

# EasyTouch Ultra

ASY-349-X02

Contains EasyTouch II display connection and operation information



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## Introduction

Thanks for purchasing a product from Micro-Air's EasyTouch line. Micro-Air has over 50 years of experience in the marine industry. This EasyTouch display is the latest in marine state of the art displays.

## Features

- Large 2.4-inch (6.1cm) display face.
- Touch screen interface.
- Vimar™ EIKON™ and EIKON EVO™ series box and bezel compatible.
- Configurable support for Marine U and Passport IO control boards.
- Configurable support for Micro-Air FX-1 and FX-2 control boards.
- Surface mount style display face with snap in mounting.
- Bluetooth connectivity.
- Cloud based WIFI connectivity. No port forwarding or difficult setup process.
- Micro-Air Connect app is available for Android and Apple platforms.
- Display firmware is updatable over WIFI.
- Supports Micro-Air CAN bus operation.
- Configurable for air handler (tempered water) or direct expansion (DX or self-contained) systems.
- Built in temperature sensor.
- Standard 8 pin marine display cable RJ45 connection.

## Installation

The EasyTouch display construction is based on installation using the Vimar™ Eikon™ or Eikon EVO™ series of switching products. Standard three module Vimar™ or similar boxes are typically used with a wide selection of commercially available three module bezels. Please consult with your specific box manufacturer's instructions for mounting this product.

## Connecting the display

Breaker/ power off the control board. Connect the RJ-45 display connector to the back of the EasyTouch display. Install the display as provided above. Power on the control board.

***Warning: Control board must be powered down when plugging and unplugging the display. Both the board and the display have detection software that functions on power up. Plugging in the display while the board is powered may result in errors in the detection routine causing undesired operation.***

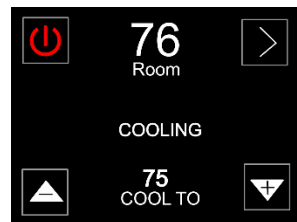
# Navigating the display screens

## Using the touch screen

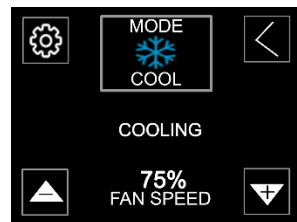
The touch screen used in EasyTouch is a resistive style touch screen. This is a little different than a typical cell phone in that it requires light touch pressure to work. Press the touch areas with light pressure briefly for best results. While it has a different feel than capacitive touch screens, it is more immune to accidental changes that can occur with those screens.

## Navigation

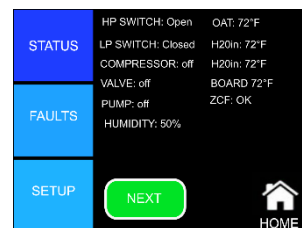
The main page shows the room temperature, set point, power and a right arrow. Press the right arrow to show the second part of the main page.



The second part of the main page shows a gear icon, current operating mode, fan speed setting and a left arrow to return to the first part of the main page. Press the gear icon to access settings information.

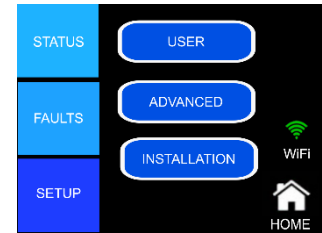


The settings page is a tabbed page with status, faults, and setup tabs on the left. Press the next button on the status page to view system data from the control board. Press the faults tab to see recent faults or clear the faults list. Press the setup tab to see additional settings for the display and control board.



## Setup

The setup tab is broken into three categories, user, advanced, and installation. The tables below show the settings for each selection and a brief note on its operation. Installation settings are explained in more detail in the [Software Setup](#) section.



### User Settings:

These settings are typically used for basic comfort and operation.

