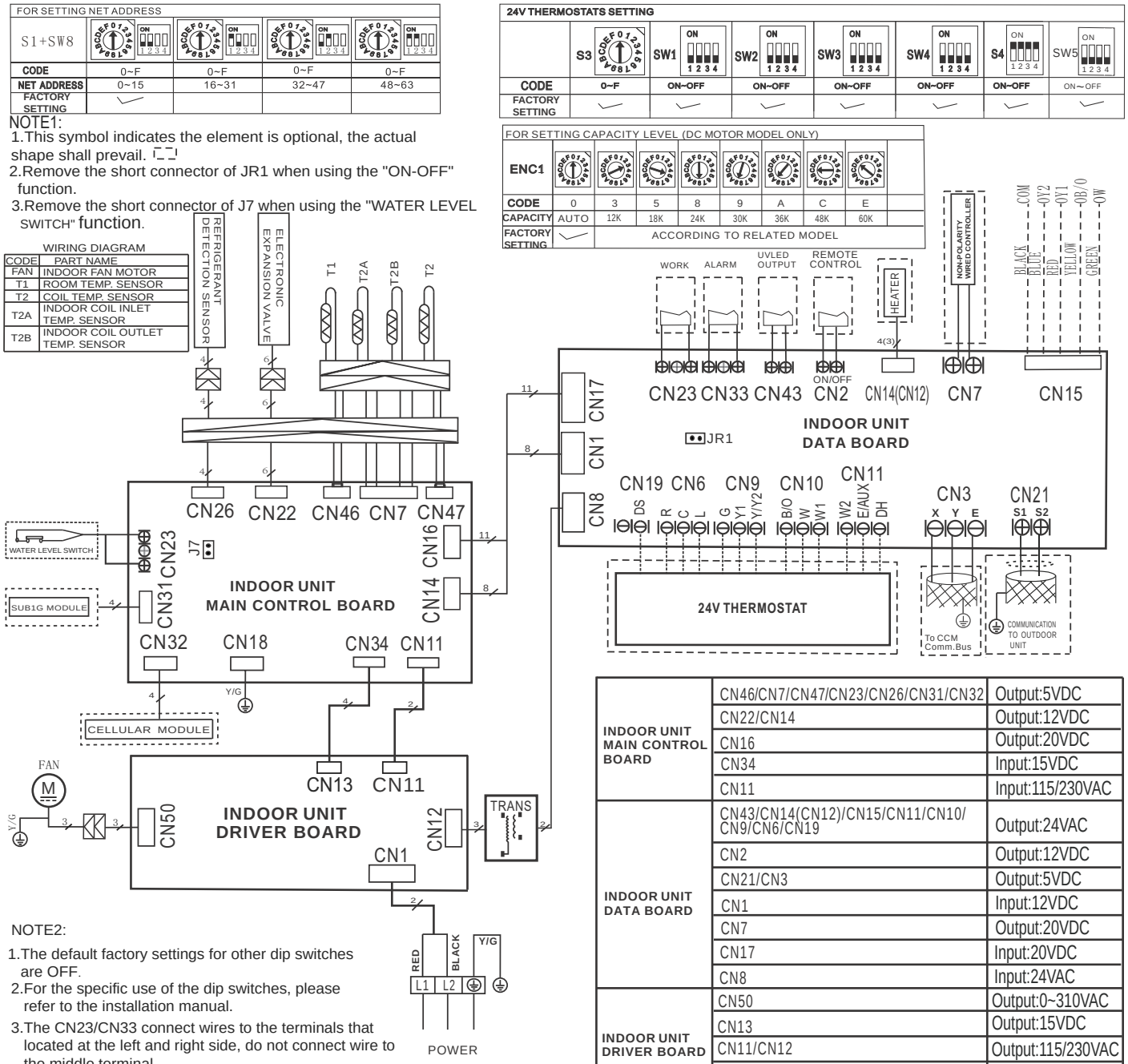
WIRING DIAGRAM



INDOOR UNIT MAIN CONTROL BOARD	CN46/CN7/CN47/CN23/CN26/CN31/CN32	Output:5VDC
	CN22/CN14	Output:12VDC
	CN16	Output:20VDC
	CN34	Input:15VDC
	CN11	Input:115/230VAC
INDOOR UNIT DATA BOARD	CN43/CN14(CN12)/CN15/CN11/CN10/ CN9/CN6/CN19	Output:24VAC
	CN2	Output:12VDC
	CN21/CN3	Output:5VDC
	CN1	Input:12VDC
	CN7	Output:20VDC
	CN17	Input:20VDC
	CN8	Input:24VAC
INDOOR UNIT DRIVER BOARD	CN50	Output:0~310VAC
	CN13	Output:15VDC
	CN11/CN12	Output:115/230VAC
	CN1	Input:115/230VAC

Fig. 24 — Wiring Diagram (For All Sizes)

CAPACITY SETTINGS

24K(18K) AHU3

ENC1 Dip Switch Instruction for Capacity Change
ENC1 dip switch is used for capacity change.

When matching with D5FUAA single zone condensers S1 S2 communication, the indoor unit will automatically adjust to 18,000 BTU/H or 24,000 BTU/ according to condensers capacity.

When matching with D5FUAA single zone condensers 24V communication, it needs to set the ENC1.
Change the capacity of indoor unit to 18,000 BTU/H by adjusting the dip switch ENC1 from “0” to “5”. Change the capacity of indoor unit to 24,000 BTU/H by adjusting the dip switch ENC1 from “0” to “8”.

Power needs to be OFF BEFORE DIP SWITCH adjustment.


(Default setting “0”)


(Dip switch change to be “5” for 18,000BTU/H)


(Default setting “0”)


(Dip switch change to be “8” for 24,000BTU/H)

36K(30K) AHU3

ENC1 Dip Switch Instruction for Capacity Change
ENC1 dip switch is used for capacity change.

When matching with D5FUAA single zone condensers S1 S2 communication, the indoor unit will automatically adjust to 30,000 BTU/H or 36,000 BTU/ according to condensers capacity.

When matching with D5FUAA single zone condensers 24V communication, it needs to set the ENC1. Change
the capacity of indoor unit to 30,000 BTU/H by adjusting the dip switch ENC1 from “0” to “9”. Change the capacity of indoor unit to 36,000 BTU/H by adjusting the dip switch ENC1 from “0” to “A”.

Power needs to be OFF BEFORE DIP SWITCH adjustment.


(Default setting “0”)


(Dip switch change to be “9” for 30,000BTU/H)


(Default setting “0”)


(Dip switch change to be “A” for 36,000BTU/H)

60K(48K) AHU3

ENC1 Dip Switch Instruction for Capacity Change
ENC1 dip switch is used for capacity change.

When matching with D5FUAA single zone condensers S1 S2 communication, the indoor unit will automatically adjust to 48,000 BTU/H or 60,000 BTU/ according to condensers capacity.

When matching with D5FUAA single zone condensers 24V communication, it needs to set the ENC1.
Change the capacity of indoor unit to 48,000 BTU/H by adjusting the dip switch ENC1 from “0” to “C”. Change the capacity of indoor unit to 60,000 BTU/H by adjusting the dip switch ENC1 from “0” to “E”.

Power needs to be OFF BEFORE DIP SWITCH adjustment.


(Default setting “0”)


(Dip switch change to be “C” for 48,000BTU/H)


(Default setting “0”)


(Dip switch change to be “E” for 60,000BTU/H)

Fig. 25 —Capacity Settings

WIRING PRECAUTIONS

⚠ WARNING

Before performing any electrical work, read these warnings:

- All wiring must comply with local and national electrical codes, regulations and must be installed by a licensed electrician.
- All electrical connections must be made according to the Electrical Connection Diagram located on the panels of the indoor and outdoor units.
- 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.
- Power voltage should be within 90-110% of rated voltage. Insufficient power supply can cause malfunction, electrical shock, or fire.
- Installation of an external surge suppressor at the outdoor disconnect is recommended.
- If connecting power to fixed wiring, a switch or circuit breaker that disconnects all poles and has a contact separation of at least 1/8in (3mm) must be incorporated in the fixed wiring. The qualified technician must use an approved circuit breaker or switch.
- Only connect the unit to an individual branch circuit. Do not connect another appliance to that Circuit.
- Make sure to properly ground the air conditioner.
- Every wire must be firmly connected. Loose wiring can cause the terminal to overheat, resulting in product malfunction and possible fire.
- Do not let wires touch or rest against refrigerant tubing, the compressor, or any moving parts within the unit.
- To avoid getting an electric shock, never touch the electrical components soon after the power supply has been turned on. After turning o the power, always wait 10 minutes or more before you touch the electrical components.
- Make sure that you do not cross your electrical wiring with your signal wiring. This may cause distortion, interference or possibly damage to circuit boards.
- No other equipment should be connected to the same power circuit.
- Connect the outdoor wires before connecting the indoor wires.

⚠ WARNING

Failure to follow this warning could result in product damage, personal injury, or death.

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

Wiring Overview

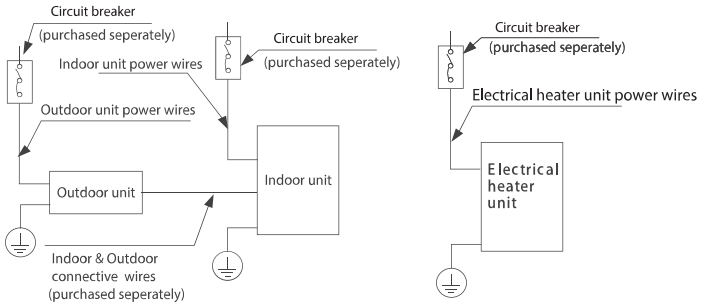


Fig. 26 — Wiring Overview

NOTE: Wiring overview is for general explanation only. Your unit may be slightly different. The actual diagram should prevail.

OUTDOOR UNIT WIRING

Step 1: Prepare the cable for connection.

1. You must first choose the right cable size.
2. Using wire strippers, strip the rubber jacket from both ends of the signal cable to reveal approximately 5.9in (150mm) of wire.
3. Strip the insulation from the ends.
4. Stranded wire requires u-lugs or ring terminals to be crimped onto the ends of the wire.

NOTICE:

- When connecting the wires, strictly stranded wire requires u-lugs or ring terminals to be crimped onto the ends of the wire.
- Follow the wiring diagram found inside the electrical box cover.
- Choose the cable type according to the local electrical switches and regulations. Please choose the right cable size according to the Minimum Circuit Ampacity indicated on the nameplate of the unit.

Step 2: Remove the electrical cover.

- Remove the electric cover of the outdoor unit. If there is no cover on the outdoor unit, take off the bolts from the maintenance board and remove the protection board.

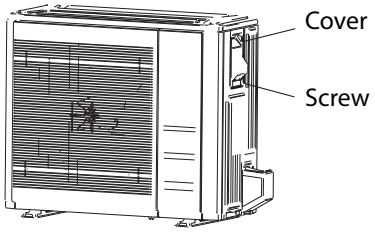


Fig. 27 — Remove Electrical Cover

Step 3: Connect the u-lugs to the terminals

Match the wire colors/labels with the labels on the terminal block. Firmly screw the u-lug of each wire to its corresponding terminal.

- Clamp down the cable with the cable clamp.
- Insulate unused wires with electrical tape. Keep them away from any electrical or metal parts.
- Reinstall the cover of the electric control box.

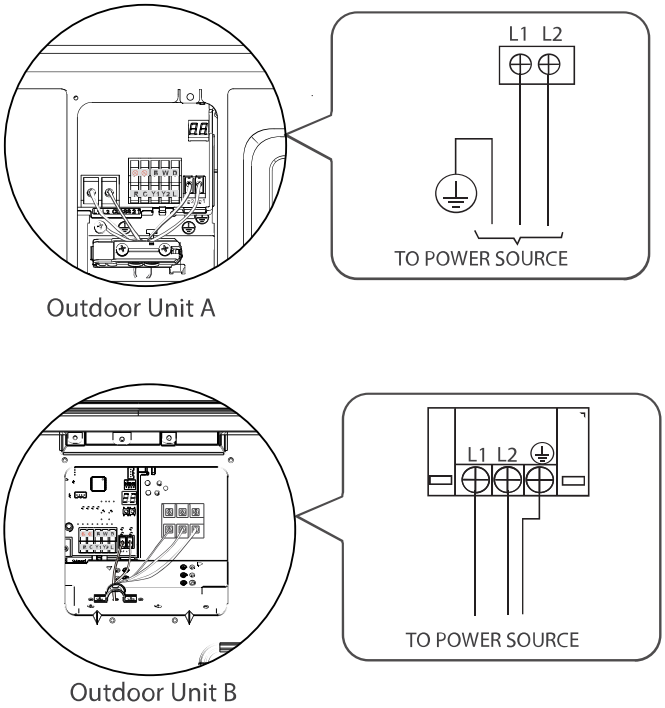


Fig. 28 — Connect U-Lugs to Terminals

1. Remove the wire cover from the unit by loosening the 3 screws.
2. Remove caps on the conduit panel.
3. Mount the conduit tubes (not included) on the conduit panel.
4. Properly connect both the power supply and low voltage lines to the corresponding terminals on the terminal block.
5. Ground the unit in accordance with local codes.
6. Be sure to size each wire allowing several inches longer than the required length for wiring.

