TotalTouch™ **www.totaltouch.info**

Technical Support 1-866-90TOUCH (1-866-908-6824)

INSTRUCTION MANUAL

P286-1500 3 Heating and 2 Cooling
with Automatic Humidity Control & Dual Fuel Switch

To be used with P286-0001: Outdoor Wireless
Temperature Transmitter & Receiver Kit

TOTALINE®

ENERGY STAR

TotalTouch™

Complete Comfort

INTRODUCING THE P286-1500 Featuring automatic humidity controller and fossil fuel switch which is only activated when combined with our Outdoor Wireless Transmitter and Receiver Kit. (P286-0001)

Standard in all TotalTouch™ Thermostats Complete and quick set-up with gas, oil, electric, heat pump, air conditioning and multi-stage HVAC systems.

- 7 Day programmable with 4 events per day – including fan
- Large, easy to read dot matrix display
- True touch screen technology
- Automatic selection of cool or heat mode
- Programmable fan mode
- Programmable filter monitor
- Programmable installer message
- Configureable humidifcation relay
- Independant de-humidification relay
- Customizable full and partial lock security
- Adjustable differential settings for multistage installations
- Energy watch calculates kWh and HVAC costs
- Simple mode for non-programmable usage
- Programmable Vacation Mode

TOTALINE®

TotalTouch™

Complete Comfort

INTRODUCING THE P286-0001

Outdoor Wireless Temperature Transmitter and Receiver Kit

Your Kit Includes: Outdoor Wireless Temperature Transmitter + Antenna + Receiver Module + 2 Batteries

This convenient feature provides you the outdoor temperature right on your TotalTouch™ thermostat.

TABLE OF CONTENTS

Anticipator control – Anticipator control is used to turn off the heating equipment before the room temperature actually reaches the cut-out point.

Cut-in Point – The air temperature at the thermostat at which it initiates action of heating/cooling equipment.

Cut-out Point – The air temperature at the thermostat at which it terminates action of heating/cooling equipment.

Cycle rate – Cycle rate is the frequency that heating or cooling equipment is turned on during a certain period of time. Cycle rate is often given in units of cycles per hour (CPH).

Dehumidify – The process of removing moisture from the air.

Dehumidifier – Device used to remove moisture from the air.

Differential – Differential is defined as the difference between the cut-in and cut-out points as measured at the thermostat under specified operating conditions. For example, if the thermostat turns the heating equipment on at 70 degrees F and turns the heating equipment off at 74 degrees F, then the differential is 4 degrees F.

Humidifier – A device used to add moisture to a space.

Humidistat – A control which is operates the humidifier and is affected by changing humidity.

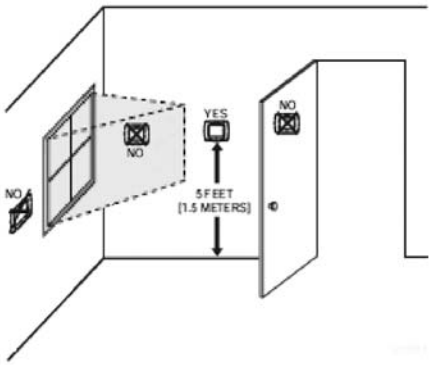
Humidity – Moisture in the air.

Programmable thermostat – A thermostat with the capability of automatically adjusting temperature set point to pre-selected settings at pre-selected times.

Setback – The automatic alteration of the thermostat control point(s) by means other than manually changing the temperature set point.

Set point – The desired temperature setting on an electromechanical or electronic thermostat.

Install your TotalTouch™ thermostat approximately 5 feet (1.5 meters) above the floor in an area with good air circulation.



Avoid the following locations:

- Hot or cold air from ducts
- Radiant heat for appliances or sun such as a skylight
- Unheated areas or uncooled areas:
  for example an outside wall behind the thermostat.

MOUNTING TOTALTOUCH™ TO THE WALL

1. Make sure to turn off the power supply located at the electrical service panel. All heating and cooling units should be OFF.

2. Remove the cover plate by pulling up the cover from the left or right side only.

3. Align the thermostat unit to the wall.

4. Mark the two locations for drilling the 3/16" holes required for the plastic screw anchors.

5. Remove the thermostat and drill the two 3/16" holes in these locations.

6. Insert the plastic gyproc screw anchors and tighten them securely.

7. Make the appropriate wire connections based on the specifications of the household HVAC unit(s). Please refer to Wiring Table to determine the appropriate wire connections.

8. Securely mount the thermostat unit to the wall with the two supplied screws.

9. Fit the cover plate back by clipping one side first (left or right) and than push down on the opposite side.

10. Turn on the electricity at the electrical service panel.

WIRING LEGEND

TERMINAL	EQUIPMENT	STANDARD COLOR
Y1	First Heat Pump & AC	Yellow
G	Fan	Green
W2	First Stage Furnace	White
OBW	Reverse Valve - Second Stage Furnace	Orange
RH	24v	Red
Y2	Second Heat Pump & AC	Unknown
C	Common	Blue
H	Humidity Control	Unknown
DH	Dehumidity Control, Variable Fan Control	Unknown
RC	24v	Unknown
11 & 12	Not Used	

NOTE: The above colors are standard in HVAC industry. The wiring should be confirmed before installation

Cooling Only — Air Conditioner / Furnace Off

Y1	Y2	W2	OB/W	R/C	R/H	G
AC				x	x	x

2 Air Conditioner / Furnace Off

Y1	Y2	W2	OB/W	R/C	R/H	G
AC1	AC2			x	x	x

Heating Only — No Compressor / El. Furnace

Y1	Y2	W2	OB/W	R/C	R/H	G
		El. Furn	El. Furn 2*	x	x	x

No Compressor / Emergency El. Furnace

Y1	Y2	W2	OB/W	R/C	R/H	G
	Emg. El. Furn	El. Furn	El. Furn 2*	x	x	x

No Compressor / Gas

Y1	Y2	W2	OB/W	R/C	R/H	G
		Gas	Gas 2*	x	x	x

No Compressor / Oil

Y1	Y2	W2	OB/W	R/C	R/H	G
		Oil	Oil 2*	x	x	x

Heating Only — No Compressor / 2 Stage Gas

Y1	Y2	W2	OB/W	R/C	R/H	G
		Gas 1	Gas 2	x	x	x

* if there is another furnace, then connect it to OB/W relay.

