LAKT01 & LAKT03
LOW AMBIENT KITS
INSTALLATION INSTRUCTIONS

ATTENTION INSTALLING PERSONNEL

As a professional installer you have an obligation to know the product better than the customer. This includes all safety precautions and related items.

Prior to actual installation, thoroughly familiarize yourself with this Instruction Manual. Pay special attention to all safety warnings. Often during installation or repair it is possible to place yourself in a position which is more hazardous than when the unit is in operation.

Remember, it is **your** responsibility to install the product safely and to know it well enough to be able to instruct a customer in its safe use.

Safety is a matter of common sense...a matter of thinking before acting. Most dealers have a list of specific good safety practices... follow them.

The precautions listed in this Installation Manual are intended as supplemental to existing practices. However, if there is a direct conflict between existing practices and the content of this manual, the precautions listed here take precedence.

DESCRIPTION

The LAKT01 and LAKT03 low ambient kits (for Light Commercial Models and Residential Splits) are temperature sensitive fan motor speed controls designed to regulate the outdoor section head pressure by varying the air volume through the outdoor coil and are required when operating below 55°F outdoor temperature. This is achieved by sensing the liquid temperature at the coil by means of a thermistor probe. The probe provides an input signal to the control to increase the fan motor speed in relation to changes in the liquid temperature. Ensure all parts are included before beginning. If parts are missing from the kit contact the distributor where the kit was purchased.

NOTE: These kits are not approved for any 16 and 18 SEER outdoor units that utilize an ECM condenser fan motor.

The following accessories must be installed on all condensers and remote heat pumps when equipped with low ambient kits.

1. Crankcase heater must be installed if not factory installed.
2. Hard start kit for single phase units. (See Spec Sheet for Accessories)
3. TXV kit installed on indoor evaporator coil, if not factory installed.
4. FSK01A - Freeze protection kit must be installed on indoor coil.
5. Wind buffer must be installed for temperatures below 0°F or areas with high prevailing winds. Wind buffer can be a wall fabricated from wood or masonry material that will prevent the prevailing wind from causing the outdoor fan to rotate. **NOTE**: When wind buffer is installed, it is necessary to use minimum 4" risers to elevate the unit off of the pad to provide better airflow for moderate and high ambient temperatures.

NOTE: SPECIFICATIONS AND PERFORMANCE DATA LISTED HEREIN ARE SUBJECT TO CHANGE WITHOUT NOTICE

Quality Makes the Difference!

All of our systems are designed and manufactured with the same high quality standards regardless of size or efficiency. We have designed these units to significantly reduce the most frequent causes of product failure. They are simple to service and forgiving to operate. We use quality materials and components. Finally, every unit is run tested before it leaves the factory. That's why we know. . .**There's No Better Quality.**

Visit our website at www.daikincomfort.com, www.goodmanmfg.com or www.amana-hac.com for information on:

- Products
- Warranties
- Customer Services
- Parts
- Contractor Programs and Training
- Financing Options

IO-826
7/2014

PARTS LIST FOR KITS

Item	Part No.	Qty.
Pressure Control & Probe LAKT01	0130M00058	1
Pressure Control & Probe LAKT03	0130M00059	1
Wire Assembly LAKT01	---	8
Wire Assembly LAKT03	---	6
Terminals LAKT01	---	4
Terminals LAKT03	---	7
Wire Ties LAKT01	---	3
Wire Ties LAKT03	---	4
Mounting Bracket LAKT01 & LAKT03	0121M00047	1
Installation Instructions	IO-826	1

KIT INSTALLATION

⚠ WARNING

HIGH VOLTAGE

DISCONNECT ALL POWER BEFORE SERVICING OR INSTALLING THIS KIT. MULTIPLE POWER SOURCES MAY BE PRESENT. FAILURE TO DO SO MAY CAUSE PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.

1. Disconnect all sources of power to the unit.
2. Remove access panels to blower compartment and control box.
3. Using the screws provided, secure the control to the mounting bracket provided (see Figure 1A). Secure the new assembly on the condenser evaporator partition panel in the blower section of the unit.

   For 3 to 12.5 ton light commercial, secure 2 inches below the hole where the fan and compressor leads exit the blower section. See Figure 1B.

