

EasyTouch RV™

Reference Manual

for Model

351



MICRO-AIR



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The EasyTouch RV™ 351 model displays are Bluetooth and Wi-Fi enabled displays for remote access to your RV's comfort system. The 351 models were designed to directly replace certain 12-volt Dometic™ single-zone displays. All functionality of the original control is preserved, alongside all of the new functionality that EasyTouch RV brings, as well as fixes for long-standing issues with the original system. Use this manual for detailed installation and operation of this product.

EasyTouch RV 351 Models and Compatible Replacements

EasyTouch RV 351 can be purchased in two colors. [Table 1](#) lists all EasyTouch RV 351 models.

| EasyTouch RV 351 Model | Color |
|------------------------|-------|
| ASY-351-X01 | Black |
| ASY-351-X02 | White |

Table 1

EasyTouch RV 351 models are only for use in Dometic™ Single-Zone Capacitive Touch (CT) or Single-Zone LCD (SZLCD) systems. These systems can be identified by the OEM (Original Equipment Manufacturer) display. The 351 is a direct, drop-in replacement of these displays. They are square displays with centered LCD screens and three buttons. [Figure 1](#) shows an example of the two kinds of compatible OEM displays. The color of the plastic and arrangement of markings and LEDs is not important, so long as it has the same plastic form. If you purchased a 351 and your display is not the same form as those in [Figure 1](#) then EasyTouch RV model 351 is not the appropriate replacement for you.

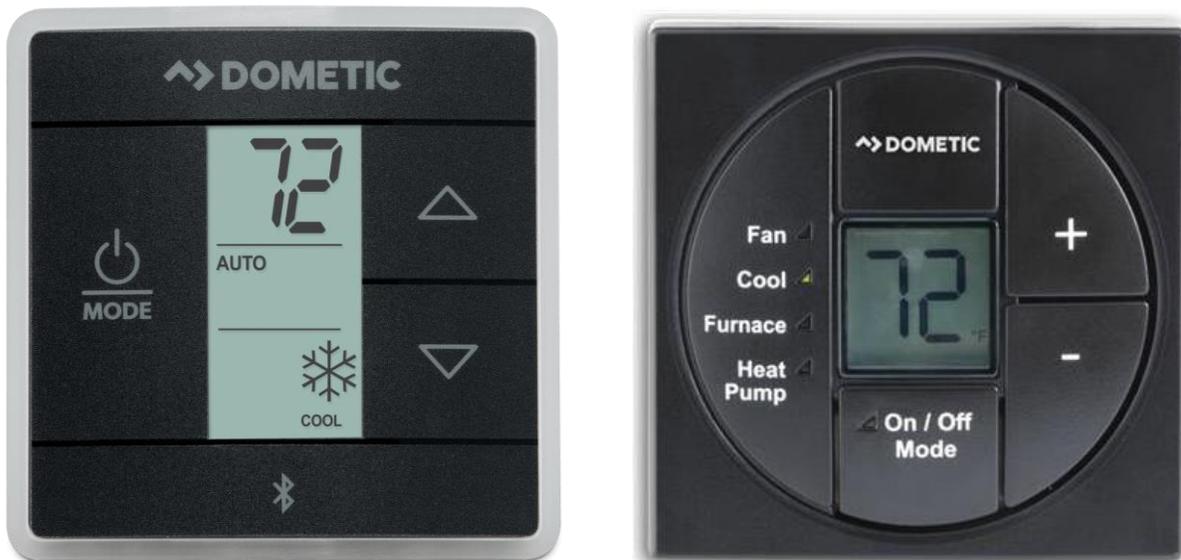


Figure 1 - Examples of the two Dometic™ displays that EasyTouch RV 351 Replaces

Included in the Box

EasyTouch RV model 351 is shipped with the following items:

- 1x EasyTouch RV 351 Display
- 1x Quick-Instruction Card
- 1x Mounting Bracket (*Figure 2*)
- 4x Screw Hole Covers

The mounting bracket is used during installation. The screw hole covers can be used to cover holes in the wall from the previous display if they are exposed.

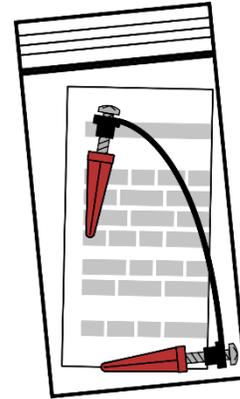


Figure 2 - Mounting Bracket and Instructions

Installing the Display

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 display. This greatly reduces the chance of any harmful electrical discharge, as well as preventing accidentally opening a fuse.

Removing the Old Display's Faceplate

SZLCD

This is the thermostat in *Figure 1* that has the square LCD and raised circular plastic. Depress the rectangular locking tab on the bottom of the display with a small screw-driver. Pull the front of the display away from the wall from the bottom.

CT

This is the thermostat in *Figure 1* that has the rectangular LCD and has capacitive touch buttons. Carefully hold the base of the thermostat at the bottom while pulling the cover plate away from the wall. It is easiest to pull at one of the corners to get the plastic to pop off.

Backplate and Wire Labels

The backplate is now exposed that shows its screws and the display's wiring. Before removing the wiring, write down the color of the three wires and the name of the terminal that each wire goes to. Also take a picture of this wiring for your reference. The wire terminals will be labeled 12V+, COM or COMMS, and -12V or GND, depending on which display you have. You can use *Table 2* to write down the color wire related to the three terminal labels. After recording the original wiring, disconnect them from their screw terminals and remove any wall attachment screws. Free the back plate from the wall.

