Model TSTATG4272GT



Skyport<sup>\*</sup>

RESIDENTIAL

## High-Resolution, Full Color **TouchScreen Display** Digital Thermostat with Humidity Control

Compatible with Wi-Fi accessories



# **Owner's Manual** and Installation Instructions

Thank goodness for Goodman.



Follow the <u>Installation Instructions</u> before proceeding. Set the thermostat mode to "OFF" prior to changing settings in setup or restoring Factory Defaults.

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.

This color touchscreen has the ability to receive updates to its firmware. Periodically firmware updates are released by the manufacturer to add features and/or performance enhancements. This manual was produced reflecting the most current firmware/ feature set at the time of publication, firmware rev. 3.04. Firmware releases after rev. 3.04 may not be adequately depicted in this manual. Please refer to the appropriate website or contact your place of purchase to learn about changes to the thermostat after firmware releases 3.04.





## **Glossary of Terms**

- Auto-Changeover: A mode in which the thermostat will turn on the heating or cooling based on room temperature demand.
- **Cool Setpoint:** The warmest temperature that the space should rise to before cooling is turned on (without regard to deadband).
- **Deadband**: The number of degrees the thermostat will wait, once a setpoint has been reached, before energizing heating or cooling.
- **Differential:** The forced temperature difference between the *heat setpoint* and the *cool setpoint*.
- **Heat Setpoint:** The coolest temperature that the space should drop to before heating is turned on (without regard to deadband).
- Icon: The word or symbol that appears on the thermostat display.
- **Mode:** The current operating condition of the thermostat (i.e. Off, Heat, Cool, Auto, Program On).
- **Non-Programmable Thermostat:** A thermostat that does not have the capability of running *Time Period Programming*.
- **Programmable Thermostat:** A thermostat that has the capability of running *Time Period Programming.*
- Temperature Swing: Same as Deadband.
- **Time Period Programming:** A program that allows the thermostat to automatically adjust the *heat setpoint* and/or the *cool setpoint* based on the time of the day. *Same as Schedule.*

GET TO KNOW YOUR THERMOSTAT Home Screen Menu Screens Dropdown Dashbaord Care and Use of your Thermostat	1 2
QUICK START	4
Selecting your desired temperature and mode Using the Fan button	
Setting the time	
Setting the date	
Daylight Savings setup	
MAIN MENU BUTTONS	
Schedule	8
Time Period Schedule On/Off	9
View My Schedule	9
Edit My Schedule	9
Smart Fan	11
Smart Fan On/Off	
Smart Fan Minimum Runtime	
Start/Stop Times	12
Days to allow Smart Fan operation	
Screensaver	
Screensaver On/Off	
Screensaver Setup	
Screensaver Preview	
Alerts	
View Current Alerts	
Reset Alerts	
Set/Edit Reminders	
Service Information (Who To Call For Service)	16

## **Table of Contents**

DISPLAY	17
Active Brightness	18
Idle Brightness	18
Night Dimmer	18
Maintenance	19
PREFERENCES	20
User Interface Themes	
Custom Wallpaper	
Heat/Cool Indicator	21
Backdrop On/Off	21
Sound Options	
HUMIDITY	22
Humidification Settings	
Dehumidification Settings	
VACATION	
Vacation Mode On/Off	
Schedule	
Modes & Setpoints	
SECURITY	
Auto Screenlock	
Setpoint Limits	
Mode Restrictions	
INFORMATION	
View Runtime Graphs	
Who To Call For Service	30
SETTINGS	31
Thermostat Name	35
Available Modes	35
SD Card (Import and Export)	35

## **Table of Contents**

GENERAL SETUP	35
Units (F or C)	35
Language	
Smart Recovery On/Off	
Simple Thermostat On/Off	36
INSTALLATION SETTINGS	37
Heat & Cool Stages	37
Heat & Cool Stages	37
Compressor Stages	37
Aux Heat Stages	37
Timers & Deadbands	37
Free Cooling	
HEAT PUMP SETTINGS	40
Heat Pump Lockout - Enabled/Disabled	
Heat Pump Lockout Outdoor Temp	
Aux Heat Lockout Enabled/Disabled	
Aux Heat Lockout Temp	
DUAL FUEL SETTINGS	
Dual Fuel On/Off	
Changeover With Outdoor Temp On/Off	
Adjust Balance Point	
Aux Output Settings	
Fan Off Delay	
Sensor Settings	
Test Outputs	
Dealer Information	
Upgrade Firmware	
Delete Custom Images	
Calibrate Clock	43
Reset to Factory Default Settings	
Restart Thermostat	

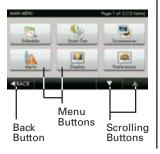
## **Table of Contents**

ACCESSORIES	44
Accessory Info	45
Setup	45
EMERGENCY HEAT	46
TOUCHSCREEN ASSISTANT	47
Installing the TouchScreen Assistant Software	48
Uploading Photos	
INSTALLATION INSTRUCTIONS	
Remove & Replace the Old Thermostat	49
Wire Connections	50
The TouchScreen Thermostat Backplate	
Explanation Of the Thermostat Dip Switches	
Sample Wiring Diagrams	53
TROUBLESHOOTING	57
INDEX	58
WARRANTY	63

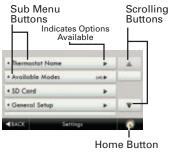
### **Get To Know Your Thermostat**

#### **Home Screen OutdoorTemperature** (If optional sensor is installed) Backlit Color Touchscreen Display Humidity Reading Connectivity Symbol Drop Down **Connectivity Symbol Table** (if optional accessory is installed) Sensor Button Warmer Not connected ି Button 101 **4** 101 11 to Wi-Fi SD Card Connected to local - Slot access point w/IP ି С address without Skyport access Connected to local Cooler access point w/IP **X** Button address, but not yet connected to Skyport Menu Button ÷. Connected to Skyport Fan Button Mode Buttons No Wi-Fi Key detected Date & Time Away Button

#### Main Menu Screen



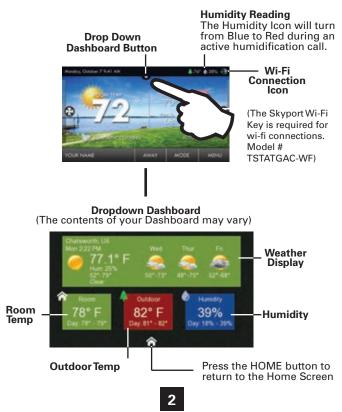
#### Sub Menu Screen



### **Get To Know Your Thermostat**

#### **Dropdown Dashboard**

The Dropdown Dashboard displays temperature, humidity, and other readings. It will also show the high and low readings of the day.



