# EasyTouch RV™

## Reference Manual

for Model

# 356

micro-air

# Table of Contents





The EasyTouch RV™ 356 model thermostats were designed to directly replace certain 12-volt Coleman™, Airxcel™, RVComfort™, TrueAir™, and ComfortGuard™ single zone, single/dual-stage compressor, single/dual-stage heater systems. These are typically "basement units" in Winnebago or Alfa brand recreational vehicles. Please use section *EasyTouch RV 356 Models and Compatible Replacements* to make sure that this model is right for you.

## EasyTouch RV 356 Models and Compatible Replacements

EasyTouch RV 356 can be purchased in two colors. *Table 1* lists all EasyTouch RV 356 models. The obsolete thermostats are no longer sold, however their only difference was how to wire the unit. There is no need to replace these models as operations and build quality were identical to the latest thermostats.

| EasyTouch RV 356 Model | Color |
|---|---|
| ASY-356-X01 | Black |
| ASY-356-X02 | White |
| -**OBSOLETE-** ASY-356-X03 -**OBSOLETE-** | |
| -**OBSOLETE-** ASY-356-X04 -**OBSOLETE-** | |

*Table 1*

*Table 2* and *Table 3* list the known OEM model numbers that can be used with EasyTouch RV 356. The tables are not exhaustive so if your thermostat is not listed, please contact Micro-Air https://www.micro-air.com/SupportRequest to verify if this is the correct model for your application. Thermostat model numbers can be found in your original user's manual and on the back side of the thermostat or the back of the mounting plate. Note that a " * " character means any character in that position is a match.

A 4-to-3 wire harness is provided with EasyTouch RV 356 that may or may not be needed. *Table 2* are those that do not use this harness, while *Table 3* thermostats will. See section *Wiring the Thermostat* for how and when to use it, if needed.

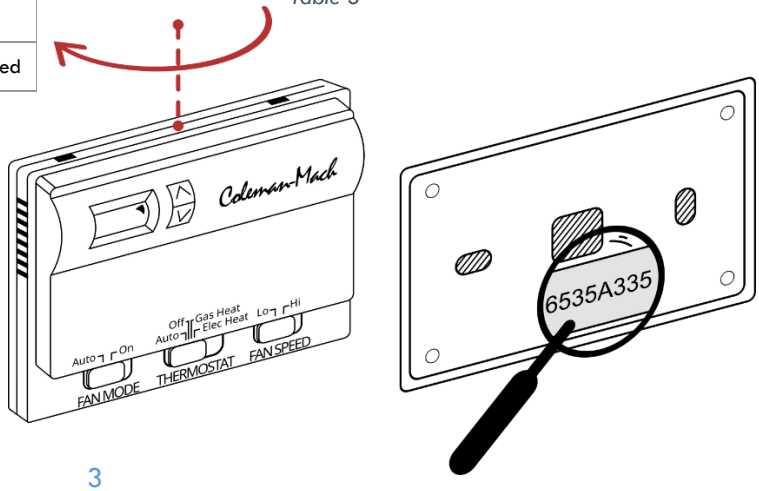
The "**G**(as)**C**(hangeover) **Ver**(sion)" columns of *Table 2* and *Table 3* are referenced in section *Auto Gas Changeover Type* of the *Initial Setup Instructions*. Please refer back here during initial setup.

| Compatible OEM Thermostats | | | |
|---|---|---|---|
| | GC Ver. | | GC Ver. |
| 6536*335* | C | 6795*345* | Disabled |
| 6536*345* | C | 6795*365* | Disabled |
| 6759*345* | C | 6636*345* | Disabled |
| 6537*335* | A | 6535*335* | B |
| 6636*344* | Disabled | 6636*347* | Disabled |
| 6535*345* | C | | |

*Table 2*

| Compatible OEM Thermostats | | | |
|---|---|---|---|
| | GC Ver. | | GC Ver. |
| 6535*344* | A | 9530*335* | A |
| 9330*336* | D | 6330*355* | D |
| 6537*344* | A | | |

*Table 3*



## Included in the Box

EasyTouch RV model 356 is shipped with the following items:

- 1x EasyTouch RV 356 Thermostat
- 1x Quick-Start Guide
- 1x 4-to-3-pin adapter (*Figure 1*)
- 1x 9-Pin (3x3) adapter (*Figure 2*)
- 1x Mounting Bracket (*Figure 3*)
- 4x Screw Hole Covers

The quick start guide can be used to get the thermostat installed and set up quickly to cool or heat the space. The mounting bracket and adapters are for installation, though the adapters are not always used. The screw hole covers can be used to cover holes in the wall from the previous thermostat if they are exposed.

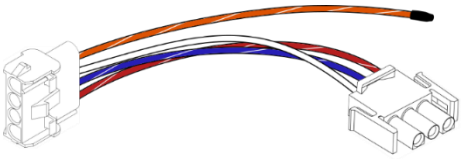


*Figure 1- 4-to-3-Pin Adapter*

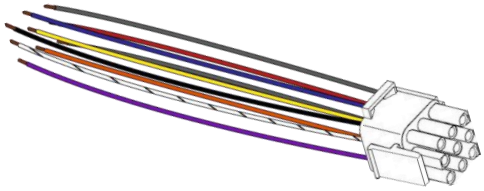


*Figure 2 – 9-Pin (3x3) Adapter*

*Figure 3 - Mounting Bracket*

## Installing the Thermostat

### Came From Quick Start Guide? - Begin Here

You may have been directed here from the included Quick-Start Guide if it determined that you need to do some additional setup. The directions needed are difficult to express without detail so please read the full installation guide here to install your thermostat. This complete installation guide covers everything in the Quick-Start Guide.

### Safety

First, it is recommended to remove both AC and DC power from your system. Unplug your RV from shore power and turn off any converters or generators to remove AC power. Open your 12-volt DC bus breaker or fuse to de-energize your thermostat. This greatly reduces the chance of any harmful electrical discharge, as well as preventing accidentally opening a fuse.

### Removing the Old Thermostat

The original thermostats have a front cover that pops off. Behind the cover there are 2-4 mounting screws that must be removed to free the back plate, shown by *Figure 4*. Once the thermostat is removed, pull out some of the wire from the wall to inspect how it was installed.

Some RV builders will use the proper plugs recommended by the original thermostat manufacturer for *all* the thermostat connections, which is also how EasyTouch RV is designed. This is shown in *Figure 5*. This means you can simply unplug the thermostat and proceed to the next section. Note that *Figure 5* shows only one possible set of plugs and there may find more or different plugs in your system.