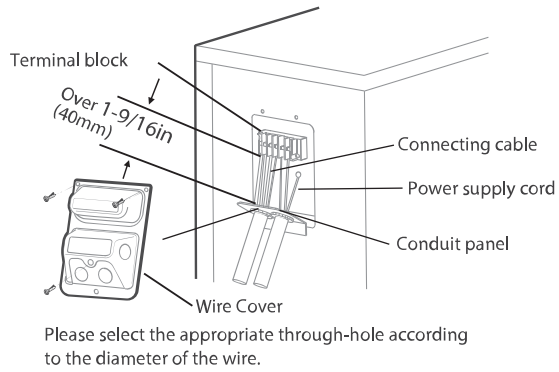


Fig. 29 — Typical Wiring

IMPORTANT: Isolate the power supply leads and communication leads by the strain relief and keep power supply leads away from communication leads.

INDOOR UNIT WIRING

⚠ CAUTION

While connecting the wires, please strictly follow the wiring diagram.The refrigerant circuit can become very hot. Keep the interconnection cable away from the copper tube.

Step 1: Prepare the cable for connection.

1. Using wire strippers, strip the insulating jacket from both ends of the signal cable to reveal about 5.9in(150mm) of the wire.
2. Strip the insulation from the ends of the wires.

Step 2: Open the front panel of the indoor unit.

Use a screwdriver, remove the cover of the electric control box on the indoor unit.

Step 3: Connect the wires to the terminals.

1. Thread the power cable and the signal cable through the wire outlet.
2. Match the wire colors/labels with the labels on the terminal block. Firmly screw the wires of each wire to its corresponding terminal. Refer to the Serial Number and Wiring Diagram located on the cover of the electric control box. Terminal block wiring. When using 208V or 230V, connect L1 and L2. When using 115V, connect L1 and L2 (L2 is used as N).

NOTE: The board will automatically detect input voltage.

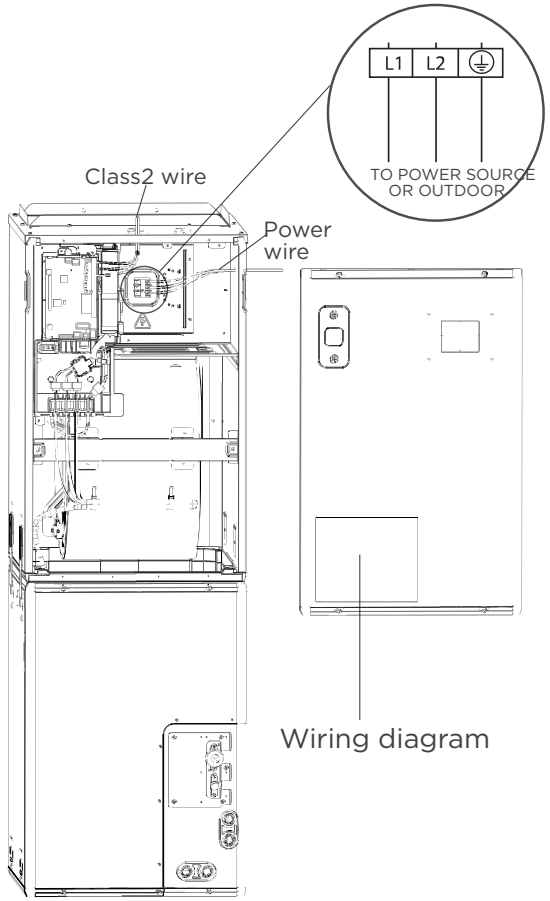


Fig. 30 — Connect the wires to the terminals

3. Clamp down the cable with the cable clamp.The cable must not be loose or pull on the u-lugs.Reattach the electric box cover. Clamp down the cable with the cable clamp.The cable must not be loose or pull on the u-lugs. Reattach the electric box cover

⚠ CAUTION

- While connecting the wires, strictly follow the wiring diagram.
- The refrigerant circuit can become very hot. Keep the interconnection cable away from the copper tube.
- The holes on cover of the electronic control box must be threaded through with armored wires.

SPECIFY WIRING METHODS

⚠ WARNING

Please refer to the wiring nameplate for the wiring method. Do not connect 24VAC to S1 - S2, as this will damage the system.

Scenario 1:

This is the preferred method of control. This allows a 24V thermostat to be used with the RS485 communication between the indoor and outdoor units.

- None of the 24V outdoor terminals can be used for this scenario.
- The B terminal and W terminal should not be used together at the indoor unit.
- W should only be used with a conventional thermostat for the heat demand at the indoor unit.
- DS is a reserve Terminal.

To use a 24V thermostat, Refer to Figure 31.

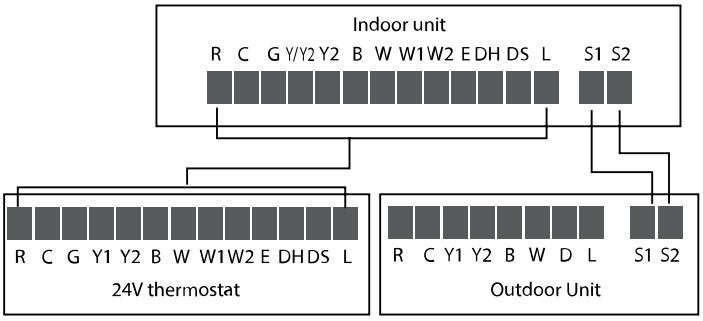


Fig. 31 — Scenario 1

Scenario 2 (Default)

This allows the 1401 wired controller to be used with RS485 communication between indoor and outdoor units.

- None of the 24 volt terminals at the air handler or outdoor unit can be used for this scenario
- Using the 1401 wired controller allows for the system to be fully communicating.
- Refer to the 1401 wired controller Owner's Manual for wired controller operating information.

Refer to the wiring method of indoor and outdoor unit communication and wired controller as follows:

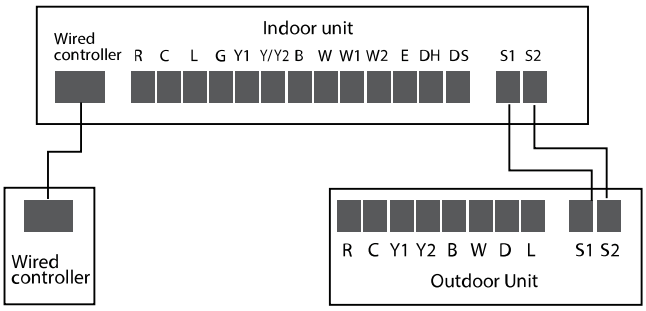


Fig. 32 — Scenario 2 (Default)

Scenario 3

This allows a 24 volt thermostat to be used with 24 volt communication between the indoor and outdoor units. Some communication features will not be available with this method.

NOTE: This equipment energizes the reversing valve in heat. Ensure that the B terminal is configured at the thermostat for heat.

NOTE: This method can be used for a D5CUHA outdoor unit and a third party indoor unit or cased coil and gas furnace.

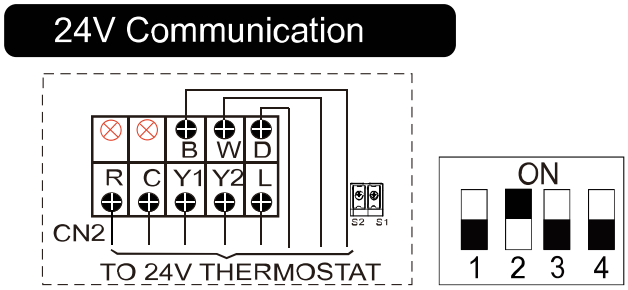


Fig. 33 — Scenario 3 – Wiring to the Outdoor Unit

NOTE: DIP switch 2 in the outdoor unit must be turned on for Scenario 3 only. Leave off for the other 2 scenarios.

NOTE: The 24 volt wire terminals in the outdoor unit should only be used for Scenario 3. S1 and S2 should only be used for Scenarios 1 and 2.

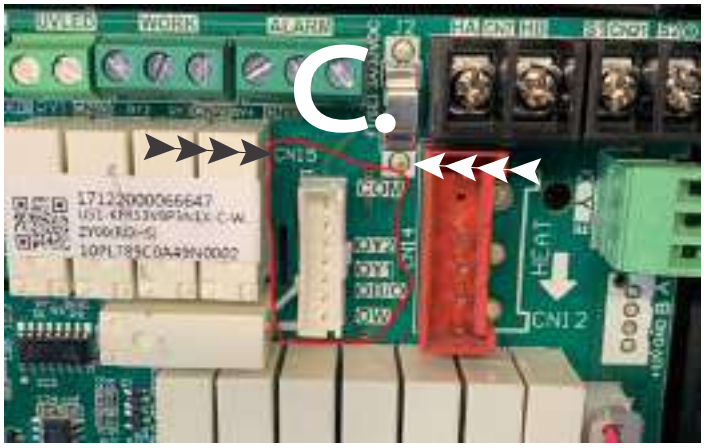


Fig. 34 —CN15 Harness Connection - AHU 24V Board

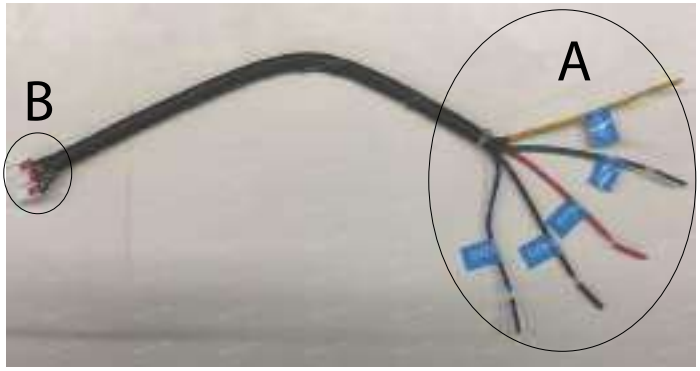
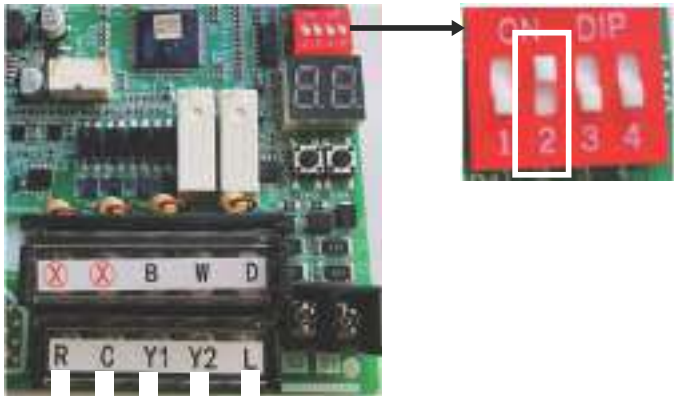


Fig. 35 —CN15 Harness

NOTE: For scenario 3, connect the outdoor unit 24 volt terminals (A) to the 24 volt harness (included, See Fig. 35) and plug in the CN15 harness connector (B) on AHU 24 volt board (C) (See Fig. 34). This will allow for the dissipation logic to shut off the ODU when a refrigerant leak is sensed if 24 volt communication is used.
24V must never be connected to S1 – S2. All wiring must be in compliance with the above scenarios. Incorrect wiring can damage the outdoor and indoor control boards.



Scenario 3: DIP Switch 2 = ON.
Scenarios 1 and 2: DIP Switch 2 = OFF.

Fig. 36 — 24V Connection (Scenario 1) Dip Switch Settings

The SW3 button is not active.

SW4 button should be used for point check inquiry and forced defrost.

NOTE: The use of shielded communication or thermostat wire is not required, but is recommended where separation from high voltage conductors can not be maintained, or in areas with high electrical noise. The shield must be grounded at the outdoor unit and stripped back and taped at the indoor unit. Grounding at both ends results in an increase of noise transmitted onto the signal wires.

Outdoor Unit Dip Switch Setting

Press the SW4 button 10S for force defrosting (the SW3 button is not active).

NOTE: Forced defrost should only be used to test defrost. All defrost termination conditions affect the length of time forced defrost is active.

