Instructions for A/200 Series, Sizes 3 and 4, 2 and 3 Pole Motor Controller with Block Type Overload Relay

I.L. 13240

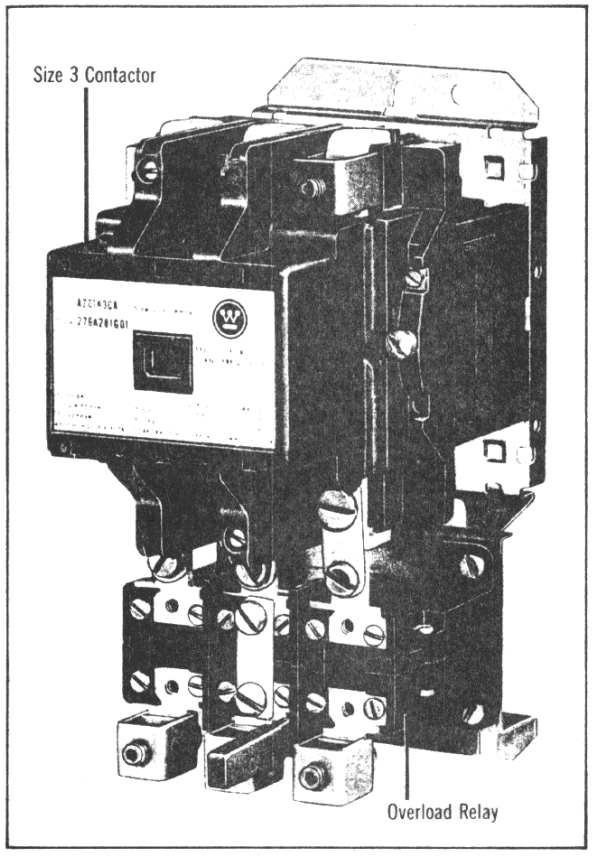

Figure 1 - Size 3, A/200 Motor Controller

The Controller

The A/200 Series Motor Controller, when wired as shown in Figure 4, will operate as a full voltage starter and will give protection against overload but not against short circuit currents, when provided with overload heaters as listed in the Heater Application Tables or when used with any means of inherent protection activated by motor temperature.

The controller, see Figure 1, should be protected against short circuits by fuses not exceeding four times the rated motor current or by a circuit breaker set at not more than four times the full load motor current.

The Type A controller complete is identified by CAT. No. (shown on nameplate, carton and in catalog).

The coil style number is marked on the end of the coil along with the voltage and frequency rating.

Coil

The A/200 Series Motor Controller is available with single or dual voltage coil. When equipped with a single voltage coil, the contactor is wired as shown in Figure 4. A connection diagram for a dual voltage coil is also shown in Figure 4. When supplied with a dual voltage coil, the motor controller is normally wired for the high voltage (HV) connection. The wiring may be changed to the low voltage (LV) connection by removing and reconnecting the jumpers tagged $C_1 - C_4$ and $C_2 - C_3$ as illustrated in Figure 4.

Overload Relay

The A/200 Series Motor Controller (designed primarily for enclosure mounting) is equipped with a block overload relay mounted below the contactor unit, see Figures 1 and 2. This relay is a non-compensated bimetal actuated type which is equipped with a trip indicator, trip adjustment covering ± 15% of normal rating, normally closed control contact and which may be operated with either a hand or automatic reset. A STOP function is not incorporated in this mechanism. See I.L. 13299 for more complete information.

Type of operation is determined by the position of the adjusting plate on the load side of the overload relay base. See Figure 2. The "HAND" position is set when the adjusting plate is positioned away from the panel. To set for "AUTO" operation; loosen the locking screw, move the adjusting plate toward the panel, and retighten the screw. Automatic reset should not be used with 2-wire master switch.