Setting	Range	Default	Notes
Metric units	Yes, No	No	Set for no to use US units.
Brightness	10 to 100%	100%	
Screen saver brightness	0 to 100%	10%	Screen saver activates after 1 minute of inactivity. Set for 0 to turn off back light when active. Set for 100 to never use screen saver.
Air filter hours	0 to 2500 hours	100 hours	Set to 0 to disable air filter reminder.
Reset filter alarm	Yes, No	No	Set for yes to reset filter reminder.
Continuous fan	Yes, No	No	Set for yes to have continual circulation. Set for no to turn on fan when heating or colling is needed only.

### Advanced Settings:

These settings are for fine control of system operation. They should not need to be changed.

Setting	Range	Default	Notes
Inside Air Calibration	+/- 10°F	0	
Reset Password	Yes, No	No	Select 'Yes' then press next to reset the Bluetooth password.
Fan Reverse	Yes, No	No	Reverse automatic fan speeds in heat mode.
Dry set point	30% to 90%	45%	
Set Point Differential	1 to 5 °F	2°F	Sets the difference in temperature needed to start a heating or cooling cycle. Set higher for units that short cycle.
Force valve open	Yes, No	No	AH only. Force the water valve open to purge air while filling.

## Installation settings:

These settings should be changed only during installation. Changing some settings may reset all other settings or cause improper operation in your system if incorrectly configured. Please read and understand the installation documentation in the next section before making any changes.

Setting	Range	Default	Notes
Board Type	U-board/PPIO, FX-1/FX-2	FX-1/FX-2	
System type	DX, AH	DX	
Has Rev. Cycle heat	Yes, No	No	DX only
Has loop heat	Yes, No	No	AH only
Electric heat option	Yes, No	No	
Use display sensor	Yes, No	No	
Continuous pump	Yes, No	No	
Low refrigerant pressure	Yes, No	No	
Low fan speed	25% to 75%	25%	
High fan speed	50% to 100%	100%	
Pump sentry temperature	100°F to 150°F	125°F	DX only
Compressor start delay	5 to 250 seconds	15 seconds	DX only
De-ice cycle time	0 to 180 seconds	60 seconds	DX only, 0=off
CAN ID	0 to 255	57	
CAN group ID	0 to 255	58	
Water differential	5°F to 25°F	15°F	AH only

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## Software Setup

This section describes how to set the settings found in the installation menu. These settings should be set once then not changed. This is because they are based on the hardware available to the control board and expected responses to certain system conditions. Improper settings can cause damage to your HVAC system. These settings will be listed below with an explanation of their purpose and use. System knowledge is required for many of these parameters.

### Board type:

The display supports Dometic™ U-board and Passport IO displays when set for U/PPIO. **This does NOT include earlier passport II or Passport I displays.** Passport IO was built from about 2005 until 2016 and has a serial number starting with 372. U-boards were made from 2016 until present and include the DGLC board.

The display also supports the Micro-Air FX-1 and FX-2 control boards. These boards have serial numbers starting with 370 or 360.

The display software you receive may have selections to support other display types as well. These are for OEM use and should not be selected.

### System type:

This selection depends on your system application. Air handlers should be set for AH. Direct expansion systems, sometimes called self-contained, should be set for DX.

### Has Rev. Cycle heat, Has loop heat:

If your DX system is also a heat pump (many are) set this setting to “yes”. If your loop water system also supports heated loop water, set this setting to “yes”. Otherwise leave it set for no.

### Electric heat option:

If your system has an electric heat strip for heating, set this option to “yes” otherwise set it to “No”

### Use display sensor:

This option forces the display to use its internal sensor and not the board mounted sensor.

### Continuous pump:

This setting forces the pump on whenever the display power setting is green (on). Some systems require this if there is only one point of pump control from a single control board.

### Low refrigerant pressure:

Set this option to “Yes” if your system has a dry contact low pressure switch connected to the board input.