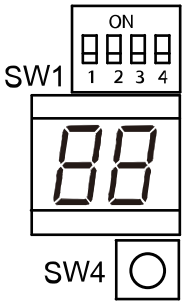


Fig. 37 — Outdoor Unit Dip Switch

Table 18 — Outdoor Unit Dip Switch

NO	DIAL CODE	FEATURES	ON	OFF
1	SW1-1	Function to be defined	N/A	N/A
2	SW1-2	Communication method code	24V communication (scenario 3 only)	RS 485 communication (scenarios 1 and 2 only)
3	SW1-3	Recovery time enhancement (scenario 3 only)	Increases compressor frequency for quicker recovery to set point	Default settings for scenarios 1 and 2
4	SW1-4	Enhanced defrosting function (all 3 scenarios)	Enhanced defrosting	Default setting (standard defrost algorithm)

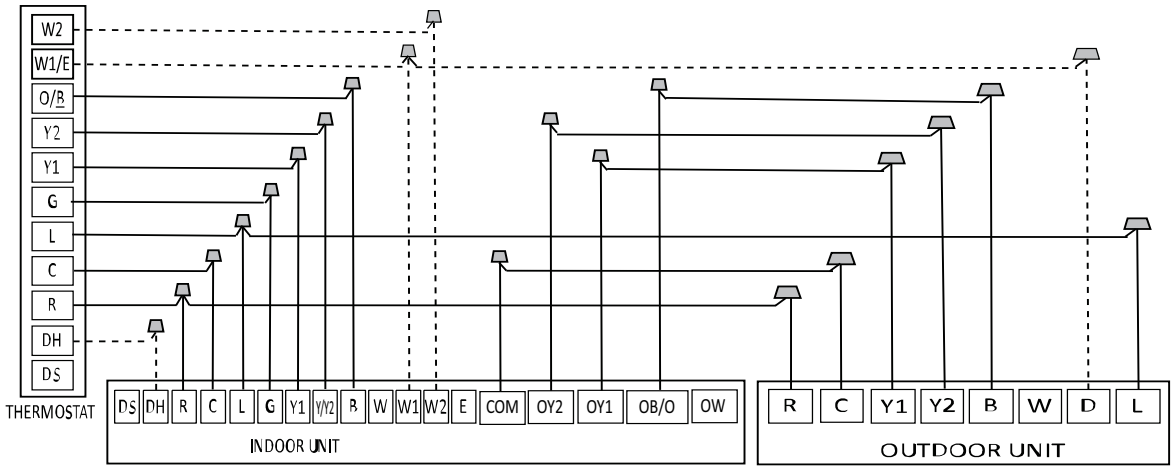
NOTE: SW4 is the button for forced defrosting, and it is active for all three scenarios.

NOTE: When the SW1-4 is ON, the outdoor unit will have enhanced defrosting function.

If the enhanced defrosting is activated, defrost will be active after 40 minutes of compressor cumulative run time in heat mode.

If standard defrosting is activated, defrost will be active after 90 minutes of compressor cumulative run time in heat mode.

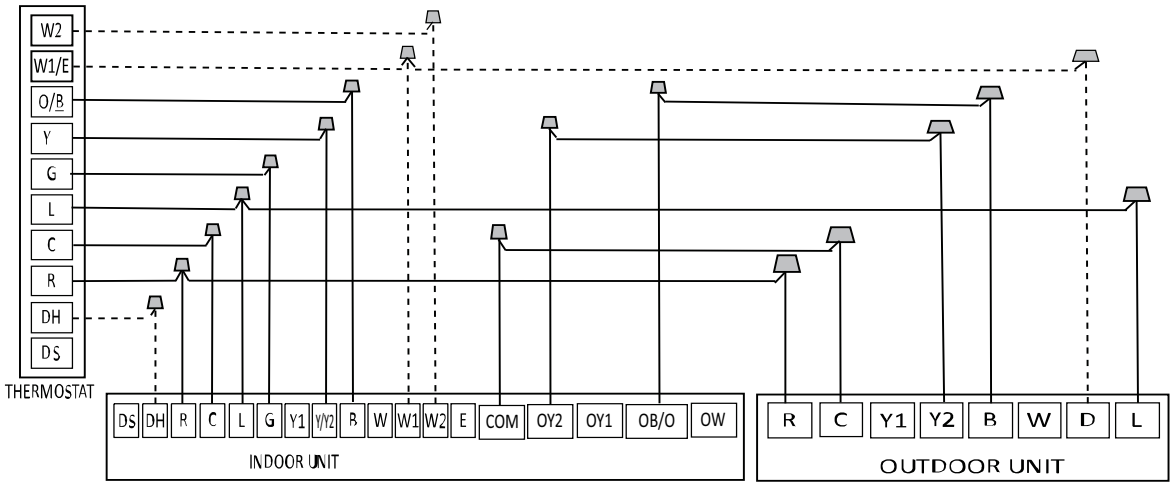
Thermostat Wiring



S4-2 Default on, DH function off. Turn switch off to activate DH function.

S4-4 Default on, W1 and W2 shorted for single stage Aux heat operation. Turn off to separate stages.

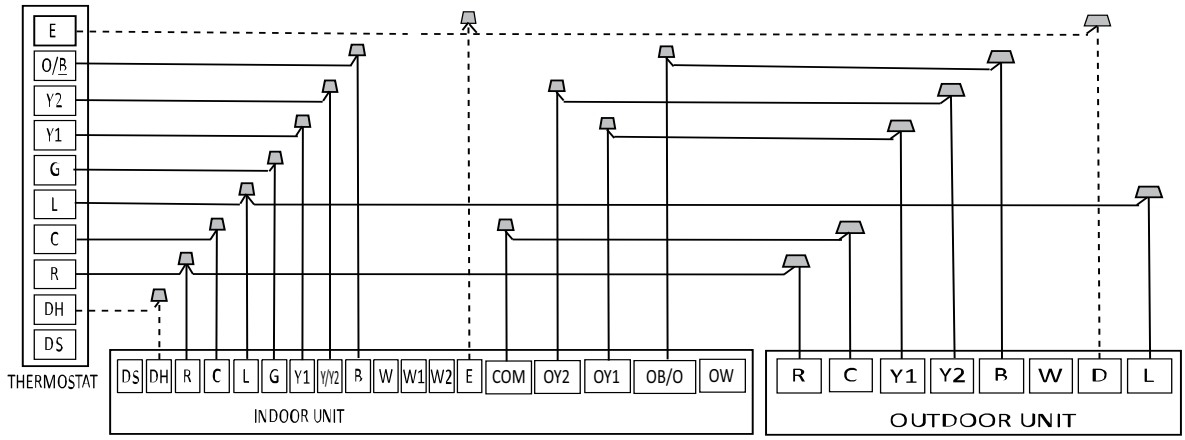
Fig. 38 — Wiring for 4H and 2C Thermostat



S4-2 Default on, DH function off. Turn switch off to activate DH function.

S4-4 Default on, W1 and W2 shorted for single stage Aux heat operation. Turn off to separate stages.

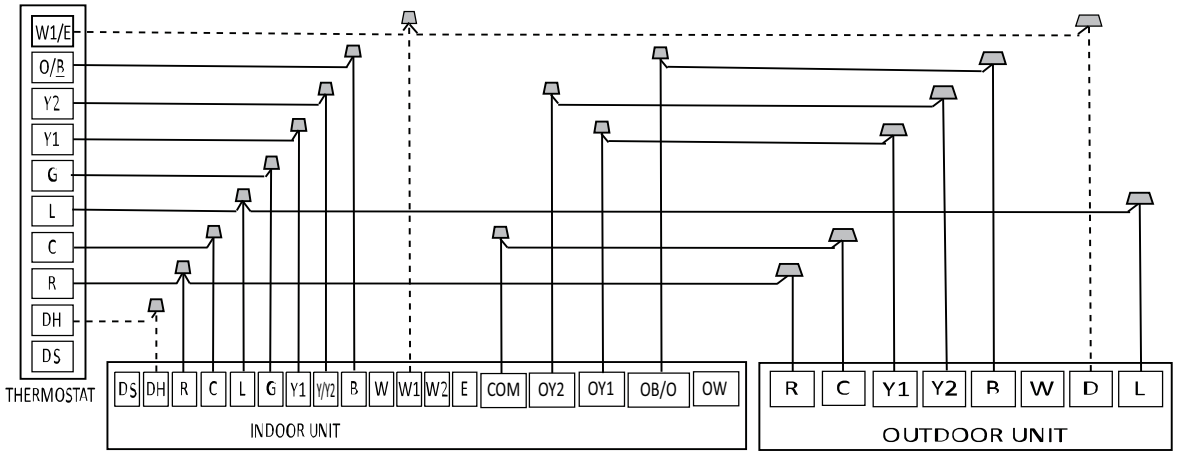
Fig. 39 — Wiring for 3H and 1C Thermostat



S4-2 Default on, DH function off. Turn switch off to activate DH function.

Emergency heating control three groups of electric heating at the same time

Fig. 40 — Wiring for 3H and 2C Thermostat



S4-2 Default on, DH function off. Turn switch off to activate DH function.

S4-4 Default on, W1 and W2 shorted for single stage Aux heat operation. Turn off to separate stages.

Fig. 41 — Wiring for 3H and 2C Thermostat

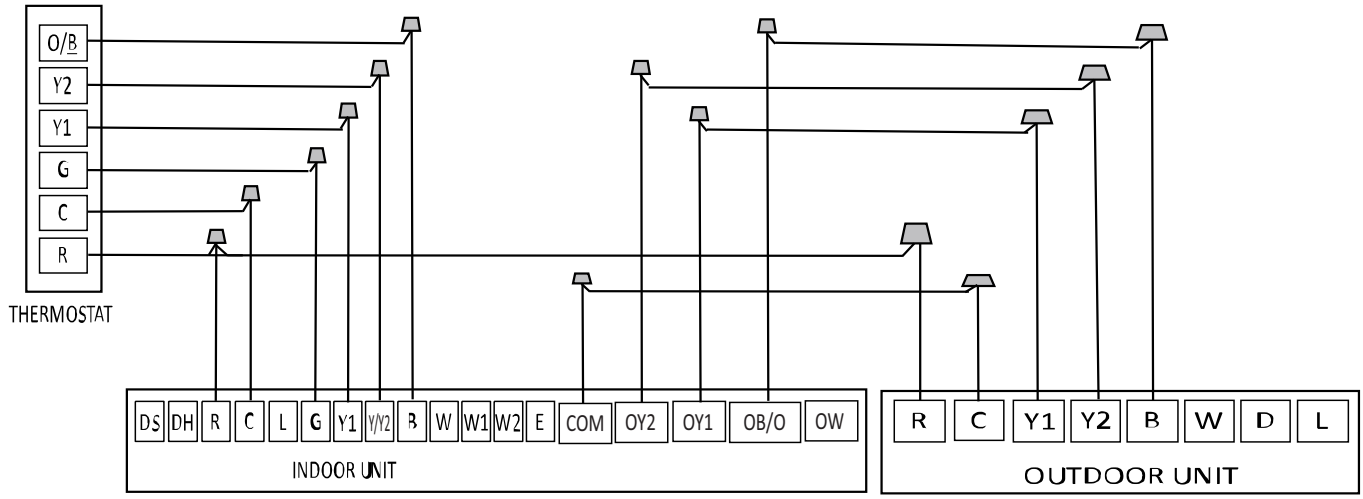
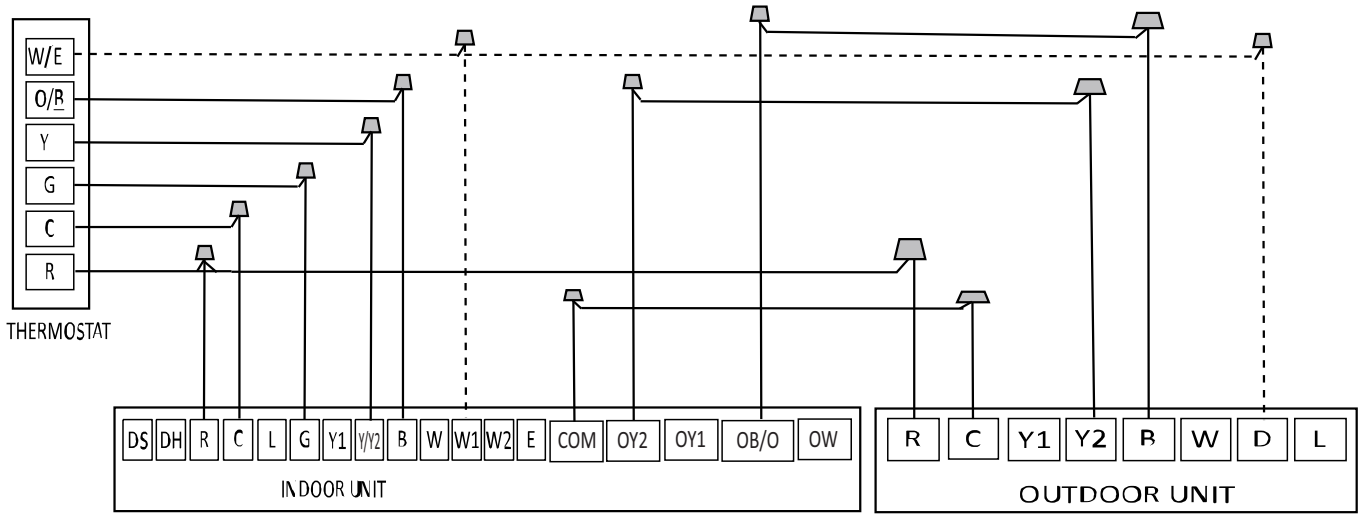


Fig. 42 — Wiring for 2H and 2C Thermostat



S4-4 Default on, W1 and W2 shorted for single stage Aux heat operation. Turn off to separate stages.

