

Quick Start Guide

ACiQ Next Gen

Ducted Heat Pump System

ACiQ-24-AHB/ACiQ-24-HPB
ACiQ-36-AHB/ACiQ-36-HPB
ACiQ-48-AHB/ACiQ-48-HPB
ACiQ-60-AHB/ACiQ-60-HPB

ACiQ-24-AHB/ACiQ-24-EHPB
ACiQ-36-AHB/ACiQ-36-EHPB
ACiQ-48-AHB/ACiQ-48-EHPB
ACiQ-60-AHB/ACiQ-60-EHPB



Thank you for purchasing a Next Gen Heat Pump system from ACiQ! This system gives you the benefits of a variable speed, inverter driven heat pump condenser, combined with a smart air handler with a variable speed blower.

This Quick Start Guide covers how to connect the thermostat to your system and ensure proper communication. It is not meant to replace the entire installation manual. Please reference install manual for in depth instructions.

ACiQ™ Wiring Diagrams and Connections

The wiring diagrams below and on the following pages show the proper wiring and DIP switch settings (for indoor and outdoor units) depending upon your application and the type of thermostat used (standard wired controller or 24V thermostat).

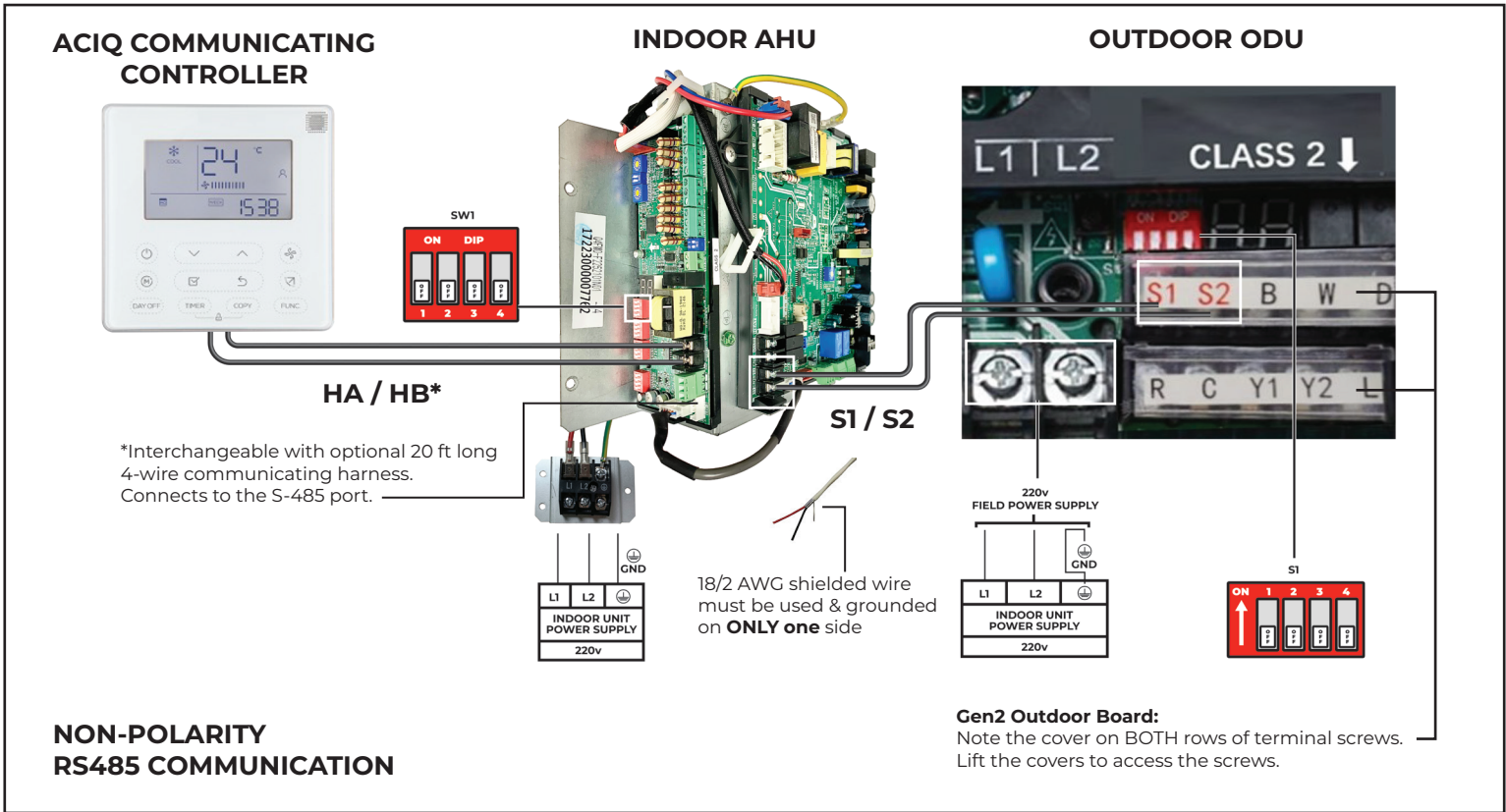
SCENARIO	CONTROLLER	INDOOR UNIT	CONNECTION BETWEEN INDOOR & OUTDOOR UNITS	OUTDOOR UNIT	AHU DIP SWITCH		ODU DIP SWITCH
					SW1-1	SW1-4	S1-2
SCENARIO 1 (RECOMMENDED)	ACIQ COMMUNICATING CONTROLLER (STANDARD)	AIR HANDLER	RS485: S1/S2	STANDARD OUTDOOR UNIT	OFF (Default)	OFF (Default)	OFF (Default)
SCENARIO 2	ACIQ T755 24V THERMOSTAT	AIR HANDLER	RS485: S1/S2	STANDARD OUTDOOR UNIT	ON	OFF (Default)	OFF (Default)
SCENARIO 3	3RD PARTY 24V THERMOSTAT	AIR HANDLER	24V: R/C/B/Y1/Y2/G/W	STANDARD OUTDOOR UNIT	ON	ON	ON



