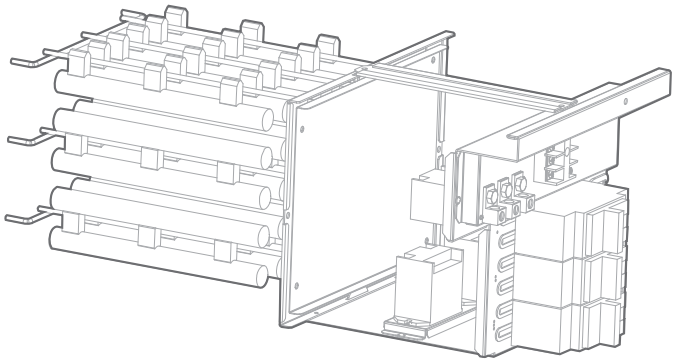
EHKMC
Auxillary Electrical Heater for Air Handlers

Installation Instructions



Auxiliary Electrical Heater

NOTES: Read the entire instruction manual before starting the installation. Images are for illustration purposes only. Actual models may differ slightly.

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SAFETY CONSIDERATIONS

Installing, starting up, and servicing air-conditioning equipment can be hazardous due to system pressures, electrical components, and equipment location (roofs, elevated structures, etc.).
Only trained, qualified installers and service mechanics should install, start- up, and service this equipment.

Untrained personnel can perform basic maintenance functions such as coil cleaning. All other operations should be performed by trained service personnel only.

When working on the equipment, observe the precautions in the literature and on tags, stickers, and labels attached to the equipment.

Follow all safety codes.Wear safety glasses and work gloves. Keep a quenching cloth and a fire extinguisher nearby when brazing. Use care in handling, rigging, and setting bulky equipment.
Read these instructions thoroughly and follow all warnings or cautions included in the literature and 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 unit and in instructions or manuals, be alert to the potential for personal injury. Understand these 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, the main electrical disconnect switch must be in the OFF position. There may be more than 1 disconnect switch. Lock out and tag switch with a suitable warning label.

⚠ WARNING

EXPLOSION HAZARD
Failure to follow this warning could result in death, serious personal injury, and/or property damage.

Never use air or gases containing oxygen for leak testing or operating refrigerant compressors. Pressurized mixtures of air or gases containing oxygen can lead to an explosion.

⚠ CAUTION

EQUIPMENT DAMAGE HAZARD

Failure to follow this caution may result in equipment damage or improper operation.

Do not bury more than 36 in. (914 mm) of refrigerant pipe in the ground. If any section of pipe is buried, there must be a 6 in. (152 mm) vertical rise to the valve connections on the outdoor units. If more than the recommended length is buried, refrigerant may migrate to the cooler buried section during extended periods of system shutdown. This causes refrigerant slugging and could possibly damage the compressor at start-up.

⚠ WARNING

Only use the specified wire. If the wire is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard. The product must be properly grounded at the time of installation, or electric shock may occur.

For all electrical work, follow all local and national wiring standards, regulations, and the Installation Manual. Connect the cables tightly, and clamp them securely to prevent external forces from damaging the terminal. Improper electrical connections can overheat and cause fire, and may also cause shock. All electrical connections must be made according to the Electrical Connection Diagram located on the panels of the indoor and outdoor units.

All wiring must be properly arranged to ensure that the control board cover can close properly. If the control board cover is not closed properly, it can lead to corrosion and cause the connection points on the terminal to heat up, catch fire, or cause electrical shock.

Disconnection must be incorporated in the fixed wiring in accordance with NEC, CSA and Local Codes. **Do not** share the electrical outlet with other appliances. Improper or insufficient power supply can cause fire or electric shock.

If connecting power to fixed wiring, an all-pole disconnection device which has at least 3mm clearances in all poles, and have a leakage current that may exceed 10mA, the residual current device (RCD) having a rated residual operating current not exceeding 30mA, and disconnection must be incorporated in the fixed wiring in accordance with NEC, CSA and Local Codes.

⚠ WARNING

ELECTRICAL WARNING

The product must be properly grounded at the time of installation, or electrical shock may occur.

For all electrical work, follow all local and national wiring standards, regulations, and the Installation Manual. Connect cables tightly, and clamp them securely to prevent external forces from damaging the terminal. Improper electrical connections can overheat and cause fire, and may also cause shock. All electrical connections must be made according to the Electrical Connection Diagram located on the panels of the indoor and outdoor units.

All wiring must be properly arranged to ensure that the control board cover can close properly. If the control board cover is not closed properly, it can lead to corrosion and cause the connection points on the terminal to heat up, catch fire, or cause electrical shock. If connecting power to fixed wiring, an all-pole disconnection device which has at least 3mm clearances in all poles, and have a leakage current that may exceed 10mA, the residual current device (RCD) having a rated residual operating current not exceeding 30mA, and disconnection must be incorporated in the fixed wiring in accordance with the wiring rules.

⚠ WARNING

Turn off the air conditioner and disconnect the power before performing any installation or repairing. Failure to do so can cause electric shock.

Installation must be performed by an authorized dealer or specialist. Defective installation can cause water leakage, electrical shock, or fire. Installation must be performed according to the installation instructions.

Improper installation can cause water leakage, electrical shock, or fire. Contact an authorized service technician for repair or maintenance of this unit. This appliance shall be installed in accordance with national wiring regulations.

Only use the included accessories, parts, and specified parts for installation. Using non-standard parts can cause water leakage, electrical shock, fire, and can cause the unit to fail.