Wiring the Display

Figure 3 shows a screwdriver depressing the COMM terminal of the EasyTouch RV push button connector, as well as the other terminals and what they look like. This is on the back of EasyTouch RV 351. Depressing the button opens the wire clamp jaw for that terminal. This allows a wire to be inserted. Releasing the button closes the jaw and grabs onto the inserted wire and makes the connection.

Table 2 shows the names of the original display terminals and the matching EasyTouch RV terminal names. Insert the original wire into the appropriate EasyTouch RV terminal.

There should be approximately 3/8 inch (1cm) of exposed wire. Remove insulation or cut down the wire if it is a different length. If it is a stranded type of wire then twist them together by hand. Use a small screwdriver or similar tool to push down on the square push button. Insert the wire in the insertion space and release the push button. Verify the connection by gently pulling on the wire. Do not force excessive wire down into the connector. If the stripped wire end is longer than 3/8 inch, cut the end so there is no bare wire sticking out when properly inserted.



Figure 3 - EasyTouch RV Wire Terminals

| Terminal Labels | | | |
|-----------------|------|------------------|----------------------|
| SZLCD | CT | EasyTouch RV 351 | Wire Color (Fill In) |
| 12V- | GND | GND | |
| COMMS | COM | COMM | |
| 12V+ | 12V+ | 12V | |

Table 2 - Wiring Guide

I don't know which wire is which anymore!

You may have accidentally lost which wire is used for what purpose. You can typically use a voltmeter to determine what each wire is. Disconnect the three wires and set the meter to measure DC voltage at least up to 16 volts (some meters can be set to a lower maximum voltage). Make sure your color probe is seated in the matching color hole of the voltmeter. Probe two of the three wires and match the measurement to [Table 3](#). The measurements may be slightly different but the proportion laid out by the table should be close enough to determine which wire is which.

| Terminal Labels of Wires for EasyTouch RV | | |
|--------------------------------------------------|------------------------|--------------------------|
| DC Voltage Measurement | Red Probed Wire | Black Probed Wire |
| About positive 12 Volts | 12V+ | GND |
| About negative 12 Volts | GND | 12V+ |
| About positive 5 Volts | COMM | GND |
| About negative 5 Volts | GND | COMM |
| About positive (12 – 5 =) 7 Volts | 12V+ | COMM |
| About negative (12 – 5 =) 7 Volts | COMM | 12V+ |

Table 3 - Voltage measurements to determine installation wire function

Re-apply Power

Restore DC power. The display screen should light up and boot into the main menus. Restore AC power so that your appliances can run again. Move on to the section [Mounting the Display](#), or the section [Initial Setup Instructions](#) and mount the display later.

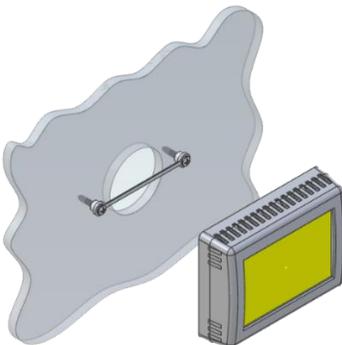
Mounting the Display



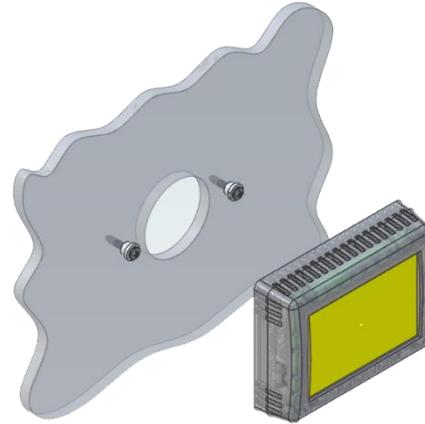
Step 1: Level the mounting bracket horizontally across the hole with the smaller diameter of the mounting button against the wall.



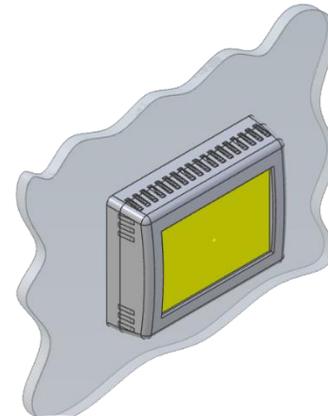
Step 2: Screw in one screw and level the buttons so the display will be straight when installed. Screw into the smaller hole of the two buttons.



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



Step 4: Cut away the center of the mounting bracket before mounting the display on the wall.



Step 5: Align 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

Available Modes and Communication

There is no software configuration required to control your appliances from the touchscreen.

The control board in the air conditioner determines the available appliances automatically. This information is communicated down to the display. This makes EasyTouch RV 351 a plug-and-play solution.

See section *Unique Features* for some settings that can be changed for some desired operations. Default operation is often fine for most users.

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 (mobile app). Some extra features will require a wireless connection and are described in their sections. See *Appendix A: Working Wirelessly* for details.



EasyTouch RV App icon

It is recommended to make sure all aspects of the system are working from the display itself before moving on to trying the app. The app mirrors the display touchscreen operation when connected so familiarizing yourself with the display touchscreen first will help understand intended operation and isolate any issues during installation.

Operating the Display - Touchscreen

Main Screen

This screen is where most time is spent using the display. This screen allows you to set and monitor the desired operation of the display, shown in *Figure 3*.

(1) Operational Mode

This is the main operating state of the system. The graphics correspond to how your appliances will operate. Tap it to change to any available mode or turn the zone or entire system off.