WARNING – In ALL wiring scenarios, be sure to turn off the circuit breaker and pull the disconnect before wiring. Incorrect wiring can cause an electrical short and destroy the main circuits boards!

SCENARIO 1: INCLUDED RS485 COMMUNICATING CONTROLLER THERMOSTAT (Standard and Recommended Installation)

Please note that using the provided communicating thermostat will provide maximum efficiency. But when using this thermostat the unit will prioritize efficiency over comfort. The system will maintain a comfortable temperature but may run longer than some people desire. For conventional control over the unit see option #2.



ACIQ™ Wiring Diagrams and Connections

SCENARIO 1 Continued: INCLUDED RS485 COMMUNICATING CONTROLLER THERMOSTAT (Standard and Recommended Installation)

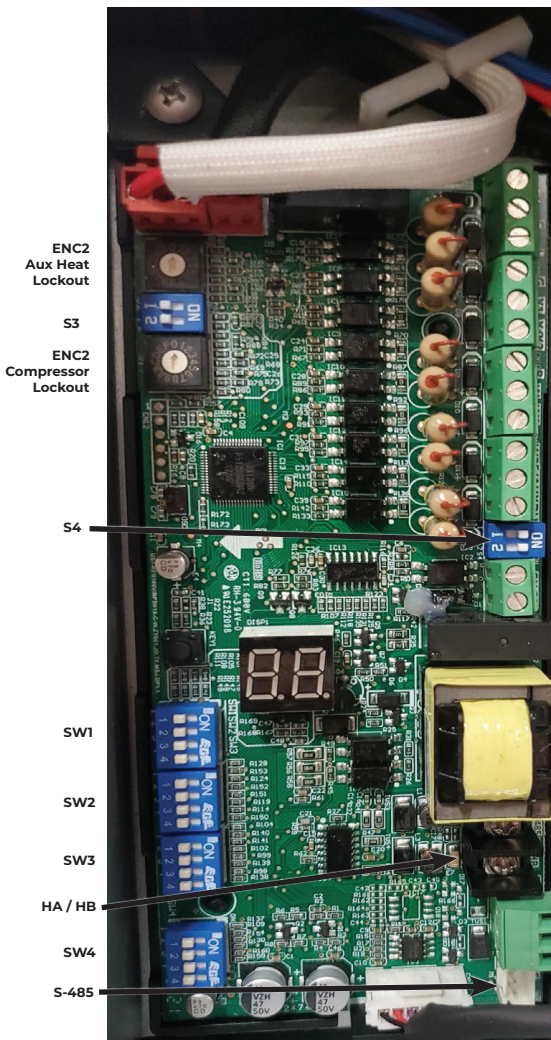
IMPORTANT NOTES

-  Communication wire connected to S1 & S2 **MUST** be 18/2 AWG shielded cable. Failure to use specified wire can result in communication errors.
-  The shielded ground must be grounded at one end **ONLY**. **DO NOT** ground the shield at both ends. Failure to follow this procedure can result in communication errors.
-  Communication wire must be run a minimum of 18" away from any line voltage wires. Failure to follow this procedure can result in communication errors. Always try to run the communication wire perpendicular to power lines and **NOT** along with them.
-  Ensure battery is inserted in the thermostat and wiring is connected. Without battery, the thermostat will not turn on.

