



ELECTRIC HEAT SECTIONS

506486-01
6/2011
Supersedes 4/2010

EHO075/EHO600 ELECTRIC HEAT

See unit nameplate for manufacturer's name and address.

INSTALLATION INSTRUCTIONS FOR EHO075/EHO600 ELECTRIC HEAT ASSEMBLIES USED WITH PACKAGED COOLING AND HEAT PUMP 092/150 UNITS

Shipping and Packing List

Package 1 of 1 contains:

- 1- Electric heat assembly
- 1- Electric heat control assembly
- 1- Door frame
- 1- Door
- 3- Harnesses
- 1- Bag assembly containing:
 - 3- Harnesses
 - 2- Wiring diagram stickers
- 25- Screws
 - 1- Door knob
 - 2- Hinges
 - 1- Terminal block
 - 1- Spring latch

Inspect package upon receiving. If damage is found, contact last carrier immediately.

F4 Fuse Block

Fuse block assembly (F4) is furnished in all cooling and heat pump units. Assembly is required in single point power installations only.

TB2 Terminal Block

TB2 is furnished with electric heat. TB2 is required in units equipped with S48 (80A) disconnect switches. TB2 is also required when a unit does NOT contain a CB10 circuit

breaker or S48 (150A) disconnect switch. Make sure the CB10 has lugs on top to distribute power.

Electric Heat Control Module

The electric heat control module kit is provided in this kit. The kit is required on units not equipped with a Unit Controller control.

Application

Electric heat sections are used as primary heaters for packaged cooling units and as a secondary heat source for packaged heat pump units. See table 1 for match-ups.

Requirements

The EHO series heaters are CGA and ETL design certified.

Installation of electric heaters must conform with standards of the National Fire Protection Association (NFPA) "Standard for Installation of Air Conditioning and Ventilation Systems NFPA No. 90A;" "Standard for the Installation of Residence Type Warm Air Heating and Air Conditioning Systems NFPA No. 90B;" in Canada, CSA C22.1 Canadian Electrical Code — Part I and all applicable CSA requirements; manufacturer's installation instructions and local municipal building codes. Heaters are approved for clearances to combustible materials as listed on heater rating plate.

TABLE 1

Unit	Electric Heat
Cooling 092, 102 (7-1/2, 8-1/2 Ton) Heat Pump 092, 102 (7-1/2 Ton, 8-1/2 Ton)	EHO075 (7.5KW)
Cooling 092, 102, 120, 150 (7-1/2, 8-1/2, 10, 12-1/2 Ton) Heat Pump 092, 102, 120, 150 (7-1/2, 8-1/2, 10 Ton, 12-1/2 Ton)	EHO150 (15KW)
	EHO225 (22.5KW)
	EHO300 (30KW)
	EHO450 (45KW)
Cooling 120, 150 (10, 12-1/2 Ton) Heat Pump 120, 150 (10 Ton, 12-1/2 Ton)	EHO600 (60KW)



Accessibility and service clearances must take precedence over fire protection clearances. All wiring must conform with local building codes and the current National Electric Code (NEC) ANSI-C1 and in Canada, CSA C22.1 Canadian Electrical Code —Part I and the applicable CSA requirements.

Install Electric Heat Assembly

- 1- Disconnect all power to unit.
- 2- Remove unit heat access panel. Remove screws and discard rectangular vestibule cover(s).
- 3- Insert electric element heat assembly into

rectangular vestibule opening and secure assembly using screws provided. See figure 1.

- 4- *Single disconnect installations-*
Install separately ordered TB2, CB10, or S48 (150A) using screws provided. See figure 2 for location.
- 5- *KCA/KHA Unit Only -*
Replace the unit TB2 with the TB2 provided in this kit. Install separately ordered CB10 or S48 (150A) using screws provided. See figure 2 for location.

Note - Kit is not required on units equipped with a Unit Controller.

Note - Install electric heat door assembly after electric heat assembly and wiring is complete.