## Low fan speed:

Low fan speed is based on the percentage of electrical power delivered to the fan. Fan power must be enough to prevent stalling of the fan in low line conditions. It must also be enough to prevent freezing of the evaporator in DX systems. ***Low fan speed must be set appropriately, or system damage can occur.***

## High fan speed:

High fan speed is based on the percentage of electrical power delivered to the fan. To set this setting, first set the speed to 100%. Reduce this setting until you detect a difference in the fan speed then increase the value by two or three counts.

## Pump sentry temperature:

DX systems only: Some systems are equipped with a condenser water sensor. This setting is used to detect poor water flow or abnormally high temperatures that can damage a compressor or cause poor operation. Setting should be selected based on the recommendation of the compressor manufacturer. If not known, set for the lowest setting then work up, 5 degrees at a time, until there are no faults and the system is still operating properly and making cold air.

## Compressor start delay:

DX systems only: Some users may want to prevent all the compressors from starting at once when power is first applied. Change this setting for each compressor in the system so when shore power is applied, the units will start at different times.

## De-Ice cycle time:

To prevent evaporator icing, the system may be programmed to stop the compressor for a time during a long run cycle. If the compressor runs for 1 hour without satisfying the set point, the compressor will stop and continue to run the fan. This setting determines how long that stop occurs for. Use longer time for systems with poor air flow or in high humidity environments that are causing icing.

## CAN ID:

The Micro-Air CAN bus system uses CAN ID to distinguish between controls on the bus. Change this setting to what is appropriate for your monitoring system.

## CAN group ID:

The Micro-Air CAN bus system uses CAN ID to distinguish between controls on the bus. Change this setting to what is appropriate for your monitoring system.

## Water Differential:

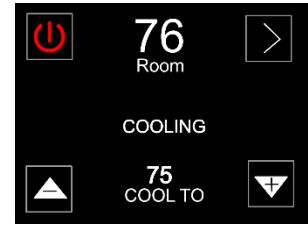
Air handlers (AH) only: This setting affects when the water valve will open and when electric heat can be used to supplement or in replacement of heated water. A typical setting of 15 degrees means the water in the loop must be at least 15 degrees below the ambient temperature for the water valve to open in cooling. This prevents undesired operation when the loop water is in a state counter to the desired operation.

# Operation

## Screen Functions

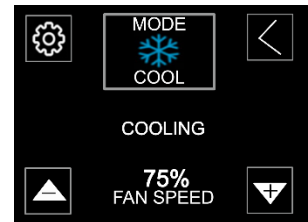
There are six possible touch locations on the main screen.

- Power turns the system off and on.
- Room temperature can be pressed to view another sensor if one is installed.
- The right arrow is pressed to see the second half of the main screen.
- Up or down is pressed to change the set point.
- Cool Set can be pressed in auto mode to switch to 'Heat Set' and make changes.



There are 5 possible touch locations on the second half of the main screen.

- The settings gear navigates to system settings.
- The mode button in the top center changes the operating mode.
- The left arrow navigates back to the other half of the main screen.
- The up and down buttons change the fan speed.



## Fan Control

The fan can be operated at various speeds from 1% (lowest setting) to 100% (highest setting). It can also operate automatically where it changes speed relative to the temperature difference between room temperature and the set point. When set for cooling, the fan will slow down as the room temperature gets closer to set point.

In heat mode, the standard automatic fan control speeds up the fan as room temperature gets closer to set point. The 'Fan Reverse' option in settings->setup->Advanced will change the operation so the fan slows as room temperature approaches the set point.

