

ENTOUCH CONTROLS

ENTOUCH ONE USER GUIDE

v4.0

MEASURE. MANAGE. SAVE.

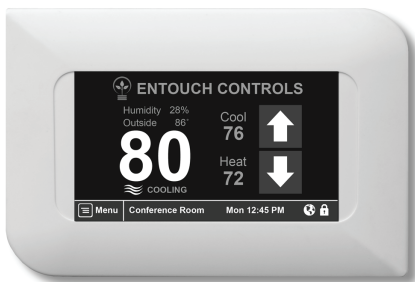
Contents

Getting Started	3
Installation	7
Using the Setup Wizard	11
Using the Home Screen	12
Using the Main Menu	16
The Setup Menu	19
Using the Web Management Portal	30
EnTouch Controls Limited Warranty	34
Information From Your Installation	35

Welcome to the future of energy management. The EnTouch Controls energy management system (EMS) is a simple to use and powerful tool that will help you do three things: MEASURE, MANAGE, and SAVE.

The system is designed to be easy to install and easy to use. This manual will review common installation procedures and give you a basic overview of the system.

In This Box



EnTouch One Master Controller

Feature List

Master Controller

Can Be Gateway Or Slave Mode

Controls Most Commercial Hvac Systems

Wizard For Installation

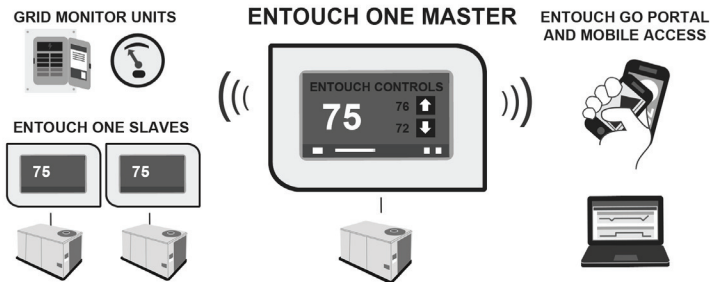
Security

Scheduling

Energy Optimization

Problem Alerts

Understanding Your EnTouch EMS



The power of the EnTouch EMS is the built in wireless networking and the built in internet gateway functions.

The EnTouch wireless network connects devices in the facility. One controller must be set to master mode, it establishes the network and controls communication to slave devices. Devices can be linked using the setup wizard in the advanced setup menu of the master controller.

The built in gateway enables communication to the EnTouch servers.

There are three gateway options.

EnTouch One Wifi - built-in wifi radio

EnTouch One LAN - built-in RJ-45 ethernet connection

EnTouch One GSM - built-in cellular radio

Parts of the EnTouch One EMS



1. **EnTouch One Controllers** are drop in replacements for your existing thermostats. They feature advanced software that optimizes HVAC performance and efficiency. They also have security features to prevent user adjustments, a 7 day, 4 time period occupancy based schedule including multi-stage heat pump and split systems.



2. **EnTouch GM Energy Monitors** are wireless sensors that are installed in your electric panels. They use digital signal processing to accurately measure your facility's energy usage.



3. **The EnTouchGo Web Portal** provides tools to manage multiple facilities, make changes to schedules, and to monitor facility performance. Point your browser to www.entouchgo.com to setup your account.

Before You Get Started



- 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 wire systems.
- If you are unsure about these items or have other questions please contact technical support before you get started installing the EnTouch EMS.

Technical Support

Our technical support team is available to answer your questions and assist you with your installation.

