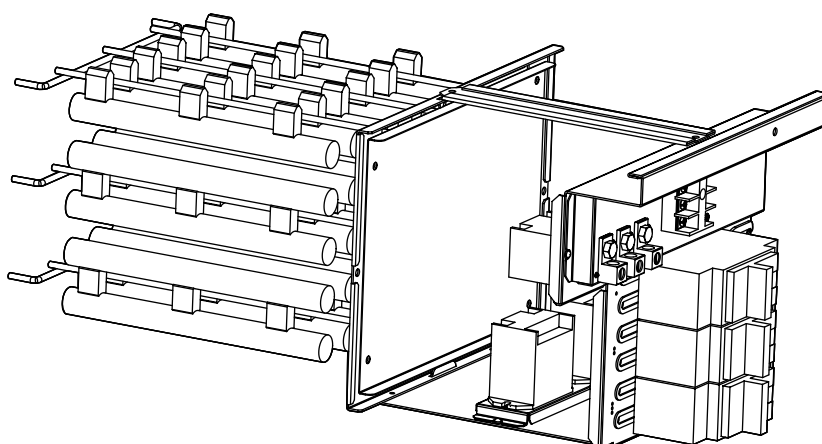


INSTALLATION MANUAL

AUXILIARY ELECTRIC HEATER 3kW – 20kW

DRHTR03BRKB, DRHTR05BRKB, DRHTR08BRKB,
DRHTR10BRKB, DRHTR15BRKB, DRHTR20BRKB
208/230V 1ph 60 HZ



Model Number:

Serial Number:

Purchase Date:

Installing Contractor Company Name:

**TIP**

Capture relevant information about your Durastar mini-split equipment before it is installed and write it above for future reference.

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INTRODUCTION

To better serve you, please do the following before contacting customer service:

- If you received a damaged product, immediately contact the retailer or dealer that sold you the product.
- Read and follow this owner's manual carefully to help you use and maintain your air handler.
- Read the troubleshooting section of this manual as it will help you diagnose and solve common issues.
- Visit us on the web at www.durastar.com to download product guides and up-to-date information.
- If you need warranty service, our friendly customer service representatives are available via email at questions@durastar.com or by telephone at 1-888-320-0706.

WARNINGS

Symbols Used in This Manual



The warning symbol indicates cautionary information for the user. Extra care and precautions should be taken to ensure the user's safety.



The pencil indicates any manufacturer notes relating to surrounding content. These may include further clarifications or call-outs.



A light bulb symbol indicates suggested manufacturer tips for the user to get the most out of the Durastar equipment and to accommodate the best user experience.

IMPORTANT SAFETY PRECAUTIONS

Improper handling can cause serious damage or injury. Please read the following safety information in its entirety.



Operation, Cleaning, and Maintenance Safety Precautions

- Children and people with reduced physical, sensory, or mental capabilities, or lack of experience and knowledge, should only use this air handler or heater if they are given supervision and instructions concerning use in a safe way and understand the hazards involved.
- Children should not play with the equipment.
- Never stick fingers, other body parts, or other objects into the air inlet or outlet. The internal fan may be rotating at high speeds. This could result in injury.
- Installation and maintenance must be performed by qualified professionals. Otherwise, you may experience personal injury or damage to the air handler and surrounding property.
- If an abnormal situation arises (like a burning smell), immediately turn off the air handler/ heater and disconnect power at the circuit breaker immediately. Then contact your dealer or a qualified professional for service.
- Do not install the air handler/ heater in a wet room such as a bathroom or laundry room. Too much exposure to water could cause electrical components to short circuit.
- Do not operate the air handler or heater with wet hands. This may cause electric shock.
- Turn off the device and disconnect the power before cleaning. Failure to do so can cause electrical shock.
- Do not clean the air handler/ heater with excessive amounts of water.
- Do not clean the air handler/ heater with combustible cleaning agents. Combustible cleaning agents can cause fire or deformation.
- Do not use flammable materials such as hair spray, lacquer, or paint near the air handler/ heater as they may catch fire.
- Do not operate the air handler/ heater in places near combustible gases. Emitted gases may collect around the air handler and cause an explosion.
- Do not use the air handler/ heater for any other purpose than its intended use.
- Turn off the air handler/ heater if you are not going to use it for a long time.
- Make sure that water can drain unhindered from the unit.
- Do not allow the air handler to operate for long periods of time with doors or windows open, or if the humidity is very high.
- If the air handler/ heater is used together with burners or other heating devices, thoroughly ventilate the room to avoid oxygen deficiency and carbon monoxide build up.
- In certain environments, such as kitchens, server rooms, etc., the use of specially designed air-conditioning units is highly recommended.
- As with any mechanical equipment, contact with sharp sheet metal edges can result in personal injury. Take care while handling this equipment and wear gloves and protective clothing.