Other RV builders do not use the proper plugs and direct wire the thermostat to the RV manufacturers wiring using wire crimps or similar. Some of them may use a mix of plugs and direct wire. If the unit is direct-wired fully or in part then take some

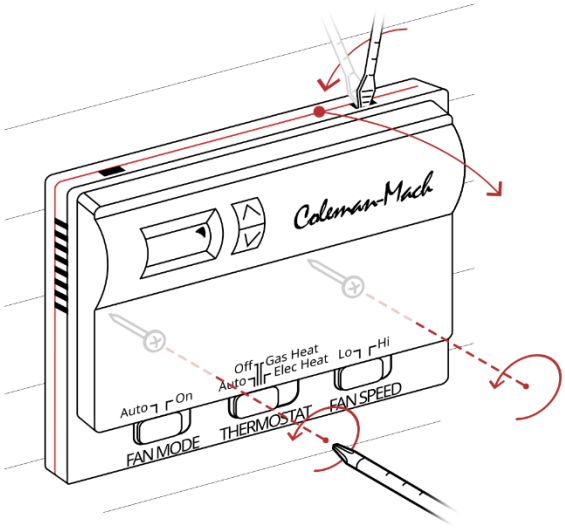



*Figure 4 - Inpect OEM Installation*

pictures of this wiring for reference. Be sure that you can see where the thermostat wires meet with the wall wires as they are typically different colors. You can also write in *Table 4* later in the section to record what color wires meet.

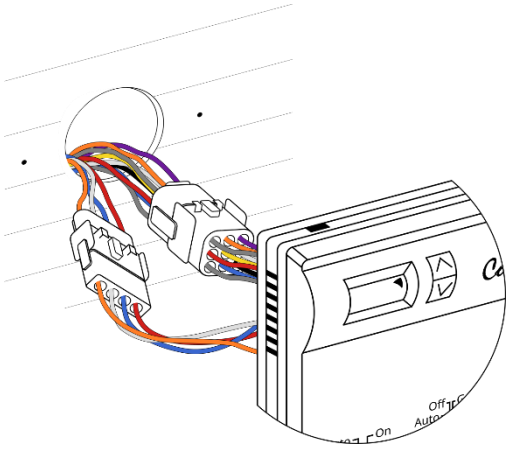


*Figure 5 - Inspect OEM Wiring*

## Wiring the Thermostat

### *Molex™ Plugs*

If your installation was done with the proper mating Molex™ plugs similar to *Figure 5*, then you can simply plug in all the mating connectors and move on to the section *Mounting the Thermostat*. The provided 9-pin (3x3) wire harness will not be needed. Not all installations will use all plugs, just ensure that every original plug has an EasyTouch match.

You may find the Molex™ plug coming from the wall has a 3-pin plug and EasyTouch comes with a 4-pin plug installed. Use the provided 4-to-3 pin adapter harness (*Figure 1*) in these systems, where the orange/white wire is not used. If you have a 4-wire plug coming from the wall already then you will not need the 4-to-3 pin adapter harness. If you find the 9-pin (3x3) is used but not a 4-or 3-pin then you will use the relevant *Direct-Wired* section directions to complete the wiring.

If the plugs are not the standard Molex™ plugs that mate with EasyTouch then you will have to wire it direct as described in the *Direct-Wired* section. You could also make up your own plugs but is beyond what Micro-Air can assist with.

### *Direct-Wired*

The original thermostat in these systems will have wires coming out of the back of it that are connected to the RV manufacturer's wiring harness, using a crimp-splice or similar. The wire colors on the RV manufacturer's harness can vary, but the wires at the back of the original thermostat are always the same color for their use.

Follow the thermostat wires the short distance to where they are spliced to the RV manufacturer's wire harness. Write in the RV wiring harness colors in *Table 4* below before making connections. Take pictures if you have not already for reference as well. Some thermostats and harnesses may not have all wires shown in *Table 4*. The important part is that every original wire has an EasyTouch match.



*Table 4 – Wire Color Chart*

| Micro-Air Connector | | Original thermostat wire color | Micro-Air harness color | | Function | Factory harness color (Provided to write in your color) |
|---|---|---|---|---|---|---|
| 2- pin connector | | Green/White Stripe | Green/White Stripe | | Room Sensor | |
| | | Green/White Stripe | Green/White Stripe | | Room Sensor | |
| 9-pin connector | | Gray | Pin No. 1 | Gray | Freeze Sensor | |
| | | Red | 2 | Red | + 12 VDC Out | |
| | | Gray | 3 | Gray | Freeze Sensor | |
| | | Green | 3 | Gray | AGS | |
| | | Blue | 4 | Blue | - 12 VDC (Ground) Out | |
| | | Yellow | 5 | Yellow | Compressor 1 | |
| | | Orange | 6 | Orange | Compressor 2 | |
| | | Black | 7 | Black | Indoor Fan High | |
| | | White/Black Stripe | 8 | White/Black Stripe | Electric Heat | |
| | | Purple | 9 | Purple | Indoor Fan Low | |
| 3-pin Connector | 4-pin Connector | Red or Red/White Stripe | 1 | Red/White Stripe | + 12 VDC In | |
| | | Blue or Blue/White Stripe | 2 | Blue/White Stripe | - 12 VDC (Ground) In | |
| | | White | 3 | White | Gas Heat 1 | |
| | | Orange/White Stripe | 4 | Orange/White Stripe | Gas Heat 2 | |

Micro-Air provides a 9-pin harness (*Figure 2*) that will be used to interface between EasyTouch and the RV manufacturer's wires. One side plugs into EasyTouch RV while the other wire-end side is used to make your new wire connections. You will have to source or reuse electrical connectors to make these connections.

EasyTouch will also have a pre-wired 2-pin connector and a pre-wired 4-pin connector attached to the back. Connect the provided 4-to-3 pin adapter harness (*Figure 1*) to EasyTouch. Strip away the black heat-shrink on the orange/white stripe wire if the orange/white stripe wire is used. Cut off the 2-pin and 3-pin plugs as needed and use electrical connectors (not provided) to complete the installation per *Table 4*. Any unused wires or plugs you can cut short or leave untouched.

When you know where each wire goes you should begin cutting wires. Move through them one at a time, replacing an OEM thermostat wire with the appropriate EasyTouch wire until all the wires are replaced.

## Check for Additional Hardware – Software Setup for Later

You must check your wiring to determine what additional hardware your system may have. Later, you will use these findings to configure the software in EasyTouch RV. Some of them had a freeze sensor while others used an AGS (Auto-Generator Start) output, but never both. If an AGS system was used, it was often in a Winnebago (TrueAir) thermostat, but a freeze sensor is most common in general.

Inspect your OEM thermostat wires (*Figure 6*) for either two gray wires or a green wire. A green wire means that you have AGS. Two gray wires means that you do not have AGS. See the *Configure Auto-Gen Start* section in *Initial Setup Instructions* to tell the thermostat what you have. If your system is *Direct-Wired*, use *Table 4* to connect your gray wires to the gray wires of the Micro-Air 9-pin harness (polarity does not matter) or connect your green wire to the pin-3 gray wire of the Micro-Air 9-pin harness. Pin-3 is the gray wire next to orange and red.