Install the unit in a firm location that can support the unit's weight. If the chosen location cannot support the unit's weight, or the installation is not done properly, the unit may drop and cause serious injury and damage. Install drainage piping according to the instructions in this manual. Improper drainage may cause water damage to your home and property. For units that have an auxiliary electric heater, do not install the unit within 3 feet (1 meter) of any combustible materials.

If combustible gas accumulates around the unit, it may cause fire.

Do not turn on the power until all work has been completed.

When moving or relocating the air conditioner, consult experienced service technicians for disconnection and re-installation of the unit.

Read the information for details in "indoor unit installation" and "outdoor unit installation" sections.

NOTE: The air conditioner's circuit board (PCB) is designed with a fuse to provide overcurrent protection. The specifications of the fuse are printed on the circuit board, for example: T3.15AL/250VAC, T5AL/250VAC, T3.15A/250VAC, T5A/250VAC, T20A/250VAC, T30A/250VAC,etc.

NOTE: Only a blast-proof ceramic fuse can be used.

⚠ WARNING

PERSONAL INJURY AND PROPERTY DAMAGE HAZARD

For continued performance, reliability, and safety, the only approved accessories and replacement parts are those specified by the equipment manufacturer. The use of non-manufacturer approved parts and accessories could invalidate the equipment limited warranty and result in a fire risk, equipment malfunction, and failure.

Please review the manufacturer's instructions and replacement parts catalogs available from your equipment supplier.

⚠ WARNING

WARNING FOR PRODUCT INSTALLATION

Installation must be performed by an authorized dealer or specialist. Defective installation can cause water leakage, electrical shock, or fire. Installation must be performed according to the installation instructions. Improper installation can cause water leakage, electrical shock, or fire. (In North America, installation must be performed in accordance with the requirement of NEC and CEC by authorized personnel only.)

Contact an authorized service provider for repair or maintenance of this unit. This appliance shall be installed in accordance with national wiring regulations. Only use the included accessories, parts, and specified parts for installation. Using non-standard parts can cause water leakage, electrical shock, fire, and can cause the unit to fail.

For units that have an auxiliary electric heater, do not install the unit within 1 meter (3 feet) of any combustible materials.

Do not install the unit in a location that may be exposed to combustible gas leaks. If combustible gas accumulates around the unit, it may cause fire.

Do not turn on the power until all work has been completed.

When moving or relocating the auxiliary heater, consult experienced service technicians for disconnection and re-installation of the unit.

⚠ WARNING

WARNINGS FOR CLEANING AND MAINTENANCE

Turn off the device and disconnect the power before cleaning. Failure to do so can cause electrical shock.

Table 1 — Symbols displayed on the indoor unit or outdoor unit

	**WARNING**	This symbol shows that this appliance used a flammable refrigerant. If the refrigerant is leaked and exposed to an external ignition source, there is a risk of fire.
	**CAUTION**	This symbol shows that the operation manual should be read carefully.
	**CAUTION**	This symbol shows that a service personnel should be handling this equipment with reference to the installation manual.
	**CAUTION**	
	**CAUTION**	This symbol shows that information is available such as the operating manual or installation manual.

NOTE: A separate power source is required for an Auxiliary Electric Heater. These units do NOT support a SINGLE POINT electrical connection when utilizing auxiliary heat.

WARNING

FOR FLAMMABLE REFRIGERANTS

Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer.

The appliance shall be stored in a room without continuously operating ignition sources (for example: open flames, an operating gas appliance or an operating electric heater).

Do not pierce or burn. Be aware that refrigerants may not contain an odor.

WARNING

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.

WARNING - RISK OF FIRE DUE TO FLAMMABLE REFRIGERANT USED. FOLLOW HANDLING INSTRUCTIONS CAREFULLY IN COMPLIANCE WITH NATIONAL REGULATIONS.

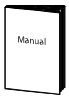
NOTE: Risk of Fire. Flammable refrigerant used. To be repaired only by trained service personnel. Do not puncture refrigerant tubing.

ACCESSORIES

The system is shipped with the following accessories. Use all of the installation parts and accessories to install the system. Improper installation may result in water leakage, electrical shock and fire, or cause the equipment to fail. Keep the installation manual in a safe place and do not discard any other accessories until the installation has been completed.

NOTE: Installation must be performed by an licensed contractor. Take necessary precaution when performing the installation operation.

Table 2 — Accessories

NAME	SHAPE	QTY
Manual		1
Foam Gasket		2
Screws		7
Silicone Breaker Cover		1~2
Electric auxiliary heating wiring diagram	**NOTE: See Wiring Diagrams on page 10.**	

Model Size Selection

For installations requiring supplemental heating, the optional Electric Auxiliary Heat Module is available in sizes from 5kW to 25kW to accommodate appropriate sizing given the specific heat load and electrical requirements of each installation. Before installing the unit, ensure the compatibility with the Air Handler and outdoor unit using the product data as a reference. Refer to Table 3 for selection of available sizes of each model, being sure to avoid improper matching.

Table 3 — Model Size Selection

MODEL (Btu/h)	5kW	8kW	10kW	15kW	20kW	25kW
18K	Y	Y	Y	-	-	-
24K	Y	Y	Y	Y	-	-
30K	Y	Y	Y	Y	-	-
36K	Y	Y	Y	Y	Y	-
48K	-	Y	Y	Y	Y	-
60K	-	-	Y	Y	Y	Y

NOTE: Only use matched modules certified for use with model. Refer to the Electric Auxiliary Heat Model specification for additional details to ensure proper selection and installation.

NOTE: This heater cannot be powered from a 115 volt circuit. Separate 208/230 volt power must be supplied for 115 volt applications.

