

# TStatSpec™

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# INTRODUCTION

## Welcome and Links

TStatSpec™ is used to configure, download, calibrate and monitor the T7350 controllers.

Check out Honeywell on the Internet: <http://www.honeywell.com/>

**NOTE:** Topic information is accurate at the time of release. However, information is updated with each new release of TStatSpec™. To obtain the latest copy of TStatSpec™, contact your Honeywell distributor.

## Features

TStatSpec™ includes the following features:

### One-stop configuration

Configure T7350 controllers, download controllers, calibrate inputs, and monitor system behavior all with one software tool.

### Simple configuration

To configure T7350 controllers, select the icon in the workspace representing the controller and fill in the dialog boxes.

### Easy scheduling

Use scheduling tables to easily configure and change schedules based on the list of holidays.

### Standard Windows operating

TStatSpec™ supports a title bar, menu bar, toolbar, status bar, and workspace with a standard Microsoft® Windows® look and feel. Find, create, and open configurations using the menu bar.

## User's Guide

Click Help at any time for printable step-by-step instructions and tips.

## Backup and Restore

Click the Backup icon to instantly back up configurations. Click the Restore icon to recall any Backed up configuration.

### IMPORTANT

*The user's guide assumes the user has knowledge of control fundamentals, theory, and types of controls as related to building management control. The user also needs access to engineering data such as equipment sizing, psychometric charts, and conversion formulas. To enhance understanding, some definitions are provided.*

*It is also assumed that the user has a basic knowledge of building management systems and configurations.*

*Any control recommendations in this guide are general in nature and are not the basis for any specific job or installation. Control systems are to be furnished according to the plans and specifications prepared by the consulting engineer or other specifier. In many instances there may be more than one control solution for a given application. Professional expertise and judgment are required for the design of a control system.*

*This guide is not a substitute for control engineering expertise and judgment. Always consult a licensed engineer for advice on designing control systems.*

## QUICK START

### Quick Start-Apply

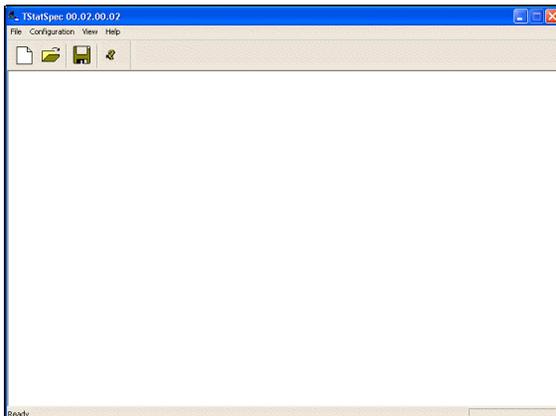
#### Description

If you are new to TStatSpec™, the Quick Start Tutorial will help you get started right away by guiding you through the process of creating a sample configuration.

The Quick Start Tutorial assumes you have a basic knowledge of building management systems and configurations. In addition, it is assumed you have basic knowledge of control fundamentals, theory and types of controls as related to building management control. You may need access to the glossary or to other engineering data not contained in this help file. For maximum usability, treat the Quick Start Tutorial separately from the remainder of the User's Guide (Help).

When TStatSpec™ opens with no configurations, the workspace (see figure below) is empty and there are no controller icons in the toolbar.

The example shows a toolbar with available controller icons. To view and enable the controller icons in your toolbar, you must have an open configuration. During this exercise, you will learn how and why this works..



### Quick Start-New Configuration

#### Procedure

##### START BY CREATING A NEW CONFIGURATION:

1. Press **Ctrl+N** to open the **New Configuration** dialog box. You can also select **New** from the **Configuration** menu or click the **New Configuration** button.



2. Select or enter a directory in the **Configuration Directory** field.
3. Enter a configuration name in the **Configuration name** field. For example, PROJECT1.
4. For the purposes of this exercise, leave the remaining fields at their default settings and click **OK**.

# GETTING STARTED

## Intro and Links Getting Started

### Description:

This section describes how to install, re-install, and start TStatSpec™. It also lists Windows conventions, describes how to use TStatSpec™, describes TStatSpec™ tools and menus, and gives tips for using TStatSpec™ in the Windows environment.

The User's Guide assumes the user is knowledgeable of the basic operation of Windows and with keyboard and mouse operations. Users new to Windows may find the Windows Help files useful. To open the Windows Help files, click the **Start** button, then click **Help**.

### Windows Conventions

This guide uses the following Windows conventions:

### Mouse

Click	Press and release the primary (usually left) mouse button.
Right-Click	Press and release the secondary (usually right) mouse button.
Double-Click	Press and release the primary mouse button twice.
Drag	Move the mouse while you hold down the primary mouse button.
Scroll	Scroll bars along the right and bottom sides of an image or window can be used to move the image up and down or left and right. To use a scrollbar, click and hold one of the arrow buttons at either end of the bar or drag the scroll bar slider.

### Keyboard (Examples)

**Ctrl+A** Press and hold down the Ctrl key while pressing the A key on the keyboard.

**Alt+W** Press and hold down the Alt key while pressing the W key on the keyboard.

### Mouse vs. Keyboard Navigation

- In some dialog boxes, TStatSpec™ only accepts mouse navigation and does not use the tab key to move from one column to another. Otherwise, press Tab to move between fields within dialog boxes.

## Install TStatSpec

### Description

Requirements for installing TStatSpec™ for Windows are as follows:

#### MINIMUM REQUIREMENTS

- Microsoft™ Windows Vista Business, Windows 7 Professional Edition, or Windows XP (Home or Professional Edition) operating system.
- Intel Pentium Processor or equivalent running at 233 MHz.
- 64MB of RAM minimum, 64MB highly recommended.
- 100MB of available hard disk space for installation.
- CD ROM or computer network connection required for installation.
- A Windows compatible printer is required to print reports.
- USB Port and USB-TIM adapter.
- Windows compatible monitor, video card, mouse, and keyboard are required.

**NOTE:** It is not recommended that you install this version on a PC with a screen setting of less than 1024x768 pixels.

#### PROCESS

If any version of TStatSpec™ is installed on your PC, it is necessary to uninstall it before installing a new version.

- Use the TStatSpec Backup Configuration function to generate backup files for all configuration in TStatSpec™. Use the Windows Add/Remove Programs function in Windows Control Panel to remove the previously installed TStatSpec™.

To install TStatSpec™ from the CD provided, follow these instructions:

- Close all programs.
- Insert the CD-ROM.
  - Open Windows Explorer.
  - Select Compact Disk drive. The explorer left pane shows the files available on the CD.
- From TStatSpec™ directory, double-click on Setup.exe.

## Start TStatSpec from Start menu

### Description:

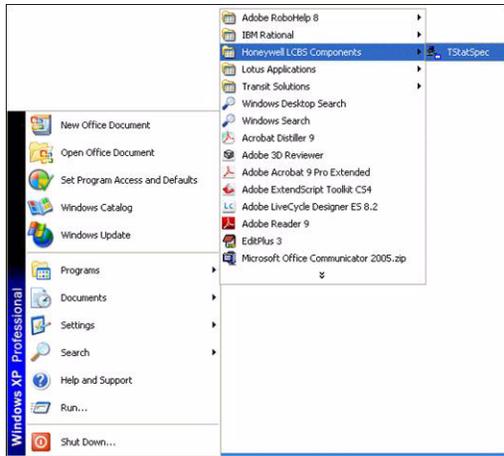
Describes the process to start TStatSpec™ from the Start menu.

### Procedure:

To start TStatSpec™ from the Windows Start menu:

1. Close all programs.
2. Click the Windows **Start** button, point to **Programs**, then point to Honeywell LCBS Components ->TStat-Spec.

Fig. 1. Starting TstatSpec



3. Select the folder where TStatSpec™ is installed. Click on TStatSpec™ Folder.
4. The list of files in the folder is displayed in the right side pane.
5. Locate **TStatSpec.exe** in the right pane and double-click.

## Start TStatSpec from Desktop icon

### Description:

Describes the procedure to start TStatSpec™ from the desktop.

### Procedure:

To start TStatSpec™ from the TStatSpec™ icon on the desktop:

1. Double-click the TStatSpec™ icon. The icon is available on the Windows desktop.



## Start TStatSpec from Windows Explorer

### Description

Describes the process to start TStatSpec™ from Windows Explorer.

### Procedure

Windows offer several ways to find files, including executables. One way is to use Windows Explorer, as follows:

1. Close all programs.
2. Click the Windows **Start** button, point to **Programs**, and then point to **Windows Explorer**.

## Troubleshooting-TStatSpec Fails to Start

### Description:

This section details the steps to be taken if TStatSpec™ fails to start.

TStatSpec™ will not start if the program is corrupted or certain files are removed inadvertently.