During business hours: **1.800.850.9284**

Online technical support: **support@entouchcontrols.com**

 **Call us if you have questions** 

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

Installation Instructions

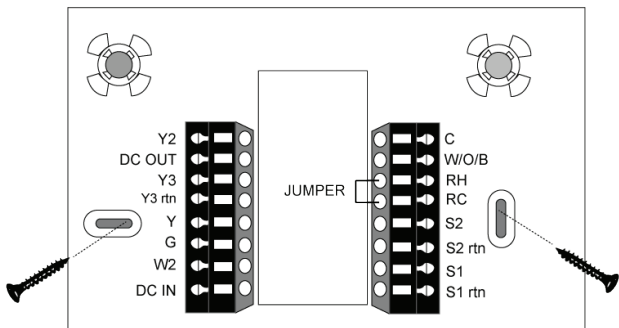
Step 1. Remove The Existing Thermostat

First step is to power down your HVAC system. This can be done by opening the circuit breaker associated with the unit. Once power is removed, carefully remove your existing thermostat

from the wall and disconnect the existing wiring. It is recommended that you label the wires as you remove them so you can properly attach them to the EnTouch Controller.

NOTE: Many times the colors represent the type of connection but this isn't always reliable. Take the time to label the wires, it will save you time in troubleshooting later!

Step 2. Install The System Backplate



Using the supplied wall anchors and screws, attach the backplate to the wall. The opening allows for cable routing. Note that the alignment posts need to be towards the top of the backplate.

Step3. Wire To The System

Follow the pinout description in the terminal description to wire your system. Note that RC and RH are shipped with an installed jumper, this can be removed in systems with a separate heat and cool power transformer.

NOTE: Please ensure that this jumper is properly inserted after installation.

Wiring Diagrams

The following are common wiring diagrams. If you have questions about your system and how to install the EnTouch system, please contact technical support.

Step 4. Place The Unit On The Backplate

Align the rear posts and gently press the controller onto the backplate. You can then power up your HVAC system and should see the screen light up. If the screen remains black see the troubleshooting section.

DIAGRAM 1 CONVENTIONAL HVAC SYSTEM

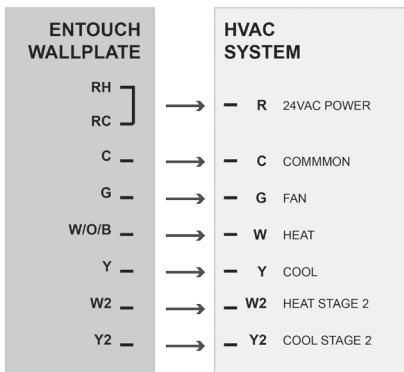
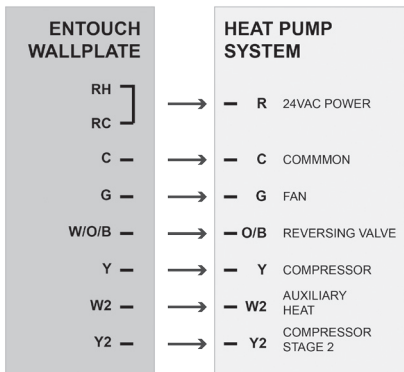


DIAGRAM 2 HEAT PUMP



Using The Setup Wizard

After successfully powering up the controller you will be directed to the installation wizard to guide you through the key programming steps.

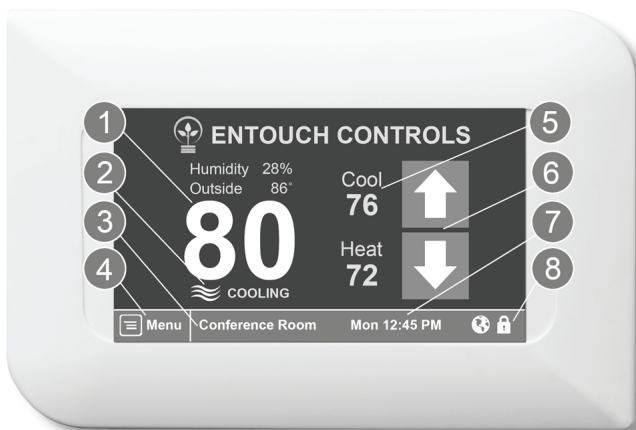
NOTE: The wizard is only displayed once.

