
INSTALLATION INSTRUCTIONS

CMA-34 Low Ambient 460V Fan Speed Control (For Use with 460V W**A Series Units)

The CMA-34 is a field-installable low ambient fan speed control for 460V motors. The CMA-34 460V head pressure control helps maintain the correct condensing temperature/pressure, which results in a constant head pressure. By adjusting the condenser fan speed, the CMA-34 controls the airflow through the condenser. A single desired temperature/pressure setpoint adjustment will result in precise condensing temperatures and stable head pressures.

The CMA-34 kit consists of:

- 7960-785 Installation Instructions
- 902-2069 Fan Speed Control Box
- 5810-006 Flare Tee
- 1012-066 3/4" Screw (1)
- 8607-017 Terminal Block
- 1012-085 1/2" Self-Tapping Screws (3)
- 7950-004 Nylon Wire Ties (6)
- 7961-312-0338 CMA-34 Unit I.D. Label

The CMA-34 kit is for use with Bard models W24AA-C, W36A2DC, W42A2DC, W48A2DC, W60A2DC wall-mount air conditioners.

INSTALLATION

Circled numbers provided in Figures 1 and 3 of this manual correspond to the following instructions.

1. Disconnect all power to the unit. Remove control panel inner and outer covers, and both right-side and left-side condenser inlet grilles.
2. Mount the fan speed control box as shown in Figure 1 (page 2) using the three self-tapping screws (see Note 1, Figure 1). The dimensions for mounting the control box are provided in Figure 1.
3. Remove service cap and attach the pressure transducer and flare tee to the liquid line as shown in Figure 2 on page 3; re-install the service cap on the end of the service tee. Check for leaks. Attach the plug from the fan speed control box to the pressure switch.
4. Run all wires from the low ambient control (LAC) box (except the ones going to the pressure transducer) up through the bushing in the bottom of the unit control box as shown in Figure 3 on page 4. Disconnect the black fan wire running from the T2 terminal of the compressor contactor. Install terminal block and reconnect the black fan wire to one side of the terminal block (see dotted line) (see Note 1, Figure 3). Run the black/red wire from LAC to the terminal block so that it is connected to the fan motor wire (Note 2, Figure 3). Run the black wire from LAC to the T2 terminal of the compressor contactor (Note 3, Figure 3). Run the black/white wire from LAC to the



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- C terminal on the 24V transformer (Note 4, Figure 3). Run the red/white wire from LAC to the R (hot) terminal on the transformer (Note 5, Figure 3). Run the yellow wire from LAC to the T3 terminal of the compressor contactor (Note 6, Figure 3).
- Secure wires running on the outdoor section of the unit using the supplied nylon wire ties as shown in Figure 1). Be sure that there is no way that the wires can come in contact with the fan blades or any sharp edges.
 - Check wiring and control knob settings. See Figures 3 and 4 for wiring and suggested setpoints.
 - Apply "This unit is equipped with CMA-34 control module" label to the inside of the inner control panel cover above the wiring diagrams.
 - Replace all panels, grilles and covers. This completes the installation.

