
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 UNDESIRE OPERATION.

Made in Canada / Printed in Canada



INSTRUCTION MANUAL

P286-1400 3 Heating and 2 Cooling with Humidification and De-humidification



TotalTouch[™]

www.totaltouch.info

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WELCOME TO
TotalTouch™
Complete Comfort



P286-1300 3 Heating and 2 Cooling
with Humidification and De-humidification

Loaded with features, your TotalTouch™ thermostat provides comfort, ease of use in a package that works for you.

Humidity sensor and controller, 2 separate configurable relays in one synchronized thermostat offering maximum control. Controls steam or drum type humidifiers, supports variable fan speed de-humidification, separate de-humidifiers, air exchangers or HRV controls.

True touch screen technology offers responsive action, clear and easy to read LCD display that works in all lighting conditions. All with proven reliability backed by the world's largest manufacturer of air conditioning and heating equipment.

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.

Terminals

C	Power Supply Common
R/C	24 VAC Power Supply
R/H	Second 24 VAC Power Supply
H	A programmable contact to be used for example in controlling a ventilation damper to open and close at specific times. Access this function through program settings.
Y2	See Wiring Table
O/B/W	Heat or cool reverse valve - the default is energized in COOL mode. See Manufacturer's Technical Settings to reverse (if necessary) the logical orientation of contact Ob.
W2	Furnace
G	Fan
Y1	Compressor
H	Humidification Relay
DH	De-humidification Relay
24 VAC Class 2 MAX 4A	

WIRING TABLE

CONFIGURATION	Y1	Y2	W2	OB/W	R/C	R/H	G	H	DH
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Cooling Only

Air Conditioner	Furn. Off	AC			x	x	x	x	x
2 Air Conditioner	Furn. Off	AC1	AC2		x	x	x	x	x

Heating Only

No Compressor	Electrical Furn.			OB	x	x	x	x	x
No Compressor	Emg. El. Furn.	Emg.El.Furn	El.Furn		x	x	x	x	x
No Compressor	Gas		El.Furn		x	x	x	x	x
No Compressor	Oil		Gas		x	x	x	x	x
No Compressor	2 Stage Gas		Oil		x	x	x	x	x

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

1 Stage Cooling, 1 Stage Heating

Heat Pump	Furn. Off	HP		OB	x	x	x	x	x
Conditioner	Electrical Furn.	AC	El.Furn		x	x	x	x	x
Conditioner	Emg. El. Furn.	AC	Emg. El.Furn	El.Furn	x	x	x	x	x
Conditioner	Gas	AC	Gas		x	x	x	x	x
Conditioner	Oil	AC	Oil		x	x	x	x	x

WIRING TABLE

CONFIGURATION	Y1	Y2	W2	OB/W	R/C	R/H	G	H	DH
---------------	----	----	----	------	-----	-----	---	---	----

1 Stage Cooling, 2 Stage Heating

Air Conditioner	2 Stage Gas	AC		Gas1	Gas2	x	x	x	x	x
Air Conditioner	Electrical Furn.	AC		El.Furn1	El.Furn2	x	x	x	x	x
Air Conditioner	Emg. El. Furn.	AC	Emg. El.Furn	El.Furn1	El.Furn2	x	x	x	x	x
Air Conditioner	Gas	AC		Gas1	Gas2	x	x	x	x	x
Air Conditioner	Oil	AC		Oil1	Oil2	x	x	x	x	x
Heat Pump	Electrical Furn.	HP		El.Furn	OB	x	x	x	x	x
Heat Pump	Gas	HP		Gas	OB	x	x	x	x	x
Heat Pump	Oil	HP		Oil	OB	x	x	x	x	x

1 Stage Cooling, 3 Stage Heating

Heat Pump	2 Stage Gas	HP	Gas2	Gas1	OB	x	x	x	x	x
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2 Stage Cooling, 1 Stage Heating