You can also access it at a later date in the **ADVANCED SETUP** menu under **MENU -> ADVANCED INSTALL -> INSTALLATION SETTINGS -> ADVANCED -> WIZARD**

1. Set Control Mode As Master Or Share Mode
2. Choosing Your Equipment Type
3. Setting Date And Time
4. Setting Your Time Zone
5. Adding EnTouch Wireless Devices
6. Choosing A Preset Schedule
7. Connecting To The Network
8. Name EMS Controller

These are the basic items required to activate the EnTouch Controller. Full configuration of system operation is available in the **ADVANCED SETUP MENU**.

Using The Home Screen



The Home Screen

The home screen shows basic information about the system.

1. Temperature Display
2. HVAC Operation Status
3. Unit Name (adjustable via internet)
4. System Menu
5. Heat and Cool Setpoints
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 (see Installation Settings menu).

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 (see instructions for connecting to the server and setting up your facility). If Internet connection is not available you can configure the external sensor S as an Outside Temperature sensor (see Installation Settings menu).

Occupied Mode

The unit displays the heat and cool setpoints when it is in occupied mode. If the unit is in auto mode it will show both setpoints. If it is in cool mode, only the cool setpoint is displayed. If it is in heat mode, only the heat setpoint 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 setpoints are not displayed. Pressing either the Up or Down button will force an override, set the zone status to occupied, and show the occupancy setpoint range.

Adjusting The Temperature When Unit Is Unlocked

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

Adjusting The Temperature When Unit Is 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.

Understanding Hold Duration

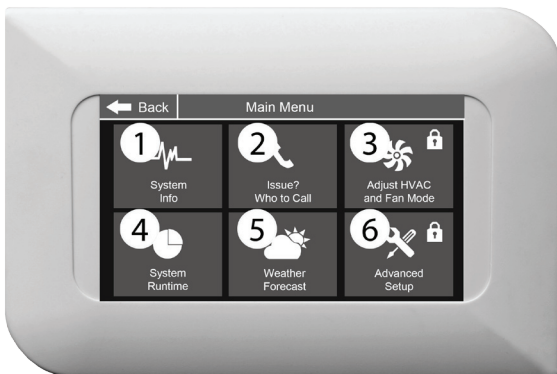
One of the energy saving features of the EnTouch EMS is that there are no permanent holds from the front panel. The system only allows temporary changes when using the Up/Down arrows. Changes are cancelled after an adjustable delay of 1 hour, 2 hours, or the next schedule transition. All hold conditions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

Note, if a user wants to set a permanent hold for a vacation or other event they can set an event in the *EVENTS* menu, located in the *SETUP* screen. This can also be done from www.entouchgo.com

Status Icons

Two status icons in the bottom right of the display highlight server connection status and security status. If the lock icon appears the unit is locked. If a globe icon appears 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 troubleshooting menu for more information.

Using The Main Menu



The Main Menu

The main menu provides basic information, troubleshooting information, and access to advanced system settings

1. System Info

The system information menu provides basic device information and advanced troubleshooting information. Included in this menu are:

- Basic device information, including MAC address and on-line passcode.

NOTE: Online passcode is required to register the controller on the www.entouchgo.com.

- Sensor information, including internal temperature, humidity, external sensor temperature, and alarm input status

- Output drive status, showing active status of the fan, cool, heat, and mappable output relays
- Network connection status for local network and remote server

2. Emergency Contact Information

This screen has name, email, and phone contact for the two facility contact individuals. These contacts are set from www.entouchgo.com.

3. HVAC And Fan Mode Adjustment

HVAC MODE can be selected as:

- **AUTO** (default) The system, will heat or cool as necessary to maintain optimal comfort.
- **COOL ONLY**
- **HEAT ONLY**
- **OFF**

FAN MODE can be selected as:

- **AUTO** (default setting. Fan runs during heating and cooling).
- **ON** (fan always on).
- **CIRCULATE** (fan runs during heating and cooling and periodically activates based on fan circulation time settings. Circulation is only active during occupied schedule times and may be configured in the **ADVANCED SETUP MENU** under **INSTALLATION/EMS**).