#### **Care and Use of Your Thermostat**

Pencils, pens and other sharp objects should never be used on your touch screen thermostat; these may damage your touchscreen. Only use your finger tip to press the touchscreen buttons.



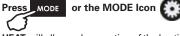
Use a soft, damp cloth to clean the screen.

DO NOT USE ABRASIVE CLEANERS OR CLEANERSTHAT CONTAIN SOLVENTS. DO NOT SPRAY ANYTHING DIRECTLY ONTO THE THERMOSTAT.

#### **Selecting Your Desired Temperature and Mode**



**Heat Setpoint** 



HEAT will allow only operation of the heating system.

**COOL** will allow only operation of the cooling system.

**AUTO** will allow operation of the heating and cooling systems.

OFF - heating and cooling systems are turned off.

AUTO-CHANGEOVER MODE - Pressing the WARMER or COOLER buttons in Auto mode will adjust <u>both</u> the heat and cool setpoints simultaneously. To adjust heat and cool setpoints individually, choose HEAT mode to adjust the heat setpoint and COOL mode to adjust the cool setpoint, then return to AUTO mode.

**HEAT** <u>OR</u> **COOL MODE** - Pressing the WARMER or COOLER buttons in Heat or Cool mode will adjust only the heat <u>or</u> cool setpoints.

#### Using the Fan Button

Press FAN Icon



FAN ON fan runs constantly even in OFF Mode.

FAN AUTO fan only runs with a heating or cooling demand.

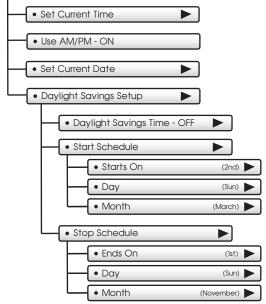




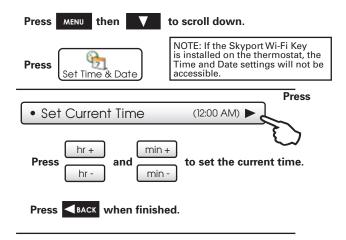
#### Quick Start - Set Time & Date



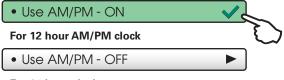
**NOTE:** When the thermostat is connected to Skyport; the Time & Date are automatically synchronized to the Skyport Cloud, including automatic Daylight Savings adjustments.



#### **Setting the Time**



#### Choose



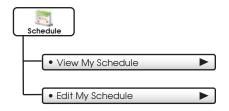
#### For 24 hour clock



#### **Setting the Date**



#### Main Menu Buttons - Schedule



#### Main Menu Buttons - Schedule



This thermostat features up to four programmable time periods per 24 hour day: Morning, Day, Evening, and Night. The start time for each time period is adjustable. The stop time for each time period is the start time for the next period.

#### • View My Schedule

Press a day of the week to view its settings. This may be repeated for each day.



#### • Edit My Schedule

Press and select days to program



### Main Menu Buttons - Schedule

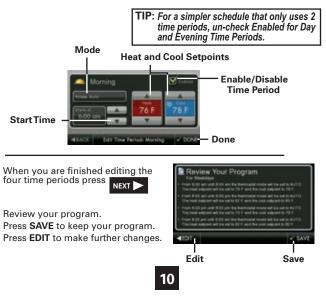
• Edit My Schedule

(Continued)

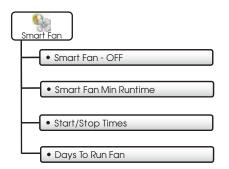
Press and select a Time Period (Morning, Day, Evening, or Night) to edit.



Adjust Mode, StartTime, and Heat and Cool Setpoints to desired settings. The Time Period may also be Enabled or Disabled. Un-check the Enabled box forTime Periods you don't want to use. Press **DONE** when finished.



#### Main Menu Buttons - Smart Fan



### Main Menu Buttons - Smart Fan



The fan may be programmed to turn on automatically for a specified period during the day.

(0m) ►

Press to turn fan schedule on or off

- Smart Fan OFF
- Smart Fan ON
- Smart Fan Min Runtime

Set the minimum number of minutes the fan will run from the top of each hour. Set runtime to 60 minutes to be on continuously from StartTime to StopTime. (5 - 60 mins.)

• Start/Stop Times (7:00AM - 9:00PM) ►

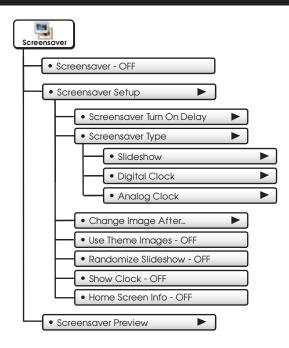
Set when the Smart Fan schedule will start and stop. For example, you may not want Smart Fan to run during sleeping hours.



Choose which days of the week Smart Fan will run.



#### Main Menu Buttons - Screensaver



13

### Main Menu Buttons - Screensaver



The Screensaver allows you to create custom slideshows.

(Slideshow)

Screensaver - OFF

#### Screensaver - ON

Screensaver Setup

• Screensaver Turn On Delay (5m)

How long after a button press for the Screensaver to appear. 1, 3, 5, or 30 minutes

• Screensaver Type

Slideshow, Digital Clock, Analog Clock

Change Image After...

15, 30 seconds - 1, 5, or 10 minutes

• Use Theme Images - OFF

Slideshow uses included Theme Images. Off or On

• Randomize Slideshow - OFF

Shuffles slideshow photos in random order

Show Clock - OFF

Shows the time and date every 5 photos. Off or On

• Home Screen Info - OFF

Shows the mode, setpoints, and temperature after every 10 photos. Off or On.

