

INSTALLATION INSTRUCTIONS

Electric Heat Sections

Used with Air Handler Units

ELECTRIC HEAT SECTIONS
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**THIS MANUAL MUST BE LEFT WITH THE
HOMEOWNER FOR FUTURE REFERENCE**

⚠ WARNING

Improper installation, adjustment, alteration, service or maintenance can cause personal injury, loss of life, or damage to property.

Installation and service must be performed by a licensed professional installer (or equivalent) or a service agency.

Shipping and Packing List

Package 1 of 1 contains

- 1 - Assembled electric heat section
- 1 - circuit breaker cover

Check equipment for shipping damage. If you find any damage, immediately contact the last carrier.

Electric Heat Sections

The electric heat sections provide field installed electric heat for air handler units.

Table 1 shows the available heat sections. Refer to the Product Specifications for heat section applications.

Table 1. Electric Heat Sections

Termination Type	Part Number	Catalog Number
2.5kW with stripped wires	0668142-10	89W42
5 kW with terminal block	0668142-02	89W43
5 kW with breaker	0668142-03	89W44
7.5 kW with breaker	0668142-04	89W45
7.5 kW with terminal block	0668142-05	89W46
10 kW with terminal block	0668142-06	89W47
10 kW with breaker	0668142-07	89W48
12.5 kW with breaker	0668142-11	89W49
15 kW with breaker	0668142-08	89W50
20 kW with breaker	0668142-09	89W51

General Information

These instructions are intended to be a general guide and do not supersede any local or national codes. Installation must conform with the local building codes and with the latest editions of the National Electric Code.

Be sure to disconnect all power to the unit while you install and service this equipment. Use proper tools and protective equipment during installation and service.

Installation of air handler with or without optional electric heat must conform with standards in the National Fire Protection Association (NFPA) "Standard for Installation of Air Conditioning and Ventilation Systems NFPA No. 90A," and "Standard for Installation of Resident Type Warm Air Heating and Air Conditioning System, No. 90B," the manufacturer's installation instructions, and local municipal building codes.

Heat Section Installation

Before installing the unit, check information on the unit rating plate to ensure that the unit meets the job specification, proper electrical power is available, and that proper duct clearances are maintained.

⚠ CAUTION

Physical contact with metal edges and corners while applying excessive force or rapid motion can result in personal injury. Be aware of, and use caution when working near these areas during installation or while servicing this equipment.

⚠ WARNING

Before installing or servicing unit, be sure ALL power to the unit is OFF. More than one disconnect switch may be present. *Electrical shock can cause personal injury or death!*

NOTE - If installing heat sections at the same time as the air handler unit, install the electric heat section in the air handler unit before setting the air handler unit and attaching the plenum.

1. Shut off all power to the air handler unit. More than one disconnect may be required.



2. Remove air handler access panel and keep the 6 screws to reattach access panel after installing heat elements.
3. Disconnect any existing field supply wires and pull them out of the air handler. Disconnect and remove wiring harness and fastener (see figure 1). If not removed, these items will prevent the heat section's base from resting properly in the compartment.
4. Remove the no-heat seal plate in the air handler frame. See figure 1.