Effective November, 1965
File 7000

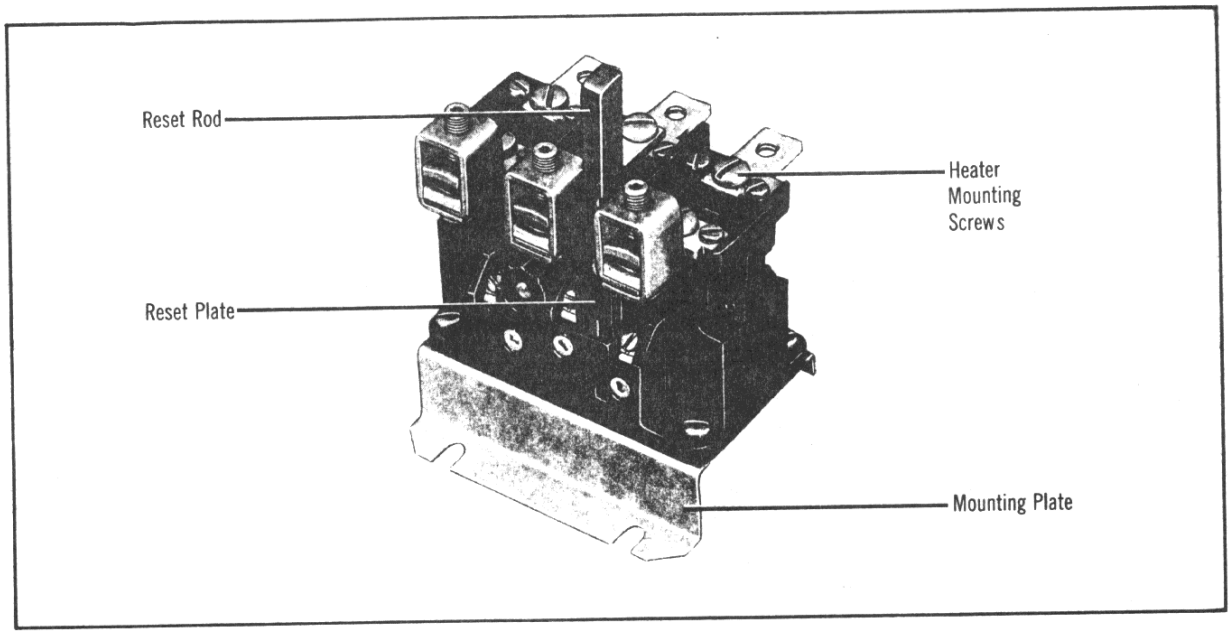

Figure 2 - Block Type Overload Relay

An ambient compensated two pole overload, is also available for use with A/200 Series Motor Controller. See I.L. 13299 for complete information.

Heaters for the relay which are shipped in a separate carton, are interchangeable. When installing on either relay, the heater catalog number (adjacent to the mounting holes) should be checked against the Heater Application Table, page 5. When the non-compensated relay is used, the ambient condition should be considered. If the room temperature surrounding the motor is the same as that at the starter, the full load current marking of the motor nameplate should come within the current range of the heater. If the room temperature surrounding the motor exceeds that at the starter, assume a decreased motor current of 1% for each degree C difference in temperature and select heaters accordingly. If the room temperature at the starter exceeds that at the motor, assume an increased motor current of 1% for each degree C difference in temperature and select heaters accordingly. Install each heater as shown in Figure 2, making sure that heater mounting screws are tight.

Electrical Interlocks - L56

An L-56 with a Normally Open pole is supplied as the Standard holding interlock and is mounted in the upper left hand corner recess of the contactor. L-56 interlocks: catalog number L-56, with universal poles (one normally open and one normally closed pole) are standard replacement interlocks. A maximum of four interlock units can be installed in the recesses of each contactor.