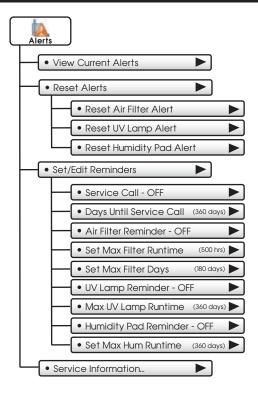
Screensaver Preview

Press this button to preview your screensaver operation before returning to the Home Screen.

After the preview, press anywhere on the screen to return to the sub menu.



#### Main Menu Buttons - Alerts



### Main Menu Buttons - Alerts



The alerts let you know when your system needs service.

View Current Alerts



Alerts appear on the bottom Press to view and bar of the Home Screen. Press to view and reset current alerts.



#### • Reset Alerts

Clear and reset current service alerts.

• Set/Edit Reminders

Set service alert runtimes and turn reminders on or off.

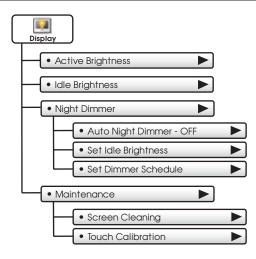
- Service Call Reminder OFF
- Days Until Service Call (360 days)
- Air Filter Reminder OFF
- Set Max Filter Runtime (500 hrs)
- Set Max Filter Days (180 days)
- UV Lamp Reminder OFF
- Set Max UV Lamp Runtime (360 days)
- Humidity Pad Reminder OFF
- Set Max Hum Runtime (360 days)
- Service Information...

View your service company's contact information.





### Main Menu Buttons - Display



#### Main Menu Buttons - Display



The display brightness options may be adjusted in this menu.

#### Active Brightness

You may select how bright the backlight is while the thermostat is active. The display is active for 3 minutes after last touch, it then goes Idle.

• Idle Brightness

(30%) 🕨

(80%)

You may select how bright the backlight is while the thermostat is idle.

#### Night Dimmer

You may dim the brightness of the screen at night.

• Auto Night Dimmer - OFF

The screen can be set to dim automatically at night. Dimming the display can prolong the life of the backlight.

Set Idle Brightness

(20%)

Set the screen brightness for the Night Dimmer. When Night Dimmer is On, the display will go idle 8 seconds after last touch.

• Set Dimmer Schedule

Set the schedule for the Night Dimmer.



### Main Menu Buttons - Display

• Maintenance

Maintenance allows you to clean and calibrate the touch screen.



Screen Cleaning Mode disables the touch feature for 15 seconds so the screen may be cleaned without altering any settings.

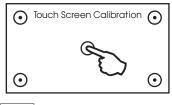


Use a soft cloth without solvents or abrasive cleaners

Touch Calibration

Under normal circumstances, the touchscreen should not need to be calibrated.

Touch the center of the targets as they appear on the screen.

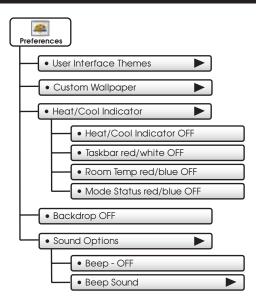


Press FINISH when done.

When calibration is complete, the thermostat will automatically restart and return to the Home Screen.



### Main Menu Buttons - Preferences





#### Main Menu Buttons - Preferences



You may set the type of background that appears on the thermostat Home Screen.

 User Interface Themes (ocean) 

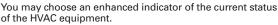
This thermostat has several high quality background themes to choose from. NOTE: At 7 PM, the background will change to an evening scene and the moon will replace the sun. At 7 AM it will return to a daytime scene.

#### Custom Wallpaper



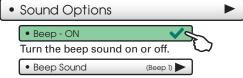
You may choose your own background image by selecting a photo that you have uploaded from an SD memory card.

Heat/Cool Indicator



- Heat/Cool Indicator ON/OFF
- Room Temp Red/Blue ON/OFF
- Taskbar Red/White ON/OFF
- Mode Status Red/Blue ON/OFF
- Backdrop OFF

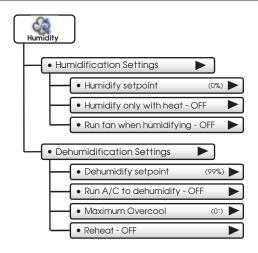
The Backdrop makes numbers and words easier to read, and may be needed on certain background images.



Choose from different beep sounds.



### Main Menu Buttons - Humidity





### Main Menu Buttons - Humidity



The Humidity feature allows the thermostat to control a humidifier or use your air conditioner to dehumidify the space.

## IMPORTANT: Aux Output Usage must be set for Hum or Dehum for these settings to take effect.

See: AUX Output Settings on page 41.

Humidification Settings

Humidify setpoint

Adjust Humidify setpoint. (0% - 60%)

• Humidify only with heat - OFF

When this step is ON, Humidify will only run with a demand for heat.

(0%)

Run fan when humidifying - OFF

When this step is ON, the fan will run with a call for Humidification.

- Dehumidification Settings
  - Dehumidify setpoint (99%)

Adjust Dehumidify setpoint. (25% - 99%)

Run A/C to dehumidify - OFF

When this step is ON, the A/C system will be used for Dehumidification.

Maximum Overcool
 <sup>(0°)</sup>

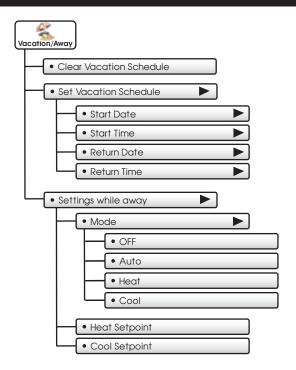
This specifies how many degrees the A/C system will run past the cool setpoint to satisfy a demand for Dehumidification. (0 - 20 degrees F)

• Reheat - OFF

This turns on electric strip heat during an A/C to dehumidify demand to help maintain desired room temperature. (Run A/C to dehumidify must be set to ON and the GAS ELEC Dip Switch must be set to ELEC page 52 - to access this feature)



### Main Menu Buttons - Vacation/Away





#### Main Menu Buttons - Vacation/Away



Vacation or pressing the AWAY button, will use temporary, energy saving settings without changing the regular schedule. Pressing the HOME button will return the thermostat to normal comfort settings.