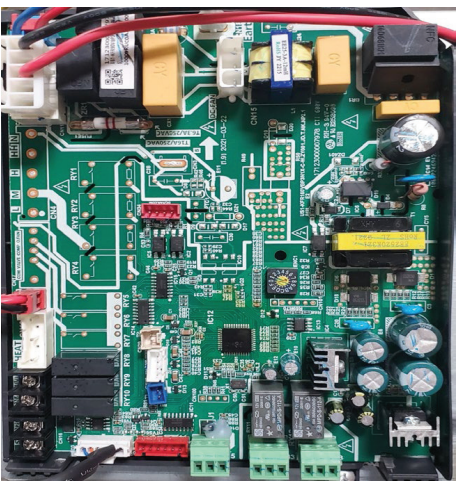
Photo Examples

Indoor Air Handler Circuit Boards

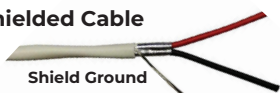
Data Transfer Board



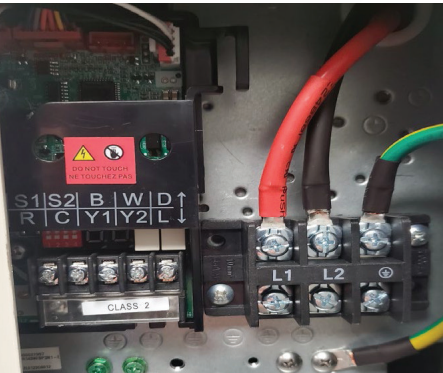
Main Board (Side Facing)



18/2 Shielded Cable



Gen1 Outdoor Board (Discontinued)

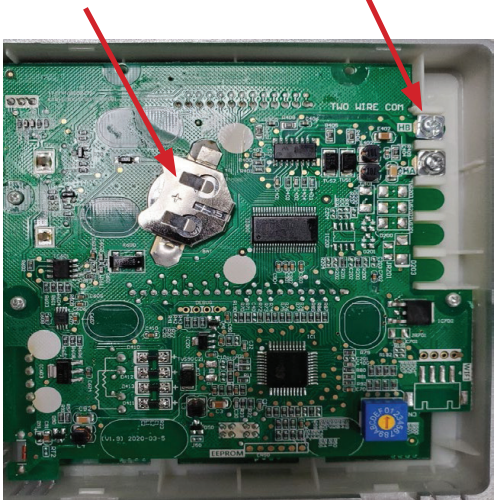


Upper terminal screws shown
Lower terminal screws under the label

ACIQ Provided Thermostat

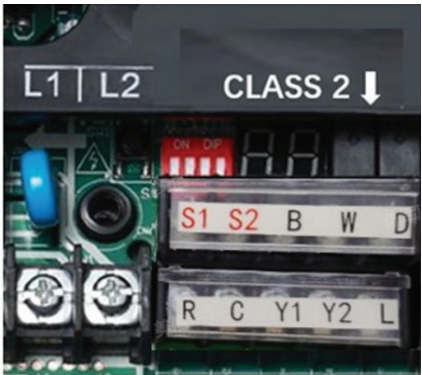
Ensure battery is inserted here. Without battery thermostat will not turn on.

