Energy Management Thermostat Quick Guide — Cat. # RFTSTAT01

Purpose:
This Quick Guide provides the basic instructions for wiring, installing, and programming the Helios thermostat into a Z-Wave® network. For more detailed instructions refer to the complete Energy Management Thermostat Installation and Operation Manual. This is located online at www.cooperwiringdevices.com/AspireRF.

HVAC System / Thermostat Overview
The RFTSTAT01 connects to the HVAC system's thermostat connections just like a traditional thermostat.

HVAC System Compatibility
The RFTSTAT01 is compatible with most heating and cooling systems. There are two types of HVAC systems:

Standard (gas/electric)
Heat Pump systems

The system type is selectable from the Thermostat Installer Screen by using the Function Control Buttons to access Menu > System Settings > Mechanical Settings submenu. Refer to the complete Installation and Operation Manual for detailed explanation.

Standard HVAC systems: For Gas heating or Electric heating.

Heat Pump HVAC systems: Supports changeover valve operation for either changeover with cooling or changeover with heating.

Multi-Stage HVAC Compatibility:

For Standard HVAC systems the HVAC outputs support 2 stages of heating and 2 stages of cooling.
For Heat Pump HVAC systems, the HVAC outputs support 3 stages of heating (2 compressor/1 Aux Heat) and 2 stages of cooling.

Remote Communications
The RFSTAT01 is embedded with a Z-Wave module for communicating wirelessesly with Z-Wave compatible control systems.

WIRING / INSTALLATION
The RFTSTAT01 requires 24VAC power from the HVAC system it is controlling. Refer to Figure 1 for connection to a Standard HVAC System and Figure 2 for a Heat Pump HVAC System.

- Connect the 24V/AC Common (typically the Blue wire/terminal) from the HVAC system to the thermostat terminal block 24Com
- Connect the 24V/AC Return (typically the Red wire/terminal) from the HVAC system to the thermostats HVAC System terminal block 24RH or 24RC terminals

NOTE – the 24RH and 24RC terminals are default tied together in the thermostat. Most HVAC systems have a common heating and cooling transformer. If you have a system with separate heating and cooling transformers, you will need to split the RH and RC jumper by cutting the trace on the PCB. Refer to the complete Thermostat Manual for a detailed explanation.

NOTE – Do **NOT** split the 24RC/24RH terminals for a Heat Pump system.

FIG. 1: STANDARD GAS/ELECTRIC HVAC SYSTEM WIRING

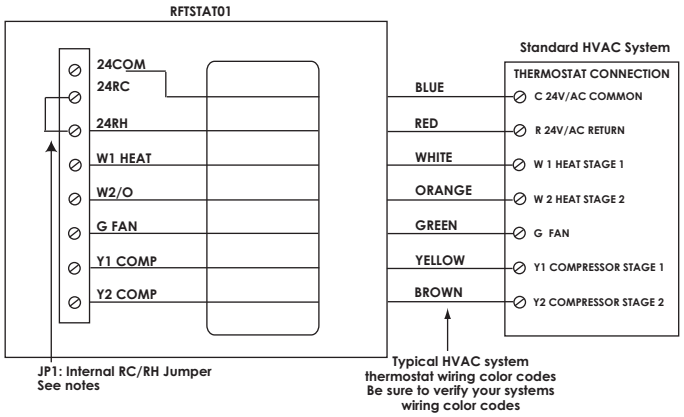

FIG. 2: HEAT PUMP HVAC SYSTEM WIRING

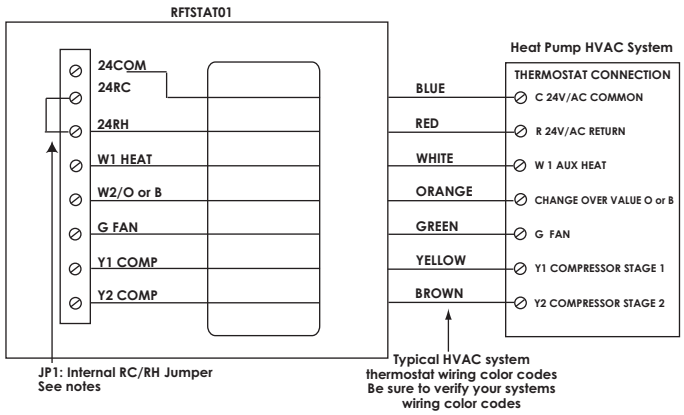

Figure 1:
Installation Notes – Standard HVAC System Setup

System Type: Set the system type to Gas/Elect in the Mechanical Settings menu of the Installer Setup. This is the default setting.
Single Stage systems use W1 for heating stage 1 and Y1 for cooling stage 1.
Two Stage Heating systems use W1 for stage 1 heating and W2 for stage 2 heating.
Two Stage Cooling systems use Y1 for stage 1 cooling and Y2 for stage 2 cooling.
HVAC system transformer: If you have an integrated heating and cooling system with a single transformer, do **NOT** cut jumper JP1. This is typical of most central HVAC systems.

Figure 2 :
Installation Notes – Heat Pump HVAC System Setup
System Type: Set the system type to Heat Pump in the Mechanical Settings menu of the Installer Setup.
Single Stage Compressor Systems: Use *Y1 for stage 1* heating/cooling, and *W1 for stage 2 Aux* Heating.
Two Stage Compressor Systems: Use *Y1 for stage 1 heating/cooling and Y2 for stage 2* heating/cooling and *W1 for* stage 3 Aux Heating.
Change Over Valve: You must configure the thermostat's changeover valve setting to work correctly with your HVAC system. Check your HVAC system documentation to be sure.

