

Installation Instructions

NOTE: Read the entire instruction manual before starting the installation.

SAFETY CONSIDERATIONS

Installing and servicing of heating and air conditioning equipment can be hazardous due to system pressures and electrical components. Only trained personnel should install or service heating and air conditioning equipment.

Untrained personnel can perform basic maintenance functions such as cleaning coils, or cleaning and replacing filters. All other operations should be performed by trained personnel. When working on heating and air conditioning equipment, observe precautions in literature, on tags, and on labels attached to the unit. Follow all safety codes. Wear safety glasses and work gloves. Have a fire extinguisher available.

Recognize safety information. This is the safety-alert symbol . When you see this symbol on the unit and in instructions or manuals, be alert to the potential for personal injury.

Understand the signal words DANGER, WARNING, and CAUTION. These words are used with the safety-alert symbol. DANGER identifies the most serious hazards which **will** result in severe personal injury or death. WARNING signifies hazards which **could** result in personal injury or death. CAUTION is used to identify unsafe practices, which **may** result in minor personal injury or product and property damage. NOTE is used to highlight suggestions which **will** result in enhanced installation, reliability, or operation.

WARNING

ELECTRICAL SHOCK HAZARD

Failure to follow this warning could result in personal injury or death.

Before installing, modifying or servicing system, always turn off main power to system. There may be more than one disconnect switch. Lock out and tag switch with a suitable warning label.

CAUTION

PERSONAL INJURY HAZARD

Failure to follow this caution may result in personal injury.

Sheet metal parts may have sharp edges or burrs. Use care and wear appropriate protective clothing and gloves when handling parts.

INSTALLATION

This instruction describes the installation of Part No. EHK3 accessory heaters in FPMAN(U/C), FM(U/C) and WAMC fan coils.

NOTE: These heat kits contain circuitry to prevent the simultaneous operation of the heat pump in heating mode and the electric heater.

Install Electric Heater Assembly

NOTE: Ensure heater coils are not deformed or damaged during heater installation.

1. Make sure power to unit is off.
2. Remove the control box.
3. Remove the screws that attach the control box to the fan coil.
4. Take the control box off of the fan coil, leaving the blower motor wires attached. Remove the heater opening cover plate. Retain the screws for the heater installation.
5. Align the heater assembly with the opening, bringing the heater control into the control box.
6. Use the previously removed cover-plate screws to secure the heater assembly (See Fig. 1). Discard cover plate.
7. Carefully insert the heater coils into the blower-compartment opening, using care not to damage coils.
8. Reinstall the control box onto the fan coil in its original location.
9. Attach the 6-wire harness connector on the fan coil to the harness connector on the heater assembly.
10. Attaching like colors together, use the two wire nuts provided with the heat kit to attach the Red/Black wires on the fan coil pigtail to the Red/Black pigtail on the kit.
11. Use the wire ties to secure wires away from sharp edges.
12. Appropriately mark the unit rating plate to indicate the heat kit size installed.

WARNING

ELECTRICAL SHOCK HAZARD

Failure to follow this warning could result in personal injury or death.