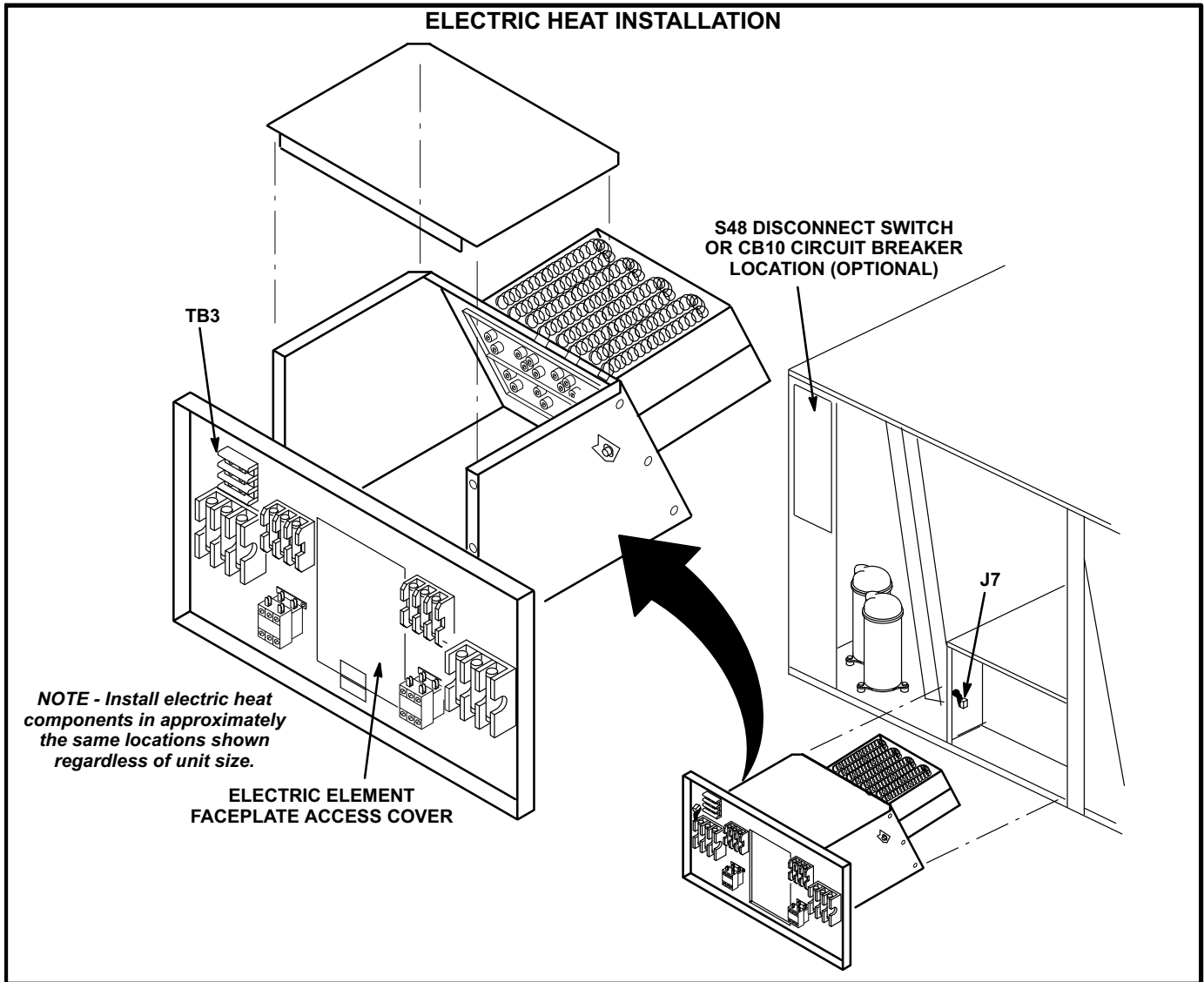


FIGURE 1

**S48 DISCONNECT SWITCH OR
CB10 CIRCUIT BREAKER LOCATION (OPTIONAL)**

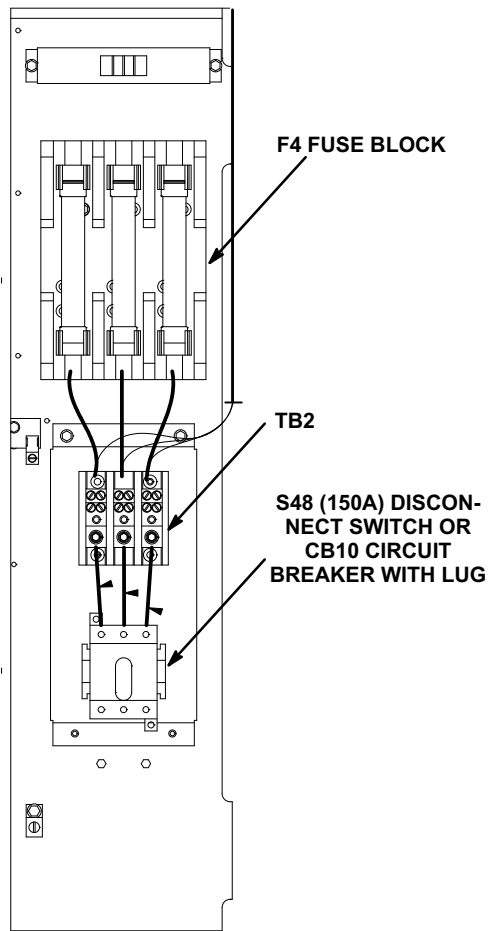


FIGURE 2

Electrical Connections

Wiring must conform to local codes and NEC/CEC. Refer closely to wiring diagram in this instruction and the following information: If electric heat assembly is being installed in an existing unit, a change in power supply wiring and disconnect switch may be required. Remove the original supply wires or disconnect at power source. Refer to heater nameplate for minimum circuit ampacity and maximum fuse size.

