

ENTOUCH.one™

Controller

Installation and User Guide



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DEVICE OVERVIEW

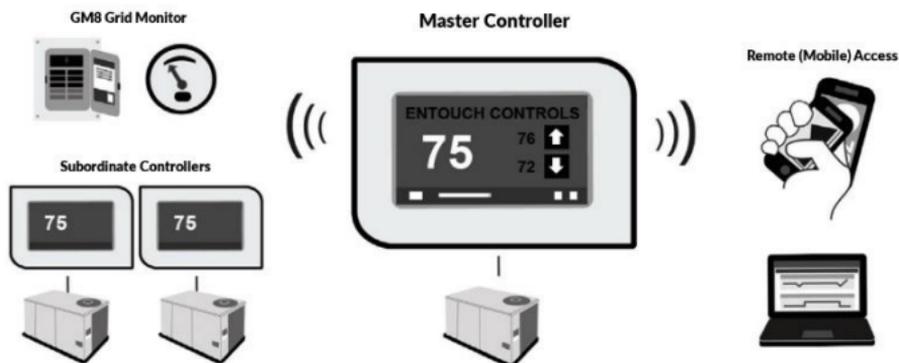


ENTOUCH.one Controller

The ENTOUCH.one Controller is a vital component of the ENTOUCH.360 Energy Management System, replacing a standard thermostat to provide complete facility HVAC control.

Hardware Variations and Device Integration

The ENTOUCH.one Controller provides built in Wireless Networking capabilities and Internet Gateway functions, allowing for the installation of multiple Controllers in a facility. One of the Controllers must be designated as the Primary (Master) Controller, which provides communication with additional units (Subordinate Controllers), as well as with other ENTOUCH.one devices, providing remote access for communication with and control over your facility.



Network Communication

Communication between site devices and the ENTOUCH Cloud Service is managed by the ENTOUCH.one Controller that is configured as the Primary (Master) Controller. For most installations, this unit will connect directly to the site's existing intranet, requiring a single IP Address. There are multiple hardware configurations available, however, to ensure that connectivity is always possible, even if the site does not have a network or the network cannot be accessed.

Hardware variations are as follows:

- **LAN**—Wired Ethernet LAN connectivity to your existing intranet (ENTOUCH.one LAN).
- **WiFi**—Wireless WiFi connectivity to your existing intranet and Access Points (AP's) (ENTOUCH.one WiFi). ENTOUCH WiFi connectivity supports WPA-PSK, WPA2-PSK, and WPA-Enterprise security modes.
- **GSM**—Cellular GSM connectivity directly to the ENTOUCH Cloud Service, bypassing your intranet altogether (ENTOUCH.one GSM). This service also incurs a nominal monthly cellular connectivity fee per primary HVAC Controller.

Technical Specifications

HVAC System Compatibility

- Supports Gas / Electric / Heat Pump Systems
- Supports 1, 2, and 3 Stage Heat
- Supports 1, 2, and 3 Stage Cool
- Support for Auxiliary Heat
- Control of Humidifier / Dehumidifier
- Configurable Remote Sensor Input



Power Requirements

- 24VAC: Requires both R and C Wires

Internet Communication

- WiFi Version: 802.11 (b, g, & n)
- LAN Version: 10/100 BASE-T
- Supports DHCP and Static Connections
- Cellular Data Connection

ENTOUCH Wireless Sensor Network

- Self-Forming Network with up to 150' Range

Terminal Descriptions

PIN	DEFINITION
Y2	Second Stage Cool (Configurable)
DC OUT	Analog Controller Output
Y3	Configurable Dry Contact
Y3 rtn	Configurable Dry Contact Return
Y	Cool
G	Fan
W2	Second Stage Heat (Configurable)
DC IN	Analog Controller Input
C	Common (Required)
W/O/B	First Stage Heat or O/B Valve
RH	24VAC Heating (default jumper to RC)
RC	24VAC Cooling (default jumper to RH)
S2	Remote Temp Sensor/Digital Input
S2 rtn	Remote Temp Sensor/Digital Input Return
S1	Remote Temperature Sensor
S1 rtn	Remote Temperature Sensor Return

DEVICE INSTALLATION



Installation Notes

Review the following information prior to installing the ENTOUCH.one Controller:

- The Controller works with low voltage HVAC controls. It does not support high voltage systems.
- The Controller requires both 24VAC and COMMON wires for power. You can use an add-a-wire converter for four (4) wire systems.
- If you are unsure about the installation, or have other questions, please contact technical support before you start the installation.