   For 15 to 20 ton light commercial, secure to the right of the capacitor assembly, located on the partition panel. See Figure 1C.

   For residential 3 phase models, secure ICM to the control panel. See Figure 1D. *(Do not use mounting bracket in this application.)*

   NOTE: Do not install the control in areas where the mounting screws can come into contact with the condenser coil or tubing.

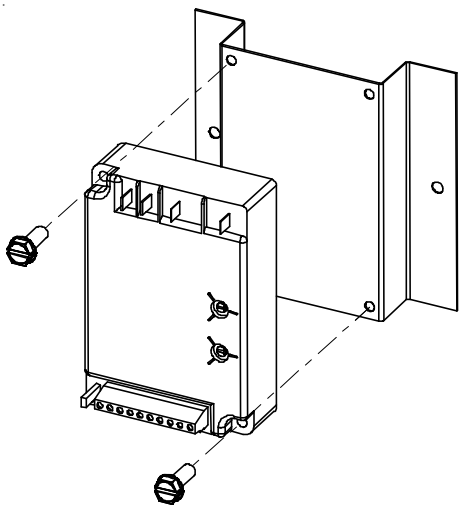


Figure 1A

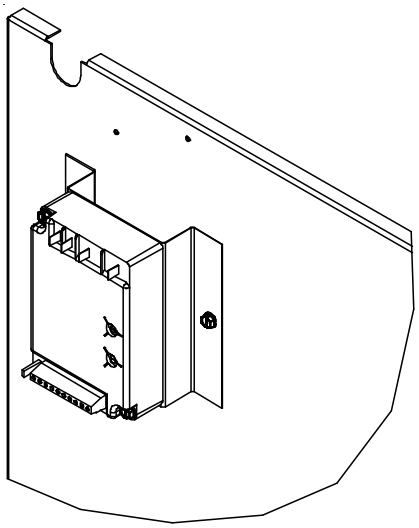


Figure 1B

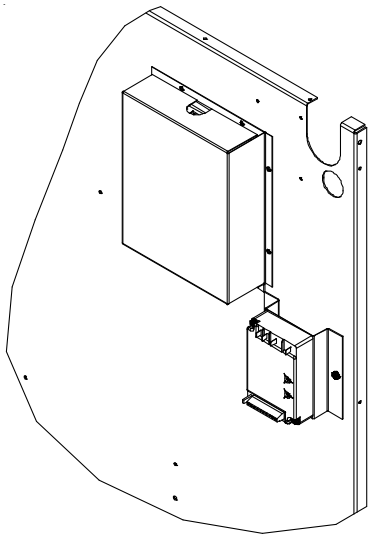


Figure 1C

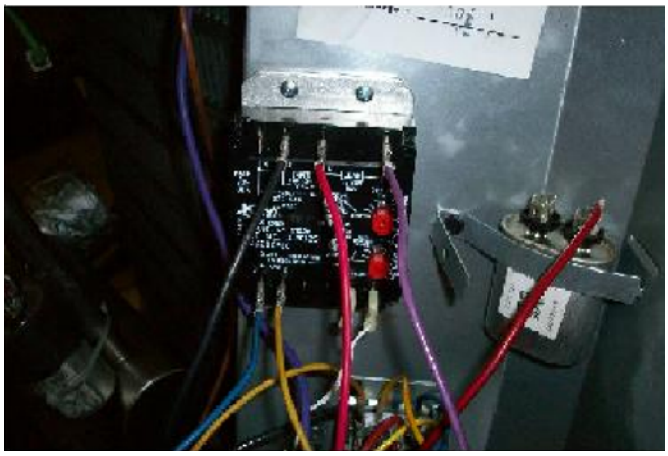


Figure 1D

4. Connect the electrical wiring as shown in the wiring diagrams on pages 5 - 8.

5. **For light commercial,** install temperature probe between the fins, at the middle to upper section of the condenser coil (see Figure 2).

   For Residential Split Condensers and heat pumps, install the probe on the liquid line before the filter/dryer. Ensure the probe body is completely attached to the body of the liquid tube before securing with the tape (See Figure 3).

Figure 2

6. Connect the probe leads to the terminal marked PROBE S1. For systems with multiple refrigeration circuits, attach the second probe to PROBE S2 or PROBE S3. The LAKT03 is shipped with two probes. See control instruction manual for multiple probe connection and operation.

