

# Installation Instructions

Heater Part Numbers: CRHEATER200A00 through CRHEATER263A00  
Single Point Box Part Numbers: CSINGLE028A00 through CRSINGLE036A00

## HEATER PACKAGE CONTENTS

ITEM	QUANTITY
Heater Module	1
Wiring Label	1

## SINGLE POINT BOX PACKAGE CONTENTS

ITEM	QUANTITY
Single Point Box	1
Terminal Block	*
Wiring Label	1
Fuse Block†	*

\* Quantity varies by kit.

† If single point box has fuses, contents will include a hinged cover, rivets, and magnetic latch.

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## SAFETY CONSIDERATIONS

Improper installation, adjustment, alteration, service, maintenance, or use can cause explosion, fire, electrical shock, or other conditions which may cause personal injury or property damage. Consult a qualified installer, service agency, or your distributor or branch for information or assistance. The qualified installer or agency must use factory-authorized kits or accessories when modifying this product. Refer to the individual instructions packaged with kits or accessories when installing.

Follow all safety codes. Wear safety glasses and work gloves. Use quenching cloth for brazing operations. Have fire extinguisher available. Read these instructions thoroughly and follow all warnings or cautions attached to the unit. Consult local building codes and National Electrical Code (NEC) for special requirements.

Recognize safety information. This is the safety-alert symbol . When you see this symbol on the furnace 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 a hazard 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.

## ! CAUTION

### ELECTRICAL OPERATION HAZARD

Failure to follow this caution may cause personal injury and damage to equipment.

Field modification of electric heat staging may result in the overriding of electric heat safety switches and is prohibited.

## ! CAUTION

### PROPERTY DAMAGE HAZARD

Failure to follow this caution may result in property damage.

When removing panels from the unit, be careful not to damage the roof or other surfaces with the panels.

## GENERAL

This installation instruction covers accessory heaters CRHEATER200A00 through CRHEATER263A00. A single point box may be required for some heaters. The single point box must be ordered separately when required.

## INSTALLATION

### Heater Installation

Perform the following procedure to install the accessory electric heaters:

1. Turn off power to the unit. Install “Lock-Out Tag-Out” tag on unit disconnect or breaker.

2. Configure unit for horizontal duct configuration, if desired.

**NOTE:** The 50PG16 size requires an accessory conversion kit for converting from vertical to horizontal duct configuration.

3. Permanently mark the appropriate block on the unit nameplate for the accessory heater installed.

4. Verify unit input power wire sizing and circuit protection per requirements on the unit nameplate for the accessory heater installed.

5. Open the electric heater section, compressor section, and indoor fan section access doors. (See Fig. 1.)

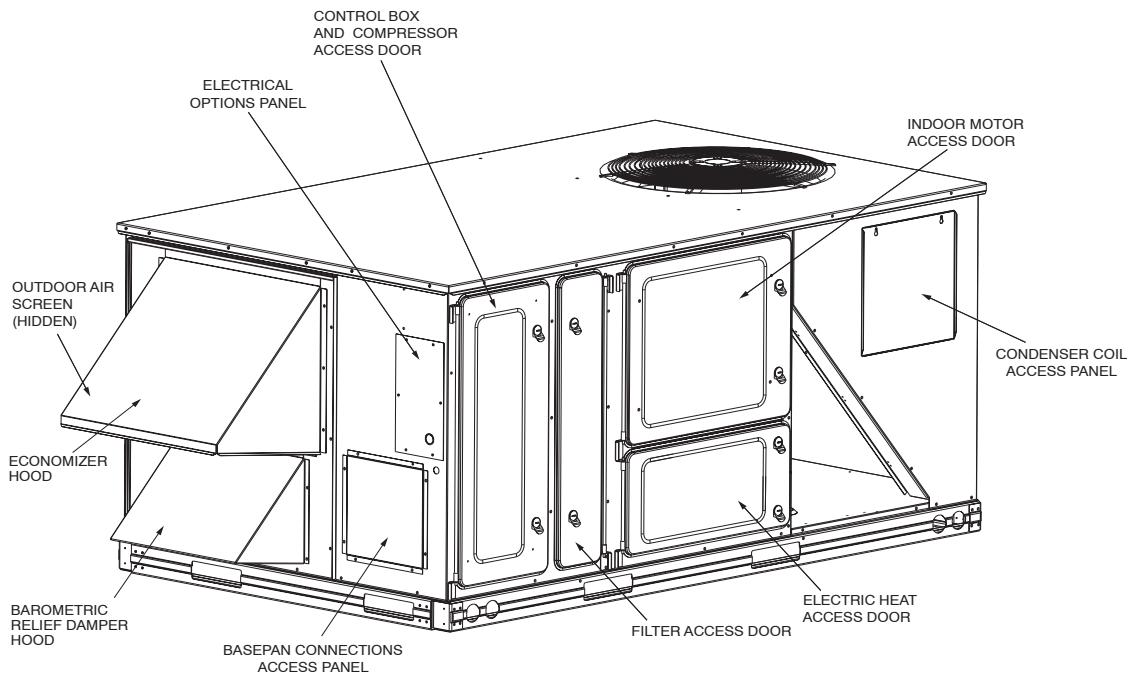
6. Remove the block-off plate from electric heater compartment and save screws. (See Fig. 2.)
  7. Slide heater module into heater compartment by aligning the heater frame with the heater opening. Do NOT handle heater assembly by the heating coils. Handle by sheet metal panel only. (See Fig. 3.)
- NOTE:** The 50PG16 heater bottom-rear flange will secure into a slot on the internal cross rail when fully installed. Check that the heater flange is straight and flat before installing.
8. Secure electric heater to unit using screws from item 6. Heater will attach to the block off plate screw holes.
  9. Route heater power wires to the left through the foam bushing and to the single point power connection box in the compressor section. (See Fig. 3 and 4.)
  10. Install the single point box, if required. Refer to the Install Single Point Box, Step 2, for details.