Installation Overview

Installation of the ENTOUCH.one Controller requires only a few primary steps to complete. These steps include physical device installation and wiring, device configuration (firmware), and facility monitoring setup (software).

Each primary step also includes detailed sub-steps for clarity, sometimes in multiple sections. Please review each primary step and associated sub-steps thoroughly prior to starting:

- 1) Remove Existing Thermostat, 2) Mount the Controller, 3) Terminate Connections, 4) Complete Initial Configuration, 5) Verify Basic Operation, and 6) Complete Portal Setup.

Installation Instructions

STEP
1

Remove Existing Thermostat

Complete the following steps to remove the existing thermostat unit.

1. Power down the HVAC system.
Adjust the temperature on the old thermostat to make sure the system is off, and then turn off the circuit breaker associated with the unit. These important safety measure and will assist in avoiding blowing a fuse.
2. Remove the thermostat cover.
Some covers pop off, but others need to be unscrewed.
3. Determine the voltage.
If the existing thermostat is labeled 120Vac or 240Vac or has thick wires with wire nuts, the system is high voltage. Look to see if your unit has a "C" or "X" attached.
4. Use the Wiring Notation Table that follows to note the wire colors to existing stats.



WARNING: Do not rely on the colors of existing wiring when disconnecting the thermostat. It is possible that wiring has been spliced and/or replaced with different colors.

Wiring Notation Table

EXISTING	WIRE COLOR	ENTOUCH
R		R
Rh		Rh
Y		Y
Y2		Y2
W		W/O/B
O/B		
W2		W2
Aux		Y3
G		G
C or X		C

5. Disconnect the wires and remove the base of the thermostat.

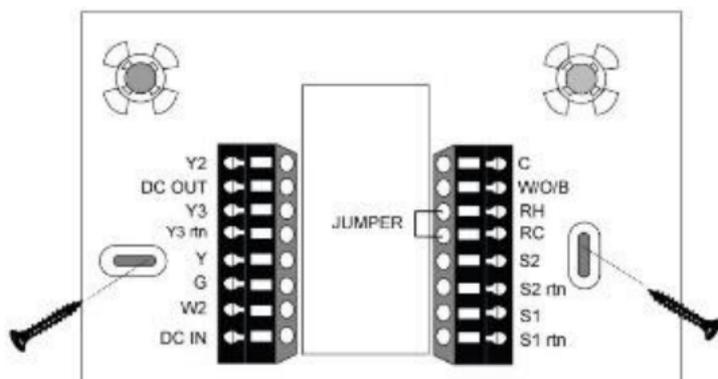
Wrap the wires around a round object, such as a pencil, to prevent them from falling into the wall. It is also recommended that you label the wires as you remove them so you can properly attach them to the Controller.

**STEP
2**

Mount the Controller

Complete the following steps to mount the Controller. Up to 16 Subordinate Controllers can be networked to a single Controller, so these steps may need to be repeated multiple times during the overall installation process.

1. Detach the Controller display from the mounted base.
Gently pull the display until it snaps off of the base.
2. Using the base as a reference, mark the positions of mounting screws, and drill holes for the wall anchors.
The unit is held in place by 2 mounting screws.



3. Mount the base to the wall.
Hold the base against the wall and attach using the supplied screws.

STEP
3

Terminate Connections

Complete the following steps to complete wiring and energize the unit.