WIRING DIAGRAMS AND APPLICATION

The LAKT01 and LAKT03 kits are shipped with wiring diagram included. Affix the low ambient kit wiring diagram on the control box door next to the unit wiring diagram.

LAKT01 (3 thru 6 tons)

Wiring Diagram 0140M00108 - use with AC and HP units, three phase and single phase application.

For residential 3 phase condensers, connect wires per 0140M00108 wiring diagram.

For residential 3 phase heat pumps, connect wires per 0140R00167 wiring diagram.

LAKT03 (7 ½ tons thru 12 ½ tons)

Wiring Diagram 0140L03520A - use with AC and HP units, three phase application.

LAKT03 (15 tons and up)

Wiring Diagram 0140L01008 - use with AC units.

(a) Wiring diagrams show the controller connection for 120/277 volts supply. For 480/600 volts application, connect the power supply leads to the 480/600 VAC terminal.

NOTE: The low ambient kit is pre-set at the factory and requires no further adjustment. Altering the setting may greatly reduce motor life.

Figure 3

WIRING PROCEDURE FOR LAKT01 (REMOTE AC & HP):

1. Connect the wiring as shown on page 6.
2. Attach supplied wiring diagram adjacent to existing wiring diagram. Follow the system calibration instruction provided in the control instruction manual for sleeve bearing motors. Verify wiring is correct.
3. Use provided wire ties to secure wire leads away from all moving parts and warm refrigeration tubing.
4. Reinstall access panel.
5. Restore power and verify system operation.

WIRING PROCEDURE FOR LAKT03 (7½ thru 12 ½ tons):

1. Find the three (3) fan motor leads (purple, black & brown) from condenser motor circuit #2. (These leads pass through the partition panel just above the area where the controller is mounted.) Disconnect the leads at the junctions.
2. From the kit, install one of the **"Y"** push-on terminal adapters onto the controller terminal marked **Motor 2** and another onto terminal **Line 1/Motor 1**.

   NOTE: Make sure the correct voltage tap is selected.
3. Connect the black wire from condenser motor circuit #2 to one side of the connector on the **Motor 2** terminal of the controller. Using the male/female black adapter wire from the kit, connect the black wire coming from the control box to the **Line 2** terminal on the controller.
4. Connect the male/female purple adapter wire from the kit to the purple wire coming from the control box and to one side of the **Line 1/Motor 1** terminal on the controller.
5. Find the three fan motor leads (purple, black & brown) going to condenser motor circuit #1. (These leads exit through the partition panel on the opposite side of the controller.) Cut the black and purple wires so that those leads will connect to the controller. Attach the provided terminals to each of the leads and connect the purple lead to the **Line 1/Motor 1** terminal. Attach the black wire to the other side of the **"Y"** push-on terminal adapters on the **Motor 2** terminal on the controller.
6. Remove or tape up the ends of the cut purple and black wires.
7. Locate the red wire connecting **FC1** (fan capacitor #1) to **T2** of the compressor contactor #1. Disconnect the wire from **T2** and connect it to the terminal on **FC2** (fan capacitor #2) that has three black wires. Remove the black wire from **FC1** (fan capacitor #1) and connect to **T2** of the compressor contactor 1.
8. Connect **YL** and **BL** wire to 24 vac connection on the controller and then to **YI** and **C** respectively, on the terminal block in the control box.
9. Attach supplied wiring diagram adjacent to existing wiring diagram. Follow the system calibration instruction provided in the control instruction manual for sleeve bearing motors. Verify wiring is correct.
10. Use provided wire ties to secure wire leads away from all moving parts and warm refrigeration tubing.
11. Reinstall access panel.
12. Restore power and verify system operation.

