Installation Guide

Electric Heater Kits

Medium Foundation Rooftops
7.5 to 12.5 Tons

Model Numbers:

EHK-10C(UL)	EHK-14F(HL)
EHK-15C(UL)	EHK-16F(HL)
EHK-25C(UL)	EHK-25F(HL)
EHK-32C(UL)	EHK-33F(HL)
EHK-41C(UL)	EHK-41F(HL)
EHK-50C(UL)	EHK-50F(HL)

⚠ 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.

November 2021 **RT-SVN036B-EN**

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:

⚠WARNING	Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
⚠CAUTION	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-including industry replacements for CFCs and HCFCs such as saturated or unsaturated HFCs and HCFCs.

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.**

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Revision History

Added 460 Volts data and Model Numbers.

Pre-Installation

Unit Inspection

To protect against loss due to damage incurred in transit, perform inspection immediately upon receipt of the unit.

Exterior Inspection

If the job site inspection reveals damage or material shortages, file a claim with the carrier immediately. Specify the type and extent of the damage on the bill of lading before signing. Notify the appropriate sales representative.

Important: *Do not proceed with installation of a damaged unit without sales representative's approval.*

- Inspect the complete exterior for signs of shipping damages to unit or packing material.
- Verify that the nameplate data matches the sales order and bill of lading.
- Verify that the unit is properly equipped and there are no material shortages.
- Verify the power supply complies with the unit nameplate specifications.

Inspection for Concealed Damage

Inspect the components for concealed damage as soon as possible after delivery and before it is stored.

If concealed damage is discovered:

- Notify the carrier's terminal of the damage immediately by phone and by mail.
- Concealed damage must be reported within 15 days.
- Request an immediate, joint inspection of the damage with the carrier and consignee.
- Stop unpacking the unit.
- Do not remove damaged material from receiving location.
- Take photos of the damage, if possible.
- The owner must provide reasonable evidence that the damage did not occur after delivery.

Parts List

- Heater elements and support frame
- Heater control assembly (including power supply and control)
- Wiring diagrams
- Screws ANSI/B-4.8*12 (5 PCS)
- Cable ties

Important:

- *The 41kW heater consists one (1) 16kW and one (1) 25 kW element.*
- *The 32kW heater consists of two (2) 16kW elements.*
- *The 50kW heater consists of two (2) 25kW elements.*

Main Components

Figure 1. Electric heater elements and support frame

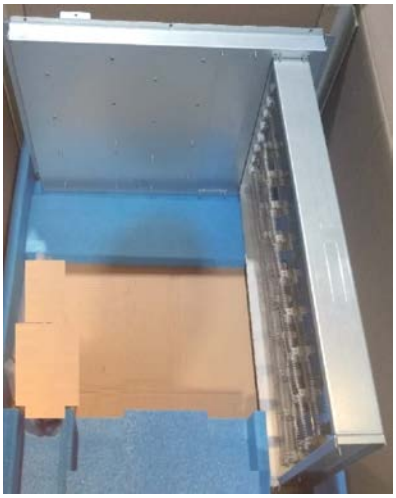


Figure 2. Control assembly

Figure 3. Wiring diagram, screws, and cable ties

Figure 4. Support plates

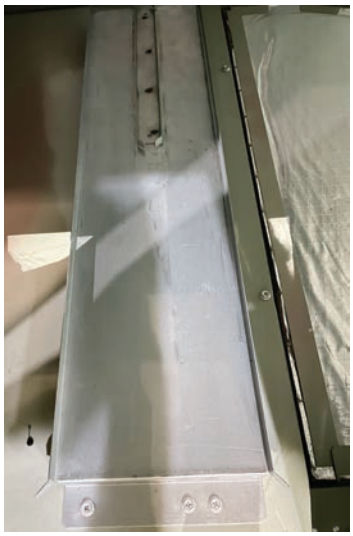


Figure 5. Support plates (shorter used with 7.5 ton)

Electric Heaters

These installation instructions apply to the following heater models:

Electric Heater Models	Nominal kW Rating
208/230 Volts Three Phase	
EHK-10CUL	10.4
EHK-15CUL	16.0
EHK-25CUL	25.0
EHK-32CUL	32.0
EHK-41CUL	41.0
EHK-50CUL	50.0
460 Volts Three Phase	
EHK-14FHL	13.9
EHK-16FHL	16.5
EHK-25FHL	25.0
EHK-33FHL	33.0
EHK-41FHL	41.5
EHK-50FHL	50.0

General Information

ALL phases of this installation must comply with NATIONAL, STATE AND LOCAL CODES. Installer must mark unit nameplate with heater information per instructions on nameplate.

