

# Installation Instructions

# **Accessory Electric Heat**

## Foundation™ Packaged Rooftop Units

## 15 to 25 Tons

BAYHTFE318\*  
BAYHTFE336\*  
BAYHTFF336\*  
BAYHTFH336\*  
BAYHTFE354\*  
BAYHTFF354\*  
BAYHTFH354\*  
BAYHTFF372\*  
BAYHTFH372\*  
BAYHTFE418\*  
BAYHTFF436\*  
BAYHTFG436\*  
BAYHTFH436\*

BAYHTFF454\*  
BAYHTFG454\*  
BAYHTFH454\*  
BAYHTFF472\*  
BAYHTFG472\*  
BAYHTFH472\*  
BAYHTFEW18\*  
BAYHTFFW36\*  
BAYHTFHW36\*  
BAYHTFFW54\*  
BAYHTFHW54\*  
BAYHTFFW72\*  
BAYHTFHW72\*

BAYHTFED18\*  
BAYHTFFD36\*  
BAYHTFHD36\*  
BAYHTFFD54\*  
BAYHTFHD54\*  
BAYHTFFD72\*  
BAYHTFHD72\*

### **▲ SAFETY WARNING**

Only qualified personnel should install and service the equipment. The installation, starting up, and servicing of heating, ventilating, and air-conditioning equipment can be hazardous and requires specific knowledge and training. Improperly installed, adjusted or altered equipment by an unqualified person could result in death or serious injury. When working on the equipment, observe all precautions in the literature and on the tags, stickers, and labels that are attached to the equipment.

# Introduction

Read this manual thoroughly before operating or servicing this unit.

## Warnings, Cautions, and Notices

Safety advisories appear throughout this manual as required. Your personal safety and the proper operation of this machine depend upon the strict observance of these precautions.

The three types of advisories are defined as follows:



Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury. It could also be used to alert against unsafe practices.

**NOTICE**

Indicates a situation that could result in equipment or property-damage only accidents.

## Important Environmental Concerns

Scientific research has shown that certain man-made chemicals can affect the earth's naturally occurring stratospheric ozone layer when released to the atmosphere. In particular, several of the identified chemicals that may affect the ozone layer are refrigerants that contain Chlorine, Fluorine and Carbon (CFCs) and those containing Hydrogen, Chlorine, Fluorine and Carbon (HCFCs). Not all refrigerants containing these compounds have the same potential impact to the environment. Trane advocates the responsible handling of all refrigerants.

## Important Responsible Refrigerant Practices

Trane believes that responsible refrigerant practices are important to the environment, our customers, and the air conditioning industry. All technicians who handle refrigerants must be certified according to local rules. For the USA, the Federal Clean Air Act (Section 608) sets forth the requirements for handling, reclaiming, recovering and recycling of certain refrigerants and the equipment that is used in these service procedures. In addition, some states or municipalities may have additional requirements that must also be adhered to for responsible management of refrigerants. Know the applicable laws and follow them.

### **⚠ WARNING**

#### **Proper Field Wiring and Grounding Required!**

Failure to follow code could result in death or serious injury.

**All field wiring MUST be performed by qualified personnel. Improperly installed and grounded field wiring poses FIRE and ELECTROCUTION hazards. To avoid these hazards, you MUST follow requirements for field wiring installation and grounding as described in NEC and your local/state/national electrical codes.**

### **⚠ WARNING**

#### **Personal Protective Equipment (PPE) Required!**

Failure to wear proper PPE for the job being undertaken could result in death or serious injury.