If an error message is received while attempting to open the TStatSpec™ program, the TStatSpec™ program or a component may not be installed, may have been removed, or may be missing some files that are necessary to run. If this condition exists, it is necessary to reinstall TStatSpec™.

Before attempting to reinstall TStatSpec use the Add/Remove Programs function in the Windows Control Panel to uninstall the existing TStatSpec files from the PC. This will significantly reduce the possibility of corrupting the new files being installed. It is advisable that the user backs up the configurations on a periodic basis.

### Process:

If TStatSpec™ is currently installed from diskettes or a CD provided, it can be re-installed from the TStatSpec™ setup file. Otherwise, refer to the Installation Instructions.

1. Click the Windows **Start** button, point to **Settings**, and then click **Control Panel**.
2. Double-click the **Add/Remove** Programs icon.
3. Click TStatSpec™ on the Install/Uninstall tab, and then click **Add/Remove**.
4. Follow the instructions on the screen.

## Quitting TStatSpec

### Description:

Quit TStatSpec™ program. Configuration information is automatically saved in the configuration folder; however, it is good practice to Backup the configuration before quitting if changes have been made.

### Purpose:

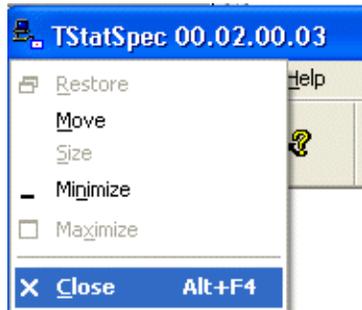
After completion of configuration activities the user may quit the TStatSpec™ application.

### Procedure:

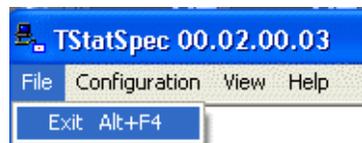
To quit TStatSpec™:

1. Choose **Close** from the TStatSpec™ system menu in the upper left corner.

**Fig. 2. Closing the application**



- Or, choose **Exit** from the **File** menu.



- Or, click the **X** button in the upper right corner.
2. If there is an open configuration, TStatSpec™ displays a message box. Click **Yes** to close.

## Tips

### Description:

This section describes a few tips that may be useful when using TStatSpec.

### Process:

#### Automatically start TStatSpec™ when the computer is started

To start TStatSpec™ automatically when the computer is started:

1. Click the Windows **Start** menu, point to **Settings**, and then click **Taskbar & Start Menu**.
2. In the 'Taskbar and Start Menu properties' window, Click the **Advanced** tab, and then click **Add**.
3. Click **Browse**.
4. Select the drive where TStatSpec™ is installed (by default, C:\ drive).
5. In the folder list, double-click the folder that contains TStatSpec™.
6. Select **TStatSpec.exe**, and then click **Next**.
7. In the folder list, click **StartUp**, and then click **Next**.
8. In the *Select a name for the shortcut* box, type a name for the shortcut, such as TStatSpec™, and then click **Finish**.

As a result of the above procedure the computer will operate as before, except the steps normally taken to start TStatSpec™ are bypassed. When the computer is started, Windows will start and the TStatSpec™ program will open automatically.

#### Set screen resolution size

To adjust the screen, follow these instructions:

1. Click **Start**, select **Settings**, and click **Control Panel**.
2. Double-click the **Display** icon.
3. Open the **Settings** tab.
  - Under Desktop area, drag the slider to change the screen resolution. It is recommended that a setting of 1024 X 768 pixels be used. If the monitor doesn't support this resolution the entire TStatSpec™ screen may not be viewable, requiring the use of the scroll bars to navigate the screen.

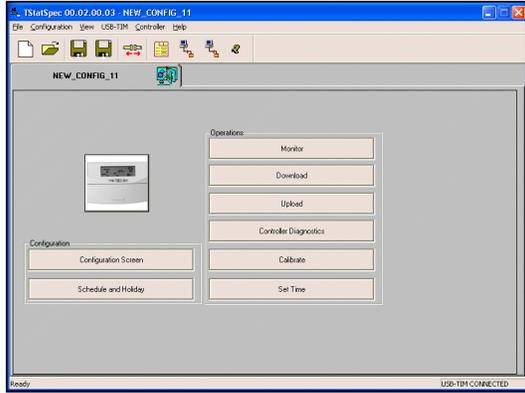
The monitor and video adapter determine whether the screen resolution can be changed.

# USING TStatSpec WINDOWS, MENUS AND TOOLBARS

## Intro and Links Using TStatSpec Windows, Menus, and Toolbars.

### Description:

TStatSpec™ includes a title bar, status bar, menu bar, toolbar, and a workspace. Select a topic below to learn more about using TStatSpec™ windows, menus, and toolbars.



### Purpose:

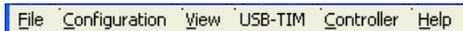
To familiarize the user with TStatSpec™ Windows, menus and toolbars.

## Menu Bar

### Description:

TStatSpec™ provides the following menu bar.

Fig. 3. Menu Bar



### FILE MENU



Exit	Quit TStatSpec.	Alt + F4
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### CONFIGURATION MENU

Fig. 4. Configuration Menu

Configuration	
New...	Ctrl+N
Open...	Ctrl+O
Edit...	Ctrl+E
Close	Shift+Ctrl+O
Delete...	Shift+Ctrl+N
Replicate...	Shift+Ctrl+P
Backup...	Ctrl+B
Restore...	Shift+Ctrl+B
Batch Restore	

<b>New</b>	Create a new configuration.	Ctrl + N
<b>Open</b>	Open an existing TStatSpec™ configuration.	Ctrl + O
<b>Edit</b>	Modify a configuration's information.	Ctrl + E
<b>Close</b>	Close the current configuration. Note that TStatSpec™ also closes the current configuration if you select New or Open.	Shift + Ctrl + O
<b>Delete</b>	Remove a TStatSpec configuration.	Shift + Ctrl + N
<b>Replicate</b>	Replicate a TStatSpec™ configuration	Shift + Ctrl + P
<b>Backup</b>	Archive a TStatSpec™ configuration, in its entirety, on diskettes, PC drives, or network drives. You can later completely restore the configuration into TStatSpec™ via the Restore function.	Ctrl + B
<b>Restore</b>	Retrieve a backup copy of a TStatSpec™ configuration.	Shift + Ctrl + B
<b>Batch Restore</b>	Restore a set of TStatSpec™ configurations from the disk.	

### VIEW MENU

Fig. 5. View Menu



A check mark next to an item indicates that it is enabled. If the space is blank, then it indicates that the item is disabled.

<b>Toolbar</b>	Enable/disable display of the toolbar.	Alt + T
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<b>Status Bar</b>	Enable/disable display of the status bar. The status bar displays messages as you move the cursor over areas of the window and as you perform functions. It also displays on-/off-line status, current date, and current time.	F4
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**USB-TIM MENU**

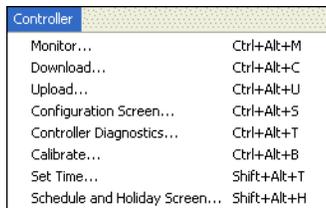
**Fig. 6. USB-Tim Menu**



Connect	Connects to the USB-TIM adapter.	F2
Disconnect	Disconnects from the USB-TIM adapter.	Ctrl + F2

**CONTROLLER MENU**

**Fig. 7. Controller menu**

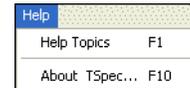


<b>Monitor</b>	Displays <b>Select a Controller</b> dialog box. Monitor activity and configuration such as alarms, diagnostics, occupancy, temperature, and heating/cooling for the selected controller.	Ctrl + Alt +M
<b>Download</b>	Opens the <b>Download</b> dialog box. Downloads configuration data from TStatSpec™ to the device. Also see Upload.	Ctrl + Alt + C
<b>Upload</b>	Opens the <b>Select a Controller</b> dialog box. Copy controller database information from the controller to TStatSpec™. Also see Download.	Ctrl + Alt + U
<b>Configuration Screen</b>	Displays the <b>Configuration Screen</b> dialog box to view or modify a configuration.	Ctrl + Alt + S
<b>Controller Diagnostics</b>	Opens the select controller dialog box, where it is possible to select the diagnostics screen for a controller type.	Ctrl + Alt + T
<b>Calibrate</b>	Opens the select controller dialog box, to select the calibrate screen option for a controller type.	Ctrl + Alt + B

<b>Set Time</b>	Allows the user to set the time on the time master.	Shift + Alt + T
<b>Schedule and Holiday Screen</b>	Opens the Schedule and Holiday dialog box. Allows the user to save or restore schedules.	Shift + Alt + H

**HELP MENU**

**Fig. 8. Help Menu**



<b>Help Topics</b>	Displays the Contents tab.	F1
<b>About TStatSpec™</b>	Displays TStatSpec™ version number and copyright information.	F10

**Status Bar**

**Description:**

The status bar displays at the bottom of the TStatSpec™ window. It displays messages as you move the cursor over window areas and perform actions. For example, if you Select the **Configuration** menu and point to **New**, the status bar displays a description of the command. This option is not available when the actions are performed using the icons from the toolbar.