Table 1. Limit control settings

Unit Model Number	Horizontal (mm)
208/230 Volts Three Phase	
EBC090A3*	1000
EBC120A3*	1000
460 Volts Three Phase	
EBC090A4*	1000
EBC102A4*	1000
EBC120A4*	1000
EBC150A4*	1000

Table 2. Air temperature rise across electric heaters (°F)

kW	Stages	10 Ton 4000 cfm	7.5 Ton 3000 cfm	8.5 Ton 3400 cfm	12.5 Ton 5000 cfm
208/230 Volts Three Phase (°F)					
10.4	1	8.2	10.7	-	-
16.0	1	12.6	14.6	-	-
25.0	1	-	22.4	-	-
32.0	2	25.3	28.2	-	-
41.0	2	32.4	37.5	-	-
50.0	2	39.5	-	-	-
460 Volts Three Phase (°F)					
13.9	1	10.5	12.4	11.8	8.7
16.5	1	13.1	15.0	14.4	11.3
25.0	1	-	22.4	22.4	-
33.0	2	26.2	29.2	28.3	22.5
41.5	2	33.0	38.2	36.1	28.2
50.0	2	39.5	-	-	33.8

Table 3. Unit wiring with electric heat (single point connection)

TONS	Unit Model Number	Heater kW Rating	Control Stages	Standard Indoor Fan Motor		Oversized Indoor Fan Motor	
				Minimum Circuit Ampacity	Maximum Fuse Size or Maximum Circuit Breaker	Minimum Circuit Ampacity	Maximum Fuse Size or Maximum Circuit Breaker
208/230 Volts Three Phase							
7.5	EHK-41CUL	41.0	2	114/130	125/150	119/135	125/150
	EHK-32CUL	32.0	2	90/103	100/125	95/108	100/125
	EHK-25CUL	25.0	1	72/82	80/90	77/87	80/90
	EHK-15CUL	16.0	1	49/55	50/60	54/60	50/60
	EHK-10CUL	10.4	1	37/38	50	42/43	50
8.5	EHK-41CUL	41.0	2	114/130	125/150	119/135	125/150
	EHK-32CUL	32.0	2	90/103	100/125	95/108	100/125
	EHK-25CUL	25.0	1	72/82	80/90	77/87	80/90
	EHK-15CUL	16.0	1	49/55	50/60	54/60	50/60
	EHK-10CUL	10.4	1	40	50	45	50
10	EHK-50CUL	50.0	2	139/129	150	144/134	150
	EHK-41CUL	41.0	2	115/132	125/150	120/137	125/150
	EHK-32CUL	32.0	2	92/105	100/125	97/110	100/125
	EHK-15CUL	16.0	1	54/56	70	59/62	70
	EHK-10CUL	10.4	1	54	70	59	70
12.5	EHK-50CUL	50.0	2	140/130	150/150	145/135	150/150
	EHK-41CUL	41.0	2	116/133	125/150	121/138	125/150
	EHK-32CUL	32.0	2	93/106	100/125	98/111	100/125
	EHK-15CUL	16.0	1	62	80	67	80
	EHK-10CUL	10.4	1	62	80	67	80
460 Volts Three Phase							
7.5	EHK-41FHL	41.5	2	70	70	72	80
	EHK-33FHL	33.0	2	57	60	59	60
	EHK-25FHL	25.0	1	44	45	47	50
	EHK-16FHL	16.5	1	31	35	33	35
	EHK-14FHL	13.9	1	27	30	29	30
8.5	EHK-41FHL	41.5	2	70	70	74	80
	EHK-33FHL	33.0	2	57	60	61	70
	EHK-25FHL	25.0	1	44	45	48	50
	EHK-16FHL	16.5	1	31	35	35	35
	EHK-14FHL	13.9	1	27	30	31	35
10	EHK-50FHL	50.0	2	69	70	72	80
	EHK-41FHL	41.5	2	71	80	74	80
	EHK-33FHL	33.0	2	58	60	61	70
	EHK-16FHL	16.5	1	32	35	35	35
	EHK-14FHL	13.9	1	28	35	31	35
12.5	EHK-50FHL	50.0	2	69	70	72	80
	EHK-41FHL	41.5	2	71	80	74	80
	EHK-33FHL	33.0	2	58	60	61	70
	EHK-16FHL	16.5	1	32	40	35	40
	EHK-14FHL	13.9	1	31	40	34	40

Installation

⚠ WARNING

Hazardous Voltage w/Capacitors!