#### • Clear Vacation Schedule

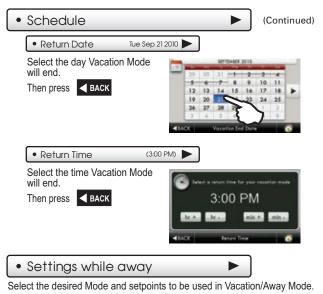
Removes the stored vacation schedule.







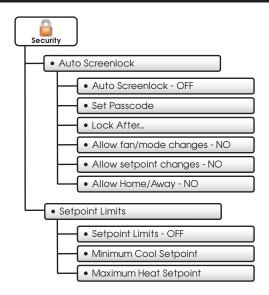
### Main Menu Buttons - Vacation/Away



• Mode	(Auto) 🕨
Heat Setpoint	(50*)
Cool Setpoint	(85°)



### Main Menu Buttons - Security





### Main Menu Buttons - Security



Lock After...

(5 m)

Set the time the screen will automatically lock after the last button press.

• Allow fan/mode changes - NO

Choose to allow fan/mode changes when Auto Screenlock is on.

• Allow setpoint changes - NO

Choose to allow setpoint changes when Auto Screenlock is on.

• Allow Home/Away - NO

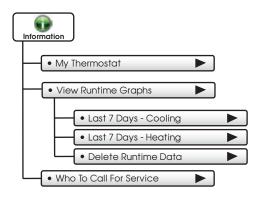
Choose to allow use of the Home and Away button when Auto Screenlock is on.

#### • Setpoint Limits

Limits how high or low heating and cooling may be adjusted.



### Main Menu Buttons - Information





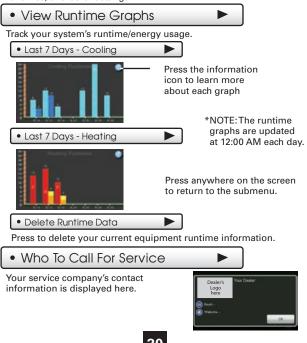
# Main Menu Buttons - Information

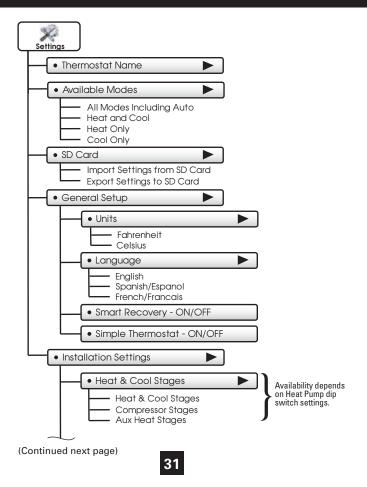


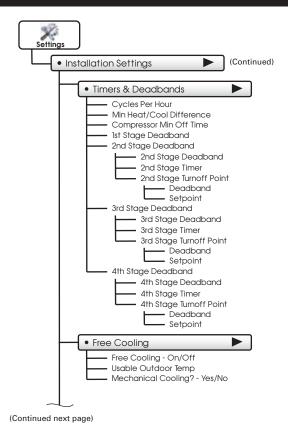
This button contains valuable service and system runtime information.

## My Thermostat

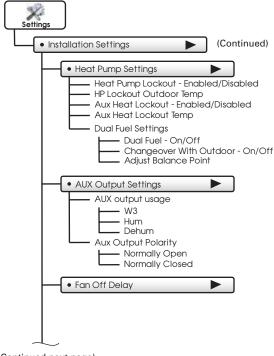
View your thermostat dip switch settings, equipment status, runtimes, and other settings.



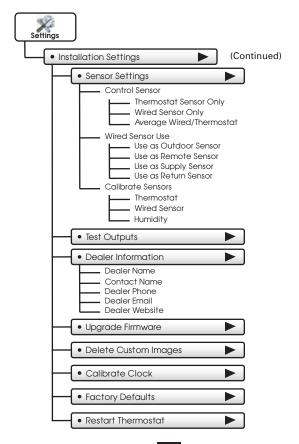




32



(Continued next page)







Thermostat heating and cooling options are found in this menu

## • Thermostat Name

Use keypad to name your thermostat. The name is displayed on the Home Screen.

(Up to 14 characters)

## Name appears here



(all)

## Available Modes

Choose the desired modes the thermostat will use: Heat, Cool, Heat & Cool, or Auto (All). For example, if you only have a heater, choose Heat, and only Heat & Off modes will be available. This will simplify the operation for the user.

## SD Card



Import and export files to and from the thermostat. See the **Touchscreen Assistant** instructions (page 47).

Import Settings from SD Card

Upload files from TouchScreen Assistant or another thermostat.

• Export Settings to SD Card

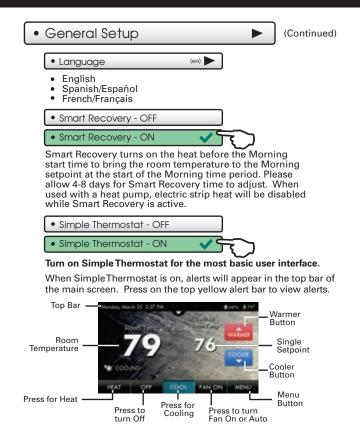
\*NOTE: A 2GB SD card is recommended. To import and export files, the SD card must contain the same version of the firmware as the thermostat.

Export files from one thermostat and import them into others.

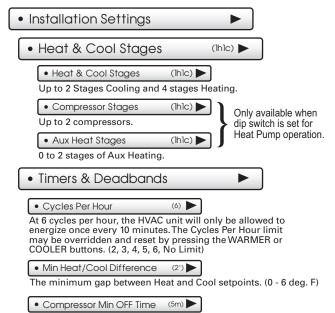
- General Setup
  - Units
    - Fahrenheit (F)
    - Celsius (C)



(F)

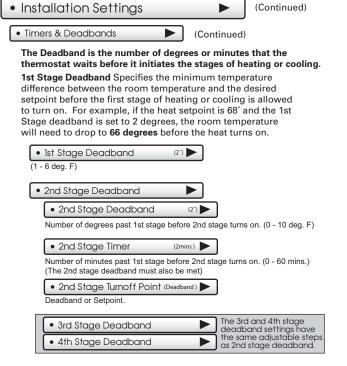


Note: When using the Simple Thermostat Home Screen; the program schedule along with the HOME and AWAY features are unavailable.



