0ºF LOW AMBIENT ACCESSORY INSTALLATION INSTRUCTIONS

MODELS 2LA04700100
FOR 3 THRU 12-1/2 TON SINGLE PACKAGE AIR CONDITIONERS

GENERAL

The Electronic Low Ambient Controller 2LA04700100 is designed to regulate condenser head pressure at low ambient temperatures by varying the amount of airflow through the condenser. It helps to ensure sufficient pressure differential across the expansion device and prevent downtime.

PRE-INSTALLATION INFORMATION/INSTRUCTION

⚠WARNING

Improper installation, adjustment service, or maintenance can cause injury or property damage; therefore, only a qualified installer or qualified service personnel should perform this conversion.

1. For single phase, permanent split capacitor or shaded pole motors.
2. Line Voltage Range(s): available from 120V AC through 600V AC.
3. Wiring must comply with local and national electric codes.
4. Max. running amps under all conditions shall not exceed 10 amps. Locked Rotor Amps (LRA) are not to exceed 30 amps for 1 second.
5. The controller requires a 24V AC external power source, supplied from the unit 24V AC control circuit.

⚠ CAUTION

It is important that the primary of the 24V AC power source must be on the same primary (lines) serving the motor.

6. Speed regulation and performance characteristics will vary with the motor design and motor ventilation capability.

INSPECTION

The following list details the parts included in this kit. Inspect the kit to ensure that all parts are included.

TABLE 1: PARTS SUPPLIED WITH KIT

ITEM	QTY.	PART NO.	DESCRIPTION
1	1	025-32750-000	Low Ambient Control LAC (includes mounting tape, sensor and cable straps)
2	1	035-16751-000	Kit Instruction Form
3	1	AB096BLU7157804	Wire 804/BLU
4	1	AB096BLK7171805	Wire 805/BLK
5	1	AB096YEL7171806	Wire 806/YEL
6	1	AB096BRN7157807	Wire 807/BRN
7	1	035-16720-000	Wiring Diagram, 3-6 ton
8	1	035-15369-000	Wiring Diagram, 7.5 - 12.5 ton
9	1	025-14461-000	Splice Connector

INSTALLING THE CONTROLLER

1. Disconnect power from the unit.
2. Remove the unit access panels to the supply air blower and the main control box.
3. Disconnect all factory wiring connecting the condenser fan motor(s) to the line.
4. Setting Minimum Speed: A Minimum Speed Adjustment is provided on the controller to accommodate the slowest allowable speed for the condenser fan motor. Based on the motor nameplate RPM and voltage, set the adjustment arrow to the setting indicated on the following table.

MINIMUM SPEED SETTING	
MOTOR	SETTING
1,075 RPM, 230/460 VOLT	“A”
850 RPM, 230 VOLT	“B”
850 RPM, 460 VOLT	“C”

NOTE: Controller is factory set to “B”.

⚠ CAUTION

The use of this controller (2LA047001000) may also require the changing of the unit standard condenser motor and capacitor. Refer to Table 2 for details.

5. Mount the controller(s) on the supply air blower partition as shown in Figure 1, or directly to the blower housing using the adhesive tape and/or drilling screws provided. One controller is used for 3 thru 6 ton units and two controllers are used for 7-1/2 thru 12-1/2 ton units.

6. Based on the unit capacity, select the proper wiring diagram and attach it to the inside of the control access panel.

7. Refer to the wiring diagram for the correct controller wiring procedure.

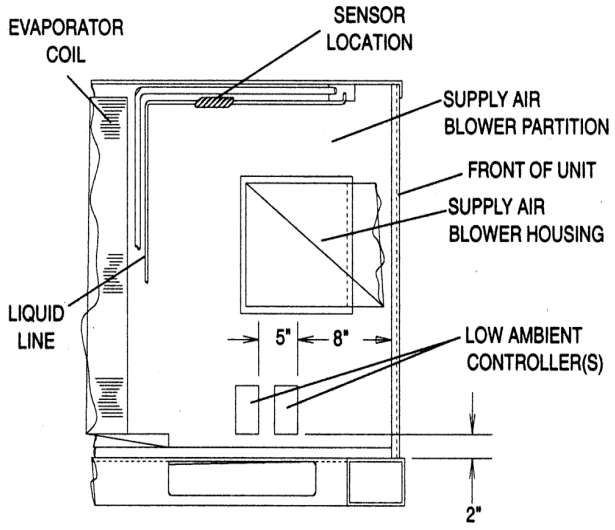

FIGURE 1 - ELECTRICAL BOX AND SENSOR LOCATION

SENSOR INSTALLATION

- Install the sensor to the top of the liquid line exiting the condenser coil at the location shown in Figure 1.