Fig. 43 — Wiring for 2H and 1C Thermostat

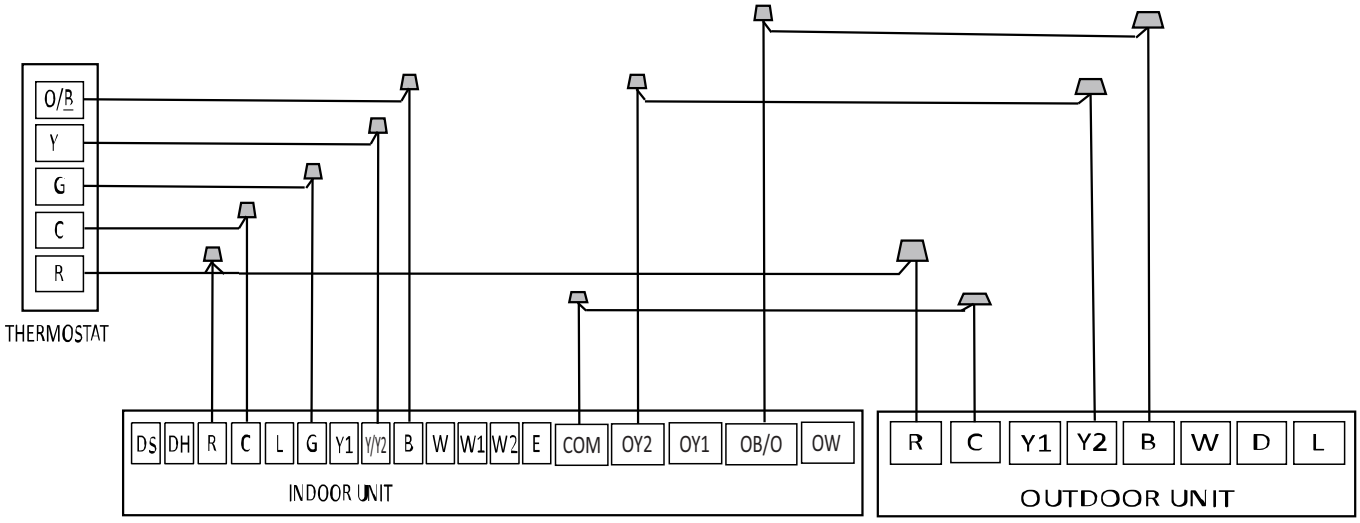


Fig. 44 — Wiring for 1H and 1C Thermostat

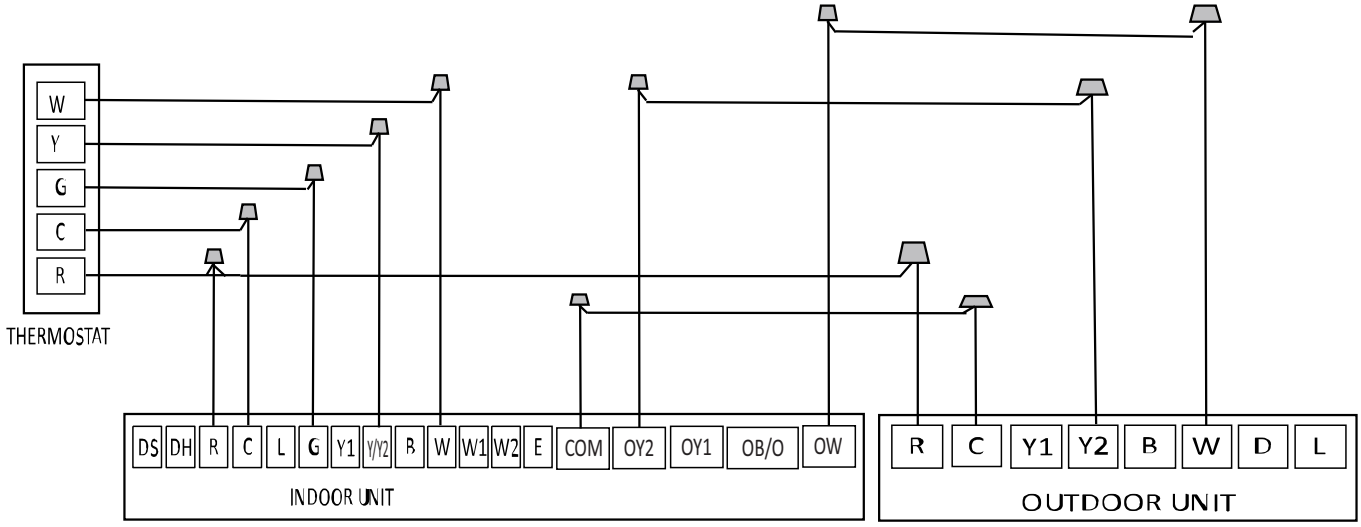
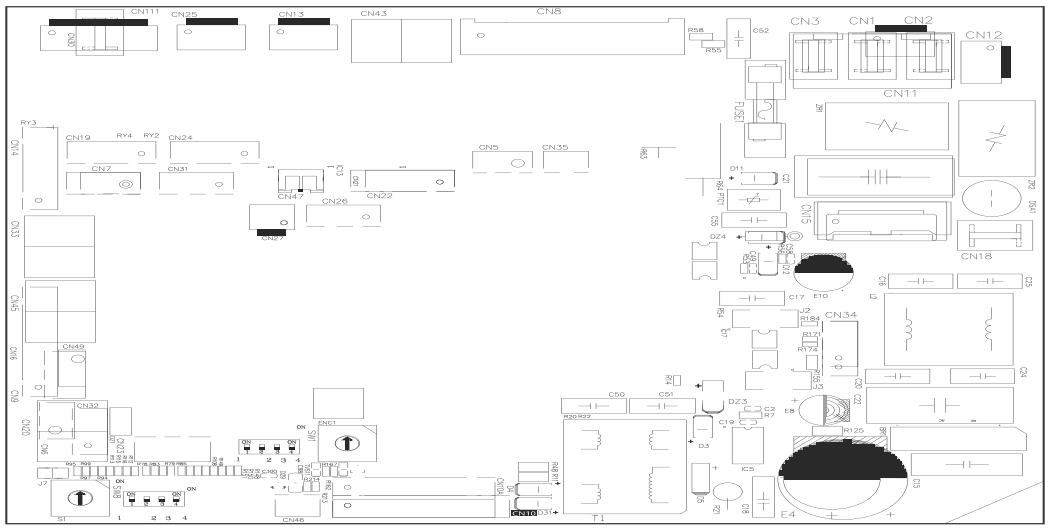


Fig. 45 — Wiring for 1H and 1C Thermostat

Optional function wiring



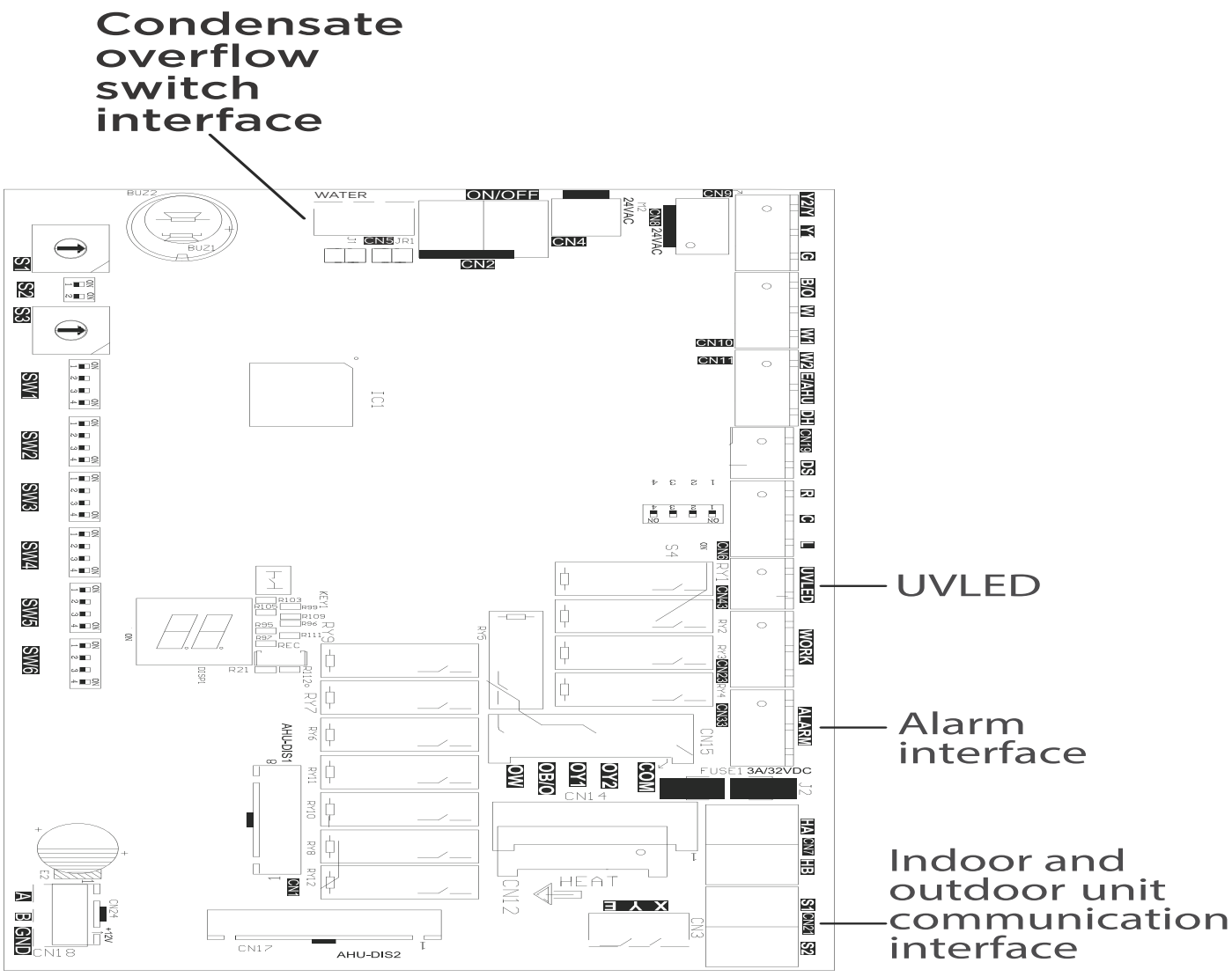
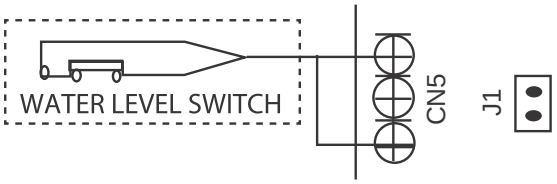


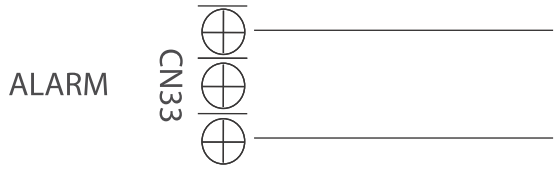
Fig. 46 —Optional Function Wiring

Condensate Overflow Switch

The unit will accommodate a remote condensate overflow switch. To enable, remove jumper J1, and connect the installer provided condensate overflow device to CN5 per below. When an overflow condition is present, the device should open connection signaling the unit to turn off the system.



The fault warning:



Alarm Output

An alarm output (CN33) can be utilized if actions are required when a fault is present. This is a passive outlet port, so you will need to input a voltage signal. The relay is normally-open for normal operation, and closed when a fault condition is active.

Humidifier Control

To connect a humidifier, utilize the passive signal “WORK” output (CN23) port as well as the R and C wires on the controller, and wire the humidistat and humidifier per above wiring diagram. When the fan is running, the CN23 relay will be closed, which allows power to the humidifier when the humidistat is below humidity setpoint. If the thermostat has an HUM interface, connect the humidifier directly to the HUM and C ports.

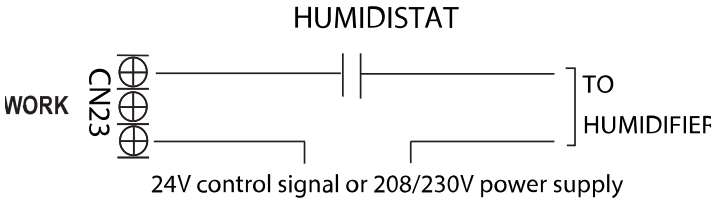


Fig. 47 — Humidistat

UV, Fresh Air or ION Generator Wiring

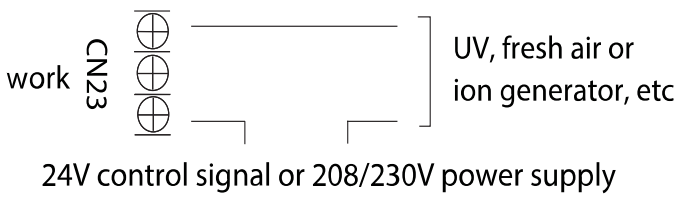


Fig. 48 — UV, Fresh Air, or Ion Generator Wiring

The WORK port is linked with the fan. When the fan is running, the relay is closed.