1 Stage Cooling, 1 Stage Heating — Heat Pump / Furnace Off

Y1	Y2	W2	OB/W	R/C	R/H	G
HP			OB	x	x	x

Air Conditioner / El. Furnace

Y1	Y2	W2	OB/W	R/C	R/H	G
AC		El. Furn		x	x	x

Air Conditioner / Emergency El. Furnace

Y1	Y2	W2	OB/W	R/C	R/H	G
AC	Emg. El. Furn	El. Furn		x	x	x

Air Conditioner / Gas

Y1	Y2	W2	OB/W	R/C	R/H	G
AC		Gas		x	x	x

Air Conditioner / Oil

Y1	Y2	W2	OB/W	R/C	R/H	G
AC		Oil		x	x	x

1 Stage Cooling, 2 Stage Heating — Air Conditioner / 2 Stage Heating

Y1	Y2	W2	OB/W	R/C	R/H	G
AC		Gas 1	Gas 2	x	x	x

Air Conditioner / El. Furnace

Y1	Y2	W2	OB/W	R/C	R/H	G
AC		El. Furn 1	El. Furn 2	x	x	x

Air Conditioner / Emergency El. Furnace

Y1	Y2	W2	OB/W	R/C	R/H	G
AC	Emg. El. Furn	El. Furn 1	El. Furn 2	x	x	x

Air Conditioner / Gas

Y1	Y2	W2	OB/W	R/C	R/H	G
AC		Gas 1	Gas 2	x	x	x

Air Conditioner / Oil

Y1	Y2	W2	OB/W	R/C	R/H	G
AC		Oil 1	Oil 2	x	x	x

Heat Pump / El. Furnace

Y1	Y2	W2	OB/W	R/C	R/H	G
HP		El. Furn	OB	x	x	x

1 Stage Cooling, 2 Stage Heating — Heat Pump / Gas

Y1	Y2	W2	OB/W	R/C	R/H	G
HP		Gas	OB	x	x	x

Heat Pump / Oil

Y1	Y2	W2	OB/W	R/C	R/H	G
HP		Oil	OB	x	x	x

1 Stage Cooling, 3 Stage Heating — Heat Pump / 2 Stage Gas

Y1	Y2	W2	OB/W	R/C	R/H	G
HP	Gas 2	Gas 1	OB	x	x	x

2 Stage Cooling, 1 Stage Heating — HP/AC / Furnace Off

Y1	Y2	W2	OB/W	R/C	R/H	G
HP	AC		OB	x	x	x

2 Air Conditioner / El. Furnace

Y1	Y2	W2	OB/W	R/C	R/H	G
AC 1	AC 2	El. Furn		x	x	x

2 Air Conditioner / Gas

Y1	Y2	W2	OB/W	R/C	R/H	G
AC 1	AC 2	Gas		x	x	x

2 Stage Cooling, 1 Stage Heating — 2 Air Conditioner / Oil

Y1	Y2	W2	OB/W	R/C	R/H	G
AC 1	AC 2	Oil		x	x	x

2 Stage Cooling, 2 Stage Heating — HP/AC / El. Furnace

Y1	Y2	W2	OB/W	R/C	R/H	G
HP	AC	El. Furn	OB	x	x	x

HP/AC / Gas

Y1	Y2	W2	OB/W	R/C	R/H	G
HP	AC	Gas	OB	x	x	x

HP/AC / Oil

Y1	Y2	W2	OB/W	R/C	R/H	G
HP	AC	Oil	OB	x	x	x

2 Heat Pump / Furnace Off

Y1	Y2	W2	OB/W	R/C	R/H	G
HP 1	HP 2		OB	x	x	x

2 Air Conditioner / El. Furnace

Y1	Y2	W2	OB/W	R/C	R/H	G
AC 1	AC 2	El. Furn 1	El. Furn 2	x	x	x

2 Stage Cooling, 2 Stage Heating — 2 Air Conditioner / Gas

Y1	Y2	W2	OB/W	R/C	R/H	G
AC 1	AC 2	Gas 1	Gas 2	x	x	x

2 Air Conditioner / Oil

Y1	Y2	W2	OB/W	R/C	R/H	G
AC 1	AC 2	Oil 1	Oil 2	x	x	x

2 Air Conditioner / 2 Stage Gas

Y1	Y2	W2	OB/W	R/C	R/H	G
AC 1	AC 2	Gas 1	Gas 2	x	x	x

2 Stage Cooling, 3 Stage Heating — 2 Heat Pump / Gas

Y1	Y2	W2	OB/W	R/C	R/H	G
HP 1	HP 2	Gas	OB	x	x	x

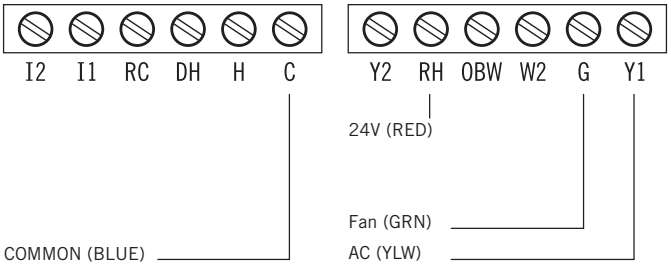
2 Heat Pump / Oil

Y1	Y2	W2	OB/W	R/C	R/H	G
HP 1	HP 2	Oil	OB	x	x	x

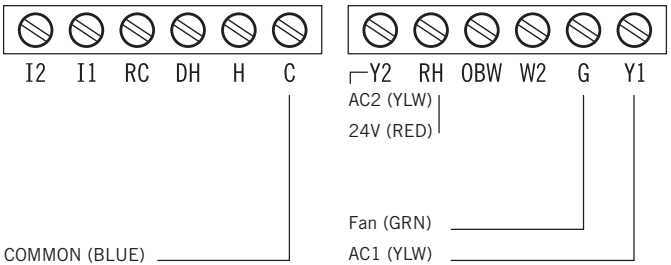
2 Heat Pump / El. Furnace

Y1	Y2	W2	OB/W	R/C	R/H	G
HP 1	HP 2	El. Furn	OB	x	x	x