**Fig. 9. Status bar**



The status bar also displays the status, and messages when downloading or uploading device configurations.

**Title Bar**

**Description:**

The title bar shows the TStatSpec™ program icon, TStatSpec™ name and version, and Configuration name (if open):

**Fig. 10. Title bar**



The title bar also displays the Minimize and Maximize buttons.

**Using Minimize and Maximize**

Click the Minimize button (leftmost button shown below) to reduce TStatSpec™ to an icon or Exit (rightmost button) to quit TStatSpec™.

**Fig. 11. Minimize button**



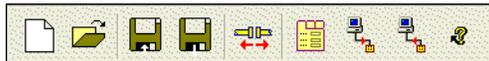
## Toolbar

### Description:

The toolbar displays across the top of the application window, below the menu bar. The toolbar provides a quick access alternative to commands found in the menu bar. Pop-up windows display button functions when you point to a toolbar icon.

To toggle between hide and display, choose **Toolbar** from the **View** menu. A checkmark next to **Toolbar** indicates that the Toolbar will be shown. To remove the checkmark, click **Toolbar**.

Fig. 12. Tool bar



### TOOLBAR ICONS:

	Quick Start-New Configuration
	Open an Existing Configuration

	Backup a Configuration
	Restore a Configuration
	Connect or disconnect the USB-TIM adapter.
	Connect or disconnect the USB-TIM adapter.
	Configuration Screen
	Download a Controller
	Upload a Controller
	Help Topics

# CONFIGURATION

## Create a Configuration

### Description:

To work in TStatSpec™ you must define a configuration if none exists. If a configuration exists, it must be open.

### Purpose:

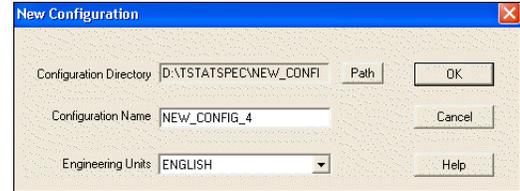
Create a new configuration.

### Procedure:

To create a new configuration:

1. Press **CTRL + N** or choose **New** from the **Configuration** menu to open the **New Configuration** dialog box.

**Fig. 13. New Configuration**



2. Select the directory and enter a name for the configuration.
3. Set the configuration attributes as given in the fields below.
4. Click **OK** to save settings and close the dialog box.

Fields	
Name	Definition
<b>Configuration Directory</b>	TStatSpec™ lists a default directory. Enter new directory name or click <b>Path</b> to locate a directory.
<b>Configuration name</b>	Name of configuration (for example, RESTAURANT). Use valid DOS directory characters, up to 32.
<b>Engineering Units</b>	Click down arrow to view choices (Standard International [SI] Units [metric] or English). To display temperature in degrees Fahrenheit, select English.
Buttons	
Name	Definition
<b>Path</b>	Opens the <b>Browse for Folder</b> dialog box to select a folder under which the configurations are placed.
<b>OK</b>	Creates a configuration, adds the configuration folder to the directory and closes the dialog box. If a configuration with the same name exists then the configuration will not be created.
<b>Cancel</b>	Closes the dialog box. Any information entered is lost.
<b>Help</b>	Displays help for this topic.

## Open an Existing Configuration

### Description:

Multiple configurations exist within the TStatSpec™ application. The user can only work with one configuration at a time. The user has to open the configuration to work on it. If a configuration is already open TStatSpec™ prompts the user and closes the open configuration.

### Purpose:

Open a configuration for viewing or editing.

### Procedure:

1. Press **CTRL + O** or choose **Open** from the **Configuration** menu or click the **Open Configuration** to view the **Open Configuration** dialog box.
2. Select the desired configuration from the list and click **OK**. The dialog box closes and the selected configuration opens in the TStatSpec™ window.

**NOTE:** If a configuration is already open, a message box warns that the current configuration will be closed. Click **Yes** to close the configuration and the message box.

### Fields:

Name	Definition
<b>Current Configurations</b>	Lists all the configurations available.
<b>OK</b>	Opens the selected configuration.
<b>Cancel</b>	Closes the dialog box without opening a configuration.
<b>Help</b>	Displays help for this topic.

## Edit a Configuration

### Description:

This section describes the process of editing a configuration. This feature helps the user to change the configuration name and its Engineering units. The user cannot edit the directory in which the configuration is stored.

### Purpose:

Edit a configuration.

### Procedure:

1. Press **CTRL + E** or choose **Edit** from the **Configuration** menu to open the **Edit Configuration** dialog box.
2. Edit the configuration and click **OK**.

### Fields:

Name	Definition
<b>OK</b>	Click <b>OK</b> to save the edited configuration
<b>Cancel</b>	Closes the dialog box.
<b>Help</b>	Displays help for this topic.

## Close a Configuration

### Description:

Only one configuration may be open at a time. To open a new configuration, the current one must be closed. Closing a configuration does not delete it from the TStatSpec™ database

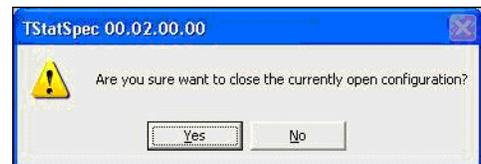
### Purpose:

Remove a configuration from the workspace so that another configuration may be opened.

### Procedure:

1. Press **SHIFT + CTRL + O** or choose **Close** from the **Configuration** menu to close the configuration:

**Fig. 14. Close Configuration**



2. Click **Yes** in the message box.

## Delete a Configuration

### Description:

When a configuration is deleted all the controller information associated with the configuration is permanently removed from the TStatSpec™ database. If the configuration has been backed up, it can be restored even after deletion.

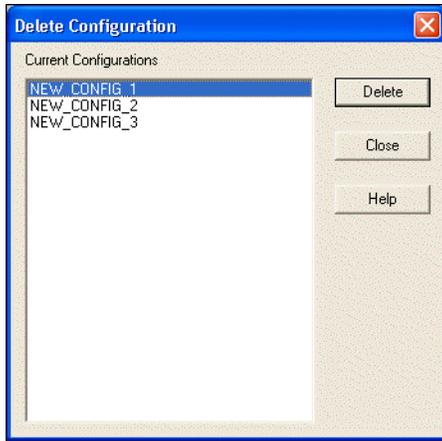
### Purpose:

Delete a configuration.

**Procedure:**

1. Press **SHIFT + CTRL + N** or choose **Delete** from the **Configuration** menu to open the **Delete Configuration** dialog box.

**Fig. 15. Delete Configuration**



2. Select the configuration to be deleted and click **Delete**.
3. TStatSpec™ pops up a message warning the user. Click **Yes** to delete the selected configuration.

Fields	
Name	Definition
<b>Current Configurations</b>	List of current configurations available for deletion.
Buttons	
<b>Delete</b>	Opens a message box. Click <b>Yes</b> to delete the configuration.
<b>Close</b>	Closes the dialog box.
<b>Help</b>	Displays help for this topic.

## Replicate a Configuration

**Description:**

This section describes the procedure of copying one configuration into another configuration. This feature helps the user to create a new configuration database from an existing database without backing up and restoring the configuration with a different name.

**Procedure:**

1. Press **SHIFT + CTRL + P** or select **Replicate** from **Configuration** menu. TStatSpec will pop up a dialog asking to close the open configuration. This message

box does not appear if no configurations are open. This menu will be enabled only when TStatSpec contains at least one configuration in the workspace.

**Fig. 16. Replicate Configuration Message**



2. After clicking **Yes** TStatSpec™ will display the following dialog box:

**Fig. 17. Replicate Configuration**



3. From the drop-down list, select the configuration name from which the new configuration database will be replicated.
4. Give a new name to the configuration in **New Config Name**.
5. After clicking **OK**, TStatSpec will create a new configuration and add to TStatSpec Workspace.

## Backup a Configuration

**Description:**

This section describes the process for backing up a configuration. It is a good practice to periodically back up configuration(s) data while working and prior to exiting TStatSpec™ so that valuable information can be restored if it is accidentally damaged or destroyed. The configuration backups may be stored on floppy disks, a fixed drive on your PC, or a network drive. In case of a Novell network, the backed up file name should only have a maximum of 8 characters.

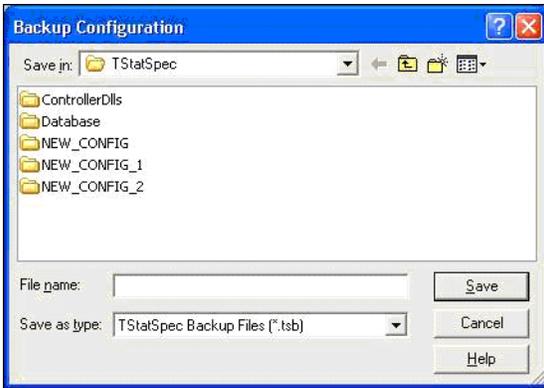
**Purpose:**

To backup a configuration for failure recovery, or to copy the configuration information into another TStatSpec™ installation.