HP /AC	Furn. Off	HP	AC		OB	x	x	x	x	x
2Air Conditioner	Electrical Furn.	AC1	AC2	El.Furn		x	x	x	x	x
2Air Conditioner	Gas	AC1	AC2	Gas		x	x	x	x	x
2Air Conditioner	Oil	AC1	AC2	Oil		x	x	x	x	x

WIRING TABLE

CONFIGURATION	Y1	Y2	W2	OB/W	R/C	R/H	G	H	DH
---------------	----	----	----	------	-----	-----	---	---	----


2 Stage Cooling, 2 Stage Heating

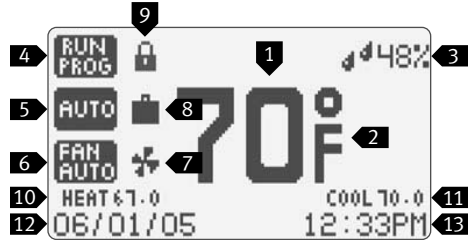
HP /AC	Electrical Furn.	HP	AC	El.Furn	OB	x	x	x	x	x
HP /AC	Gas	HP	AC	Gas	OB	x	x	x	x	x
HP /AC	Oil	HP	AC	Oil	OB	x	x	x	x	x
2Heat Pump	Furn. Off	HP1	HP2		OB	x	x	x	x	x
2Air Conditioner	Electrical Furn.	AC1	AC2	El.Furn1	El.Furn2	x	x	x	x	x
2Air Conditioner	Gas	AC1	AC2	Gas1	Gas2	x	x	x	x	x
2Air Conditioner	Oil	AC1	AC2	Oil1	Oil2	x	x	x	x	x
2Air Conditioner	2 Stage Gas	AC1	AC2	Gas1	Gas2	x	x	x	x	x

2 Stage Cooling, 3 Stage Heating

2Heat Pump	Gas	HP1	HP2	Gas	OB	x	x	x	x	x
2Heat Pump	Oil	HP1	HP2	Oil	OB	x	x	x	x	x
2Heat Pump	Electrical Furn.	HP1	HP2	El. Furn	OB	x	x	x	x	x

HOME PAGE

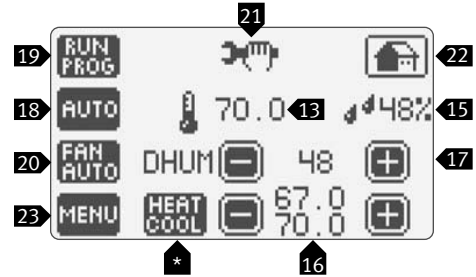
To return to the Home Page, simply touch  icon at any time!



- 1 Room Temperature.
- 2 To change °F/°C, go to 35.
- 3 Relative Room Humidity (%)¹; to change set point, go to 17.
- 4 Thermostat Control Mode; to change, go to 19.
- 5 Temperature Control Mode; to change, go to 18.
- 6 Fan Operation Mode; to change, go to 20.
- 7 Fan Operation Indicator; to change, go to 20.
- 8 Vacation Mode Indicator; to change, go to 28.
- 9 Security On Indicator; to change, go to 36.
- 10 Heating set point; to change, go to 16.
- 11 Cooling set point; to change, go to 16.
- 12 Date (Month/Day/Year); to change, go to 24.
- 13 Time; to change, go to 24.

CONTROL PAGE

To access the Control Page, simply touch the Home Page Screen... anywhere!



