



Quick Start Guide

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



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

These systems are designed to either reuse existing thermostat wiring between the thermostat, AHU, and ODU or with new wiring. Installation is dependent on the number of wires available. 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).

INSTALLATION SITUATION	THERMOSTAT CONTROLLER	CONNECTION BETWEEN T-STAT AND AHU	CONNECTION BETWEEN AHU & ODU	AHU DIP SWITCH		ODU DIP SWITCH
				SW1-1	SW1-4	S1-2
2-WIRE/2-WIRE INSTALLATION (SEE PAGE 4)	ACIQ RS485 COMMUNICATING THERMOSTAT (INCLUDED)	2-wire (HA/HB)	2-wire (S1/S2)	OFF (Default)	OFF (Default)	OFF (Default)
7-WIRE/2-WIRE INSTALLATION (RECOMMENDED) (SEE PAGE 5)	24V COMMUNICATING THERMOSTAT (ACIQ OR 3RD PARTY)	7-wire (24v) (R/C/B/Y1/Y2/G/W)	2-wire (S1/S2)	ON	OFF (Default)	OFF (Default)
7-WIRE/7-WIRE INSTALLATION (SEE PAGE 6)		7-wire (24v) (R/C/B/Y1/Y2/G/W)	7-wire (24v) (R/C/B/Y1/Y2/G/W)	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!

IMPORTANT NOTES



The ACiQ communicating thermostat by default reads the temperature of the air in the ductwork, not the temperature of the room, which makes it different than most thermostats. You can change this to room mode by using the "Follow Me" function.



The system will operate like a mini split, with the indoor fan running continuously, and the outdoor system running at low power mode.

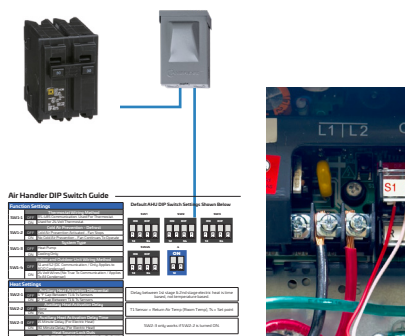


According to AHRI there is at most a 0.9 SEER2 increase in energy efficiency using the communicating system. Most customers are extremely happy with a sophisticated learning thermostat such as the standard ACiQ Communicating Thermostat.

ELECTRIC CONNECTIONS

Please note - Each component requires a dedicated circuit and wiring, sized according to national and local codes.