Electrical Safety

**WARNING**

Before performing any electrical or wiring work, turn off the main power to the system.

- The product must be properly grounded at the time of installation, or electrical shock may occur.
- If there is a serious safety issue with the power supply, stop work immediately. Explain your reasoning to the client, and refuse to install the unit until the safety issue is properly resolved.
- 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 1/8" (3mm) clearances in all poles, a leakage current that may exceed 10mA, a residual current device(RCD) that has a rated residual operating current not exceeding 30mA, and a disconnection must be incorporated in the fixed wiring in accordance with the wiring rules.
- Only connect the unit to an individual branch circuit. Do not connect another appliance to that circuit.
- No other equipment should be connected to the same power circuit.
- Power voltage should be within 90–110% of rated voltage. Insufficient power supply can cause malfunction, electrical shock, or fire.
- To avoid getting an electric shock, never touch the electrical components soon after the power supply has been turned off.
- After turning on the power, always wait 10 minutes or more before you touch the electrical components.

Installation Safety

- 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.
- 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 fall and cause

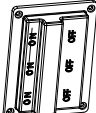
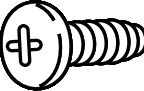
serious injury and damage.

- For units that have an auxiliary electric heater, do not install the unit within three (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 air handler or heater, consult experienced service technicians for disconnection and re-installation of the unit.

ACCESSORIES

INCLUDED INSTALLATION ACCESSORIES

The electric auxiliary heater module comes with the following accessories. These are usually packaged in the air outlet. Remove before install.

ACCESSORY	QUANTITY	IMAGE	ACCESSORY	QUANTITY	IMAGE
Manual	1		Silicone Breaker Cover	1	
Gasket Seal	2		Wiring Diagram	1	
Screws	7		Circuit Breaker Label	1	

FIELD SUPPLIED INSTALLATION ACCESSORIES

The following installation accessories are required and must be purchased separately.

- Power supply wire

COMPATIBILITY

The electric auxiliary heat module is available in sizes 3kW – 20kW to accommodate the specific heat load and electrical requirements of each installation. Please refer to the compatibility and specification tables to follow.

These heaters are compatible with the following models:

R410-A

DRAM18F1A, DRAM24F1A, DRAM30S1A, DRAM36S1A, DRAM48S1A, DRAM60S1A

R454-B

DRAM18F2A, DRAM24F2A, DRUM1824S2A, DRUM3036S2A, DRUM4260S2A

AUXILIARY HEATER BTU COMPATIBILITY CHART

BTU Setting	3kW	5kW	8kW	10kW	15kW	20kW
18K	Y	Y	Y	Y		
24K		Y	Y	Y	Y	
30K		Y	Y	Y	Y	
36K		Y	Y	Y	Y	
42-48K			Y	Y	Y	Y
60K				Y	Y	Y