- 1- Review heater installed nameplate for MCA values and enlarge power entry knockouts as needed. Refer to figure 8 for field wiring. For wiring between F4 and TB2 or CB10, use the harness provided in this kit. Likewise, for wiring between TB2 or CB10 and TB3, use the harness provided in this kit. For low voltage wiring connections, refer to unit installation instruction.
- 2- Make 24 volt harness jack/plug connections as follows.
LCH Units -
Connect electric heat jack J7 to electric heat plug P7. See figure 4.
KCA/KHA Units -
Connect electric heat jack J7 to electric heat plug P7. Connect P2 plug to main cooling harness jack J2. See figure 5.
- 3- Select wiring diagram with appropriate unit model number and affix to unit in location shown in figure 6.

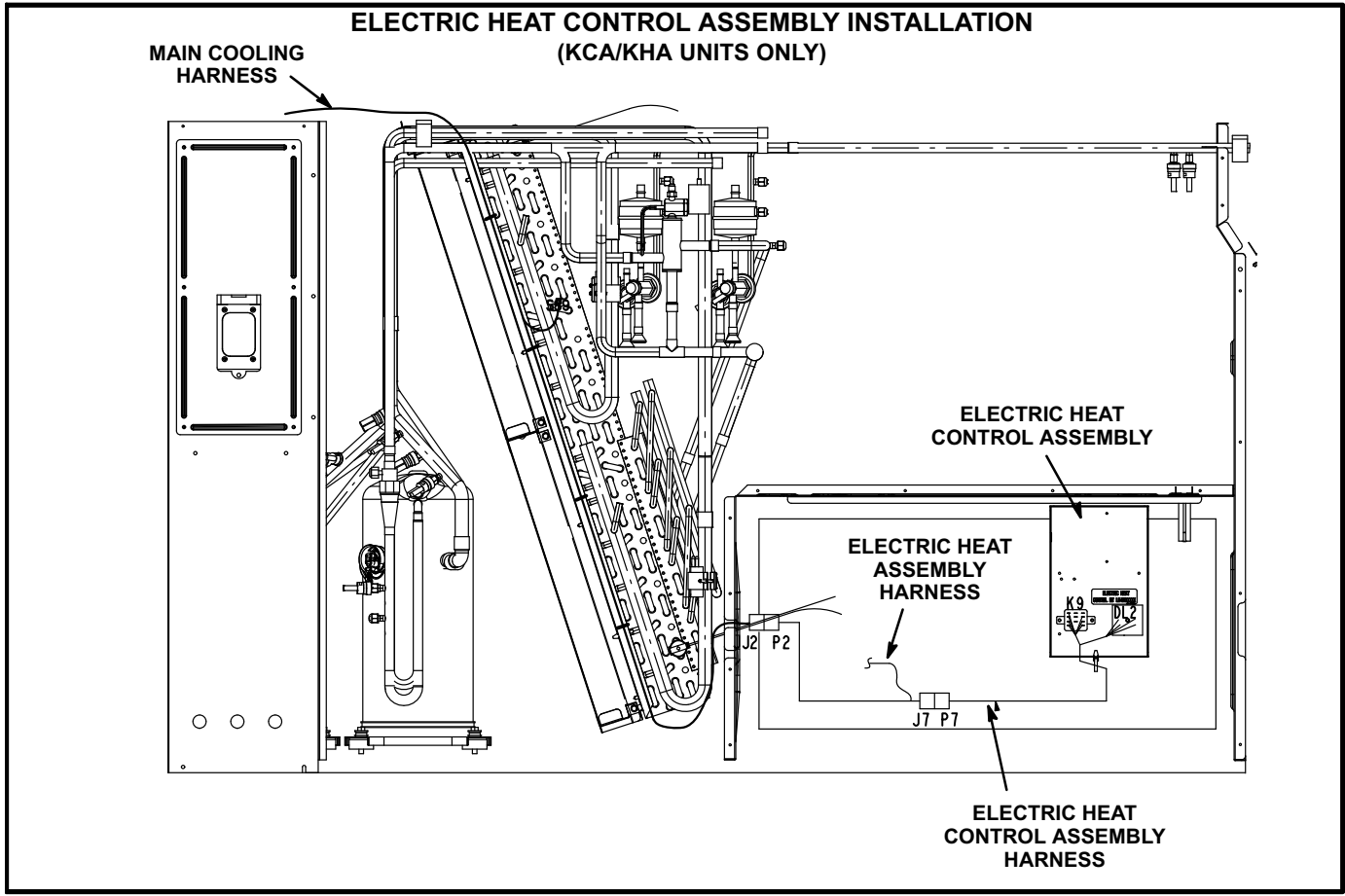


FIGURE 3

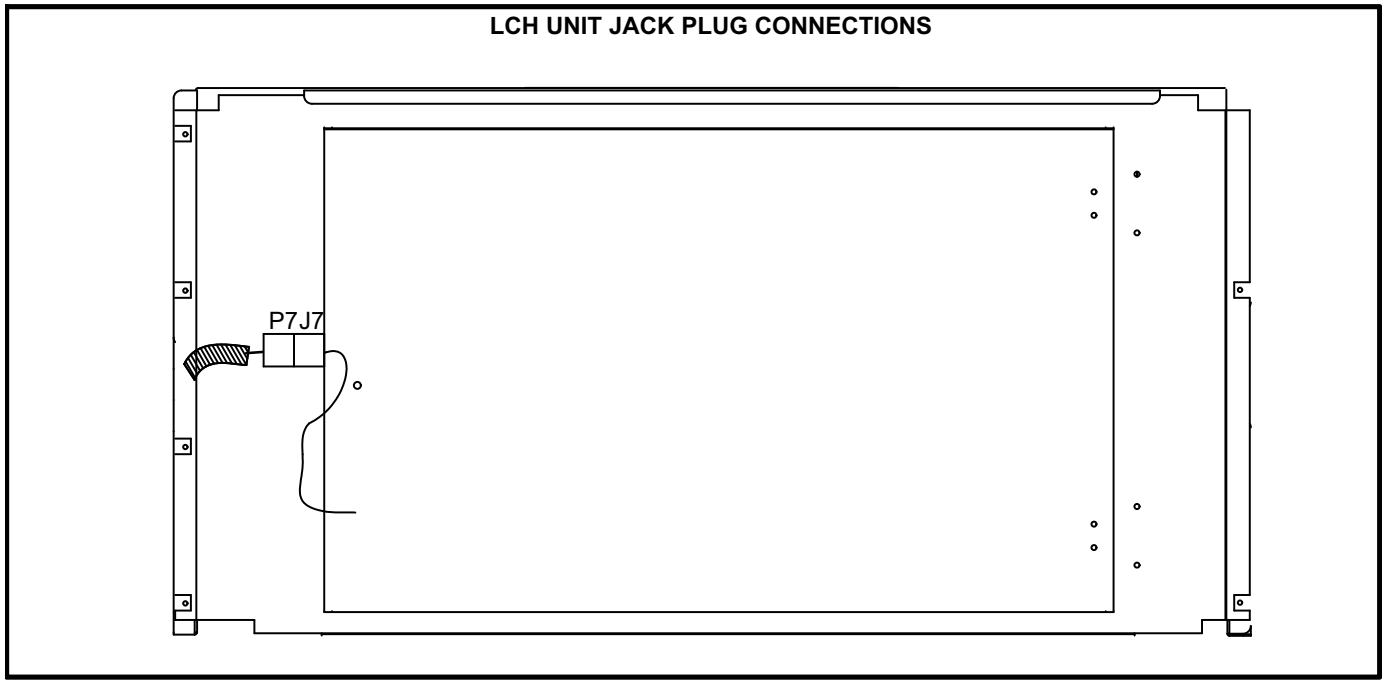


FIGURE 4

KC/KH UNIT JACK PLUG CONNECTIONS

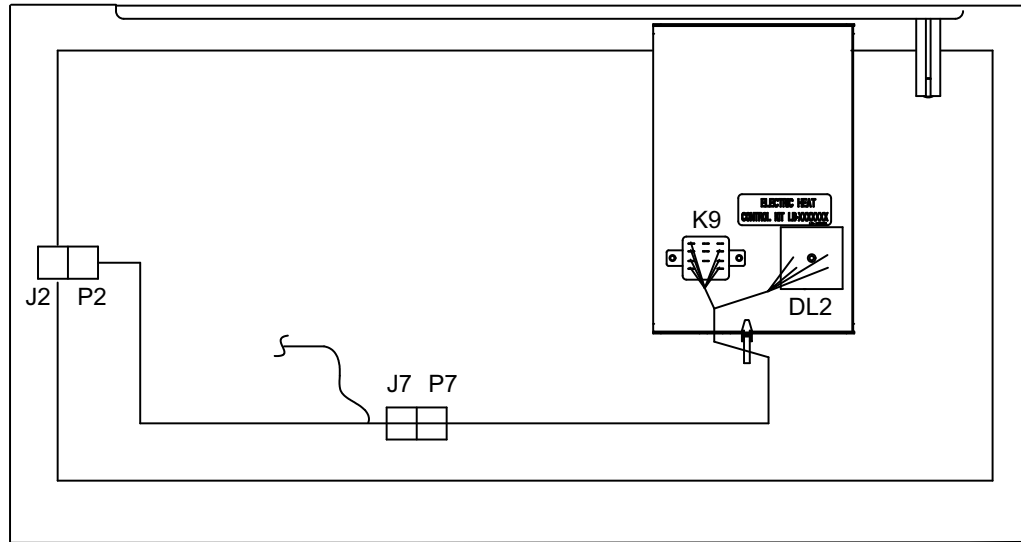


FIGURE 5

WIRING DIAGRAM LOCATION

AFFIX WIRING
DIAGRAM

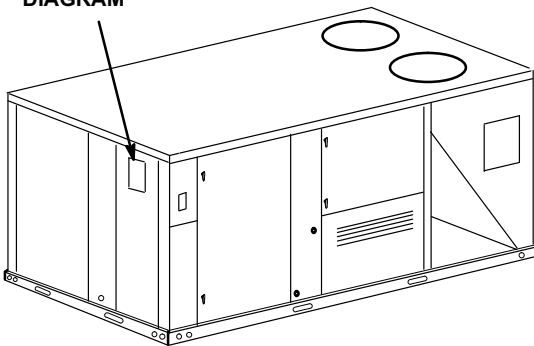


FIGURE 6

Install Door Assembly

- 1- Secure door frame on inside of filter access and heating/blower access mullions. Use existing screws. See figure 7.
- 2- Install hinges on electric heat door.
- 3- Install knob on electric heat door.
- 4- Install spring latch to door frame with #8 screws (provided).
- 5- Secure electric heat door hinges onto door frame. Make sure door opens to the right. Make sure door opens and closes properly; adjust hinges if necessary.