11. Route the control wires to the left through the foam bushing. Connect to the mating plug (PL-3) in the wire harness in the indoor fan section. Do not route 24 volt low voltage wiring beside high voltage wiring. Maintain at least a 1-2" separation.

12. Set the manual reset limit switch on the fan housing by pressing the button located between the terminals on the switch. (See Fig. 3.)

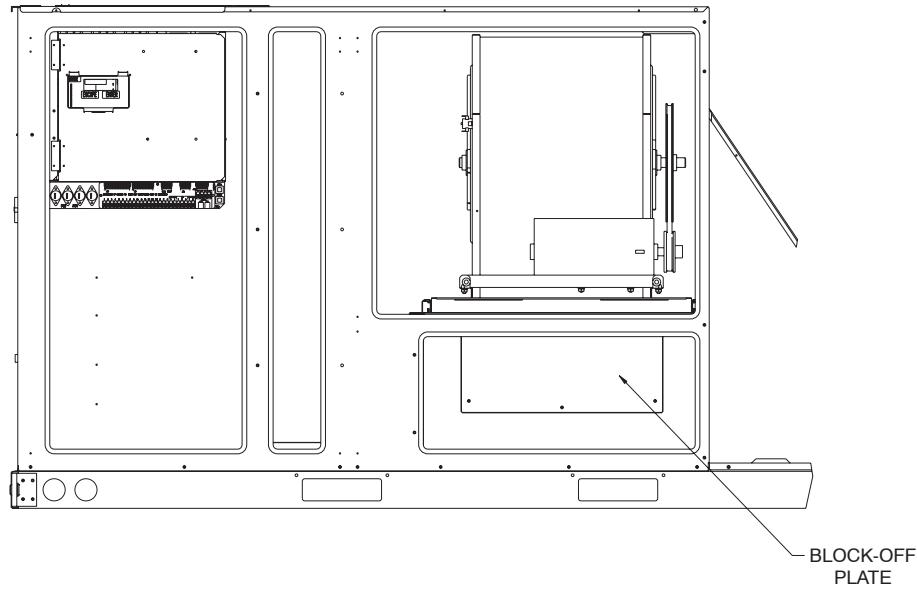
**NOTE:** This switch is added as a supplemental means to de-energize the electric heat contactor in case of indoor airflow failure. The switch should only open and require reset for a switch temperature above 200°F.

13. Apply heater wiring label to inside of electric heater section door. (See Fig. 5.)
14. Close all access doors.
15. Remove "Lock-Out Tag-Out" tag. Apply power to unit.