**Procedure:**

1. Press **CTRL + B** or choose **Backup** from the **Configuration** menu, or click the **Configuration Backup** button in the toolbar to open the dialog box.

**Fig. 18. Backup Configuration**



**IMPORTANT**

*Your backup files must reside in a directory outside the TStatSpec™ program directory.*

2. If necessary, click the **directory button** to go up at least one level above the TStatSpec™ program directory.



- Type a descriptive configuration backup name in the **File name** field.
- Click **Save**.

TStatSpec backs up the database in \*.tsb and \*.hdr files. In case the files are transferred both the files need to be copied. The \*.tsb file is used for restoration; do not delete these files.

TStatSpec backs up the database in \*.tsb files.

The user can also select the backup option from **Configuration > Backup**.

## Restore a Configuration

**Description:**

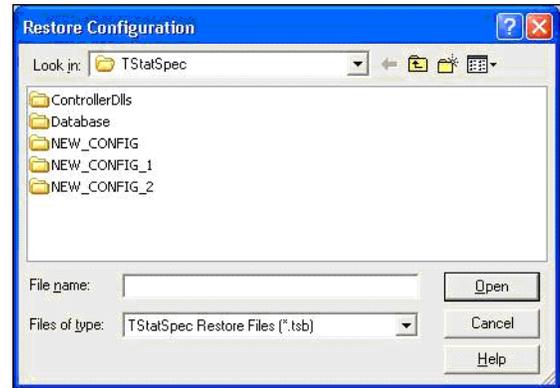
This section describes the process used to restore a backed up configuration. The restore operation is typically used to import a backed up TStatSpec™ database, but it can also be used in the event of a database failure.

**Procedure:**

Retrieve a backup copy of a TStatSpec™ configuration to view or modify.

1. Press **SHIFT + CTRL + N** or choose **Restore** from the **Configuration** menu or click the **Configuration Restore** in the toolbar to open the dialog box:

**Fig. 19. Restore Configuration**



2. Locate the diskette or directory where the backup is stored.
3. Select the \*.tsb file to restore. If the configuration to be restored already exists in TStatSpec™ workspace, then the user is prompted to overwrite or restore the configuration under a different name.

**Fig. 20. Configuration Restore Message**



4. Click **OK**.

If the configuration that is being restored is open, a message displays that the current configuration will be overwritten.

If a different configuration is open, TStatSpec™ displays a warning that it will close the current configuration, and prompts the user to continue or cancel the restore action.

TStatSpec™ checks for adequate disk space. If there is not enough space a message displays and the process terminates. If TStatSpec™ begins a restore and cannot finish, it displays an error message and deletes any restored data so that no partial files remain.

## Batch Restore

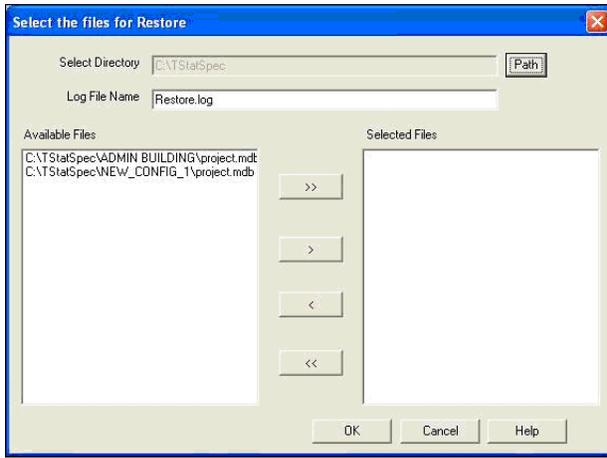
**Description:**

Unlike the Restore Configuration option, you do not need to back up any Configuration explicitly. This option requires the folder where previous configuration data was created/saved so that it can automatically search and find the configuration databases that need to be restored.

**Procedure:**

1. Click the **Batch Restore** item from **Configuration** menu

**Fig. 21. Batch Restore**



2. Locate the diskette or directory where the backup is stored or the older versions of TStatSpec™ configuration files are located.
  - Select the files from the available list box to the selected list
  - Click **OK**.
3. If a configuration with the name of the restored configuration already exists in TStatSpec™ workspace, the user will be asked whether to overwrite the existing configuration or restore under a different name. If the user does not respond within 30 secs, TStatSpec™ will choose the overwrite option by default and close the dialog box.

**Fig. 22. Configuration Restore Message**



4. On completion of the restore operation, TStatSpec™ will display a dialog asking to view the restore Log file.

If the configuration that is being restored is open, a message will appear indicating that the current configuration will be overwritten.

TStatSpec™ automatically checks for adequate disk space. If there is not enough space a message displays and the process terminates. If TStatSpec™ begins a restore and cannot finish, it displays an error message and deletes any restored data so that no partial files remain.

**Fields:**

Name	Definition
<b>Select Directory</b>	Allows the user to select the folder where backup or the older versions of TStatSpec configuration files are located.
<b>Log File Name</b>	Allows the user to enter the restore log file name. This file will be created under the current directory of TStatSpec.
<b>Available files</b>	The available configurations are displayed.
<b>Selected files</b>	Allows the user to select the configurations to be restored.
<b>Buttons:</b>	
<b>Name</b>	<b>Definition</b>
>>	To add all the files from <b>Available Files</b> .
>	To add the selected file from <b>Available Files</b> .
<	To remove the selected file from <b>Selected Files</b> .
<<	To remove all the files from <b>Selected Files</b> .
<b>OK</b>	Accept the changes and closes the dialog.
<b>Cancel</b>	Closes the dialog without accepting the changes.
<b>Help</b>	Displays help for this topic.

**Tips:**

Follow the below steps to copy all your configurations from one computer to another:

1. Copy the directory (which contains all of the configuration files) to the new computer.
2. Begin a **Batch Restore**.
3. Click the **Path** button.
4. Choose the copied directory.
5. Click the >> button to select all configurations.
6. Click **OK** to restore all configurations.

If the TStatSpec™ application is reinstalled, follow the below steps to restore all old configurations:

1. Begin a **Batch Restore**.
2. Click the **Path** button.
3. Choose the directory where the old configurations were saved.
4. Click the >> button to select all configurations.
5. Click **OK** to restore all configurations.

## CONTROLLER FUNCTIONS

### Intro and Links Controller Functions

#### Description:

TStatSpec™ provides various operations for configuring the controller application. These include downloading and uploading the controller. TStatSpec™ also provides features to monitor controller points, view the alarm, create device list report, configuration report.

### Monitor Controller Activities

#### Description:

The controller must be online before monitoring. The controller data points are organized into tabs and are refreshed continuously.

#### Purpose:

Displays point data for a selected controller.

#### Procedure:

1. Press **CTRL + ALT + M** or click **Monitor** in the workspace or select **Monitor** from the **Controller** menu.

#### Link to T7350 Monitoring:

T7350 Monitoring

### Download a Controller

#### Description:

Downloading updates the controller with the configuration in the TStatSpec™ database.

#### Purpose:

To download configurations to the controllers. Download the information you configure from the TStatSpec™ database to the controller's database.

#### Procedure:

1. Press **CTRL + ALT + C** or click **Download** in the workspace or select the **Controller** menu and choose **Download** to download the controller.

TStatSpec™ downloads the controller.

Observe the download status and progress. If a failure occurs, the status bar displays and shows the error message.

Other error messages may display, including: communication failures, hardware type mismatch, controller type mismatch, device busy, and current status of device does not allow downloading.

#### Tips:

Wait for at least 5 seconds after T7350 is powered up before performing any download/upload operations.

### Upload a Controller

#### Description:

A controller configuration can be uploaded into TStatSpec database.

#### Purpose:

Transfer database information from the controller to the TStatSpec™ database.

#### Procedure:

1. Press **CTRL + ALT + U** or click **Upload** in the workspace or select **Controller** menu and choose **Upload** to upload the configuration to TStatSpec™ database.:

TStatSpec™ uploads the selected controllers. It displays the progress of operations as they occur in the status bar. If a failure occurs, the status bar displays and shows the error message. It also copies controller database information from the controller to the PC.

### Controller Diagnostics

#### Description:

After configuration and downloading, the controller is put into Controller Diagnostic mode and checked for proper operation.



## CAUTION

**Equipment Damage is Possible.**

*May cause short-cycling of compressors, or cause damage to other heating or cooling equipment.*

*You must take appropriate and recommended precautions when initiating the Controller Diagnostic-Mode. This mode directly drives controller outputs to the manually-entered states.*

#### Purpose:

Place the controller in manual mode. In this mode, the controller's application goes off-line and you can view and command the outputs within the context of the application schematic.