None, 1 minute, or 5 minutes.

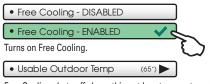






## Free Cooling

Free Cooling is an energy saving way to boost the efficiency of your air conditioning system by bringing in cool air from the outside. The installation of a Free Cooling damper(s) and outdoor temperature sensor is required.

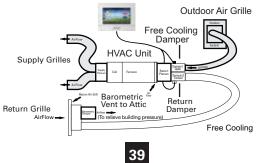


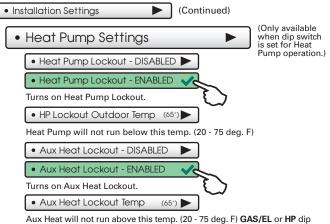
Free Cooling shuts off above this outdoor temperature. (40 - 80 degrees F)

```
• Mechanical Cooling? - NO
```

If you don't have a compressor, set Mechanical Cooling to "NO", Y1 will then be used to control the Free Cooling Damper(s) and Y2 will be disabled. If set to "YES", mechanical (compressor) cooling will be controlled by the Y2 terminal. (See page 55 for wiring diagram)

Mechanical air conditioning is turned on with a 2nd stage demand for cooling and the Free Cooling, outdoor air damper is closed.





switch must be set for HP and GAS or ELEC dip switch must be set for ELEC.

Dual Fuel Settings

#### This feature is for heat pump applications only.

This will only appear if the **GAS/EL** or **HP** dip switch is set for **HP** and the **GAS** or **ELEC** dip switch is set for Gas.

When Dual Fuel is ON, an outdoor temperature or, if Change With Outdoor is set to OFF a demand for third stage heat will be used to stop running the heat pump and switch to a fossil fuel source of heat. NOTE: Once the change to fossil fuel is made, the heat demand must finish with fossil fuel. Additional heat demands within 10 minutes will also use fossil fuel, regardless of outdoor temperature or stage demand.

• Dual Fuel - ON/OFF

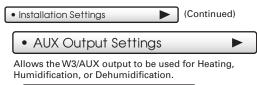
#### • Changeover With Outdoor - ON/OFF

ON: Uses an outdoor sensor for changeover. OFF: Uses a third stage heat demand for changeover.

#### Adjust Balance Point

Choose the temperature for changeover to fossil fuel. (5 - 60 deg. F)







IMPORTANT: Aux Output Usage must be set for Hum or Dehum before any settings will take effect in the Humidity Main Menu.



• AUX output polarity (NO)

The AUX Output polarity may be set for Normally Open or Normally Closed to accommodate different types of humidification and dehumidification equipment.

Fan Off Delay

(Os) 🕨

Runs the fan for a short time after Cooling or electric strip heat turns off to increase system efficiency. (0 - 120 Secs.)





When a remote sensor is connected to the thermostat, the user may choose which sensor source is used to measure room temperature.

- Thermostat Sensor only
- Remote Sensor only
- Average remote/thermostat

Wired Sensor Use (remote)

The wired sensor may be used as follows:

- Outdoor Sensor
- Remote Sensor
- Supply Sensor
- Return Sensor

• Calibrate Sensors (0")

The thermostat and wired sensor may be calibrated -7 to +7 degrees F. The integral humidity sensor may be calibrated -20% to +20% RH

## Test Outputs



The installer or service technician can use this feature to test the functions without any time delays of the thermostat.



With a 1st stage cooling call, Y1 and G are active



## Dealer Information

A Dealer may enter their company contact information for the customer to use when they need service. This will appear when the "WhoTo Call For Service" button is pressed in the Information Menu.

Use the keyboard to enter your information.

- Dealer Name
- Please use Contact Name TouchScreen
- Dealer Phone
- Dealer Email
- Dealer Website

logo. (See Page 47)

Assistant to

add Dealer's

## Upgrade Firmware

Press to upgrade the thermostat firmware. The SD Card must be in the thermostat SD Card reader and contain the valid firmware. If an error message appears, confirm with TouchScreen Assistant that firmware is up to date or simply try reinserting the SD card.

#### If you are connected to Skyport Wi-Fi and you receive an Alert that new firmware is available, simply press the Upgrade Firmware button to upgrade wirelessly.

Note: Occasionally an update that requires a large amount of data is not possible to do wirelessly. In this case an update using an SD card will be required.

## Delete Custom Images

Press to delete the custom photos you uploaded to the thermostat.

Calibrate Clock

If needed, the clock may be calibrated up to -10 to +10 minutes per month.

Factory Defaults

Press to reset the thermostat back to the factory settings.

Restart Thermostat

If needed, press here to restart the thermostat.











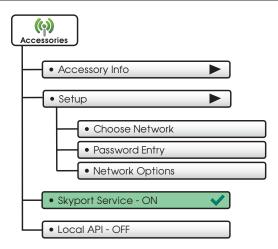




(0 mins)



# Main Menu Buttons - Accessories





# Main Menu Buttons - Accessories

## Accessory Info

It is here that you will find helpful information regarding the connectivity status of your thermostat, including the thermostat's ID.



Setup

Upon pressing setup, the thermostat will search for available local networks with which to connect. After identifying local access points, you will be promted to choose a network, enter a password and other network options.



## • Skyport Service - ON

Enable the thermostat to connect to the Skyport Cloud for remote monitoring and control features.

Local API - OFF

Enabling the local API allows 3rd party software to interface with your thermostat, such as a home automation system.

# Main Menu Buttons - Emergency Heat



The Emergency Heat function is only available if your thermostat is set to control a Heat Pump.

To initiate the Emergency Heat feature, Press the Emergency Heat button. During Emergency Heat operation the thermostat will turn on the fan and auxiliary stages of heat when there is a demand for heat. The 1st stage of heating and all stages of cooling will be unavailable. To exit Emergency Heat, press the Emergency Heat button.





TouchScreen Assistant may be downloaded at no charge at:

## www.goodmanthermostats.com/touchscreen/



Every time the user runs the TouchScreen Assistant software, it automatically connects to the Goodman thermostat website in the background and updates the software and firmware (the operating system for TouchScreen) at no cost.