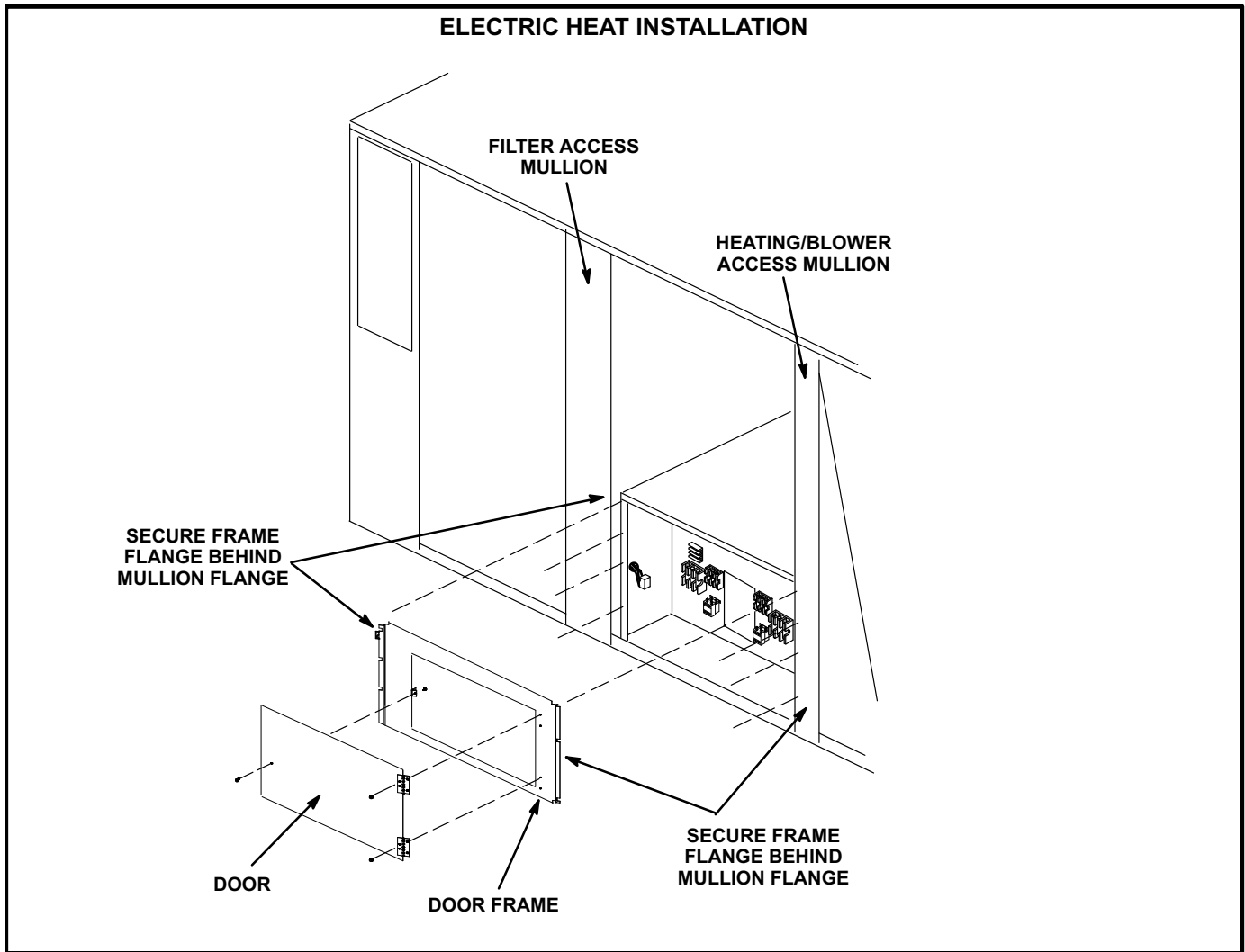


FIGURE 7

Blower Speed Requirements

EHO electric heater applications require specific blower air volumes. Refer to page 8 for proper blower speeds.

Set Unit Controller

Use the Unit Controller manual provided with each unit to enable the appropriate number of electric heat stages.

Use the following menu:

Settings>Install>Electric Heat Stages

Unit Start-Up (Heating Cycle)