30AMP



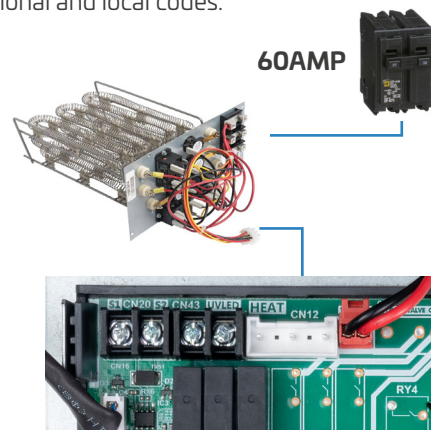
ODU

15AMP



AHU

60AMP



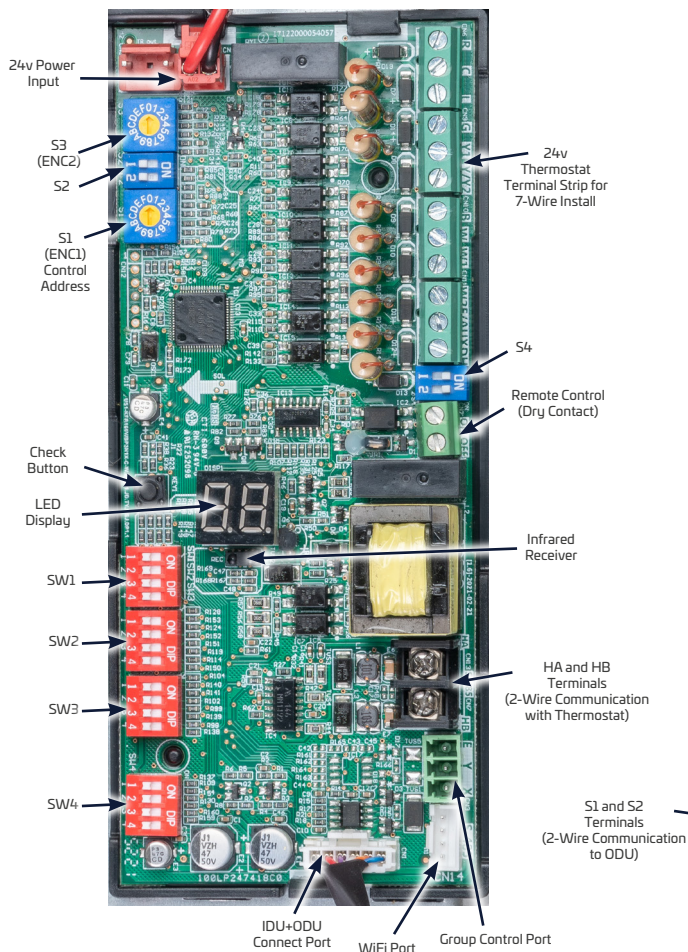
10kW HEAT STRIP KIT



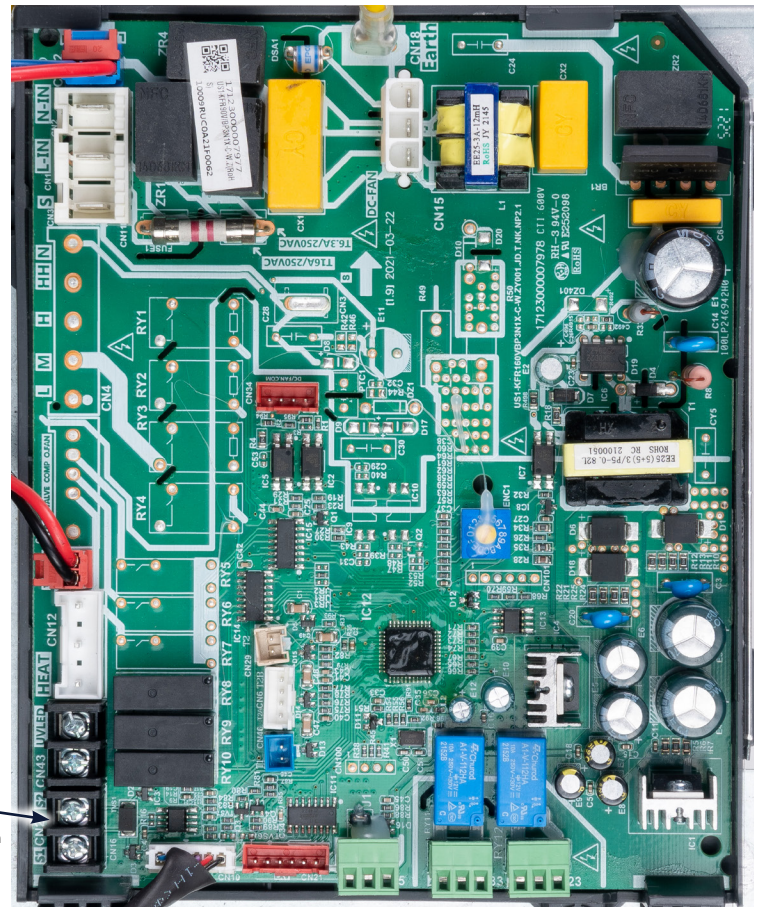
IMPORTANT! 24 Volts AC must **NEVER** be connected to S1 & S2. Doing so will cause irreversible damage to the outdoor communication board.

INDOOR AIR HANDLER CIRCUIT BOARDS

Data Transfer Board

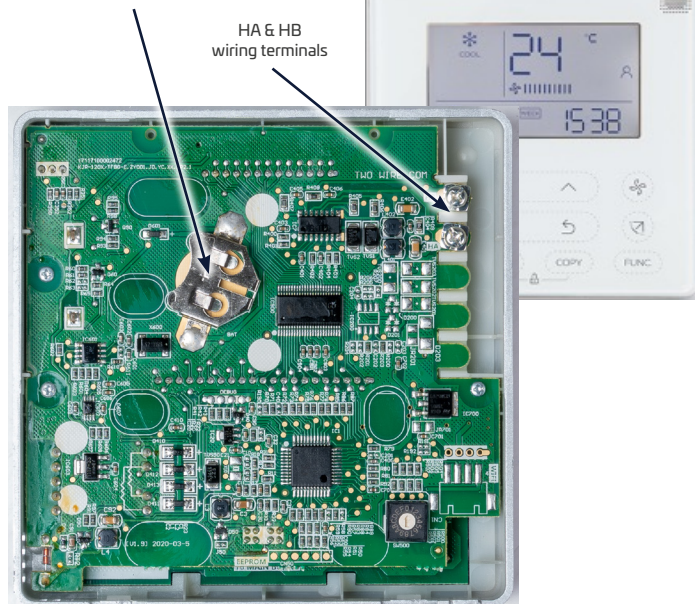


Main Board (Side Facing)