Actual operation is performed by the A/C control board. The display (both OEM and EasyTouch RV) simply tell the control board the mode, setpoint, and electric fan speed. The same OEM control board then turns appliances on and off as it sees fit. This makes modes and their operation identical between the OEM display and EasyTouch RV.

(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. EasyTouch RV offers improved electric fan control whenever possible.

No fan button for a mode means there is no fan control for the selected mode. Not all fan speeds are available for the selected mode and there is no control of the furnace blower from the display.

- **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
- **Off:** Some modes can be set to not use the electric overhead fan with any cycle

(3) Inside Temperature

This is the temperature reading for the space that the display is trying to temper, determined by an ambient air sensor in the display. The numbers being white means that no cycle is active. The numbers being blue or red mean that a cooling or heating cycle is active, respectively, determined by the (1) *Operational Mode*. There is no provision for a remote sensor in these systems.

(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. If there is no setpoint button then there is no setpoint control for the selected mode.

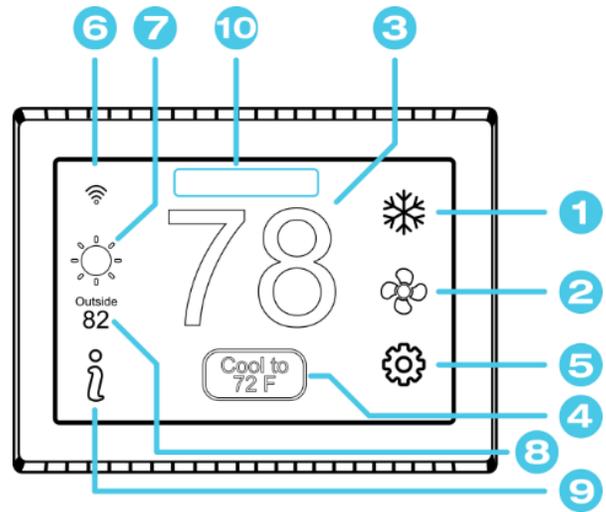


Figure 3 – Main Screen

(5) Settings

This button will enter the settings screens. Settings are mostly for configuring the display 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 display'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 display 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 and may be retrieved over the display's internet connection as part of the [\(7\) Local Weather](#) information. It may also be from a local outside air temperature sensor if an internet reading has not yet been retrieved. This sensor is factory installed in heat pump models only. Micro-Air cannot assist in adding these sensors.

(9) Info Screen

This screen shows information about the display'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.

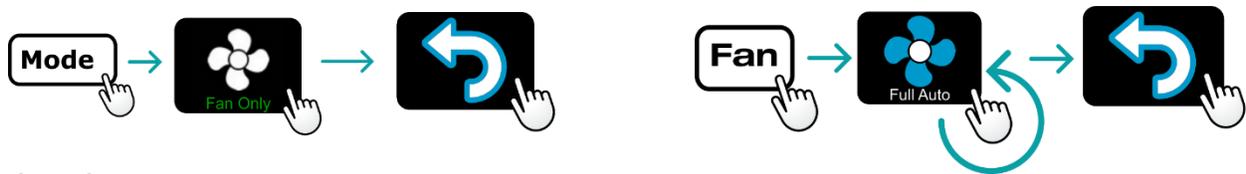
Operational Modes

All modes operate the overhead electric fan and/or a heating or cooling cycle based on the current setpoint, relative to the inside ambient temperature. To get appliance operation:

1. Set the desired mode by tapping the *(1) Operational Mode* and choosing the desired mode or turn the system off.
2. Tap the *(2) Fan Speed* button if applicable to set the desired electric fan operation.
3. Tap the *(4) Temperature Setpoint* button if applicable to set the desired ambient temperature for this zone.

Fans and Fan Only Mode

This mode lets the fan operate based on the chosen *(2) Fan Speed*. This will circulate the air using the electric fan of the A/C without operating any heating or cooling cycles.



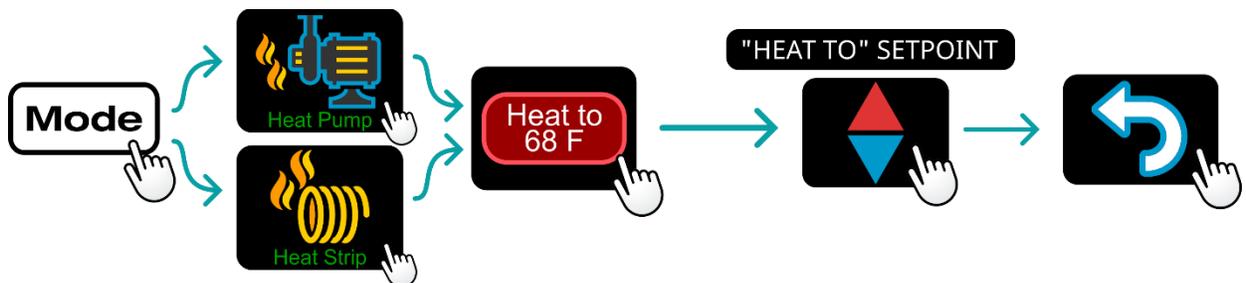
Cool Only Mode

This mode only runs a cool cycle to maintain the cooling set-point in the selected zone. Set the *(1) Operational Mode* to Cool and the desired *(2) Fan Speed* and *(4) Temperature Setpoint*.