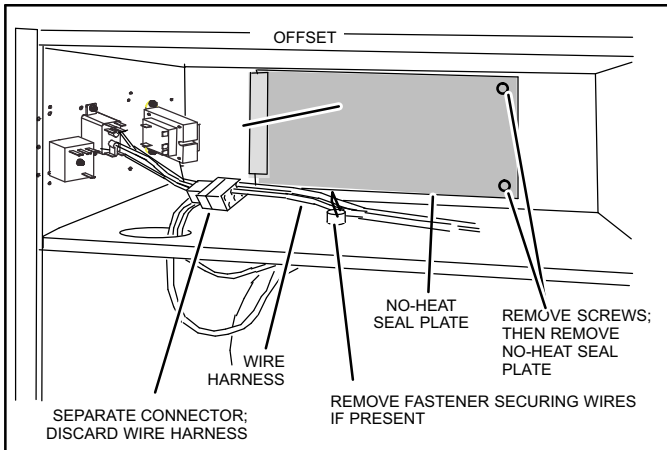


Figure 1. Prepare to Install Heat Element

5. Slide the electric heat section into the air handler. Be careful that the heating elements do not rub against the sheet metal opening when they slide into the air handler. The side opposite the side with the mounting holes should slip behind the offset. The mounting holes should then line up with holes in the air handler control box.
6. Secure the electric heater assembly into place with the screws that were removed from the heat element panel. Install two field-provided #8 SDST screws in the front of the electric heater assembly (see figure 2).

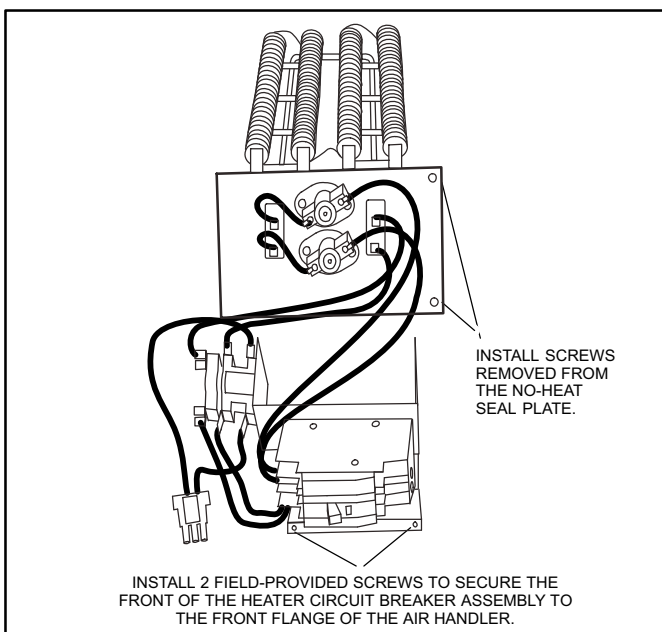


Figure 2. Installing the Heat Element Assembly

7. The air handler's access panels have knockouts over the circuit breaker opening. Knock out both plates to accommodate the number of circuit breakers used. If installing a heat element assembly with circuit breakers, remove the knockouts but do not install the access panel until all electrical connections have been completed.

⚠ WARNING

Foil face insulation must be cut to eliminate the possibility for any frayed foil to coming in contact with any main or low voltage connections. Insulation must be kept a minimum of 1/2" away from any electrical connection.

Changing Circuit Breaker Orientation

The air handler comes from the factory setup for horizontal left-hand discharge which will require no change in the circuit breaker orientation. However, if the air handler is installed in a horizontal right-hand discharge position, the breaker will need to be rotated 180° so that the **UP** position of the breaker is the **ON** position. The circuit breaker orientation change is required by UL 1995, Article 26.18 (25 Sep 2005).

1. The factory default configuration for the two circuit breakers is horizontal left-hand discharge which will require no change (see figure 4). To change the applicable circuit breakers orientation for right-hand discharge, proceed to step 2.
2. Locate the one clip which is located on the right side (see arrow) of each breaker (see figure 3). The clip secures the circuit breaker to the mounting bracket. Pull the clip to release the breaker from the mounting bracket.