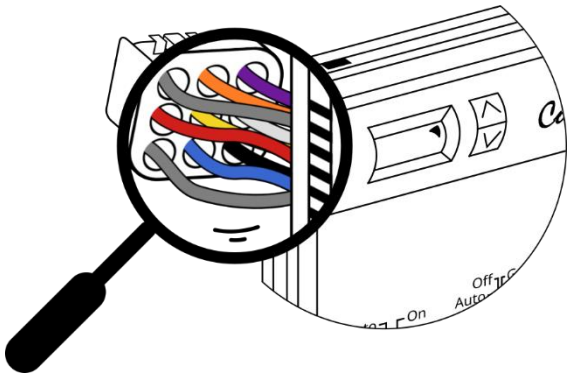


*Figure 6 - Inspect OEM Thermostat Wire Color*

## Re-apply Power

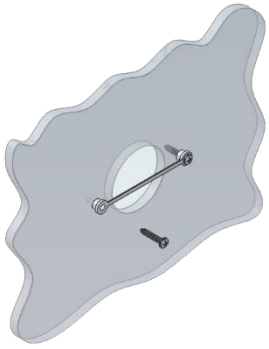
Restore DC power. The thermostat screen should light up and boot into the main menus. This will happen if the four power wires are connected properly. All other wires control the outputs or are sensors. Restore AC power so that your appliances can run again. Move on to the section *Mounting the Thermostat*, or the section *Initial Setup Instructions* and mount the thermostat later.



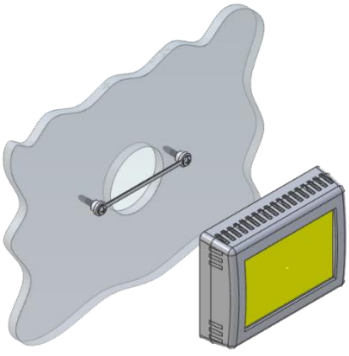
 

## Mounting the Thermostat

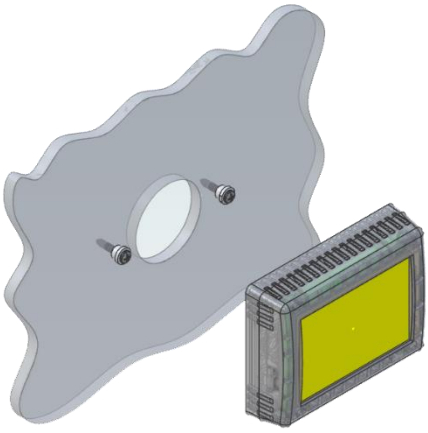
**Step 1:** Locate the mounting bracket (*Figure 3*) horizontally across the hole with the smaller diameter of the mounting button against the wall.



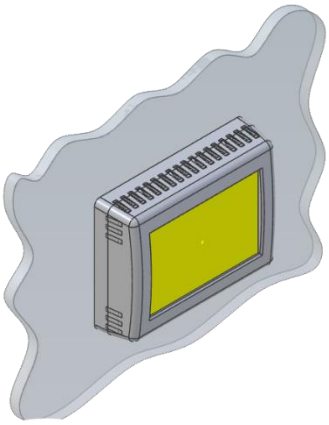
**Step 2:** Screw in one screw and level the buttons so the display will be straight when installed. Screw into the smaller hole of the two buttons.



**Step 3:** Screw in the second screw and make sure the buttons are flat and level. The larger diameter button has some play to make these adjustments easier.

**Step 4:** Remove the mounting tab before mounting the thermostat on the wall.



**Step 5:** Aligning the buttons with the holes in the back of the display. Press the display against the wall and gently slide the display down to lock it in place.

# Initial Setup Instructions

## Configure your Available Outputs

EasyTouch RV 356 is meant to replace a few different OEM thermostats and so must be configured for your system prior to using it. Tap the Settings button on the main screen, then navigate to the Setup button and tap it. The first page is to configure the hardware in your specific system. Tap the heat pump button to enable or disable it based on what is installed in your system. A red circle with a line through it over the button indicates disabled. Cool and furnace are always enabled.


*Settings*


*Setup*


*Heat Pump*

### *Configure Auto-Gen Start (AGS)*

Some systems have hardware to allow for a generator to start prior to a cycle occurring that needs it. These systems are commonly labeled "TrueAir" and are often found in Winnebago products, but not all have Auto-Gen Start (AGS). The hardware for (AGS) is **not** part of the thermostat but it must be configured to know if it is available. Use section *Check for Additional Hardware – Software Setup for Later* to know what you have.


*AGS Available/Unavailable*

Tap the AGS Available/Unavailable button under the "Auto Gen-Start" heading to set it based on what you have. If set as "Available" then the Generator button will appear and you can turn the functionality on or off. Setting this to "Unavailable" is the default and should be used for all non-AGS systems.


*AGS Enable/Disable*

**Warning: You MUST configure AGS availability appropriately or your thermostat may not function as designed. You CANNOT enable this function unless you know you have the appropriate hardware. See section *Check for Additional Hardware –* if you are not sure. This can also be found in your original thermostat's manual. Micro-Air cannot assist with acquiring AGS hardware.**

## Auto Gas Changeover Type

You can choose the auto gas changeover type by tapping the Type button on the second page. Each "version" has slightly different logic to use all of your available heat modes in stages based on how far the inside temperature is from the set-point. Each version corresponds to a version of the OEM thermostats behavior, as well as a "Disabled" option. Use the "GC Ver" column of *Table 2* and *Table 3* to match the version to your original thermostat. "Version A" has the broadest coverage if not sure.

*Auto Gas Changeover Type*

You can also adjust parameters for the Auto Gas Changeover to operate its logic. The temperature at which stages escalate can be set, as well as the maximum run time for a lower stage to escalate. See section *Auto Gas Changeover* in section *Operating the Thermostat* for more details on this operation and the configurable parameters.

## Connecting Remotely

EasyTouch RV can be operated entirely by the touchscreen, however you can also communicate, monitor, and modify operation of it wirelessly using the EasyTouch RV application. Some extra features will require a wireless connection and is described in their sections. See *Appendix A: Working Wirelessly* for details.


*EasyTouch RV App icon*

# Operating the Thermostat

## Main Screen

This screen is where most time is spent using the thermostat. This screen allows you to set and monitor the desired operation of the thermostat and is shown in *Figure 7*.