NOTE: If the unit needs to be equipped with the electric auxiliary heat module, check the electric auxiliary heat module specification that is compatible with the unit to avoid unnecessary consequences caused by improper matching and refer to Product Data manual.

DIMENSIONS

Table 4 — Dimensions

SYSTEM SIZE		5KW	8KW	10KW	15KW	20KW	25KW
		(208/230 V)	(208/230 V)	(208/230 V)	(208/230 V)	(208/230 V)	(208/230 V)
Height (H)	inch	8.03	8.03	8.03	8.03	8.03	8.03
	mm	204	204	204	204	204	204
Width (W)	inch	21.06	21.06	21.06	21.06	21.06	21.06
	mm	535	535	535	535	535	535
Depth (D)	inch	10.16	10.16	10.16	10.16	10.16	11.81
	mm	258	258	258	258	258	300
Weight -Net	lbs.	5.73	7.28	6.83	8.82	9.70	12.57
	kg	2.6	3.3	3.1	4.0	4.4	5.7

INSTALLATION REQUIREMENTS

NOTE: Installation of the Auxiliary Electric Heat Module should be completed before installing the discharge ductwork to insure proper alignment of the inside support brackets. Before installation, check the list of electric auxiliary heat modules and physical objects. After transportation, check whether the electric heat module is damaged. If any damage is detected, contact the after-sales personnel immediately.

NOTE: A separate power source is required for an Auxiliary Electric Heater. These units do NOT support a SINGLE POINT electrical connection when utilizing auxiliary heat.

INSTALLATION PREPARATION

⚠ CAUTION

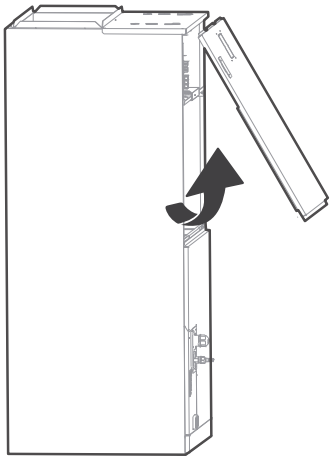
This electric auxiliary heat module is internally mounted in the air handler, DO NOT mount in the ductwork.

NOTE: Before installation, confirm the electric auxiliary heat module and supplied accessories are complete and free of any damage. Do not attempt to install if damage is present.

ELECTRIC AUXILLARY HEAT MODULE INSTALLATION AND WIRING OPERATION

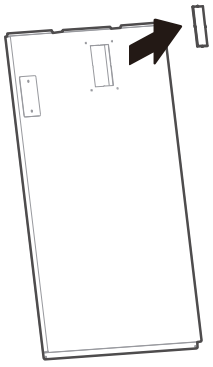
Step 1

Open the upper cover.



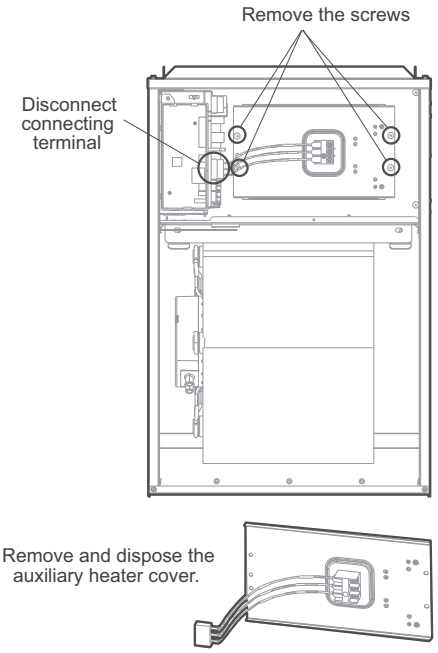
Step 2

Use tools to remove the knock-out holes of upper cover.



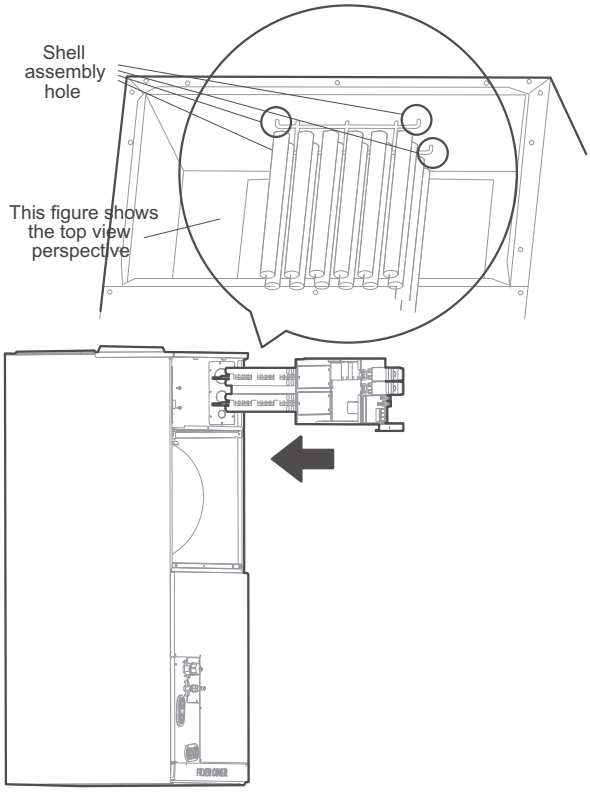
Step 3

Disconnect the Connecting terminal, remove the screws and then remove the auxiliary heater cover.