The TouchScreen Assistant allows you to use your computer to:

- Upload photos for background and slideshow images
- Program a time period schedule
- Configure installation settings
- Upload dealer and service contact information and company logo
- Update thermostat firmware



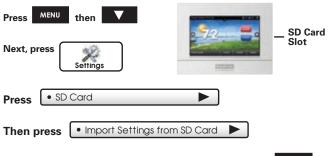
## **Uploading Photos and Settings to your thermostat**

When you are finished adding and editing photos and settings, click on Save to SD. When prompted, remove the SD card from the SD card reader on your computer.



# At the thermostat:

Insert the SD card into the SD Card Slot.



Select the items to import into your thermostat then press NEXT

Your thermostat will automatically save your new photos and settings.

# 48

# **Remove and Replace the old thermostat**

To install the thermostat properly, please follow these step by step instructions. If you are unsure about any of these steps, call a qualified technician for assistance.

Assemble tools: Flat blade screwdriver, wire cutters and wire strippers.



- Make sure your Heater/Air Conditioner is working properly before beginning installation of the thermostat.
- Carefully unpack the thermostat. Save the screws, any brackets, and instructions.
- Turn off the power to the Heating/Air Conditioning system at the main fuse panel. Most residential systems have a separate breaker for disconnecting power to the furnace.
- Remove the cover of the old thermostat. If it does not come off easily, check for screws.
- Loosen the screws holding the thermostat base or subbase to the wall and lift away.
- Disconnect the wires from the old thermostat. Tape the ends of the wires as you disconnect them, and mark them with the letter of the terminal for easy reconnection to the new thermostat.
- Keep the old thermostat for reference purposes, until your new thermostat is functioning properly.



# **Wire Connections**

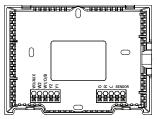
If the terminal designations on your old thermostat do not match those on the new thermostat, **refer to the chart below or the wiring diagrams that follow.** 

Wire from the old thermostat terminal marked	Function	Install on the new thermostat connector marked
G or F	Fan	G
Y1,Y or C	Cooling	Y1
W1, W or H	Heating	W1/O/B
Rh, R, M, Vr, A	Power	R
С	Common	С
O/B	Rev. Valve	W1/O/B*
W2	2nd Stage Heat	W2
Y2	2nd Stage Cooling	Y2
W3	3rd Stage Heat	W3/AUX
HUM	Humidification	W3/AUX
DEHUM	Dehumidification	W3/AUX
S1/OUT -	Temp Sensor	SENSOR
S2/OUT +	Temp Sensor	SENSOR

\* O/B is used if your system is a Heat Pump.

50

# The TSTATG4272GT Thermostat Backplate



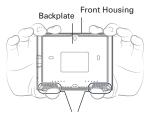
## NOTE:

The backplate does not fully cover a full size vertical junction box. The TSTATGTAC-WP Touchscreen Wallplate or a single-gang, horizontally mounted junction box would be needed for that type of installation.

To remove the thermostat backplate: Using the Finger Pull Areas, pull the front housing away from the backplate.



Look for these tabs to locate the pull areas



Pull out with thumbs in these areas

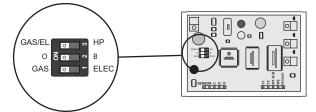
W3/AUX	3rd stage heat circuit/2nd stage aux heat/humidification/dehumidication
W2	2nd stage heat circuit/1st stage aux heat
W1/O/B	1st stage heat circuit/reversing valve
Y2	2nd stage compressor relay
Y1	1st stage compressor relay
G	fan relay
R	24 VAC return
С	24 VAC common
SENSOR	remote/outdoor/supply/return sensor connections

IMPORTANT: This thermostat requires  $\underline{both}$  R (24 VAC Return) and C (24 VAC Common) be connected to the backplate terminals.



# **Explanation of Thermostat Dip Switches**

Dip switches are located on the back of the thermostat



GAS/EL HP GAS/EL HP

This dip switch configures the thermostat to control a conventional gas/electric system or a heat pump. If your system is anything other than a heat pump, leave this switch set for **GAS/EL**.\*

\*For some commercial heat pumps, this switch may need to be set for **GAS/EL**. Consult the commercial heat pump literature.



When the **GAS/EL** or **HP** dip switch is configured for **HP**, this dip switch (**O** or **B**) must be set to control the appropriate reversing valve. If **O** is chosen, the **W1/O/B** terminal will energize in cooling. If **B** is chosen, the W1/O/B terminal will energize in heating.

#### 1. When GAS/EL or HP is set for GAS/EL:

This switch (GAS or ELEC) controls how the thermostat will control the Fan (G) terminal in heating mode. When <u>GAS</u> is chosen, the thermostat <u>will not</u> energize the Fan (G) terminal in heating. When <u>ELEC</u> is chosen the thermostat <u>will</u> energize the fan in heating.



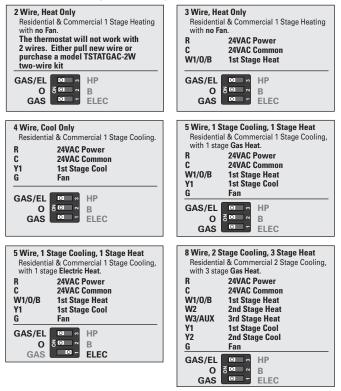
#### 2. When GAS/EL or HP is set for HP:

This switch (GAS or ELEC) defines the Aux Heat type. When <u>GAS</u> is chosen, the auxiliary heat will not be allowed to run during heat pump operation. When using a Dual Fuel system, set this switch for <u>GAS</u>. When <u>ELEC</u> is chosen, up to two stages of auxiliary strip heat will be allowed to run.