Control Logic

Table 19 — Indoor Unit Connector

CONNECTOR	PURPOSE
R	24V Power Connection
C	Common
G	Fan Control
Y1	Low Demand
Y/Y2	High Demand
B	Heating Reversing Valve
W	Heating Control
W1	Stage 1 Electric Heating
W2	State 2 Electric Heating
E/AUX	Emergency Heating
DH/BK	Dehumidification / Zoning Control
DS	Reserved Signal
L	System Fault Signal

Table 20 — Outdoor Unit Connector

CONNECTOR	PURPOSE
R	24V Power Connection
C	Common
Y1	Low Demand
Y2	High Demand
B	Heating Reversing Valve
W	Heating Control
D	Defrost Control
L	System Fault Signal

LED Display

The control displays unit status as well as any active fault codes on the LED display. If the unit is functioning normally, the LED displays the current temperature setpoint. When a fault code is active, the display flashes quickly the active fault code. Refer to the fault code table located in the troubleshooting section of the manual for detailed fault code information.

Instructions (for Wired Controller only)

- Press to enter the forced automatic mode, press KEY1 again to enter the forced cooling mode (LED display FC), and press KEY1 again to shut down.
- Long press under forced cooling mode (LED display FC) 5s to enter forced defrost mode

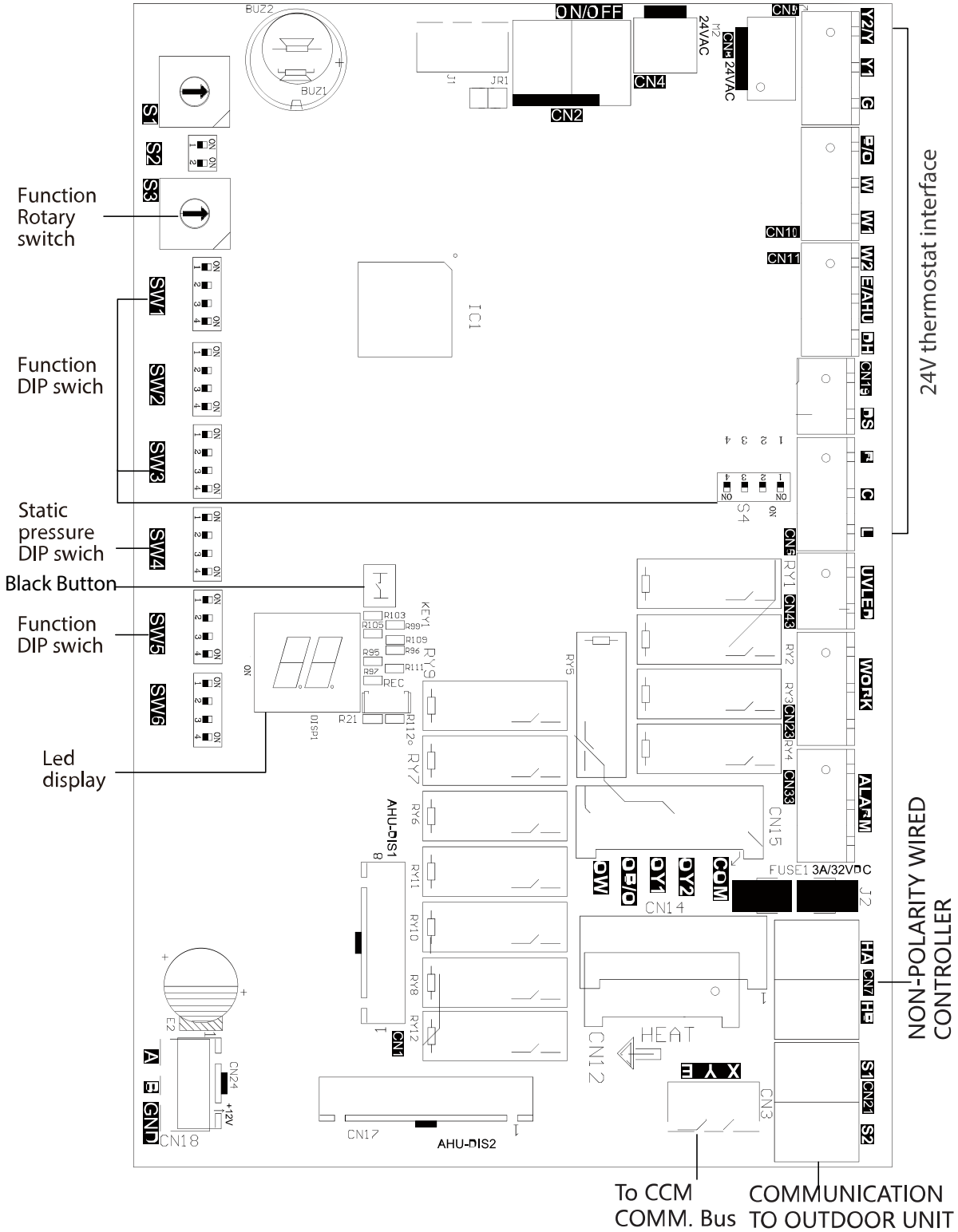


Fig. 49 — DIP Switch Definitions

The 24V thermostat mode needs to refer to the following settings.

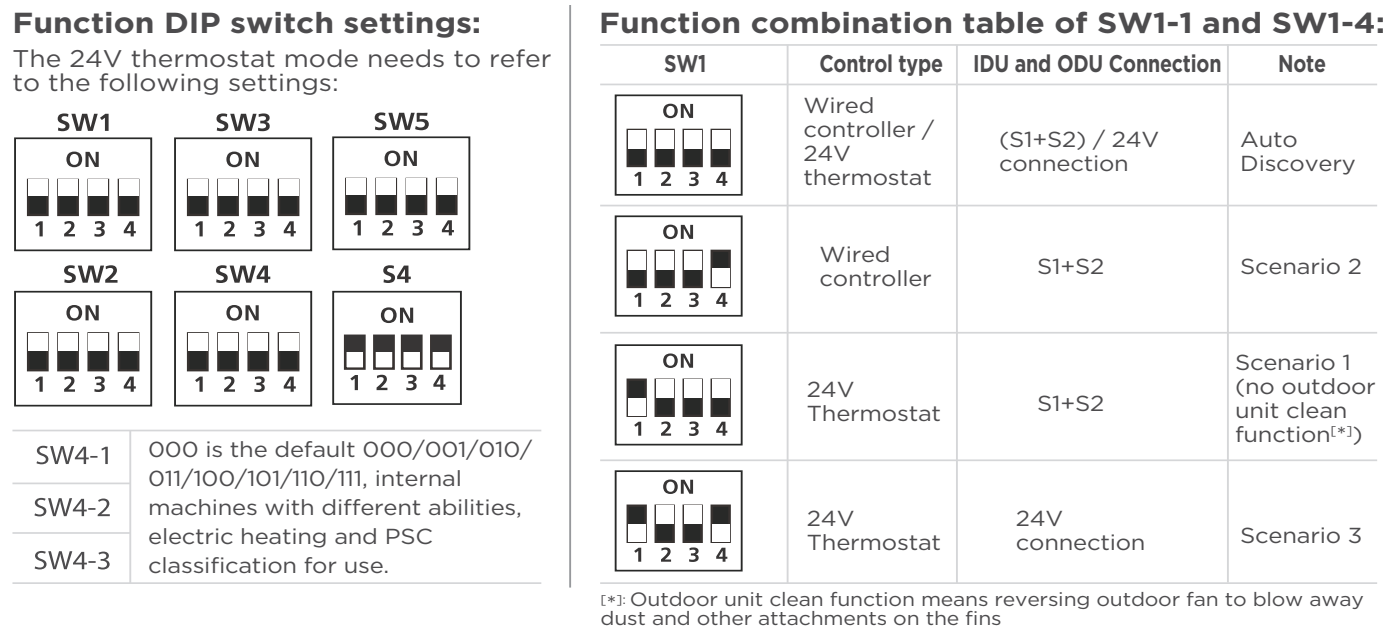


Fig. 50 — Function DIP Switch Settings

NOTE: Refer to Table 27 on page 47 for setting airflow for each heater.

Table 21 — Functions of SW1-1 and SW1-4

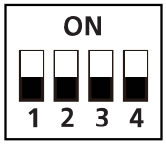
SW1	CONTROLLER TYPE	IDU AND ODU CONNECTION	NOTE
	Wired controller / 24V thermostat	(S1 + S2) / 24V connection	Auto Discovery
	Wired controller	S1 + S2	Scenario 2
	24V thermostat	S1 + S2	Scenario 1
	24V thermostat	24V connection	Scenario 3

Table 22 — Indoor Unit Dial Codes

NO	DIAL CODE	CONTROL SCENARIO	FUNCTION	ON	OFF	NOTE
1	SW1-2	1, 2, 3	Anti-cold blow protection option	NO	[Default] YES	
2	SW1-3	1, 2, 3	Single cooling / heating and cooling options	Cooling	[Default] Cooling & Heating	
3	SW2-1	1	Compressor Running (demand working with heat pump+ Electric heat)	Compressor slower speed	[Default] Faster Compressor	Only affects compressor and W1
4	SW2-1	2	Temperature differential to activate first stage auxiliary heat (the GAP of T1 and Ts), Wire controller demand with heat pump + electric heat working together	2°F (1°C)	[Default] 4°F (2°C)	
5	SW2-2	2	Electric heat on delay	YES	[Default] NO	
6	SW2-3	2	Electric auxiliary heating delay to start time	30 minutes	[Default] 15 minutes	Based on SW2-2 is ON
7	SW2-4	1	Compressor	The operation of heat pump is limited by the outdoor temperature, and the operation of auxiliary heat is not limited.The system makes judgments according to the following rules: 1) The compressor can be operated when the outdoor temperature is ≥S3 DIP switch temperature +2 °C. 2) The compressor cannot be operated when the outdoor temperature is lower than the S3 DIP switch temperature.	[Default] The operation of heat pump is limited by the outdoor temperature, and the operation of auxiliary heat is not limited. The system makes judgments based on the following rules: 1) The compressor cannot be operated when the outdoor temperature is lower than the S3 DIP switch. 2) The compressor can be operated when the outdoor temperature is ≥S3 DIP switch temperature +2 °C.	SW2-4 and S3 need to working together
8	SW2-4	2	Compressor/Auxiliary heat out-door ambient lockout	The operation of heat pump is limited by the outdoor temperature, and the operation of auxiliary heat is not limited.The system makes judgments according to the following rules: 1) The compressor can be operated when the outdoor temperature is ≥S3 DIP switch temperature +2 °C. 2) The compressor cannot be operated when the outdoor temperature is lower than the S3 DIP switch temperature.	[Default] Only one heat pump or auxiliary heat can be operated.The system makes judgments according to the following rules: 1) When the outdoor temperature is lower than the S3 DIP switch temperature, the compressor is not allowed to operated, but auxiliary heat is allowed to operated; 2) When the outdoor temperature is ≥S3 DIP switch temperature +2(°C), the compressor can be operated, but auxiliary heat cannot be operated.	
9	Rotary Switch S3	1, 2	Set outdoor temperature Limitation (for auxiliary heating or compressor)	Table A		
10	SW3-1	1	Maximum continuous runtime allowed before system automatically stages up capacity to satisfy set point. This adds 1 to 5°F to the user set point in the calculated control point to increase capacity and satisfy user setpoint.	30 minutes	[Default] 90 minutes	
11	SW3-2	1	Cooling and heating Y/Y2 temperature differential adjustment.	Compressor slower speed	[Default] Faster Compressor	Only affects compressor
12	SW3-3	1	Compressor Running (demand working with heat pump+ Electric heat)	Compressor slower speed	[Default] Faster Compressor	Only affects compressor and W2
13	SW3-3	2	Temperature differential to activate second stage auxiliary heating (the GAP of T1 and Ts) Wire controller demand with heat pump + Electric heat working together	4°F (2°C)	[Default] 6°F (3°C)	
14	SW3-4	1, 3	Fan speed of cooling mode when 24V Thermostat is applied for.	Turbo	High	
15	SW4-1,2,3	1, 2, 3	Electric heat nominal CFM adjustment	Available settings are 000/001/010/011. Each digit corresponds an individual switch position. For example [SW4-1 OFF, SW4-2 ON, SW4 -3 OFF] = 010		
16	SW4-4	2	Temperature differential to activate third stage auxiliary heating (the GAP of T1 and Ts) Wire controller demand with heat pump + electric heat working together	6°F (3°C)	[Default] 8°F (4°C)	Only valid for product which has three stage auxiliary heating.
17	S4-4	1, 3	Default ON	[Default] For single stage supplemental heat, W1 and W2 are connected	For dual stage supplemental heat, W1 and W2 are controlled independently.	
18	S4-2	1, 3	DH function selection	[Default] Dehumidification control not available	Dehumidification feature is enabled through thermostat	
19	SW5-3	1, 2, 3	L or Alarm relay selection	L output 24V or alarm relay close only when refrigerant sensor fault or R454B refrigerant leak detected	[default] L output 24V or alarm relay close when any fault detected	
20	SW5-4	1, 3	R output selection	R stops output 24V when R454B refrig-erant leak detected	[default] R keeps output 24V even when R454B refrigerant leak detected	

Table 23 — Control Scenario

CONTROL SCENARIO	24V Tstat, S1 + S2	1
	Wired Controller S1 + S2	2
	Full 24V	3

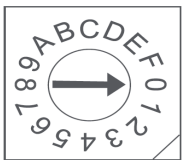


Fig. 51 — Address DIP Switch

Note: For Scenario 1 & Scenario 2, when the IDU paired with a single split outdoor unit, after power-on or recovery from IDU and ODU communication failure, the compressor in heating mode delays starting for 3 minutes.