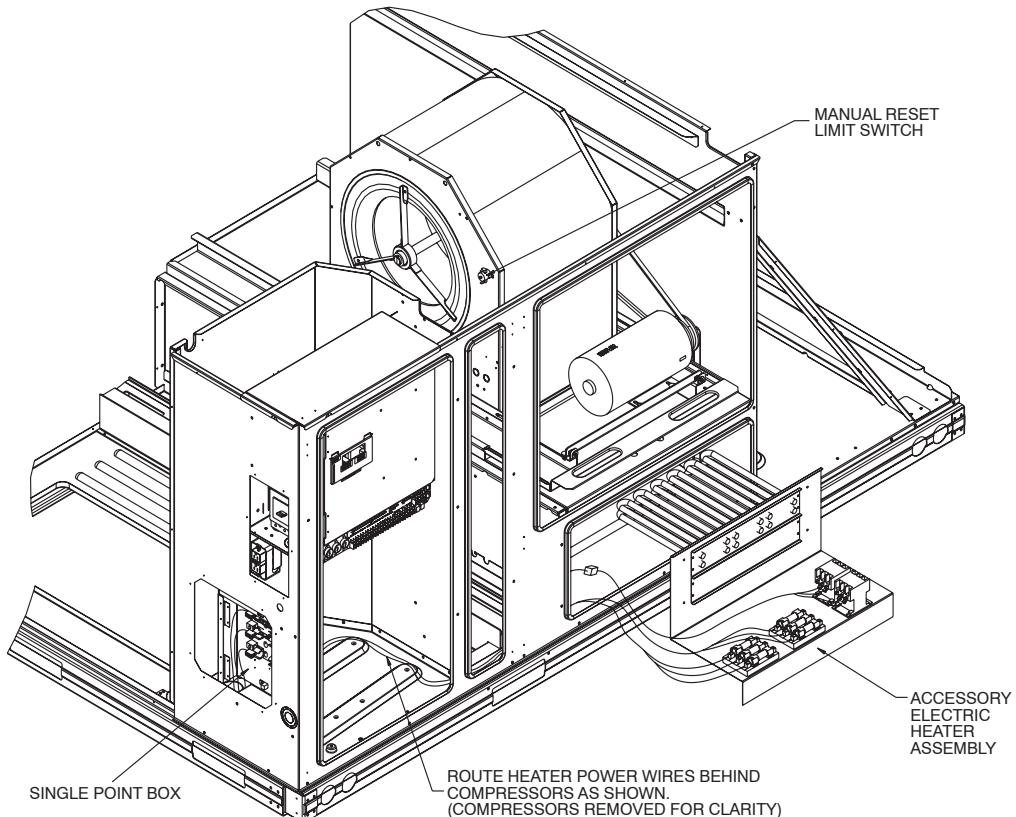
**Fig. 1 — Panel Locations**

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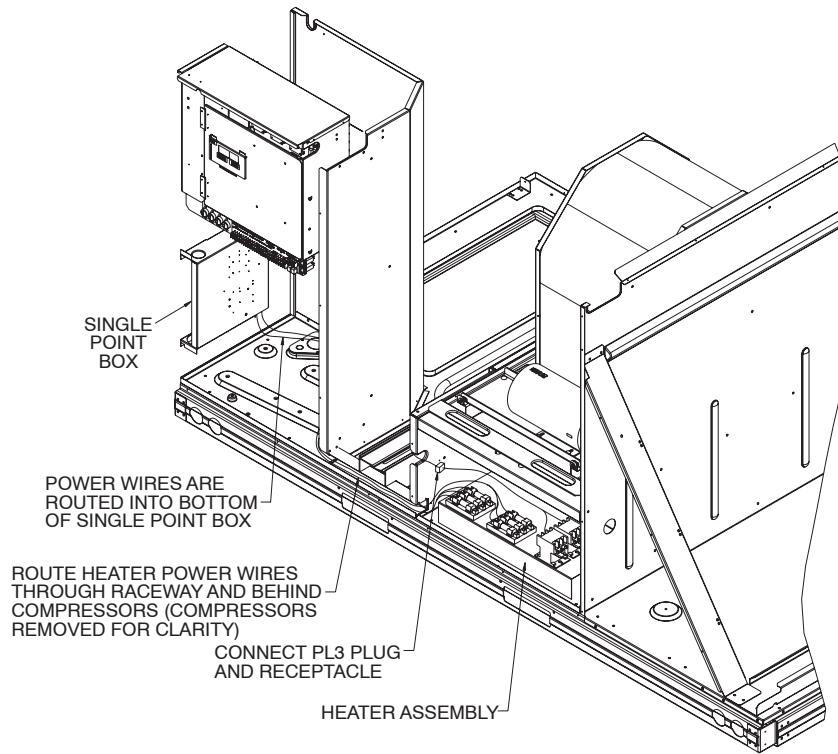
**Fig. 2 — Block-Off Plate**

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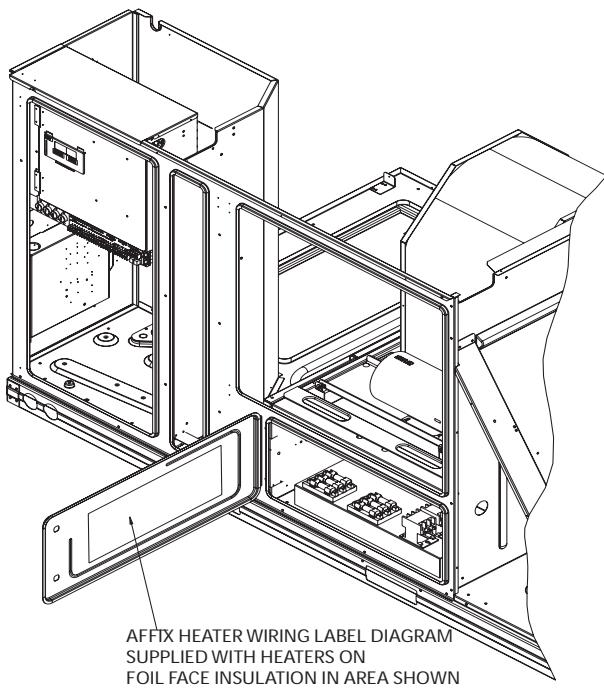


**Fig. 3 — Electric Heater Installation**

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**Fig. 4 – Electric Heater Wire Routing**

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**Fig. 5 – Heater Label Location**

### Install Single Point Box

See Tables 1 and 2 to determine the correct single point box accessory for the selected heater. The appropriate single point box is determined by the MOCP (maximum overcurrent protection) for the heater and unit combination. Refer to the correct figure for correct installation of the single point box components.

Single point accessories CRSINGLE028A00 and CRSINGLE030A00 are for use on units where the combined MOCP rating is less than 60 amps. These accessories contain

only a terminal block; no fuses are provided. Fuses are not required per the National Electrical Code in these single point accessories since the circuit is below 60 amps. Field-supplied pressure connectors (Kerneys) may be used in place of these single point boxes.

All fuses provided in the single point boxes are rated at 60 amps.

UNIT VOLTAGE	FUSE VOLTAGE RATING	UL CLASS
208/230	250	RK5
460	600	T
575	600	T

To install single point box:

1. Remove single point box access panel located on the end of the unit. Save panel and screws. (See Fig. 3.)
2. Using the screws provided, install the terminal blocks and fuse blocks (if required). (See Fig. 6-12.)
3. If required, using the wires provided, connect the terminal block to the fuse block. (See Fig. 13-22.)
4. Route power wires from the control box and electric heaters into the single point box. Route power wires from the disconnect into the single point box through power entry hole located next to the access panel. Make all wiring connections.
5. If single point box has fuses, install hinged cover using rivets provided. Install magnetic latch in rectangular hole. (See Fig. 7-10 and 12.)
6. Install wiring label on back of single point box access panel or on hinged cover.
7. Replace single point box access panel removed in item 1.

### Configuring the *ComfortLink™* Control

The *ComfortLink* control must be configured for Electric Heat (default is No Heat). In addition, if a single-stage electric heater has been installed, it will be necessary to change the N.HTR configuration (2 is the default setting). These configurations are changed through the Scrolling Marquee Display or a Carrier network device.

**NOTE:** Consult the Controls and Troubleshooting Guide for in-depth instructions on using and configuring the *ComfortLink* control. The following instructions are written for the Scrolling Marquee Display or Navigator™ accessory.