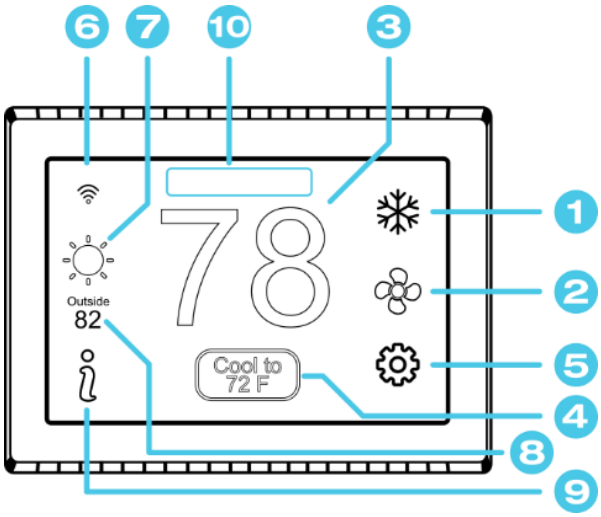



*Figure 7 – Main Screen*

### *(1) Operational Mode*

This is the main operating state of the system. Tap it to change to any available mode or turn the system off.

**Note: If you do not see a mode you should have then see section *Configure your Available Outputs*.**

### *(2) Fan Speed*

This sets how the electric fan (not the furnace blower!) will operate in conjunction with the selected *(1) Operational Mode*. Tap it to iterate the available fan speeds. No fan button means there is no fan control for the selected mode. Not all fan speeds are available for the selected mode.

- **Full Auto**: Turns the electric fan on and off with a cycle. It automatically adjusts the speed based on the difference between setpoint and inside temperature
- **Cycled**: Turns the electric fan on and off with a cycle at the selected speed only
- **Manual**: Always runs the electric fan at the selected speed

### *(3) Inside temperature*

This is the temperature reading for the space that the thermostat is trying to temper, determined by a local sensor. If a remote sensor is plugged into the back of the thermostat then it has priority over the sensor installed in the thermostat from the factory. Use the *(9) Info Screen* to determine which is in use.

### *(4) Temperature Setpoint*

This button shows the current temperature setpoint for the selected *(1) Operational Mode*. Tap it to adjust the temperature setpoint. Setpoints are tied to each mode to remember the last setting. No setpoint button means there is no setpoint control for the selected mode.

### *(5) Settings*

This button will enter the settings screens. Settings are mostly for configuring the thermostat and making changes that are not common or found on the main screen. See section *Settings Screens* for more details.

### *(6) WiFi Status*

The Wi-Fi indicator shows the state of the thermostat's Wi-Fi connection. A dark blue icon means no connection to an internet enabling device. Red means it is connected to an internet enabling device but does not have internet. Green means it is connected to the internet. The number of bars indicate strength. See the *Connecting to a New Wi-Fi Network* for more details.

### *(7) Local Weather*

This icon indicates the local weather at the last time weather information was received. A Wi-Fi connection on the thermostat is required to get weather data. Tap the icon for more detailed weather information. See the *Local Weather and Local Time* section for more details.

### *(8) Outside Temperature*

This is the temperature reading for your local area that is retrieved over the thermostat's internet connection and is part of the *(7) Local Weather* information.

### *(9) Info Screen*

This screen shows information about the thermostat's operating state. Tap the button for this information.

### *(10) Status Message*

Various messages may be shown here to indicate active operations. See the *Status Messages* section for potential messages and their meanings.

## Operational Modes

All modes operate the overhead fan and/or a heating or cooling cycle based on the current heating or cooling setpoint, relative to the inside temperature.

### *Fans and Fan Only Mode*

This mode lets the fan to operate based on the chosen *(2) Fan Speed*. This will circulate the air without operating any heating or cooling cycles.

*Fan Only Mode*

*Fan Speed*

### *Cool Only Mode*

This mode only runs a cool cycle to maintain the cooling set-point in the space. Set the *(1) Operational Mode* button to Cool Only and the desired *(2) Fan Speed*, where behavior will then be based on *Table 5*.

*Cool Only Mode*

| Environment (°F) | Cycle Operation | Auto Fan Operation |
|---|---|---|
| Inside ≤ Setpoint | None | Off |
| Inside 1° Above Setpoint | Compressor #1 On | On Low |
| Inside 2° Or More Above Setpoint | Compressor #1 and #2 On | On High |
| Inside Returns 1° Below Setpoint | Compressors Off | Runs 45 More Seconds, Off |

*Table 5 - Cool Only Mode Operation*

**Note: *Table 5* operation may be different based on the Gap settings. See section *Temperature Gap (Hysteresis)* for details.**

### *Heat Pump Only Mode*

This mode only runs an electric heat pump heating cycle to maintain the heating set-point in the space. Set the *(1) Operational Mode* button to Heat Pump Only and the desired *(2) Fan Speed*, where behavior will then be based on *Table 6*.

*Heat Pump Only Mode*

| Environment (°F) | Cycle Operation | Auto Fan Operation |
|---|---|---|
| Inside ≥ Setpoint | None | Off |
| Inside 1° Or More Below Setpoint | Compressor #1 And #2 On | On High |
| Inside Returns 1° Above Setpoint | Compressors Off | Runs 45 More Seconds, Off |

*Table 6 - Heat Pump Only Mode Operation*

**Note: *Table 6* operation may be different based on the Gap settings. See section *Temperature Gap (Hysteresis)* for details.**

**Note: All heat modes are subject to Auto Gas Changeover Operation when enabled. See section *Auto Gas Changeover* in *Operating the Thermostat* for details.**

### *Furnace Only*

This mode only runs an auxiliary heating cycle to maintain the heating set-point in the space. Set the *(1) Operational Mode* button to Furnace Only or Aqua Only and the desired *(2) Fan Speed*, where behavior will then be based on *Table 7*.

Furnace Only Mode

| Environment (°F) | Cycle Operation |
|---|---|
| Inside ≥ Setpoint | None |
| Inside 1° Or More Below Setpoint | Furnace Stage #1 On |
| Inside Returns 1° Above Setpoint | Furnace Stage #1 Off |

*Table 7 - Furnace Only Mode Operation*

**Note: *Table 7* operation may be different based on the Gap settings. See section *Temperature Gap (Hysteresis)* for details.**

**Note: All heat modes are subject to Auto Gas Changeover Operation when enabled. See section *Auto Gas Changeover* in *Operating the Thermostat* for details.**

### *Auto Modes*

These modes will automatically switch between heating and cooling cycles as needed. Their operation will be the same as their "only" mode counterparts described earlier in the *Operational Modes* section. Auto modes will have their own "dual" set-points that are separate heating and cooling set-points. No heating or cooling cycles will occur when the inside temperature is between the setpoints.