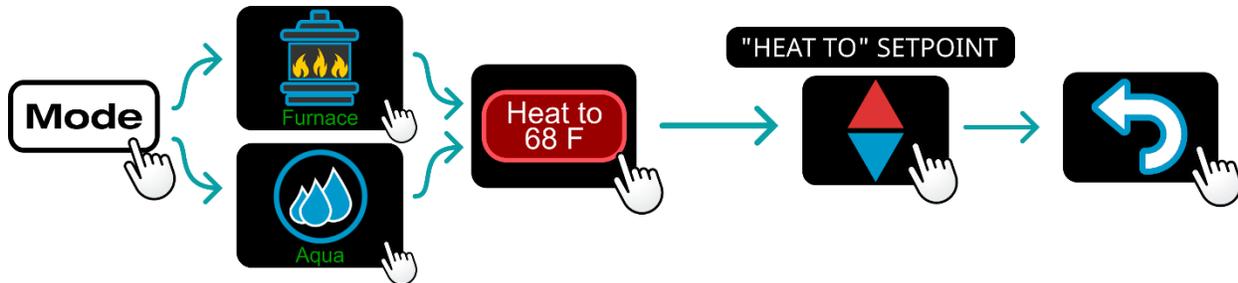
Electric Heat Only Mode

This mode only runs an electric heat cycle to maintain the heating set-point in the selected zone. This may be a heat pump or a heat strip depending on the factory zone set up. Set the *(1) Operational Mode* to Heat Pump or Heat Strip and the desired *(2) Fan Speed* and *(4) Temperature Setpoint*.



Auxiliary Heat Only Mode

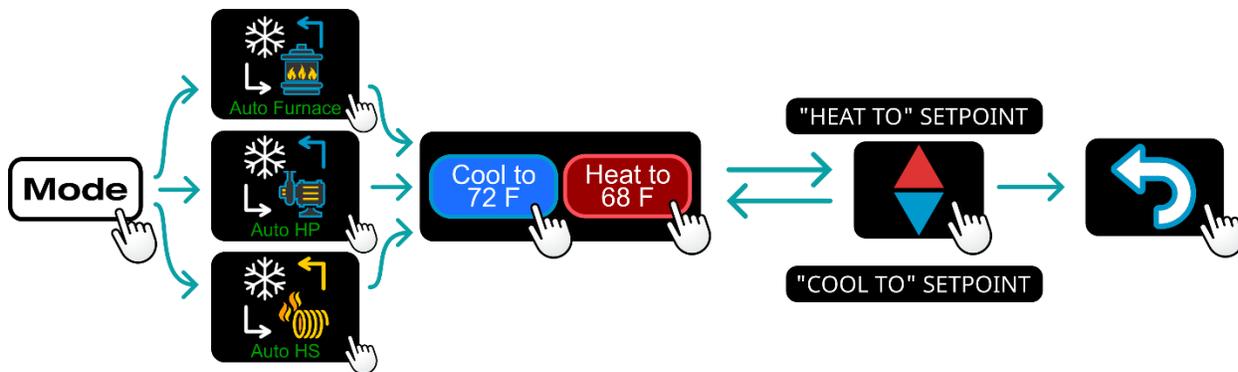
This mode only runs a “forced-air” auxiliary heat cycle to maintain the heating set-point in the selected zone. Set the (1) *Operational Mode* to Furnace or Aqua and the desired (2) *Fan Speed* and (4) *Temperature Setpoint*.



Auto Modes

This is a new feature brought to the system by EasyTouch RV. These modes will automatically switch between a heat or cool cycle as needed, without changing modes. Their operation will be the same as their “only” mode counterpart to trigger cycles. Auto modes have their own “dual” set-points that are separate heating and cooling setpoints. No heating or cooling cycles will occur when the inside temperature is between these setpoints.

These modes can be useful when setting a higher daytime cooling temperature and a lower nighttime heating temperature. It can also be used to control the temperature extremes when you are away from the space.



Settings Screens

These settings are common to all displays. These allow for further configuration and control of the display and system behaviors. Each setting can be tapped to configure the related settings.



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 Menu



Next Settings Page

System Help

This screen displays a QR code that can be scanned to provide information about display operation and troubleshooting from the Micro-Air website. It also shows the current display firmware revision and the display's 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 display. SSID and Password fields show the saved credentials that the display 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 display is also shown at the bottom. See section [Connecting to a New Wi-Fi Network](#) for more details about using Wi-Fi.

Max Wi-Fi Recovery

This button on the Wi-Fi settings page, when enabled, will restart the thermostat if it detects an outage for too long. This is intended to make sure the Wi-Fi connection from the thermostat stays up as much as possible.



Sometimes, a cooling or heating cycle may terminate to accommodate this functionality. If this is undesirable, it is recommended to turn this feature off while at the space and reenable it when you plan to be away.

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 displays, 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 display. This is the password that must match your EasyTouch RV app account to make remote connections. Only one account can have access to the display. Use this whenever you reset the password to your app account to regain remote access to the display.



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 72F (22.2C) and you feel it is 75F (24C), you can use the up and down arrows on this page to increment the offset to +3F (+1.8C).



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 4](#) 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 Ends |

Table 4 - Temperature Gap Operational Example

Measurement Units

This setting determines the temperature scale to use in the display. 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. Tapping 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 display 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 display back to factory defaults. Some displays 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

This setting is used to configure your display'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.



Setup Button

Furnace/Aqua Icons

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.



Furnace/Aqua Button

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 4* 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 using the app.

Create Schedule Flowchart

This section shows all steps to create a schedule using a graphical flowchart. The next section shows the same process in more detail.

This flowchart is for the touchscreen on the display. It is recommended to be in front of the display when following this chart and follow the graphical elements and their arrows.