NOTE: if the unit is locked a password is required to access this menu.

4. System Runtime

This menu provides pie charts detailing system operation in the past day. It is useful for troubleshooting. More detailed runtime and live status information is also available from www.entouchgo.com.

5. Weather Forecast

This menu provides current outside temperature and a detailed five day weather forecast for your facility. Weather is determined based on your location, this is set on www.entouchgo.com

6. Advanced Setup Menu

This menu provides full system installation and setup for your controller.

NOTE: if the unit is locked a password is required to access this menu.

Using The Setup Menu



1. Preferences And Security

This menu sets up your local time, location, security, and display settings. Use this menu to:

- **Time And Date** Time may be set manually or using Internet Time. Internet Time keeps your clock updated by the network servers and will automatically adjust for daylight savings changes.
- **Security** You can prevent an authorized user from adjusting the controller outside a specified range.
- **Display Settings** Adjust display configuration including brightness in normal and screensaver mode.

2. Events And Schedule

This menu is where you set your schedule and configure special events such as vacation days, snow days, and holidays. Use this menu to:

- Choose from a preset schedule for your building.
- Enter a custom seven day schedule with four time periods per day. Each time period can have unique heating and cooling settings. Each time period can also be defined as 'occupied' or 'vacant'. You can also adjust your schedule from www.entouchgo.com.
- Set or view upcoming events. You can view the next four events for this unit and add up to four events locally. The unit supports up to date events from www.entouchgo.com.

3. Installation Settings

This menu is used to install and configure your HVAC equipment.

NOTE: Equipment operation is halted when making any changes to these settings. Operation restarts automatically.

Use this menu to:

- Select your system as conventional or heat pump.
- Configure your heating for electric or gas heat.

ENTOUCH ONE EMS

- Configure your auxiliary heating (for heat pumps) and set your lockout temperature. You can configure your heat pump to only use auxiliary heat, never use auxiliary heat, or to use heat pump only above a defined outside temperature. If a lockout mode is selected the unit will only run the compressor for heat if the outside temperature is above the threshold. Outside temperature is based on internet provided temperature or by using a remote sensor and configuring it as an outside temperature sensor.
- Configure your heat pump reversing valve for active on heat(B) or active on cool (O).
- Configure humidifier or dehumidifier control and your threshold temperature.
- Configure energy management (EMS) operation:
 - **COMFORT OR SAVINGS MODE** The EnTouch EMS implements patent pending methods that reduce energy usage. Savings mode will help you reduce energy. Comfort mode will optimize comfort levels. Savings mode is suggested to optimize your energy usage.
 - **SEQUENCER MODE** Sequencing coordinates operation of your compressor stages. The EMS supports four sequencing slots to coordinate turn-on of your compressor stages. Implementing sequencing reduces peak energy consumption and associated charges. To implement sequencing mode select a unique slot for each HVAC system. If your facility has more than four HVAC systems you can overlap systems in the same slot.

- **SMART RECOVERY** Enabling smart recovery forces the system to adjust temperatures just prior to a transition from vacancy to occupancy. This can be helpful in extending setback modes in commercial facilities and will ensure proper temperature at the start of the business day. It uses more energy so it is disabled by default.
- **FAN CIRCULATION** If the fan is set to circulate mode it will run a pre-determined amount of time, regardless of compressor or heat operation. Circulation is only active during occupied schedule time periods. If the system is idle for more than 5 minutes the fan will be turned on for an adjustable time from 1 minute to 10 minutes. It can also be set for continuous operation during occupancy, a setting that is often used in restaurant kitchens.

4. Network Settings

This menu is used to connect to your network. It initially shows your connection status and has **BASIC** and **ADVANCED** connection tools and a network **UTILITY** to diagnose connection status.