SPECIFICATIONS

AUXILIARY HEATER ELECTRICAL DATA

HEATER PART MODEL NUMBER (kW)	CIRCUIT 1 208/230V			CIRCUIT 2 208/230V		
	HEATER AMPS (1)	MCA (1)	MOCP (1)	HEATER AMPS (2)	MCA (2)	MOCP (2)
DRHTR03BRKB (3kW)	10.8/ 12.0	14.0/ 16.0	15.0/ 20.0			
DRHTR05BRKB (5kW)	18.0/ 20.0	23.0/ 27.0	25.0/ 30.0			
DRHTR08BRKB (8kW)	28.8/ 32.0	37.0/ 42.0	40.0/ 45.0			
DRHTR10BRKB (10kW)	36.0/ 40.0	46.0/ 53.0	50.0/ 60.0			
DRHTR15BRKB (15kW)	18.0/ 20.0	23.0/ 27.0	25.0/ 30.0	36.0/ 40.0	46.0/ 53.0	50.0/ 60.0
DRHTR20BRKB (20kW)	36.0/ 40.0	46.0/ 53.0	50.0/ 60.0	36.0/ 40.0	46.0/ 53.0	50.0/ 60.0

INSTALLATION

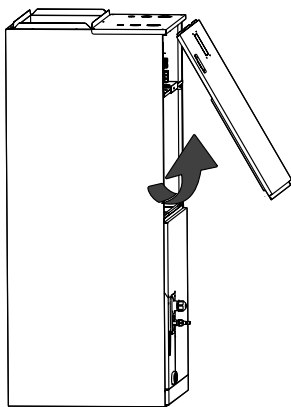


CAUTION

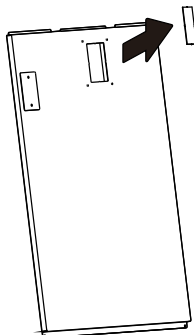
- Installation must be performed by a licensed contractor. Use recommended PPE.
- Before installation, please confirm the electric auxiliary heat module and supplied accessories are complete and free of damage. Do not install if any items are damaged.
- Durastar factory approved heaters are UL rated with the equipment. DO NOT install a non-approved heater, this can cause damage and will not be covered under warranty.
- This heater is for installation in the air handler, DO NOT mount in the ductwork.

INSTALLATION STEPS

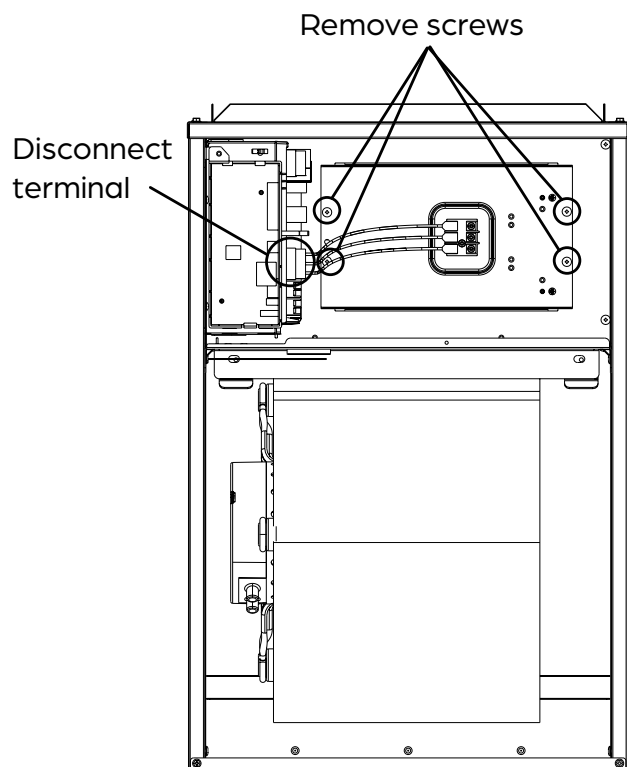
STEP 1: Open the upper cover.