ACIQ INCLUDED RS485 COMMUNICATING THERMOSTAT

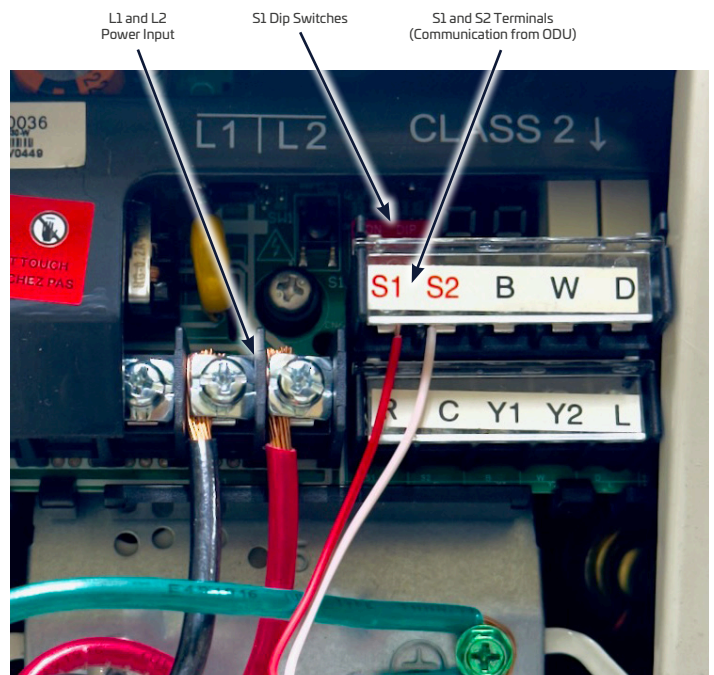
Battery maintains the thermostat's internal date and time



OUTDOOR UNIT CIRCUIT BOARD

Terminal Block (Left)

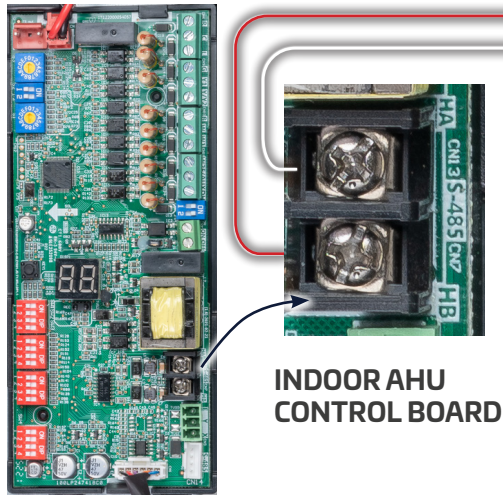
Communication Board (Right):
Terminal screws under the labels



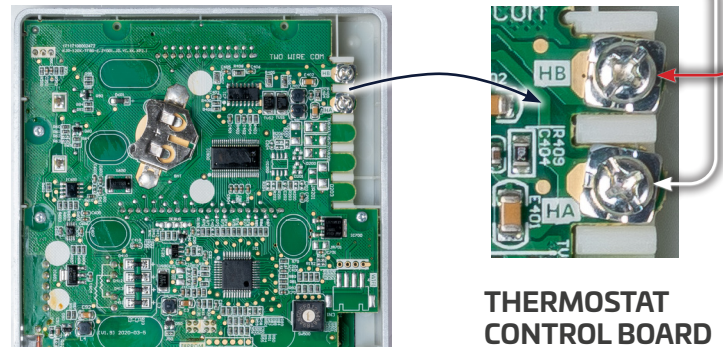
2-WIRE to 2-WIRE INSTALLATION: USING INCLUDED RS485 COMMUNICATING THERMOSTAT

This is the simplest installation method, reusing 2 wires from the existing thermostat wiring between the AHU, thermostat and ODU. The provided communicating thermostat provides maximum efficiency, causing the unit to prioritize efficiency over comfort. It will maintain a comfortable temperature, but could run longer than some people desire. For more conventional control over the unit see the additional installation options on pages 5 and 6.