- **BASIC MENU** allows you to quickly find available networks, select one, enter your password, and connect. LAN units will automatically connect when plugged into your router.
- **ADVANCED MENU** allows you full control for custom networks. It allows configuration for **DHCP** or **STATIC** networks, adjustment of gateway and subnet mask parameters, and other items.
- **SERVER MENU** configure the www.entouchgo.com server if you use a custom IP or domain name.

- **UTILITY MENU** provides details on connection status and can be used for troubleshooting network performance.

NOTE: Contact your IT support for more help.

5. The Configure Devices Menu

The EMS controller supports wireless devices for additional functionality. These devices must be associated with at least one master controller to communicate to www.entouchgo.com

Wireless devices include energy monitoring, load control, and slave temperature zones.

- **MY DEVICES** provides detailed information on any connected devices. Information included device connection status, radio strength, signal quality, and details on status.
- **ALL DEVICES** is a list of available wireless devices. Select a device and press **ADD DEVICE** to attach it to your network.

6. Inputs And Outputs

The EMS controller supports external sensors and configurable output drive.

- **S1 INPUT (REMOTE SENSOR) CONFIGURATION**
 - Sensors can be configured to monitor external temperatures. The system supports several types of common NTC thermistor sensors from 10K to 20K ohms.
 - **DISABLED** Use internal sensor to monitor temperature.

- **ZONE TEMPERATURE** Use sensor as the temperature regulation point.

NOTE: if this setting is selected and the external sensor is disconnected the unit will revert to internal temperature sense.

- **AVERAGE TEMPERATURE** Average between the internal temperature and the remote sensor. This setting is useful to balance temperature between two rooms.
- **OUTSIDE TEMPERATURE** If this setting is selected the device will report this temperature as the external temperature. This is displayed on the front screen and used to determine heat pump lockout.
- **DEVICE TEMPERATURE** This setting is useful to monitor an auxiliary temperature such as a duct outlet, refrigerator, or other temperature. It can be used on www.entouchgo.com for alerting. It does not affect unit performance.

- **S2 (DIGITAL INPUT) CONFIGURATION**

- **ACTIVE WHEN CLOSED:** Active when connected (closed).
- **ACTIVE WHEN OPEN:** Active when non-connected (open).

- When configured as Digital Input, the S2 can be configured to support:
 - » **DISABLED**
 - » **MOTION SENSOR** This setting is commonly used in portable buildings and hotel room applications. When motion is detected the zone status will be set to **OCCUPIED** and the setpoint temperatures will be set to the most recent (previous) occupied time period settings as determined by the schedule. This input remains active for the default hold interval. If no motion is detected the system returns to the scheduled settings. The defaults hold interval can be adjusted in the **SETUP -> PREFERENCES -> SECURITY MENU**.
 - » **SECURITY SYSTEM** The schedule will be adjusted to **VACANCY** status when input is active. This setting is useful to force setback mode when a facility security system is armed. Setpoint temperatures revert to the next upcoming vacancy time period settings. This configuration is useful in offices.
 - » **ALARM WHEN OCCUPIED AND ACTIVE** An **ALARM** state will be generated if the input is active and the schedule is in **OCCUPANCY**. This setting is useful for ventilator or humidity control in portable building applications. The alarm condition can be latched for a custom duration. Select this in the hold duration dialogue box.

NOTE: The **S2 ALARM** state can also be directly configured to one of the output relays for pass-through of this signal.

- » **ALARM WHEN ACTIVE** This configuration is the same as above but will be activated regardless of schedule setting.
- When configured as Temp Sensor, the S2 can support several types of 10K and 20K sensors:
 - » **DEVICE TEMPERATURE 2** This setting is useful to monitor an auxiliary temperature such as a duct outlet, refrigerator, or other temperature. It can be used on www.entouchgo.com for alerting. It does not affect unit performance.