Set room thermostat for proper heat or auto operation if switching subbase is used. Close disconnect switch and position heat setpoint lever above room temperature. Refer to unit installation instructions for additional information on start-up operations and adjustments.

Heating Operation

Cooling Units:

Single Stage (7.5 & 15KW)

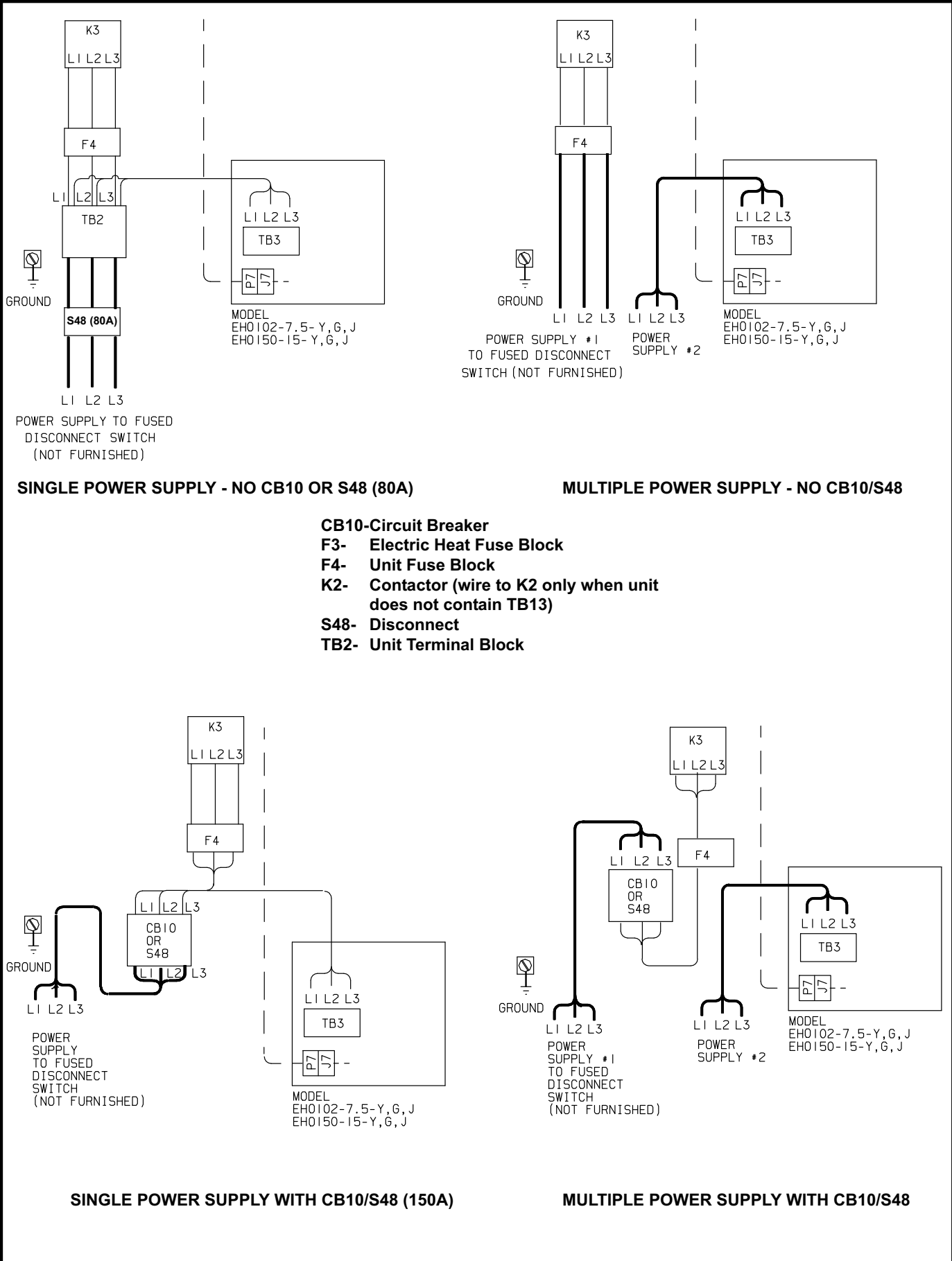
A W1 thermostat demand will energize the first stage of electric heat.