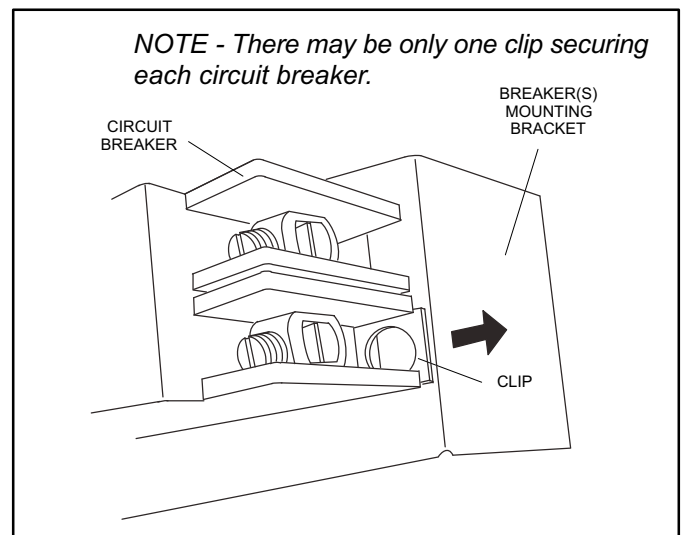


Figure 3. Circuit Breaker Clip

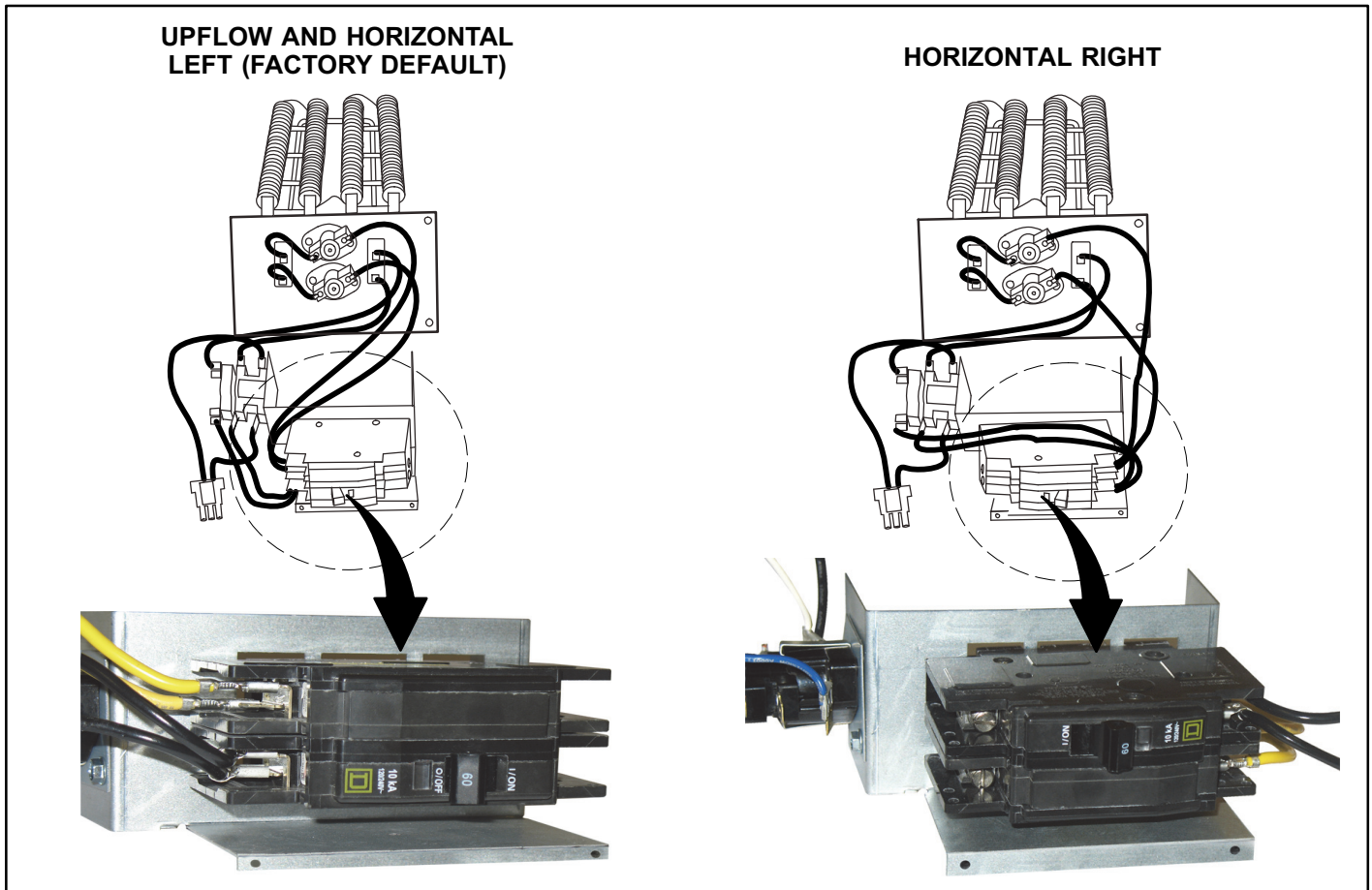


Figure 4. Circuit Breaker Orientation

3. Flip the breaker so that the wires attached to the circuit breakers terminals are on the left side (see figure 4).
4. Use the black clip to reattach the circuit breaker to the mounting bracket.

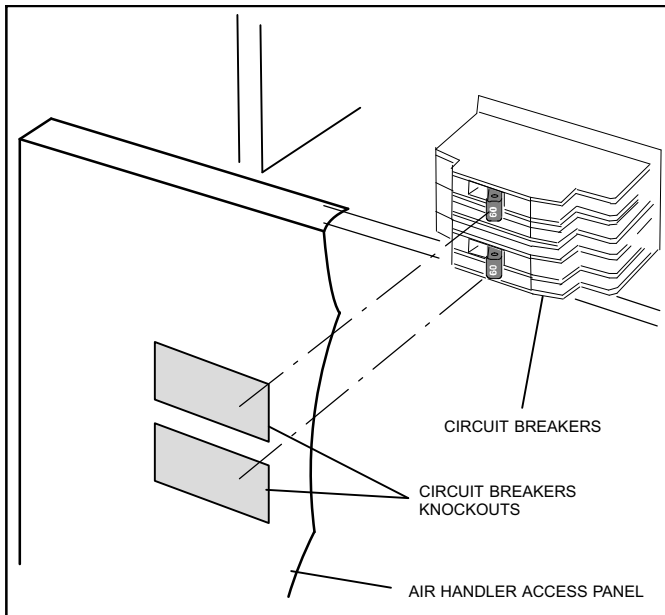



Figure 5. Circuit Breaker Knockouts

Electrical Connections

⚠ WARNING

 Electric shock hazard! - Disconnect all power supplies before servicing. Replace all parts and panels before operating. Failure to do so can result in death or electrical shock.

⚠ WARNING

USE COPPER CONDUCTORS ONLY.

NOTE - Refer to the nameplate on the air handler unit for minimum circuit ampacity and maximum overcurrent protection size.

The air handler units are provided with openings to be used with 1-1/2 inch trade size (1-31/32 inch diameter) conduit. If you want a single point power supply, refer to the nameplate on the single point power supply accessory for minimum circuit ampacity and maximum overcurrent protection size. Select the proper supply circuit conductors in accordance with tables 310-16 and 310-17 in the National Electric Code, ANSI/NFPA No. 70 or tables 1 through 4 in the Canadian Electric Code, Part I, CSA Standard C22.1.

Refer to figure 11 for typical low voltage field wiring for air handler/condensing unit and heat pump applications. Figure 10 is a diagram of the air handler connections and the heater elements high-voltage wiring.

1. Make wiring connections as follows -

Heaters equipped with circuit breakers—Connect field power supply wiring to circuit breaker(s). Figure 6 shows L1, L2 and ground GND connections for a 2-breaker configuration.