## DX Operation

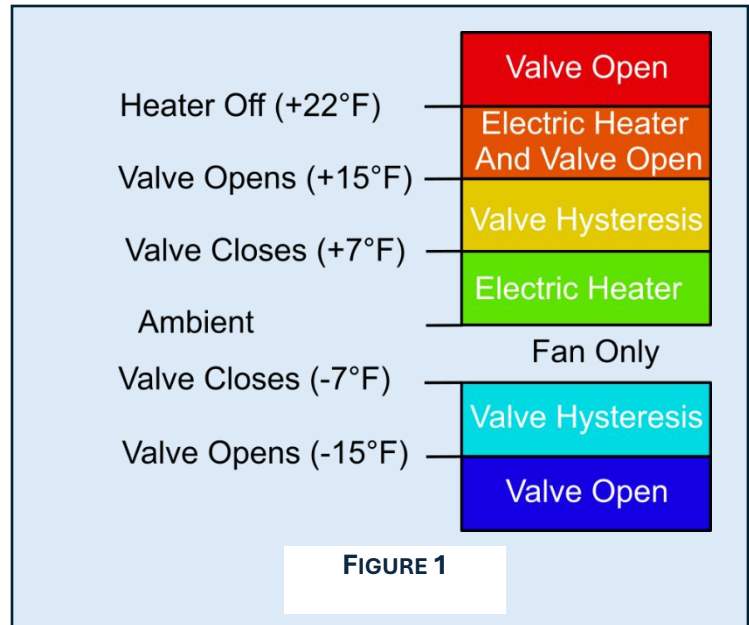
DX systems will start a cycle once the room temperature is two or more degrees from the set point. At that point the valve will turn on along with the pump. The compressor will start a short time later and the valve will turn off. The fan shortly after that. Operation will continue unless a fault occurs or the De-Ice setting is implemented.

### *De-Ice*

If the compressor runs for longer than 1 hour continuously, it may have ice buildup. The de-ice feature turns off the compressor for a short time to clear ice then restarts the compressor. This helps remove ice from the evaporator.

## AH Operation

Figure 1 shows typical operation of the valve and heater outputs in an air handler or tempered water system. For this example, the installation parameter “Water Differential” is set for the default value of 15°F. As loop water warms (moves toward the top of the chart) the electric heater will start (if available) until the difference reaches 7°F (about ½ of the set difference). Once loop water warms to more than 15°F, the valve also opens to aid heating. If loop water is 22°F or more above ambient, the heater turns off and only loop water is used for heating. If temperature difference decreases, the valve remains active in the hysteresis region until it reaches less than 7° difference from ambient. At that point it turns off and uses the heater (if available) or just remains off until the water is heated again.



Cooling works similarly in that the valve will not be open until the loop water is 15°F below ambient. If the water loop warms once the valve is open, it will close if it reaches less than 7°F below the ambient temperature.

If you are troubleshooting this system, be sure that the loop water is warm enough or cold enough for the operation you are requesting (heating or cooling).

## Faults

- **Air Sensor:** There is a sensor located in the display and optionally on the control board. If the setting is set to force the display sensor, the display sensor has failed. The optional sensor can be installed, or the display must be replaced.
- **Low AC Volts:** Voltage at the input terminals on the control board is too low to operate the compressor.
- **High Pressure:** The high refrigerant pressure switch has opened. This is usually caused by a lack of water flow but can be a system issue as well.
- **Low Pressure:** The low refrigerant pressure switch has opened. Some systems may trip in heat mode if the gas is low or at extremely low temperatures. Persistent issues should be checked to prevent potential compressor damage.
- **Water temperature high:** The sea water loop temperature is above the safe operating range. This is usually caused by a clogged sea strainer or poor water flow through the condenser coil.
- **Air Filter Dirty:** This is a reminder to change or clean the air filter. Please see the service instructions for your system for details on how to change it. Use ‘Air Filter Reset’ in Settings->setup->user to clear the warning.

- **Brown Out:** Power was reduced or lost then returned. The system will restart shortly.
- **Low Sea Water Temperature:** The sea water loop temperature is too low to make heat. Damage may occur if ice forms inside the seawater condenser. Check that water temperatures are above 37°F (2.8°C) and that proper water flow through the condenser is available.