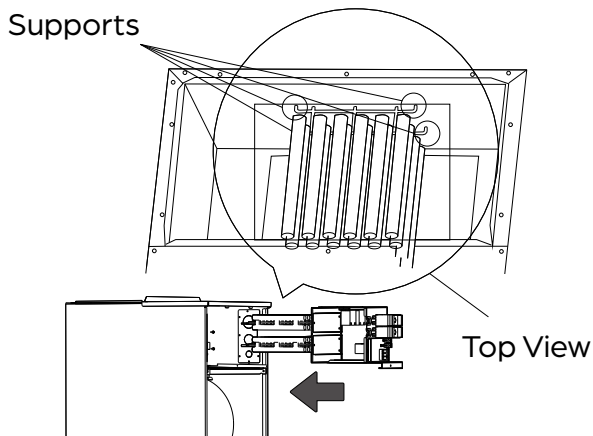
STEP 2: Remove the knock-out hole of the upper cover.



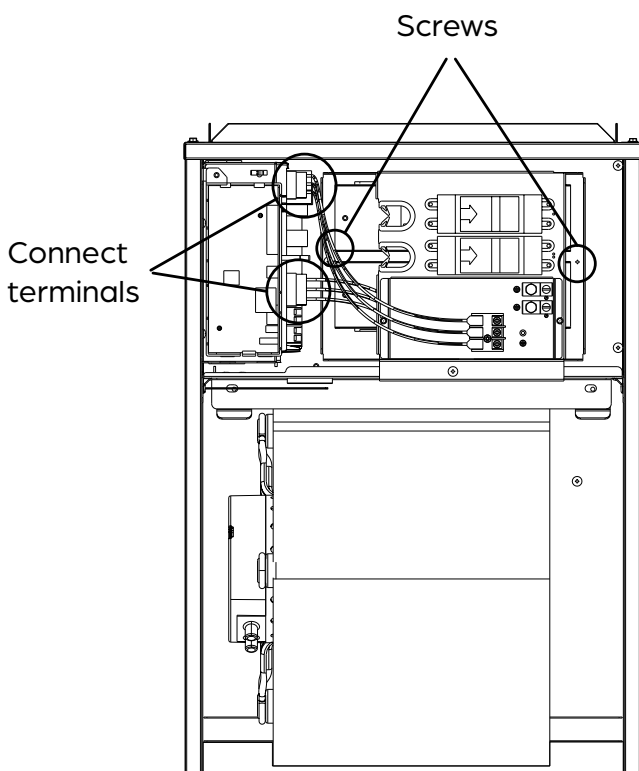
STEP 3: Remove the terminal block and power wires, loosen the screws, and remove the electric auxiliary heating cover. The cover can be discarded.



STEP 4: Install the electric auxiliary heating assembly and note that the support assembly must lock into the support holes in the back of the cabinet.



STEP 5: Tighten the mounting screws.



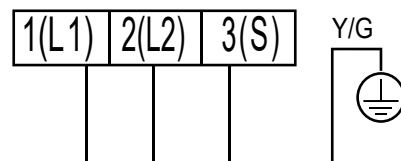
STEP 6: Connect the wiring according to the wiring diagram on page 10 and 11. Attach the wiring diagram sticker provided to the inside of the front cover for future reference.

For power supply A on the wiring diagram, pay special attention to if you have connection type A or B depending on the model air handler you have.

CONNECTION TYPE A MODEL NUMBERS:

DRAM18F1A, DRAM24F1A, DRAM18F2A, DRAM24F2A

In connection type A, always power the heater and the air handler separately. The power/communication cable from the outdoor unit connects with 4 wires using L1, L2, **S** and Ground.



CONNECTION TYPE B MODEL NUMBERS:

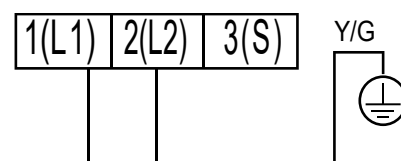
DRAM30S1A, DRAM36S1A, DRAM48S1A, DRAM60S1A, DRUM1824S2A, DRUM3036S2A, DRUM4260S2A

In connection type B, the **S** connection is **not** used. If using 208/230V, the air handler power supply (Power A) can be connected through the heater power supply (Power B). Connect L1, L2 and Ground. If using 115V power for the air handler, power the heater separately with 208/230V.