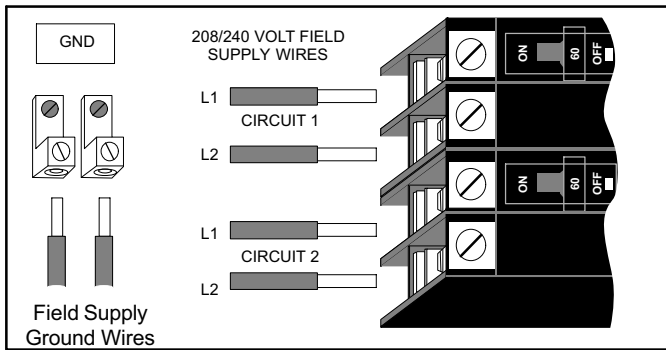


Figure 6. Field Power Supply Wiring

Heaters equipped with terminal blocks—Connect field power supply wiring to terminal block(s). Figure 7 shows L1, L2 and ground (GND) connection for a terminal block configuration.

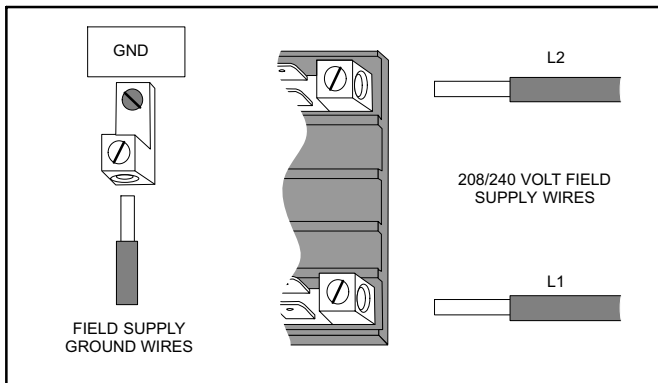


Figure 7. Terminal Block Connections

2. Remove the interface harness from the air handler unit and connect the 6-pin connector on the heater assembly to the mating connector on the air handler unit.
3. For applications using a two-stage room thermostat and/or an outdoor thermostat, connect wiring as shown in figure 11.

Circuit Breaker Cover Installation

1. Remove any installed patch plates still present .
2. Remove paper covering adhesive back around backside perimeter of circuit breaker cover (figure 8).

3. Position the breaker cover over the air handler circuit breaker opening (figure 9).

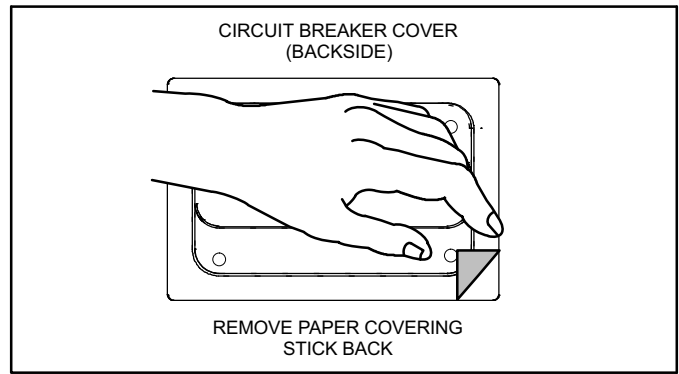


Figure 8. Remove Paper Cover

▲ IMPORTANT

Confirm air tight seal between breaker cover and air handler access panel. Apply a thin silicone bead to the adhesive back seat to ensure air tight seal.

Failure to seal circuit breaker cover will allow warm moist air to be pulled into control panel which can create condensation to form on the circuit breaker and other electrical components within the control panel.