Address dialing S1+SW8: When the user uses the centralized controller, the address dialing is required.
Network address: The address silkscreen is NET address, which is composed of a 16-bit address rotary code S1 plus a two-digit DIP switch SW8 [Set during engineering installation, no network function does not need to be set]
When SW8 is 00 (the dialing code is not connected), the network address value is the value of S1;
When SW8 is 10 (corresponding to the switch of the hardware connected to the 10K resistor), the network address value is S1 plus 16;
Determined by dial code SW8 1-10K 2-5.1K
When SW8 is 01 (corresponding to the dial code of the 5.1K resistor connected to the hardware is turned on), the network address value is the value of S1 plus 32;
When SW8 is 11 (all dialing codes are on), the network address value is the value of S1 plus 48.

Table 24 — Table A

S3	S3 (°F)	S3 (°C)
0	OFF	OFF
1	-22	-30
2	-18	-28
3	-15	-26
4	-11	-24
5	-8	-22
6	-4	-20
7	3	-16
8	10	-12
9	18	-8
A	25	-4
B	32	0
C	36	2
D	39	4
E	43	6
F	46	8

Table 25 — Determined by Dial Code SW8 1-10K 2-5.1K

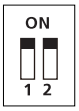
DIAL CODE SELECTION	WEBSITE ADDRESS
	S1 + 48
	S1 + 32
	S1 + 16
	S1

Table 26 — Outdoor Unit DIP Switch Settings

NO.	DIAL CODE	FEATURES	ON	OFF
1	SW1-1	Function to be defined		
2	SW1-2	Communication Dial Code	485 Communication Scheme	24V Communication Scheme
3	SW1-3	Strong Cold and Strong Heat Function	The Cooling / Heating Target Pressure Compensation Value is Valid	The Cooling / Heating Target Pressure Compensation Value is Invalid
4	SW1-4	Enhanced Defrosting Function	Enhanced Defrosting	Default Setting (standard defrost algorithm)

Table 27 — Air Volume Table

Capacity	External Static Pressure Range	Fan speed	Electric auxiliary heat module	24V thermostat		Wired controller		Airflow volume (CFM)
				DIP Switch	24V terminal engaged	DIP Switch	Mode	
18K(1.5 Ton)	0 - 1.0 in.wc.	Cooling Turbo	—	SW3-4=ON	Y2/Y	—	Cool	618
		Cooling High	—	SW3-4=OFF	Y2/Y	—	Cool	576
		Cooling Medium	—	—	Y1	—	Cool	529
		Cooling Low	—	—	—	—	Cool	488
		Heat Pump Turbo	—	—	—	—	Heat	565
		Heat Pump High	—	—	B+Y2/Y, W	—	Heat	541
		Heat Pump Medium	—	—	**B+Y1**	—	Heat	435
		Heat Pump Low	—	—	—	—	Heat	400
		Electric auxiliary heat module 0(Default)	10kW	SW4-1=OFF SW4-2=OFF SW4-3=OFF	W1, W2, AUX	SW4-1=OFF SW4-2=OFF SW4-3=OFF	Heat + AUX, AUX	882
		Electric auxiliary heat module 1	10kW, 8kW	SW4-1=OFF SW4-2=OFF SW4-3=ON	W1, W2, AUX	SW4-1=OFF SW4-2=OFF SW4-3=ON	Heat + AUX, AUX	624
		Electric auxiliary heat module 2	8kW	SW4-1=OFF SW4-2=ON SW4-3=OFF	W1, W2, AUX	SW4-1=OFF SW4-2=ON SW4-3=OFF	Heat + AUX, AUX	594
		Electric auxiliary heat module 3	5kW, 3kW	SW4-1=OFF SW4-2=ON SW4-3=ON	W1, W2, AUX	SW4-1=OFF SW4-2=ON SW4-3=ON	Heat + AUX, AUX	565
24K(2 Ton)	0 - 1.0 in.wc.	Cooling Turbo	—	SW3-4=ON	Y2/Y	—	Cool	824
		Cooling High	—	SW3-4=OFF	Y2/Y	—	Cool	759
		Cooling Medium	—	—	Y1	—	Cool	694
		Cooling Low	—	—	—	—	Cool	629
		Heat Pump Turbo	—	—	—	—	Heat	788
		Heat Pump High	—	—	B+Y2/Y, W	—	Heat	753
		Heat Pump Medium	—	—	**B+Y1**	—	Heat	641
		Heat Pump Low	—	—	—	—	Heat	524
		Electric auxiliary heat module 0(Default)	15kW	SW4-1=OFF SW4-2=OFF SW4-3=OFF	W1, W2, AUX	SW4-1=OFF SW4-2=OFF SW4-3=OFF	Heat + AUX, AUX	988
		Electric auxiliary heat module 1	15kW, 10kW	SW4-1=OFF SW4-2=OFF SW4-3=ON	W1, W2, AUX	SW4-1=OFF SW4-2=OFF SW4-3=ON	Heat + AUX, AUX	841
		Electric auxiliary heat module 2	10kW, 8kW	SW4-1=OFF SW4-2=ON SW4-3=OFF	W1, W2, AUX	SW4-1=OFF SW4-2=ON SW4-3=OFF	Heat + AUX, AUX	818
		Electric auxiliary heat module 3	5kW	SW4-1=OFF SW4-2=ON SW4-3=ON	W1, W2, AUX	SW4-1=OFF SW4-2=ON SW4-3=ON	Heat + AUX, AUX	788
30K(2.5 Ton)	0 - 1.0 in.wc.	Cooling Turbo	—	SW3-4=ON	Y2/Y	—	Cool	988
		Cooling High	—	SW3-4=OFF	Y2/Y	—	Cool	894
		Cooling Medium	—	—	Y1	—	Cool	806
		Cooling Low	—	—	—	—	Cool	712
		Heat Pump Turbo	—	—	—	—	Heat	988
		Heat Pump High	—	—	B+Y2/Y, W	—	Heat	894
		Heat Pump Medium	—	—	**B+Y1**	—	Heat	806
		Heat Pump Low	—	—	—	—	Heat	712
		Electric auxiliary heat module 0(Default)	15kW	SW4-1=OFF SW4-2=OFF SW4-3=OFF	W1, W2, AUX	SW4-1=OFF SW4-2=OFF SW4-3=OFF	Heat + AUX, AUX	1088
		Electric auxiliary heat module 1	15kW, 10kW	SW4-1=OFF SW4-2=OFF SW4-3=ON	W1, W2, AUX	SW4-1=OFF SW4-2=OFF SW4-3=ON	Heat + AUX, AUX	1029
		Electric auxiliary heat module 2	10kW, 8kW	SW4-1=OFF SW4-2=ON SW4-3=OFF	W1, W2, AUX	SW4-1=OFF SW4-2=ON SW4-3=OFF	Heat + AUX, AUX	976
		Electric auxiliary heat module 3	5kW	SW4-1=OFF SW4-2=ON SW4-3=ON	W1, W2, AUX	SW4-1=OFF SW4-2=ON SW4-3=ON	Heat + AUX, AUX	918

Table 27 — Air Volume Table (continued)

Capacity	External Static Pressure Range	Fan Speed	Electric auxiliary heat module	24V thermostat		Wired controller		Airflow volume (CFM)
				DIP Switch	24V terminal engaged	DIP Switch	Mode	
36K (3 Ton)	0 - 1.0 in.wc.	Cooling Turbo	—	SW3-4=ON	Y2/Y	—	Cool	1235
		Cooling High	—	SW3-4=OFF	Y2/Y	—	Cool	1147
		Cooling Medium	—	—	Y1	—	Cool	1059
		Cooling Low	—	—	—	—	Cool	971
		Heat Pump Turbo	—	—	—	—	Heat	1235
		Heat Pump High	—	—	B+Y2/Y, W	—	Heat	1147
		Heat Pump Medium	—	—	Y1	—	Heat	1059
		Heat Pump Low	—	—	—	—	Heat	971
		Electric auxiliary heat module 0(Default)	20kW	SW4-1=OFF SW4-2=OFF SW4-3=OFF	W1, W2, AUX	SW4-1=OFF SW4-2=OFF SW4-3=OFF	Heat + AUX, AUX	1306
		Electric auxiliary heat module 1	15kW	SW4-1=OFF SW4-2=OFF SW4-3=ON	W1, W2, AUX	SW4-1=OFF SW4-2=OFF SW4-3=ON	Heat + AUX, AUX	1241
		Electric auxiliary heat module 2	10kW, 8kW	SW4-1=OFF SW4-2=ON SW4-3=OFF	W1, W2, AUX	SW4-1=OFF SW4-2=ON SW4-3=OFF	Heat + AUX, AUX	1176
		Electric auxiliary heat module 3	5kW, 8kW	SW4-1=OFF SW4-2=ON SW4-3=ON	W1, W2, AUX	SW4-1=OFF SW4-2=ON SW4-3=ON	Heat + AUX, AUX	1112
48K (4 Ton)	0 - 0.8 in.wc.	Cooling Turbo	—	SW3-4=ON	Y2/Y	—	Cool	1600
		Cooling High	—	SW3-4=OFF	Y2/Y	—	Cool	1441
		Cooling Medium	—	—	Y1	—	Cool	1265
		Cooling Low	—	—	—	—	Cool	1088
		Heat Pump Turbo	—	—	—	—	Heat	1471
		Heat Pump High	—	—	B+Y2/Y, W	—	Heat	1324
		Heat Pump Medium	—	—	Y1	—	Heat	1147
		Heat Pump Low	—	—	—	—	Heat	971
		Electric auxiliary heat module 0(Default)	20kW	SW4-1=OFF SW4-2=OFF SW4-3=OFF	W1, W2, AUX	SW4-1=OFF SW4-2=OFF SW4-3=OFF	Heat + AUX, AUX	1741
		Electric auxiliary heat module 1	15kW	SW4-1=OFF SW4-2=OFF SW4-3=ON	W1, W2, AUX	SW4-1=OFF SW4-2=OFF SW4-3=ON	Heat + AUX, AUX	1653
		Electric auxiliary heat module 2	10kW, 8kW	SW4-1=OFF SW4-2=ON SW4-3=OFF	W1, W2, AUX	SW4-1=OFF SW4-2=ON SW4-3=OFF	Heat + AUX, AUX	1559
		Electric auxiliary heat module 3	8kW	SW4-1=OFF SW4-2=ON SW4-3=ON	W1, W2, AUX	SW4-1=OFF SW4-2=ON SW4-3=ON	Heat + AUX, AUX	1471
60K (5 Ton)	0 - 0.8 in.wc.	Cooling Turbo	—	SW3-4=ON	Y2/Y	—	Cool	1800
		Cooling High	—	SW3-4=OFF	Y2/Y	—	Cool	1647
		Cooling Medium	—	—	Y1	—	Cool	1500
		Cooling Low	—	—	—	—	Cool	1235
		Heat Pump Turbo	—	—	—	—	Heat	1682
		Heat Pump High	—	—	B+Y2/Y, W	—	Heat	1582
		Heat Pump Medium	—	—	B+Y1	—	Heat	1359
		Heat Pump Low	—	—	—	—	Heat	1047
		Electric auxiliary heat module 0(Default)	25kW	SW4-1=OFF SW4-2=OFF SW4-3=OFF	W1, W2, AUX	SW4-1=OFF SW4-2=OFF SW4-3=OFF	Heat + AUX, AUX	2171
		Electric auxiliary heat module 1	15kW, 20kW	SW4-1=OFF SW4-2=OFF SW4-3=ON	W1, W2, AUX	SW4-1=OFF SW4-2=OFF SW4-3=ON	Heat + AUX, AUX	2029
		Electric auxiliary heat module 2	10kW, 15kW	SW4-1=OFF SW4-2=ON SW4-3=OFF	W1, W2, AUX	SW4-1=OFF SW4-2=ON SW4-3=OFF	Heat + AUX, AUX	1894
		Electric auxiliary heat module 3	10kW	SW4-1=OFF SW4-2=ON SW4-3=ON	W1, W2, AUX	SW4-1=OFF SW4-2=ON SW4-3=ON	Heat + AUX, AUX	1753

NOTE: The constant airflow volume motor speed is applied, so the airflow volume is constant at all ESP within the stated range.