HA & HB wiring terminals



Gen2 Outdoor Unit Circuit Board

Terminal Block (Left) Communication Board (Right)

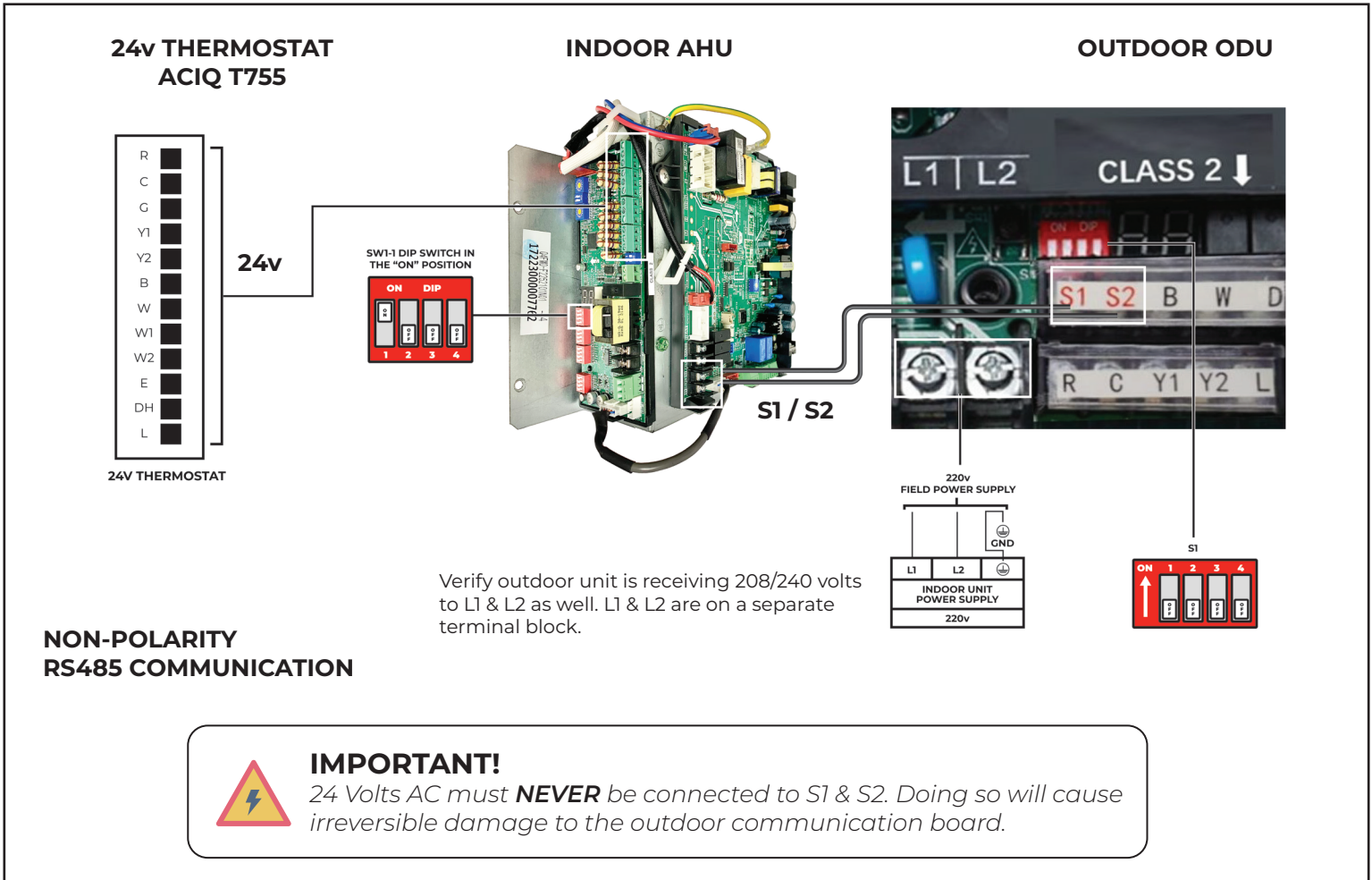
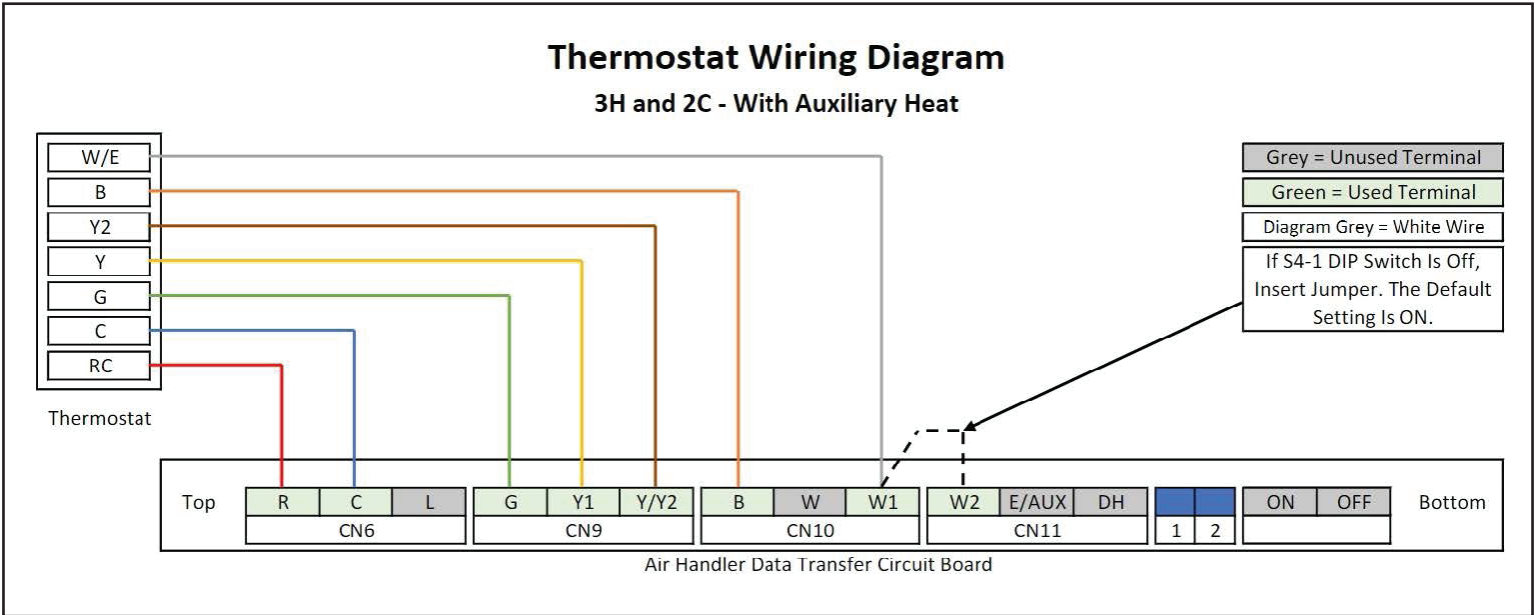