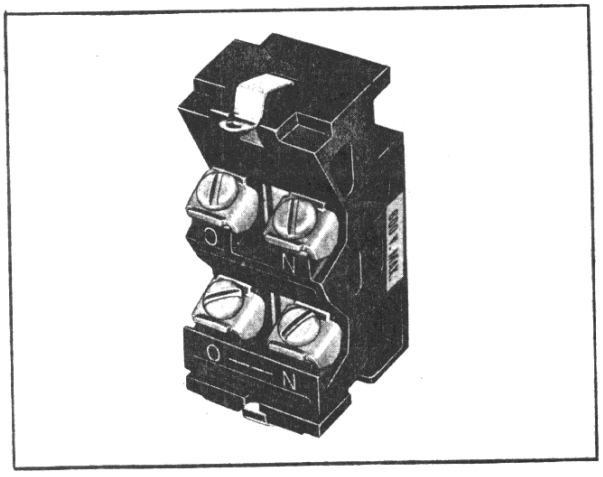

Figure 3 - L-56 Electrical Interlock

Motor Controller arrangements are such that the L-56 may be mounted with the terminals in line with the power poles or, where necessary, may also be mounted with the terminals in a right angle relationship to the power poles. Secure mounting is obtained by means of spring clips which snap into locations provided in the motor controller unit. To remove the L-56 it is only necessary to disengage the top spring clip, by pressing on the extended tab, and withdraw the interlock unit.

Maintenance

FIRST TURN OFF POWER

To inspect contacts -

Refer to Figure 5
Loosen the two arc box assembly screws (7) located immediately above and below the nameplate and remove arc box (8). Contacts (5) are visible.

To replace contacts -

After removing arc box, and having replacement contacts at hand, remove the moving contact carrier (5) by compressing the overtravel spring (12) and displacing carrier from crossbar (6). Stationary contact carriers (3) are removed by only loosening the retaining screw (11) and sliding out the carrier.

To replace contact carriers, reverse above procedure, making sure that stationary carriers are secure, moving carriers are free to move, overtravel springs are seated and crossbar moves freely when arc box is in position.

The silver-cadmium oxide contact buttons need no dressing or lubricant throughout their life.

IMPORTANT - Replace all contacts as a group to avoid misalignment.