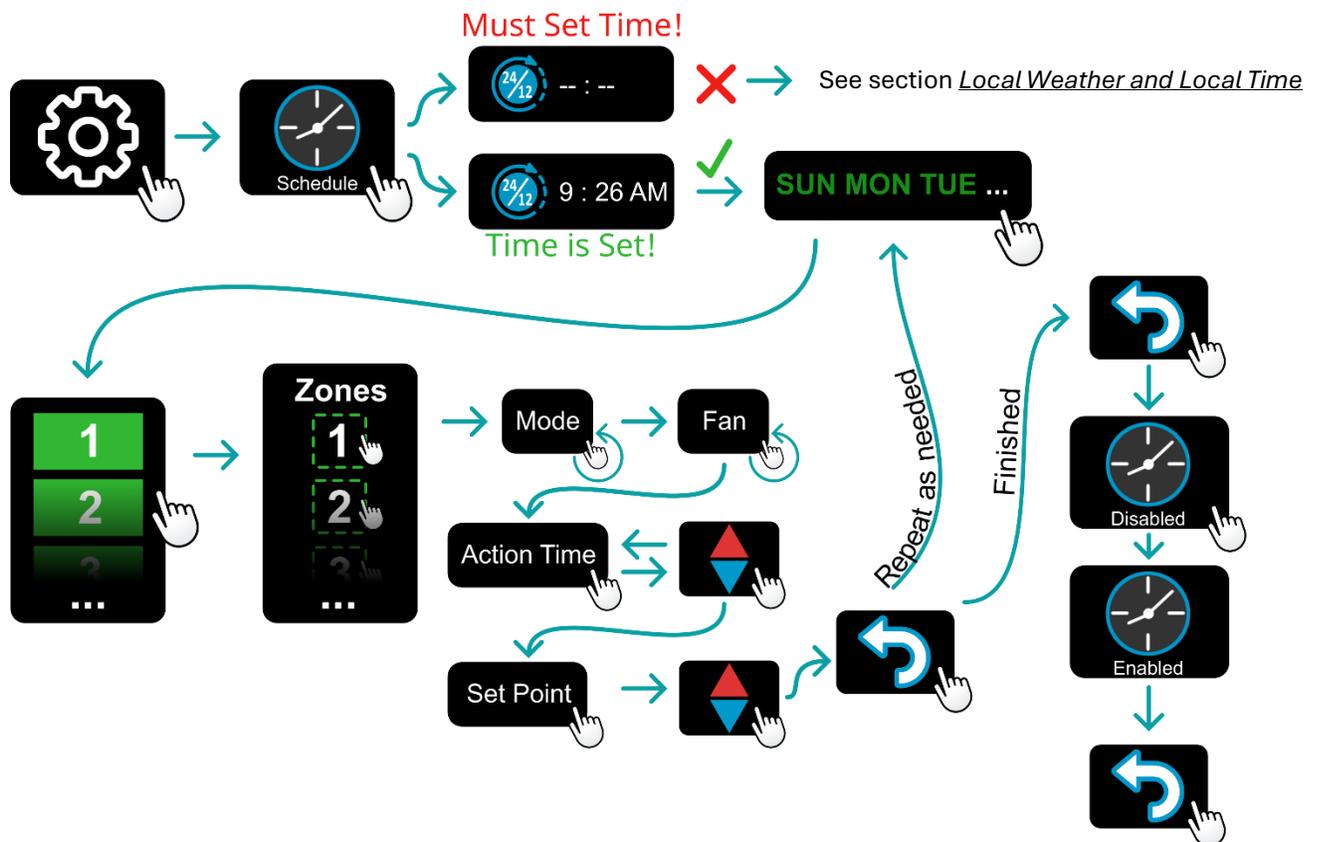


Figure 5 shows the edit screen when an event is tapped as shown in (8) *Scheduled Events* of *Figure 4 - Main Schedule Screen*. The event time on the main schedule screen and Action Time in the edit schedule screen will show disabled until a time is set. Tap “Disabled” (1) at the top of the screen to 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.

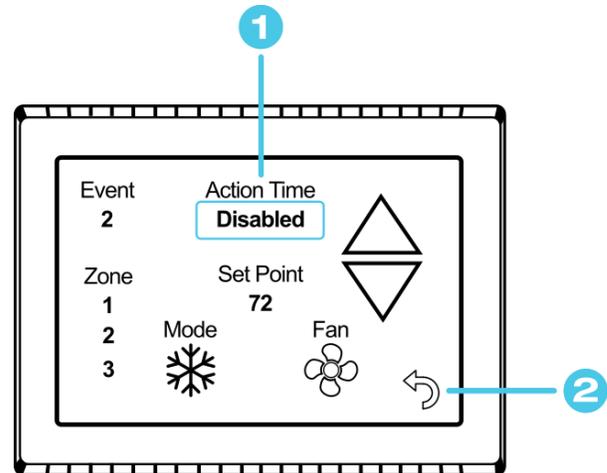


Figure 5 - Schedule Edit Screen (Disabled Event)

Figure 6 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.

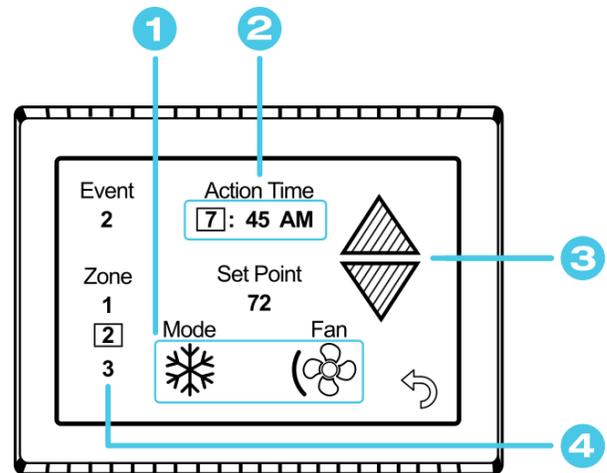


Figure 6 - Schedule Edit Screen (Enabled Event)

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 4*.
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 4*. Tapping the event will take you to the edit schedule screen, shown by *Figure 5* and *Figure 6*.
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*.