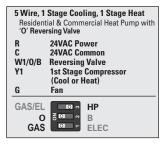
# Sample Wiring Diagrams with Dip Switch Positions

**Conventional Heating and Cooling Systems** 



# Sample Wiring Diagrams with Dip Switch Positions

Heat Pump Systems



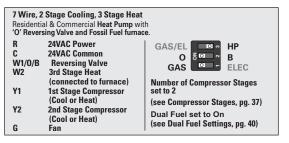
6 Wire, 1 Stage Cooling, 2 Stage Heat Residential & Commercial Heat Pump with 'O' Reversing Valve	
R	24VAC Power
C	24VAC Common
W1/0/B	
Y1	1st Stage Compressor
	(Cool or Heat)
W2	Aux Heat
G	Fan
GAS/EL	HP
0	S ⊡ ∾ B
GAS	ELEC

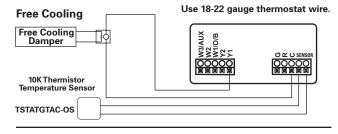
7 Wire, 2 Stage Cooling, 3 Stage Heat Residential & Commercial Heat Pump with 'O' Reversing Valve.		
R	24VAC Power	
C	24VAC Common	
W1/0/B		
W2	3rd Stage Heat	
Y1	1st Stage Compressor	
¥2	(Cool or Heat) 2nd Stage Compressor	
12	(Cool or Heat)	
G	Fan	
GAS/EL	HP	
0		
0 GAS		

8 Wire, 2 Stage Cooling, 4 Stage Heat Residential & Commercial Heat Pump with 'O' Reversing Valve.		
R C W1/0/B W2 W3/AUX Y1 Y2 G	24VAC Power 24VAC Common Reversing Valve 3rd Stage Heat 4th Stage Heat 1st Stage Compressor (Cool or Heat) 2nd Stage Compressor (Cool or Heat) Fan	
GAS/EL GAS GAS GAS GAS GAS GAS GAS GAS		

# Sample Wiring Diagrams with Dip Switch Positions

Heat Pump Systems with Dual Fuel





Free Cooling utilizes the Y1 terminal for the operation of 1st stage cooling. If mechanical (compressor) cooling is also present, the mechanical cooling is connected to the Y2 terminal in this instance.

Free Cooling may be used with a Gas/Electric or Heat Pump system.

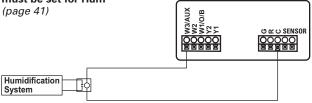
Temperature Sensor: TSTATGTAC-OS Temperature Sensor 10K ohm sensor at 77F/25C. Negative Temperature Coefficient.



# **Sample Wiring Diagrams**

# **Humidification**

AUX Output Usage must be set for Hum (page 41) Use 18-22 gauge thermostat wire.



# **Dehumidification**

## AUX Output Usage must be set for Dehum (page 41)

Dehumidification Terminal on Equipment



- SYMPTOM: The thermostat touchscreen buttons are not responsive.
  CAUSE: The touchscreen is out of calibration.
  REMEDY: Remove the thermostat from the backplate. Push the thermostat back onto the backplate, while keeping your finger pressed firmly against the center of the touchscreen, until the Calibration screen appears. Re-calibrate theTouchscreen.
- SYMPTOM: The display is blank.
  CAUSE: Lack of proper power.
  REMEDY: Make sure the power is on to the HVAC and that you have 24vac between R & C.
- SYMPTOM: The air conditioning does not attempt to turn on. CAUSE: The cooling setpoint is set too high. REMEDY: Lower the cooling setpoint or lower the cooling setpoint limit. See Setpoint Limits (page 28).
- SYMPTOM: The heating does not attempt to turn on. CAUSE: The heating setpoint is set too low. REMEDY: Raise the heating setpoint or raise the heating setpoint limit. See Setpoint Limits (page 28).
- SYMPTOM: When controlling a residential heat pump, and asking for cooling, the heat comes on.
  CAUSE: The thermostat reversing valve dip switch is set for "B".
  REMEDY: Set the reversing valve jumper for "O".
- SYMPTOM: When calling for cooling, both the heat and cool come on. CAUSE: The thermostat equipment dip switch is configured for "HP" and the HVAC unit is a Gas/Electric. REMEDY: Set the equipment dip switch for "Gas".
- **SYMPTOM**: Air handler control board fuse blows when thermostat is attached to backplate with power on, but does not blow until the thermostat is placed onto the backplate.

**CAUSE**: The Outdoor sensor and/or sensor wiring is shorted. **REMEDY**: Check/replace Outdoor sensor and/or sensor wiring.





Accessories, 45 Active Brightness, 18 Alerts, 16 view current, 16 reset, 16 set/edit reminders, 16 See also Runtime

#### Aux Heat Lockout, 40 Auto

adjust temperature, 4 changeover, 4 fan, 4 mode, 4 Auto Screenlock, 28

Available Modes, 35



B Reversing Valve, 50 Backdrop, 21 Backlight, 18 Backplate, 51 Balance Point, 40 Beep, 21 Buttons, Back, 1 Cooler, 1, 4 Fan, 1, 4 Home, 1 Mode, 1, 4 Menu, 1 Warmer, 1, 4



C, 50 Calibration, 42 Celsius, 35 Cleaning, 3, 19 Clock Display 1 Setting, 6 Choose Network, 44, 45 TouchScreen Assistant, 47 Compressor Lockout, 37 Cool 1st stage deadband, see Deadband 2nd stage deadband, see Deadband

Minutes of runtime, 30



Custom Wallpaper, 21 Cycles Per Hour, 37 Daylight Savings, 7 Deadband 1st stage, 38 2nd stage, 38 3rd stage, 38 4th stage, 38



Dealer Information, 30, 43 Delay

Fan-off, *see Fan* Time between stages, *see Time Delay* 

Dehumidification, 23, 41

Differential Heat and cool, 37 Dimmer, 18

Dip Switches ELEC, 52 electric heat, 52 GAS/EL, 52 GAS, 52 HP, 52 heat pump, 52 O, 52 B, 52

Disabled Buttons see Security Display, 18

Dual Fuel

changeover balance point, 40 control two heat sources, 40 operation, 40 outdoor sensor, 40, 55



Electric Heating Aux heat, 37 Dip switch setting, 52 Lockout, 40

#### Emergency Heat, 46

Energy Watch

Cool, 30 Heat, 30 Aux heat, 30



Factory Defaults resetting, 43 Fahrenheit, 35

Fan

button function. see Buttons off time delay, 41 on during heat, see Electric Heat runtime, 30 2nd stage heat, see Emergency Heat Free Cooling, 39, 55