#### Procedure:

1. Press **CTRL + ALT + T**, or click **Controller Diagnostics** in the workspace, or select **Controller** menu and choose **Controller Diagnostics**.

#### NOTE:

- Test options as available in the dialog box.
- When an output is used in a control loop and it is being commanded, the minimum on/off times have highest priority (except when control is in the manual mode).

- When control loops are in the manual mode, digital outputs can be manually controlled (commanded on or off) from a user interface. While in this mode, digital output points do not adhere to minimum on/off times.

## Calibrate Controller

### Description:

Only the online controllers may be calibrated. The input sensors to a controller need to be calibrated. This is done by applying a correction to the sensor input.

### Purpose:

Adjust sensor offset values for a controller.

### Procedure:

1. Press **CTRL + ALT + B** or click **Controller** in the workspace or select **Controller** menu and choose **Calibrate**.

Typically, the calibration screen provides the actual value of the sensor. Enter an expected value that represents the true value the sensor should be detecting. Click the **Calibrate** button to store the offset value in the controller.

## Time Settings

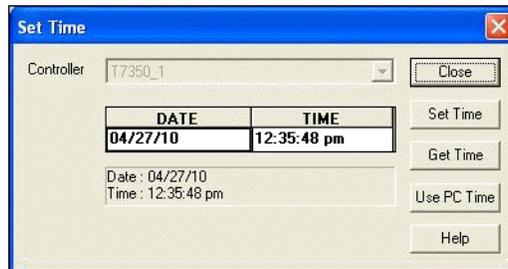
### Description:

**Set Time** dialog allows the user to Get and Set the Time in the controllers.

### Purpose:

To get and set the time in the controllers.

**Fig. 23. Set Time**



### Procedure:

1. Press **SHIFT + ALT + T**, or click **Set Time** in the workspace, or select **Set Time** from **Controller** menu to display the **Set Time** dialog box.
2. Select **Set Time** or **Get Time** to set/get time from/to the controller.
3. Select **Use PC Time** and then **Set Time** to set the System time to the controller.

Fields	
<b>Controller</b>	To select a controller
<b>Date and Time</b>	Read from the controller
<b>Buttons</b>	
<b>Close</b>	Select this to close the dialog
<b>Set Time</b>	Select this to set the specified time to the selected controller
<b>Get Time</b>	Select this to read the time from the specified controller
<b>Use PC Time</b>	Use this to read the system time
<b>Help</b>	Displays help for this topic.

**NOTE:** If the time is not configured in Thermostat, the Get-time shows invalid time and date. After setting a valid time and date in the thermostat, the monitoring screens displays a proper time.

# CONFIGURE T7350 THERMOSTAT

## Intro and Links Configuring T7350

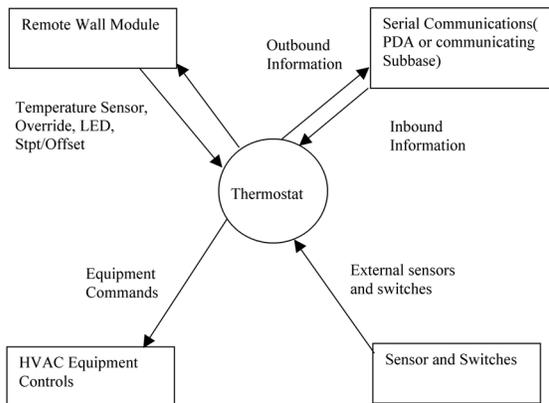
The T7350 is a full-featured commercial programmable thermostat. The primary opportunity for a commercial thermostat is in buildings of less than 55,000 square feet. Examples of these buildings include restaurants, shopping malls, office buildings and banks. Commercial thermostats are used on single zone rooftop units, split systems, heat pumps or hot/chilled systems.

The electronic thermostat consists of two pieces - the cover assembly and a subbase. The subbase includes the equipment control connections. The subbase is mounted on the wall and the thermostat cover assembly is mounted on the subbase. Different subbases will be used for different applications including up to Three Heat/Three Cool or Two Heat/Four Cool, modulating outputs, and dehumidification high limit control. Each subbase is compatible with the common cover assembly.

## System Level Block Diagram

Fig. 24 illustrates a thermostat system level context diagram. The next generation thermostat is capable of interfacing with remote HVAC equipment controls, external sensors and switches, and a remote wall module. External sensors and switches include discharge air temperature, outdoor air temperature, and humidity and occupancy sensor. The remote wall module includes capability for temperature sensor, override switch with LED, and warmer/cooler knob.

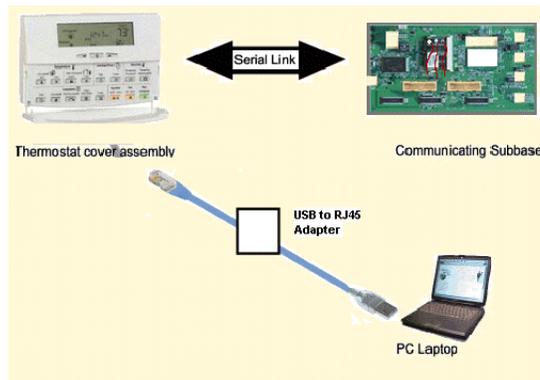
Fig. 24. System Context Diagram



The thermostat has serial communications to allow communications with an installer configuration tool and a future communicating subbase. The thermostat is configured using Installer Setup through the thermostat keys for basic setup functions. More advanced features are available

through an installer configuration tool. The installer configuration tool is compatible with a Palm™ OS handheld computer. See Fig. 25.

Fig. 25. System Communication Overview



The communicating subbase contains relays, humidity sensor and power supply.

A Palm Personal Digital Assistant may be connected to the thermostat via an RJ45 connector and used to configure or program the thermostat.

## Features

- 8-day programming
- Two Occupied and two Unoccupied periods per day
- Individual heat, cool and standby setpoints available for Occupied and Unoccupied periods.
- Proportional plus Integral (P + I) control eliminates temperature fluctuations
- Intelligent Recovery control automatically optimizes equipment start times based on building load
- Intelligent Fan™ feature energizes fan continuously in the Occupied periods. Fan can also be configured for conventional heat(OFF with Heat) or electric heat(ON with Heat) fan operation.
- Convenient overrides allow temporary set point changes.
- Keypad lockout available.

## Non-Communicating Subbase

Non-Communicating Subbases have one of the following configurations:

Three Heat /Three Cool:

This Subbase allows for conventional or heat pump operation. A total of eight relays are available with thermostat cover assembly and subbase. The auxiliary relay may be configured for an economizer, TOD, or dehumidification. This sub base may be configured for 2 Heat / 4 Cool by using the third stage of heat for an additional stage of cooling.

4 additional relays: Stage 2 heating, Stage 3 heating (or Stage 4 cooling relay), Stage 2 cooling, and Stage 3 cooling.

- Remote Room Sensor, T7770 or TR 21 or TR22 or TR23 or TR24 / T7771 Wall Module.

- Remote Room Humidity Sensor.
- Remote Discharge Air Temperature Sensor.
- Remote Outdoor Air Temperature Sensor.
- Remote Occupancy Input (Digital Input).
- Access to the serial communications port on the thermostat.

Terminal Conventional	Terminal Ht Pump	Description
Rc <sup>a</sup>	Rc <sup>a</sup>	24 VAC Cooling transformer
Rh <sup>a</sup>	Rh <sup>a</sup>	24 VAC Heating transformer
X	X	Common.
G	G	Fan relay. (uses RC)
aux	aux	Auxiliary relay. (uses RH)
W1	O/B	Conventional: Stage 1 heating relay. Heat Pump: Changeover relay for heating (B) or cooling (O). (uses RH)
W2	W1	Conventional Stage 2 heating relay. Heat Pump: 1 <sup>st</sup> Stage auxiliary heat relay. (uses RH)
W3/Y4	W2	Conventional: Stage 3 heating or stage 4 cooling relay or auxiliary function if not used as a stage. Heat Pump: 2 <sup>nd</sup> Stage auxiliary heat relay or auxiliary function if not used as a stage. (uses RH)
Y1	Y1	Conventional Stage 1 cooling relay. Heat Pump: Stage 1 compressor relay. (uses RC)
Y2	Y2	Conventional Stage 2 cooling Heat Pump: Stage 2 compressor relay. (uses RC)
Y3	--	Conventional Stage 3 cooling relay or auxiliary function if not used as a stage. Heat Pump: Used as an auxiliary function. (uses RC)
As	As	Discharge Air Sensor connection. (1)
As	As	Discharge Air Sensor connection. (2)
Os	Os	Outdoor Air Sensor connection. (1)
Os	Os	Outdoor Air Sensor connection. (2)
Hc	Hc	Humidity Sensor common.
Hp	Hp	Humidity Sensor Power: 24VAC.
Hs	Hs	Humidity Sensor signal: 0-10V.
M	M	Occupancy (Motion) Sensor. (1)
M	M	Occupancy (Motion) Sensor. (2)
T3	T3	Remote sensor common for T7770 or TR 21 or TR22 or TR23 or TR24 / T7771.
T4	T4	Remote sensor input for T7770 or TR 21 or TR22 or TR23 or TR24 / T7771.
T5	T5	Remote setpoint input for T7770 or TR 21 or TR22 or TR23 or TR24 / T7771.
T6	T6	Remote bypass input for T7770 or TR 21 or TR22 or TR23 or TR24 / T7771.
T7	T7	Remote LED output for T7770 or TR 21 or TR22 or TR23 or TR24 / T7771.