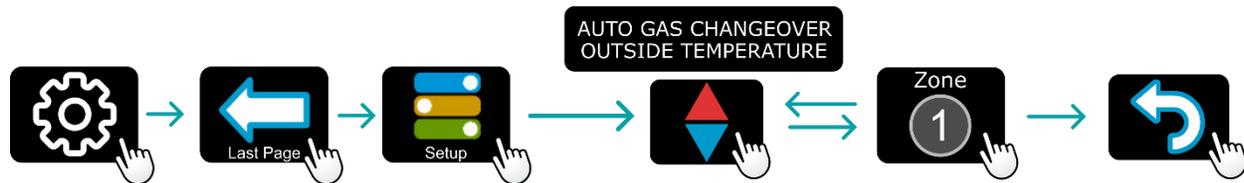
Unique Features

Each model of EasyTouch RV is a drop-in replacement for a specific existing OEM system. This means each model will have some unique operations and parameters that can be set. EasyTouch RV also brings new functionality to the OEM system.

Auto Gas Changeover

The OEM system does not have a protocol for automatically switching from heat pump to auxiliary heat (gas or hydronic heat) when the outside temperature is deemed too cold for the heat pump to create heat. The original system will simply shut down, while EasyTouch RV will switch over to auxiliary heat. A temperature sensor in the heat pump measures the outside temperature to make this decision.

First, navigate to Setup and turn on Auto Gas Changeover if desired from the enable button. Then, set the temperature for the changeover to occur. When the outside temperature goes below this then the auxiliary heat will turn on until the outside temperature rises back above this setpoint. This feature will be grayed out if your system does not have a heat pump.



A/C Freeze Lockout Procedure

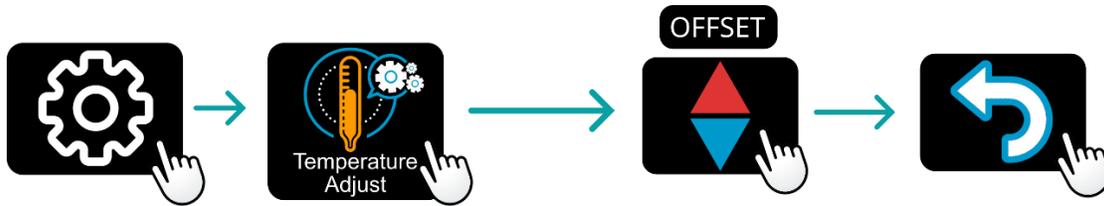
Some OEM systems would “randomly” shut down a cool cycle with no messages saying why. This was because the system detected that the inside coil has frozen, which could cause damage to the system if left to run, determined by a temperature sensor attached to the coil. EasyTouch RV has a fully automatic procedure to handle this when it happens so that the issue is cleared and cooling can resume as quickly as possible by warming the coil.

Once a freeze is detected, EasyTouch will run the fan until the freeze detection has cleared, and cooling will resume. Running the fan will warm to coil to prevent damage. “A/C Freeze Lockout” or similar will show on the main screen of EasyTouch while this is occurring.

This is typically due to the A/C unit’s inability to pass air over the coil while cooling. This can often be resolved by normal maintenance like cleaning the coil fins to allow proper airflow. Sometimes however, the day could be very humid and so the coil is susceptible to freezing. Some customers report that it is a design flaw of the system and they simply do not pass enough air, even if the coil is clean and fan on high speed. Micro-Air cannot assist in diagnosing the causes of a system’s freeze ups. This should always be investigated to make sure the root problem is resolved or understood, perhaps with the help of an RV service shop and technician. No matter the reason though, EasyTouch RV can warm the coil again so that cooling resumes as quickly as possible.

Temperature Sensor Adjustment

EasyTouch has a temperature sensor installed in the display and is used to make decisions on when to run a cycle. This reading can be calibrated to better match what the space feels like.



Auto Operational Mode

EasyTouch RV has modes that will run heating or cooling without intervention. The original system could only be set to heat or cool at any one time. See section [Operational Modes](#) for more details.

Enhanced Electric Fan Speed Control

EasyTouch RV has improved control over how the electric fan will operate during a cycle. See section [Operational Modes](#) for more details on the additional ways to control the overhead fan.

Status Messages

Some messages may be displayed at the top of the main screen. [Table 5](#) shows the potential messages and their meaning.

| Message Text | Description |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NO CONTROL RESPONSE | The A/C communicates digitally with EasyTouch RV. This says that EasyTouch RV does not hear the A/C control board. A new installation may need to use “Reset All” to rescan after the wiring is inspected. See section No Control Response for more details. |
| BAD INDOOR SENSOR | EasyTouch RV has an ambient sensor for making decisions on when to operate a cycle. In the unlikely event that this occurs, EasyTouch RV needs to be repaired or replaced. |
| BAD OUTDOOR SENSOR | Each A/C that has a heat-pump uses an outdoor sensor. This reads the outside air temperature to ensure proper heat-pump operation. This means the sensor and/or control board needs to be replaced. Micro-Air cannot assist in resolving non-display issues. |
| BAD FREEZE SENSOR | Each A/C has a sensor to detect a frozen coil during cooling operation, to prevent damage should it get too cold. This means this sensor and/or the A/C control board has failed and needs to be replaced. Micro-Air cannot assist in resolving non-display issues. |
| A/C FREEZE LOCKOUT | This means that the A/C control board has detected a frozen coil and has locked out the cooling cycle. EasyTouch RV handles this situation to clear the fault as quickly as possible. See section A/C Freeze Lockout Procedure for more details. |

Table 5 - Status Message Descriptions

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 *(7) Local Weather* 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 to set up the time zone. 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 an outside 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.