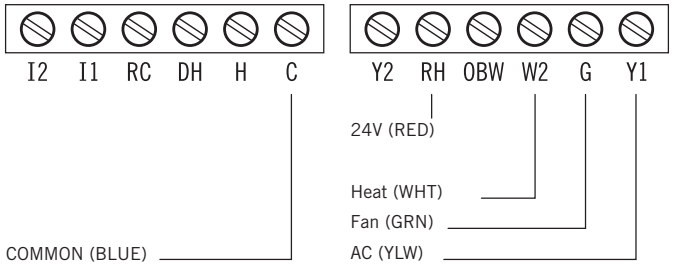
ONE AC



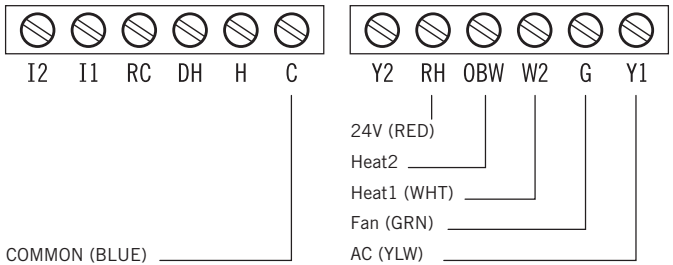
TWO AC



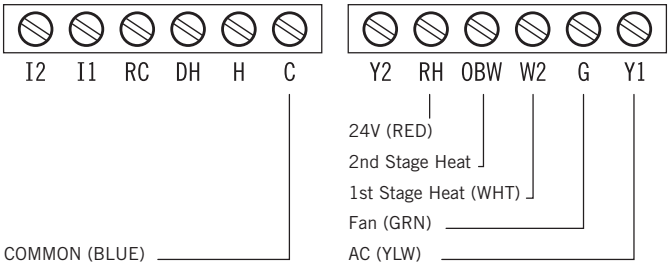
AC & ONE HEAT



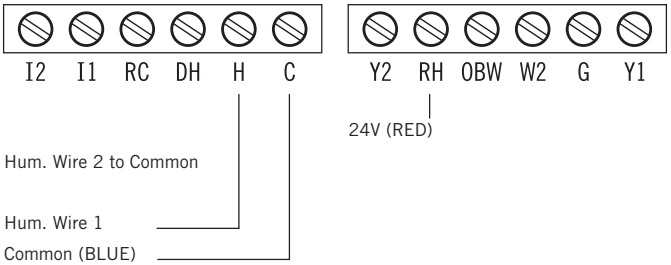
AC & TWO HEAT



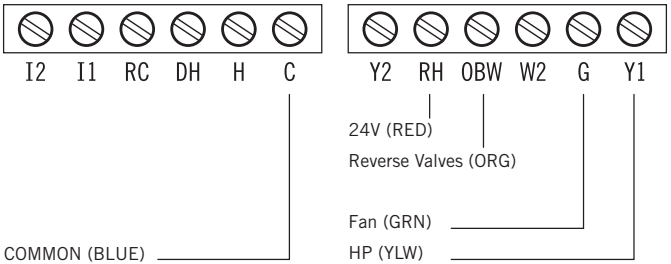
AC & TWO STAGE FURNACE



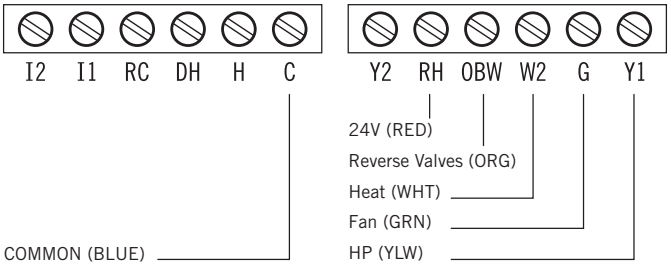
HUMIDITY CONTROL



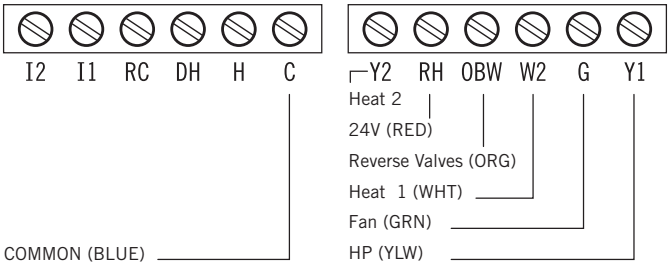
ONE HEAT PUMP



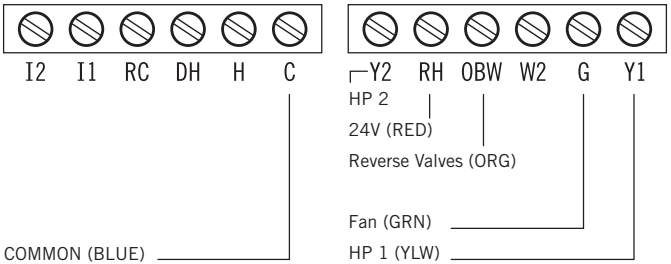
ONE HEAT PUMP & ONE HEAT



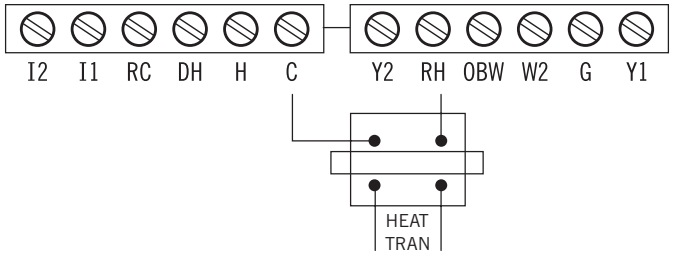
ONE HEAT PUMP & TWO HEAT



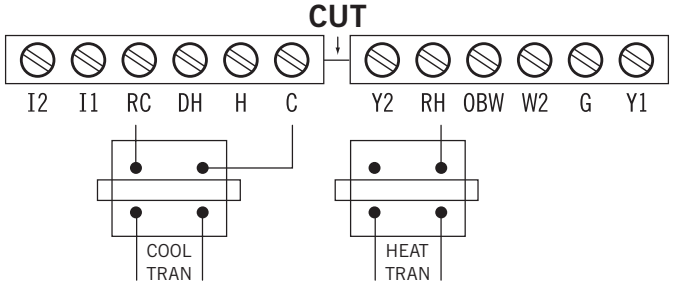
TWO HEAT PUMP



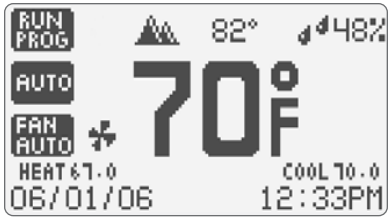
ONE TRANSFORMER



TWO TRANSFORMER



HOME PAGE

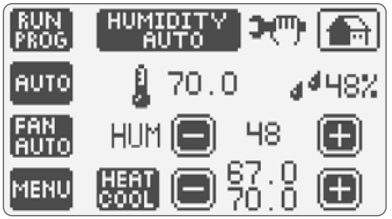


To return to the Home Page, simply touch  *icon at any time!*

1. Current Room Temperature
2. ºF/ºC Indicator
3. Relative Room Humidity (%)
4. Thermostat Control Mode: Run Program or Hold Temperature
5. Temperature Control Mode: Auto, Heat and Cool
6. Fan Operation Mode: Fan Automatic, Fan Intermittent, Fan Off
7. Fan Operation Indicator
8. Heat Setpoint and Cool Setpoint
9. Date Stamp (Month/Day/Year)
10. Time: Choose between 12 hour or 24 hour clock
11. Outdoor Temperature

Now that you know the basics let's review the Control Page - and begin to learn about all the unique features!

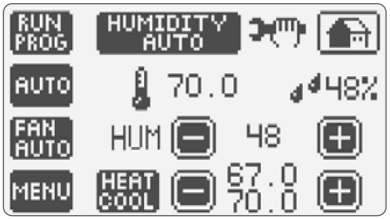
CONTROL PAGE



The TotalTouch™ Control Page provides you with an easy and intuitive screen to set your thermostat- all functions are available at the touch of a finger! To access the Control Page, simply touch the Home Page Screen… anywhere!

1. Current Room Temperature
2. Relative Room Humidity (%)
3. Thermostat Control Mode: Run Program or Hold Temperature
4. Temperature Control Mode: Auto, Heat, Cool and Off
5. Fan Operation Mode; Fan Automatic, Fan Intermittent, Fan Off
6. Menu Page – Access all program features with this button
7. Humidity and Dehumidity Setpoint: to lower or raise as desired
8. Temperature Control Mode: Heat and Cool temperature set points allows you to change, raise or lower set point as desired. In "Auto" mode touch the Heat/Cool button (Heat or Cool will flash once selected), then raise or lower set points as desired.
9. Humidity Auto
10. Displays Installer Message: review important information
11. Returns to the Home Page

THERMOSTAT OPERATION MODE

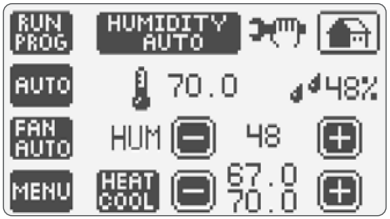


- Your TotalTouch™ thermostat can run in Program Mode or can hold a fixed temperature.

- **RUN PROGRAM:** Your custom program settings will be initiated - 4 events per day including the fan mode