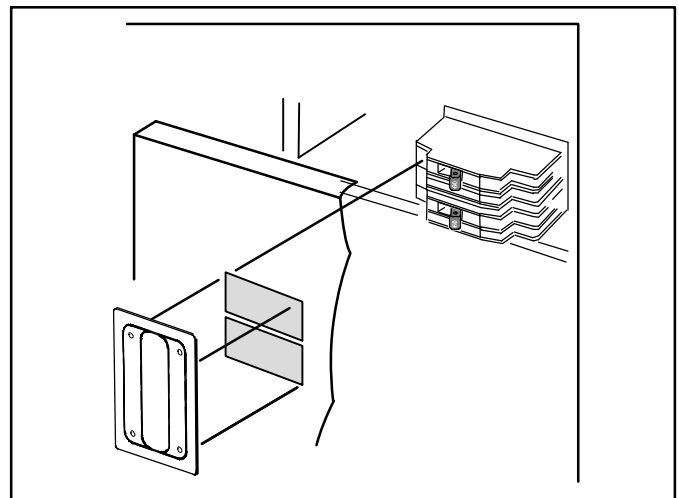


Figure 9. Typical Circuit Breaker Cover Installation

Air Handler Speed Connections

When using the electric heat sections with air handler units, you must adjust the air handler speed according to the size of electric heat and air handler unit. **Air handler speed tap for electric heat in upflow and horizontal position is medium. For downflow it is high speed.** See specific air handler installation instructions for air handler speed adjustment procedure and location.

Unit Start-Up

1. After all electrical connections have been completed and jumpers configured (if required), replace the air handler compartment access cover.
2. Restore power to the unit.
3. If using an electromechanical room thermostat, set the thermostat heat anticipator to 0.4 amps.
4. Set the thermostat above room temperature.
5. Check the heat pump and the heat section for normal operation.
6. Set the thermostat to desired setting.
7. Affix the wiring diagram sticker to air handler scroll, aligned with circuit breaker unit wiring diagram sticker.