Technicians, in order to protect themselves from potential electrical, mechanical, and chemical hazards, **MUST follow precautions in this manual and on the tags, stickers, and labels, as well as the instructions below:**

- **Before installing/servicing this unit, technicians MUST put on all PPE required for the work being undertaken (Examples; cut resistant gloves/sleeves, butyl gloves, safety glasses, hard hat/bump cap, fall protection, electrical PPE and arc flash clothing). ALWAYS refer to appropriate Safety Data Sheets (SDS) and OSHA guidelines for proper PPE.**
- **When working with or around hazardous chemicals, ALWAYS refer to the appropriate SDS and OSHA/GHS (Global Harmonized System of Classification and Labelling of Chemicals) guidelines for information on allowable personal exposure levels, proper respiratory protection and handling instructions.**
- **If there is a risk of energized electrical contact, arc, or flash, technicians MUST put on all PPE in accordance with OSHA, NFPA 70E, or other country-specific requirements for arc flash protection, PRIOR to servicing the unit. NEVER PERFORM ANY SWITCHING, DISCONNECTING, OR VOLTAGE TESTING WITHOUT PROPER ELECTRICAL PPE AND ARC FLASH CLOTHING. ENSURE ELECTRICAL METERS AND EQUIPMENT ARE PROPERLY RATED FOR INTENDED VOLTAGE.**

**⚠ WARNING****Follow EHS Policies!**

Failure to follow instructions below could result in death or serious injury.

- All Trane personnel must follow the company's Environmental, Health and Safety (EHS) policies when performing work such as hot work, electrical, fall protection, lockout/tagout, refrigerant handling, etc. Where local regulations are more stringent than these policies, those regulations supersede these policies.
- Non-Trane personnel should always follow local regulations.

**⚠ WARNING****R-454B Flammable A2L Refrigerant!**

Failure to use proper equipment or components as described below could result in equipment failure, and possibly fire, which could result in death, serious injury, or equipment damage.

The equipment described in this manual uses R-454B refrigerant which is flammable (A2L). Use ONLY R-454B rated service equipment and components. For specific handling concerns with R-454B, contact your local representative.

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# General Information

These instructions cover the installation of accessory electric heat in cooling only units. Limit control settings are listed in the following chart.

**Table 1. Limit control settings (in Deg. F)**

Heater Rated Voltage	Downflow and Horizontal
240	160
460	150
600	150

The following tables show the air temperature rise across the electric heaters:

**Table 2. Air temperature rise across electric heaters - cooling - 60 Hz**

kW	Stages	EDK180 NOM. CFM 6000	EDK210 NOM. CFM 7000	EDK240 NOM. CFM 8000	EDK300 NOM. CFM 9000
18	1	9.5	–	–	–
36	2	19.0	16.3	14.2	12.6
54	2	28.5	24.4	21.3	19.0
72	2	–	32.5	28.5	25.3

**Table 3. Air temperature rise across electric heaters - cooling - 50 Hz**

kW	Stages	EA*180AD NOM. CFM 6000	EA*210AD NOM. CFM 7000	EA*240AD NOM. CFM 8000	EA*300AD NOM. CFM 9000
18	1	9.5	–	–	–
36	2	19.0	20.3	16.3	16.3
54	2	28.5	30.5	24.5	24.5
72	2	37.9	40.6	32.5	32.5

# Inspection

1. Unpack all components of the kit.
2. Check carefully for shipping damage. If any damage is found, report it immediately, and file a claim against the transportation company.

# Parts List

**Table 4. Parts list**

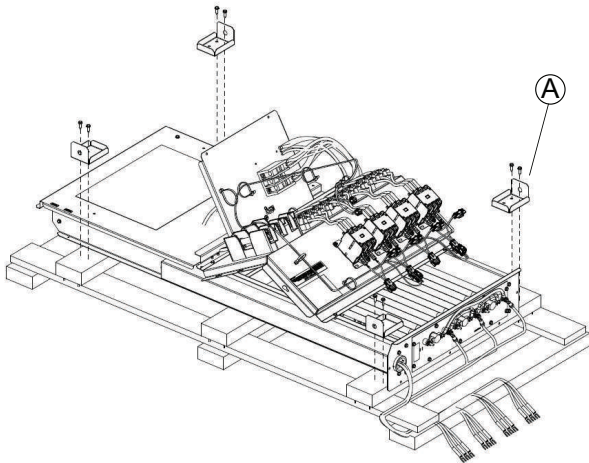
Qty	Description
1	Heater element assembly
1	Heater control assembly
31	3/4-in. Sheet metal screws
4	1/2-in. Blunt point screws
1	Hinged access panel with support pre-assembled
1	Wiring diagram(s)
1	Foam tape
1	Conduit plates (one or more with different size holes)
12	Wire ties