• MAPPABLE OUTPUTS

- The W2, Y2, and Y3 output relays can be configured to support a wide range of system applications.
- By default, the W2 and Y2 relays are used to control second stage heating and cooling and to support multi-stage heat pumps and multi-stage auxiliary heating.

NOTE: Changing your system type from Conventional to Heat pump will override any custom settings in this menu and you will need to reset these mappings.

- **DISABLED** The output relay remains open.
- **SECOND STAGE HEAT** is used in conventional systems to call for second stage heat. Only available on W2.
- **SECOND STAGE COOL** is used in conventional systems to call for second stage cool. It is also used in heat pump systems to call for second stage compressor. Only available on Y2.
- **AUX HEAT STAGE 1 and AUX HEAT STAGE 2** are used in heat pump systems to call for auxiliary heating.

- **HUMIDITY** is used to control either a humidifier or dehumidifier. Humidity can be set to:
 - » **HUMIDIFY** » **HUMIDIFY WHEN OCCUPIED**
 - » **DE-HUMIDIFY** » **DE-HUMIDIFY WHEN OCCUPIED**

These settings are located in the **INSTALLATION SETTINGS** menu under **HUMIDITY**.

- **VENTILATION CONTROL** is used to open system dampers for outside air. Only available on Y3. The damper control is active (closed) when the zone status is occupied.
- **L ALARM OUTPUT** is used to pass through an alarm condition on the **DIGITAL INPUT S2**. It is active (closed) when the **DIGITAL INPUT ALARM** is active.
- **BASEBOARD DISABLE** is used to disable independent baseboard heaters. This output is normally active (closed). If the system enters cool mode this output becomes inactive (open) and will remain inactive for 30 minutes following the release of cooling state.

NOTE: Relay Y3 is a dry contact with a return on Y3rtn. It can be used independently or in combination with other relays to perform a wide range of custom control functions. Please contact technical support for additional details.

Using The Relay Test

To verify proper HVAC equipment operation it is highly recommended that you use the built in relay test.

The relay test is located in: **ADVANCED SETUP / INSTALLATION / ADVANCED.**

You can manually active and de-activate all system relays and test for proper fan, heat, and cool operation.

Troubleshooting

No Display (Screen Is Black)

The first item to verify is proper power to the controller. The system requires a 16VAC to 30VAC from your HVAC system.

NOTE: The system requires a common connection!

If the display is black or the controller cycles on and off this is usually a sign of improper power or a loose connection.

Step 1. Remove the master controller from the backplate and measure the voltage across RC/RH and C. If it is less than 16VAC please verify wiring and your HVAC system.

Step 2. Verify all wires are properly connected and screws are tight.

Step 3. Verify the RC/RH jumper is installed and tightened.

Troubleshooting Network Connection

During normal operation you should see a globe symbol in the status section of the front screen. This icon indicates you are properly connected to the network server. If you do not see the globe symbol you are either not connected to the Internet (a wifi status bar symbol will be displayed) or not connected to a router (no wifi or globe symbol is displayed).



SERVER CONNECTED



ROUTER CONNECTED



NO NETWORK

Troubleshooting information is located in the **MENU / SYSTEM INFO / NETWORK** menu and can help diagnose router connection, Internet connection, or server connection issues.

This menu has four sections:

- Router connection status
- IP Address status
- Internet network status
- Network server status

Please contact EnTouch technical support or your IT support for assistance.

Using The Web Management Portal

The power of your EMS controller will be fully realized when you connect to www.entouchgo.com. This portal is designed to let you 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.