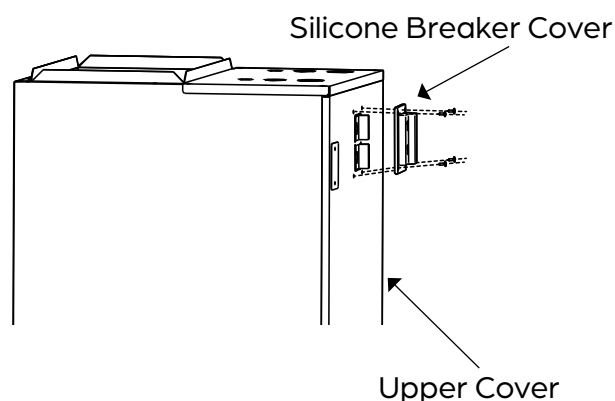


NOTE

When using 115V, L2 is N.



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 included near the silicone breaker cover that was just installed for future reference.

WIRING CONFIRMATION

After the electric heating wiring is connected, please confirm before turning power on that all wiring connections are secure and that wiring size is correct for NEC and local codes.

NOTE



The electric auxiliary heating wiring diagram is packed with the accessories.

If the branch circuit wire length exceeds 100 ft, consult NEC 210-19a to determine the maximum wire length. Use a two (2)% voltage drop.

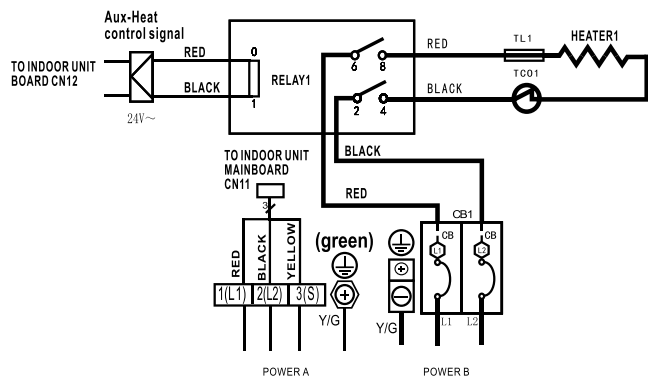
SPECIFICATIONS	NUMBER OF CIRCUIT BREAKERS	NUMBER OF RELAYS	NUMBER OF POWER CORD GROUPS	NUMBER OF POWER CORD GROUNDING SCREWS
3kW	1	1	2	2
5kW	1	1	2	2
8kW	1	2	2	2
10kW	1	2	2	2
15kW	2	3	3	3
20kW	2	4	3	3

Only use copper wire to connect the unit. If wire other than uncoated (non-plated) 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).

WIRING DIAGRAMS: CONNECTION TYPE A

3KW/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,C,D ARE DIFFERENT POWERS.

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

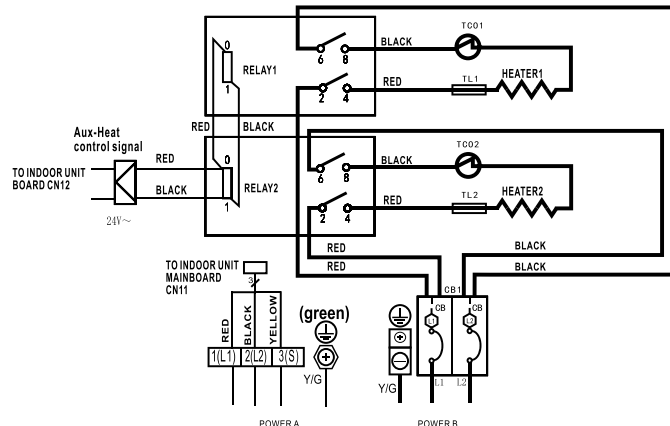
The wiring mode of power supply A shall be based on the type of original wiring terminal of AHU; for type A, S position must be connected to the outdoor S; for type B, S position shall not be connected. When using 208V or 230V, connect L1 and L2. When using 115V, connect L1 and L2 (L2 is used as N).