# Installation

## Removing Heater from Packaging

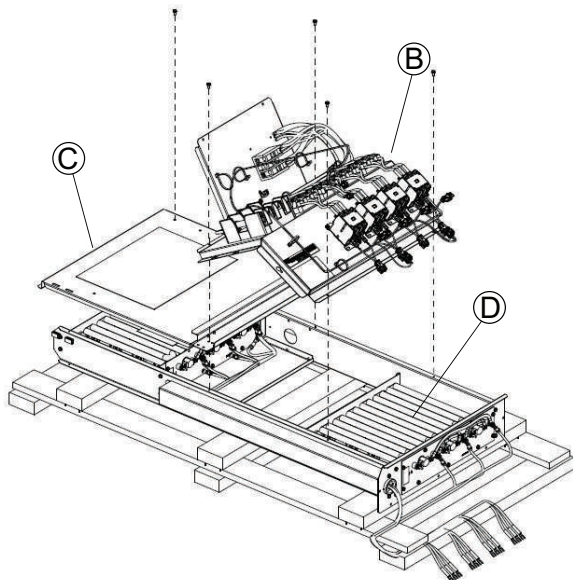
1. Remove all cardboard supports from the box.
2. Unfasten and discard the four L-brackets (A) along with the eight screws holding the heater assembly to the wooden base.

Figure 1. Remove L Brackets



3. Remove and discard five screws in order to separate the control panel (B) and the hinged access door (C) from the electric heater, as shown in figure below.

Figure 2. Remove screws and cardboard pad



4. Remove the cardboard pad (D) from the top of the front heater element before installing the heater.

## Heater Installation

### ⚠ WARNING

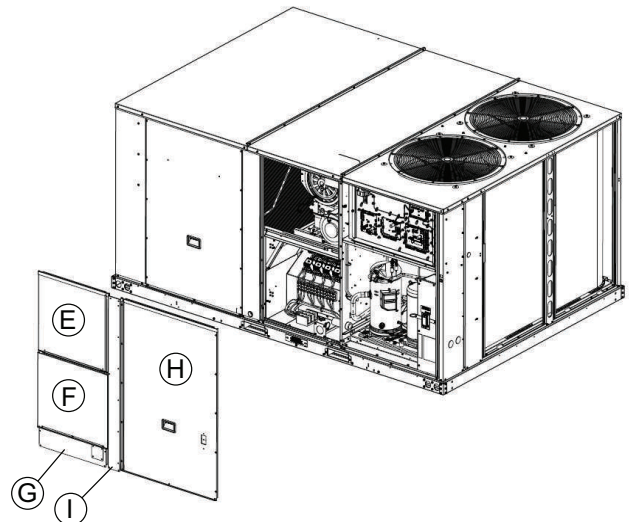
#### Hazardous Voltage!

Failure to disconnect power before servicing could result in death or serious injury.

Disconnect all electric power, including remote disconnects before servicing. Follow proper lockout/tagout procedures to ensure the power can not be inadvertently energized. Verify that no power is present with a voltmeter.