- Changeover settings are made in the Installer Settings > System Settings > Mechanical Settings menu.
- Changeover with "Cool" is the default setting and typical for most systems.
- If you get cooling when you expect heating, change the C/O type to the opposite setting.

Z-Wave INSTALLATION

Aspire RF's controllers (RFHDCSG and RFTDCSG) support the Helios Z-wave Thermostat General Version 2 Device class. The following procedure will allow the thermostat to be added to a Z-Wave network.

1. Set your primary controller to **Install** mode to add the thermostat as a node on your network (Refer to the Aspire RF User Guide for more detailed instructions).
2. In the Thermostat's Main Menu, scroll down to the Z-Wave Install item. Select the item.
3. Press the YES button in the Z-Wave Install screen.
4. The controller will indicate that the thermostat was successfully added to the RF network.
5. For deleting the thermostat from an existing network set the Primary Controller to **Uninstall** mode.
6. In the Thermostat's main menu, scroll down to the Z-Wave Install item. Select this item. Press the YES button in the Z-Wave Install screen.
NOTE: Before adding the RFTSTAT01 to a Z-Wave Network, check that it does not already belong to one by viewing the Home and Zone ID's located in the **Thermostat** Info screen. An un-configured thermostat should show zeros for both the Home and Zone IDs. O

Z-Wave APPLICATIONS

After the RFTSTAT01 has been installed in the Z-Wave network, you now have the ability to:

- Control the thermostat temperature from the Aspire RF controller
- Control the HVAC mode from the Aspire RF controller
- Add a specific thermostat setting or mode to a customized scene. This scene can be activated from a Aspire RF controller.
  NOTE: thermostat control is not included in scenes that are loaded into the Wallmount Scene Controller (RFWDC)
- Ability to easily set thermostat schedules with the Aspire RF controller.

NOTE – By using Aspire RF's HS2-Pro software (RFBER and RFUSB-PRO), you can have the ability to remotely control your thermostat setting through an Internet connection.

LED DISPLAYS

The Thermostat Control Screen has the following LEDs and on-screen labels.

LED L1 Green: System Operation mode.

• HVAC system is OFF – "SYS OFF" is displayed.	LED OFF
• Minimum Off Time (MOT) delay On is active- "SYS MOT" is displayed	LED OFF
• HVAC system is heating – "HEAT ON" is displayed	LED ON
• HVAC system is cooling – "COOL ON" is displayed	LED ON
• HVAC system is Heating and Min Run Time (MRT) delay off is active. "HEAT MRT" is displayed.	LED ON
• HVAC system is Cooling and Min Run Time (MRT) delay off is active. "COOL MRT" is displayed	LED ON

LED L2 Green: System Stage mode

• 1st stage heating or cooling not active – No display.	LED OFF
• 2nd stage heating or cooling is active – "2nd Stg" displayed.	LED ON
• Stage 3 heating is active – "Aux Heat" is displayed.	LED ON

LED L3 Green: Schedule mode.

• Setback schedule is running – "Run" is displayed.	LED OFF
• Schedule is off, temperature setpoint hold in effect – "Hold" is displayed	LED ON
• Away setback mode is active – "Away" is displayed.	LED ON

LED L4 RED: Alert LED. (Used for system alerts)

• No alerts. No display.	LED OFF
• Specific alert text (i.e. change filter, etc) – Alert Text displayed.	LED ON

Installer Settings Summary

For complete explanation of all thermostat settings refer to the complete Installation & Operation manual.

Setting	Range	Default	Additional Explanation
Display Lock	Y or N	N	Locks out front buttons
F/C Mode	C or F	F	
Screen Timeout	0, 20-120	0	(seconds)
Schedule Enable	Y or N	N	
Max heat setpoint	50F-90F (4C-32C)	90F (32C)	
Min cool setpoint	55F-99F(10C-37C)	55F (10C)	
Min Run Time (MRT)	1 – 9	3	(minutes)
Min Off Time (MOT)	5 – 9	5	(minutes)
Mechanical – Type	Std or HP	Std	Choose either Standard HVAC or heat pump
Mechanical – Fan Type	Gas or Elec	Gas	
Mechanical – C/O Type	w/Heat or w/Cool	w/Cool	
Mechanical – 2nd Stage Heat	Y or N	N	
Mechanical – Aux Heat	Y or N	Y	
Mechanical – 2nd Stage Cool	Y or N	N	
Filter Interval		300	Accumulated run time hours
Maint Interval		3000	Accumulated run time hours
H/C Delta	3 – 15	3	Degrees
Heat Delta Stage 1 On	1 – 8	1	Degrees
Heat Delta Stage 1 Off	0 – 8	0	Degrees
Heat Delta Stage 2 On	1 – 8	2	Degrees
Heat Delta Stage 2 Off	0 – 8	0	Degrees
Heat Delta Stage 3 On	1 – 8	3	Degrees
Heat Delta Stage 3 Off	0 – 8	0	Degrees
Cool Delta Stage 1 On	1 – 8	1	Degrees
Cool Delta Stage 1 Off	0 – 8	0	Degrees
Cool Delta Stage 2 On	1 – 8	2	Degrees
Cool Delta Stage 2 Off	0 – 8	0	Degrees
Fan Cycler ON time	0 – 120	0	0 = Fan Cycler OFF (seconds)
Fan Cycler Off Time	10 – 120	10	(seconds)