Step 1. Getting Online

Using a computer or tablet device connect to www.entouchgo.com

**ENTOUCH
CONTROLS**

Email

Password

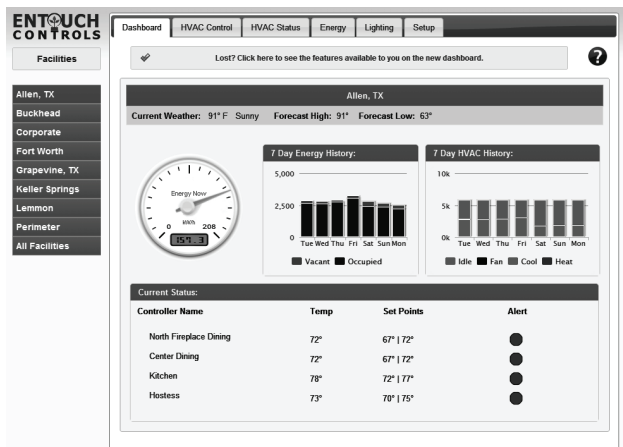
[Password Reset](#)

Log in

[Register](#)

Support: 1-800-850-9284
Email: support@entouchcontrols.com

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



Step 2 Create A Facility And Add Your Units

ADDING A FACILITY

- Go to the **SETUP** tab.
- Click on **ADD A FACILITY**.
- Enter a facility and assign it a name.

- Enter location information – zip code and time zone – for proper time and weather information.
- Enter contacts for the facility and set them up to receive **SMS** or **EMAIL** alerts.
- Enter optional data on facility size, energy rate, type of facility, and energy categories for custom energy mapping.

Adding Controllers To Your Facilities

- Go to the **SETUP** tab.
- Click on **ADD A CONTROLLER**.
- Enter the online passcode for the controller. This five-character code is found in the **SYSTEM INFO** menu.
- Set alert preferences for the controller.

Using The Web Management Portal

The portal allows you to:

- Setup and manage facilities
- Change the controller names
- Set schedules and add events
- Configure global events and schedules.
- Set up performance alerts
- View temperatures and HVAC status
- Get detailed information for diagnostics
- View energy usage

The portal is a tool for monitoring performance and optimizing settings

- View detailed energy and runtime graphs
- View daily summary of energy usage in each facility
- View detailed branch energy like your HVAC and Lighting
- Get summary reports

Additional instructions and help is available on the portal.

Entouch Controls Limited Warranty

No need to worry when purchasing the EnTouch system. EnTouch Controls stands by the system with a 3-year limited warranty.

EnTouch Controls warrants this product to be free from defects in the workmanship or materials, under normal use and service, for a period of three (3) years from the date of purchase. If at any time during the warranty period, the product is determined to be defective or malfunctions, EnTouch Controls shall repair or replace it at EnTouch Controls' option.

If the product is defective;(i) return it, with a bill of sale or other dated proof of purchase, to the place from which you purchased it; or (ii) call EnTouch Controls customer care at 800-850-9284. Customer care will make the determination whether the product should be returned or whether a replacement should be sent to you.

This warranty does not cover removal or reinstallation costs. The warranty shall not apply if it is determined by EnTouch Controls that the defect or malfunction was caused by improper usage while the product was in possession of the user.

EnTouch Controls' sole responsibility shall be to repair or replace this product within the terms stated above. EnTouch Controls shall not be liable for any loss or damage of any kind, including any incidental or consequential damages resulting, directly or indirectly, from any breach of any warranty, express or implied, or any other failure of this product.

This warranty is the only express warranty EnTouch Controls makes on this product. The duration of any implied warranties, including the warranties of merchantability and fitness for a particular purpose, is hereby limited to the duration of this warranty.

If you have any questions concerning this warranty, please write EnTouch Controls Customer Relations, 661 N. Plano Rd. Suite 323, Richardson, Texas 75081.

Information From Your Installation

We recommend you capture the following information at time of installation and retain for your records.

UNIT SERIAL NUMBER: _____

UNIT ONLINE PASSCODE: _____

INSTALLER NAME: _____

INSTALLER PHONE: _____

INSTALLATION DATE: _____



Thank you for partnering with EnTouch Controls

EnTouch Controls offers a complete suite of products. To find out how we can accommodate a full solution for your facility management, please contact us.

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Learn more at



www.entouchcontrols.com