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

Disconnect all electric power, including remote disconnects and discharge all motor start/run capacitors before servicing. Follow proper lockout/tagout procedures to ensure the power cannot be inadvertently energized. For variable frequency drives or other energy storing components provided by Trane or others, refer to the appropriate manufacturer's literature for allowable waiting periods for discharge of capacitors. Verify with a CAT III or IV voltmeter rated per NFPA 70E that all capacitors have discharged.

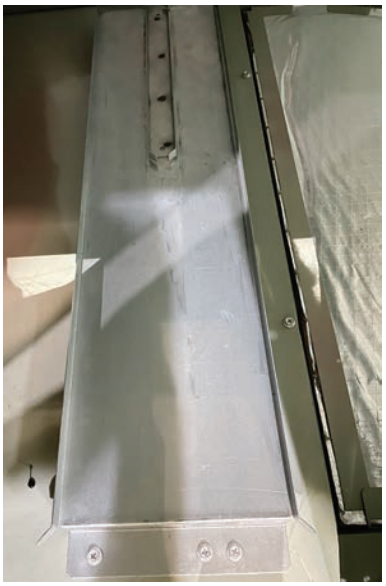
Important: *Turn off power to unit. Follow proper lockout/tagout procedures to ensure power cannot inadvertently be energized.*

The figure shown in this manual is for reference only and may be slightly different from the actual product.

1. Remove access panels A and B. Refer to the following figure. Retain screws for future use.

2. Remove duct access panel C. Refer to the following figure. Retain screws for future use.

3. Install the electric heaters support plate to the base of unit. Both ends of the support plate must be secured to the bottom panel, using provided screws. Refer to the following figure.



4. Check the opening in the panel. Remove any metal burrs or slivers that could damage or pinch the heater elements resulting in a short circuit when elements are installed in the opening.
5. For 7.5 Ton units only: Remove plate. Refer to following image.

Figure 6. Remove support plate (for 7.5 ton only)

6. Slide electric heater in, aligning to support plate. Secure to panel C hole. Use retained screws from step 2. Refer to the following figures.

Figure 7. Align electric heater to support plate

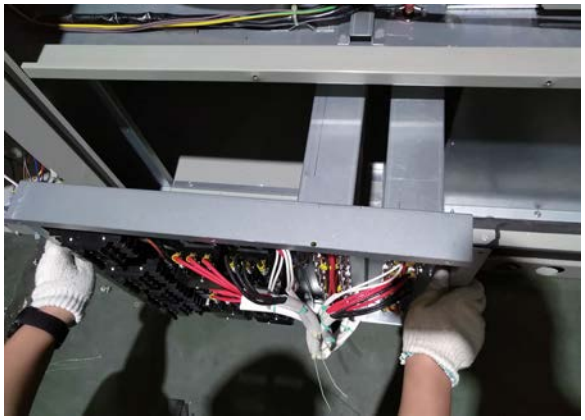
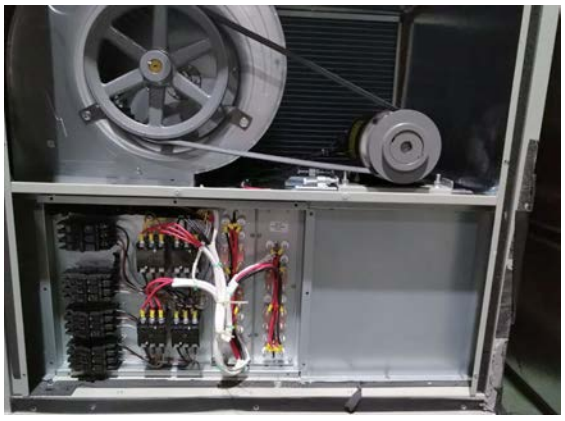
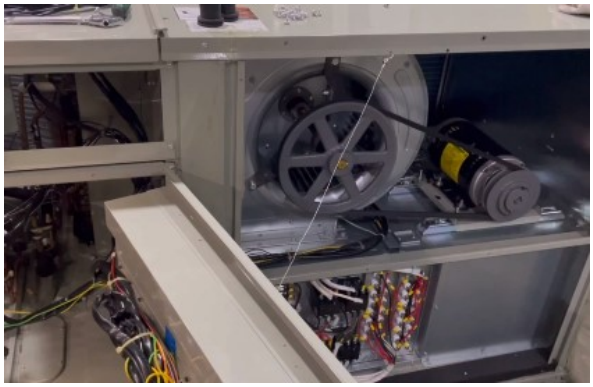