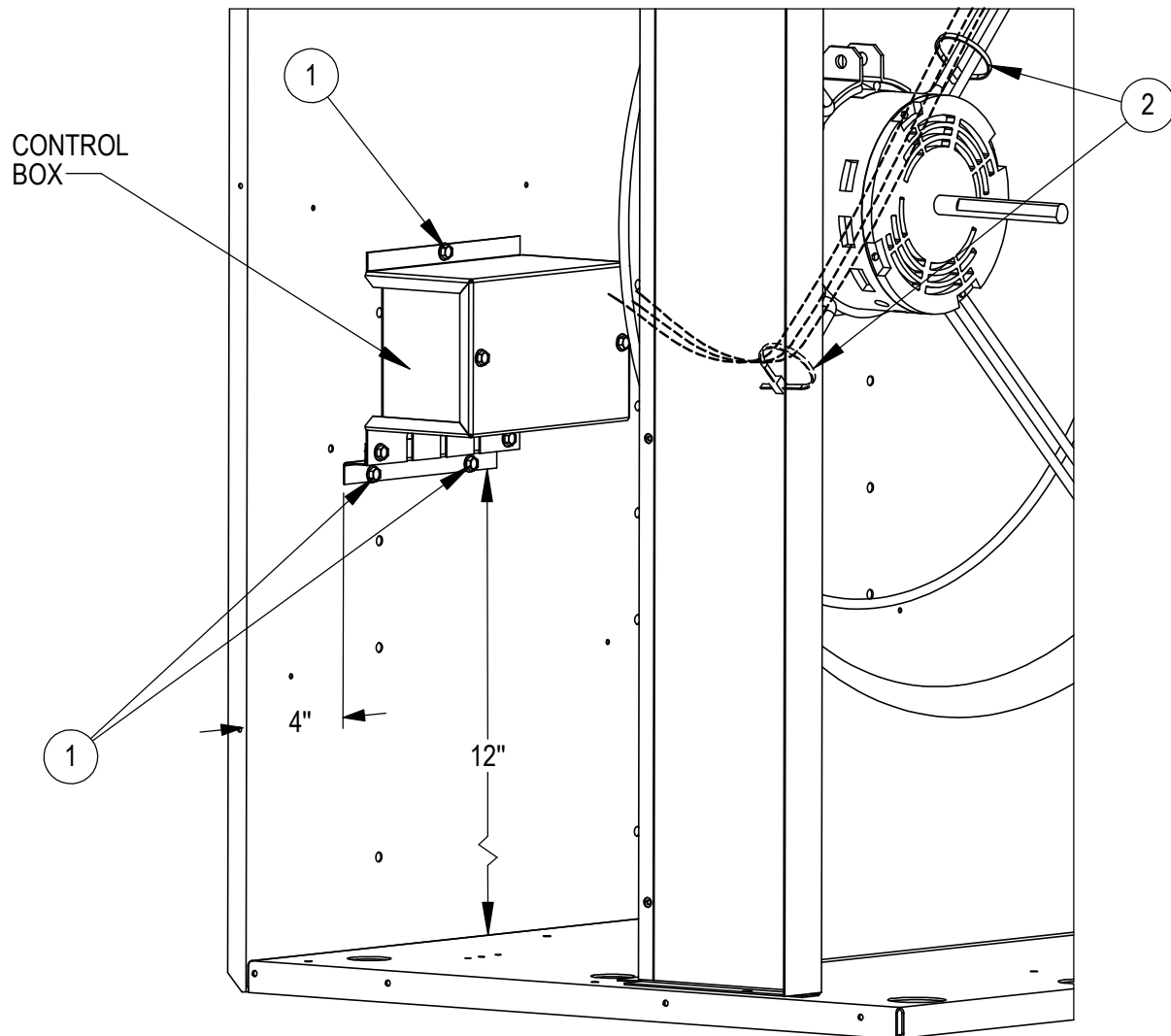
- Check proper operation of the unit by energizing the compressor in cooling mode. The condenser fan motor should start and ramp up speed as system pressure increases.

SEQUENCE OF OPERATION

Upon initiation, the CMA-34 will apply full voltage to the fan motor for the time period selected with the Hard Start knob (see Figure 4). Hard start time is adjustable from 0.1 to 5 seconds. The hard start ensures correct rotation of the condenser fan, even in windy conditions. After a hard start, the control reads the temperature/pressure sensor and the fan speed is adjusted until the input temperature/pressure matches the setpoint.

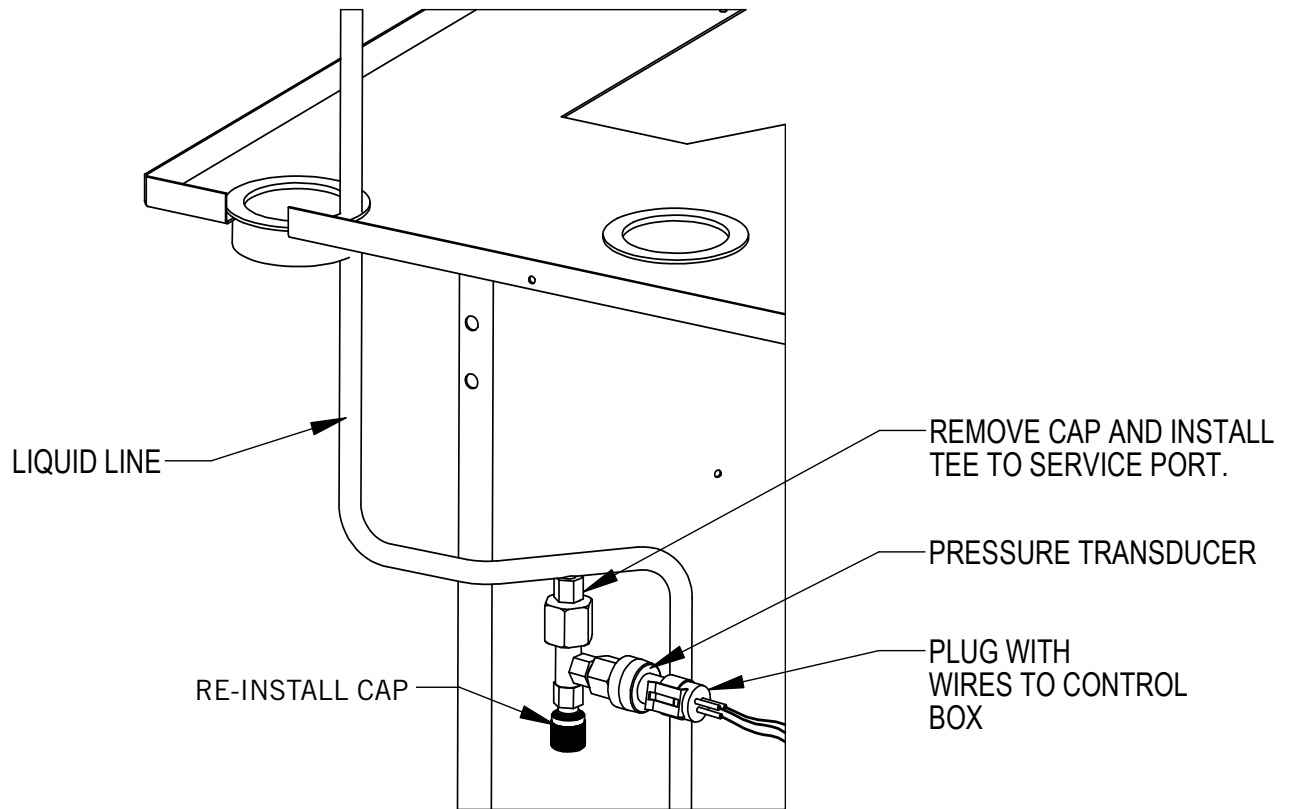
The CMA-34 enables the user to set and adjust the pressure to be maintained by the control. The setpoint pressure is adjustable from 35-465 psig.