SETTING UP AIRFLOW AND STATIC PRESSURE

Accessing the INQUIRY Mode

CAUTION

Read and understand the function changes you wish to make in advance. Changes can only be made in the **SERVICE** mode, but to access **SERVICE** mode, the remote must be in the **INQUIRY** mode first. Refer to the Remote Controller Service Mode Set Up instructions to enable the **SERVICE** mode. Neither the indoor unit nor the remote control displays the new level of any of the changes made while in the **INQUIRY** mode. Be sure to document the changes you have made to the system's programming using the **INQUIRY** mode. Once you complete the changes and exit the **INQUIRY** mode, if additional changes are made to the programming, the system will not show the new previously set level(s).

For example, when you first access **CODE 22**, **Heating Temperature Compensation**, the remote control display defaults to **0**. If you change it to **-2,** then save and exit out of the **INQUIRY** mode, the next time someone goes back in and accesses **CODE 22**, the remote's display will not display **-2**. Instead the display will show **0** because that's the default. If you are unsure of the previous changes, due to a lack of documentation, you could press the **DOWN** symbol to the maximum change range of **-6**, then press the **UP** symbol until you are back to **0**, and make the new adjustments accordingly. Be sure to document the changes when you are done.

For information regarding fan speed set up for each size AHU, refer to the Fan Performance Tables below.

Simultaneously press **ON/OFF** and **FAN SPEED** for 8 seconds:

a. The remote is now in the **INQUIRY** mode.
b. The remote control remains in the **INQUIRY** mode for 1 minute if no other button is pressed.
c. While in the **INQUIRY** Mode, the remote display cancels all icons except **AUTO**, **COOL**, **DRY**, **HEAT** and **Battery Strength**.
d. The remote control digital display defaults to **0** upon entering the **INQUIRY** mode.
e. In the **INQUIRY** mode, each digital code (from 0 to 30) is accessed by pressing the **UP** or **DOWN** arrows.
f. The **INQUIRY** information appears on the high wall indoor unit display in approximately 1 second after accessing the digital code. Press **OK** to send as well.
g. In the **INQUIRY** mode, all other buttons and operations are invalid except for **UP**, **DOWN** and **OK** or the operation to exit the **INQUIRY** mode.

Remote Controller Service Mode Set Up

NOTE: While in the INQUIRY mode, refer to the following instructions to enter SERVICE mode for the applicable codes.

Below is a list of **INQUIRY** modes and serviceable functions.

a. Before using the remote's service functions, turn **OFF** the indoor unit with the remote.
b. Turn **OFF** the power to the outdoor unit for 2 minutes. Turn the power back **ON**.
c. Remove the batteries from the remote and wait for the remote screen to clear. Within 30 seconds of replacing the batteries, use **UP** or **DOWN** to scroll through the **INQUIRY** modes.
d. To enter the **SERVICE** mode for an applicable **INQUIRY** mode, press **ON/OFF** for 2 seconds.
e. After **SERVICE** adjustments have been made, press **ON/OFF** for 2 seconds to exit the **SERVICE** mode and return to the **INQUIRY** mode.
f. Once operations in the **INQUIRY** mode are complete, press **ON/OFF** and **FAN SPEED** for 2 seconds to exit. All buttons on the remote controller are disabled for 60 seconds.

NOTE: To ensure changes are locked, power down the outdoor unit for three (3) minutes after all the service mode changes are made.

AIR EVACUATION

NOTE: When opening the valve stems, turn the hexagonal wrench until it hits the stopper. Do not try to force the valve to open further.

Preparations and Precautions

Air and foreign matter in the refrigerant circuit can cause abnormal rises in pressure, which can damage the air conditioner, reduce its efficiency, and cause injury. Use a vacuum pump and manifold gauge to evacuate the refrigerant circuit, removing any non-condensable gas and moisture from the system. Evacuation should be performed upon initial installation and when unit is relocated.

Before performing evacuation:

- Check to make sure the connective pipes between the indoor and outdoor units are connected properly.
- Check to make sure all wiring is connected properly.

Evacuation Instructions

1. Connect the charge hose of the manifold gauge to service port on the outdoor unit's low pressure valve.
2. Connect another charge hose from the manifold gauge to the vacuum pump.
3. Open the Low Pressure side of the manifold gauge. Keep the High Pressure side closed.
4. Turn on the vacuum pump to evacuate the system.
5. Run the vacuum for at least 15 minutes, or until the micron gauge reads 500 Microns (67 Pa)

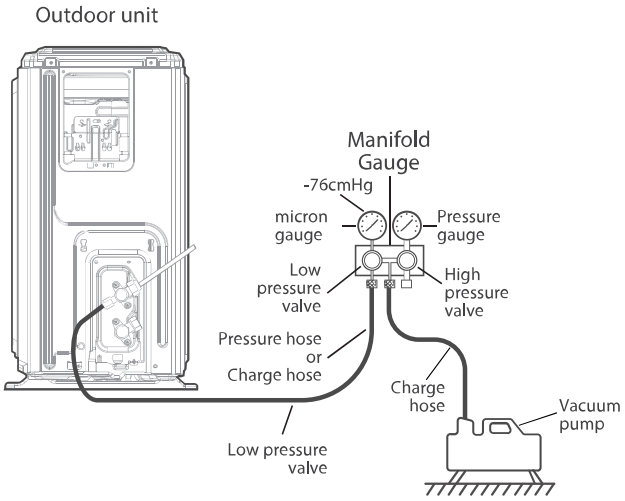


Fig. 63 — Evacuation Setup

6. Close the Low Pressure side of the manifold gauge, and turn o the vacuum pump.
7. Wait for 5 minutes, then check that there has been no change in system pressure.
8. If there is a change in system pressure, refer to Gas Leak Check section for information on how to check for leaks. If there is no change in system pressure, unscrew the cap from the packed valve (high pressure valve).
9. Insert hexagonal wrench into the packed valve (high pressure valve) and open the valve by turning the wrench in a 1/4 counterclockwise turn. Listen for gas to exit the system, then close the valve after 5 seconds.
10. Watch the Pressure Gauge for one minute to make sure that there is no change in pressure. The Pressure Gauge should read slightly higher than atmospheric pressure.
11. Remove the charge hose from the service port.

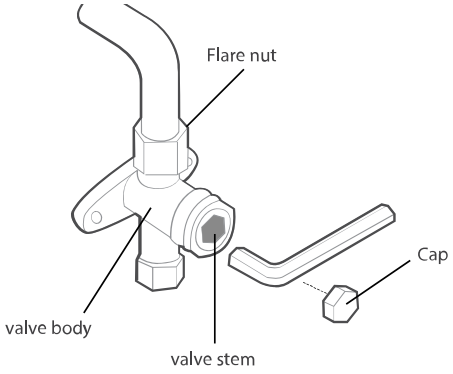


Fig. 64 — Stop Valve

12. Open the stop valves of the outdoor unit to start the flow of the refrigerant between the indoor and outdoor unit. Using hexagonal wrench, fully open both the high pressure and low pressure valves.
13. Tighten valve caps on all three valves (service port, high pressure, low pressure) by hand. You may tighten it further using a torque wrench if needed.

Adding Refrigerant

IMPORTANT: Do not mix refrigerant types. Equipment damage will occur.

Some systems require additional charging depending on pipe lengths. In North America, the standard pipe length is 25ft (7.5m). The refrigerant should be charged from the service port on the outdoor unit's low pressure valve. The additional refrigerant to be charged can be calculated using the following formula:

Table 28 — Additional Refrigerant

	LIQUID SIDE DIAMETER
	3/8 in. (9.52 mm)
R-454B: (tube in indoor unit)	(total pipe length - std pipe length) x 65 g/m (0.7oz/ft)

TEST RUN

⚠ CAUTION

Failure to perform the test run may result in unit damage, property damage, or personal injury.

Before Test Run

A test run must be performed after the entire system has been completely installed. Confirm the following points before performing the test:

a. Indoor and outdoor units are properly installed.
b. Piping and wiring are properly connected.
c. No obstacles near the inlet and outlet of the unit that might cause poor performance or product malfunction.
d. Refrigeration system does not leak.
e. Drainage system is unimpeded and draining to a safe location.
f. Insulation of piping and duct is properly installed.
g. Grounding wires are properly connected.
h. Length of the piping and additional refrigerant capacity have been recorded.
i. Power voltage is the correct voltage for the air conditioner

Test Run Instructions

1. Open both the liquid and gas service valves.
2. Turn on the main power switch and allow the unit to warm up.
3. Set the air conditioner to COOL mode.
4. For the Indoor Unit
   a. Double check to see if the room temperature is being registered correctly.
   b. Ensure the manual buttons on the indoor unit works properly.
   c. Check to see that the drainage system is unimpeded and draining smoothly.
   d. Ensure there is no vibration or abnormal noise during operation.
5. For the Outdoor Unit
   a. Check to see if the refrigeration system is leaking.
   b. Make sure there is no vibration or abnormal noise during operation.
   c. Ensure the wind, noise, and water generated by the unit do not disturb your neighbors or pose a safety hazard.
6. Drainage Test
   a. Ensure the drainpipe flows smoothly. New buildings should perform this test before finishing the ceiling.
   b. Turn on the main power switch and run the air conditioner in COOL mode.
   c. Check to see that the water is discharged. It may take up to one minute after the unit begins to drain depending on the drainpipe.
   d. Make sure that there are no leaks in any of the piping.
   e. Stop the air conditioner. Turn off the main power switch and reinstall the test cover.

NOTE: If the unit malfunctions or does not operate according to your expectations, please refer to the Troubleshooting section of Service Manual before calling customer service.

Table 29 — 24V Signal Chart (Heating and Cooling)

		24V INPUT TERMINAL										
Mode	Priority	G	Y1	Y/Y2	B	W	W1	W2	E/ AUX	DH	Fan speed	Display
OFF	/	0	0	0	0	0	0	0	0	*	OFF	00
FAN	7	1	0	0	*	0	0	0	0	*	Low	01
Cooling stage 1	6	*	1	0	0	0	0	0	0	1	Mid	02
Cooling stage 2		*	*	1	0	0	0	0	0	1	High	03
Dehumidification 1		*	1	0	0	0	0	0	0	0	Low	04
Dehumidification 2		*	*	1	0	0	0	0	0	0	Low	05
Heat pump stage 1	5	*	1	0	1	0	0	0	0	1	Mid	06
Heat pump stage 2		*	*	1	1	0	0	0	0	1	High	07
Heat pump stage 2		*	*	*	*	1	0	0	0	1	High	
Electric auxiliary heat module 1	3	*	0	0	*	0	1	0	0	*	Turbo	08
Electric auxiliary heat module 2		*	0	0	*	0	0	1	0	*	Turbo	
Electric auxiliary heat module 1 and 2		*	0	0	*	0	1	1	0	*	Turbo	09
Heat pump stage 1 + Electric auxiliary heat module 1	4	*	1	0	1	0	1	0	0	1	Turbo	10
Heat pump stage 1 + Electric auxiliary heat module 2		*	1	0	1	0	0	1	0	1	Turbo	
Heat pump stage 2 + Electric auxiliary heat module 1		*	*	1	1	0	1	0	0	1	Turbo	
Heat pump stage 2 + Electric auxiliary heat module 1		*	*	*	*	1	1	0	0	1	Turbo	
Heat pump stage 2 + Electric auxiliary heat module 2		*	*	1	1	0	0	1	0	1	Turbo	
Heat pump stage 2 + Electric auxiliary heat module 2		*	*	*	*	1	0	1	0	1	Turbo	
Heat pump stage 1 + Electric auxiliary heat module 1 and 2		*	1	0	1	0	1	1	0	1	Turbo	11
Heat pump stage 2 + Electric auxiliary heat module 1 and 2		*	*	1	1	0	1	1	0	1	Turbo	
Heat pump stage 2 + Electric auxiliary heat module 1 and 2		*	*	*	*	1	1	1	0	1	Turbo	
Emergency heat	1	*	*	*	*	*	*	*	1	*	Turbo	12

Note:
1: 24V signal
0: No 24V signal
***: 1 or 0.**
The AHU will turn off if the 24V input cannot meet the table.