Two Stage (22.5, 30, 45, & 60KW)

A W1 thermostat demand will energize the first stage of electric heat. A W2 thermostat demand will energize the second stage of electric heat after a 30-second delay.

Heat Pump Units:

A W1 thermostat demand will energize both compressors in heating mode (reversing valves are not energized). A W2 thermostat demand will energize the first stage of electric heat in addition to compressors operating in heat pump mode. For 22.5 through 30KW electric heat, the second stage of electric heat will be energized after a 30-second delay.



SINGLE POWER SUPPLY - NO CB10 OR S48 (80A)

MULTIPLE POWER SUPPLY - NO CB10/S48

- CB10-Circuit Breaker**
- F3- Electric Heat Fuse Block**
- F4- Unit Fuse Block**
- K2- Contactor (wire to K2 only when unit does not contain TB13)**
- S48- Disconnect**
- TB2- Unit Terminal Block**

SINGLE POWER SUPPLY WITH CB10/S48 (150A)

MULTIPLE POWER SUPPLY WITH CB10/S48

FIGURE 8

PACKAGED COOLING AND HEAT PUMP 092, 102, 120, 150 BLOWER PERFORMANCE

Air Volume cfm (L/s)	Total Static Pressure - in. w.g. (Pa)																			
	.20 (50)		.40 (100)		.60 (150)		.80 (200)		1.00 (250)		1.20 (300)		1.40 (350)		1.60 (400)		1.80 (450)		2.00 (495)	
	RPM	BHP kW	RPM	BHP kW	RPM	BHP kW	RPM	BHP kW	RPM	BHP kW	RPM	BHP kW	RPM	BHP kW	RPM	BHP kW	RPM	BHP kW	RPM	BHP kW
2250 (1060)	612	0.12 (0.09)	661	0.39 (0.29)	713	0.67 (0.50)	769	0.96 (0.72)	827	1.23 (0.92)	885	1.45 (1.08)	938	1.60 (1.19)	989	1.71 (1.28)	1040	1.84 (1.37)	1092	1.99 (1.49)
2500 (1180)	628	0.29 (0.22)	676	0.55 (0.41)	728	0.83 (0.62)	782	1.11 (0.83)	839	1.37 (1.02)	896	1.58 (1.18)	949	1.72 (1.28)	1001	1.84 (1.37)	1053	1.99 (1.49)	1105	2.17 (1.62)
2750 (1300)	645	0.47 (0.35)	692	0.72 (0.54)	742	0.99 (0.74)	796	1.26 (0.93)	852	1.51 (1.13)	908	1.71 (1.28)	961	1.86 (1.39)	1013	2.00 (1.49)	1066	2.17 (1.62)	1119	2.36 (1.76)
3000 (1415)	662	0.65 (0.49)	708	0.90 (0.67)	758	1.16 (0.87)	811	1.42 (1.06)	866	1.66 (1.24)	921	1.86 (1.39)	974	2.01 (1.50)	1026	2.17 (1.62)	1080	2.35 (1.75)	1134	2.56 (1.91)
3250 (1535)	681	0.84 (0.63)	726	1.08 (0.81)	774	1.34 (1.00)	826	1.59 (1.19)	881	1.83 (1.37)	935	2.01 (1.50)	988	2.17 (1.62)	1041	2.35 (1.75)	1095	2.56 (1.91)	1150	2.77 (2.07)