Smart-Device Application Features

Check for Updates

Checks to see if any updates are available for the display. The smart device application must have internet and the display 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 display in the app, selecting the settings gear, and then selecting notifications. A minimum and maximum allowed temperature can be set. [Table 6](#) 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 6 - Push Notifications Operation Example

Edit Wi-Fi Settings or Connect to Wi-Fi

This is where you will make the connection from the display 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 display over Bluetooth to see this option.

Refresh Configuration

This setting resets the saved configuration in the app if a configuration change is made at the display. If there is a difference between the modes and zones available on the app compared to the display then press this button to sync the app to the display. First time connection will grab the correct settings but activate this setting to force the sync.

Appendix A: Working Wirelessly

This display 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 display.



EasyTouch RV App icon

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

If a second user is going to use the display remotely, they **MUST** use the same account and password that the first user assigned to the display. Each display can only be assigned to a single account, but many users can control the display 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 display 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 display 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 display to Wi-Fi now. Enter your SSID (network name) and password of the network you want to connect the display to.

Adding a Display to Your Account

Follow the next steps if you did not add a display or there are more to add.

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 display (s) should be listed in the “Devices Found” list. These are the displays 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 displays added to your account.
4. Select the display you want to control from the “Devices” list to connect.

Connecting to a New Wi-Fi Network

You can connect to the display from anywhere using the app when the display 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 display 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 display 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 display will reset and a green Wi-Fi symbol will appear on the main display screen if the connection was successful.
5. With a green Wi-Fi symbol, you can now connect to the display from anywhere using the app over the internet.

Updating The EasyTouch RV Display

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

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

Appendix B: Troubleshooting

This section has some troubleshooting suggestions based on what you may find with this display in particular. Please take a look at our [Quick Start and FAQ Manual](#) for typical questions that may arise when using the display or the app, as well as quick instructions for common operations.

EasyTouch RV Does Not Have a Three Wire Connector on the Back

EasyTouch RV 351 is connected to the system by three wires. If the EasyTouch RV display you have does not then it is not a 351 model. Make sure that you purchased a 351 model, the 351 is appropriate for you, and that you were shipped the correct model. The serial number will begin with “351” if it is an EasyTouch RV 351 model.

EasyTouch RV Reboots Constantly or Shuts Down Randomly

EasyTouch RV when first plugged in or is powered (boots) will show “EasyTouch RV by Micro-Air” before transitioning to the [Main Screen](#).

If you find it shuts down randomly then see section [Max Wi-Fi Recovery](#).

If you find it constantly re-shows the boot screen:

- See section [EasyTouch RV 351 Models and Compatible Replacements](#) to make sure you have the correct thermostat.
- Use section [Wiring the Display](#) to verify the installation wiring:
 - First time installations should make sure the wiring is correct. Incorrect wiring will constantly reboot.
 - Inspect the wiring to make sure the wires are fully inserted into the display. There should be about 3/8” of exposed wire that is fully inserted to expose no copper. Peer down into the wire jaw and make sure there is no dirt or debris that could foul the connection. See that the clamp opens and closes when you depress and release its button, respectively.
- Try to unplug and reseat the wiring and wait up to 30 seconds for the display to return. Try this a couple times to be sure. This may clear away dirt or debris that created a poor connection.
- Try and plug in the OEM display if you still have it.

An Appliance is Not Operating as Expected

You may configure the system to start to heat or cool the space and appliances are not turning on or off as you expect. The system's logic is largely determined by the A/C control board that is the same. This means that appliance operation is largely identical to the OEM display operation. Practically speaking, the display tells the control board the mode and setpoint and the control board does the rest. Use this section if you have trouble getting the system to heat and cool as expected.

It is best to address these issues from the display directly to isolate any issue from use of the app. This procedure will reference the *Main Screen* and its buttons to tap.

- Make sure you have the latest display software. See section *Updating The EasyTouch RV Display* for more details.
- If the electric fan for the A/C is what is odd then use the fan button to set the fan speed appropriately and understand when it should run.
- Is the ambient temperature drawn in white? The ambient temperature color is how the display shows whether a cycle is active or not and is a direct signal from the A/C control board that is powering the appliances. White means a cycle is inactive. Make sure the software is set correctly to call for a cycle.
 - Tap the mode button, then the power button to green and tap the desired mode, such as the cool mode.
 - Tap the fan button to the desired fan mode. Set the speed appropriately and understand when the electric fan should run.
 - Tap the setpoint button to the desired temperature. For example, in cool mode the setpoint must be less than the ambient temperature to start a cycle.
 - You can use the *(9) Info Screen* to see if a cycle is pending and will start soon.
 - Check that the *Temperature Gap (Hysteresis)* operation is understood and set as expected as it affects when a cycle will start.
 - Check the *(10) Status Message* for any issues that may need to be addressed. Most messages will not allow a cycle to start.
- Is the ambient temperature drawn in color (blue or red)? This means the A/C control board is actively powering the appropriate appliances for the mode and the cycle is active. This is a signal directly from the control board that allows EasyTouch RV to draw the color.
 - If an appliance is not running when the cycle is active then it is likely an issue outside EasyTouch RV. Appliances are connected to the control board to turn on and off. The appliance may need to be serviced and the A/C control board verified that it is sending the appropriate signals (when the cycle is active). An RV shop is recommended to troubleshoot these parts of the system. Micro-Air cannot assist with troubleshooting non-display related issues.

