Innovair GT4 Wiring / Dip Switch / Optimal Refrigerant Charge Guide

Scenario	Controller	Indoor unit	Connection between Thermostat - Indoor and outdoor	Outdoor unit
Scenario 1	24V Thermostat	Innovair AHU	24V: R/C/B/Y1/Y2/G/W1/W2	Innovair ODU
Scenario 2	24V Thermostat	Innovair AHU	24V: R/C/B/Y1/Y2/G/W1/W2	The third-party ODU
Scenario 3	24V Thermostat	The third-party AHU / Furnace / A-COIL as a Heat-Pump	24V: R/C/B/Y1/Y2/G/W1/W2	Innovair ODU
Scenario 4	24V Thermostat	The third-party AHU / a Furnace / A-COIL as a Straight Cooling	24V: R/C/Y1/Y2/G/W1/W2	Innovair ODU

Note: Need to set the dip switch first before the unit power on.

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Scenario 1:

24V Thermostat

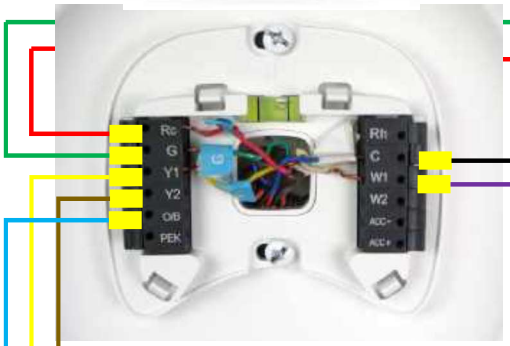
24V

Innovair GT4 AHU Indoor unit

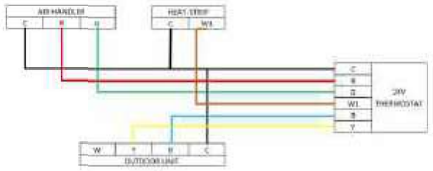
24V

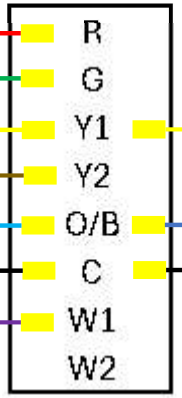
Innovair GT4 Outdoor unit

Ecobee 24V thermostat as an example



Heat Strip wiring





24V

24V

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Scenario 2:

24V Thermostat

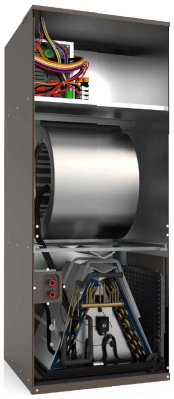
24V

Innovair GT4 AHU Indoor unit

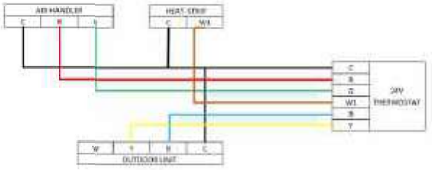
24V

Third Party Outdoor unit

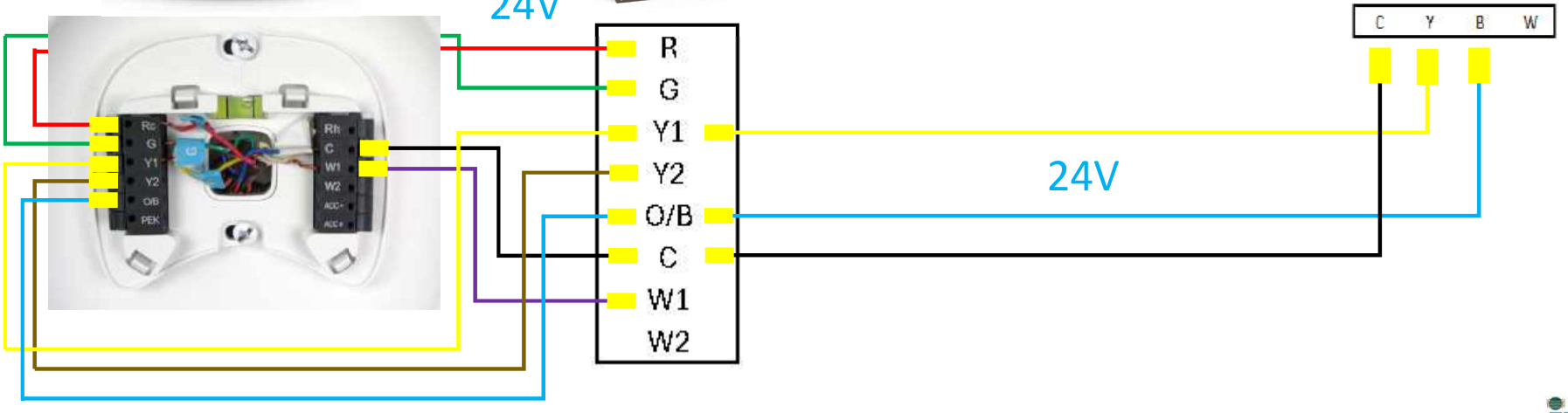
Ecobee 24V thermostat as an example



Heat Strip wiring



Note: Need to set the dip switch first before the unit power on.



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Scenario 3:

24V Thermostat

24V

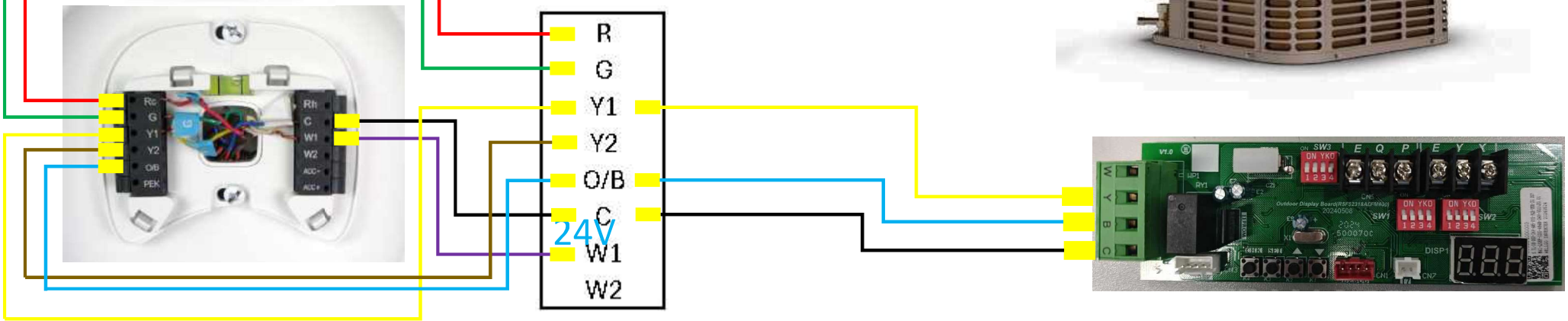
The third-party Indoor unit or Furnace as a Heat-Pump

24V

Innovair GT4 Outdoor unit

Ecobee 24V thermostat as an example

Note: If you will be using this outdoor unit as a heat-pump, make sure you have a heat-pump TXV installed on your indoor unit.



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Scenario 4:

24V Thermostat

24V

TheThe third-party Indoor unit or Furnace as Straight Cooling

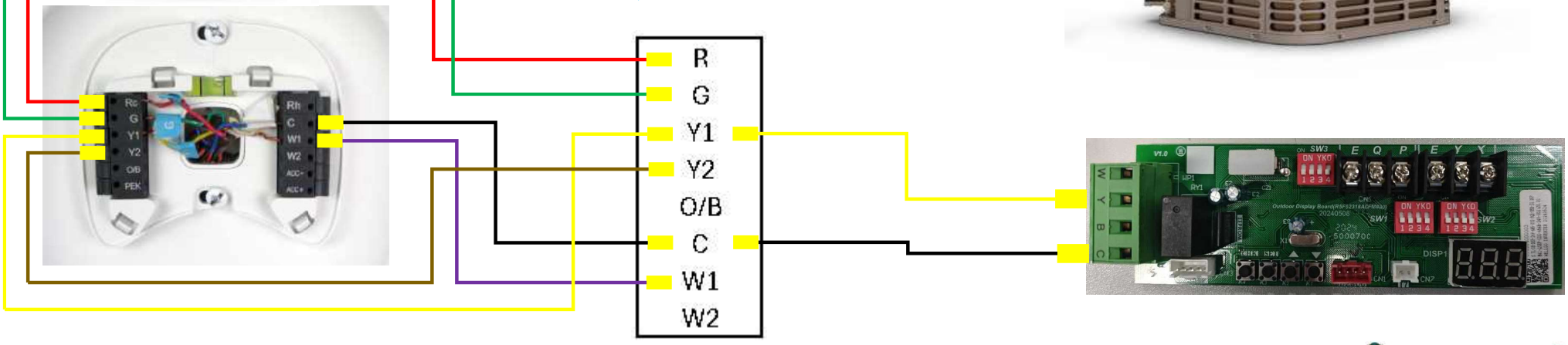
24V

Innovair GT4 Outdoor unit

Ecobee 24V thermostat as an example

24V

Note: If you will be using this outdoor unit as a cooling only unit, make sure you have at least a TXV installed on your indoor unit.



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Indoor Board Settings:

MODEL	SW1	SW2
36K 48K 60K		
24K		

SW1 SELECTOR SWITCH(ON: OFF:)

SW1-1	ON	RS-485 communication mode
	OFF	24V thermostat control
SW1-2	ON	Heating fan delay 90S
	OFF	Anti-cooling fan delay
SW1-3	ON	T1 temp sensor from Thermostat
	OFF	T1 temp sensor from the AHU Return
SW1-4	ON	USB port software update
	OFF	RESERVED

SW2 FAN SPEED TAPS			
SW2-1	SW2-2	HIGH SPEED TAPS (Y1+Y2 OR W)	LOW SPEED TAPS (Y1)
OFF	OFF	3 -- MEDIUM	1 -- LOW
ON	OFF	4 -- MEDIUMHIGH	2 -- MEDIUM LOW
OFF	ON	4 -- MEDIUMHIGH	3 -- MEDIUM
ON	ON	5 -- HIGH	4 -- MEDIUM HIGH

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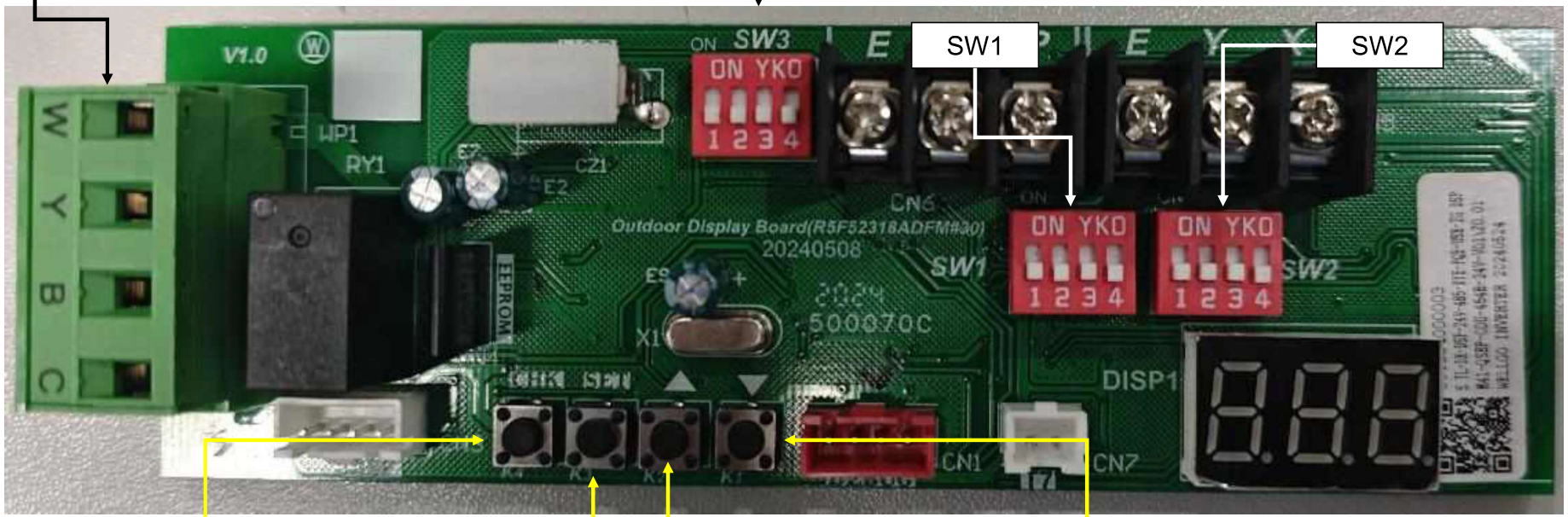
Outdoor Interface Board:



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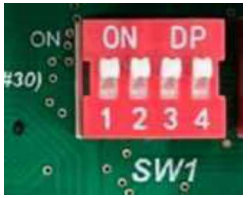
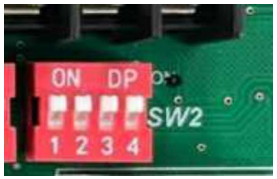
Outdoor Interface Board Functions:



	SW1-1	SW1-2	SW1-3	SW1-4
ON	communicative control	Display temperature unit: ℃	**A/C** Disable ODU throttling when heating mode. EXV in the ODU will keep 100% open when heating mode. Useful when application requires Piston in the AHU to act as the system throttling device.	USB Upgrade
OFF	24V control (Factory)	Display temperature unit:℉（Factory）	**HEAT PUMP** EXV in ODU activated in heating mode. (factory default)	Reserved (factory default)



Defrosting choice	SW2-1	SW2-2	SW2-3	SW2-4
ON	Fix timed defrost	Timer 30 min	Powerful defrosting（Heating operating time is reduced by 10% and Defrosting extended for 60 seconds）	Thermostat O/B signal is opposite
OFF	Auto Defrost (factory default)	Timer 60 min（factory default）	Normal（factory default）	Normal（factory default）
Remark	Defrosting control mode selection	Cycle time selection	Only applicable to fix timed defrosting timer and the Minimum Runtime Timer	

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Outdoor Interface Board Functions:

Mode	SW3-1	SW3-2	Remark
2 Ton mode	OFF	OFF	
3 Ton mode	OFF	ON	Factory default
4 Ton mode	ON	OFF	
5 Ton mode	ON	ON	Factory default

	SW3-3	SW3-4
ON	Accelerated cooling	Accelerated heating
OFF	Normally cooling (factory default)	Normally heating (factory default)

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Force Cooling Procedure:

Indoor Unit:

Step 1: Have the indoor fan on the ON position.

Outdoor Unit:

Step 2: Press "K3" button on the display board for about 5 seconds to enter Force Cooling Mode, once that is done the led display Will show "dC".

Step 3: Make sure your unit has the correct subcooling for the capacity is set to. Use table 14.3.

Force Heating Procedure:

Indoor Unit:

Step 1: Have the indoor fan on the ON position.

Outdoor Unit:

Step 2: Press "▲" button on the display board for about 5 seconds to enter Force Heating Mode, once that is done the led display Will show "dH".

Step 3: Make sure your unit has the correct subcooling for the capacity is set to. Use table 14.3.

Table 14.3

Subcooling (°F)		Ambient Remperature (°F)				
		68~77	77~86	86~95	95~104	104~113
Model	24K	10±2	8±2	8±2	6±2	6±2
	36K	10±2	8±2	8±2	6±2	6±2
	48K	8±2	8±2	8±2	6±2	6±2
	60K	8±2	8±2	8±2	6±2	6±2

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Additional Guides:

Table 14.2

Liquid Line Temp (°F)	Subcooling Value(°F)							
	6	7	8	9	10	11	12	13
	Liquid Gauge Pressure (PSI)							
55	164	167	170	172	175	178	181	184
60	178	181	184	187	191	194	197	200
65	194	197	200	203	206	210	213	217
70	210	213	217	220	223	227	230	234
75	227	230	234	238	241	245	249	252
80	245	249	252	256	260	264	268	272
85	264	268	272	276	280	284	288	292
90	284	288	292	297	301	305	309	314
95	305	309	314	318	323	327	332	336
100	327	332	336	341	346	351	355	360
105	351	355	360	365	370	375	380	385
110	375	380	385	390	396	401	406	412
115	401	406	412	417	422	428	433	439
120	428	433	439	445	450	456	462	468
125	456	462	468	474	480	486	492	498

Additional refrigerant:

The unit comes pre-charged for installations up to 25 feet. If you need to add refrigerant, add 0.54 oz/feet.

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