Figure 8. Electric heater aligned to screw holes



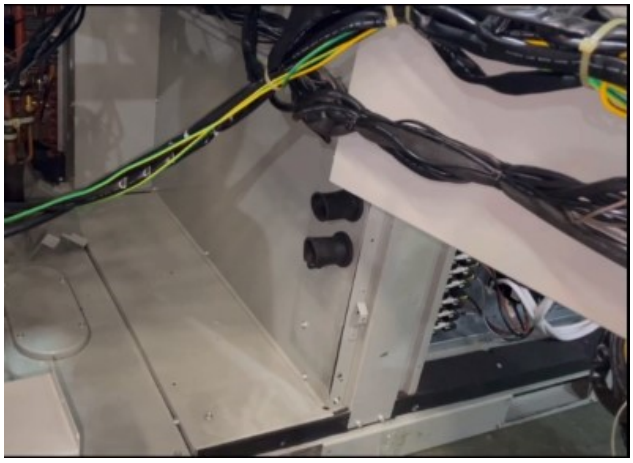
7. Open and secure control panel with wire hook. Refer to the following figure.

Figure 9. Secure control panel with wire hook



8. Install rubber sheaths provided in panel separating electric heat section and compressor section. Refer to the following figure.

Figure 10. Rubber sheath installation



9. Install Control Box in the compressor section. Secure to side panel using 4 screws provided. Refer to the following figure.

Figure 11. Control box installation

10. Route low voltage wiring harness plug end through the heat section using top sheath and route into the control panel and connect to CN26 on the Main Board. See the following figures.

Figure 12. Connect control signal wires

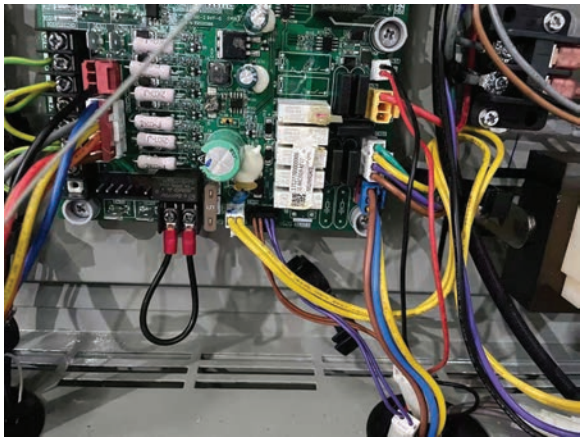
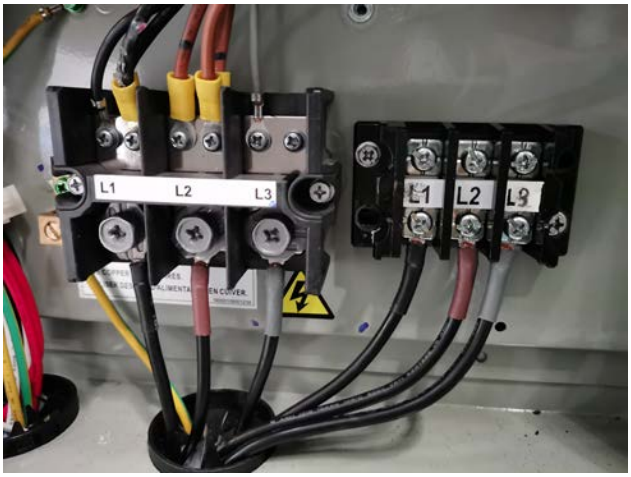