Terminal screws under the labels

Common Wiring Connections, Continued

SCENARIO 2: OPTIONAL 24v ACIQ (T755) THERMOSTAT

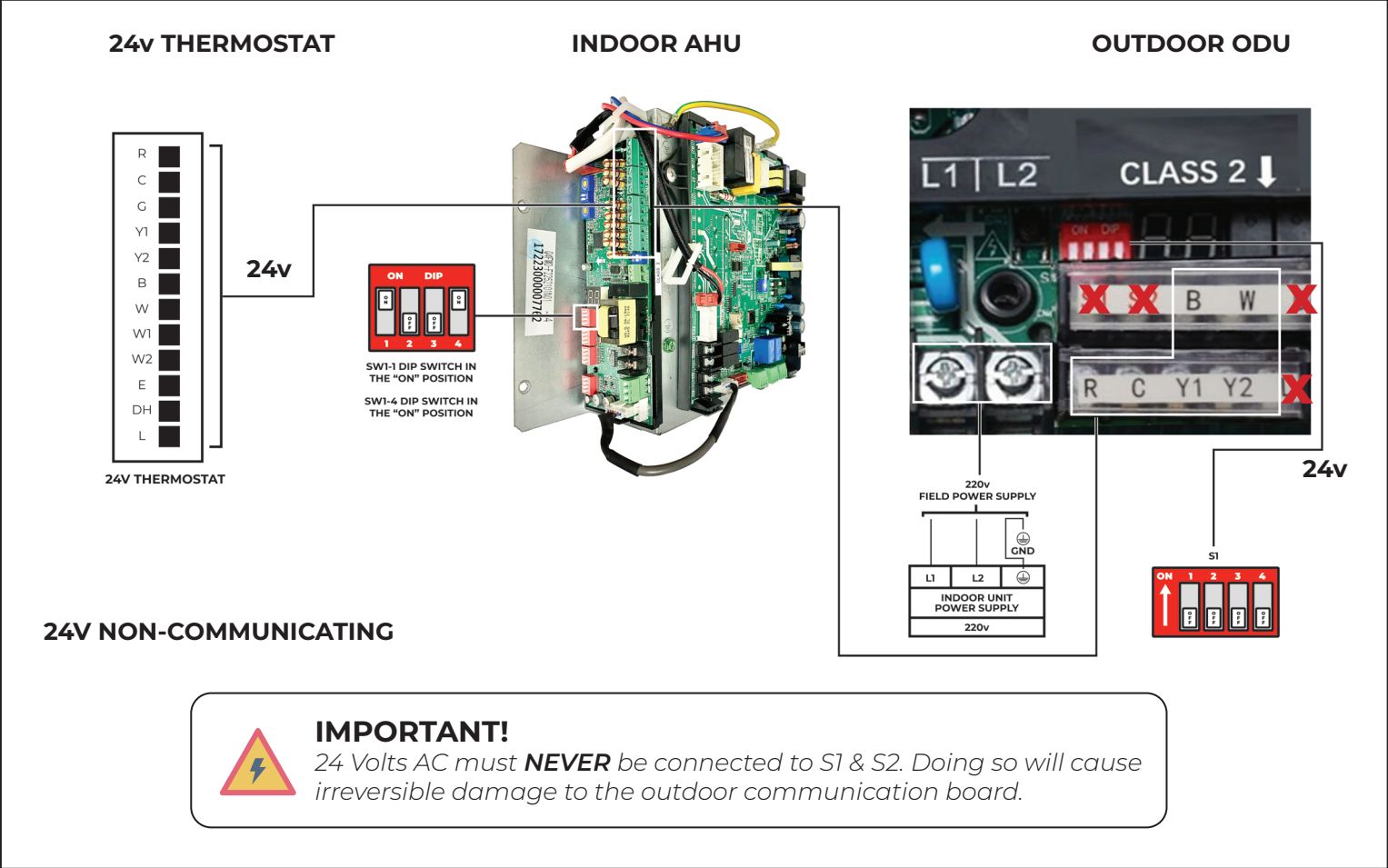
This option shows how to wire the 24 volt ACiQ thermostat to the air handler. This method prioritizes comfort over efficiency. Please note for this method to work DIP switch SW1-1 needs to be turned ON. This method also uses S1 & S2 to communicate between the air handler and the condenser (no 24 volt wire is run outside) only 18/2 shielded wire is run outside. For additional thermostat wiring options, see page 5.



Common Wiring Connections, Continued

SCENARIO 3: OPTIONAL THIRD-PARTY 24v THERMOSTAT (ECOBEE, NEST, ETC)

This option shows how to wire any 24 volt thermostat to the air handler without communication. This method also prioritizes comfort over efficiency. Please note for this method to work DIP switch SW1-1 needs to be turned ON. This method also uses 24v wiring to communicate between the air handler and the condenser using regular thermostat cable. For thermostat wiring options, see page 6.

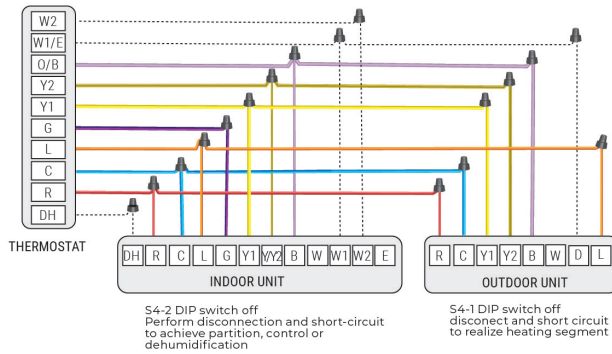


Wiring Diagrams and Connections Without Communication

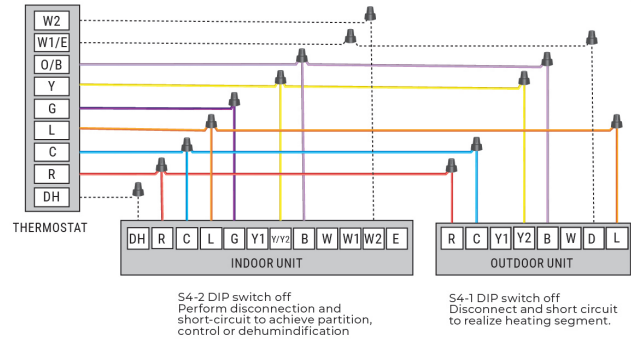
Scenario 3 24v Connection Method C (36k to 60k Units Only): The following wiring diagrams are suitable for the AHU and outdoor condenser when used with a 24v thermostat without communication.