- Use the insulation tape provided to secure the sensor to the liquid line, refer to Figure 2. Stretch the tape slightly, as you wrap the sensor around the liquid line. Use all the tape, lapping the sensor. Firm contact is required between the metal tab of the sensor and the liquid line.

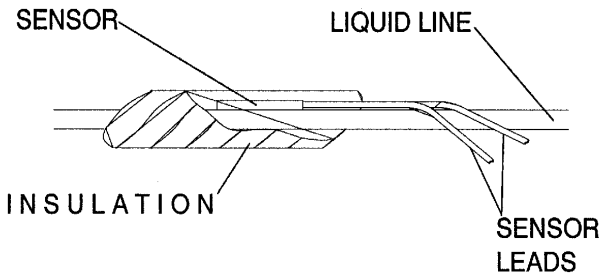

FIGURE 2 - SENSOR INSTALLATION

- Connect the wiring from the sensor(s) to the “Sensor” input terminals.

CHECKOUT PROCEDURE

Step 1: With power disconnected, to the controller.

- With ohmmeter, measure the ohms across the “MOTOR” (load) terminals.
- If you measure a reading of 5 ohms or less the controller is probably improperly wired.

⚠ CAUTION

Check for wiring errors. Do not apply power until you measure a value greater than 5 ohms.

Step 2: With the compressor disabled, apply voltage to controller.

- Install metering instruments for measuring liquid line temperature (°F) and condenser motor voltage and current during installation operation.

- Verify that both the controller and motor are operating properly.

NOTE: If the sensor temperature (liquid line) at startup is:

- Below (less than) 50°F the motor will not start up. Artificially increase the liquid line temperature above 50°F, or short the sensor terminals.
- Between 50°F and 80°F the motor will start at full speed for a few seconds and immediately modulate to a reduced speed proportional to the temperature sensed. (51°F, min. speed/ 79°F, near full speed).
- Above 80°F the motor will start and remain at full speed.

Step 3: Making unit ready for normal operation.

- Disconnect power to the unit & reconnect the disabled compressor.
- Reconnect power to the unit & observe operation.
- Verify operation as described above by monitoring liquid line temperature and observing motor speed.

UNIT MODEL/SIZE	CONDENSER MOTOR	
	CHANGE REQUIRED	PART NUMBER
D4CE/DDHB036 D4CE/DDHB048 D4CE/DDHB060 D4CE/DDHB072	NO	-
D7CG/DHUC036 D7CG/DHUC048 D7CG/DHUC060 D7CG/DHUC072	NO	-
D1EE/DAHC036 D1EE/DAHC048 D1EE/DAHC060	YES	2CM04600506 (use with 208/230 volt)
D2EG/DBUS036 D2EG/DBUS048 D2EG/DBUS060	YES	
D1HE/D1HG048 D1HE/D1HG060	YES	
D3CE/DCHB090 D3CE/DCHB102 D3CE/DCHB120	YES	
D3DG/DCUC080 D3CG/DCUC102 D3CG/DCUC120	YES	2CM04600551 (use with 460/575 volt)
D1EE/DAHC090 D1EE/DAHC120	YES	
D1EG/DAUS090 D1EG/DAUS120	YES	
D4CE/DDHB150	YES	2CM04600806 (use with 208/230 volt)
D4CG/DDUC150		
D2EE/DBHC150		2CM04600851 (use with 460/575 volt)
D2EG/DBUS150		

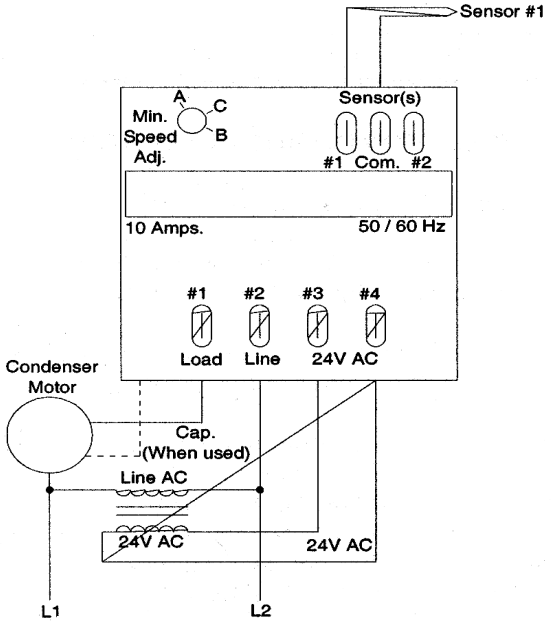

FIGURE 3 - TYPICAL WIRING DIAGRAM

(For detailed schematics, see wiring diagrams included in kit)

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