1. The *ComfortLink* control must be configured to use the electric heater accessory. A password may be required to edit the configurations depending on the previous settings configured in the unit. Default password is “1111.”
2. To configure the *ComfortLink* control, use the arrow keys to scroll the red LED on the display to the “Configuration” position and press ENTER.
3. Use the arrow keys to scroll down until the display shows “HEAT.” This is the Heating Configuration Sub Mode. Press ENTER.
4. The *ComfortLink* control will display the Type of Heat (HT.TY) setting. Press ENTER once to select the HT.TY setting for configuration. Press ENTER again. A “0” will begin flashing.
5. Use the arrow keys to change the configuration from “0” (No Heat) to “2” (Electric Heat) and press ENTER. Press ESCAPE to save the setting.
6. For single-stage electric heaters only (10 kW or less), the Number of Heat Stages must be changed from 2 to 1.
  - a. Use the arrow keys to scroll down to the Number of Heat Stages setting (N.HTR). Press ENTER to select the N.HTR setting for configuration.
  - b. Press ENTER again. Configuration value will flash.
  - c. Use the arrow keys to change the configuration from “2” (2 stages of heat) to “1” (one stage of heat) and press ENTER.
  - d. Press ESCAPE to save the configuration change.
7. Configuration of *ComfortLink*™ control is now complete. Pressing ESCAPE multiple times will return the display to the auto-scroll setting.
8. Close and secure all access doors.

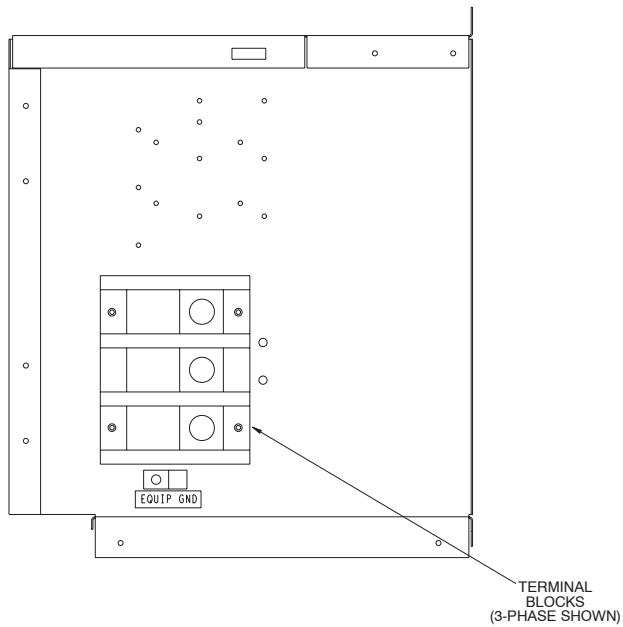
#### **THERMOSTAT CONTROL**

For heat mode to operate, the accessory thermostat must be connected to the corresponding W1 and W2 terminals on the field connection terminal board located in the unit control box.

#### **SPACE TEMPERATURE CONTROL**

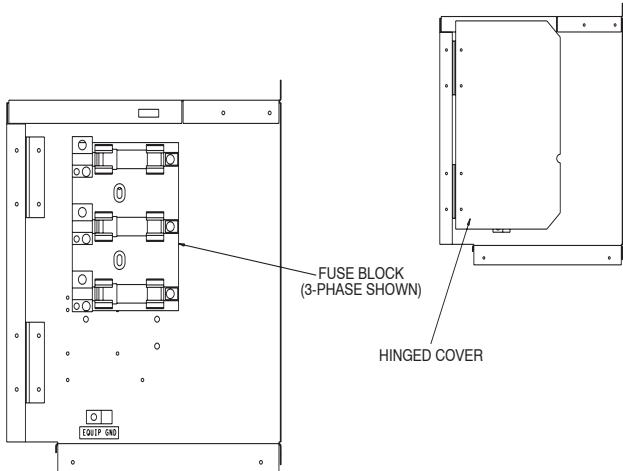
##### **(Direct Wired or CCN)**

For heat mode to operate, a jumper must be connected between R and W1 on the field-connection terminal board located in the unit control box.



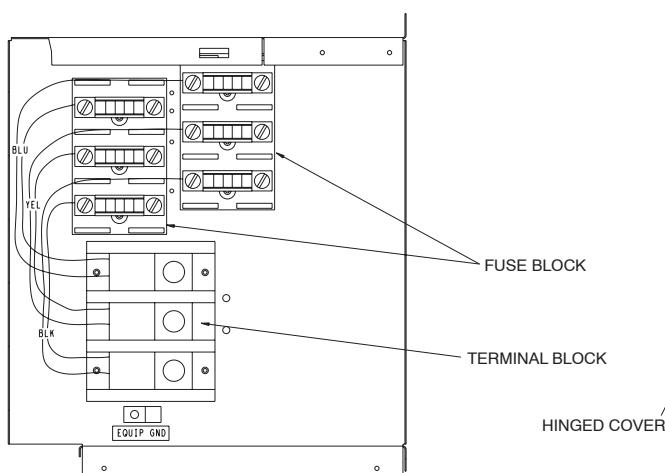
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**Fig. 6 – Single Point Box  
CRSINGLE028A00, CRSINGLE030A00**



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**Fig. 7 – Single Point Box  
CRSINGLE029A00, CRSINGLE031A00**



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**Fig. 8 – Single Point Box CRSINGLE032A00**