TYPE A

TYPE B

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,C,D ARE DIFFERENT POWERS.

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

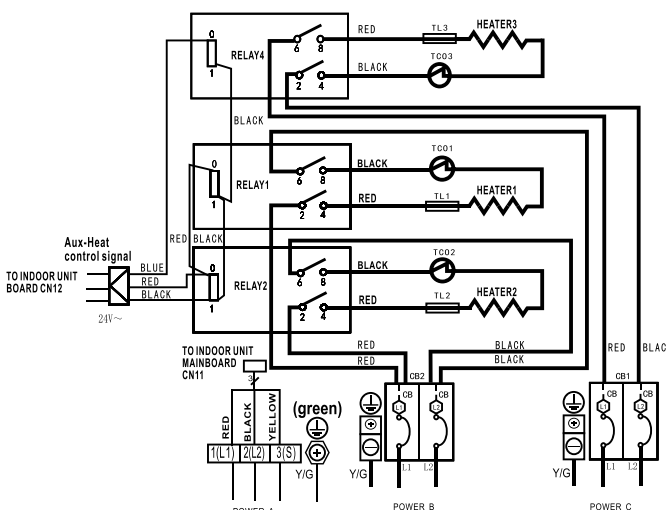
The wiring mode of power supply A shall be based on the type of original wiring terminal of AHU; for type A, S position must be connected to the outdoor S; for type B, S position shall not be connected. When using 208V or 230V, connect L1 and L2. When using 115V, connect L1 and L2 (L2 is used as N).

TYPE A

TYPE B

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,D ARE DIFFERENT POWERS.

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

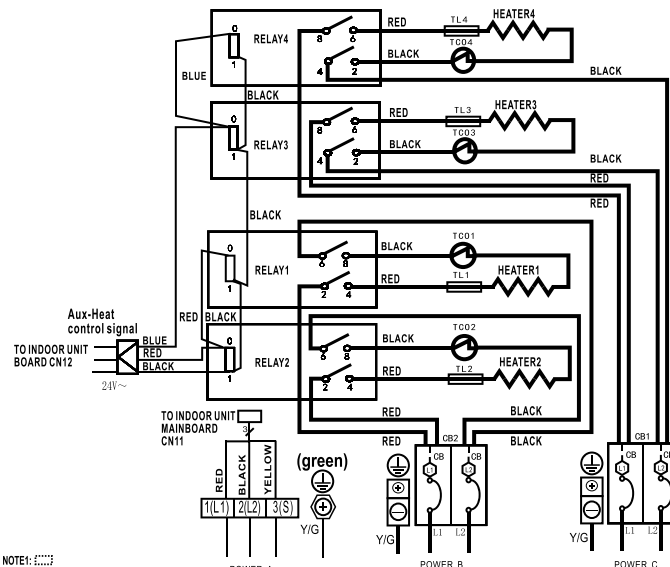
The wiring mode of power supply A shall be based on the type of original wiring terminal of AHU; for type A, S position must be connected to the outdoor S; for type B, S position shall not be connected. When using 208V or 230V, connect L1 and L2. When using 115V, connect L1 and L2 (L2 is used as N).

TYPE A

TYPE B

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,C,D ARE DIFFERENT POWERS.

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

The wiring mode of power supply A shall be based on the type of original wiring terminal of AHU; for type A, S position must be connected to the outdoor S; for type B, S position shall not be connected. When using 208V or 230V, connect L1 and L2. When using 115V, connect L1 and L2 (L2 is used as N).