*Auto Cool/Heat Pump Mode*

*Auto Cool/Furnace Mode*

This can be useful when setting a higher day-time cooling temperature and lower night-time heating temperature. It can also be used to control the temperature extremes when you are away from the RV.

**Note: These auto modes are subject to Auto Gas Changeover and Gap operations. See their *Auto Gas Changeover* and *Temperature Gap (Hysteresis)* sections respectively for more details.**

## Auto Gas Changeover

**Note: See section Auto Gas Changeover Type in section *Initial Setup Instructions* to configure this feature.**

Auto Gas Changeover operation mirrors the OEM thermostat's operation for additional stages of heat when the thermostat determines more are needed. The three escalating stages are shown in *Table 8*. All three stages may not be available based on your system, but EasyTouch will output the same logic. Stage 2 heating is available in every system.

| Staging | Heat Source |
|---|---|
| Stage 1 | Heat Pump |
| Stage 2 | Furnace 1 |
| Stage 3 | Furnace 2 |

*Table 8 - Heat Staging*

The below tables are based on "Version A" type of Auto Gas Changeover, which is the default selection and should be adjusted as described in the *Auto Gas Changeover Type* section. "DISABLED" will turn this behavior off. Other version changes are noted within the below tables.

The temperature and runtime values can also be adjusted from the same setup screens where "Type" is set.

### *Heat Pump and Auto Cool/Heat Pump Changeover Behavior*

*Table 9* shows how Auto Gas Changeover affects the Heat Pump operational modes when enabled.

| Environment (°F) | Operation |
|---|---|
| Inside 4° Or Less Below Setpoint | Normal Heat Pump Operation (Stage 1) |
| Inside 5° Or 6° Below Setpoint | Stage 1 and Stage 2 Run Until Setpoint is Satisfied (VERSION **C** TURNS **OFF** STAGE 1 ABOVE 4°) |
| Inside 7° Or More Below Setpoint | Stage 1, Stage 2, and Stage 3 Run Until Setpoint is Satisfied |
| **or** | |
| Any Stage Runs 20 Minutes (VERSION **A** AND **D** ONLY) | Stage Escalates to the Next Highest Available Stage |
| | |
| 3 Cycles in a Row Call for Escalation | Operates on *Table 10* Behavior for Two Hours |

*Table 9 - Heat Pump AGC Operation*

**Note: *Table 9* operation may be different based on the Gap and/or Setup settings. See section *Temperature Gap (Hysteresis)* and *Setup* for details, respectively.**

### *Furance and Auto Cool/Furnace Changeover Behavior*

*Table 10* shows how Auto Gas Changeover affects the Furnace operational modes when enabled.

| Environment (°F) | Operation |
|---|---|
| Inside 4° Or Less Below Setpoint | Normal Furnace Operation (Stage 2) (Stage 1 Never Runs) |
| Inside 5° Or More Below Setpoint | Stage 2 and Stage 3 Run Until Setpoint is Satisfied |
| **or** | |
| Any Stage Runs 20 Minutes (VERSION **A** AND **D** ONLY) | Stage Escalates to the Next Highest Available Stage |
| | |
| 3 Cycles in a Row Call for Escalation | Stage 2 and Stage 3 will Start Together for Next Two Hours |

*Table 10 - Furnace AGC Operation*

**Note: *Table 10* operation may be different based on the Gap and/or Setup settings. See section *Temperature Gap (Hysteresis)* and *Setup* for details, respectively.**



## Local Weather and Local Time

Local weather is displayed on the main screen whenever Wi-Fi and internet is available, shown visibly in the *Main Screen* section. Tapping the button will reveal more detailed weather information of the last received weather data. The local temperature is displayed under the local weather.

A valid location and an internet connection on the thermostat are required to retrieve weather data. Local time data also requires valid location data. Location is saved in the thermostat when a Bluetooth connection is made from a smart device with its location services enabled. You can check the current saved location from the weather screen. Location is preserved through power losses or device restarts.

New weather data is retrieved when there is any screen press or when a connection from a smart device is made, along with the above prerequisites.

Time is pulled in when a Bluetooth or Wi-Fi connection is made from the app. Also, an internet connection on the thermostat will grab the time so long as there is a valid saved location. If power is interrupted or the device is restarted, it will go out to the internet to grab the current time when the internet connection is re-established, without app interaction.

Tapping the weather icon area, whether there is information there or not, will change to the weather screen that will show the last valid weather data or weather troubleshooting information. If the main screen has a temperature but no weather icon, it is defaulting to the outside sensor reading on thermostats that have one. The information screen will always show the sensor reading if there is a sensor, and the weather screen will always show the temperature reading from the internet. Systems without an outside temperature sensor cannot add one.

## Status Messages

Some messages may be displayed on the main screen as shown in section *(10) Status Message* under *Main Screen*. *Table 11* shows the potential messages and their meaning.

| Message Text | Description |
|---|---|
| **OPEN INDOOR SENSOR** | The room sensor inside EasyTouch RV has failed open/disconnected or shorted. It must be repaired, or replaced by an external AirXcel OEM remote sensor using the green/white stripe wires of EasyTouch RV. |
| **BAD INDOOR SENSOR** | |
| **OPEN FREEZE SENSOR** | The freeze sensor is open to say that the indoor coil has frozen up under cooling operation and should be serviced as directed in the OEM manual for the A/C unit. Cooling operation will resume when the sensor closes to indicate it has warmed up.<br><br>If not, ensure that the sensor is installed to the thermostat correctly on the two gray wires. AGS systems do not use a freeze sensor so ensure that the thermostat is configured properly for AGS systems if used, as described in the *Check for Additional Hardware – Software Setup for Later* section.<br><br>When 120 Volts AC is removed, the sensor no longer operates as expected and reads open. This is OK and just a nuisance fault. The fault will clear when power is restored. Power is needed to run electric appliances and the furnace will run if the freeze sensor is open.<br><br>Also check that the fuse at the back of the thermostat is still good. Appliances cannot turn on with an open fuse and the freeze sensor circuit will read open. |
| **AUX HEAT ENABLED** | This means that the two-hour timer of the Auto Gas Changeover logic is active. See the *Auto Gas Changeover* section in *Operating the Thermostat* for details. |

*Table 11 - Status Message Descriptions*



## Settings Screens

The settings screens allow for further configuration and control of the thermostat. It is a paged system that you can navigate through to see all available settings. Each setting button can be tapped to configure the related settings. **Note: Not all settings may be available depending on your EasyTouch RV model. If you do not see the graphic then it is not available for your system.**


*Settings Button*

Tap the settings button as shown in section *(5) Settings* under *Main Screen* to view them.

### *Navigation*

Use these buttons to flip through all the available settings or return to the main screen.


*Previous Settings Page*


*Back to Main*


*Next Settings Page*

### *System Help*

This screen displays a QR code that can be scanned to provide information about thermostat operation and troubleshooting from the Micro-Air website. It also shows the current thermostat firmware revision and the thermostat serial number.