STEP 1: CONNECT 2-WIRE CABLE TO THE HA/HB TERMINALS ON THE INDOOR AHU

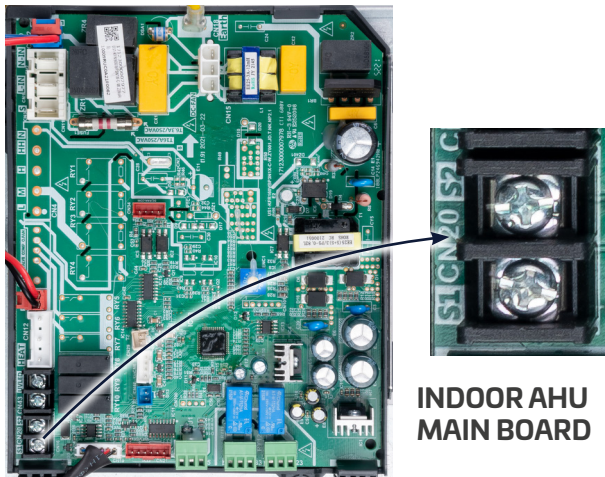


STEP 2: CONNECT 2-WIRE CABLE TO THE HA/HB TERMINALS ON THE THERMOSTAT

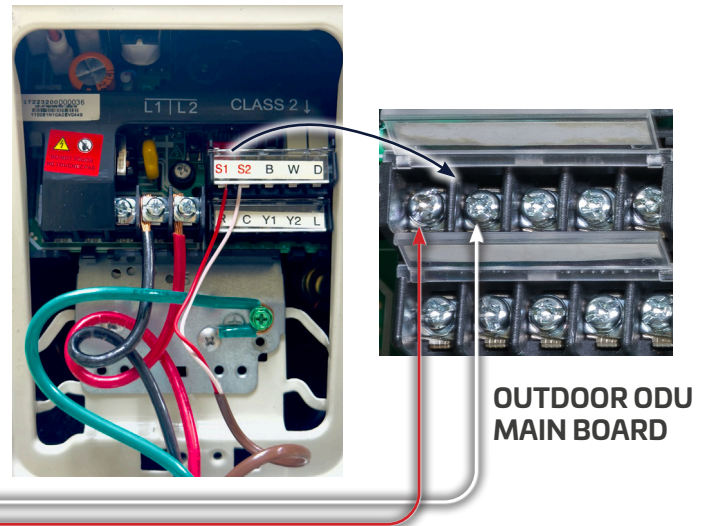


NOTE: The battery maintains the thermostat's setting during power outages.

STEP 3: CONNECT 2-WIRE CABLE TO THE S1/S2 TERMINALS ON THE INDOOR AHU

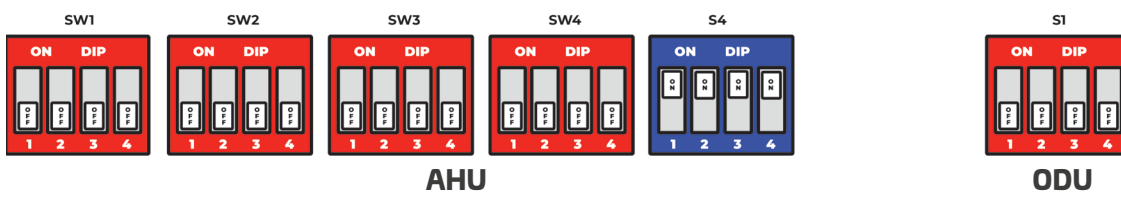


STEP 4: CONNECT 2-WIRE CABLE TO THE S1/S2 TERMINALS ON THE OUTDOOR ODU



NOTE: Connecting S1/S2 to any terminal other than the designated S1/S2 terminals can cause permanent damage!