Gas/Electric Furnace dip switch, 52 General Setup, 35



## Heat

1st stage deadband, see Deadband emergency heat, 46 minutes of runtime, 30 2nd stage deadband, see Deadband electric strip heat. see Aux Heat minutes of runtime, 30, 38 3rd stage deadband, see Deadhand 4th stage deadband, see Deadhand timer. 38 turnoff point, 38 electric/heat pump, 40 mode, 4 program, see Schedule runtime, see Runtime setpoint, 4

## Heat/Cool Indicator, 21

#### Heat Pump

aux heat, 37, 40 aux heat lockout, 40 emergency heat, 46 heat pump lockout, 40 dip switch setting, 52 multi-stage, 37, 40

Humidity, 23, 41



Idle Brightness, 18 Information, 30 Installation Settings, 37 Installation, 49



#### Keypad, 28



Language, 36 Lock see Security Logo, 43





Main Menu, 1 Maintenance, 19 Manual changeover, 40 cool, 4 heat, 4 Mode, 1, 4

## Mode Restrictions, 28 Morning Warm-up, see Smart Recovery

Multi-Stage Operation, 4



Network Password, 45 Night Dimmer, 18 Non-Programmable Thermostat, ii



O Reversing Valve, 50 Off Mode, 4 Outdoor calibrate, 42 high and low temp, 2 sensor, 42, 55 viewing temp, 1, 2 Overcool, 23



Passcode, 28 Photos, 21, 43 Preferences, 21 Program daily schedule, 9



Reheat, 23 Reset alert messages, 16 thermostat settings, *see Factory Defaults* runtime, fan/filter, 16 UV light, 16

Reversing Valve, 50, 52 Runtime resetting, see Reset service filter, 16 UV light, 16 viewing, 16, 30





Schedule turn on/off. 9 view. 9 edit, 9 Screen Cleaning, 19 Screensaver turn on/off, 14 setup, 14 preview, 14 SD Card, 35 2nd stage turn off temperature, 38 Security, 28 Sensor outdoor, 42 thermostat, 42 Service alerts, 16 information, 16, 30 Set Clock, see Clock Setpoint balance point, 40 cool. 4 heat 4 limits, 28 vacation, 25 Settings, 35 Simple Thermostat, 36 Skyport Service ON/OFF, 45 Smart Fan, 12 Smart Recovery, 36 Sound Options, 21 Stages, 37



Terminals, see Backplate

Test Outputs, 42

Themes, 21

Thermostat Sensor calibrate, 42

Three Stage Heat, 37

Time, see Clock

Timers, 37

## Time Delay,

compressor lockout, 37 cycles per hour, 37 1st stage to 2nd stage, 38 2nd stage to 3rd stage, 38 3rd stage to 4th stage, 38

### Time schedule,

see Schedule

## Touch Calibration, 19



Upgrade Firmware, 43 User Interface Themes, 21 UV Light,

resetting, 16 runtime, *see Runtime* setting, *see Runtime* 



Vacation, 25 modes, 26 schedule, 25 setpoints, 26



W1, 50 W2, 50 W3, 50 Wallpaper, 21 Warranty, 63 Wiring, 50 dual fuel, 53 free cooling, 53 gas/electric, 52 heat pump, 52



Y1, 39, 50 Y2, 39, 50



# Notes



# Warranty

One-Year Warranty - This Product is warranted to be free from defects in material and workmanship. If it appears within one year from the date of original installation, whether or not actual use begins on that date, that the product does not meet this warranty, a new or remanufactured part, at the manufacturer's sole option to replace any defective part, will be provided without charge for the part itself provided the defective part is returned to the distributor through a qualified servicing dealer.

THIS WARRANTY DOES NOT INCLUDE LABOR OR OTHER COSTS incurred for diagnosing, repairing, removing, installing, shipping, servicing or handling of either defective parts or replacement parts. Such costs may be covered by a separate warranty provided by the installer.

THIS WARRANTY APPLIES ONLY TO PRODUCTS IN THEIR ORIGINAL INSTALLATION LOCATION AND BECOMES VOID UPON REINSTALLATION.

LIMITATIONS OF WARRANTIES – ALL IMPLIED WARRANTIES (INCLUDING IMPLIED WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE AND MERCHANTABILITY) ARE HEREBY LIMITED IN DURATIONTO THE PERIOD FOR WHICH THE LIMITED WARRANTY IS GIVEN. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE MAY NOT APPLYTO YOU. THE EXPRESSED WARRANTIES MADE INTHIS WARRANTY ARE EXCLUSIVE AND MAY NOT BE ALTERED, ENLARGED, OR CHANGED BY ANY DISTRIBUTOR, DEALER, OR OTHER PERSON WHATSOEVER.

ALL WORK UNDERTHETERMS OF THIS WARRANTY SHALL BE PERFORMED DURING NORMAL WORKING HOURS. ALL REPLACEMENT PARTS, WHETHER NEW OR REMANUFACTURED, ASSUME ASTHEIR WARRANTY PERIOD ONLYTHE REMAINING TIME PERIOD OF THIS WARRANTY.

THE MANUFACTURER WILL NOT BE RESPONSIBLE FOR:

- Normal maintenance as outlined in the installation and servicing instructions or owner's manual, including filter cleaning and/or replacement and lubrication.
- Damage or repairs required as a consequence of faulty installation, misapplication, abuse, improper servicing, unauthorized alteration or improper operation.
- Failure to start due to voltage conditions, blown fuses, open circuit breakers or other damages due to the inadequacy or interruption of electrical service.
- Damage as a result of floods, winds, fires, lightning, accidents, corrosive environments or other conditions beyond the control of the Manufacturer.
- 5. Parts not supplied or designated by the Manufacturer, or damages resulting from their use.
- 6. Manufacturer products installed outside the continental U.S.A., Alaska, Hawaii, and Canada.
- Electricity or fuel costs or increases in electricity or fuel costs for any reason whatsoever including additional or unusual use of supplemental electric heat.
- ANY SPECIAL INDIRECT OR CONSEQUENTIAL PROPERTY OR COMMERCIAL DAMAGE OF ANY NATURE WHATSOEVER. Some states do not allow the exclusion of incidental or consequential damages, so the above may not apply to you.

This warranty gives you specific legal rights and you may also have other rights which may vary from state to state.



# Notes

# Notes

PATENT PENDING



Printed on recycled paper. P/N 88-1000 2/14