- 14 Current Room Temperature.
- 15 Current Room Humidity¹.
- 16 Heat and Cool temperature set points; to change, raise or lower set point as desired. In “Auto” mode touch * Heat/Cool button (Heat or Cool will flash once selected), then raise or lower set points as desired.
- 17 Humidify/Dehumidify set point²; to change, raise or lower as desired.
- 18 Temperature Control Mode; select between Heat / Cool / Auto / Emergency Heat.
- 19 Thermostat Operation Mode: Select between “Run Program” mode (for details, see 25) or “Hold Temperature” mode.
- 20 Fan Operation Mode: select between Fan Automatic where the fan will turn on only when there is a demand for heating and cooling. Fan Continuously On – the fan runs continuously/ Fan Intermittent
Tip! In the fan intermittent mode the fan will run for 10 minutes per hour which is a convenient way to filter the air and conserve energy.
- 21 Displays Installer Message; to enter a message, go to 37
- 22 Return to Homepage.
- 23 Access the Menu Page.

MENU PAGE

To access the Menu Page, simply touch **MENU** from the Control Page.



24 Set Date and Time.

25 Program automatic temperature changes and fan mode (“Run Program” mode) to do so:

- Select the Day of the week.
- Select the event number
- Select the Start time of the Event
- Select the desired temperature setpoint
- Select the next event number and repeat steps 3 & 4.
- 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. To activate the program select run program from the control page.

26 Displays system energy consumption and cost of running system; to enter system consumption parameters, go to **34**; otherwise, displays fan and compressor runtime.

MENU PAGE

To access the Menu Page, simply touch **MENU** from the Control Page.



27 This function allows you to 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.

28 Vacation settings allows you to set the temperature to a fixed setpoint during the time you are on vacation. Please note that either Heat or Cool must be selected from the control page before entering the Vacation Settings page. To active the feature 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 main page. When you return from vacation, you will see a message Vacation Mode Ended displayed on the screen, simply touch the screen to acknowledge the message.

MENU PAGE

To access the Menu Page, simply touch **MENU** from the Control Page.



29 Displays filter usage in days and resets filter timer.

30 Select either “Humidify” or “Dehumidify” mode; to change Humidify / Dehumidify set point, go to **17**.

31 Set Screen Options:

- Daylight Time (ON/OFF): activate only if you are located in a “Daylight Savings Time” zone.
- Reverse: Select between dark background (ON) or light background (OFF)
- Night Reverse: Select between ON: Automatically reverses screen background for comfortable viewing

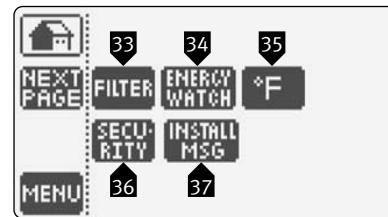
at night (from 9PM to 6AM) OFF: screen background determined by “Reverse” function setting.

- Contrast: set screen contrast from 1-11.

32 To access “Advanced Settings”, hold finger 5 seconds on icon. A warning will appear:

Caution: Incorrect configuration can damage your system, continue? YES NO

ADVANCED SETTINGS: Page 1



33 Turn “Filter Monitor” ON or OFF; if ON enter the filter replacement interval.

34 Enter HVAC system consumption parameters rounded off to kW; see 26 (Typically: Fan 1kW; Heat Pump 1kW/ton; Furnace 5-30 kW, 7-9¢/kW)

35 Change thermostat temperature display units (°F or °C).

36 Turn “Security” ON or OFF (Default Security PIN = 1111) and select the security level: The security settings allow you to protect your TotalTouch™ thermostat from unauthorized use.

- Turn Security On or Off (Default pin 1111)

- You will be prompted to: (first time user) Enter the default PIN

- Enter your new PIN Re-enter your new PIN

- There are two modes of password protection: Full lock and Partial Lock

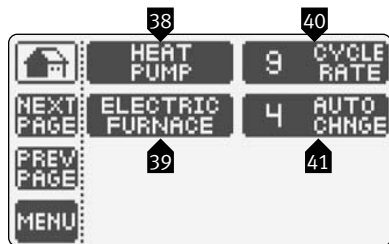
- The Full Lock Function does not allow any changes unless the user enters the PIN

- Partial Lock allows you to change only the temperature setpoint without entering a PIN.