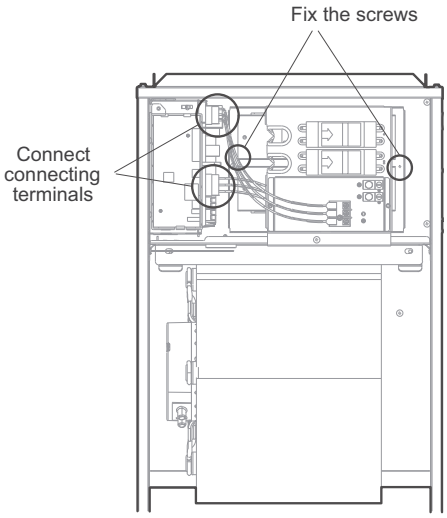
Step 4

Install the electric auxiliary heating assembly the front, and note that the support assembly must lock into the support holes in the back of the cabinet.



Step 5

Fix the screws and Connect Connecting terminals of auxiliary heater

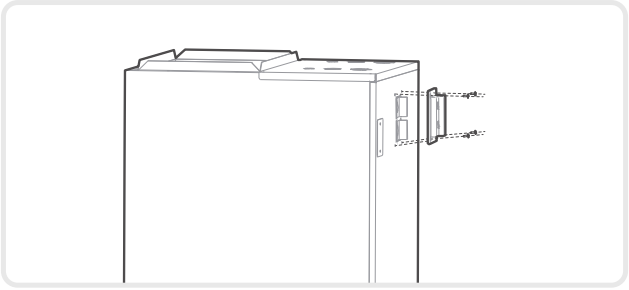


Step 6

Wire according to the wiring nameplate. Apply the wiring diagram to the inside cover wiring is completed for future reference and maintenance.

Step 7

Install the upper cover,and the silicone breaker cover.



Step 8

After installing the electric auxiliary heat module, apply the circuit breaker label near the silicone breaker cover that was just applied.

ELECTRICAL SPECIFICATIONS

NOTE: Electric auxiliary heating wiring diagram packed with the accessories. If the branch circuit wire length exceeds 100ft, consult the local code to determine maximum wire length. Use a 2% voltage drop.

Table 5 — Electrical Specifications

SPECIFICATIONS	CIRCUIT BREAKERS	NUMBER OF RELAYS	NUMBER OF POWER CORD GROUPS	NUMBER OF POWER CORD GROUNDING SCREWS
5kW	1	1	2	2
8kW	1	2	2	2
10kW	1	2	2	2
15kW	2	3	3	3
20kW	2	4	3	3
25kW	3	5	4	4

Use copper wire only to connect unit. If other than uncoated (non-plated) 167°F (75°C) 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/NFPA 70).

NOTE: The specification may be different between different models. Refer to indoor unit's nameplate.

NOTE: This heater cannot be powered from a 115 volt circuit. Separate 208/230 volt power must be supplied for 115 volt applications.

Auxiliary Heater Electrical Data

Table 6 — Auxiliary Heater Electrical Data

HEATER PART #	INTERNAL CIRCUIT PROTECTION	CIRCUIT 1 208/230V			CIRCUIT 2			CIRCUIT 2		
		HEATER AMPS	MCA(1)	MOP(2)	HEATER AMPS	MCA(1)	MOP(2)	HEATER AMPS	MCA(1)	MOP(2)
EHKMC05KN	Ckt Bkr	18.0/20.0	23.0/27.0	25.0/30.0	/	/	/	/	I	/
EHKMC08KN	Ckt Bkr	28.8/32.0	37.0/42.0	40.0/45.0	/	/	/	/	/	/
EHKMC10KN	Ckt Bkr	36.0/40.0	46.0/53.0	50.0/60.0	/	/	/	/	/	/
EHKMC15KN	Ckt Bkr	18.0/20.0	23.0/27.0	25.0/30.0	36.0/40.0	46.0/53.0	50.0/60.0	/	/	/
EHKMC20KN	Ckt Bkr	36.0/40	46.0/53.0	50.0/60.0	36.0/40.0	46.0/53.0	50.0/60.0	/	/	/
EHKMC25KN	Ckt Bkr	18.0/20.0	23.0/27.0	25.0/30.0	36.0/40.0	46.0/53.0	50.0/60.0	36.0/40.0	46.0/53.0	50.0/60.0