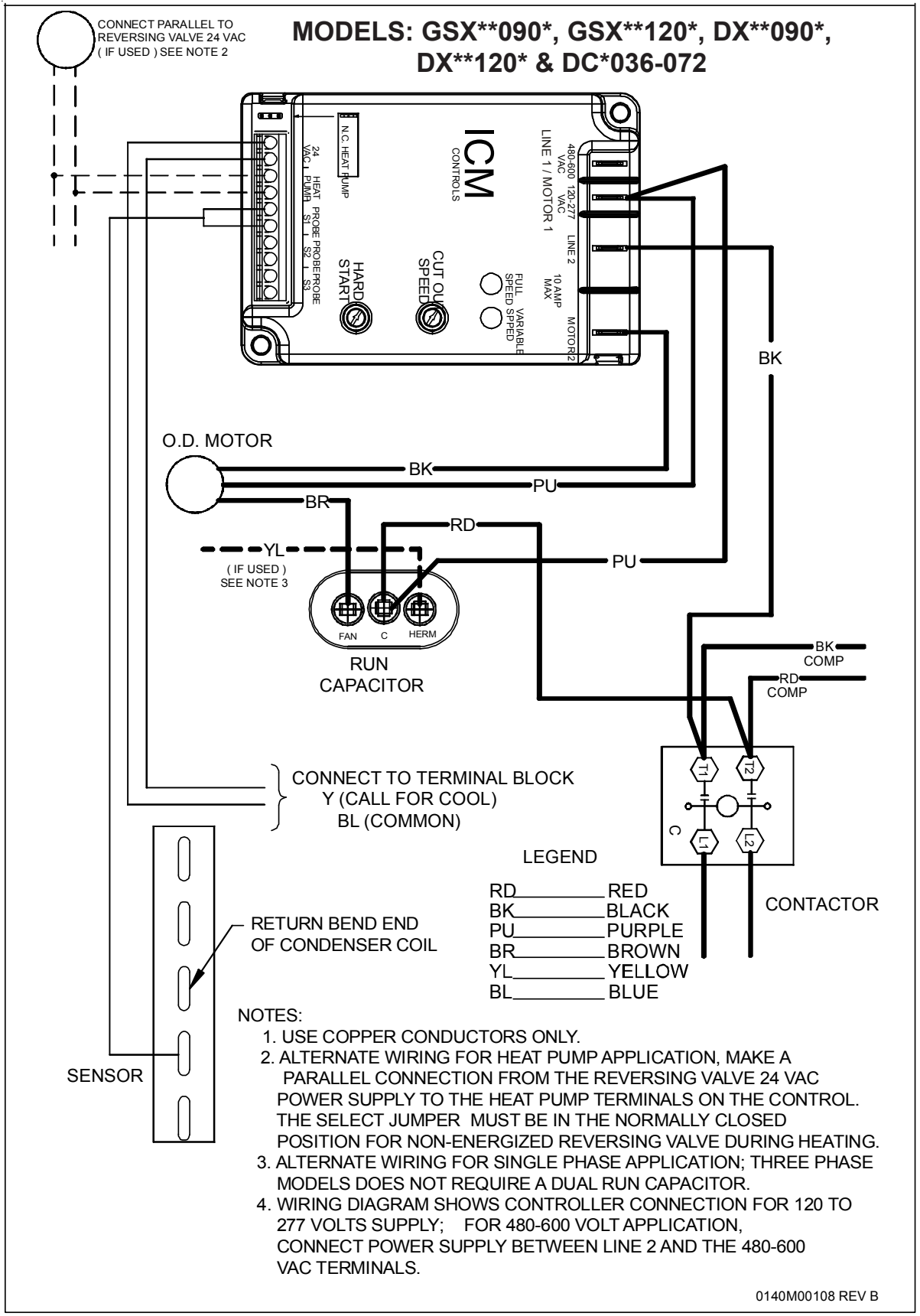
WIRING PROCEDURE FOR LAKT03 (15 tons & up):

1. Remove the cover on the capacitor assembly that is located next to the controller. Disconnect the red and black leads that are coming form the control box assembly. They are connected to the furthest right capacitor and the terminal block respectively.
2. From the kit, install one of the **Y** push on terminal adapters onto the controller terminal marked **Line 1 / Motor 1.**
3. Connect the disconnected black wire to **Line 2** terminal on the controller. Connect the disconnected red wire onto one of the **Y** push on terminals now located on the **Line 1 / Motor 1** terminal of the controller.
4. From the kit, connect the red wire between the remaining **Y** terminal on **Line 1 / Motor 1** and the location on the furthest right capacitor where the red wire had previously been removed.
5. From the kit, connect the black wire between the **Motor 2** terminal on the controller and the terminal block where the black wire had previously been removed.
6. Connect the blue wire and the yellow wire to the controller on the 24 VAC connection as shown on the diagram.
7. Route wires along tubing, under evaporator, and into the bottom opening of control box. Connect the yellow wire to **Y1** on the low voltage terminal strip and the blue wire to **C.**
8. Attach supplied wiring diagram adjacent to existing wiring diagram. Follow the system calibration instruction provided in the control instruction manual for sleeve bearing motors. Verify wiring is correct.
9. Use provided wire ties to secure wire leads away from all moving parts and warm refrigeration tubing.
10. Reinstall access panel.
11. Restore power and verify system operation.