*Help Button*

### *Day/Night Mode (Screen Saver)*

Tap this icon to switch between Day or Night mode. Day mode will dim the display down to the Sleep Level set in the *Display Brightness* settings, after 30 seconds of no screen presses. Night mode will turn the backlight completely off after 30 seconds of no screen presses. The display will brighten again after a screen press to the Active Level set in the *Display Brightness* settings.


*Day Mode*


*Night Mode*

### *Display Brightness*

This screen allows you to set the Active and Sleep brightness levels that are used by the *Day/Night Mode (Screen Saver)* settings. Tap the associated up and down arrows to change their level.


*Brightness Button*

### *Schedule – Edit, Enable or Disable*

There are two Schedule buttons with sub-writings "Schedule" or "Enable/Disable". Tap the enable/disable button to turn the schedule on or off. Tap the schedule button to modify the schedule. See section *Schedule Screens* for more details.


*Schedule Button*

### *Wi-Fi Information*

This screen allows you to monitor the state of your Wi-Fi connection to the thermostat. SSID and Password fields shows the saved credentials that the thermostat is always attempting to find and connect to. Tap the password field to reveal the password.


*Wi-Fi Button*

The Router, Strength, and Internet fields show the state of the Wi-Fi connection. The MAC address of the thermostat is also shown at the bottom. See section *Connecting to a New Wi-Fi Network* for more details about using Wi-Fi.

### *Home/Away*

This setting changes from a home memorized set of settings to an away memorized set of settings. It is like having two different thermostats, one while you are at the RV and one for when you are not. Each can be set with a completely different set of modes, schedules, set points and fan speeds to customize the operation with a single button press.

*Home and Away Buttons*

### *Bluetooth (Account) Password Reset*

This screen is used to reset the saved Bluetooth password in the thermostat. This is the password that must match your EasyTouch RV app account to make remote connections. Only one account can have access to the thermostat. Use this whenever you reset the password to your app account to regain remote access to the thermostat.

*Bluetooth Password Reset*

### *Temperature Reading Adjustment*

This setting allows you to calibrate the Inside temperature reading with an offset. For example, if the inside temperature reads 72°F (22.2°C) and you feel it is 75°F (24°C), you can use the up and down arrows on this page to increment the offset to +3°F (+1.8°C).

*Temperature Reading Adjustment*

### *Temperature Gap (Hysteresis)*

This setting determines the difference in temperature required between setpoint and inside temperature before a heating or cooling cycle will begin. This is helpful to prevent short cycling in large spaces or spaces with high thermal loss, by running a cycle for longer amounts of time. This offset is applied to all logic that involves setpoint operations, such as auto modes, auto gas changeover, etc. See *Table 12* for an operational example.

*Temperature Gap Button*

| Inside Temperature (°F) | Heating Setpoint (°F) | Heating Hysteresis (°F) | System Operation |
|---|---|---|---|
| 69 | 68 | 3 | None |
| 66 | | | None |
| 65 | | | Heating Cycle Begins |
| 67 | | | Heating Cycle Continues |
| 69 | | | Heating Cycle Terminates |

*Table 12 - Temperature Gap Operational Example*

### *Measurement Units*

This setting determines how to display temperatures on the thermostat. Tap the Units button to toggle between Fahrenheit and Celsius.

*Units Buttons*

### *Touchscreen Calibration*

The EasyTouch RV touchscreen is calibrated at the factory to accurately interpret your touch presses. Pressing the Touchscreen Calibrate Button will allow you to recalibrate the touch press area. Follow the on-screen prompts to calibrate the touchscreen.

*Touchscreen Calibrate Button*

### *Restart*

This setting will turn the thermostat off then on as if removing and restoring power. Tap the Restart button and follow the on-screen prompts to confirm.

*Restart Button*

### *Reset All*

This setting will reset certain settings in the thermostat back to factory defaults. Some thermostats offer options to which settings to return to defaults. Tap the Reset All button and follow the on-screen prompts to choose what you would like to reset.

*Reset All Button*

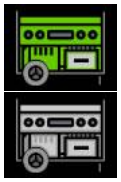
### *Setup*

*Setup Button*

This setting is used to configure your thermostat's operational settings and is slightly different for each EasyTouch RV model. Some simply display how the air conditioner control board that EasyTouch RV communicates with is configured. Others allow for telling EasyTouch RV what appliances it has connected to it. Tap the Switches button to see what configurations are available. See section ***Initial Setup Instructions*** for details on what must be configured, if any. Micro-Air cannot assist with manipulating and adding more appliances to your system.

### *Auto-Generator Start (AGS)*

**Warning: See Section *Configure Auto-Gen Start* in *Initial Setup Instructions* to configure this behavior where appropriate.**



*AGS Enable Button*

This setting allows for a generator to start prior to any appliances that need line voltage to run. EasyTouch RV will output voltage to its pin 3 grey wire to go to existing AGS hardware, prior to calling for any appropriate cycles. It then disconnects voltage from this wire when it is no longer needed. Tap the AGS Enable button to green to enable this behavior or to gray to disable it.

### *Furnace/Aqua Icons*

*Furnace/Aqua Button*

Most RV systems have auxiliary heat modes in the form of a "forced-air" gas furnace or hydronic heat. EasyTouch RV or the associated control board treats these as the same output and so you can tap the Furnace/Aqua button to toggle between what icons to display for this operational mode. This is simply a cosmetic setting for all EasyTouch RV models except the 350 model, which should be set appropriately.

## Schedule Screens

The schedule supports 7 day per week scheduling of events. Events can include changes to the set point or mode of operation for one or more zones. Each numbered row is an event that can be configured. *Figure 8* shows the main schedule screen. Tap the "Schedule" button from the *Settings Screens* to enter.

The smart device application also offers a method to copy days. Once a schedule is set for one day, it can be copied to any other day.

### *(1) Day of the Week*

Day of the week is selected from the days along the top of the screen. The day selected appears in white.

### *(8) Scheduled Events*

Events are numbered 1 to 6 along the left side of the screen. Each row is a numbered event. Tap an event to edit it and advance to the schedule edit screen, shown in *Figure 9*. Tap "More" to see events 4, 5, and 6.

### *(2) Time*

This column shows the status of the event (row). It is either disabled or set for a time to apply its event settings.

### *(3) Mode*

This column shows the mode that will be applied if this event (row) occurs.

### *(4) Temp*

This column shows the temperature setpoint that is applied if this event (row) occurs.