NOTE: This equipment uses B functionality. The terminal is energized for heating functionality. Please ensure thermostat is setup for B functionality.

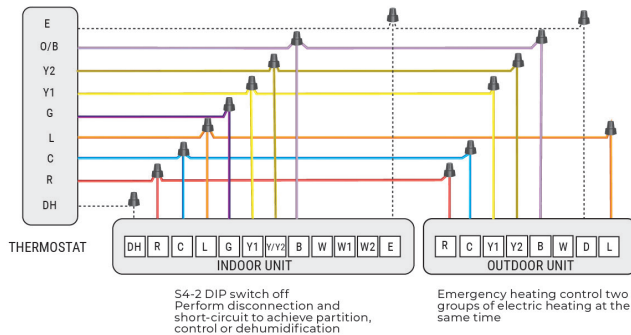
Wiring for 4H and 2C thermostat



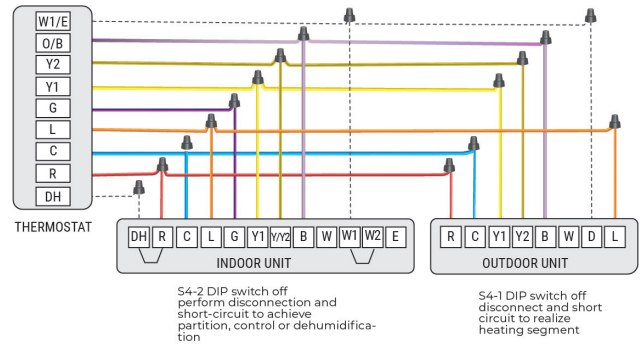
Wiring for 3H and 1C thermostat



Wiring for 3H and 2C thermostat



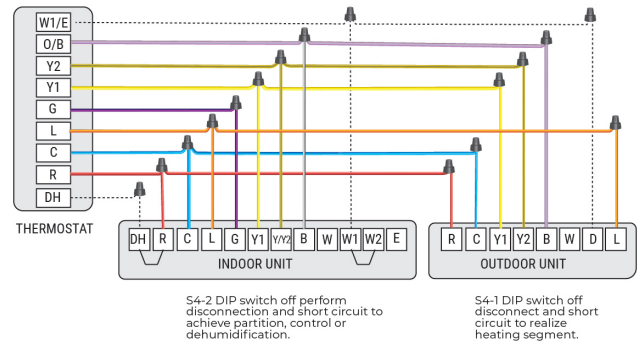
Wiring for 3H and 2C thermostat



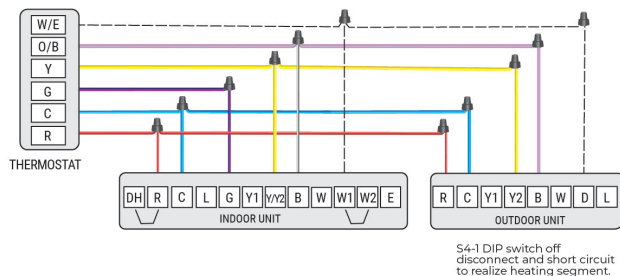
Wiring for 2H and 2C thermostat



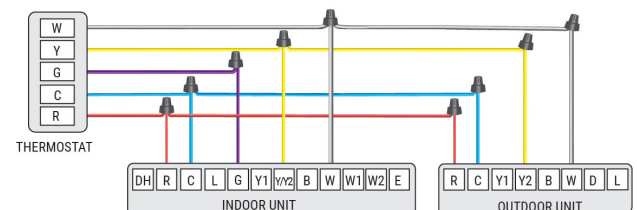
Wiring for 2H and 2C thermostat



Wiring for 2H and 1C thermostat



Wiring for 1H and 1C thermostat



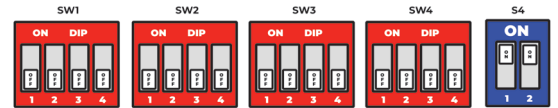
NOTE: This is the least preferred method of control wiring and should only be used for emergency situations. Full comfort capacity may not be achieved using this method.