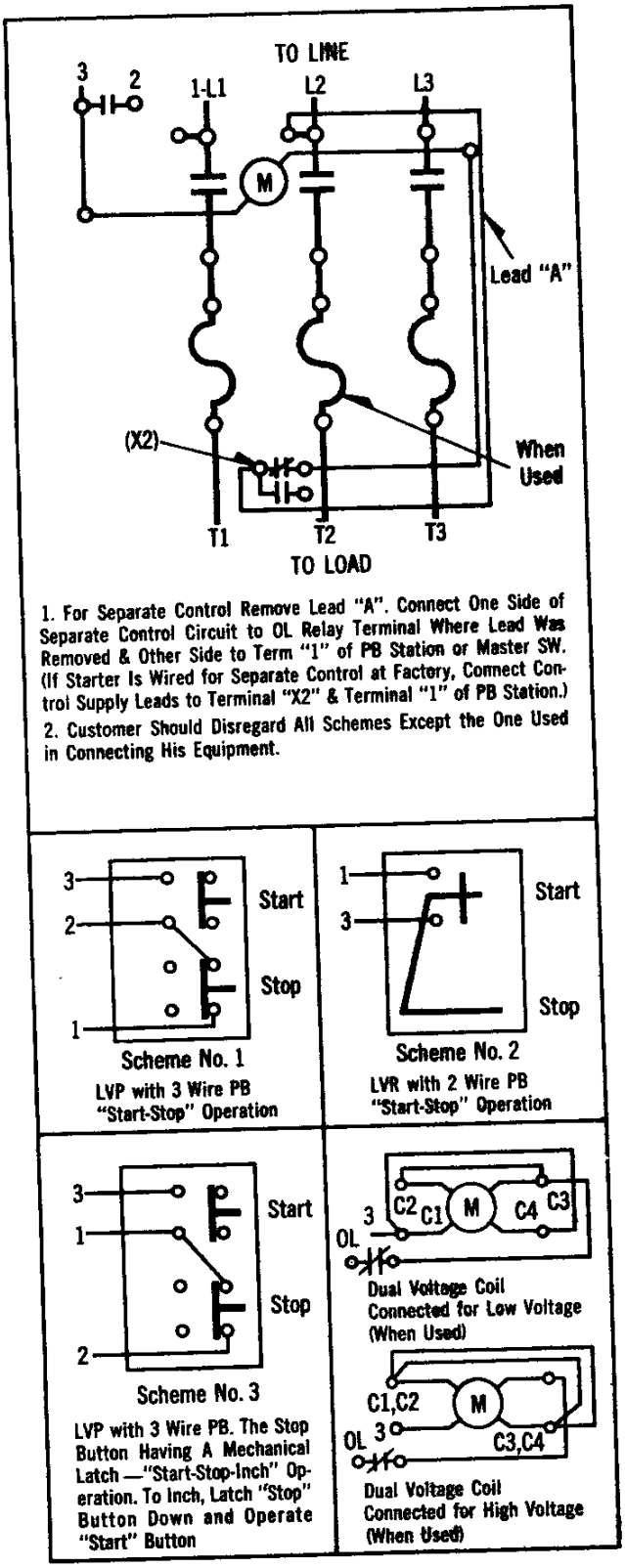

Figure 4 - Wiring Diagrams

The Heater Application Table indicates the range of full load motor current to which a given heater can be applied. This range is selected so that the current to produce ultimate tripping of the relay will be approximately 105% to 125% of rated motor current. The rating of a heater is 125% of the minimum full load current.

TABLE II "H" SERIES HEATER APPLICATION TABLE	
CATALOG NUMBER	FULL LOAD CURRENT OF MOTOR IN AMPERES (40°C AMBIENT)
H72	18.0 - 20.8
H73	20.9 - 22.9
H74	23.0 - 25.2
H75	25.3 - 27.8
H76	27.9 - 30.6
H77	30.7 - 33.5
H78	33.6 - 37.5
H79	37.6 - 41.5
H80	41.6 - 46.3
H81	46.4 - 50
H82	51 - 55
H83	56 - 61
H84	62 - 66
H85	67 - 73
H86	74 - 79
H87	80 - 87
H88	88 - 95
ABOVE HEATERS FOR USE ON SIZE 3	
H89	96 - 105
H90	106 - 116
H91	117 - 128
H92	129 - 135
ABOVE HEATERS FOR USE ON SIZE 4	

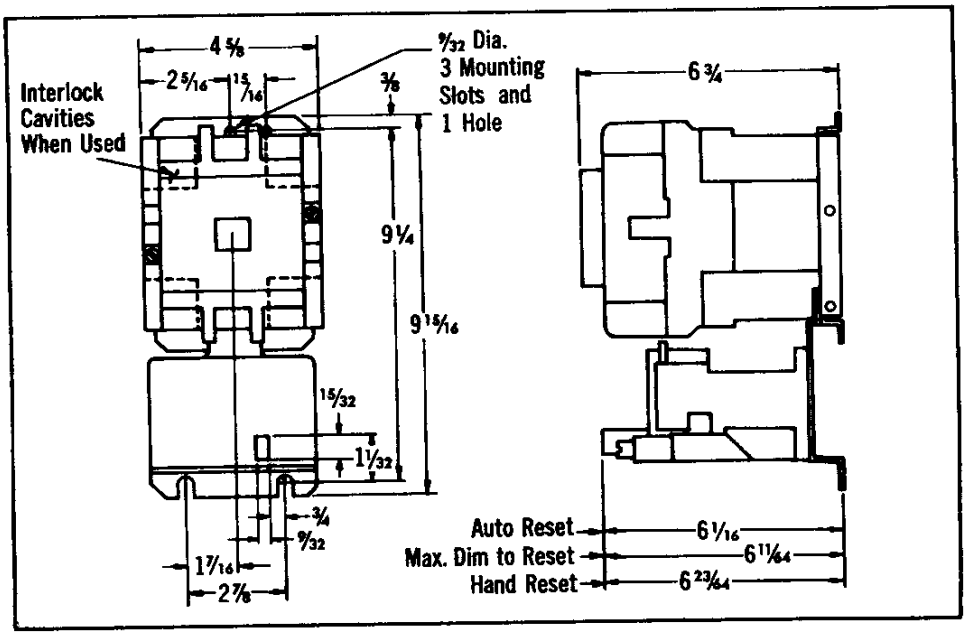

Figure 6 - Dimension Drawing