Black or White Display Screen

The screen of the display normally has some graphics on it that show the status of the system operation. You may find the screen is blank (full black or full white) and can try the following:

- If it constantly goes black and reboots or does so randomly then see section [*EasyTouch RV Reboots Constantly or Shuts Down Randomly*](#).
- Night mode will turn off the backlight so the screen is full black when inactive. Tap the screen to bring it alive and switch to Day mode to disable this functionality if desired.
- Try to unplug the display by its 12V+ and GND wires for a few seconds, then plug it back in and wait up to 30 seconds for the display to return. Try this a couple times to be sure.
- Make sure your 12-volt system (typically a system battery) is charged and any breakers or fuses are closed. Use a voltmeter to measure for 12 volts DC between the two power wires. Inspect the wires for any damage or poor connection. There should be about 3/8" of exposed wire that is fully inserted to expose no copper. Peer down into the wire jaw and make sure there is no dirt or debris that could foul the connection. See that the clamp opens and closes when you depress and release its button, respectively.
- Try and plug in the OEM display if you still have it to verify operation.

No Control Response

“No Control Response” is an error indicating that EasyTouch RV cannot hear the communication from the A/C control board. This is a proprietary digital signal through the COMMS terminal wire.

The system, prior to EasyTouch RV installation, must be working before EasyTouch RV is installed. EasyTouch RV is not intended to fix any issues with the system, unless the problem was known to be the OEM display. If there is a problem that persists with EasyTouch RV then they must be addressed with the assistance of an RV technician. If new control boards were replaced or installed then it is recommended the installation be verified by an RV shop. There are many facets to system installations that go beyond a simple drop-in replacement. Micro-Air cannot assist in installations where more than just the display is replaced.

If the system was otherwise working:

- Make sure you purchased and received the correct model display for your system. Inspect the serial number on the back of EasyTouch RV; the first three digits should be “351”. Use section *EasyTouch RV 351 Models and Compatible Replacements* to further verify.
- Make sure you have the latest display software. See section *Updating The EasyTouch RV Display* for more details.
- Navigate to “Reset All” in the display settings. Follow the prompts to rescan for the control board specifically or factory reset the display and this will force EasyTouch RV to scan for all a control it can hear. Wait about 2 minutes for the message to disappear. Try again if it does not.
- Inspect the installation wires for any issues. There should be about 3/8” of exposed wire that is fully inserted to expose no copper. Peer down into the wire jaw and make sure there is no dirt or debris that could foul the connection. See that the clamp opens and closes when you depress and release its button, respectively.
- A strong, local source of electronic noise could cause interference with the communication. We have found that some customers have a digitally-controlled fan installed right next to the display, and the 12 volt and ground connections were wired along the same wires as EasyTouch RV. They would have no issue when the fan was off and intermittent problems with it on. Routing power wires for the fan separate from the display resolved the issue.
 - In theory, other strong noise sources could be an issue if local to the display. Try turning on and off separate electronics to see if a noise source can be found and relocated.
- Try and plug in the OEM display if you still have it to verify operation.

If the system was working with EasyTouch RV installed for some time, still try the above recommendations. In addition to those recommendations, it is possible that some part of the system has failed. It is possible that the cable at the control board or the control board itself has failed. In addition to any sustained damage to the control board itself, each board has 12 volts come in, then 12 volts and communication wires go down to the display. Any issue with these connections would cause a problem. An RV shop may be best to assist in finding the source of the problem.

Wi-Fi Troubleshooting

This is a list of potential fixes we have found for most customers that have trouble connecting the display to the internet. Make sure you first read and understand how to establish a Wi-Fi connection by using this manual's [Connecting to a New Wi-Fi Network](#) section or the graphical [Quick Start and FAQ Manual](#) on our website.

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 display 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 display a few inches (even if temporary) and trying again.
- If using MAC filtering, add the display to the allowed devices list.
- Try assigning a DHCP reservation to the display's 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 display's IP or MAC address into the router's DMZ settings to bypass any firewalls.

If you still have trouble then navigate to our [Micro-Air EasyTouch RV Knowledge Bank](#) that has a troubleshooting section. See the Wi-Fi troubleshooting articles for the latest information.

More Information and Resources

Micro-Air EasyTouch RV Knowledge Bank

Home page of the knowledge bank for the latest guides on setup, operation, and troubleshooting.

https://www.micro-air.com/kb_easytouch_rv.htm

Quick Start and FAQ Manual

Installation section of the Knowledge Bank, which has the quick start and FAQ manual at the top. That manual has graphical instruction for common operations for the touchscreen and the app, as well as the FAQ for operations and troubleshooting.

https://www.micro-air.com/kb-easytouchrv/cat_installation.htm

Dealer Map

This is a map of all technicians and RV shops associated with Micro-Air. You can use these businesses for installation services.

<https://www.microair.net/pages/find-a-dealer>

Main Website

Main website for buying our products and contacting us for support. Please read over the rest of the *Appendix B: Troubleshooting* section, the *Quick Start and FAQ Manual*, and the rest of this manual to see if it has the answers to your questions or issues. If you still have trouble, be sure to provide what product you have, model number, serial number, and a description of what is happening and what you have tried when contacting us. Sales questions can also be directed there.

<https://www.microair.net/>