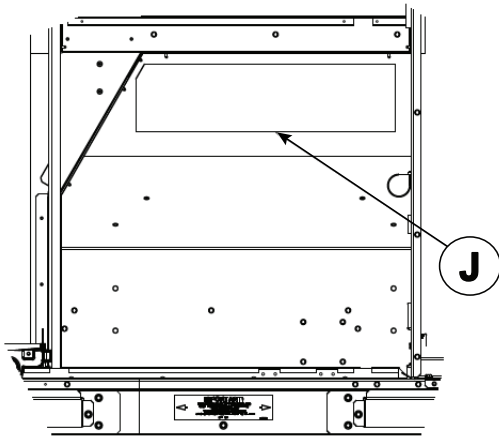
1. Open and lock unit disconnect.
2. Remove indoor fan panel (E), electric heater panel (F), power conduit entry panel (G), compressor access panel (H), and vertical post (I). See figure below.

Figure 3. Remove panels and post



3. Remove the pre-cut piece of insulation (J) located over the removable heater access panel. See figure below.

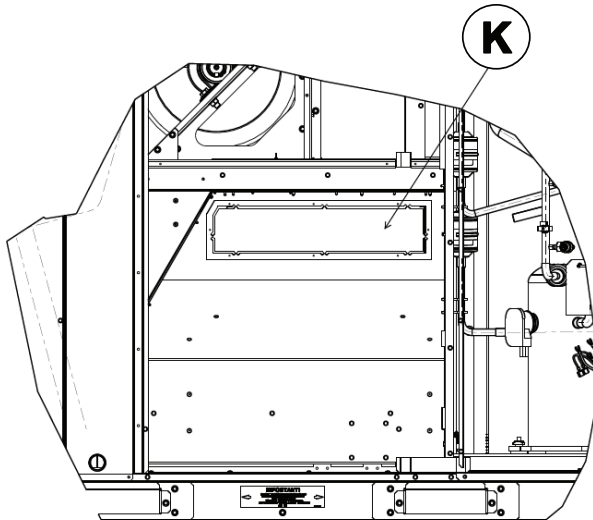
Figure 4. Remove insulation



4. Cut or break tabs around the perimeter of the removable panel (K) exposed in previous step, and discard panel. See figure below.

**Important:** On downflow units, ensure panel does not fall inside unit and into duct work.

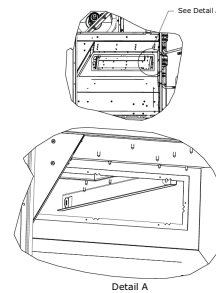
Figure 5. Remove heater access panel



5. Through the opening, locate the bracket attached to the indoor fan panel on top (see figure below). Insert heater at an angle into opening while holding the rear side higher than the front. As heater is inserted through the opening, this insures the heater flanges are above the bracket flanges in the unit. The heater flanges rest on the flanges of the support brackets located inside and to the rear of the area where heater is being installed. Slide heater assembly over the flanges, all the way through.

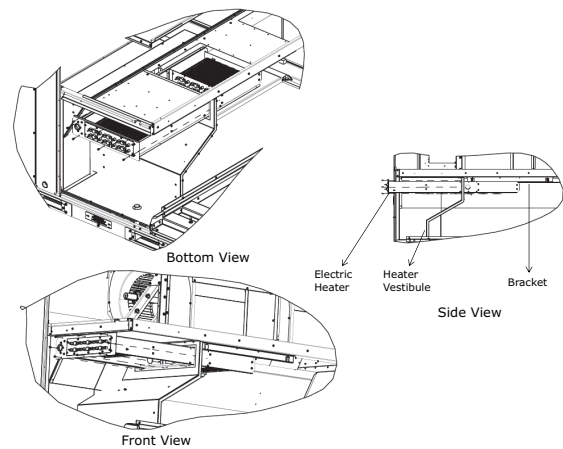
**Note:** Confirm the flange side of the heater back plate is on top.