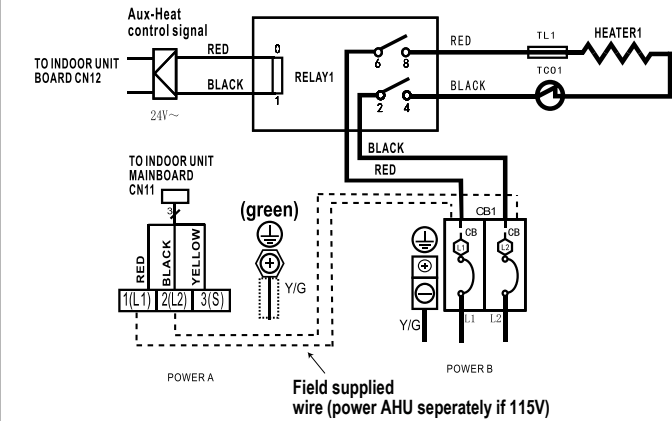
TYPE A

TYPE B

WIRING DIAGRAMS: CONNECTION TYPE B

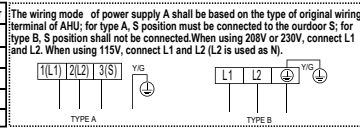
3KW/5KW HEAT KIT

- :THERMAL LINK
- :THERMAL CUT-OUT, SELF-RESETTING



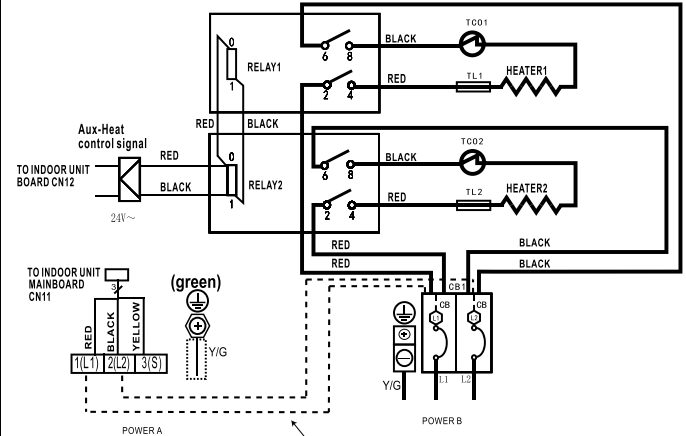
- NOTE1: This symbol indicates the element is optional. The wiring type of the actual unit shall prevail.
- NOTE2: PLEASE ATTACH THE NAMEPLATE TO THE COVER OF THE ELECTRIC CONTROL BOX. ALL THE ROUND HOLES LOCATED ON THE PLATE REPRESENT NUMBERS. PLEASE REFER TO THE INSTALLATION MANUAL FOR DETAILS.
- NOTE3: TO BE WIRED IN ACCORDANCE WITH NEC AND LOCAL CODES.
- NOTE4: POWER A,B,C,D ARE DIFFERENT POWERS.

Round hole number	Relay number	Round hole number	Circuit breaker number
1	RELAY 1	1	CB1
2		2	
3		3	
4		4	
5		5	
6		6	
7		7	
8		8	
9		9	



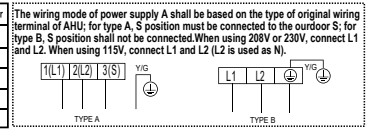
8KW/10KW HEAT KIT

- :THERMAL LINK
- :THERMAL CUT-OUT, SELF-RESETTING



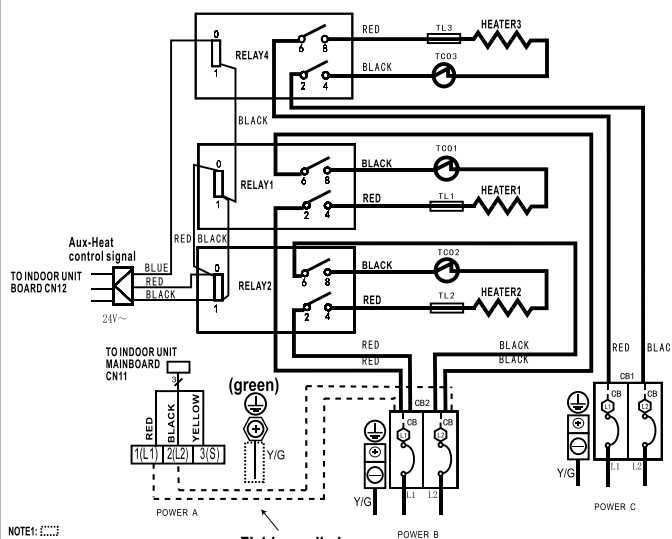
- NOTE1: This symbol indicates the element is optional. The wiring type of the actual unit shall prevail.
- NOTE2: PLEASE ATTACH THE NAMEPLATE TO THE COVER OF THE ELECTRIC CONTROL BOX. ALL THE ROUND HOLES LOCATED ON THE PLATE REPRESENT NUMBERS. PLEASE REFER TO THE INSTALLATION MANUAL FOR DETAILS.
- NOTE3: TO BE WIRED IN ACCORDANCE WITH NEC AND LOCAL CODES.
- NOTE4: POWER A,B,C,D ARE DIFFERENT POWERS.