3500 (1650)	700	1.04 (0.78)	744	1.28 (0.96)	792	1.53 (1.14)	843	1.78 (1.33)	897	2.00 (1.49)	951	2.19 (1.63)	1004	2.36 (1.76)	1058	2.56 (1.91)	1112	2.77 (2.07)	1166	2.99 (2.23)
3750 (1770)	721	1.25 (0.93)	764	1.49 (1.11)	811	1.73 (1.29)	862	1.97 (1.47)	916	2.19 (1.63)	969	2.38 (1.78)	1022	2.57 (1.92)	1075	2.78 (2.07)	1129	3.00 (2.24)	1184	3.23 (2.41)
4000 (1890)	744	1.48 (1.10)	786	1.71 (1.28)	833	1.95 (1.46)	883	2.19 (1.63)	936	2.40 (1.79)	989	2.60 (1.94)	1042	2.80 (2.09)	1094	3.03 (2.26)	1148	3.25 (2.43)	1203	3.48 (2.60)
4250 (2005)	768	1.73 (1.29)	810	1.95 (1.46)	856	2.19 (1.63)	907	2.42 (1.81)	960	2.64 (1.97)	1011	2.84 (2.12)	1063	3.06 (2.28)	1115	3.29 (2.45)	1168	3.51 (2.62)	1222	3.74 (2.79)
4500 (2125)	794	1.99 (1.49)	836	2.22 (1.66)	882	2.45 (1.83)	933	2.68 (2.00)	985	2.90 (2.16)	1035	3.12 (2.33)	1085	3.34 (2.49)	1137	3.56 (2.66)	1189	3.79 (2.83)	1243	4.01 (2.99)
4750 (2240)	822	2.28 (1.70)	864	2.50 (1.87)	911	2.74 (2.04)	962	2.97 (2.22)	1011	3.19 (2.38)	1059	3.42 (2.55)	1109	3.64 (2.72)	1159	3.86 (2.88)	1211	4.08 (3.04)	1264	4.30 (3.21)
5000 (2360)	853	2.59 (1.93)	896	2.82 (2.10)	943	3.06 (2.28)	992	3.29 (2.45)	1038	3.51 (2.62)	1085	3.74 (2.79)	1133	3.95 (2.95)	1183	4.16 (3.10)	1234	4.38 (3.27)	1287	4.59 (3.42)
5250 (2475)	886	2.93 (2.19)	930	3.17 (2.37)	976	3.41 (2.54)	1022	3.64 (2.72)	1066	3.86 (2.88)	1111	4.07 (3.04)	1158	4.28 (3.19)	1207	4.48 (3.34)	1258	4.69 (3.50)	1309	4.90 (3.66)
5500 (2595)	922	3.31 (2.47)	966	3.55 (2.65)	1010	3.78 (2.82)	1052	4.01 (2.99)	1094	4.22 (3.15)	1138	4.42 (3.30)	1184	4.62 (3.45)	1232	4.81 (3.59)	1282	5.01 (3.74)	1333	5.21 (3.89)
5750 (2715)	960	3.73 (2.78)	1002	3.96 (2.95)	1041	4.19 (3.13)	1081	4.40 (3.28)	1122	4.60 (3.43)	1166	4.78 (3.57)	1211	4.96 (3.70)	1258	5.15 (3.84)	1307	5.34 (3.98)	1357	5.53 (4.13)
6000 (2830)	998	4.17 (3.11)	1035	4.40 (3.28)	1072	4.61 (3.44)	1111	4.81 (3.59)	1151	4.98 (3.72)	1193	5.15 (3.84)	1238	5.32 (3.97)	1284	5.49 (4.10)	1332	5.67 (4.23)	1381	5.86 (4.37)
6250 (2948)	1033	4.65 (3.47)	1067	4.85 (3.62)	1103	5.04 (3.76)	1140	5.21 (3.89)	1180	5.37 (4.01)	1221	5.53 (4.13)	1265	5.68 (4.24)						

092 & 102 models require 2800 CFM minimum air with electric heat.

120 & 150 models require 4000 CFM minimum air with electric heat.