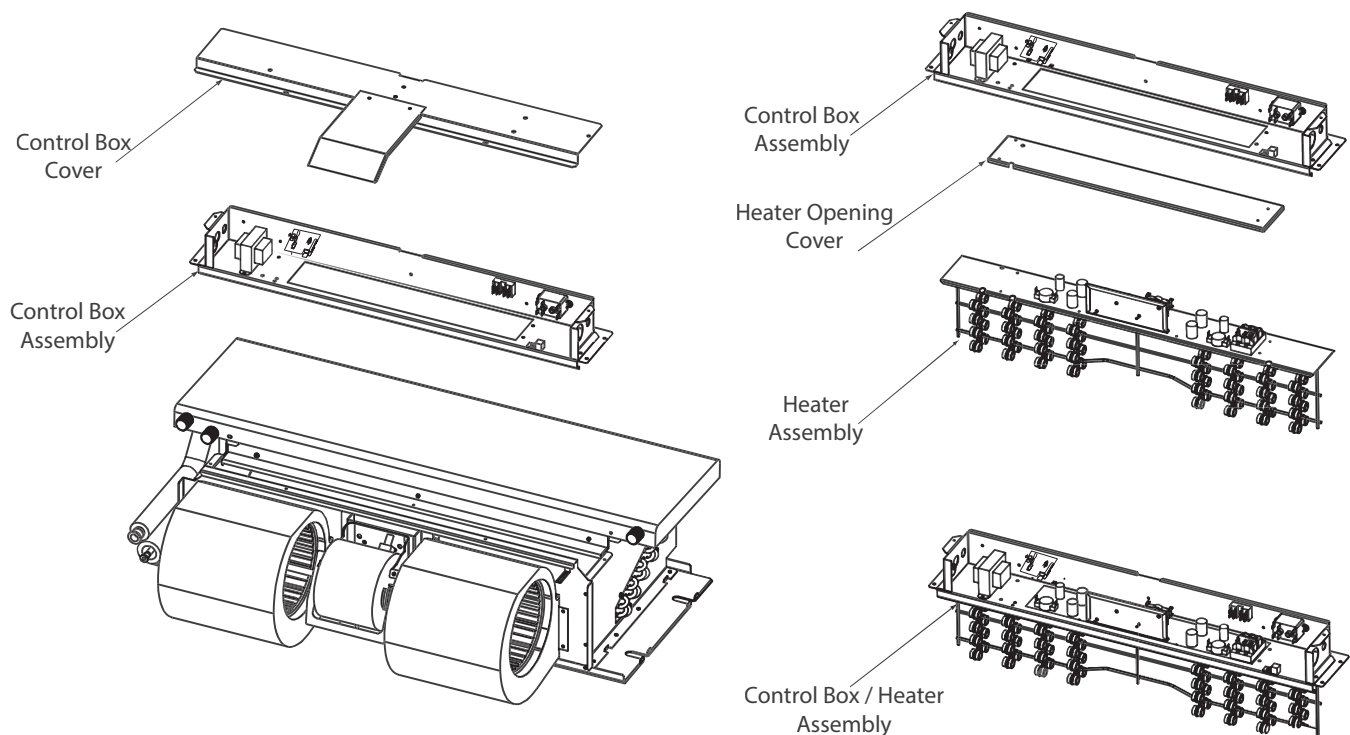
Ensure fuse box is closed before power is turned to ON position. There may be more than one power supply.

Table 1 – Accessory Heater Usage

ELECTRIC HEATER PART NUMBER	SIZES USED WITH	kW	INTERNAL CIRCUIT PROTECTION
EHK303B	18-36	3	None
EHK305B	18-36	5	None
EHK306B	18-36	6	None
EHK308B	18-36	7.5	None
EHK310B	18-36	10	None

Table 2 – Minimum CFM

FAN COIL UNIT SIZE	EHK3-03B	EHK3-05B	EHK3-06B	EHK3-08B	EHK3-10B
18	325	325	350	350	375
24	450	450	475	475	500
30	575	575	600	600	625
36	700	700	725	725	750



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Fig. 1 - EHK3 Heater Assembly

ELECTRICAL CONNECTIONS

Connection to Unit

Install wiring in accordance with all applicable local and national codes. (See Table 4.) Use No. 18 AWG color coded, insulated (35_C minimum) wire to make low voltage connection between thermostat, fan coil unit, and outdoor unit. If thermostat is located more than 100 ft (20 m) from unit (as measured along the low voltage wire), use No. 16 AWG color coded, insulated (35_C minimum) wire.

Connect heater wiring harness plug receptacle on fan coil wire harness. A positive connection must be made between plug and receptacle. Plug will interlock with receptacle when properly seated. Harness contains both 24V control and high voltage wiring. Additional connections are necessary to connect the Red/Black pigtail on the fan coil to the Red/Black pigtail on the heat kit using the wire nuts provided with the kit. Pull firmly on all wire nut connections to ensure a good connection.