FIGURE 1



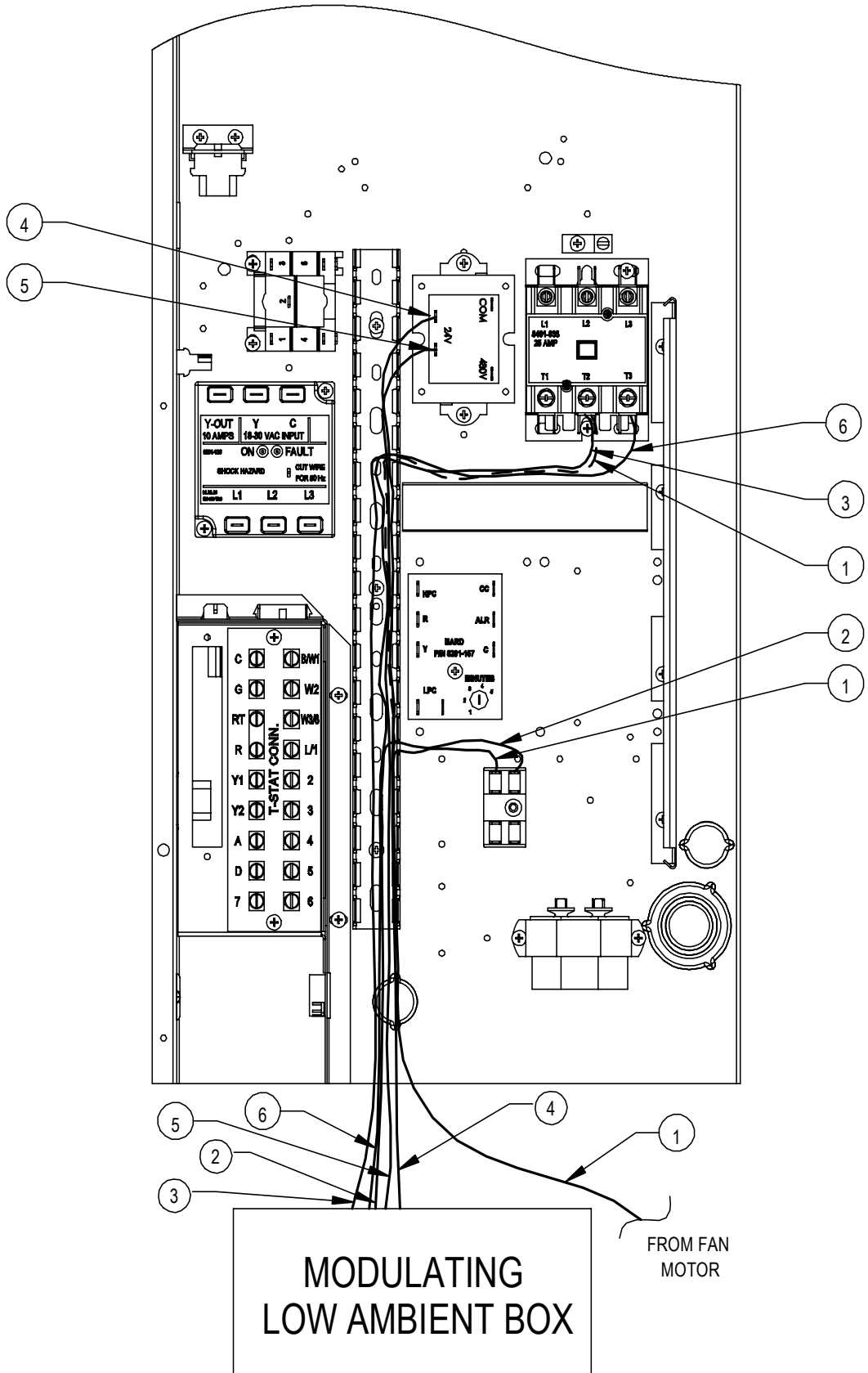
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FIGURE 2