Wiring Diagrams

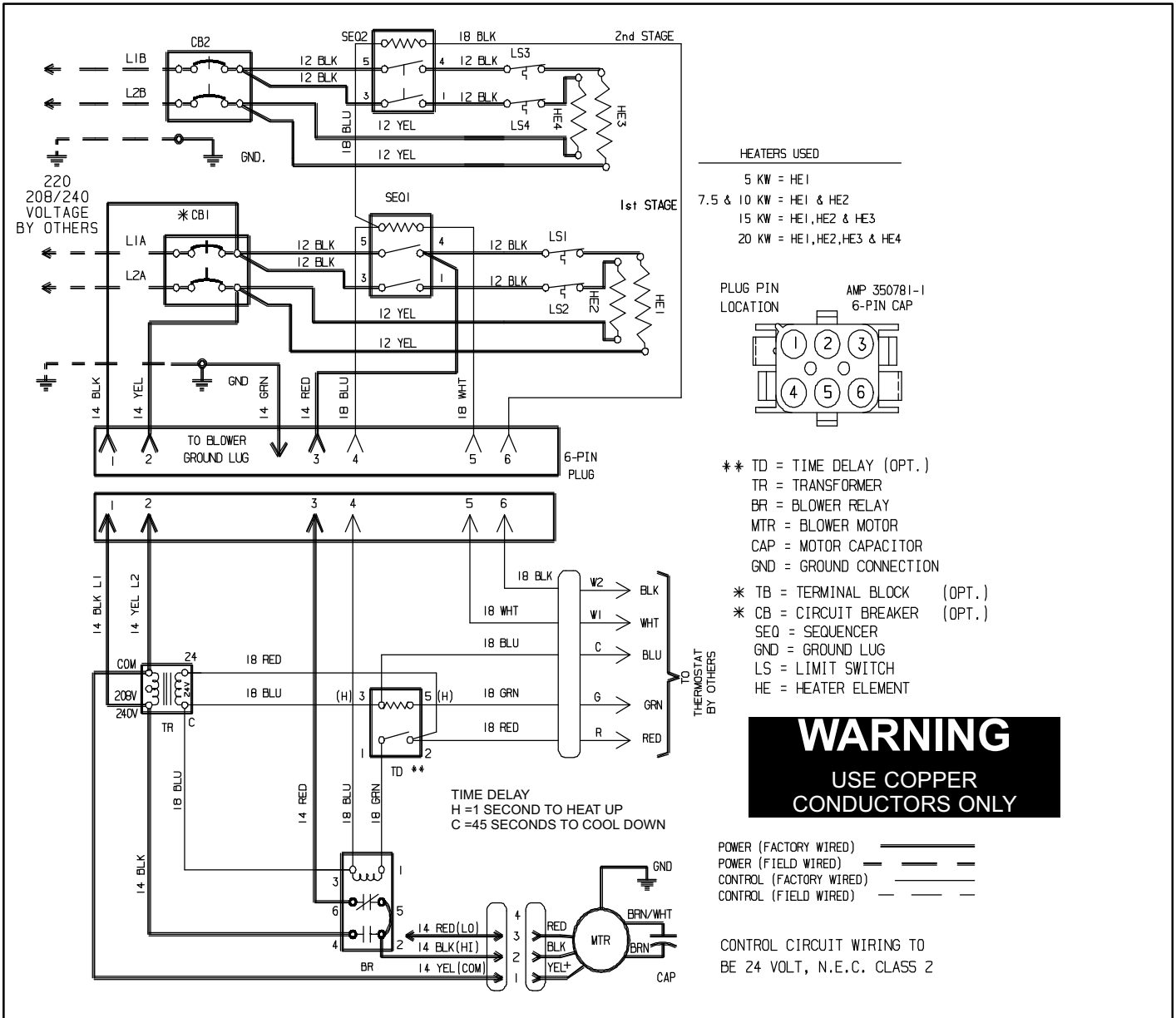


Figure 10. Field Wiring Diagram - Electric Heat and Air Handler

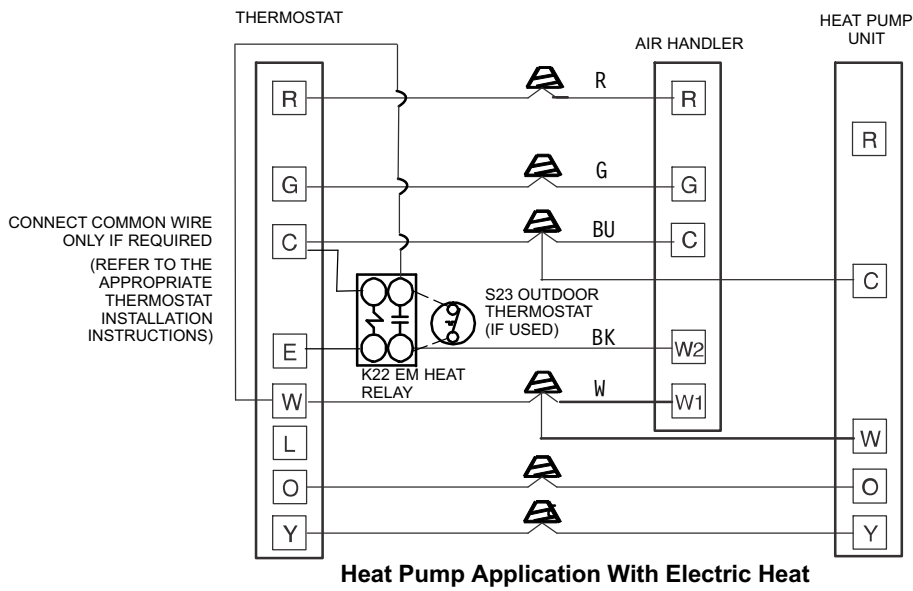
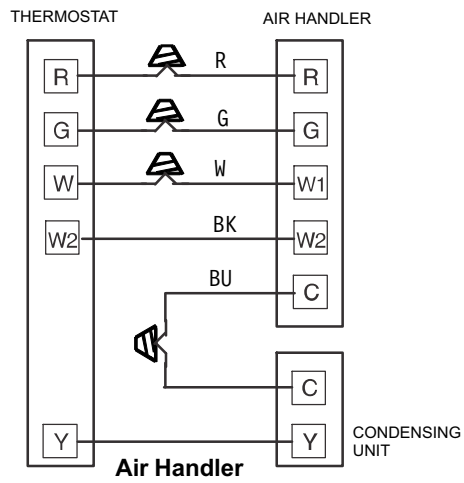


Figure 11. Low Voltage Field Wiring Electric Heat