- **HOLD TEMPERATURE:** Allows you to raise or lower the temperature setpoint by touching the heat/cool - to lower + to raise

CONTROL PAGE – TEMPERATURE SETPOINTS

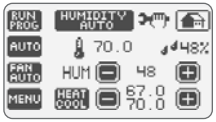


- **AUTO, HEAT, COOL AND OFF**
  Based on your HVAC equipment you can quickly and easily select the mode of operation - Automatic • Heat • Cool • Off
  - Auto – choose your heat and cool temperature setpoints – the temperature will automatically adjust according to the requirement
  - Heat – choose your Heat setpoint
  - Cool – choose your Cool setpoint
  - OFF - no heating or cooling

- **PROGRAM TEMPERATURE SETPOINTS:**
  - Choose Heat: Heat will appear with a temperature range, select your temperature
  - Choose Cool: Cool will appear with a temperature range, select your temperature
  - Choose AUTO: A combined heat/cool button will appear – when heat flashes – choose your temperature setpoint, touch the button to toggle to cool, then set your temperature setpoint.

In order to reduce condensation, humidity must be controlled and air movement must be generated. As the exterior temperature drops, the humidity level needs to decrease if condensation is to be controlled.

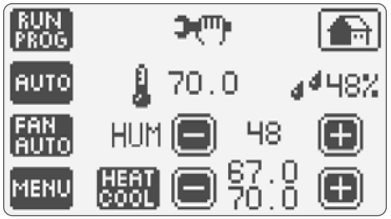
- **HUMIDITY AUTO**: Adjusts the humidity set point based on the wireless outdoor temperature sensor according to the following standard humidity table. This eliminates destructive condensation problems and maintains a higher level of home comfort.



  - Outdoor temperature is measured and transmitted to the thermostat with the Outdoor Wireless Transmitter and Receiver Kit (P286-0001).
  - Indoor humidity and temperature information is measured utilizing state of the art humidity and temperature sensors located within the P286-1500.

Setpoint	Outdoor Temp in C	Outdoor Temp in F
15%	-29	-20
20%	-24	-10
25%	-18	0
30%	-12	10
35%	-7	20
40%	>-7	>-20

- **HUMIDITY MANUAL:** You will control the setpoint as per your comfort level

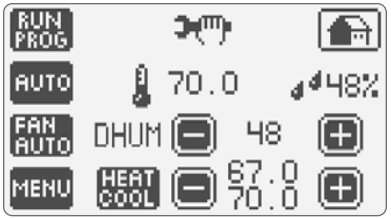


- **HUMIDIFY:** Allows you to raise and maintain the relative humidity to a specific set-point. Once you choose Humidify follow these easy steps:

- The HUM setpoint with – and + icons allow you to lower and raise your setpoint.

- Example of the typical use of the Humidify Function: If the current humidity is 30% your TotalTouch™ thermostat will initiate the humidifier to function until Setpoint 50% is reached. In order to humidify you must set the humidity setpoint above the current humidity.