STEP 5: SET THE DIP SWITCHES



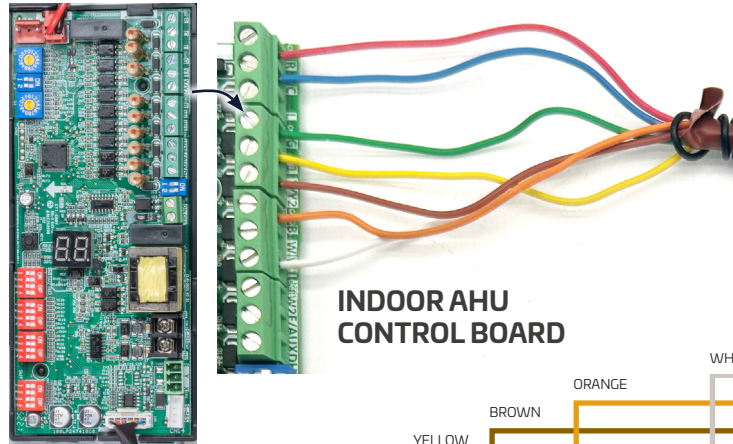
ALL DIP Switch are set to OFF, except S4. For DIP Switch functions, see page 7. **IMPORTANT!** In order for changes to take effect, power must be OFF, BEFORE DIP switch changes. Default setting is all OFF except S4.

7-WIRE to 2-WIRE INSTALLATION: USING OPTIONAL 24v THERMOSTAT

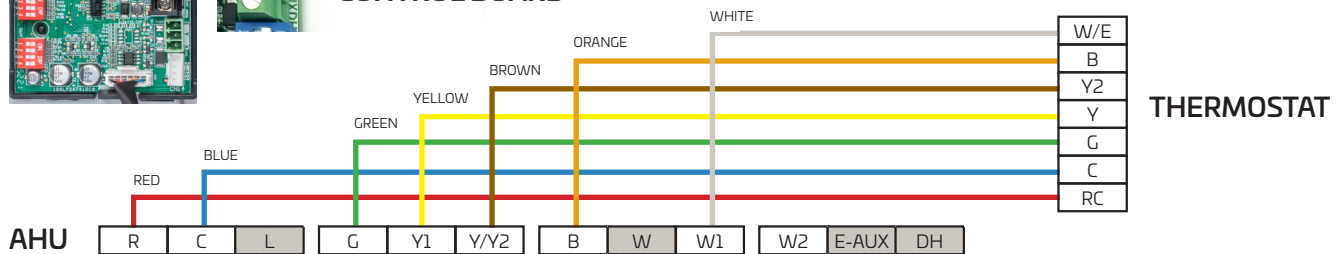
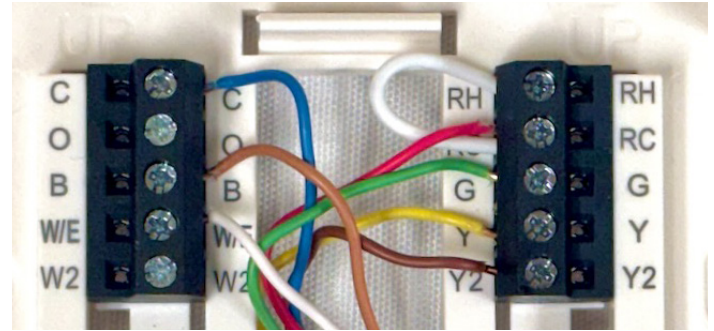
(INCLUDES ACIQ T855W, NEST, ECOBEE, ETC.)

This option shows how to wire a 24 volt thermostat to the air handler, using existing or new 24v cable with 7-wires. This method prioritizes comfort over efficiency. Please note for this method to work, DIP switch SW1-1 needs to be turned ON. This method uses S1 & S2 to communicate between the air handler and the condenser, using the existing 24 volt wire or 18/2 shielded wire run outside. For additional thermostat wiring options, see page 7.