Air Handler DIP Switch Guide

2023 V1.2

Function Settings		
Thermostat Wiring Method		
SW1-1	OFF	RS-485 Communication. Used For ACiQ Communicating Thermostat.
	ON	Used For 24 Volt Thermostats.
Cold Air Prevention - Defrost		
SW1-2	OFF	Cold Air Prevention Activated - Fan Stops
	ON	No Cold Air Prevention - Fan Continues To Operate
System Type		
SW1-3	OFF	Heat Pump
	ON	Cooling Only
Indoor & Outdoor Unit Wiring Method		
SW1-4	OFF	S1 & S2 (DC Communication / Only Applies To ACiQ Condenser)
	ON	24 Volt Wires (No True Communication / Applies To All Condensers)

Default AHU DIP Switch Settings Shown Below



ACiQ™

Heat Settings		
Auxiliary Heat Activation Differential		
SW2-1	OFF	4 °F Gap Between T1 & Ts Sensors
	ON	2 °F Gap Between T1 & Ts Sensors
Auxiliary Heat Activation Delay		
SW2-2	OFF	None
	ON	Yes
Auxiliary Heat Activation Delay Time		
SW2-3	OFF	15 Minute Delay (For Electric Heat)
	ON	30 Minute Delay (For Electric Heat)
Heat Source Lock Outs		
SW2-4	OFF	In This Position Electric Heat Lockout Can Be Set Via ENC2
	ON	In This Position Compressor Lockout Can Be Set Via ENC2

Delay between 1st stage & 2nd stage electric heat is time based, not temperature based.

T1 Sensor = Return Air Temp (Room Temp), Ts = Set point

SW2-3 only works if SW2-2 is turned ON.

This sets maximum temperature, anything over this setting locks out.
This sets minimum temperature, anything under this setting locks out.

1 = -4 °F	5 = 10 °F	9 = 25 °F	D = 39 °F
2 = 0 °F	6 = 14 °F	A = 28 °F	E = 43 °F
3 = 3 °F	7 = 18 °F	B = 32 °F	F = 46 °F
4 = 7 °F	8 = 21 °F	C = 37 °F	

S3	ENC2 Dial Referenced In SW2-4. 16 Digits To Select From (0-9, A-F). Lock Out Range = -4 °F to 46 °F. 0 = No Lock Out, 1 = -4 °F Lock Out, F = 46 °F Lock Out. Each Digit Increases Temperature By 3.6 °F. Chart Provides Temperature Rounded To Nearest Whole Number.
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Heat Settings Cont.		
Ramping Up Algorithm Delay		
SW3-1	OFF	1.5 Hours (Efficiency)
	ON	0.5 Hours (Comfort)
Y/Y2 Temperature Differential Adjustment		
SW3-2	OFF	3.6 °F (Efficiency)
	ON	1.8 °F (Comfort)
W2 Temperature Differential Activation		
SW3-3	OFF	6 °F (Efficiency)
	ON	4 °F (Comfort)

This sets the maximum continuous runtime allowed before the system automatically stages up capacity. Only applies if 24 volt thermostat is being used.

If using 24 volt thermostat this sets compressor speed instead.
ON = slower, OFF = Faster.

This DIP switch only works if using the provided communicating ACiQ thermostat. Otherwise delay is time based.

Electric Heat Nominal CFM Adjustment		
SW4	Available settings are 000/001/010/011. Each digit corresponds with an individual switch position.	

OFF = 0, ON = 1.

For example [SW4-1 OFF, SW4-2 ON, SW4 -3 OFF] = 010

Heat Settings Cont.		
Aux Heat Control		
S4-1	OFF	W1 & W2 Controlled Separately
	ON	W1 & W2 Not Controlled Separately
Dehumidify Control		
S4-2	OFF	DH Terminal Available To Be Used
	ON	DH Terminal Deactivated

General Notes

If selected 24 volt thermostat has an E/AUX option and it is used to activate heat, all delays will be bypassed.

When auxiliary heat is energized the fan will run in Turbo Mode.

IMPORTANT: In order for changes to take effect power must be OFF BEFORE DIP switch changes.

Default setting is OFF except S4.

Please note if using the provided ACiQ thermostat DIP Switch Settings will not need to be adjusted. DIP Switch settings should only be adjusted by a professional HVAC service technician. Please note in this quick start guide the specific DIP Switches that need adjusted will be shown to ensure accurate operation for the chosen set up. For Option 1 nothing needs to be done. For Option 2 please refer to the DIP Switch diagram that shows the correct position of the DIP Switches.