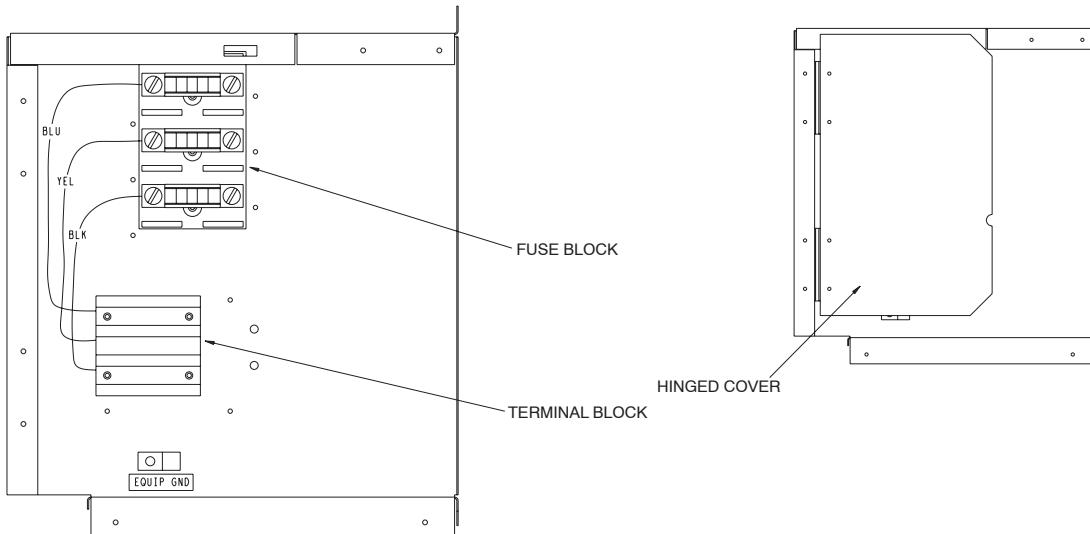


Fig. 9 — Single Point Box CRSINGLE033A00

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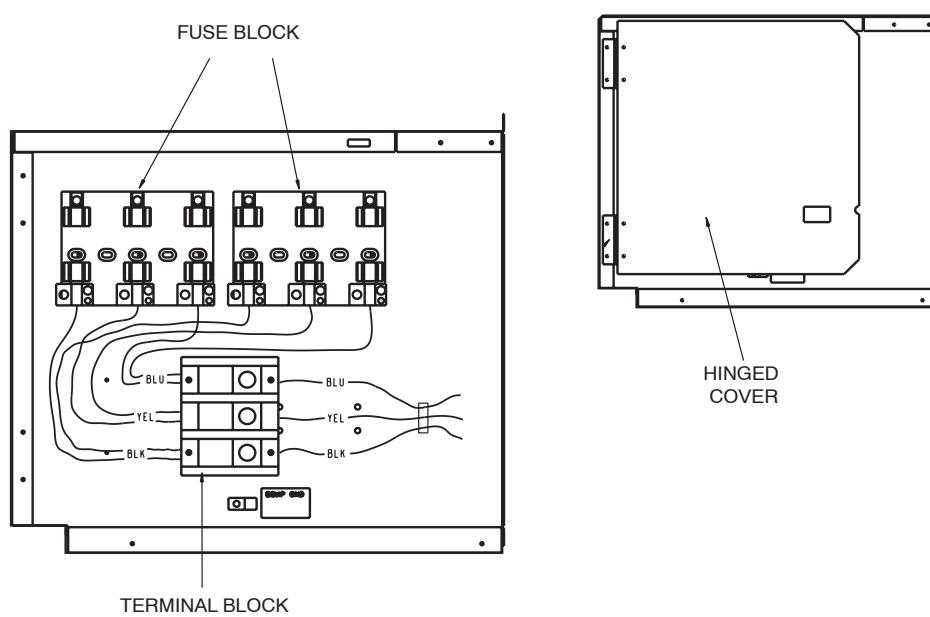


Fig. 10 — Single Point Box CRSINGLE034A00

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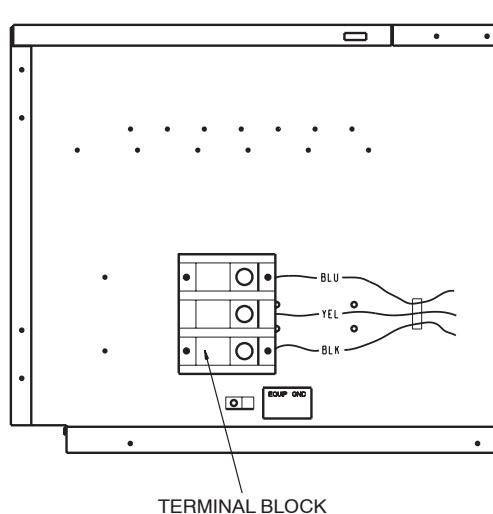
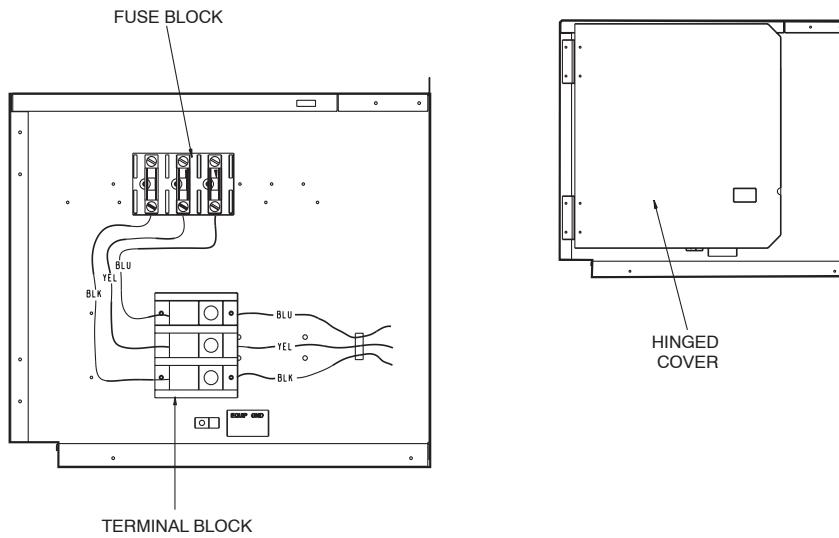