<sup>a</sup> Factory jumper between RC and RH for systems with one transformer.

Two Heat / Two Cool:

This Subbase allows for conventional or heat pump operation. A total of eight relays are available with thermostat cover assembly and subbase. The auxiliary relay may be configured for an economizer, TOD, or dehumidification. This sub base may be configured for 2 Heat / 3 Cool by using the third stage of heat for an additional stage of cooling.

3 additional relays: Stage 2 heating, Stage 2 cooling, and Stage 3 heating / Stage 3 cooling.

- Remote Room Sensor, T7770 or TR 21 or TR22 or TR23 or TR24 / T7771 Wall Module.
- Remote Discharge Air Temperature Sensor.
- Remote Outdoor Air Temperature Sensor.

Terminal Conventional	Terminal Ht Pump	Description
Rc <sup>a</sup>	Rc <sup>a</sup>	24 VAC Cooling transformer
Rh <sup>a</sup>	Rh <sup>a</sup>	24 VAC Heating transformer
X	X	Common.
G	G	Fan relay. (uses RC)
aux <sup>b</sup>	aux <sup>c</sup>	Conventional: Auxiliary relay or 3 <sup>rd</sup> stage of heating or cooling. Heat Pump: Auxiliary relay or 2 <sup>nd</sup> stage of auxiliary heat. (uses RH)
W1	O/B	Conventional: Stage 1 heating relay. Heat Pump: Changeover relay for heating (B) or cooling (O). (uses RH)
W2	W1	Conventional: Stage 2 heating relay. Heat Pump: 1 <sup>st</sup> Stage auxiliary heat relay. (uses RH)
Y1	Y1	Conventional: Stage 1 cooling relay. Heat Pump: Stage 1 compressor relay. (uses RC)
Y2	Y2	Conventional: Stage 2 cooling relay. Heat Pump: Stage 2 compressor relay. (uses RC)
As	As	Discharge Air Sensor connection. (1)
As	As	Discharge Air Sensor connection. (2)
Os	Os	Outdoor Air Sensor connection. (1)
Os	Os	Outdoor Air Sensor connection. (2)
T3	T3	Remote sensor common for T7770 or TR 21 or TR22 or TR23 or TR24 / T7771.
T4	T4	Remote sensor input for T7770 or TR 21 or TR22 or TR23 or TR24 / T7771.
T5	T5	Remote setpoint input for T7770 or TR 21 or TR22 or TR23 or TR24 / T7771.
T6	T6	Remote bypass input for T7770 or TR 21 or TR22 or TR23 or TR24 / T7771.
T7	T7	Remote LED output for T7770 or TR 21 or TR22 or TR23 or TR24 / T7771.

<sup>a</sup> Factory jumper between RC and RH for systems with one transformer.

<sup>b</sup> Can also be used for W3 or Y3.

<sup>c</sup> Can also be used for W2

One Heat / One Cool:

This subbase allows for conventional or heat pump operation. A total of eight relays are available with thermostat cover assembly and subbase. The auxiliary relay may be configured for an economizer, TOD, or dehumidification. This subbase may be configured for 1 Heat / 2 Cool by using the second stage of heat for an additional stage of cooling.

2 additional relays: Stage 1 heating, Stage 1 cooling, and Stage 2 heating / Stage 2 cooling.

Terminal Conventional	Terminal Ht Pump	Description
Rc <sup>a</sup>	Rc <sup>a</sup>	24 VAC Cooling transformer.
Rh <sup>a</sup>	Rh <sup>a</sup>	24 VAC Heating transformer.
X	X	Common.
G	G	Fan relay. (uses RC)
aux <sup>b</sup>	aux <sup>c</sup>	Conventional: Auxiliary relay or 2 <sup>nd</sup> Stage of heating or cooling relay. Heat Pump: Auxiliary relay or 1 <sup>st</sup> Stage auxiliary heat relay. (uses RH)
W1	O/B	Conventional: Stage 1 heating relay Heat Pump: Changeover relay for heating (B) or cooling (O). (uses RH)
Y1	Y1	Conventional: Stage 1 cooling relay. Heat Pump: Stage 1 compressor relay. (uses RC)

<sup>a</sup> Factory jumper between RC and RH for systems with one transformer.

<sup>b</sup> Can also be used for W2 or Y2.

<sup>c</sup> Can also be used for W1.

Modulating Model (Model M):

Terminal Conventional	Terminal Ht Pump <sup>b</sup>	Description
Rc <sup>a</sup>	N/A	24 VAC cooling transformer.
Rh <sup>a</sup>	N/A	24 VAC heating transformer.
X	N/A	Common.
G	N/A	Fan relay. (uses RC).
aux <sup>c</sup>	N/A	Conventional: Aux relay or 2nd Stage of heat or cool relay.(uses RH).
W1	N/A	Conventional: Stage 1 heating relay. (uses RH)
Y1	N/A	Conventional: Stage 1 cooling relay. (uses RC)
Mc	N/A	Cooling Analog Output.
Mh	N/A	Heating Analog Output.
Mx	N/A	Analog Output common.
As	N/A	Discharge Air Sensor connection. (1)
As	N/A	Discharge Air Sensor connection. (2)
Os	N/A	Outdoor Air Sensor connection. (1)
Os	N/A	Outdoor Air Sensor connection. (2)
Hc	N/A	Humidity Sensor common.
Hp	N/A	Humidity Sensor Power: 24VAC.
Hs	N/A	Humidity Sensor signal: 0-10V.
M	N/A	Occupancy (Motion) Sensor. (1)
M	N/A	Occupancy (Motion) Sensor. (2)
T3	N/A	Remote sensor common for T7770 or TR 21 or TR22 or TR23 or TR24 / T7771.

T4	N/A	Remote sensor input for T7770 or TR 21 or TR22 or TR23 or TR24 / T7771.
T5	N/A	Remote setpoint input for T7770 or TR 21 or TR22 or TR23 or TR24 / T7771.
T6	N/A	Remote bypass input for T7770 or TR 21 or TR22 or TR23 or TR24 / T7771.
T7	N/A	Remote LED output for T7770 or TR 21 or TR22 or TR23 or TR24 / T7771.

<sup>a</sup> Factory jumper between RC and RH for systems with one transformer.

<sup>b</sup> The modulating subbase doesn't support heat pumps.

<sup>c</sup> Can also be used for W2 or Y2.

## Communicating Subbase

Communicating Subbases have one of the following configurations:

Three Heat /Three Cool:

This subbase allows for conventional or heat pump operation. A total of eight relays are available with thermostat cover assembly and subbase. The auxiliary relay may be configured for an economizer, TOD, or dehumidification. This subbase may be configured for 2 Heat / 4 Cool by using the third stage of heat for an additional stage of cooling.

4 additional relays. Stage 2 heating, Stage 3 heating (or Stage 4 cooling relay), Stage 2 cooling, and Stage 3 cooling.

- Humidity sensor mounted in subbase.
- Remote Room Sensor, T7770 or TR 21 or TR22 or TR23 or TR24 /T7771 Wall Module.
- Remote Room Humidity Sensor.
- Remote Discharge Air Temperature Sensor.
- Remote Outdoor Air Temperature Sensor.
- Remote Occupancy Input (Digital Input).
- Access to the serial communications port on the thermostat.
- Terminals for base wall plate are listed in the table given below.

