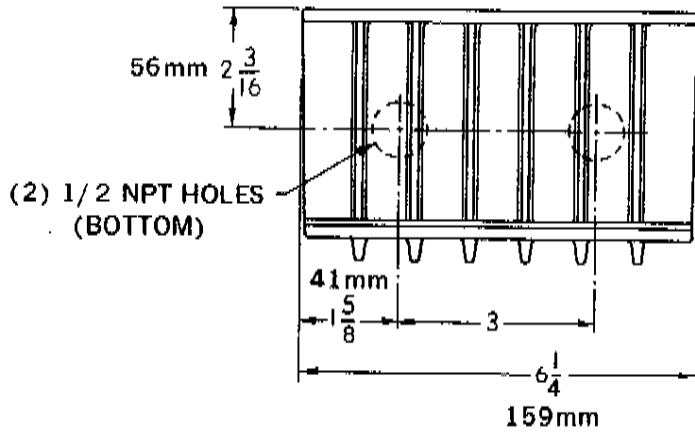
- 1.) On new installation recheck wiring.
- 2.) If the control has been in service and has been working, turn off all power and check the power resistor mounted on the aluminum plate for less than 1 Ohm of resistance. If the resistor is open, there may also be damaged components on the printed circuit board. Consult the factory.



### MOC 1 CHASSIS and COMPONENT LOCATION



### MOC 1 NEMA ENCLOSURE



WEIGHT 7#

MATERIAL Aluminum