HUMIDIFICATION AND DE-HUMIDIFICATION SETPOINTS



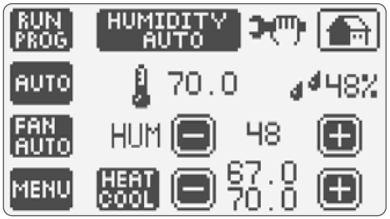
- **DE-HUMIDIFY:** Allows you to reduce and maintain the relative humidity to a specific setpoint. **Please note that this feature functions in the Cool Mode only. Your TotalTouch™ Thermostat must be configured to control a cooling unit such as an air conditioner of heat pump.** Once you choose De-Humidify follow these easy steps:

- The DH setpoint with – and + icons allow you to lower and raise your setpoint

- Example of typical use of the De-Humidify function: If the current humidity is 70% your TotalTouch™ will initiate the humidifier to function until Setpoint 50% in this reached. In order to de-humidify you must set the de-humidify setpoint below the current relative humidity. Your TotalTouch™ will both lower and regulate temperature to the cooling setpoint while monitoring and lowering the room humidity.

- Since the De-Humidify feature uses the Cool Function of your Air Conditioner or Heat Pump, your TotalTouch™ thermostat will turn off the air conditioning if either the dehumidifier setpoint or temperature setpoint is reached – which ever comes first.

FAN OPERATION MODE



- There are three modes of fan operation: Fan Auto, Fan On, Fan Off. When the fan is running, the animated fan icon will appear on the Home Page.

- **FAN AUTO:** The fan will run on only when there is a demand for heating or cooling.

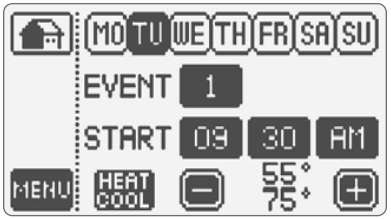
- **FAN ON:** The fan runs continuously

- **FAN INTERMITTENT:** The fan will run 10 minutes per 1/2 hour providing a convinient way to improve air quality and save energy.

To access the Menu Page, simply touch Menu from the Control Page. Remember it is as easy as a touch of the button.

- Set-up of your TotalTouch™ Thermostat is effortless with intutive menu driven programming - on our patented touchscreen.
- Enter **Date and Time Settings**: Program 7 days with 4 events per day to improve efficiency and reduce energy costs
- **Energy Watch**: display kWh consumption as well as the dollar cost of the HVAC System - configure this feature in Advanced Settings
- **Clean the Screen** without worry
- Access the **Set Screen** menu
- **Advanced Settings** for configuration of equipment
- **Vacation Mode**
- View **Filter Monitor**
- Activate the **Humidify/De-humidfy** Function

- Select the 12 or 24 hour clock display.
- Set the time of day by choosing hour and minute buttons.
- Set the Month, Day and Year by choosing the buttons.



- **PROGRAM SETTINGS:** This feature easily and quickly programs your thermostat to fit your needs and lifestyle. Remember by programming the thermostat you can increase energy efficiency and reduce energy.
  - 7 Day Programmable with 4 events per day including Fan Mode
  - Select the Day of the Week
  - Select the Event number: for example 1
  - Select the Start Time: for example 7:00 AM
  - Choose desired temperature setpoint – by raising or lowering the heat/cool button
  - Choose the next event: for example 2 and repeat the steps

Once you have set all the events for one day you may copy the same settings to other days of the week. First ensure that your program settings are correct. Then select the next day of the week that you would like to have the same program setting. TotalTouch™ will then prompt you to copy the settings. Remember that you must choose RUN Program from the control page to activate this feature.

- **ENERGY WATCH:** This unique and patented feature provides a display of system energy consumption and the cost of running your HVAC system. This feature must be activated in the ADVANCED SETTINGS of the Thermostat - page 38.

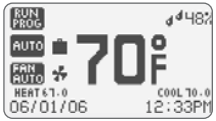
SCREEN OPTIONS

- **CLEAN SCREEN:** This function allows you to safely wipe and clean the screen with a dampened cloth with out accidentally changing any of the settings; it places the TotalTouch™ screen in a sleep mode for 15 seconds.

- **SET SCREEN:** Your TotalTouch™ thermostat has a number of options to ensure clear viewing throughout the day and night, firstly;
  - Backlight: choose between Auto or ON
  - Reverse: Choose between a dark background (ON) or light background (OFF)
  - Night Reverse: Another patented feature – ON: at 9PM the screen automatically reverses the background for comfortable viewing at night – at 6:00AM it returns to the Normal Mode for clear daytime viewing. OFF: screen background determined by “Reverse” function setting.
  - Contrast: Provides a range from 1 – 10 to lighten or darken the screen best suit your surroundings – we advise the setting of 7.

VACATION MODE

- **VACATION SETTINGS:** Allows you to set the temperature to a fixed setpoint during the time you are on vacation, providing energy savings and comfort for your return home. IMPORTANT: Heat or Cool must be selected from the Control Page before entering the Vacation Settings page. To begin select Vacation Mode ON:
  - Select the Start Date
  - Select the End Date
  - Adjust the Heat or Cool temperature setpoint: the Vacation mode begins at 10 PM on the day of your departure and ends at Midnight on the day of your arrival.
  - When the Vacation mode is active the suitcase icon will appear on the HOME PAGE. Upon your return from vacation, a message *Vacation Mode Ended* will be displayed on the screen. Simply touch the screen to acknowledge the message, and your TotalTouch™ thermostat will automatically revert to the Program Settings if you are in Run Program Mode or your can choose to Hold Temperature to raise or lower the setpoint.



- **FILTER MONITOR:** Displays filter usage in days and resets filter timer – when activated the FILTER MONITOR icon will appear on your HOME PAGE – this feature must be activated in ADVANCED SETTINGS.

- **HUMIDIFY or DEHUMIDIFY:** Choose this feature on the P286-1500 – Humidify – remember your setpoint is on the CONTROL PAGE.

IMPORTANT INSTALLER SET-UP

This TotalTouch™ thermostat works with many different HVAC systems – Gas, Oil, Electric Heat Pump, 2 Stage Heat Pump, 2 Stage Furnace and Compressors. You must enter this menu to configure the thermostat with HVAC operating equipment, and to fully customize the thermostat.