Figure 6. Support brackets inside the opening



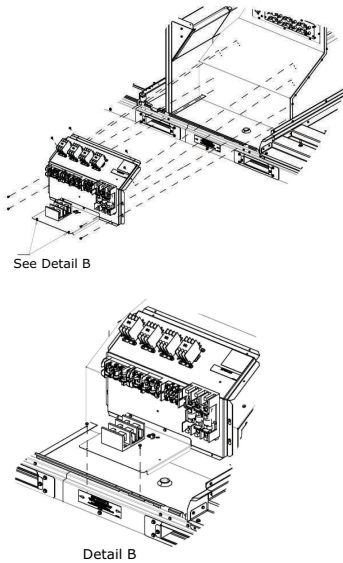
6. Secure heater with 3/4-inch sheet metal screws provided in the ship-with packet, shooting through the pre-drilled holes. See figure below.

Figure 7. Slide heater into opening



7. Using the remaining screws, install the heater control assembly on to the vestibule as illustrated below.

**Figure 8. Install control assembly**



**Important:** Use the wiring diagram provided to perform following steps.

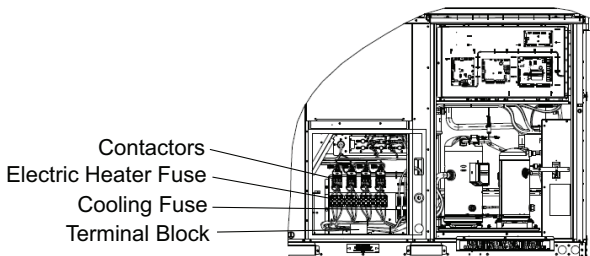
8. Attach the wires hanging from the heater to the corresponding contactors.

**Note:** The heater opening on the left carries power wires from the far heater and will be sealed off for the 18kW model since there is one row of element in the front.

9. Uncoil the power wire harness in the cardboard sleeve provided with the kit. Route and secure the leads, one end to the unit cooling fuse in the heater control panel and the other end to the terminal block in the unit control box.

**Note:** The wires need to be routed through holes provided in the outdoor section partition panel.

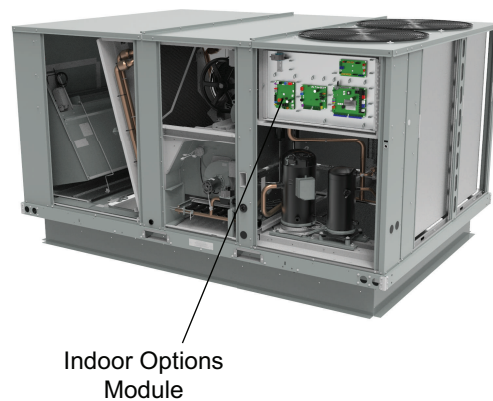
**Figure 9. Connect heater control panel**



10. Connect the heater element wire harness(es) to the contactors.
11. Connect the wire harness from the terminal block to the bottom side of the heater fuse blocks. Pay close attention to the proper L1/L2/L3 connections for each circuit and wire number (for heater 1A, 1B, 2A or 2B).

12. Connect the wire harness from the terminal block to the main power fuse block.
13. Route wires from Fuse 6-8 (control box fusing) up through heater side of bulkhead wall top opening into closest opening in main control box. Route wire across lower section of main control box to HTB1. Refer to unit level device location sheet for HTB1 location. Be sure pressure lugs on HTB1 are torqued to spec. Refer to label on side of HTB1 for the proper torque based on wire gauge being installed.
14. Connect control harness to connectors on the electric heat contactors and route harness to the main control box.
  - a. Refer to INSERT FIGURE for Indoor Options Module (IOM) location. Connect the control voltage harnesses from the contactors to the IOM by plugging them into the designated hanging connectors. For Stage 1, use J6 connector, and for Stage 2 (if installed), use J7 connector.
  - b. Refer to schematic for electrical connections. Harness routes through heater side of bulkhead wall then directly into the panel mount connector PPF323 connects to IOM-J6 & PPF324 connects to IOM-J7 located into lower left opening in main control box.

**Figure 10. Indoor options access**



15. Attach the post and the power conduit entry panel back on to the unit. Remove the plate covering the conduit entry opening.
 

