

INSTALLATION INSTRUCTIONS FOR AUXILIARY ELECTRIC HEATER KITS

▲ Recognize this symbol as an indication of Important Safety Information!

IMPORTANT: TO ENSURE PROPER INSTALLATION AND OPERATION, PLEASE READ ALL INSTRUCTIONS PRIOR TO ASSEMBLY, INSTALLATION, OPERATION, MAINTENANCE OR REPAIR OF THIS PRODUCT. AFTER UNPACKING THE HEATER KIT, INSPECT ALL PARTS FOR DAMAGE PRIOR TO INSTALLATION AND START UP.

INTRODUCTION

The information contained in these instructions has been prepared to assist in the proper installation and operation of the auxiliary electric heaters. Improper installation can result in unsatisfactory operation or dangerous conditions not covered by the unit warranty and may invalidate the Underwriters Laboratories recognition.

CHECKING PRODUCT RECEIVED

Upon receiving the heater kit, inspect it for any shipping damage. Claims for damage should be filed immediately with the shipping company.

Check heater kit model number to determine that it is the correct series for the unit, as shown on the unit rating plate, and is of the desired voltage and KW size.

APPLICATION

These auxiliary electric resistance heater kits are designed for installation in the discharge air compartment of the indoor blower. Improper usage can cause results which may be dangerous. Do not use heater kits other than those referenced on the unit rating plate.

Clearance to combustible material for the unit and first three (3) feet of duct is "0" inches.

OPERATION

The heater elements are wired through controllers operated by the 24 volt thermostat circuit. To ensure blower operation, the blower is also controlled by the heater controllers. The heater controllers will turn the blower and first stage heater "on" first and will turn the heater and blower "off" last when the thermostat is satisfied.

TOOLS NEEDED

The following tools can be helpful in installing the kits:

1. Slotted screwdrivers and 5/16" nut driver.
2. Needle-nose pliers.
3. Wire cutters and strippers.

INDOOR BLOWER SPEED

Most package units are equipped with multi-speed blower motors. The motors are factory wired for the proper electric heat speed. **DO NOT** change the indoor blower motor speed from that shown in the table below.

<u>Unit Nominal Cooling Capacity</u>	<u>Blower Motor Speed</u>
1.5 Tons	Low
2.0 Tons	High
2.5 Tons	Low
3.0 Tons	Medium
3.5 Tons	High
4.0 Tons	High
5.0 Tons	High

▲ WARNING

DISCONNECT ALL POWER BEFORE STARTING HEATER KIT INSTALLATION. FAILURE TO DO SO CAN RESULT IN SEVERE ELECTRICAL SHOCK OR DEATH.

ELECTRICAL WIRING

Field wiring must comply with the National Electrical Code (NEC in Canada) and any local ordinances that may apply.

POWER WIRING

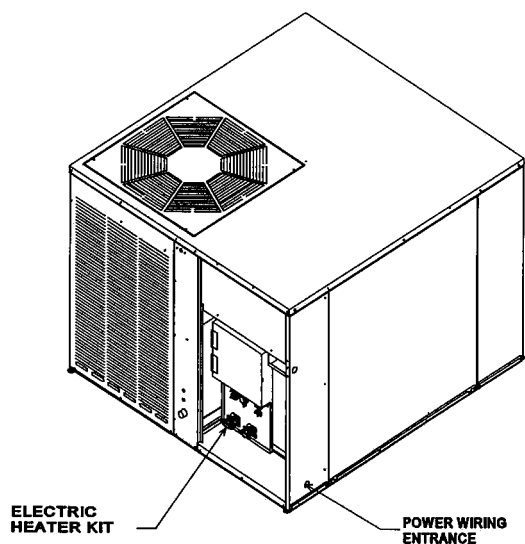
1. If the unit has been in operation without an electric heater kit installed, it may be necessary to change the field installed power wiring. The added current of the electric heater kit may require larger gauge wiring than that required for the unit alone. The wire entrance opening in the unit cabinet may also have to be enlarged for larger conduit. Refer to the unit rating plate or installation instructions for the required supply circuit size and overcurrent protection. A wire sizing table follows for reference
2. It is important that adequate electrical power is available at the heater kit terminals. Voltage should not vary more than 10% from that marked on the unit rating plate. Phase voltages must be balanced within 3%.
3. A properly sized disconnect switch shall be located within sight of the unit or as required by local codes.

4. Power wiring must be run in grounded, rain-tight conduit.
5. Refer to the unit installation instructions for power entry location. The high voltage field installed power supply circuit should be connected to the line ("L") side of the terminal block located on the heater kit. Consult the heater kit wiring diagram.

INSTALLATION

For field installation of an electric heater kit, follow the instructions below:

- a. Remove control compartment access panel and control box cover.
- b. Remove and discard the cover plate from the heater kit opening. Retain the screws.
- c. Place the heater kit into the opening and secure it to the unit with the (6) #8 x 1/2" sheet metal screws previously securing the cover plate. See Figure 1.
- d. Connect the heater control plug to the mating unit receptacle provided in the bottom of the control box.
- e. Route the power supply leads from the heater kit fuse block through the hole in the control box directly under the unit contactor and connect them to the contactor terminals marked L1 and L2 (reference heater wiring diagram). All wiring should be routed so as not to contact any live high-voltage parts.



- f. Check all electrical connections including factory wiring within the unit to make sure that all connections are tight and properly located.
- g. Replace the control compartment access panel.

CONTROL WIRING

1. All low voltage wiring must be routed into the low voltage connection area and not into the power wiring or heater control area.
2. For thermostat low voltage connections, see unit installation instructions.
3. Thermostat heat anticipator should be adjustable for a minimum range of .10 - 1.20. Typical settings are as follows:

THERMOSTAT HEAT ANTICIPATOR SETTING*

SETTING	NUMBER OF ELEMENTS			
	1	2	3	4
	.2	.4	.6	.8

*NOTES

1. Normally, the first stage heat has a fixed setting.
2. Some thermostats have no adjustable second stage heat anticipator setting indicator. Follow the instructions in these specific thermostats to get proper operation.
3. Replace the control box cover and control compartment access panel after all wiring is completed.
4. Check unit and heater kit for proper operation.

WIRE SIZE - 75°C INSULATION FOR 1% VOLTAGE DROP

SUPPLY CIRCUIT AMPACITY	COPPER WIRE- AWG/MCM				
	SUPPLY WIRE LENGTH FEET				
	100	150	200	250	300
15	10	8	6	6	6
20	8	6	4	4	4
25	8	6	4	4	3
30	6	4	4	3	2
35	6	4	3	2	1
40	6	4	3	2	1
45	4	3	2	1	1/0
50	4	3	2	1	1/0
60	4	2	1	1/0	2/0
70	3	2	1/0	2/0	3/0
80	3	1	1/0	2/0	3/0
90	2	1/0	2/0	3/0	4/0
100	2	1/0	2/0	3/0	4/0
110	1	2/0	3/0	4/0	250
125	1	2/0	3/0	4/0	250
150	1/0	3/0	4/0	250	300
175	2/0	4/0	250	300	350
200	3/0	4/0	300	350	400
225	4/0	250	350	450	500