ADVANCED SETTINGS: To begin, hold your finger for 5 seconds on the Advanced Settings Button – you will hear a beep telling you that you are in the process of entering this feature.

A warning message will appear:

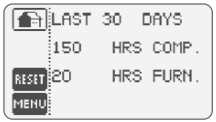
CAUTION: INCORRECT CONFIGURATION
CAN DAMAGE YOUR SYSTEM, CONTINUE?
YES NO
ACCEPT – YES

1 **HOME BUTTON:** Returns you to the Home Page at anytime- remember you will have to re-enter through the ADVANCED SETTINGS button.

2 **DAYLIGHT TIME :** Choose Daylight Time On or Off dependant on your Time Zone.

2 **FILTER:** A Helpful reminder to change or clean your air filter. The Filter Monitor function indicates how many days of "fan run time" the air filter has been used. Reset it each time after changing your air filter.

3 **ENERGY WATCH:** By entering the HVAC system consumption parameters rounded off to kW, you will have a real time total of kilowatts and cost of consumption. To review touch the Energy Watch button on the Menu Page. EXAMPLE: Fan 1kW, Heat Pump 1kW/ton, Furnace 5-30 kW, 7-9¢/kW



• This feature will run consecutively for 255 days. If you do not enter your information what will appear on the display is the total time the Compressor and the Furnace have been operating.

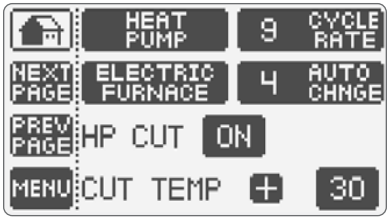
ADVANCED SETTINGS – WELCOME

4 **° F:** Choose between display units of Fahrenheit or Celsius for thermostat temperature

5 **SECURITY:** The security settings allow you to protect your TotalTouch™ thermostat from unauthorized use, and provides 2 levels of security. On your HOME PAGE once this feature is activated you will see a small lock icon.

- Turn Security On or Off – the Factory Setting PIN is 1111
- As a first time user you will be prompted to enter the Factory Setting PIN 1111
- Enter your new PIN and then Re-enter your new PIN once more.
- There are two modes of password protection: Full Lock Function does not allow any changes unless the user enters the PIN. Partial Lock Function allows you to change only the temperature setpoint without entering a PIN.

6 **INSTALLER MESSAGE:** (up to 42 characters) to appear at programmable intervals . Enter your message on the screen using the keyboard – for example service reminders or emergency contact information. Type your message in using the keyboard, upon completion choose OK. Set the number of months after which you with the message to appear. Touch the home or menu icon to exit.



IMPORTANT: BY INADVERTENTLY MODIFYING COMPRESSOR AND FURNACE SETTINGS, YOU MAY SERIOUSLY DEGRADE SYSTEM PERFORMANCE.

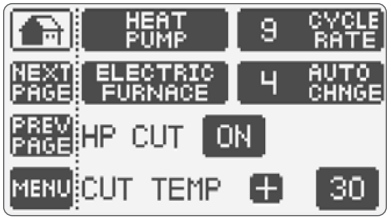
CHOOSE SYSTEM HEATING AND/OR COOLING EQUIPMENT – REMEMBER ALL YOU NEED TO DO IS TOUCH THE BUTTON WITH YOUR FINGER.

1 Choose Heat Pump, 2 Stage Heat Pump, Air Conditioning, No Compressor – please review the wiring table and diagram for wiring instructions.

2 Choose Furnace Off (No Furnace), Electric Furnace, Emergency Electrical Furnace (additional electric furnace which will come on in emergency mode in conjunction with electric furnace), Gas Furnace, Oil Furnace, and 2 Stage Gas Furnace; please review the wiring table and diagram for wiring instructions.

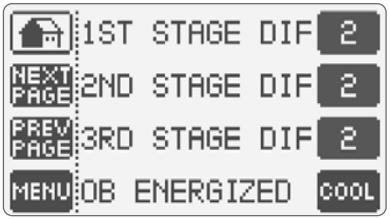
3 **CYCLE RATE:** Set the minimum difference between Auto Mode, Heat and Cool temperature set points.

4 **AUTO CHANGE:** Set Maximum compressor cycles per hour.



IMPORTANT: THIS FEATURE CAN ONLY BE ACTIVATED WHEN USED WITH THE P286-001, THE TOTALTOUCH™ OUTDOOR WIRELESS TEMPERATURE TRANSMITTER AND RECEIVER. PLEASE INSTALL THE P286-001 BEFORE ACTIVATING THIS FEATURE.

- Increasing energy efficiency and reducing costs can be achieved by using the dual fuel switch. Your heat pump can generally provide heat and comfort without assistance to an outside temperature of just a few degrees below freezing. This temperature is called the heat pumps balance point. When the outside temperature is above the balance point, the heat pump alone is sufficient for heating.
- Once the outdoor temperature drops to the balance point the heat pump must be assisted by your alternate energy source. When the outdoor temperature drops below the systems normal crossover temperature (-12 C or -15C), your heat pump will stop operating and the alternate energy source will take over.
- HP Cut On or Off
- Cut Temperature: +/- Temperature in Celsius (-5c to 25c)
  +/- Temperature in Fahrenheit (13F to 41 F)



THE P286-1500 ALLOWS YOU TO CONTROL UP TO 3 STAGES OF HEATING AND 2 STAGES OF COOLING, DEPENDENT ON THE TYPE OF SYSTEM YOU HAVE CONFIGURED.

1 **1ST STAGE DIFFERENTIAL:** Set temperature difference between temperature set point and actual temperature reading before 1st stage heating or cooling is initiated.

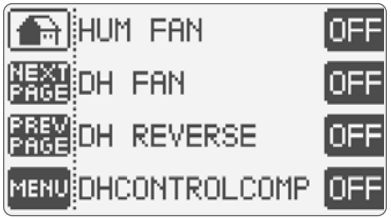
2 **2ND STAGE DIFFERENTIAL:** Set temperature difference between 1st stage initiation and 2nd stage heating or cooling initiation.