These heat kits have a built-in circuitry to prevent the simultaneous operation of the heat-pump heating mode of operation and electric heat. This is because the electric heater is

located before the refrigerant coil. Fig. 3 shows the proper wiring for these fan coils equipped with electric heat in heat pump applications.

Transformer

Transformer is factory wired for 230-V operation. For 208-V applications, disconnect black wire on transformer 230-V terminal and reconnect it to 208-V terminal. (See Fig. 4.) The secondary circuit of transformer is protected by a 3.15-amp fuse located in the harness.

Power Connections

NOTE: Heater supply circuit wire size and overcurrent protection must comply with National Electric Code (NEC) and UL branch circuit requirements. (See Table 4.) Wires and overcurrent protection, integral to the heater, are not required to meet branch circuit requirements. **Internal circuit protection of 60 amps (maximum) is acceptable.**

The power supply is connected to the L1 / L2 terminals on the heat kit power distribution block. Ensure these connections are torqued to the specification shown on the distribution block. The 5-kW through 10-kW heaters can be wired for single supply circuit only.

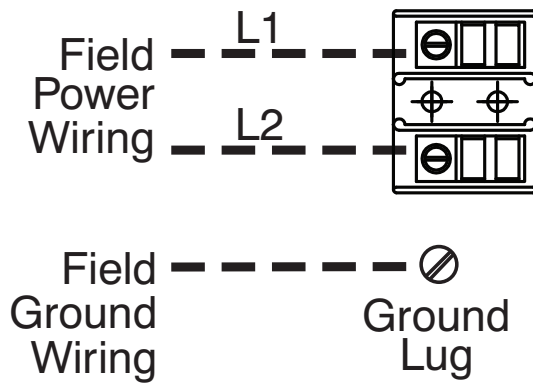


Fig. 2 - Terminal Block Connections

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Ground Connections

⚠ WARNING

ELECTRICAL SHOCK HAZARD

Failure to follow this warning could result in personal injury or death.

According to NEC, ANSI/NFPA 70, and local codes, cabinet must have an uninterrupted or unbroken ground to minimize personal injury if an electrical fault should occur. The ground may consist of electrical wire or metal conduit when installed in accordance with existing electrical codes. (See Ground/Conduit Note below.)

NOTE: Use UL-listed conduit and conduit connector for connecting supply wire(s) to unit to obtain proper grounding. If conduit connection uses reducing washers, a separate ground wire must be used. Grounding may also be accomplished by using grounding lugs provided in control box.

Fan Speeds

Before operating unit, be sure that the proper blower speed has been selected. Always ensure the minimum CFM shown in Table 2 is met. Fan speeds are selected manually. (See Table 3).

To change the fan speed:

Factory default fan speed is **medium**; fan-motor red wire connected to fan relay No. 4.

For **high** speed, connect fan-motor black wire to fan relay No. 4.

For **low** speed, connect fan-motor blue wire to fan relay No. 4 and fan-motor red wire to fan relay No. 6.

Always connect the unused fan-motor wire to the dummy terminal block.

NOTE: Be sure that selected speed taps meet the minimum cfm for cooling size and heater size.

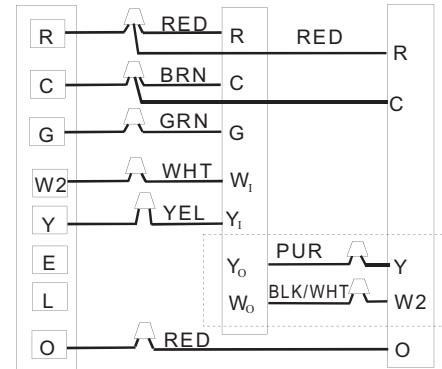
Table 3 – Color Code for PSC Motor Lead Wires