Fig. 11 — Single Point Box CRSINGLE035A00

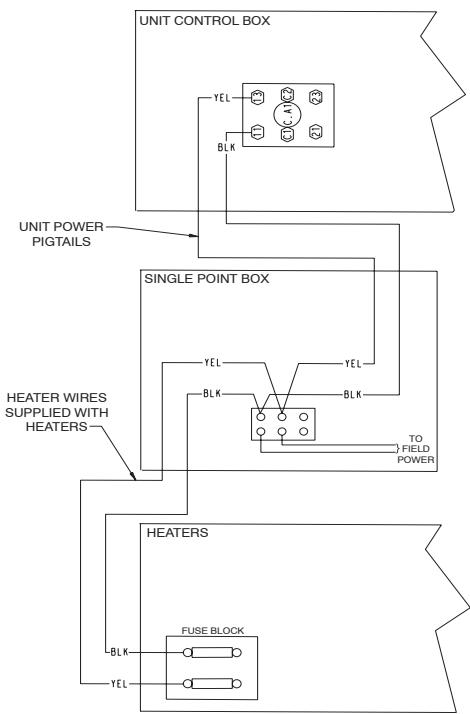
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**Fig. 12 — Single Point Box CRSINGLE036A00**

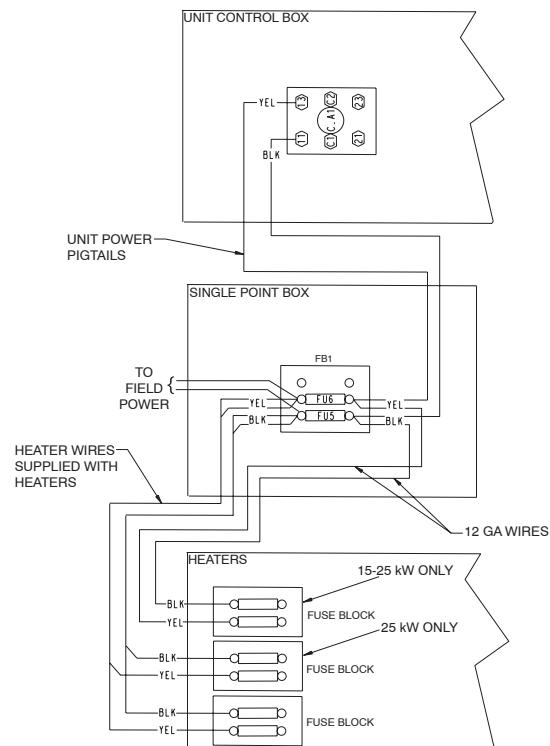
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**Fig. 13 — Heater Wiring CRSINGLE028A00**



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**Fig. 14 — Heater Wiring CRSINGLE029A00**

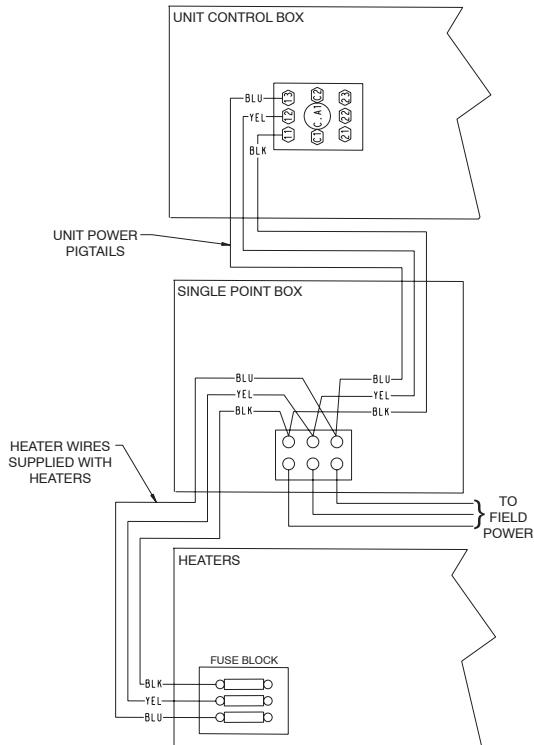


Fig. 15 – Heater Wiring CRSINGLE030A00

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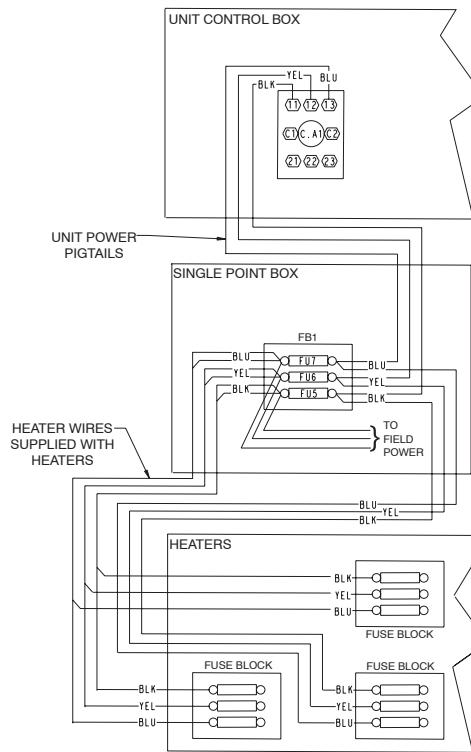
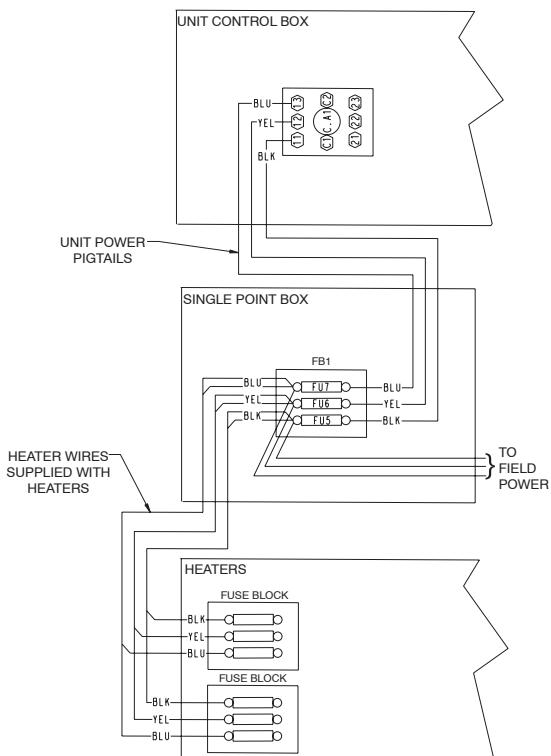