WARNING

HIGH VOLTAGE
Disconnect ALL power before servicing or installing this unit. Multiple power sources may be present. Failure to do so may cause property damage, personal injury or death.

MODELS: GSX**090*, GSX**120*, DX**090*, DX**120* & DC*036-072



NOTES:

1. USE COPPER CONDUCTORS ONLY.
2. ALTERNATE WIRING FOR HEAT PUMP APPLICATION, MAKE A PARALLEL CONNECTION FROM THE REVERSING VALVE 24 VAC POWER SUPPLY TO THE HEAT PUMP TERMINALS ON THE CONTROL. THE SELECT JUMPER MUST BE IN THE NORMALLY CLOSED POSITION FOR NON-ENERGIZED REVERSING VALVE DURING HEATING.
3. ALTERNATE WIRING FOR SINGLE PHASE APPLICATION; THREE PHASE MODELS DOES NOT REQUIRE A DUAL RUN CAPACITOR.
4. WIRING DIAGRAM SHOWS CONTROLLER CONNECTION FOR 120 TO 277 VOLTS SUPPLY; FOR 480-600 VOLT APPLICATION, CONNECT POWER SUPPLY BETWEEN LINE 2 AND THE 480-600 VAC TERMINALS.

0140M00108 REV B

Wiring is subject to change, always refer to the wiring diagram on the unit for the most up-to-date wiring.

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MODELS: GSZ**090* & GSZ**120*
DZ**090* & DZ**120*