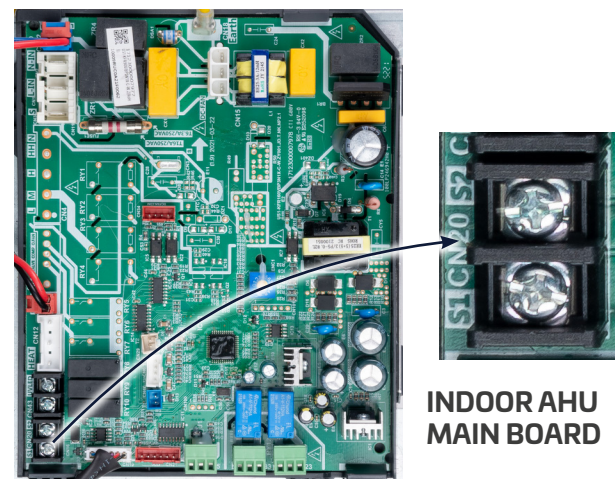
STEP 1: CONNECT 24v 7-CONDUCTOR-WIRE 24v TERMINALS ON THE INDOOR AHU



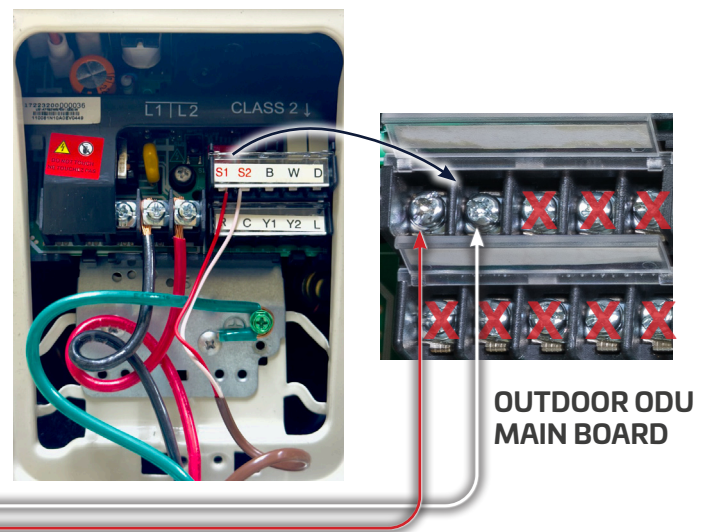
STEP 2: CONNECT 24v 7-CONDUCTOR-WIRE 24v TERMINALS ON THE THERMOSTAT



STEP 3: CONNECT 2-WIRE CABLE TO THE S1/S2 TERMINALS ON THE INDOOR AHU

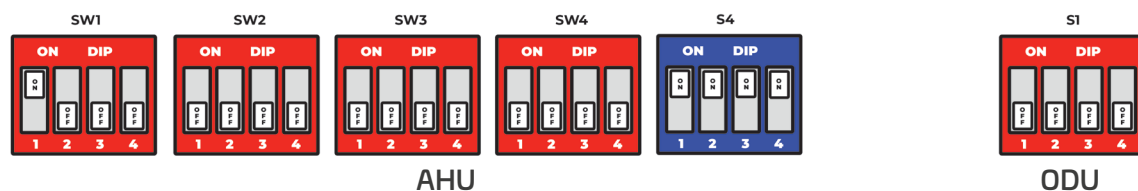


STEP 4: CONNECT 2-WIRE CABLE TO THE S1/S2 TERMINALS ON THE OUTDOOR ODU



STEP 5: SET THE DIP SWITCHES

NOTE: Connecting S1/S2 to any terminal other than the designated S1/S2 terminals can cause permanent damage!



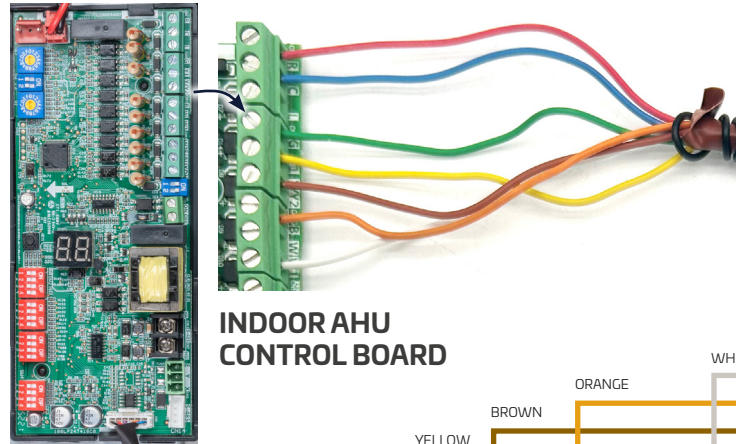
For 7-Wire to 2-Wire installations, SW1-1 DIP Switch is set to ON. Remaining DIP switches remain OFF, except S4. For DIP Switch functions, see page 7. **IMPORTANT!** In order for changes to take effect, power must be OFF, BEFORE DIP switch changes. Default setting is all OFF except S4.