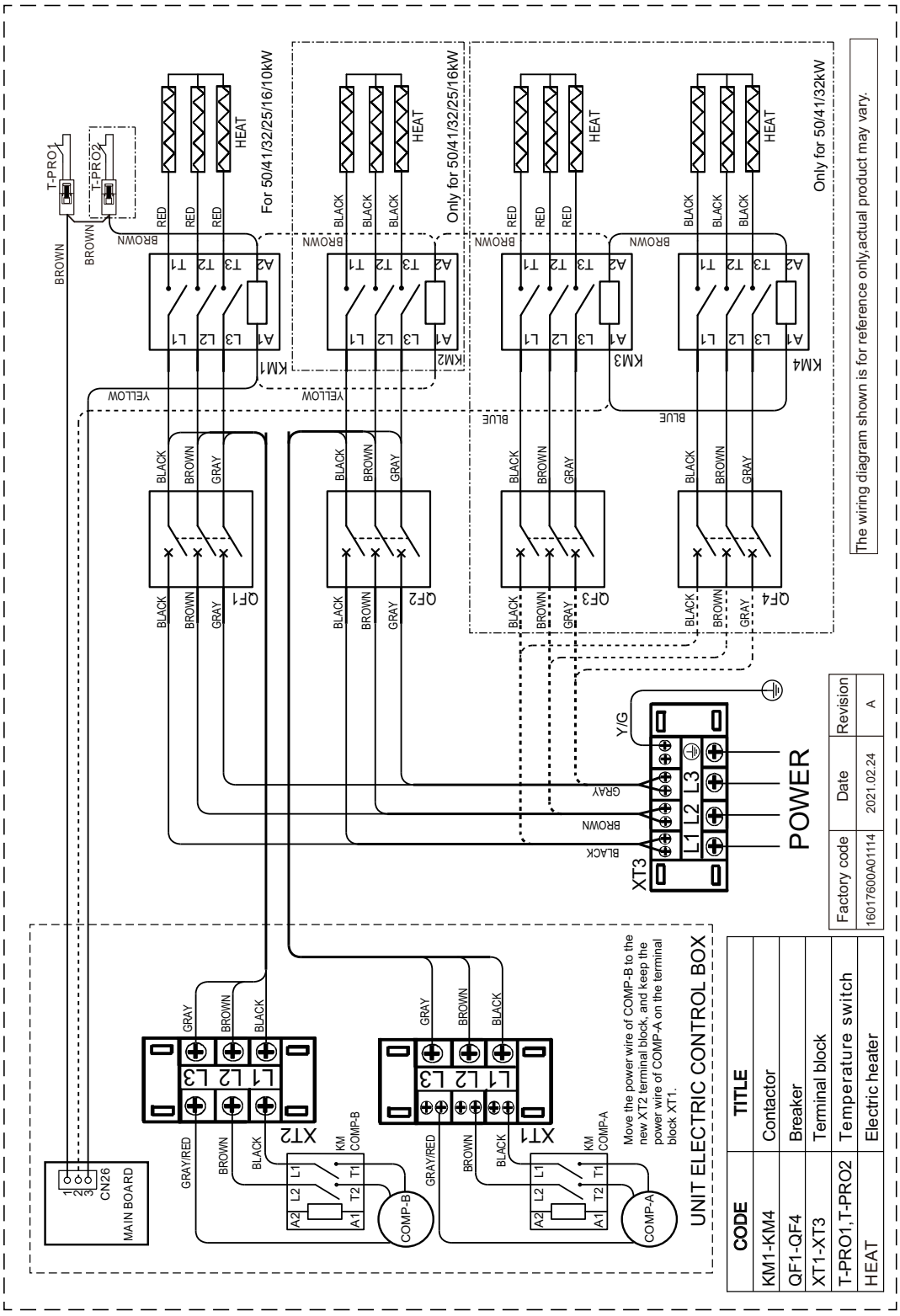
Figure 13. Connect power supply wires

Figure 14. Power terminal block



11. Set dip switch on control board for electric heat configuration. See wiring schematic for more detail.
12. Connect low voltage wiring harness quick connect terminals on proper contactor coils indicated in the wiring diagram using plastic wire loops to secure in place.
13. Route line voltage wiring through lower sheath and connect to XT3 terminal according to the wiring diagram.
14. Connect other end of line voltage wiring to breaker terminals as indicated in the wiring diagram.
15. Install XT2 terminal block in control panel and route power wires from QF1 to XT2 and QF2 to XT1 as shown in Figure 14, p. 10.
16. At XT1 terminals L1, L2, and L3 remove KM3 COMP-B black, brown, and gray/red wires; reconnect at XT2 terminals L1, L2, and L3.
17. Test the operation of heater kit and unit and verify that they are functioning properly.

Wiring Diagram



CODE	TITLE
KM1-KM4	Contactor
QF1-QF4	Breaker
XT1-XT3	Terminal block
T-PRO1,T-PRO2	Temperature switch
HEAT	Electric heater

Trane and American Standard create comfortable, energy efficient indoor environments for commercial and residential applications. For more information, please visit trane. com or americanstandardair.com.

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