Terminal Conventional	Terminal Ht Pump	Description
RC <sup>a</sup>	RC <sup>a</sup>	24 VAC Cooling transformer.
RH <sup>a</sup>	RH <sup>a</sup>	24 VAC Heating transformer.
X	X	Common.
G	G	Fan relay. (uses RC)
aux	aux	Auxiliary relay. (uses RH)
W1	O/B	Conventional: Stage 1 heating relay. Heat Pump: Changeover relay for heating (B) or cooling (O). (uses RH)
W2	W1	Conventional Stage 2 heating relay. Heat Pump: 1 <sup>st</sup> Stage auxiliary heat relay. (uses RH)
W3/Y4	W2	Conventional: Stage 3 heating or stage 4 cooling relay. Heat Pump: 2 <sup>nd</sup> Stage auxiliary heat relay. (uses RH)
Y1	Y1	Conventional Stage 1 cooling relay. Heat Pump: Stage 1 compressor relay. (uses RC)
Y2	Y2	Conventional Stage 2 cooling. Heat Pump: Stage 2 compressor relay. (uses RC)
Y3	--	Conventional Stage 3 cooling relay. Heat Pump: Not Used (uses RC).
AS	AS	Discharge Air Sensor connection. (1)

AS	AS	Discharge Air Sensor connection. (2)
OS	OS	Outdoor Air Sensor connection. (1)
OS	OS	Outdoor Air Sensor connection. (2)
HC	HC	Humidity Sensor common.
HP	HP	Humidity Sensor Power: 24VAC.
HS	HS	Humidity Sensor signal: 0-10V.
M	M	Occupancy (Motion) Sensor. (1)
M	M	Occupancy (Motion) Sensor. (2)
T3	T3	Remote sensor common for T7770 or TR 21 or TR22 or TR23 or TR24 / T7771.
T4	T4	Remote sensor input for T7770 or TR 21 or TR22 or TR23 or TR24 / T7771.
T5	T5	Remote setpoint input for T7770 or TR 21 or TR22 or TR23 or TR24 / T7771.
T6	T6	Remote bypass input for T7770 or TR 21 or TR22 or TR23 or TR24 / T7771.
T7	T7	Remote LED output for T7770 or TR 21 or TR22 or TR23 or TR24 / T7771.

<sup>a</sup> Factory jumper between RC and RH for systems with one transformer.

#### MODULATING OUTPUTS

A total of 4 relays are available with thermostat cover assembly and sub-base. The auxiliary relay may be configured for an economizer, TOD, dehumidification or an additional stage of heating or cooling.

#### MODULATING HEATING OUTPUT.

4-20mA or 2-10Vdc with user supplied external 500-ohm resistor.

#### Modulating Cooling Output.

4-20mA or 2-10Vdc with user supplied external 500-ohm resistor.

#### HUMIDITY SENSOR MOUNTED IN SUB-BASE.

#### REMOTE ROOM SENSOR, T7770 OR TR 21 OR TR22 OR TR23 OR TR24 / T7771 WALL MODULE.

#### REMOTE ROOM HUMIDITY SENSOR.

#### REMOTE DISCHARGE AIR TEMPERATURE SENSOR.

#### REMOTE OUTDOOR AIR TEMPERATURE SENSOR.

#### REMOTE OCCUPANCY INPUT (DIGITAL INPUT).

#### ACCESS TO THE SERIAL COMMUNICATIONS PORT ON THE THERMOSTAT.

Available terminals are listed in following Table.

Terminal Conventional	Terminal Ht Pump <sup>b</sup>	Description
RC <sup>a</sup>	N/A	24 VAC Cooling transformer
RH <sup>a</sup>	N/A	24 VAC Heating transformer
X	N/A	Common.
G	N/A	Fan relay. (uses RC)
aux <sup>c</sup>	N/A	Conventional: Aux relay or 2nd Stage of heat or cool relay.(uses RH)
W1	N/A	Conventional: Stage 1 heating relay. (uses RH)
Y1	N/A	Conventional: Stage 1 cooling relay. (uses RC)
AC	N/A	Cooling Analog Output.
AH	N/A	Heating Analog Output.
AX	N/A	Analog Output common.

AS	N/A	Discharge Air Sensor connection. (1)
AS	N/A	Discharge Air Sensor connection. (2)
OS	N/A	Outdoor Air Sensor connection. (1)
OS	N/A	Outdoor Air Sensor connection. (2)
HC	N/A	Humidity Sensor common.
HP	N/A	Humidity Sensor Power: 24VAC.
HS	N/A	Humidity Sensor signal: 0-10V.
M	N/A	Occupancy (Motion) Sensor. (1)
M	N/A	Occupancy (Motion) Sensor. (2)
T3	N/A	Remote sensor common for T7770 or TR 21 or TR22 or TR23 or TR24 / T7771.
T4	N/A	Remote sensor input for T7770 or TR 21 or TR22 or TR23 or TR24 / T7771.
T5	N/A	Remote setpoint input for T7770 or TR 21 or TR22 or TR23 or TR24 / T7771.
T6	N/A	Remote bypass input for T7770 or TR 21 or TR22 or TR23 or TR24 / T7771.
T7	N/A	Remote LED output for T7770 or TR 21 or TR22 or TR23 or TR24 / T7771.

**a** Factory jumper between RC and RH for systems with one transformer.

**b** The modulating sub-base doesn't support heat pumps.

**c** Can also be used for W2 or Y2.

#### Usage Scenarios

Capable of controlling HVAC equipment generally described as:

Conventional Roof Top Unit (RTU) with gas or electric heat and DX cooling.

- 0-3 stages of heat.  
Limit of 6 stages of heating and cooling combined.

- 0-4 stages of compressor.  
Limit of 6 stages of heating and cooling combined.

- Single speed fan.
- Auxiliary relay used to enable economizer dampers, TOD or Dehumidification.

Heat Pump Roof Top Unit (RTU) with gas or electric auxiliary heat.

- 0-2 stages of auxiliary heat.
- 0-3 stages of compressor.
- Heating or cooling changeover valve, configurable for ON for heat or ON for cool.
- Single speed fan.

- Auxiliary relay used to enable economizer dampers, TOD or Dehumidification.

- **Modulating Roof Top Unit (RTU)**

Hot water valve or modulating gas heat and/or chilled water valve.

- **Heat enable, cool enable, or 0-2 stages of heat or compressor.**

The modulating outputs are always active. They are always being driven 0-100%. When the number of stages is zero, the relay outputs may be used to enable heating or cooling outputs. This means the W1/Y1 relay will turn on when the modulating output is nonzero and turn off when the output is zero. Staged action may be used in addition to the modulating outputs. The number of stages is set to 1 or 2. In this case, the relay output(s) may be used for up to 2 stages of heating or cooling. Note the user can't have both 2 stages of cooling and 2 stages of heating. In another example, the user could have Mod Heat, heating pump enable relay, and 1 stage of cooling, or Mod Heat, heating pump enable relay, and 2 stages of cooling.

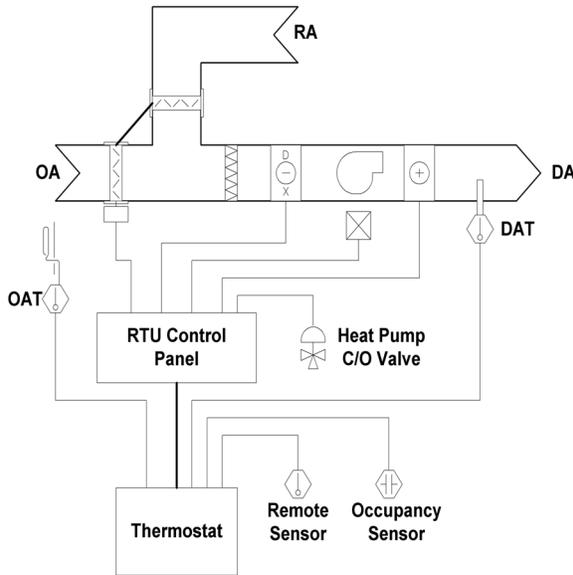
- **Cooling analog output – direct or reverse acting**  
4-20mA or 2-10Vdc with user supplied external 500-ohm resistor.

- **Heating analog output – direct or reverse acting**  
4-20mA or 2-10Vdc with user supplied external 500-ohm resistor.

- **Single speed fan.**  
— **Auxiliary relay used to enable economizer dampers, TOD or Dehumidification.**

The following figure represents typical Rooftop Unit.

**Fig. 26. Rooftop Unit**



## Configuring General Page

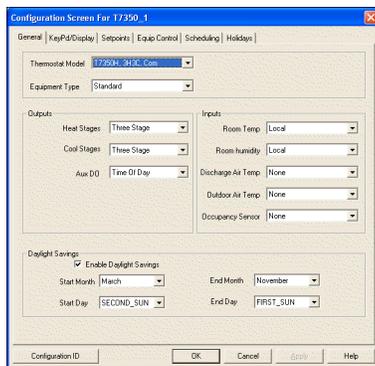
### Description:

The General Page allows the user to configure the thermostat model, equipment type, outputs, inputs, and daylight savings details.

### Procedure:

Click the T7350 thermostat controller or Configuration Screen to open the configuration dialog box. Choose General tab, if not already displayed.

**Fig. 27. General Page**



Following section explains about each field in this screen:

### THERMOSTAT MODEL:

The T7350 Communicating Subbase (T7350CS) comes in two models, T7350H, 3H3C, Com and T7350H, Mod, Com.

The T7350 Non Communicating Subbase comes in 4 models, T7350A, 1H1C; T7350B, 2H2C; T7350D, 3H3C, RH; and T7350M, Mod.