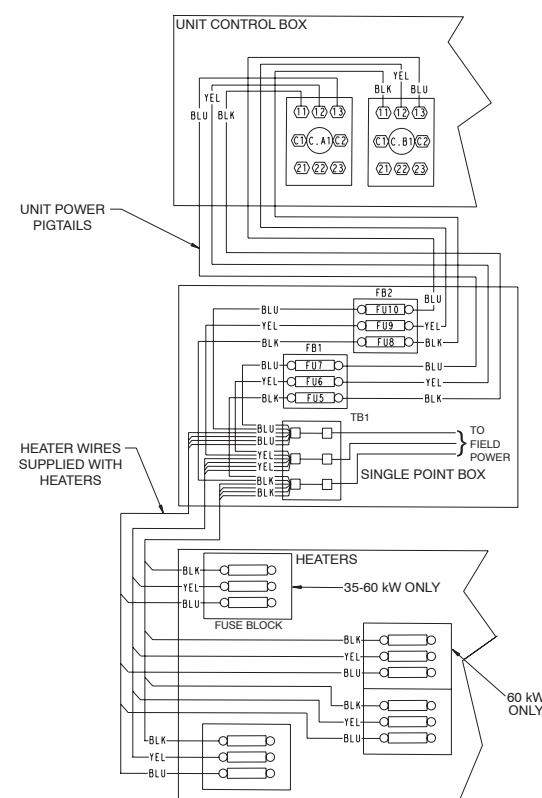
Fig. 17 – Heater Wiring CRSINGLE031A00, 35–50 kW

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Fig. 16 – Heater Wiring CRSINGLE031A00



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Fig. 18 – Heater Wiring CRSINGLE032A00

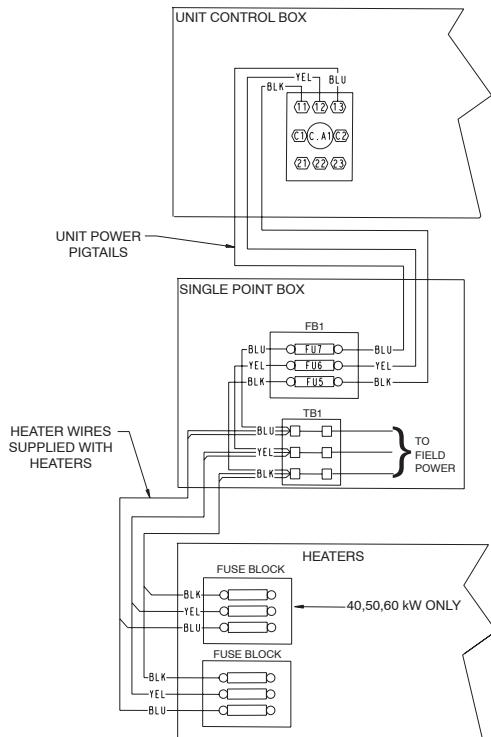


Fig. 19 – Heater Wiring CRSINGLE033A00

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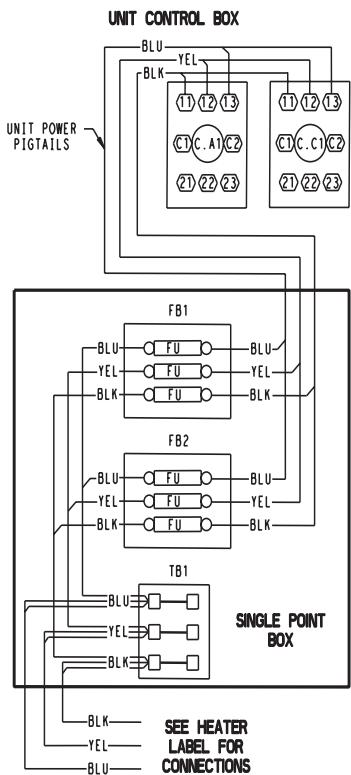