ELECTRIC AUXILIARY HEATING WIRING DIAGRAMS

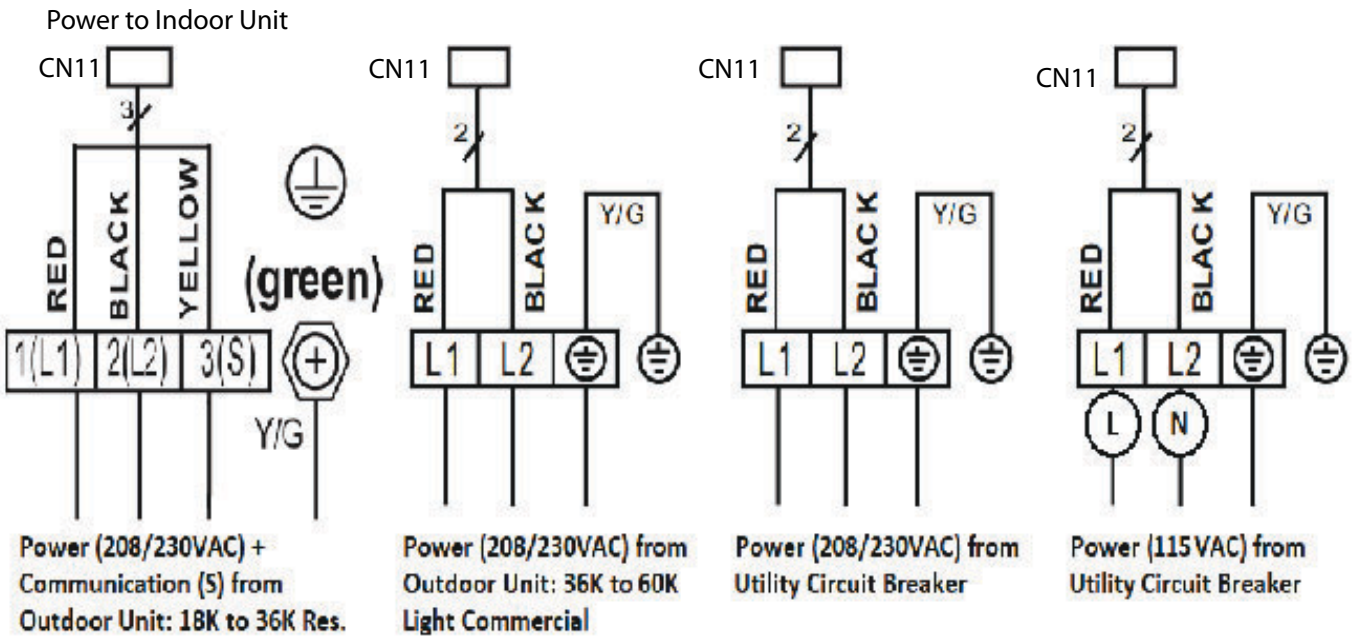
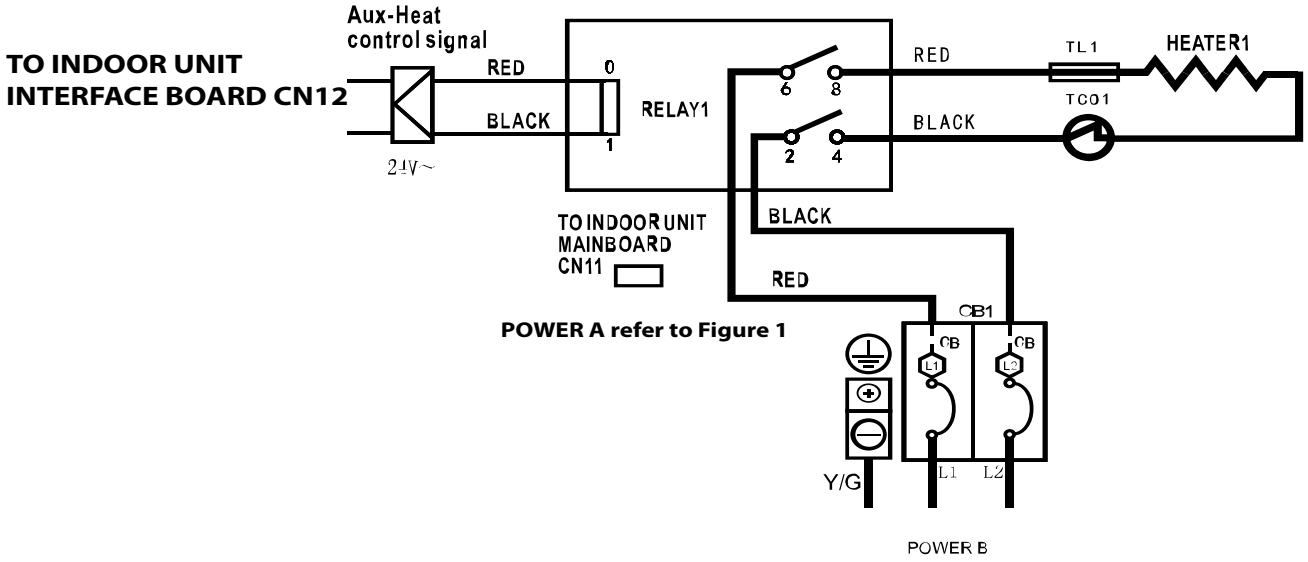


Fig. 1 —Power A Wiring Connections (Power for Indoor Unit)

5KW HEAT KIT

:THERMAL LINK

:THERMAL CUT-OUT, SELF-RESETTING



NOTE1: ⋯
This symbol indicates the element is optional, The wiring type of the actual unit shall prevail.

NOTE2:
PLEASE ATTACH THE NAMEPLATE TO THE COVER OF THE ELECTRIC CONTROL BOX. ALL THE ROUND HOLES LOCATED ON THE PLATE REPRESENT NUMBERS. PLEASE REFER TO THE INSTALLATION MANUAL FOR DETAILS.

NOTE3: TO BE WIRED IN ACCORDANCE WITH NEC AND LOCAL CODES.

NOTE4: POWER A,B ARE DIFFERENT POWERS.

Round hole number	Relay number	Round hole number	Circuit breaker number
●	RELAY 1	●	CB1
●●			
●●●			
●●●●			
●●●●●			