## System Troubleshooting

When troubleshooting a system, it is best to verify sensor and configuration settings in the [Software Setup](#) section first. Sensors are critical as they are what we use to detect a problem. An incorrectly set sensor can prevent a system from working properly and is the most common source of issue in new installations.

1. Is the thermostat lighting up? Yes, continue to #2. No: First, touch the display to stop the screen saver. If the display is dim, change the brightness setting in settings->setup->user. Next, check the control board for power. If the power light is active on the control board, check the display cable for trouble. Check the display cable for continuity and carefully check the ends for damage or corrosion. The display will only work with a marine type 8 pin display cable.
2. Is this a new installation that has not worked properly yet? No: continue to #3. Yes: Check the setup parameters again. Make sure the correct board and system type are set correctly as well as settings for any sensors.
3. Is the fan operating properly (use fan only mode to test)? Yes, continue to step 4. No: Check the display cable, board and blower. If possible, swap in a different display to verify your system has fan control.
4. Do any relays toggle? Yes: Continue to step 5. No: Be sure operating conditions exist for the relay to toggle. On AH systems, check that the loop temperature is at least 15 degrees below room temperature, that the display is set for cool, and that the set point is below room temperature by at least 2 degrees. On DX systems, set the system to start a cooling cycle. Turn off the system breaker for 5 seconds then turn it back on again. Listen for the reversing valve to toggle or the pump relay to activate. If nothing is heard, check the display cable or control board for trouble.
5. Is this a WiFi or Bluetooth problem? No, continue to step 6. Yes, see the section for "Wireless Troubleshooting"
6. Are you missing a mode such as heating? No, continue to 7. Yes: Check settings-> installation and verify that your heat settings are correct.
7. Are the operations above working (relays working, fan working, sensors are reading) but there is an issue with how something is operating? No, go to step 8. Yes: Please read the section on operation for the problem in question. If you still have an issue, please reach out for assistance in step 8. Please provide as much detail on your settings, the problem, and what you are expecting to happen so they can assist further.
8. If the above remedies do not work, please contact the thermostat vendor for assistance or look for additional help at [www.Microair.net](http://www.Microair.net)

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## WiFi and Bluetooth Operation

Companion apps are available for Apple and Android in their respective stores. The app is called Micro-Air Easy Connect. When you open the app, you will be asked to create an account. It is necessary to have internet access on your phone to create an account and add devices. Once you create the account, select the + button on the top left of the main screen and select EasyTouch 349. Thermostats will be shown with their serial number as part of the ID. Select the thermostat from the list. Enter an identifiable name for the thermostat then it will be ready to connect on Bluetooth.

There are two ways to connect the thermostat to a WiFi hot spot. On the thermostat, press settings, setup, then press the WiFi logo. Press "setup" and follow the prompts.

In the app on the main screen, open the slide out using the button on the top left. Check the bottom of the list to make sure it shows "Connecting with Bluetooth". If it shows "connecting with WiFi", press to change it to "Connecting with Bluetooth". Select your thermostat from the list then select the settings tab at the bottom of the page. Select "Edit WiFi settings" and follow the prompts to set your SSID and password.

Verify the thermostat is connected by checking the settings->setup tab on the thermostat. The WiFi symbol will be green when correctly connected to your hot spot.

Once connected, use "Connecting with WiFi" in the app to connect remotely.

## Wireless Troubleshooting

When troubleshooting a wires issue, be sure the display is functioning correctly first. All system problems and faults should be resolved before trying to fix a wireless issue.