37 Enter “Installer Message” (up to 42 characters) to appear at programmable intervals, see **21**.

ADVANCED SETTINGS: Page 2

Please note that inadvertently modifying Compressor and Furnace settings, may seriously degrade system performance.



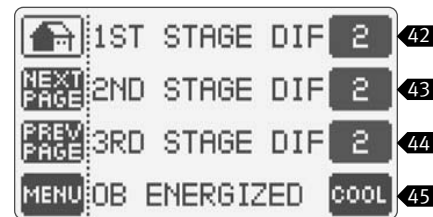
38 Select system heating and/or cooling equipment: Heat Pump, 2-stage Heat Pump, Air Conditioning, No Compressor – see Wiring Table.

39 Select the system Furnace Type: 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; see Wiring Table.

40 Set maximum compressor cycles per hour.

41 Set Minimum difference between auto mode heat and cool temperature set points. See 18.

ADVANCED SETTINGS: Page 3



42 Set temperature difference between temperature set point and actual temperature reading before 1st stage heating or cooling is initiated.

43 Set temperature difference between 1st stage initiation (42) and 2nd stage heating or cooling initiation.

44 Set temperature difference between 2nd stage initiation (43) and 3rd stage heating or cooling initiation.

NOTE: Number of stages depends on your system; see 38 & 39.

45 Reverses the Heat Pump OB Valve contact; (manufacturer dependant)

ADVANCED SETTINGS: Page 4

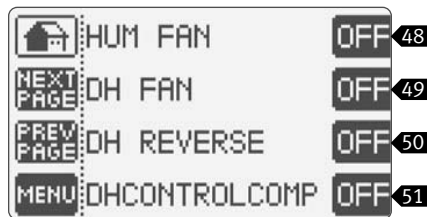


46 Specify X minutes for which stage 1 will function until stage 2 is activated to help raise (or cool) temperature (if the temperature set point is not reached). This unique function avoids excess compressor wear in the case where the necessary temperature set point is not met (see **42**, **43** & **44**). Set to “00” to disable.

ADVANCED SETTINGS: Page 5



47 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).



- 48** 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.
- 49** ON: fan runs when there is an independent demand to dehumidify;
OFF: fan only runs when there is a demand to dehumidify while cooling.
- 50** 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.
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 and can be used for a variable speed fan or separate dehumidifier or air exchanger)

INSTALLATION AND OPERATING TIPS FOR HUMIDIFICATION AND DE-HUMIDIFICATION

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.

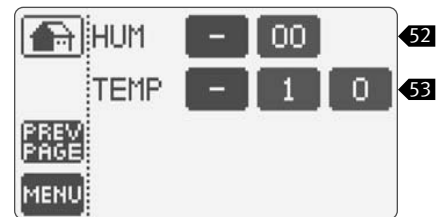
The **P286-1400 DH REVERSE** function can be configured to meet the requirements of many variable speed fans, consult the manual of your variable speed fan and determine if an “open” or “closed” contact results in slowing fan operation.

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).

DE-HUMIDIFICATION OPTIONS FOR INCREASING COMFORT AND EFFICIENCY

- 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.
- 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.
- 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.

ADVANCED SETTINGS: Page 7



52 To begin measure the current room 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.

53 Common causes of offset are lack of air circulation in the vicinity of your TotalTouch™ units or skylights. In most cases your thermostats default value of -2.5 accurately compensates for the temperature calibration of the unit.

SIMPLE THERMOSTAT MODE

TotalTouch™ can also function as a non-programable thermostat after it has been configured.

Simple Mode has the following basic features:

Temperature Control Modes:



Fan Operation Modes:



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 dehumidify set point or turn off “DH Controls Compressor” feature (see “Advanced Settings” Page 6).

Air conditioning turns on in HEAT mode and heating turns on in COOL mode.

Reverse the OB valve (see “Advanced Settings” Page 3).

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.

IMPORTANT NOTICE

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 heat 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.

LIMITED 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.

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