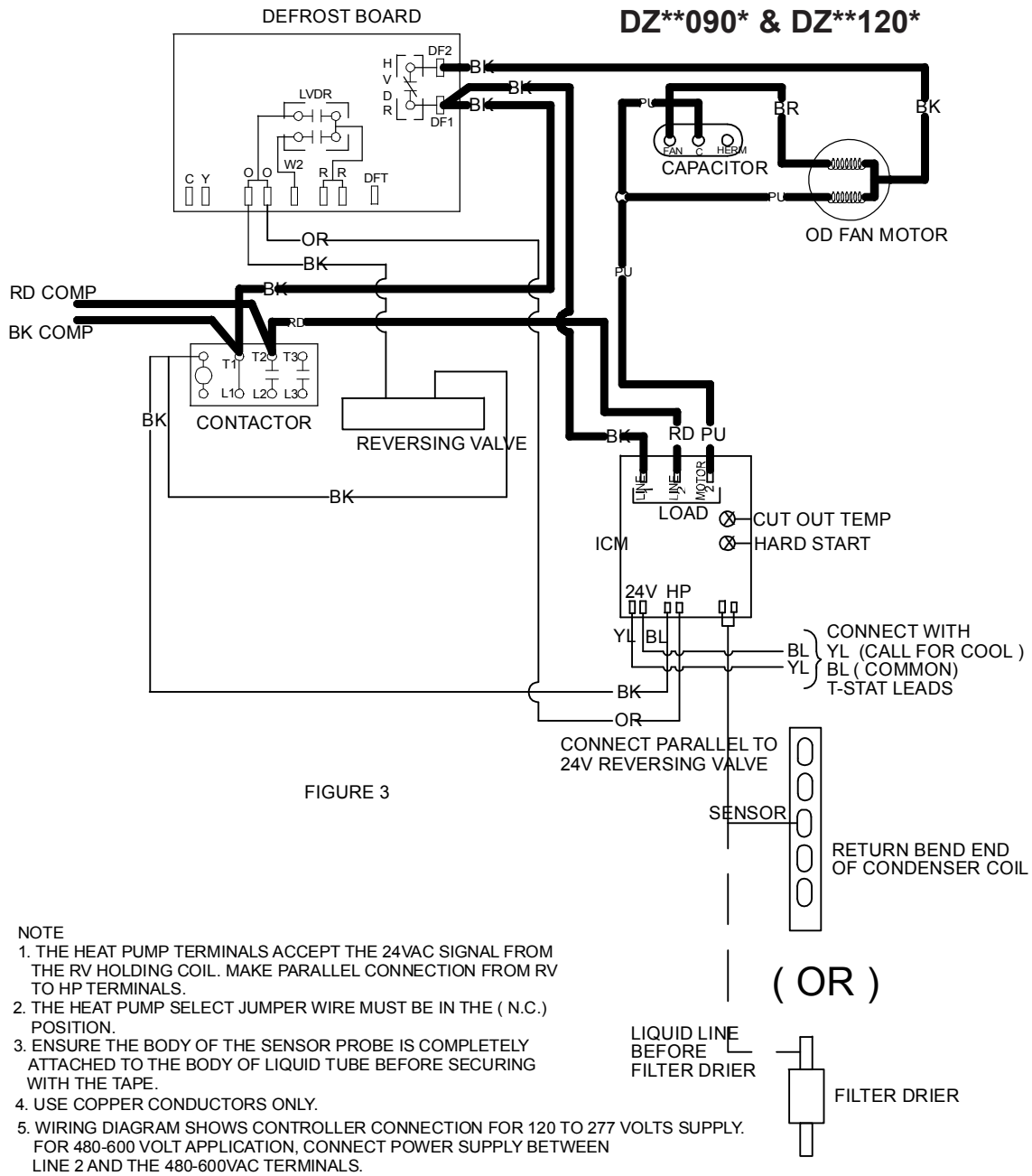

FIGURE 3

NOTE
1. THE HEAT PUMP TERMINALS ACCEPT THE 24VAC SIGNAL FROM THE RV HOLDING COIL. MAKE PARALLEL CONNECTION FROM RV TO HP TERMINALS.
2. THE HEAT PUMP SELECT JUMPER WIRE MUST BE IN THE (N.C.) POSITION.
3. ENSURE THE BODY OF THE SENSOR PROBE IS COMPLETELY ATTACHED TO THE BODY OF LIQUID TUBE BEFORE SECURING WITH THE TAPE.
4. USE COPPER CONDUCTORS ONLY.
5. WIRING DIAGRAM SHOWS CONTROLLER CONNECTION FOR 120 TO 277 VOLTS SUPPLY. FOR 480-600 VOLT APPLICATION, CONNECT POWER SUPPLY BETWEEN LINE 2 AND THE 480-600VAC TERMINALS.