**Note:** There are a number of conduit plates provided. Choose the one with a hole of the correct size for the conduit that will be used.
16. Apply foam tape around the perimeter of the conduit plate to provide a water tight seal, then connect conduit

## Installation

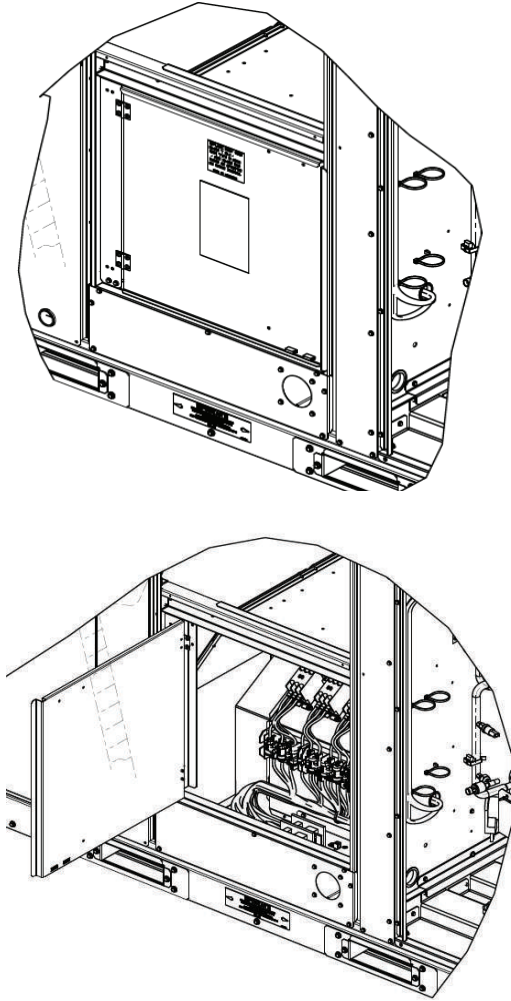
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to the terminal block in the electric heater control panel. Ground unit at grounding lug provided on electric heater control panel assembly.

17. Attach the hinged access door assembly. Position door with outer tab flush against the post. Fasten the door support to the power conduit entry panel on the bottom and the gusset plate on the top rear side of the support. See figure below.

18. Replace all the panels removed in step 2.

**Figure 11. Install hinged access door assembly**





**19. For Through the Base Electric Connections:**  
 Customer conduit connects to the unit disconnect. The power wires from the disconnect are routed under the unit control box, along the outdoor section partition panel and into the electric heater section. These wires

need to be connected to the terminal block provided in the electric heater controls assembly.

Refer to the Installation Instructions provided with the Through the Base Electric Accessory kit for more details.