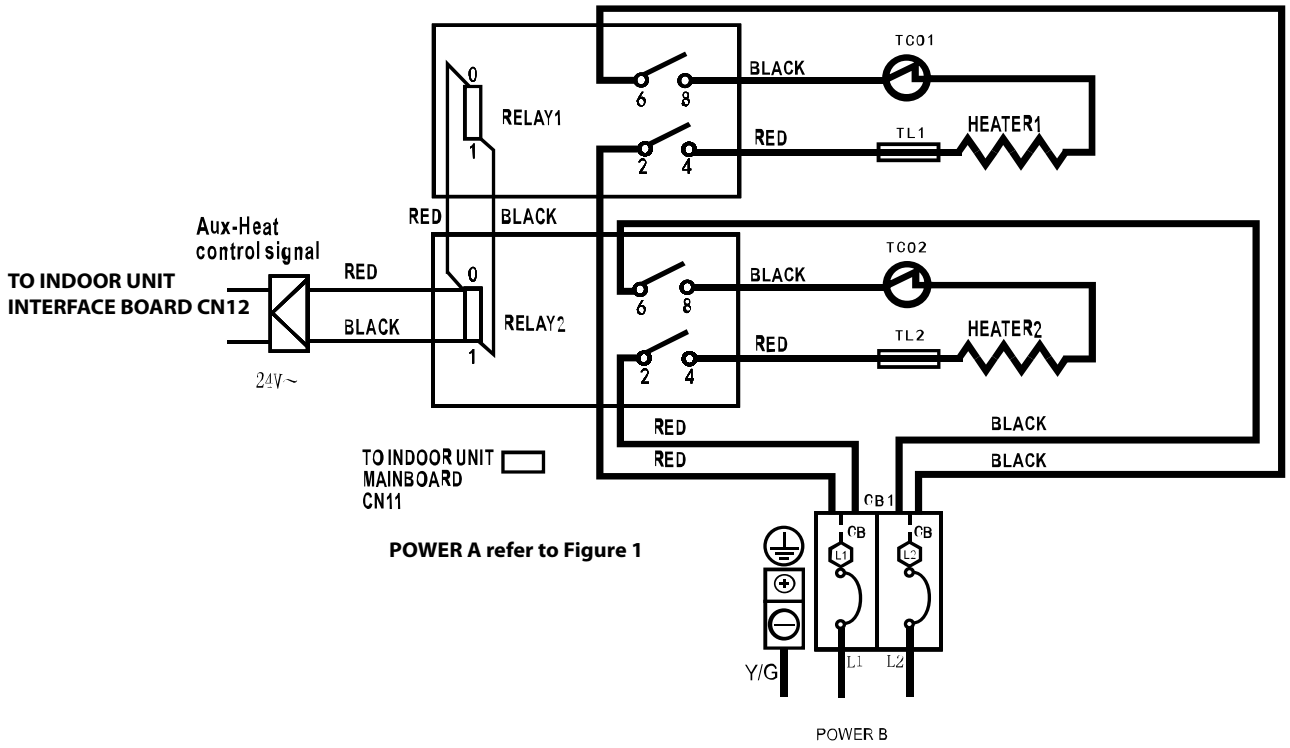
Fig. 2 —5kW Heat Kit

*** NOTE: For POWER A, refer to Figure 1.**

8KW/10KW HEAT KIT

:THERMAL LINK

:THERMAL CUT-OUT, SELF-RESETTING



NOTE1: ⋯
This symbol indicates the element is optional, The wiring type of the actual unit shall prevail.

NOTE2:
PLEASE ATTACH THE NAMEPLATE TO THE COVER OF THE ELECTRIC CONTROL BOX. ALL THE ROUND HOLES LOCATED ON THE PLATE REPRESENT NUMBERS. PLEASE REFER TO THE INSTALLATION MANUAL FOR DETAILS.

NOTE3: TO BE WIRED IN ACCORDANCE WITH NEC AND LOCAL CODES.

NOTE4: POWER A,B ARE DIFFERENT POWERS.

Round hole number	Relay number	Round hole number	Circuit breaker number
●	RELAY 1	●	CB1
●●	RELAY 2		
●●●			
●●●●			
●●●●●			