3 **3RD STAGE DIFFERENTIAL:** Set temperature difference between 2nd stage initiation and 3rd stage heating or cooling initiation.

4 **OB ENERGIZED:** Reverses the Heat Pump OB Valve contact to HEAT or COOL (manufacturer dependent).

- Specify the number of minutes for which Stage 1 will function until Stage 2 is activated to help raise (or cool) temperature (if the temperature set point is not reached). This unique function avoids excess compressor wear in the case where the necessary temperature set point is not met through setting of the Staging Differentials. Set to “00” to disable.

- HP “ON” when Furnace On: Heat Pump and Furnace can operate together when 2nd stage furnace is required. HP “OFF” when Furnace On: turns off the Heat Pump when the furnace is On (required on some gas or oil furnaces).



IMPORTANT: THIS FEATURE CAN ONLY BE ACTIVATED WHEN USED WITH THE P286-001, THE TOTALTOUCH™ OUTDOOR WIRELESS TEMPERATURE TRANSMITTER AND RECEIVER. PLEASE INSTALL THE P286-001 BEFORE ACTIVATING THIS FEATURE.

- **AUTOMATIC HUMIDITY CONTROL:** Automatic humidity control is an option that lets your system automatically adjust indoor humidity based on current outdoor conditions. This function minimizes destructive condensation build-up on your windows.

1. **HUM FAN:** ON: fan runs when there is an independent demand to humidify. OFF: fan only runs when there is a demand to humidify while heating or cooling.
2. **DH FAN:** ON: fan runs when there is an independent demand to dehumidify. OFF: fan only runs when there is a demand to dehumidify while cooling.
3. **DH REVERSE:** ON: DH relay is normally closed when relative humidity is above DH set point. OFF: DH relay is normally open when relative humidity is above DH set point.
4. **DH CONTROL COMPRESSOR:** ON: Thermostat will turn off the air conditioning if either the dehumidify set point or the temperature set point is reached, whichever comes first, both DH relay and compressor will turn off. OFF: DH relay is independent of compressor activity (DH becomes a spare relay and can be used for a variable speed fan or separate dehumidifier or air exchanger)

OPERATING TIPS

- Humidification Fan should be set to on when running steam or mist humidifiers.
- Humidification Fan should be set to off when running drum humidifiers or any other humidifier that requires the furnace to run in order to make humidity.
- De-Humidification Fan (DH) should be set to on when running separate de-humidification equipment.
- De-Humidification Fan (DH) may be set to off when using the air conditioning as a means of de-humidification. It may advantageous in some environments to turn the fan on independently when there is a call for DH in order to distribute the humidity level more evenly.
- The P286-1500 DH REVERSE function can be configured to meet the requirements of many variable speed fans, consult the manual of your variable speed fan and determine if an “open” or “closed” contact results in slowing fan operation.

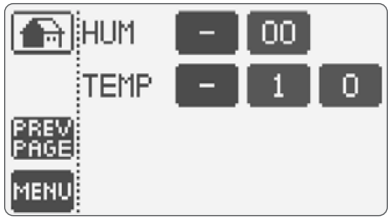
DE-HUMIDIFICATION OPTIONS FOR INCREASING COMFORT AND EFFICIENCY

- HRV/ERV units can be controlled by simply connecting the DH terminal on the thermostat to the terminal DH of the HRV/ERV. Most HRV/ERV units will control properly with the DH REVERSE feature turned off (contact normally open).

- **OPTION 1:** In Advanced Settings choose DHControlComp, set to ON then lower the temperature to a minimum safe set point, finally set the desired de-humidity level, de- humidify will control the compressor (unless minimum temperature set point is reached) whichever comes first.

- **OPTION 2:** Connect terminal DH to Y1 and set thermostat to de-humidify mode then regardless of temperature the de-humidification setting will have priority. CAUTION: This method will run the compressor until the de-humidification level is reached and may cause overcooling.

- **OPTION 3:** Connect the DH terminal to a variable speed fan control, (set DH REVERSE to control the fan so that low speed is activated to de-humidify). This method provides maximum comfort while maintaining the temperature in cooling mode.



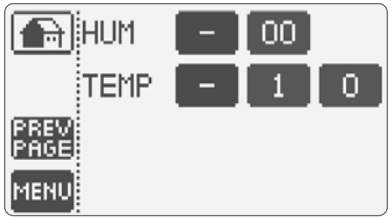
CALIBRATION OF TEMPERATURE OR RELATIVE HUMIDITY

Your TotalTouch™ Thermostat is rated for an accuracy of +/-1 degree with temperature and +/- 4% for Relative Humidity

- If you have determined due to drafts, sunlight or other environmental factors that your thermostat needs calibration, follow this easy guide. Common causes of offset are lack of air circulation in the vicinity of your TotalTouch™ unit or skylights.

- Measure humidity with a conventional hygrometer or any other device that provides a accurate reading. Then compare to the reading on your TotalTouch™ and calibrate by up to +/- 15 degrees.

ADVANCED SETTINGS – CALIBRATION



TEMPERATURE CALIBRATION TABLE

- Firstly, determine with a calibrated thermometer the temperature difference – then use the following table to adjust your thermostat.

Thermostat Calibration Number	Farenheit Change	Celsius Change
+3.0	+6F	+3.0C
+2.5	+5F	+2.5C
+2.0	+4F	+2.0C
+1.5	+3F	+1.5C
+1.0	+2F	+1.0C
+0.5	+1F	+ .5C
Factory Setting	**00**	**No Correction Required**
-0.5	-1F	-.5C
-1.0	-2F	-1C
-1.5	-3F	-1.5C
-2.0	-4 F	-2.0C
-2.5	-5F	-2.5C
-3.0	-6F	-3.0C

SIMPLE THERMOSTAT MODE

Simple Mode has the following basic features:

Temperature Control Modes:

Fan Operation Modes:

TOTALTOUCH™ CAN ALSO FUNCTION AS A NON-PROGRAMMABLE THERMOSTAT AFTER IT HAS BEEN CONFIGURED.

- To enable “Simple Mode”, press the reset button (take off the thermostat faceplate and press the reset button located in the bottom right-hand corner). The message “Touch for simple thermostat” will appear. Touch the screen, and TotalTouch™ becomes a simplified non-programmable thermostat.