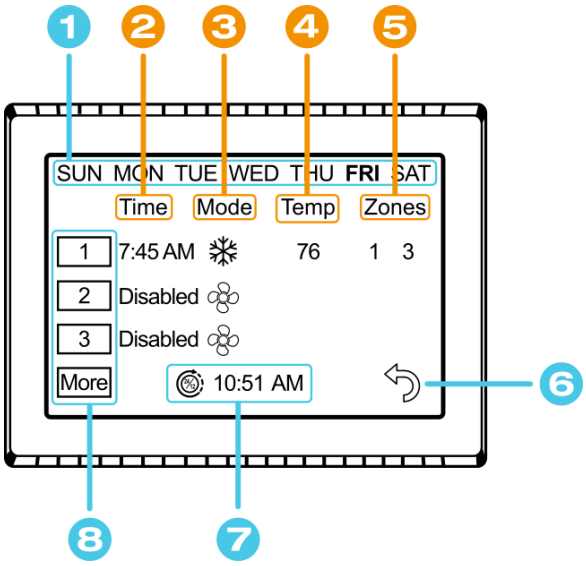



*Figure 8 - Main Schedule Screen*

### *(5) Zones*

This column shows the zones that this event (row) will apply to. Only used in zoned systems.

### *(7) System Time*

System time is displayed along the bottom. Tap the time to change from 12-hour to 24-hour time format. A "--:--" is shown when time has yet to be set. A valid time is required for the schedule to operate. See section *Local Weather and Local Time* for how the system time operates.

### *(6) Back*

Tap the back arrow to return to the last screen.

*Figure 9* shows the edit screen when an event is tapped as shown in *(8) Scheduled Events* of *Figure 8 - Main Schedule Screen*. The event time on the main schedule screen and Action Time in the edit schedule screen will show disabled until a time is set. Tap "Disabled" (1) at the top of the screen to show a gray box around the Action Time to select it. The up and down arrows change to full color once a selection is made. Use the arrows to make a change to what is selected. Use the back arrow (2) to save any changes and leave the screen.

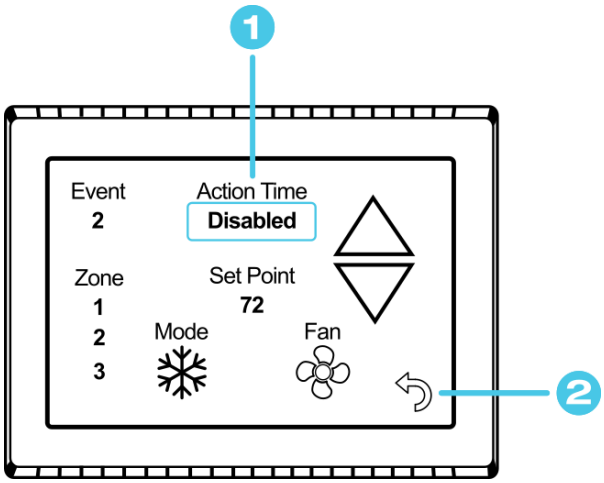



*Figure 9 - Schedule Edit Screen (Disabled Event)*

*Figure 10* shows the schedule edit screen once a valid time is set for the event.

1. Set the desired mode and (if available) fan speed by tapping their buttons.
2. Set the event time by tapping hours, minutes or AM/PM.
3. Use the red and blue arrows to adjust your selection. Tap the hours, minutes, AM/PM or the set point to select an editable parameter.
4. **Zoned systems only**: Tap the zone number to enable/disable the zone you want this event to affect. A green box will draw around zones the event is enabled for. Events for Single zone EasyTouch RV models will always be enabled when the Action Time (2) is set.

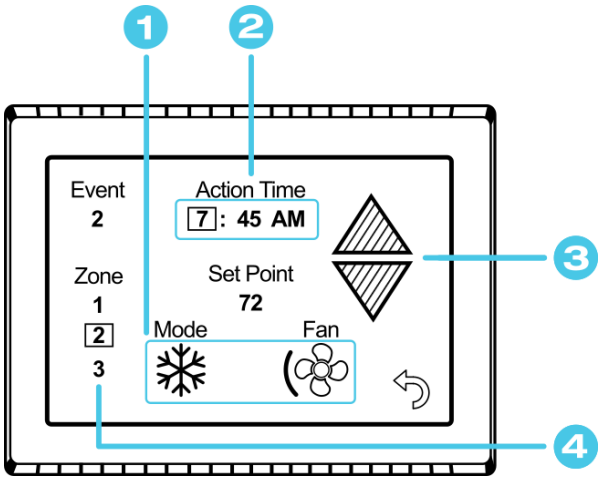



*Figure 10 - Schedule Edit Screen (Enabled Event)*

### *Create and Enable a Schedule*

1. Tap the edit schedule button as described in the Schedule – Edit, Enable or Disable section in settings to enter the main schedule screen, shown by *Figure 8*.
2. Ensure that a valid *(7) System Time* is shown. Tap the day you want to set up a schedule for, then the event you want to edit, all shown by *Figure 8*. Tapping the event will take you to the edit schedule screen, shown by *Figure 9* and *Figure 10*.
3. Tap the Action Time, Setpoint and Mode/Fan Speed to make edits to what you want your event to do. Tap the zone you want this event to occur in if shown.
4. Tap the back button to save the event and repeat for any other events and any other days.
5. Tap the back button once again to return to the settings screen. Activate the schedule by pressing the schedule button with the "Enabled/Disabled" subtext as described in the *Schedule – Edit, Enable or Disable* section in settings. When enabled, it may also be noted on the *(9) Info Screen*, under the *Main Screen*.

# Smart-Device Application Features

## Restart Thermostat

This Bluetooth only feature allows resetting the display just as if you removed and restored power.

## Check for Updates

Checks to see if any updates are available for the thermostat. The smart device application must have internet and the thermostat must be connected to Wi-Fi with a green Wi-Fi symbol. Tap Check for Updates and follow the prompts.

**Note:** Beta updates may be available from time to time, but these are for people working with Micro-Air in testing them. Some features may not work as expected. The current version firmware can be restored by checking for updates again.

## Notifications

Notifications provide a way for the user to monitor the temperature in the space using notification limits. Limits are set by connecting to the thermostat in the app, selecting the settings gear, and then selecting notifications. A minimum and maximum allowed temperature can be set. *Table 13* shows an example of operation with an 80°F maximum temperature set.

A Notification will be sent for each degree it rises above the maximum temperature. If temperature drops, no notification will be sent unless the temperature exceeds the last maximum temperature again (82 in the example). If the temperature drops two degrees below the set maximum, (78 in the example) it will again alert for each degree above the set maximum. This behavior helps avoid nuisance notifications to your smart device. The same occurs in the opposite direction for the lower limit.

| Temperature (°F) | Action |
|---|---|
| 80 | Send first notification |
| 81 | Send another notification |
| 82 | Send another notification |
| 81…79 | Temperature drops, no notification |
| 78 | Max temp resets |
| | |

*Table 13 - Push Notifications Operation Example*

## Edit Wi-Fi Settings or Connect to Wi-Fi

This is where you will make the connection from the thermostat to the internet. See section *Connecting to a New Wi-Fi Network* for details on how to use this feature. The app must be connected to the thermostat over Bluetooth to see this option.