Fig. 20 – Heater Wiring CRSINGLE034A00

C06201

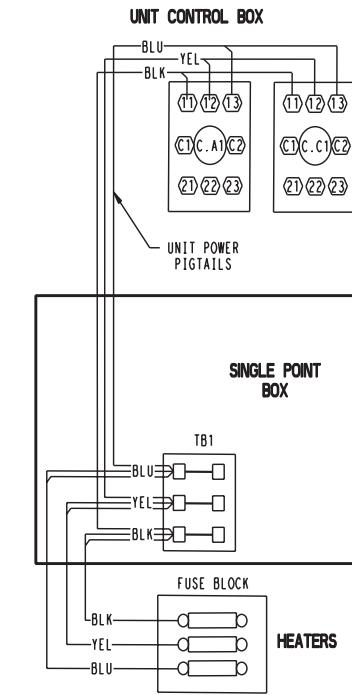


Fig. 21 – Heater Wiring CRSINGLE035A00

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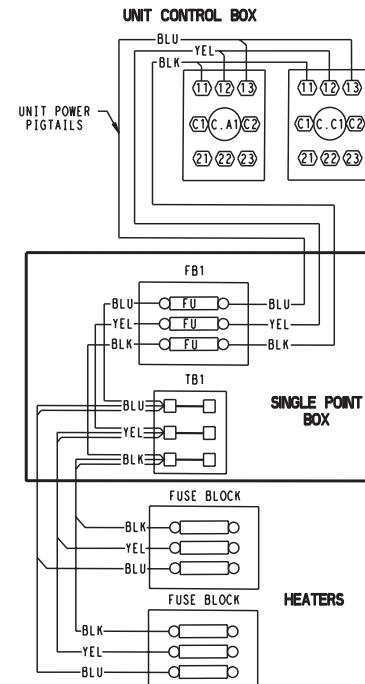


Fig. 22 – Heater Wiring CRSINGLE036A00

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**Table 1 — Electrical Data — Units Without Optional Powered Convenience Outlet (cont)**

UNIT 50PG	NOMINAL POWER SUPPLY VOLTS-PH-HZ	VOLTAGE RANGE		COMPRESSOR (EA.)		OFM FLA	IFM FLA	POWER EXHAUST FLA	IFM TYPE	ELECTRIC HEAT			POWER SUPPLY		CRSINGLE PART NO.(NOTE3)	DISCONNECT SIZE		WIRING FIG. NO.
		MIN	MAX	RLA	LRA					CRHEATER PART NO.	FLA	NOMINAL KW*	MCA	MOCPT†		FLA	LRA	
12 (cont)	575-3-60	518	632	6.1	40.0	0.8	2.8	—	Low	—	—	—	20.1	20	—	21	124	—
										239A00	13.9	15.0	20.8	25	030A00	21	124	15
										240A00	23.1	25.0	32.4	35	030A00	32	124	15
										241A00	32.3	35.0	43.9	45	030A00	42	124	15
										242A00	37.0	40.0	49.7	50	030A00	48	124	15
										243A00	46.2	50.0	49.7	60	030A00	58	124	15
							3.3	—	High	—	—	—	18.6	20	—	20	142	—
										239A00	13.9	15.0	21.4	25	030A00	20	142	15
										240A00	23.1	25.0	33.0	35	030A00	30	142	15
										241A00	32.3	35.0	45.1	45	030A00	41	142	15
										242A00	37.0	40.0	50.3	50	030A00	46	142	15
										243A00	46.2	50.0	50.3	60	030A00	57	142	15
							2.8	3.0	Low	—	—	—	21.1	25	—	23	110	—
										239A00	13.9	15.0	24.6	25	030A00	23	110	15
										240A00	23.1	25.0	36.1	40	030A00	33	110	15
										241A00	32.3	35.0	47.7	50	030A00	44	110	15
										242A00	37.0	40.0	53.4	60	030A00	49	110	15
										243A00	46.2	50.0	53.4	60	030A00	60	110	15

**LEGEND**

- FLA — Full Load Amps
- HACR — Heating, Air Conditioning and Refrigeration
- IFM — Indoor – Fan Motor
- LRA — Locked Rotor Amps
- MCA — Minimum Circuit Amps
- MOPC — Maximum Overcurrent Protection
- NEC — National Electrical Code
- OFM — Outdoor–Fan Motor
- RLA — Rated Load Amps



\* Heater capacity (kW) is based on heater voltage of 208 v, 240 v, or 480 v. If power distribution voltage to unit varies from rated heater voltage, heater kW will vary accordingly.

† Fuse or HACR circuit breaker.

NOTES:

- In compliance with NEC requirements for multimotor and combination load equipment (refer to NEC Articles 430 and 440), the overcurrent protective device for the unit shall be fuse or HACR breaker.
- Unbalanced 3-Phase Supply Voltage**  
Never operate a motor where a phase imbalance in supply voltage is greater than 2%. Use the following formula to determine the percentage of voltage imbalance.

$$\% \text{ Voltage Imbalance} = 100 \times \frac{\text{max voltage deviation from average voltage}}{\text{average voltage}}$$

Example: Supply voltage is 460-3-60



$$\begin{aligned} AB &= 224 \text{ v} \\ BC &= 231 \text{ v} \\ AC &= 226 \text{ v} \\ \text{Average Voltage} &= \frac{224 + 231 + 226}{3} \\ &= \frac{681}{3} \\ &= 227 \end{aligned}$$

Determine maximum deviation from average voltage.

$$(AB) 227 - 223 = 3 \text{ v}$$

$$(BC) 231 - 227 = 4 \text{ v}$$

$$(AC) 227 - 226 = 1 \text{ v}$$

Maximum deviation is 4 v.

Determine percent of voltage imbalance.

$$\begin{aligned} \% \text{ Voltage Imbalance} &= 100 \times \frac{4}{227} \\ &= 1.76\% \end{aligned}$$

This amount of phase imbalance is satisfactory as it is below the maximum allowable 2%.

**IMPORTANT:** If the supply voltage phase imbalance is more than 2%, contact your local electric utility company immediately.

- Single point kits CRSINGLE028A00 and CRSINGLE030A00 are not required if field-supplied pressure connectors are used.



























LEGEND	
FLA	— Full Load Amps
HACR	— Heating, Air Conditioning and Refrigeration
IFM	— Indoor – Fan Motor
LRA	— Locked Rotor Amps
MCA	— Minimum Circuit Amps
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Determine maximum deviation from average voltage.

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