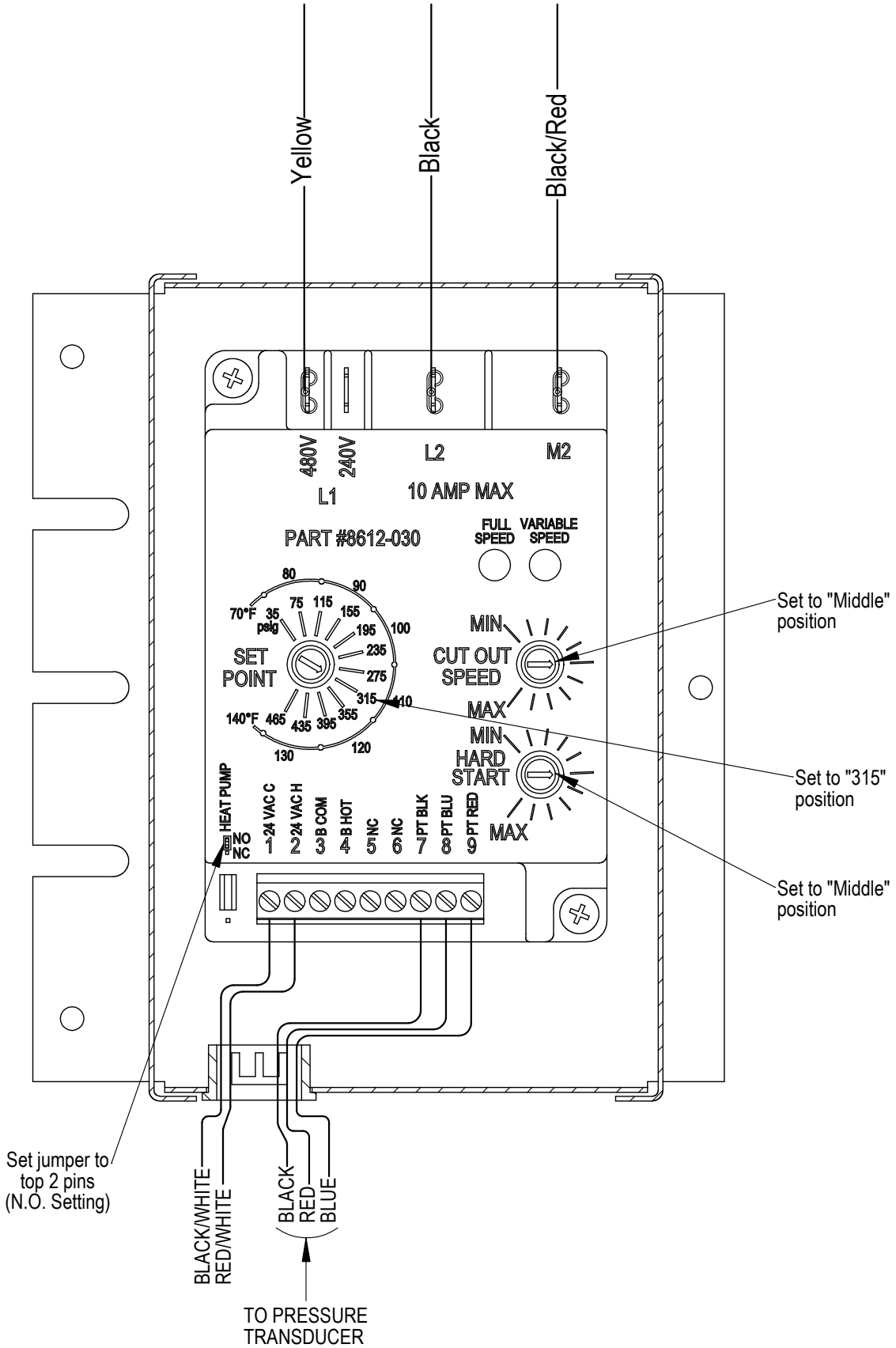
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FIGURE 3



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FIGURE 4



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