- Please note that when changing to Simple Mode, you will not lose any of the settings you have previously entered in the “Programmable Mode”.

- To revert back to the Programmable TotalTouch™ Thermostat, simply press the reset button and touch the screen when the message “Touch for Programmable Thermostat” appears.

TROUBLESHOOTING

- **Touch screen buttons do not function properly.** Remove cover, press the reset button located in the bottom left corner then accurately touch 3 target centers on the screen when prompted.

- **Air Conditioning does not turn on even when room temperature is higher then the temperature set point set point (Humidity models only).** DHCONTROLCOMP is turned ON and dehumidify set point has been reached. This will cause air conditioning to turn off. Lower Setpoint – Page 26, Dh CONTROLCOMP – Page 45.

- **Air conditioning turns on in HEAT mode and heating turns on in COOL mode.** Reverse the OB valve (see “Advanced Settings” Page 42).

- **PARTIAL LOCK and FULL LOCK do not function.** You must not touch the screen for 1 minute for TotalTouch™ to automatically lock.

- **Thermostat appears normal until the screen becomes blank when the compressor or heating system turns on.** You need to connect the “C” wire. 4 wire system will not function unless the heat and compressor contactors can supply enough current to power the thermostat with only 4 wires, if you cannot hook up the “C” wire another possible solution is to connect one 250 ohm 10 watt resistor in the HVAC room, for cooling problems between C and W or in the case of heating problem between C and Y1.

- **I forgot my PIN and cannot unlock the thermostat.** Remove the cover plate, press the reset button located in the bottom right corner, as soon as the message “touch to reset password” appears touch the screen, your PIN will be erased and the thermostat will unlock.

WHEN USING THIS THERMOSTAT WITH A GAS FURNACE A COMMON WIRE (C) MUST BE CONNECTED.

- When working without a common wire:
  A confirm in heat mode the cooling does not switch on or B confirm in cooling mode the hear does not switch on.

- If test A or B fail or the thermostat shuts down in either heat or cool mode then it is necessary to connect a common wire, (C), alternatively it may be possible to solve this issue by simply connecting the 250 ohm 10 watt resistor between C and W (in the case of a cooling problem – see B) or between C and Y1 (in the case of a heating problem - see A) at the HVAC equipment.

- When working without a common wire, A confirm that when there is a call for heat, cooling does not also activate, and when there is a call for cool, heating does not also activate.

- If using the configuration of Heat Pump and Furnace with no Common Wire confirm that when Heat Pump and Furnace are working together (both stages are operating at the same time) that the display does not go blank, if so you must use a Common Wire.

- This thermostat is equipped to run with two separated power transformers if required RC and RH. Terminals RC and RH are internally connected together however you should wish to use two transformers simply cut with a blade the copper trace on the printed circuit board located between the C and Y2 screw terminals.

WE RECOMMEND USING THE TOTALINE HUMIDIFIER
Humidifiers Model LFB, LBP, & SBP

- Easy access for cleaning and maintenance
- Smooth, low noise operation
- Long lasting attractive cover
- Optimal distribution of moisture
- As, dry air passes through the humidifier pad, moisture is absorbed into the air and distributed throughout your home for a more comfortable environment

- **WARRANTY:** Totaline offers one of the best humidifier warranties in the industry. Electrical components are covered by a five-year warranty and the entire unit is backed by a one-year warranty.

Hardware
Replacement Components Division© Carrier Corporation warrants the original end user ("Customer") that new TotalTouch™ branded products will be free from defects in workmanship and materials, under normal use, for two (2) years from the original purchase date.

Software
Replacement Components Division© Carrier Corporation warrants to Customer that the TotalTouch™ thermostat software will perform in substantial conformance to its program specifications for a period of two (2) years from the date of the original purchase.

Exclusions
This warranty excludes (1) physical damage to the surface of the product, including cracks or scratches on the touch-screen or outside casing; (2) damage caused by misuse, neglect, improper installation, unauthorized attempts to open, repair, or modify the product, or any other cause beyond the range of intended use; (3) damage caused by accident, fire, power changes, other hazard, or Acts of God; or (4) use of the product with any device if such device causes the problem.

Exclusive Remedies
Should a covered defect occur during the warranty period and Customer notifies Replacement Components Division© Carrier Corporation, Customer's sole and exclusive remedy will be, at Replacement Components Division© Carrier Corporation's sole option and expense, to repair or replace the product. Replacement products or parts may be new or reconditioned or a comparable version of the defective item. Replacement Components Division© Carrier Corporation warrants any replaced product or part for a period of ninety (90) days from shipment, or through the end of the original warranty, whichever is longer.

Obtaining Warranty Service
Customer must contact and return product to a local Replacement Components Division© Carrier Corporation product dealer or installer within the applicable warranty period to obtain warranty service. Dated proof of original purchase will be required. Replacement Components Division© Carrier Corporation will not be responsible for Customer's memory data contained in, stored on, or integrated with any products returned to Replacement Components Division© Carrier Corporation for repair, whether under warranty or not.

LIMITED WARRANTY

Warranty Exclusive
THE FORGOING WARRANTIES AND REMEDIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, CORRESPONDENCE WITH DESCRIPTION, AND NON-INFRINGEMENT, ALL OF WHICH ARE EXPRESSLY DISCLAIMED BY REPLACEMENT COMPONENTS DIVISION© CARRIER CORPORATION AND ITS SUPPLIERS.

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TOTALINE©

REPLACEMENT COMPONENTS DIVISION® CARRIER CORPORATION

www.totaltouch.info

Technical Support: 1-866-90TOUCH (1-866-908-6824)

Physical Dimensions

Case: 5.75” x 4.75” x 1.25” (145mm x 120mm x 30mm)
Display: 3.625” x 2.125” (95mm x 55mm)

Electrical Rating

24 volt AC/DC
Class 2 maximum 4 amps
Temperature Accuracy +/-1°F degree
Power failure protection safeguards clock and memory.

FCC Statement THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS: (1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE, AND (2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED, INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRED OPERATION.

ENERGY STAR

c UL us LISTED

US PatentS 7,050,026 | 7,028,912 | 6,902,117 | 6,786,421 Other Patents Pending

TOTALINE®

Made in China / Printed in China