7-WIRE to 7-WIRE INSTALLATION: USING OPTIONAL 24v THERMOSTAT

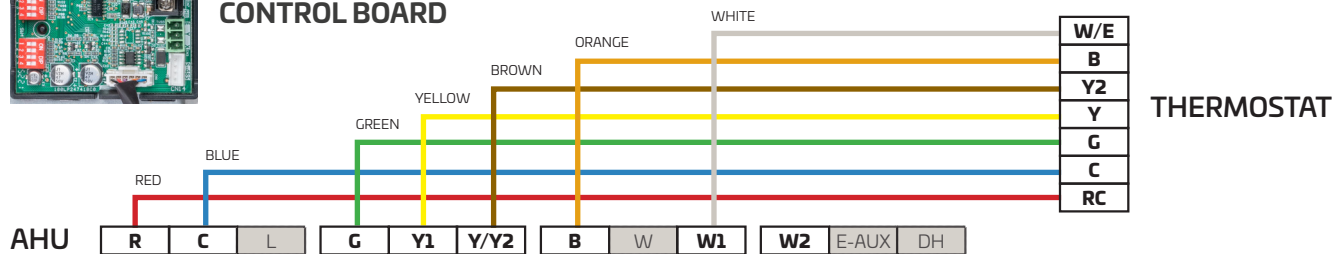
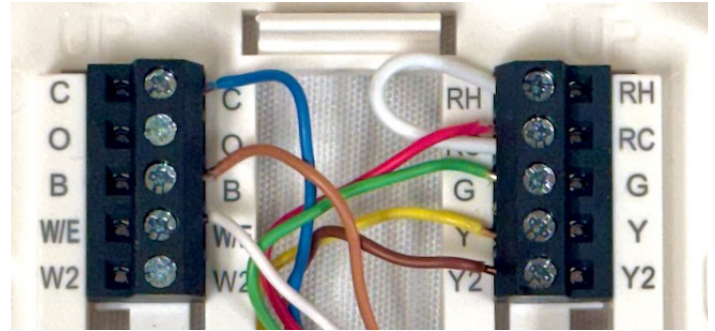
(INCLUDES ACIQ T855W, NEST, ECOBEE, ETC.)

This option shows how to wire a 24 volt thermostat to the air handler, using existing or new 24-v cable with 7-wires. This method prioritizes comfort over efficiency. Please note for this method to work, DIP switches SW1-1 and SW1-4 needs to be turned ON. This method also uses 24-v cable to communicate between the air handler and the condenser, using the existing 24-v cable with 7-wires run outside. For additional thermostat wiring options, see page 7.