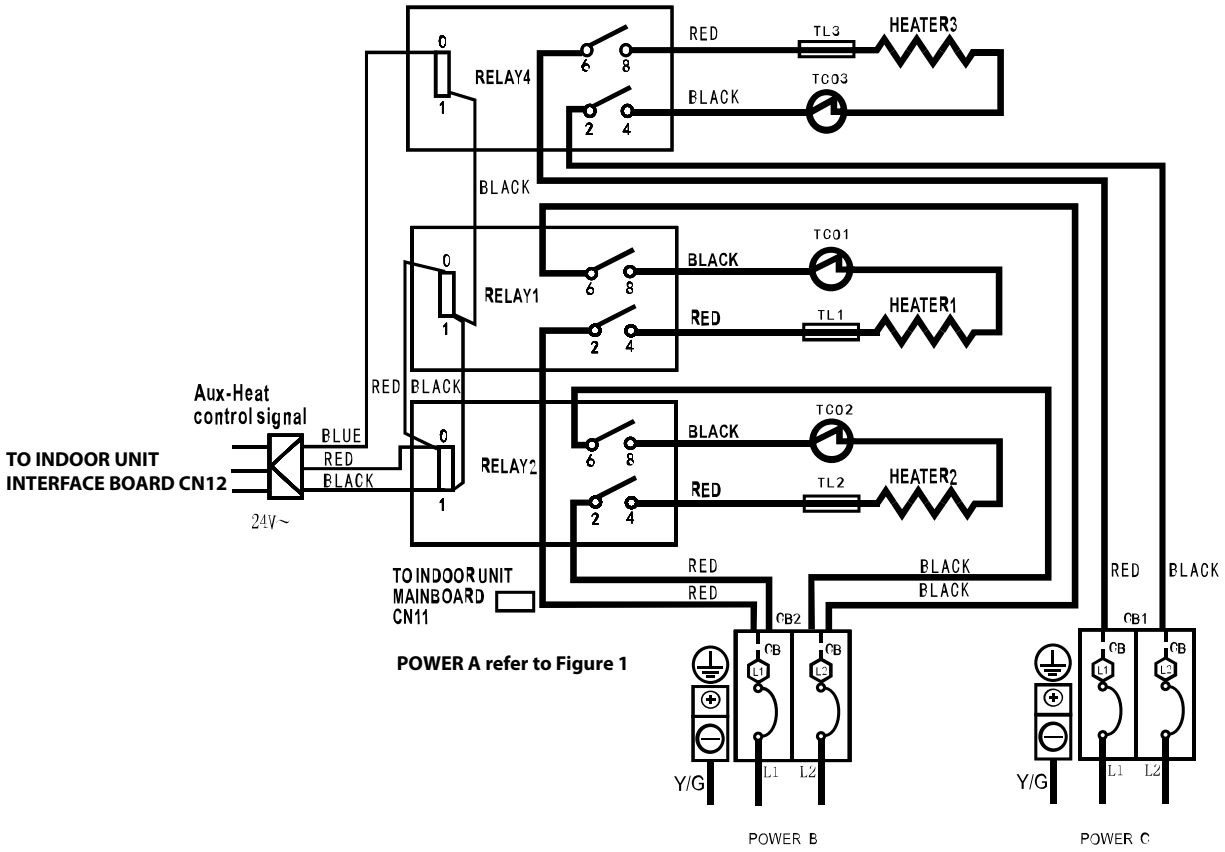
Fig. 3 —8kW/10kW Heat Kit

*** NOTE: For POWER A, refer to Figure 1.**

15KW HEAT KIT

:THERMAL LINK

:THERMAL CUT-OUT, SELF-RESETTING



NOTE1: ⋮⋮
This symbol indicates the element is optional, The wiring type of the actual unit shall prevail.

NOTE2:
PLEASE ATTACH THE NAMEPLATE TO THE COVER OF THE ELECTRIC CONTROL BOX. ALL THE ROUND HOLES LOCATED ON THE PLATE REPRESENT NUMBERS. PLEASE REFER TO THE INSTALLATION MANUAL FOR DETAILS.

NOTE3: TO BE WIRED IN ACCORDANCE WITH NEC AND LOCAL CODES.

NOTE4: POWER A,B,C, ARE DIFFERENT POWERS.

Round hole number	Relay number	Round hole number	Circuit breaker number
○	RELAY 1	○	CB1
○○	RELAY 2	○○	CB2
○○○			
○○○○	RELAY 4		
○○○○○			

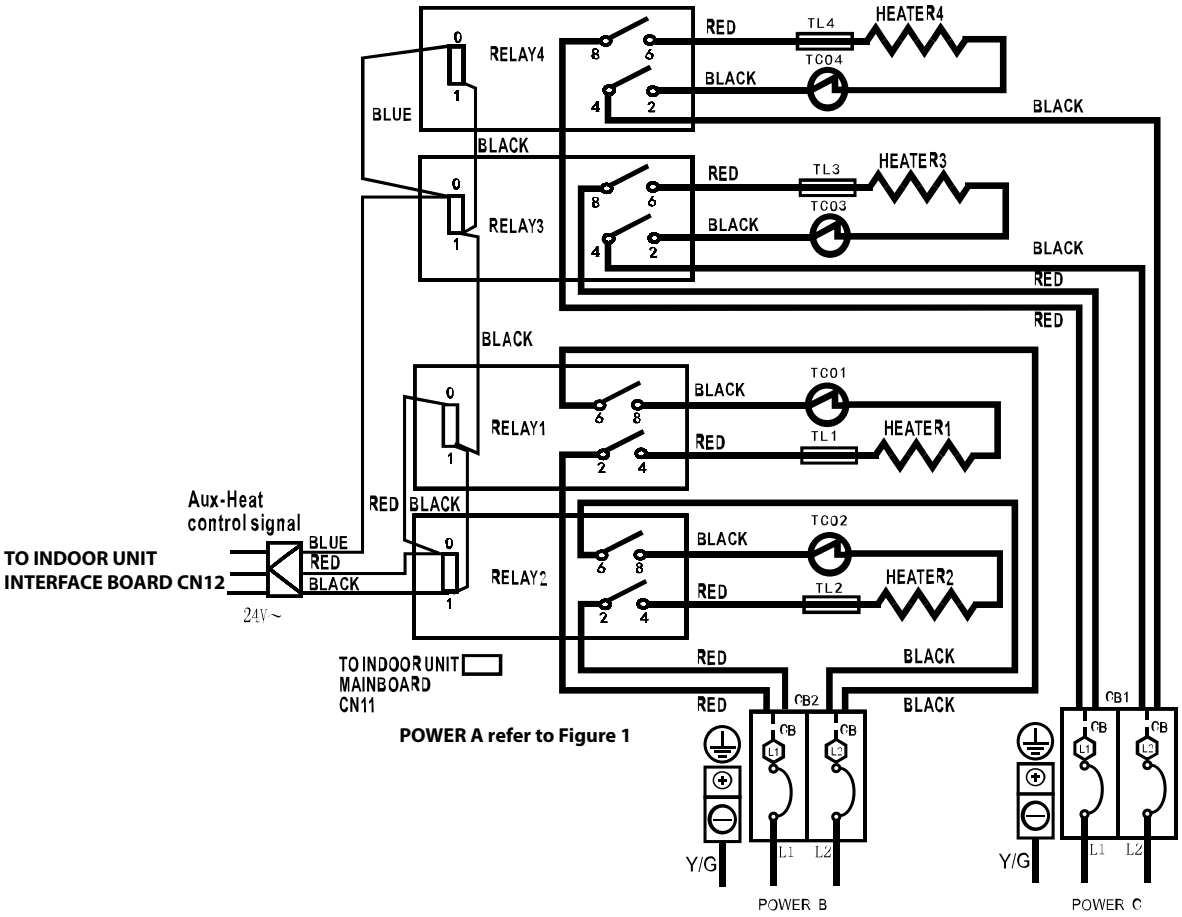
Fig. 4 —15kW Heat Kit

*** NOTE: For POWER A, refer to Figure 1.**

20KW HEAT KIT

:THERMAL LINK

:THERMAL CUT-OUT, SELF-RESETTING



NOTE1: ⋯
This symbol indicates the element is optional, The wiring type of the actual unit shall prevail.