LEGEND
RD RED
BK BLACK
PU PURPLE
BR BROWN
YL YELLOW
BL BLUE
OR ORANGE

0140R00167

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WARNING

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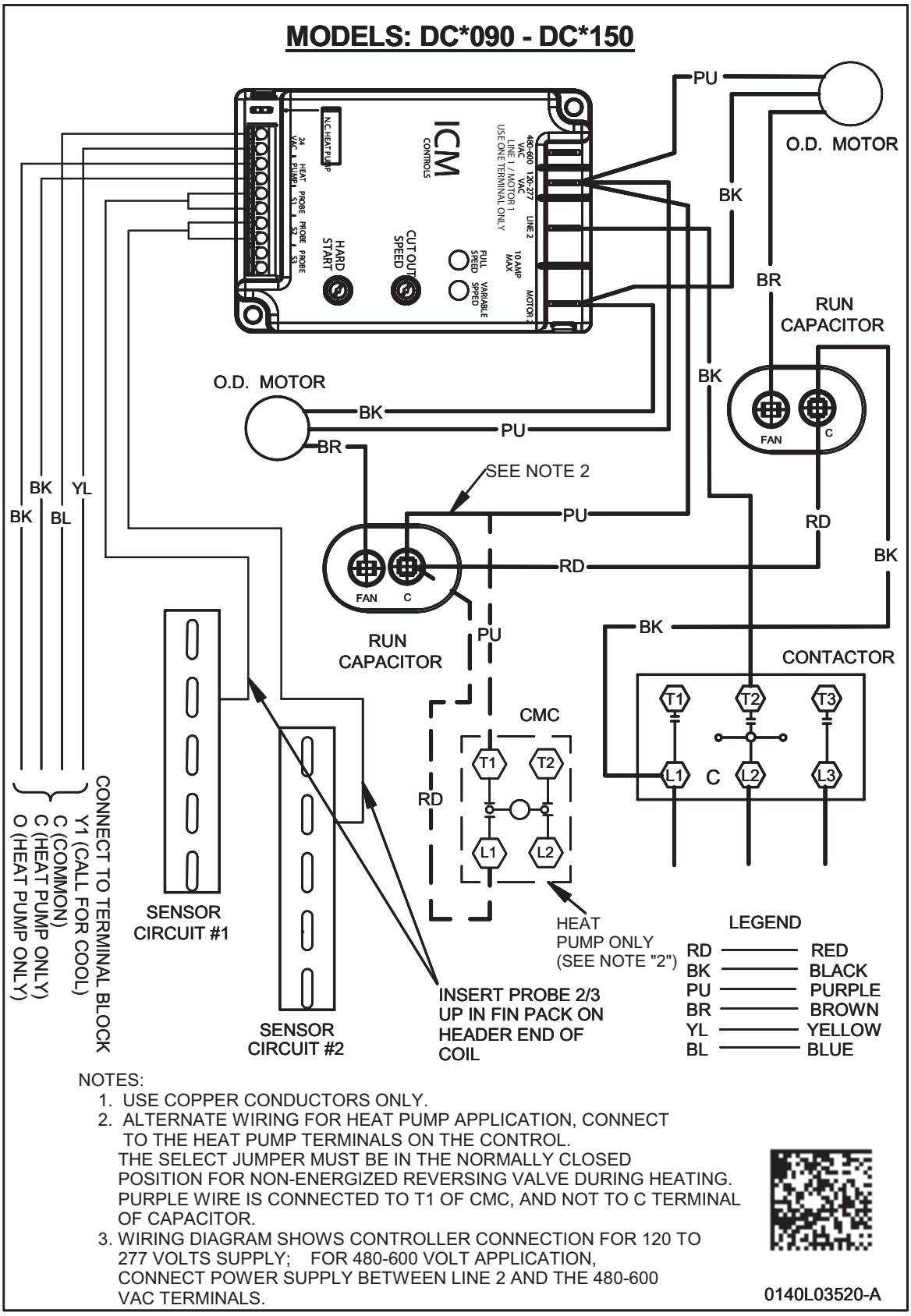
MODELS: DC*090 - DC*150



NOTES:
1. USE COPPER CONDUCTORS ONLY.
2. ALTERNATE WIRING FOR HEAT PUMP APPLICATION, CONNECT TO THE HEAT PUMP TERMINALS ON THE CONTROL. THE SELECT JUMPER MUST BE IN THE NORMALLY CLOSED POSITION FOR NON-ENERGIZED REVERSING VALVE DURING HEATING. PURPLE WIRE IS CONNECTED TO T1 OF CMC, AND NOT TO C TERMINAL OF CAPACITOR.
3. WIRING DIAGRAM SHOWS CONTROLLER CONNECTION FOR 120 TO 277 VOLTS SUPPLY; FOR 480-600 VOLT APPLICATION, CONNECT POWER SUPPLY BETWEEN LINE 2 AND THE 480-600 VAC TERMINALS.