1. Connect the stat wires.

Refer to the wiring notation table that you completed during the removal of the existing thermostat. Wiring diagrams for typical HVAC and Heat Pump installations are included for reference on the following page.

2. **IF INSTALLING A LAN CONTROLLER...** connect the RJ45 cable.

If not installing a LAN Controller, skip this step.

3. Attach the Controller display to the mounted base.
Gently press on each of the four corners of the Controller until it snaps into place.
4. Switch the power on to the unit at the breaker.

Conventional HVAC Wiring

ENTOUCH		HVAC
RH RC	→	R 24VAC POWER
C	→	C COMMON
G	→	G FAN
W/O/B	→	W HEAT
Y	→	Y COOL
W2	→	W2 HEAT STAGE 2
Y2	→	Y2 COOL STAGE 2

Conventional Heat Pump Wiring

ENTOUCH		Heat Pump
RH RC	→	R 24VAC POWER
C	→	C COMMON
G	→	G FAN
W/O/B	→	O/B REVERSING VALVE
Y	→	Y COMPRESSOR
W2	→	W2 AUXILLIARY HEAT
Y2	→	Y2 COMPRESSOR STAGE 2

STEP
4

Complete Initial Configuration

After successfully energizing the Controller, the installation wizard displays to guide you through key programming steps. The wizard settings are REQUIRED to activate the Controller and the wizard only displays once after the unit is energized. However, you can access the wizard at any time:

> MENU

> ADVANCED INSTALL

> INSTALLTION SETTINGS

> ADVANCED

> WIZARD

1. Complete the wizard settings as prompted.

The Control Mode is "Master." The name of the Controller should reflect device usage if a Subordinate device.



NOTE: Wizard settings include the minimum configuration settings for the device. Full configuration of system operation is available in the **Advanced Setup Menu**.

Determine the Device Passcode

Following wizard completion, you should determine the device's five (5) character passcode. You will need this information when setting up the device in the ENTOUCHGO.com web management portal.

1. Open the "System Info" menu: **MENU > SYSTEM INFO**.
2. Use the Passcode Notation Table to record the passcode. This code is unique to the device.

Passcode Notation Table

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NOTE: The "System Info" menu also provides valuable information that can be used for verification and/or troubleshooting purposes.

STEP
5

Verify Basic Operation

It is highly recommended that you confirm the success of device installation by verifying proper HVAC equipment operation. This is easily accomplished using the built in relay test. , which allows you to manually active and de-activate all system relays and test for proper fan, heat, and cool operation.

1. Initiate the relay test by navigating to the Controller's relay test:

> **ADVANCED SETUP**

> **INSTALLATION**

> **ADVANCED**

Installation Troubleshooting

If the display is blank (the screen is black) or the Controller cycles on and off, this is usually a sign of improper power or a loose connection. The system requires a 16Vac to 30Vac from your HVAC system.



NOTE: The system requires a common connection.

1. Remove the Controller from the back plate and measure the voltage across RC/RH and C. If it is less than 16Vac, verify wiring and your HVAC system.
2. Verify that all wires are properly connected and that screws are tight.
3. Verify that the RC/RH jumper is installed and tightened.

Network Communication Troubleshooting

During normal operation you should see a **Globe** icon (🌐) in the "Status" section of the main screen. This icon indicates you are properly connected to the network server. If you do not see the **Globe** icon you are either not connected to the Internet or not connected to a router.



SERVER CONNECTED



ROUTER CONNECTED



NO NETWORK ACCESS

Troubleshooting information is located in the menu and can help diagnose router connection, Internet connection, or server connection issues:

> MENU

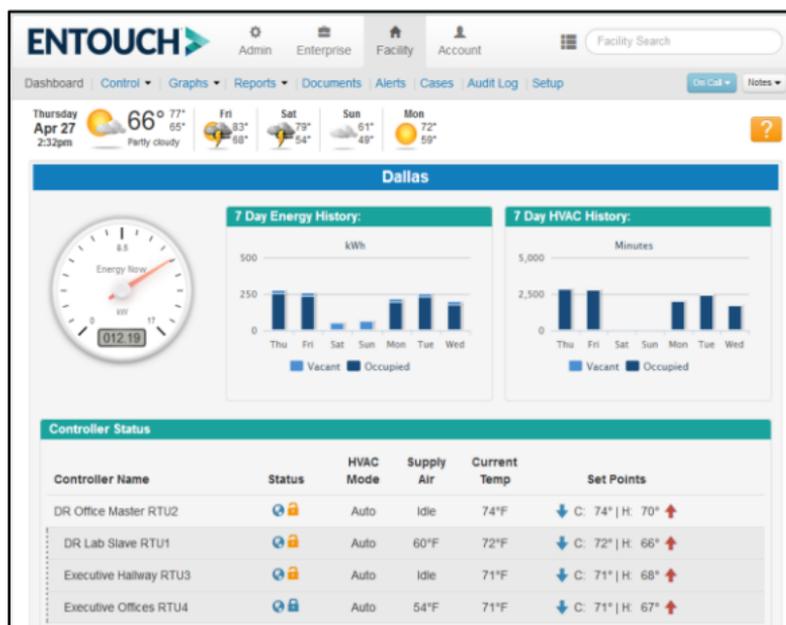
> SYSTEM INFO

> NETWORK

This menu has four sections: Router Connection Status, IP Address Status, Internet Network Status, and Network Server Status.

STEP 6 Complete Portal Setup

The power of your ENTOUCH.one Controller is fully realized when you log on to ENTOUCHGO.com and finalize setup of the device.



The web management portal allows you to create facilities, manage them remotely, and quickly react to problems. You can manage multiple facilities from a simple dashboard, view HVAC system operation, view your runtime and your energy usage details, and customize reports. You can also set your schedules, events, and create custom naming for your units.

Register and Log In

If you do not already have an ENTOUCHGO.com account, you must create one in order to complete the setup process.

1. Using a computer or tablet, connect to

<https://entouchgo.com/>

2. Log in. If you are a first time user, first click the **REGISTER** link to set up your account.

Create a Facility

Complete the following steps to create a facility in the portal. A facility represents your physical location and is required for data management purposes.

1. Go to the **FACILITY** tab.
2. Go to the **SETUP** sub-tab.
3. Click **ADD A FACILITY**.
4. Enter a facility name.
5. Enter location information, including the address. The ZIP code and time zone are necessary to determine proper time and weather information.

6. Continue through the wizard:
 - a. Enter contacts for the facility and set each up to receive SMS or EMAIL alerts.
 - b. Enter optional data on facility size, energy rate, type of facility, and energy categories for custom energy mapping.
7. Click **SAVE AND EXIT**.

Add Your Controller

Complete the following steps to add your Controller to the facility.

1. Go to the **SETUP** tab.
2. Click **ADD A CONTROLLER**.
3. Enter the Controller passcode.
*If you recorded the passcode on the Passcode Notation Table when you completed Step 4 of the installation, the five (5) character code is found on Page 16. You can also access **MENU > SYSTEM INFO** on the Controller to determine this code, or click the **WHERE'S THE PASSCODE?** link for more information.*
4. Continue through the wizard to set alert preferences for the Controller.
5. Click **SAVE AND EXIT**.

Installation Record

It is recommended that you complete the following information about the installation to retain for your records.

Device Serial Number:

Device Passcode:

Installer Name:

Installer Phone Number:

Installation Location:

Installation Date:

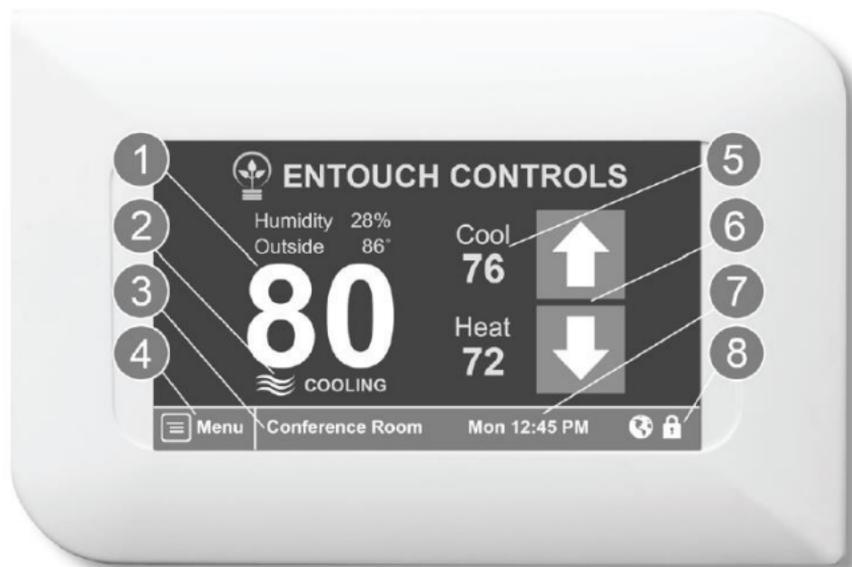
Additional Notes:

DEVICE USAGE



Home Screen

The **Home** screen displays basic information about the system.



1. Temperature Display
2. HVAC Operation Status
3. Unit Name
4. System Menu
5. Heat and Cool Set Points
6. Up/Down Temperature Adjustment
7. Time and Day
8. Status

Temperature Display

The system displays two temperatures: current sensed indoor temperature and outside temperature.

- Indoor temperature shows the regulation temperature. This can either be the temperature at the thermostat (default mode) or the temperature of the External Sensor S if remote temperature sense is enabled.
- Humidity displays the local relative humidity at the thermostat.
- Outside temperature is displayed if Internet connection is available and your unit has been configured in a facility (refer to the “Complete Portal Setup” section). If an Internet connection is not available, you can configure the External Sensor S as an Outside Temperature sensor.

Occupied Mode

The unit displays the heat and cool set points when it is in Occupied mode. If the unit is in Auto mode it will show both set points. If it is in Cool mode, only the cool set point is displayed. If it is in Heat mode, only the heat set point is displayed. Pressing the **Up/Down** buttons will adjust the temperature settings within the security limits.

Vacancy Mode

If the scheduled time period occupancy mode is set to Vacant, the heat and cool set points are not displayed. Pressing the **Up/Down** buttons will force an override, set the zone status to Occupied, and show the occupancy set point range.

Temperature Adjustment (Unlocked)

The **Up/Down** buttons are used to adjust the regulation temperature. If the unit is unlocked the set points can be adjusted between 40° and 99° F (4° to 37° C). If the HVAC system is set to Auto mode, both the heat and cool set point are adjusted simultaneously.

Temperature Adjustment (Locked)

If your unit is locked you will see a lock icon in the bottom right corner. Units may be placed into locked mode from the **DEVICE PREFERENCES** menu. When the unit is locked the temperature adjustment range is limited to the security range as defined in the **SETUP** menu. This range is adjustable from +/-1 to +/-5 degrees.

Hold Duration

One of the energy saving features of the device is that there are no permanent holds available on the front panel. The system allows only temporary changes when using the **Up/Down** arrows. Changes are cancelled after an adjustable delay of 1 hour, 2 hours, or the next schedule transition. All hold conditions cancel at midnight. The default hold interval is configured in the **DEVICE PREFERENCES** menu under **SECURITY SETTINGS**.



NOTE: You can set a permanent hold for a vacation or other event in the **EVENTS** menu, located on the **SETUP** screen. This can also be done from the www.ENTOUCHGO.com web management portal.

Status Icons

Two status icons in the bottom right of the display highlight server connection status and security status. If the **Lock** icon (🔒) displays the unit is locked. If a **Globe** icon (🌐) displays the unit is connected to the servers. If a **Signal Bar** icon (📶) is displayed the unit has connected to a local network but is not connected to the servers. See “Installation Troubleshooting” section for more information.