NOTE2:
PLEASE ATTACH THE NAMEPLATE TO THE COVER OF THE ELECTRIC CONTROL BOX. ALL THE ROUND HOLES LOCATED ON THE PLATE REPRESENT NUMBERS. PLEASE REFER TO THE INSTALLATION MANUAL FOR DETAILS.

NOTE3: TO BE WIRED IN ACCORDANCE WITH NEC AND LOCAL CODES.

NOTE4: POWER A,B, ARE DIFFERENT POWERS.

Round hole number	Relay number	Round hole number	Circuit breaker number
○	RELAY 1	○	CB1
○○	RELAY 2	○○	CB2
○○○	RELAY 3		
○○○○	RELAY 4		
○○○○○			

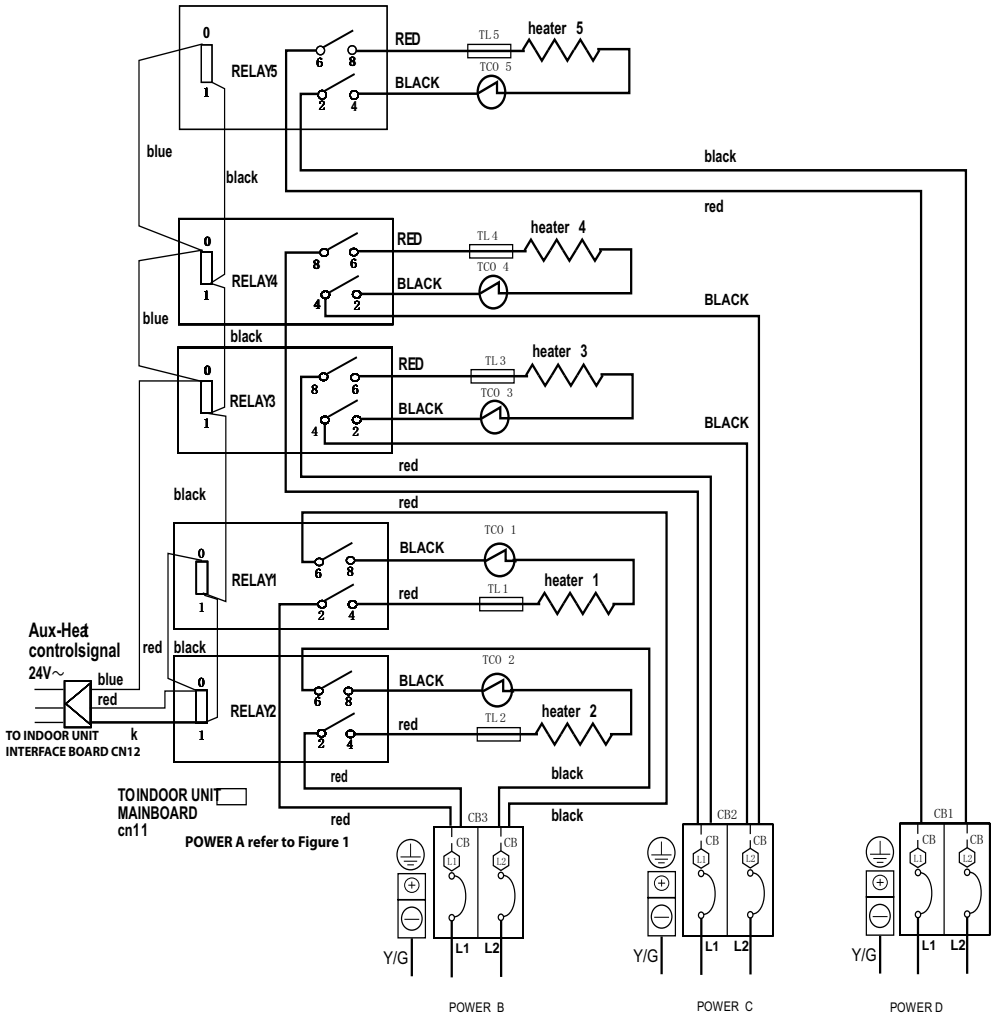
Fig. 5 —20kW Heat Kit

*** NOTE: For POWER A, refer to Figure 1.**

25KW HEAT KIT

:thermal link

:thermal cut-out, self-resetting



NOTe1: This symbol indicates the element is optional, The wiring type of the actual unit shall prevail.

NOTE 2 Attach the nameplate to the electric control box cover. All the round holes located on the plate represent numbers. Refer to the installation manual for details.

NOTE3: TO BE WIRED IN ACCORDANCE WITH NEC AND LOCAL CODES.

NOTE4: POWER A,B,C,D ARE DIFFERENT POWERS.

Round hole number	Relay number	Round hole number	Circuit breaker number
○	RELAY 1	○	Cb1
○○	RELAY 2	○○	Cb2
○○○	RELAY 3	○○○	Cb3
○○○○	RELAY 4		
○○○○○	RELAY 5		

Fig. 6 —25Kw Heat Kit

*** NOTE: For POWER A, refer to Figure 1.**

Edition Date: 10/24

Catalog No: EHKMC-01SI

Replaces: New