MOTOR SPEED TAP	WIRE COLOR
Common	Purple
High	Black
Medium	Red
Low	Blue

VERIFY INSTALLATION

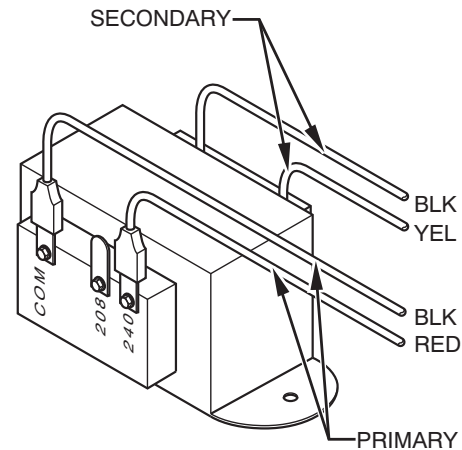
After completion of heater installation, check wiring to ensure tightness and that proper connections and routings have been made. Ensure all electrical covers are in place. Reinstall blower access panel before turning unit power on.

THERMOSTAT INDOOR UNIT OUTDOOR UNIT



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Fig. 3 - Control Wiring Diagram for Heat Pump Application (Cooling and 2-Stage Heat)



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Fig. 4 - Connection of Transformer

Table 4 – Electric Heater Electrical Data

HEAT KIT MODEL	USED ON SIZE	NOMINAL HEAT CAPACITY @ 240V	HEATER CAPACITY (MBH)		MINIMUM CIRCUIT AMPACITY (MCA)		MAX. FUSE OR BREAKER HEAT KIT AMPACITY (HACR)		MIN. WIRE SIZE (AWG) ††		MIN. GROUND WIRE SIZE		MAX. WIRE LENGTH (Ft) ‡‡	
		KW	208	240	208	240	208	240	208	240	208	240	208	240
EHK303B	18	3	7.7	10.2	14.8	16.9	20	20	12	12	10	10	72	73
EHK305B		5	12.8	17.1	23.9	27.3	30	30	10	10	10	10	72	73
EHK306B		6	15.4	20.5	28.4	32.6	35	35	8	8	10	10	98	96
EHK308B		7.5	19.3	25.7	35.2	40.4	50	50	8	8	10	10	78	79
EHK310B		10	24.7	32.8	44.6	51.3	60	60	6	6	10	10	94	96
EHK303B	24	3	7.7	10.2	14.8	16.9	20	20	12	12	10	10	72	73
EHK305B		5	12.8	17.1	23.9	27.3	30	30	10	10	10	10	72	73
EHK306B		6	15.4	20.5	28.4	32.6	35	35	8	8	10	10	98	96
EHK308B		7.5	19.3	25.7	35.2	40.4	50	50	8	8	10	10	78	79
EHK310B		10	24.7	32.8	44.6	51.3	60	60	6	6	10	10	94	96
EHK303B	30	3	7.7	10.2	15.8	17.9	20	20	12	12	10	10	67	69
EHK305B		5	12.8	17.1	24.9	28.3	30	30	10	10	10	10	69	71
EHK306B		6	15.4	20.5	29.4	33.5	35	35	8	8	10	10	94	93
EHK308B		7.5	19.3	25.7	36.1	41.4	50	50	8	8	10	10	76	77
EHK310B		10	24.7	32.8	45.5	52.3	60	60	6	6	10	10	92	94
EHK303B	36	3	7.7	10.2	15.8	17.9	20	20	12	12	10	10	67	69
EHK305B		5	12.8	17.1	24.9	28.3	30	30	10	10	10	10	69	71
EHK306B		6	15.4	20.5	29.4	33.5	35	35	8	8	10	10	94	93
EHK308B		7.5	19.3	25.7	36.1	41.4	50	50	8	8	10	10	76	77
EHK310B		10	24.7	32.8	45.5	52.3	60	60	6	6	10	10	92	94

* †† Copper wire must be used. If other than uncoated (non-plated), 75°C ambient, copper wire (solid wire for 10 AWG and smaller, stranded wire for larger than 10 AWG) is used, consult applicable tables of the National Electric Code (ANSI/NGPA 70).

* ‡‡ Length shown is as measured 1 way along wire path between unit and service panel for a voltage drop not to exceed 2%.