Round hole number	Relay number	Round hole number	Circuit breaker number
1	RELAY 1	1	CB1
2	RELAY 2	2	
3		3	
4		4	
5		5	
6		6	
7		7	
8		8	
9		9	



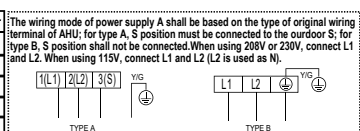
15KW HEAT KIT

- :THERMAL LINK
- :THERMAL CUT-OUT, SELF-RESETTING



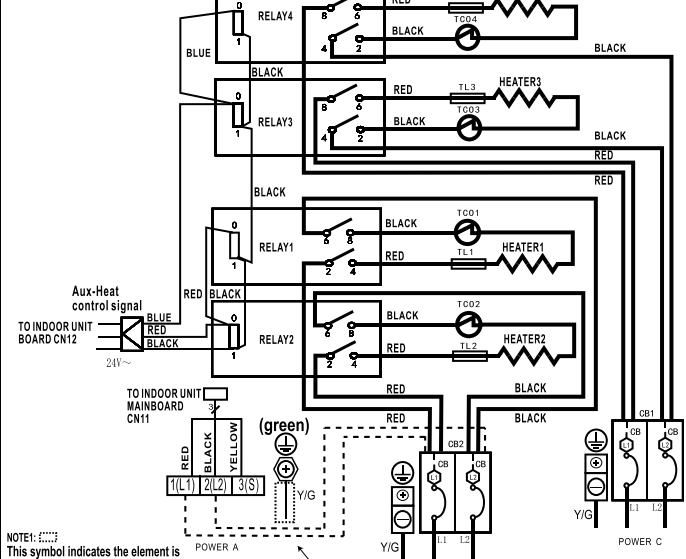
- NOTE1: This symbol indicates the element is optional. The wiring type of the actual unit shall prevail.
- NOTE2: PLEASE ATTACH THE NAMEPLATE TO THE COVER OF THE ELECTRIC CONTROL BOX. ALL THE ROUND HOLES LOCATED ON THE PLATE REPRESENT NUMBERS. PLEASE REFER TO THE INSTALLATION MANUAL FOR DETAILS.
- NOTE3: TO BE WIRED IN ACCORDANCE WITH NEC AND LOCAL CODES.
- NOTE4: POWER A,B,C,D ARE DIFFERENT POWERS.

Round hole number	Relay number	Round hole number	Circuit breaker number
1	RELAY 1	1	CB1
2	RELAY 2	2	CB2
3		3	
4		4	
5		5	
6		6	
7		7	
8		8	
9		9	



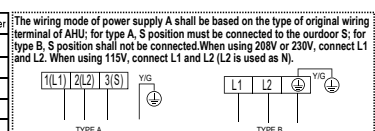
20KW HEAT KIT

- :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,C,D ARE DIFFERENT POWERS.

Round hole number	Relay number	Round hole number	Circuit breaker number
1	RELAY 1	1	CB1
2	RELAY 2	2	CB2
3	RELAY 3	3	
4	RELAY 4	4	
5		5	
6		6	
7		7	
8		8	
9		9	



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