Table 1 —24V Signal Chart (Cooling Only)

		24V INPUT TERMINAL										
MODE	**PRIORITY**	**G**	**Y1**	**Y/Y2**	**B**	**W**	**W1**	**W2**	**E/AUX**	**DH**	**FAN SPEED**	**DISPLAY**
OFF	/	0	0	0	0	0	0	0	0	*	OFF	00
FAN	7	1	0	0	*	0	0	0	0	*	Low	01
COOLING STAGE 1	6	*	1	0	0	0	0	0	0	1	Mid	02
COOLING STAGE 2		*	*	1	0	0	0	0	0	1	High	03
DEHUMIDIfiCATION 1		*	1	0	0	0	0	0	0	0	Low	04
DEHUMIDIfiCATION 2		*	*	1	0	0	0	0	0	0	Low	05
OFF	5	*	1	0	1	0	0	0	0	*	OFF	00
OFF		*	*	1	1	0	0	0	0	*	OFF	
OFF		*	*	*	*	1	0	0	0	*	OFF	
EMERGENCY HEAT	3	*	0	0	*	0	1	0	0	*	Turbo	12
EMERGENCY HEAT		*	0	0	*	0	0	1	0	*	Turbo	
EMERGENCY HEAT		*	0	0	*	0	1	1	0	*	Turbo	
EMERGENCY HEAT	4	*	1	0	1	0	1	0	0	*	Turbo	
EMERGENCY HEAT		*	1	0	1	0	0	1	0	*	Turbo	
EMERGENCY HEAT		*	*	1	1	0	1	0	0	*	Turbo	
EMERGENCY HEAT		*	*	*	*	1	1	0	0	*	Turbo	
EMERGENCY HEAT		*	*	1	1	0	0	1	0	*	Turbo	
EMERGENCY HEAT		*	*	*	*	1	0	1	0	*	Turbo	
EMERGENCY HEAT		*	1	0	1	0	1	1	0	*	Turbo	
EMERGENCY HEAT		*	*	1	1	0	1	1	0	*	Turbo	
EMERGENCY HEAT		*	*	*	*	1	1	1	0	*	Turbo	
EMERGENCY HEAT	1	*	*	*	*	*	*	*	1	*	Turbo	

Note:
1: 24V signal
0: No 24V signal
*: 1 or 0.
The AHU will turn off if the 24V input cannot meet the table.

TROUBLESHOOTING

Table 2 — Error Codes

DISPLAY	MALFUNCTION AND PROTECTION INDICATION
EC07	ODU fan speed out of control
EC0d	ODU malfunction
EC51	ODU EEPROM parameter error
EC52	ODU coil temp sensor error
EC53	ODU ambient temp sensor error
EC54	COMP. discharge temp sensor error
EC5b	IDU coil outlet temp sensor error
ECC1	Other IDU refrigerant sensor detects leakage (multi-zone)
EH00	IDU EEPROM malfunction
EH03	IDU fan speed out of control
EH0A	IDU EEPROM parameter error
EH0b	IDU main control and display boards communication error
EH0E	Water-level alarm malfunction
EH3A	External fan DC bus voltage is too low protection
EH3b	External fan DC bus voltage is too high fault
EH60	IDU room temp. sensor (T1) error
EH61	IDU coil temp. sensor (T2) error
EH62/ EH6b	Evaporator coil inlet temp. sensor (T2B) is in open circuit or short circuit
EH65	Evaporator coil inlet temp. sensor (T2A) is in open circuit or short circuit
EHbA	Communication error between indoor unit and external fan module
EHb3	Communication malfunction between wire and master control
EHC1	Refrigerant sensor detects leakage
EHC2	Refrigerant sensor is out of range and leakage is detected
EHC3	Refrigerant sensor is out of range
EL01	IDU & ODU communication error
EL0C	System lacks refrigerant
EL1b	Communication malfunction between adapter board and outdoor main board
FHCC	Refrigerant sensor error
FL09	Mismatch between the new and old platforms
PC00	ODU IPM module protection
PC01	ODU voltage protection
PC02	Compressor top (or IPM) temp. protection
PC03	Pressure protection (low or high pressure)
PC04	Inverter compressor drive error
PC0L	Low ambient temp. protection
----	IDUs mode conflict
NOTE: The digital tube will show DF in defrost mode and FC in forced cooling mode. DF and FC are not error codes.	

Table 3 — Refrigerant Leak Detection Error Codes

EHC1	Refrigerant Sensor detects a leak
EHC2	Working condition of the refrigerant sensor is out of range and a leak is detected

If **you receive one of the codes in Table 3, call a technician as soon as possible. No need to panic, the unit goes into TURBO mode until the error code clears. There is a "beeping" noise coming from the indoor unit, which is normal in this case.**

For additional diagnostic information, refer to the Service Manual.

COMMON ISSUES

Table 4 — Common Issues

ISSUE	POSSIBLE CAUSE
Unit does not turn on when pressing **ON/OFF**.	The Unit has a 3-minute protection feature that prevents the unit from overloading. The unit cannot be restarted within three minutes of being turned off.
The unit changes from **COOL/HEAT** mode to **FAN** mode	The unit may change its setting to prevent frost from forming on the unit. Once the temperature increases, the unit starts operating in the previously selected mode again. The set temperature has been reached, at which point the unit turns o the compressor. The unit continues operating when the temperature fluctuates again.
The indoor unit emits white mist	In humid regions, a large temperature difference between the room's air and the conditioned air can cause white mist.
Both the indoor and outdoor units emit white mist	When the unit restarts in **HEAT** mode after defrosting, white mist may be emitted due to moisture generated from the defrosting process.
The indoor unit makes noises	A rushing air sound may occur when the louver resets its position. A squeaking sound may occur after running the unit in **HEAT** mode due to expansion and contraction of the unit's plastic parts.
Both the indoor unit and outdoor unit make noises	Low hissing sound during operation: This is normal and is caused by refrigerant gas flowing through both indoor and outdoor units.
	Low hissing sound when the system starts, has just stopped running, or is defrosting: This noise is normal and is caused by the refrigerant gas stopping or changing direction.
	Squeaking sound: Normal expansion and contraction of plastic and metal parts caused by temperature changes during operation can cause squeaking noises.
The outdoor unit makes noises	The unit makes different sounds based on its current operating mode.
Dust is emitted from either the indoor or outdoor unit	The unit may accumulate dust during extended periods of non-use, which emits when the unit is turned on. This can be mitigated by covering the unit during long periods of inactivity.
The unit emits a bad odor	The unit may absorb odors from the environment (such as furniture, cooking, cigarettes, etc.) which emit during operations.
	The unit's filters have become moldy and should be cleaned.
The fan of the outdoor unit does not operate	During operation, the fan speed is controlled to optimize product operation.
Operation is erratic, unpredictable, or unit is unresponsive	Interference from cell phone towers and remote boosters may cause the unit to malfunction. In this case, try the following: • Disconnect the power, then reconnect. • Press **ON/OFF** on the remote control to restart operation.

NOTE: If problem persists, contact a local dealer or your nearest customer service center. Provide them with a detailed description of the unit malfunction as well as your model number.

⚠ CAUTION

When troubles occur, check the following points before contacting a repair company.

Table 5 — Common Issues

PROBLEM	POSSIBLE CAUSES	SOLUTION
Poor Cooling Performance	Temperature setting may be higher than ambient room temperature	Lower the temperature setting
	The heat exchanger on the indoor or outdoor unit is dirty	Use Clean function by remote control to clean the affected heat exchanger
	The air filter is dirty	Remove the filter and clean it according to instructions
	The air inlet or outlet of either unit is blocked	Turn the unit off, remove the obstruction and turn it back on
	Doors and windows are open	Make sure that all doors and windows are closed while operating the unit
	Excessive heat is generated by sunlight	Close windows and curtains during periods of high heat or bright sunshine
	Too many sources of heat in the room (people, computers, electronics, etc.)	Reduce amount of heat sources
	Low refrigerant due to leak or long-term use	Check for leaks, re-seal if necessary and top off refrigerant
	SILENCE function is activated (optional function)	**SILENCE** function can lower product performance by reducing operating frequency. Turn off **SILENCE** function.
The unit is not working	Power failure	Wait for the power to be restored
	The power is turned off	Turn on the power
	The fuse is burned out	Call service center to replace the fuse
	Remote control batteries are dead	Replace batteries
	The Unit's 3-minute protection has been activated	Wait three minutes after restarting the unit
	Timer Function is activated	Turn off Timer Function
The unit starts and stops frequently	There's too much or too little refrigerant in the system	Call a service center to check for leaks and recharge the system with refrigerant.
	Incompressible gas or moisture has entered the system.	Call a service center to evacuate and recharge the system with refrigerant
	The compressor is broken	Call a service center to replace the compressor
	The voltage is too high or too low	Install a manostat to regulate the voltage
Poor heating performance	The outdoor temperature is extremely low	Use auxiliary heating device
	Cold air is entering through doors and windows	Ensure all doors and windows are closed during use
	Low refrigerant due to leak or long-term use	Call service center to check for leaks, re-seal if necessary and top off refrigerant
Indicator lamps continue flashing	The unit may stop operation or continue to run safely. If the indicator lamps continue to flash or error codes appear, wait for about 10 minutes. The problem may resolve itself. If not, disconnect the power, then connect it again. Turn the unit on. If the problem persists, disconnect the power and contact your nearest customer service center.	
Error code appears and begins with the letters as the following in the window display of the indoor unit: E(x), P(x), F(x) EH(xx), EL(xx), EC(xx) PH(xx), PL(xx), PC(xx)		

NOTE: If your problem persists after performing the checks and diagnostics above, turn off your unit immediately and contact an authorized service center.

LIST - Single Zone

Installation Data

Site Address:_____

_____

City:_____

__ **State:**_____ **Zip Code:**_____

Installing Contractor:_____

Contractor Contact #: ( ) _____-_____

Job Name:_____

_____ **Start-up Date:**_____

Distributor:_____

_____

System Details

UNITS	MODEL NO.	SERIAL NO.	CONTROLLER
OUTDOOR UNIT			
INDOOR UNIT A			

Are the outdoor unit and indoor unit compatible?
YES:_____ NO:_____

REMARKS:_____

_____

_____

_____

Wiring Electrical

Wire Size and Type Used? AWG:_____ TYPE:_____

Are there any breaks, splices, wire nuts or butt connectors between the outdoor unit and the indoor unit? YES:_____ NO:_____

Was the wiring from the outdoor unit port to the correct indoor unit verified? YES:_____ NO:_____

Voltage Check

Wiring: Single Zone

Outdoor Unit Disconnect	1(L1):GND		Outdoor Unit Terminal Block	1(L1):GND		**NOTES:**_____
	2(L2):GND			2(L2):GND		_____
	1(L1):L2(2)			1(L1):2(L2)		_____
						_____
Indoor Unit Voltage Check @ Outdoor Unit	1(L1):GND		Indoor Unit Voltage Check @ Indoor Unit	1(L1):GND		**NOTES:**_____
	2(L2):GND			2(L2):GND		_____
	1(L1):2(L2)			1(L1):2(L2)		_____
	2(L2):3(S)			2(L2):3(S)		_____

Outdoor Unit Disconnect	1(L1):GND		Outdoor Unit Terminal Block	1(L1):GND		**NOTES:**_____
	2(L2):GND			2(L2):GND		_____
	1(L1):L2(2)			1(L1):2(L2)		_____
						_____
Indoor Unit Voltage Check @ Outdoor Unit	1(L1):GND		Indoor Unit Voltage Check @ Indoor Unit	1(L1):GND		**NOTES:**_____
	2(L2):GND			2(L2):GND		_____
	1(L1):2(L2)			1(L1):2(L2)		_____
	2(L2):3(S)			2(L2):3(S)		_____

Start-Up Checklist (CONT)

Piping

Leak Check:
System held 500 psig (max. 550psi) for a minimum of 30 minutes using dry nitrogen. YES:_____ NO:_____

Evacuation Method:

- Was the Triple Evacuation Method used as outlined in the installation manual? YES:_____ NO:_____
- Was the Deep Vacuum Method used as outlined in the installation manual? YES:_____ NO:_____
- Did the System Hold 500 microns for 1 hour? YES:_____ NO:_____
- Does the line set match the diameter of the evaporator connections? YES:_____ NO:_____
- For Conventional Fan Coils, does the line set match the outdoor unit size? YES:_____ NO:_____

Single Zone Piping:
Has the liquid pipe length been measured and the additional charge calculated? Size:_____ Length:_____ Charge:_____

NOTES:

NOTE: Final Charge Amount must be recorded!

PORT	LIQUID SIZE		SUCTION SIZE		LENGTH	CHARGE	NOTES:_____
A							

Performance Check

For 1:1 Single Zone Systems: Adjust the set-point to create an operational call for the desired testing operation. Allow the system to run for a minimum of 10 min. and record the following details:

(Operational data recorded on applicable heads with the wireless remote controller's Point Check function)

UNIT	SET-POINT	MODE	T1	T2	T3	T4	Tb	Tp	Th	LA/Lr
A										

NOTE:

- T1 - Ambient Space Temperature Sensor
- T2 - IDU Coil Temperature Sensor
- T3 - Outdoor Coil Temperature Sensor
- T4 - Outdoor Ambient Temperature
- Tb - Suction Line Temperature @PMV
- Tp - Discharge Temperature Sensor
- Th - IPM Board Temperature
- LA/Lr - PMV Temperature

Error Codes

Were there any error codes present at start-up? YES:_____ NO:_____

Indoor Unit Error Code:		**Notes:**
Outdoor Unit Error Code:		
Wall Controller:		
24V Interface:		

Comments:

_____

_____

NOTES:

Edition Date: 11/25

Catalog No: D5FUHA-03SI

Replaces: D5FUHA-02SI