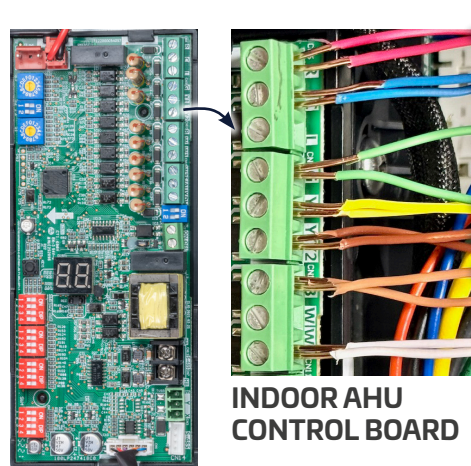
STEP 1: CONNECT 24v 7-CONDUCTOR-WIRE 24v TERMINALS ON THE INDOOR AHU



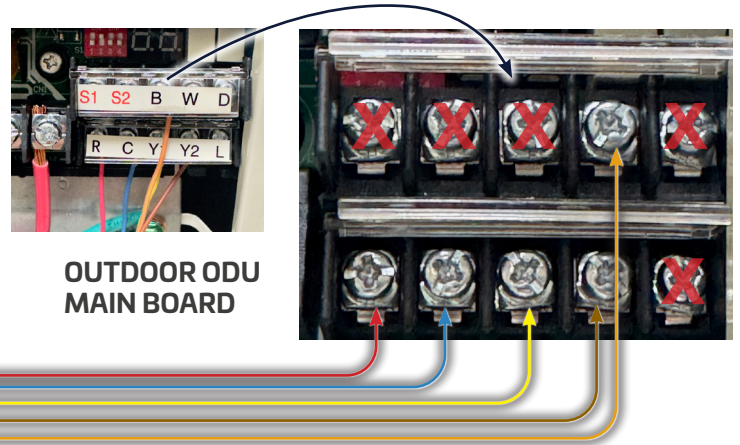
STEP 2: CONNECT 24v 7-CONDUCTOR-WIRE 24v TERMINALS ON THE THERMOSTAT



STEP 3: CONNECT 7-WIRE CONDUCTORS TO 24v TERMINALS ON THE INDOOR AHU

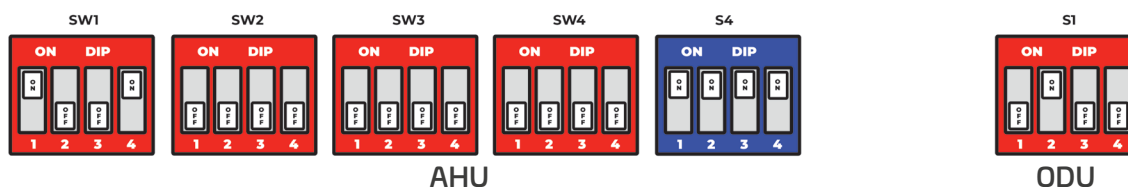


STEP 4: CONNECT 7-CONDUCTORS TO 24v TERMINALS ON THE ODU



NOTE: THERE IS NO GREEN WIRE CONNECTION ON THE ODU

STEP 5: SET THE DIP SWITCHES



For 7-Wire to 7-Wire installations, **SW1-1 and SW1-4 DIP Switches are set to ON**. Remaining AHU DIP switches remain OFF, except S4. **S1-2 on the ODU is ON**. For DIP Switch functions, see page 7.

IMPORTANT! In order for changes to take effect, power must be OFF, BEFORE DIP switch changes. Default setting is all OFF except S4.

Air Handler DIP Switch Guide

Function Settings

Thermostat Wiring Method		
SW1-1	OFF	RS-485 Communication. Used For Thermostat.
	ON	Used for 24 Volt Thermostat.
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 and Outdoor Unit Wiring Method		
SW1-4	OFF	S1 and S2 (DC Communication / Only Applies to ACiQ Condenser)
	ON	24 Volt Wires (No True To Communication / Applies To All Condenser)

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

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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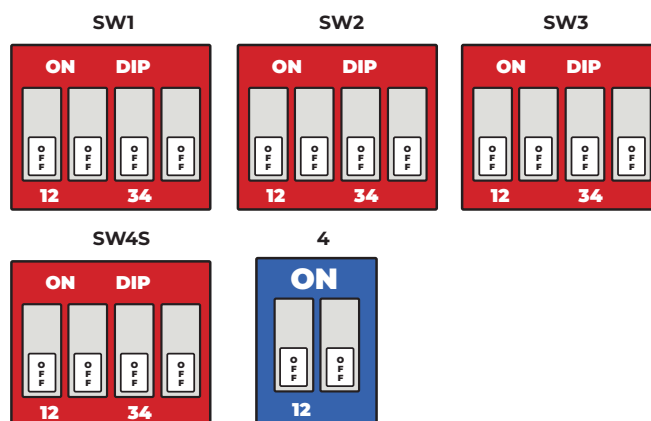
Heat Settings Cont.

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)
Electric Heat Nominal CFM Adjustment		
SW4	OFF	6 °F (Efficiency)
	ON	4 °F (Comfort)

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

Default AHU DIP Switch Settings Shown Below



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	

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.

OFF = 0, ON = 1.
For example
[SW4-1 OFF, SW4-2 ON, SW4 -3 OFF] = 010

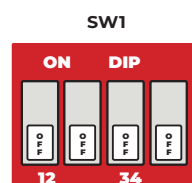
General Notes

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.

Outdoor Condenser DIP Switch Guide

Heat Settings		
S1-1	No Function	
	OFF	NONE
	ON	NONE
S1-2	Communication Protocol	
	OFF	RS485 Communication
	ON	24v Communication
S1-3	Capacity Output	
	OFF	NONE
	ON	STRONGER CAPACITY OUTPUT (24v ONLY)
S1-4	Defrost	
	OFF	NORMAL DEFROST (DEFAULT)
	ON	ENHANCED DEFROSTING



Default Outdoor Unit DIP Settings

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.