**Table 5. Unit wiring with electric heat (single point connection — 60 Hz)**

Tons	Unit Model Number	Heater Model Number	Heater kW Rating	Control Stages	Standard Indoor Motor		Oversized Indoor Motor	
					MCA	Max Fuse Size or Max Circuit Breaker	MCA	Max Fuse Size or Max Circuit Breaker <sup>(a)</sup>
<b>208/230 Volts Three Phase</b>								
15	EDK180A3	BAYHTFE318A	13.5/18	1	70	100	74	100
		BAYHTFE336A	27/36	2	107/122	110/125	112/127	125/150
		BAYHTFE354A	40.5/54	2	154/143	175	159/148	175
17.5	EDK210A3	BAYHTFF336A	27/36	2	112/127	125/150	120/135	125/150
		BAYHTFF354A	40.5/54	2	159/148	175	167/156	175
		BAYHTFF372A	54/72	2	169/192	200/225	177/200	200/225
20	EDK240A3	BAYHTFF336A	27/36	2	112/127	125/150	120/135	150
		BAYHTFF354A	40.5/54	2	159/148	175	167/156	175
		BAYHTFF372A	54/72	2	169/192	200/225	177/200	200/225
25	EDK300A3	BAYHTFH336A	27/36	2	121/135	150	127/142	175
		BAYHTFH354A	40.5/54	2	167/156	175	174/163	175
		BAYHTFH372A	54/72	2	177/200	200/225	183/206	200/225
<b>460 Volts Three Phase</b>								
15	EDK180A4	BAYHTFE418A	18	1	35	45	37	50
		BAYHTFF436A	36	2	62	70	64	70
		BAYHTFF454A	54	2	72	90	75	90
17.5	EDK210A4	BAYHTFF436A	36	2	64	70	67	70
		BAYHTFF454A	54	2	75	90	78	90
		BAYHTFF472A	72	2	96	110	99	110
20	EDK240A4	BAYHTFG436A	36	2	64	70	67	70
		BAYHTFG454A	54	2	75	90	78	90
		BAYHTFG472A	72	2	96	110	99	110
25	EDK300A4	BAYHTFH436A	36	2	67	80	72	80
		BAYHTFH454A	54	2	78	90	82	90
		BAYHTFH472A	72	2	99	110	104	110
<b>575 Volts Three Phase</b>								
15	EDK180AW	BAYHTFEW18A	18	1	28	40	30	40
		BAYHTFFW36A	36	2	50	50	51	60
		BAYHTFFW54A	54	2	58	70	60	70
17.5	EDK210AW	BAYHTFFW36A	36	2	51	60	54	60
		BAYHTFFW54A	54	2	60	70	63	70
		BAYHTFFW72A	72	2	77	90	80	90
20	EDK240AW	BAYHTFHW36A	36	2	51	60	54	60
		BAYHTFHW54A	54	2	60	70	63	70
		BAYHTFHW72A	72	2	77	90	80	90

# Installation

**Table 5. Unit wiring with electric heat (single point connection — 60 Hz) (continued)**

Tons	Unit Model Number	Heater Model Number	Heater kW Rating	Control Stages	Standard Indoor Motor		Oversized Indoor Motor	
					MCA	Max Fuse Size or Max Circuit Breaker	MCA	Max Fuse Size or Max Circuit Breaker <sup>(a)</sup>
25	EDK300AW	BAYHTFHW36A	36	2	54	60	58	60
		BAYHTFHW54A	54	2	63	70	66	70
		BAYHTFHW72A	72	2	80	90	84	90

<sup>(a)</sup> Values do not include power exhaust accessory.

**Table 6. Unit wiring with electric heat (single point connection) - 50 Hz**

Tons	Unit Model Number	Heater Model Number	Heater kW Rating	Control Stages	Standard Indoor Motor		Oversized Indoor Motor	
					MCA	Max Fuse Size or Max Circuit Breaker	MCA	Max Fuse Size or Max Circuit Breaker <sup>(a)</sup>
<b>380-415 Volts Three Phase</b>								
15	EAC180AD	BAYHTFFD18A	11.3/13.5	1	42	50	—	—
		BAYHTFFD36A	22.6/26.9	2	50	50	—	—
		BAYHTFFD54A	33.8/40.4	2	71	80	—	—
17.5	EAC210AD	BAYHTFFD36A	22.6/26.9	2	50	70	53	70
		BAYHTFFD54A	33.8/40.4	2	71	80	74	80
		BAYHTFFD72A	45.1/53.8	2	93	100	96	100
20	EAC240AD	BAYHTFHD36A	22.6/26.9	2	62	80	—	—
		BAYHTFHD54A	33.8/40.4	2	74	80	—	—
		BAYHTFHD72A	45.1/53.8	2	96	100	—	—
25	EAC270AD	BAYHTFHD36A	22.6/26.9	2	62	80	—	—
		BAYHTFHD54A	33.8/40.4	2	74	80	—	—
		BAYHTFHD72A	45.1/53.8	2	96	100	—	—

<sup>(a)</sup> Values do not include power exhaust accessory.



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