### Bluetooth

1. If the app indicates the Bluetooth password is not correct, go to the thermostat and press settings->setup->advanced then next until you see "Reset Password". Select "Yes" then press next to clear the setting. Try the connection again.
2. If you are still unable to connect using Bluetooth, uninstall and reinstall the app. Be sure to give the app all permissions requested. If you reset your account password, please follow step 2 again. Be sure the app is set for "Connect using Bluetooth" on the main screen sliding tab.
3. If the app times out and indicates you must be closer, follow steps 2 and 3 again. Reasonable distances are under 10 feet for testing, but Bluetooth can have a range of 100 feet or more under ideal conditions.
4. If you still cannot connect using Bluetooth, please contact your retailer or visit [www.Microair.net](http://www.Microair.net) for more assistance.

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## WiFi

Be sure you can connect using Bluetooth before troubleshooting your Wi-Fi Connection. Wi-Fi troubleshooting is divided into two categories, problems with the thermostat and problems with the app. Press settings-> setup on the thermostat and verify that the WiFi symbol is green. If so, drop to the WiFi-App troubleshooting section.

### *WiFi-thermostat*

1. Does the symbol show an exclamation mark? No, continue to #2. Yes: Your hotspot is connected however it is not reaching the AWS server. Reachability issues can be from blocked ports, slow service, long ping times, DNS issues, or the server could be down. Server being down is very rare and never exceeds a few hours. The rest of the issues should be addressed with your network provider.
2. Does the symbol show a red circle with a line through it? No, continue to #3. Yes: Go to step 4 and reenter your SSID and password regardless of if they look correct.
3. Press the WiFi symbol. Verify your SSID and password are correct.
4. If the SSID or password is not correct, press the setup button. The thermostat will scan for nearby hotspots and display them. If none are found, make sure you can see the SSID on your phone and verify that the hotspot radio for 2.4 GHz is active. Some hotspots call this the IoT band. Also verify that the SSID is not set for "hidden" or "do not broadcast"
5. Verify that you can connect using your phone or tablet to the same SSID and password shown in the thermostat.
6. Try entering the SSID and password from the phone app. The app will allow manual entry of the SSID and password.
7. If you still cannot connect the thermostat to WiFi, please contact your retailer or visit [www.Microair.net](http://www.Microair.net) for more assistance.

### *WiFi-App*

Before following these steps, you should have a green WiFi symbol on the thermostat.

1. Remove and reinstall the app. Be sure to give the app all requested permissions.
2. Open the app and enter your account login information.
3. The app should repopulate the thermostat name from your account in a few seconds. If not, close the app completely from the app rotator. Open the app again and verify it repopulates.
4. If you have no controls paired with your account, press the + button on the upper right and select "EasyTouch 349". Follow the prompts to reconnect to your thermostat. Note: you must be at the thermostat and have WiFi access on your phone to add a device.
5. Once the device is added, change the setting on the slide tab (top left button) to "Connecting with WiFi".
6. Select the device name you just entered, and it should now connect.
7. If you still cannot connect the thermostat to WiFi, please contact your retailer or visit [www.Microair.net](http://www.Microair.net) for more assistance.

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## Specifications

Operating temperature range	-22°F to 140°F (-30°C to 60°C)
Storage temperature range	-40°F to 158°F (-40°C to 70°C)
Compatibility	Micro-Air FX-2 (ASY-360) Micro-Air FX-1 (ASY-370) U-control boards, Dometic/Others (ASY-501 or 520) Passport IO control boards (ASY-400)

## Glossary

**AH:** Air handler. Common in larger boats with chilled (tempered) water systems.

**Condenser sensor:** The sensor connected to the sea water loop at the compressor.

**DX:** Direct Expansion. This is a heat pump system but also includes cooling only systems. These are often called self-contained or split systems which reference their configuration.

## References - More Information

### EasyTouch Reference Manuals

This is the link to our website for the latest, up to date, EasyTouch manuals.

<https://www.micro-air.com/>

### EasyTouch Knowledge Bank

This is the link to our website knowledge bank for all information on EasyTouch RV

### Contact Us

Use this link to submit a support ticket for further assistance.

[https://www.micro-air.com/contact\\_microair.htm](https://www.micro-air.com/contact_microair.htm)

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