0140L03520-A

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WIRING DIAGRAM LAKT03

WARNING

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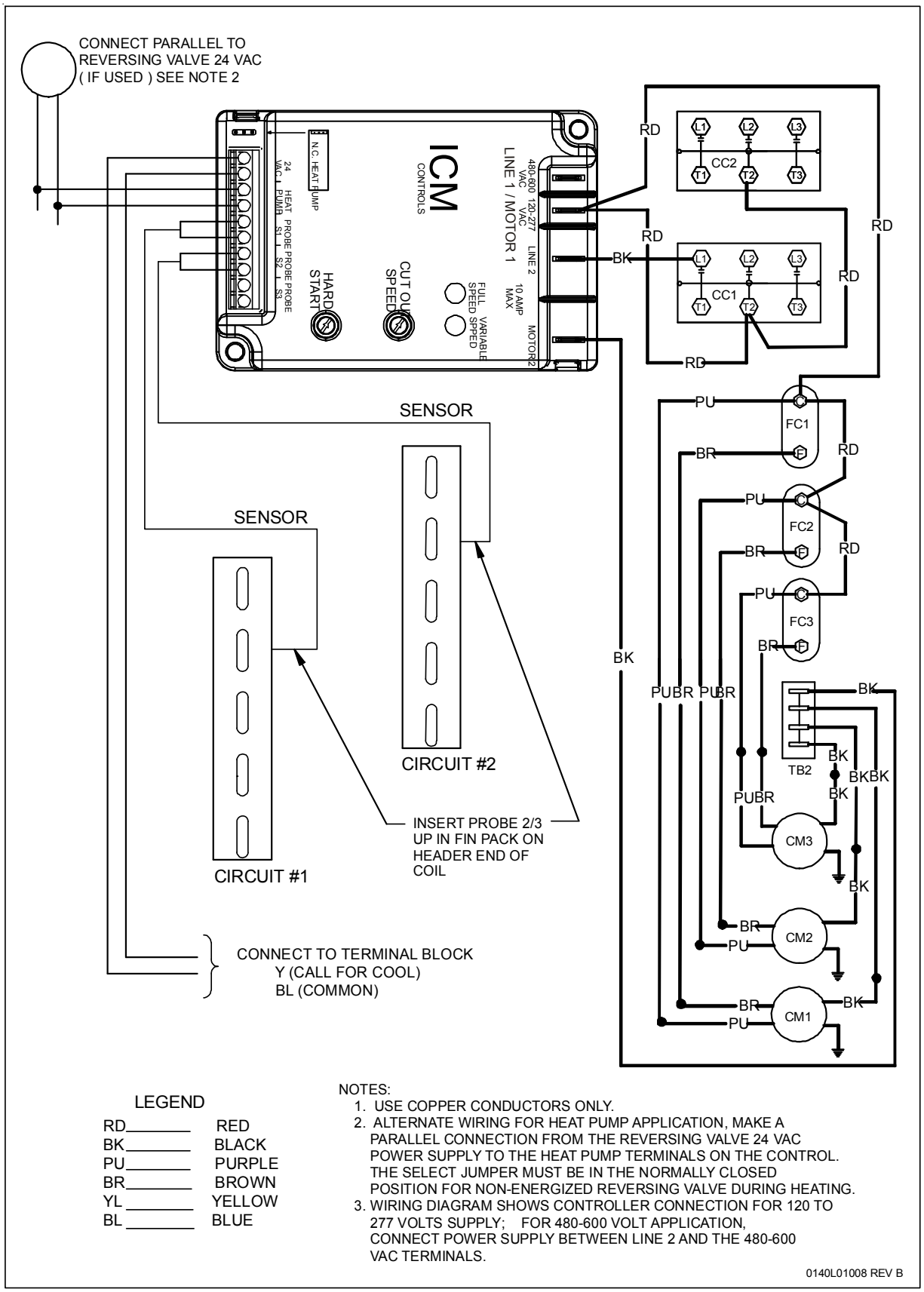

LEGEND

RD_____	RED
BK_____	BLACK
PU_____	PURPLE
BR_____	BROWN
YL _____	YELLOW
BL _____	BLUE

NOTES:
1. USE COPPER CONDUCTORS ONLY.
2. ALTERNATE WIRING FOR HEAT PUMP APPLICATION, MAKE A PARALLEL CONNECTION FROM THE REVERSING VALVE 24 VAC POWER SUPPLY TO THE HEAT PUMP TERMINALS ON THE CONTROL. THE SELECT JUMPER MUST BE IN THE NORMALLY CLOSED POSITION FOR NON-ENERGIZED REVERSING VALVE DURING HEATING.
3. WIRING DIAGRAM SHOWS CONTROLLER CONNECTION FOR 120 TO 277 VOLTS SUPPLY; FOR 480-600 VOLT APPLICATION, CONNECT POWER SUPPLY BETWEEN LINE 2 AND THE 480-600 VAC TERMINALS.

0140L01008 REV B

Wiring is subject to change, always refer to the wiring diagram on the unit for the most up-to-date wiring.