## Refresh Configuration:

This is a temporary feature that resets the saved configuration on the phone if a configuration change is made at the thermostat, for example, enabling the heat pump mode for a zone from the Setup *Settings Screens*. This will be removed later. If you experience a difference between the app modes available and the thermostat modes available, then press this button to fix the issue.



# Appendix A: Working Wirelessly

This thermostat may be operated remotely using either Bluetooth or Wi-Fi. All connectivity is performed through the EasyTouch RV App on a smart device. The app is downloaded from the Google Play store or Apple App store. The first time the app is opened, it will ask to create an account. Create your account and follow the prompts to connect your thermostat.

*EasyTouch RV App icon*

Bluetooth is a limited range method to connect, typically used when near the thermostat. The thermostat can be connected to an internet-connected network, where you can then access the thermostat from anywhere you have an internet connection with the app.

If a second user is going to use the thermostat remotely, they MUST use the same account and password that the first user assigned to the thermostat. Each thermostat can only be assigned to a single account, but many users can control the thermostat if they use the same account.

## First Connection Steps

**Note: An internet connection on your smart device is necessary for these steps.**

1. EasyTouch RV uses BLE which is a special implementation of Bluetooth. The smart device and thermostat do not "Pair" like other common devices. Ensure that Bluetooth is enabled in the smart device settings, and that the app has Bluetooth permissions. Android systems have changed over time and some users may need to have location permissions give to the app, location permissions turned on in general, our give "nearby devices" permissions to the app.
2. Start the app on your smart device. Bluetooth permissions must be accepted and may prompt you for them. The app will open to a main page where you can log-in, delete an account, recover a lost password, or create an account. Tap create account and enter your name, email, and a password at the prompts. The system will send a confirmation email to your inbox. Enter the number in the confirmation email when asked.
3. Once the account is created, the application may ask to add a device. If your thermostat is powered and permissions are set up, it will show in the list to be added to your account, found over Bluetooth. Select the device and enter a name for it. This name is used to identify and connect to it in the future.
4. If you added a control, the app will ask if you want to connect the thermostat to Wi-Fi now. Enter your SSID (network name) and password of the network you want to connect the thermostat to.

## Adding a Thermostat to Your Account

Follow the next steps if the account process does not add a control or a second thermostat is to be added.

1. Open the app and you should be signed in from the directions of the *First Connection Steps* section. Press the settings gear and "Add Device".
2. The nearby thermostat(s) should be listed in the "Devices Found" list. These are the thermostats heard over Bluetooth. Select the device and enter a name for the device.
3. Once added, go back to the "Devices" screen, which lists all the thermostats added to your account.
4. Select the thermostat you want to control from the "Devices" list to connect.

## Connecting to a New Wi-Fi Network

You can connect to the thermostat from anywhere using the app when the thermostat is connected to an internet source. The internet source **must** be operating on a 2.4GHz network to connect to EasyTouch.

1. Connect to the thermostat in Bluetooth and press the settings gear. Apple users select Bluetooth on the first page.
2. Select "Connect to Wi-Fi" or similar from the settings window.
3. Connect to a network:
    a. The SSID (network name) will say "searching" then switch to "select". Tap "select" to choose from a network the thermostat can hear.
        i. Alternatively, enter the SSID manually (case sensitive)
    b. Enter the password (case sensitive).
4. Press OK and the screen will return to the selection screen. The thermostat will reset and a green Wi-Fi symbol will appear on the main thermostat screen if the connection was successful.
5. With a green Wi-Fi symbol, you can now connect to the thermostat from anywhere using the app over the internet.

## Updating The EasyTouch RV Thermostat

Ensuring you have the latest thermostat software is key to having all the latest features.

1. Ensure the thermostat is connected to Wi-Fi with a green Wi-Fi symbol.
2. Connect to the thermostat and press the settings gear, then tap Check for Updates.
3. Follow the prompts to update the thermostat or ensure that you already have the latest software.

# Appendix B: Troubleshooting

The most common problems during installation are not matching the wires correctly or properly mating the wires. The first step should always be to recheck the instructions and make sure the wires are joined and seated properly.

The second most common problem is not knowing the thermostat operation. If the system is running a heating or cooling cycle, the set point will turn red for heating and blue for cooling. When the thermostat turns white, the heat pump, heat strip and furnace should all be off. The fan may continue to run for a while after the cycle completes. If a fan is left in a manual mode it will not shut off.

## Testing an Output

*Table 4 – Wire Color Chart* in section *Wiring the Thermostat* shows the color label and purpose for each of the thermostat wires. This information can be used in troubleshooting to verify that the thermostat has turned on an output when expected.

You can use a voltmeter to verify that the thermostat has turned on an EasyTouch output. Set to voltmeter measure DC voltage and check for ~12 volts between the blue (ground) wire and the output terminal to be tested to see if the thermostat has turned on the output. If there is 12 volts present further troubleshooting of the component (fan, compressor furnace, heat pump, heat strip) is required. If 12 volts is not present, verify that the fuse in EasyTouch RV is still good and the thermostat should be calling for that output.

## Wi-Fi Troubleshooting

### *Blue Wi-Fi Icon – No connection*

- SSID (Network name) and password are both case sensitive.
- Be sure you are connecting to a 2.4 GHz network and not a 5GHz or 6GHz network.
- Set the security to WPA2 and TKIP+AES if you are having trouble.
- The thermostat has a limit of 31 characters for the SSID and 50 for the password.
- Ensure the number of devices limit for the network is not full.
- Ensure the Wi-Fi source is not out of range or metal partitions blocking the signal.
- Try a guest network or mobile hotspot that may have reduced restrictions.
- Reset the router to renew the DHCP lease.
- If you are in a metal enclosure, try moving the router or thermostat a few inches (even if temporary) and trying again.
- If using MAC filtering, add the thermostat to the allowed devices list.
- Try assigning a DHCP reservation to the thermostat MAC address.

### *Red Wi-Fi Icon – Connected without Internet*

- The router must have an internet connection
- Server may be down, check back at a later time
- Be sure there is no firewall in the router blocking the incoming messages (port 8883, MQTT). Place the thermostat IP into the DMZ settings to bypass any firewalls.

## EasyTouch RV Knowledge Bank – More Information

Visit our knowledge bank at http://www.micro-air.com/kb_easytouch_rv.cfm for the latest resources for setup, operation, and troubleshooting, as well as our main website for contacting us for support.