**T7350H, 3H3C, Com:** This subbase is the Three Heat/Three Cool model. It allows for conventional or heat pump operation. A total of 8 relays are available with the thermostat cover assembly and subbase. The auxiliary relay may be configured for an economizer, TOD, or dehumidification. The subbase may be configured for 3 Heat/ 3 Cool or 2 Heat/ 4 Cool by using the third stage of heat for an additional stage of cooling.

**T7350H, Mod, Com:** This subbase is the modulating subbase. A total of 4 relays are available with the thermostat cover assembly and subbase. The auxiliary relay may be configured for an economizer, TOD, dehumidification or an additional stage of heating and cooling.

**T7350A, 1H1C:** This subbase allows for conventional or heat pump operation. A total of 4 relays are available with the thermostat cover assembly and subbase. (All are located in the cover assembly). The auxiliary relay may be configured for an economizer minimum position enable, TOD, or an additional stage of heating or cooling.

**T7350B, 2H2C:** This Subbase allows for conventional or heat pump operation. A total of 6 relays are available with thermostat cover assembly and subbase. The auxiliary relay may be configured for an economizer minimum position enable, TOD, dehumidification, or an additional stage of heating or cooling.

**T7350D, 3H3C, RH:** This subbase is the Three Heat/Three Cool model. It allows for conventional or heat pump operation. A total of 8 relays are available with the thermostat cover assembly and subbase. The auxiliary relay may be configured for an economizer, TOD, or dehumidification. The subbase may be configured for 3 Heat/ 3 Cool or 2 Heat/ 4 Cool by using the third stage of heat for an additional stage of cooling.

**T7350M, Mod:** This subbase is the modulating subbase. A total of 4 relays are available with thermostat cover assembly and subbase. The auxiliary relay may be configured for an economizer minimum position enable, TOD, dehumidification or an additional stage of heating or cooling.

See the section on Outputs for description on these relays.

### EQUIPMENT TYPE:

This field specifies the operation in which this subbase is used. When the thermostat model is selected as T7350A, 1H1C; or T7350B, 2H2C; or T7350D, 3H3C, RH; or T7350H, 3H3C, Com; the equipment type can be selected as Standard or Heat Pump.

When the model is selected as T7350M, Mod; or T7350H, Mod, Com the equipment type is changed to Standard and this option is disabled for selection. When the T7350M, Mod, or T7350H, Mod, Com model type is selected, the Heat Action and Cool Action options are enabled for selection. The modulating subbase does not allow for heat pumps.

**OUTPUTS**

This section allows user to configure the outputs.

These fields allows user to configure the number of heat stages and cool stages for the application the subbase is being used for.

**Heat Stages:**

The following table explains the use of the relays in different subbases.

**Cool Stages:**

Outputs	Model	Equipment type	Default value	number of stages available for configuration
Heat Stages	T7350A, 1H1C	Standard	One Stage	None One Stage Two Stage
	T7350B, 2H2C	Standard	Two Stage	None One Stage Two Stage Three Stage
	T7350D, 3H3C, RH & T7350H, 3H3C, Com	Standard	Three Stage	None One Stage Two Stage Three Stage( Not available if configured for 4 stages of cooling)
	T7350M, Mod & T7350H, Mod, Com	Standard	Heat Enable	Heat Enable() One Stage Two Stage (Used as auxiliary relay or second stage of heat or cool relay. Not available if used as second stage of cooling)
Aux Heat Stages	T7350A, 1H1C	Heat Pump	One Stage	None One Stage
	T7350B, 2H2C	Heat Pump	Two Stage	None One Stage Two Stage
	T7350D, 3H3C, RH & T7350H, 3H3C, Com	Heat Pump	One Stage	None( No auxiliary heating) One Stage (of auxiliary heat) Two Stage(of auxiliary heat )

Cool Stages	T7350A, 1H1C	Standard	One Stage	None One Stage Two Stage
	T7350B, 2H2C	Standard	Two Stage	None One Stage Two Stage Three Stage
	T7350D, 3H3C, RH & T7350H, 3H3C, Com	Standard	Three Stage	None One Stage Two Stage Three Stage
	T7350M, Mod & T7350H, Mod, Com	Standard	Cool Enable	Cool Enable One Stage Two Stage ( Used as auxiliary relay or second stage of heat or cool relay. Not available if used as second stage of heating)
Compressor stages	T7350A, 1H1C	Heat Pump	One Stage	None One Stage Two Stage
	T7350B, 2H2C	Standard	Two Stage	None One Stage Two Stage Three Stage
	T7350D, 3H3C, RH & T7350H, 3H3C, Com	Standard	Three Stage	None One Stage Two Stage Three Stage
	T7350M, Mod & T7350H, Mod, Com	Heat Pump	Two Stage	None One Stage Two Stage

When the model is selected as T7350D, 3H3C, RH & T7350H, 3H3C, Com and the equipment type as Standard, the tool allows to configure for up to three stages of heating

and three stages of cooling. The fourth stage of cooling is available for selection as long as the 0/1/2 heat stages are selected. When the fourth stage of cooling is selected, the third stage of heating is no longer available.

When the model is selected as T7350M, Mod & T7350H, Mod, Com, user can configure for 0/1/2 heat or cool stages. The modulating outputs are always active and being driven 0-100%. When the number of stages are 0, the relay outputs are used to enable the heating or cooling outputs. Staged action may be used in addition to the modulating outputs. The number of stages is set to 1 or 2. It is not possible to have both 2 stages of heating and cooling.

Examples:

**Example 1:** Selecting heating stages and cooling stages as 1 configures for modulating heat and modulating cool action.

**Example 2:** To have Mod heat, heating pump enable relay and 1 stage of heating, configure Heat Stages as Heat Enable, Heat Action (depends on the actuator connected) and connect the relay W1 such that it turns the heating pump ON or OFF.

#### AUXILIARY DO:

This option allows the user to configure the auxiliary outputs. The auxiliary DO can be configured for economizer, Time Of Day or for dehumidification. The dehumidification options available are Simple Dehumid or Dehumid Hotgas BP.

Note: The dehumid options (Simple Dehumid or Dehumid Hotgas BP) are available for configuration only if a humidity sensor is configured.

#### HEAT ACTION:

This is enabled when the model is selected as T7350M, Mod or T7350H, Mod, Com. This is disabled for other models. This is applicable for modulating heat output that is when the Heat Stages option is configured as Heat Enable. Select 'Direct 4-20mA' if the actuator connected for heating action is driven from 0-100% and 'Reverse 20-4mA' if is driven from 100-0%.

#### COOL ACTION:

This is enabled when the model is selected as T7350M, Mod or T7350H, Mod, Com. This is disabled for other models. This is applicable for modulating cool output that is when the Cool Stages option is configured as Cool Enable. Select 'Direct 4-20mA' if the actuator connected for cooling action is driven from 0-100% and 'Reverse 20-4mA' if is driven from 100-0%.

#### INPUTS:

This section allows the user to configure the inputs to the thermostat.

#### ROOM TEMP:

This option allows the user to configure the source of room temperature input to the thermostat. The T7350 thermostat is equipped with its own internal room temperature sensor. The sensor operating range is 30 deg F to 110 deg F.

The T7350 thermostat is compatible with the following Honeywell Wall Modules: T7770A1006, T7770B1046, T7770C1044, T7770D1000, TR21, TR22, TR23, TR24 and T7771.

Options available are:

- Local: Configure as local if the internal temperature sensor on the thermostat is to be used to sense the room temperature.
- T7770A/D or TR21/24: The models T7770A1006, T7770D1000, TR21 and TR24 have only temperature sensors, and have no setpoint knob. Select this option when one of these families of wall modules is connected.
- T7770B/C or TR22/23: The wall modules T770B1046, T770D1000, TR22 and TR23 have temperature sensors with setpoint knobs, override button and a LED.
- T7771: The T7771 wall module will have a temperature sensor and override button, but instead of a setpoint knob it has up/down buttons and 7 LEDs to indicate ( -3 deg F to +3 deg F) what the user has selected.

NOTE:

1. Open, short or out-of-range on the internal or remote room temperature sensor input(s) to the thermostat will cause the outputs to be turned off. The fault detection is done only on the sensor being used. That is, if the internal (local) sensor is being used, faults on the remote sensor are ignored.
2. The T7350A, 1H1C model supports only **Local** sensor.

#### ROOM HUMIDITY:

This allows the user to configure the source of room humidity input to the thermostat. Options available are:

- None: Select this option when dehumidification is not required.
- If the Aux DO output is configured as Simple Dehumid or Dehumid Hotgas BP, it is defaulted to Time Of Day option and the Simple Dehumid, Dehumid Hotgas BP options are not available for selection.
- The Dehumidification High Limit and Dehumidification Options in the Setpoints page are disabled.
- **Local:** The thermostat has an internal room relative humidity sensor, which has the range of 5% to 105%RH. For humidity less than 5% and above 105%, the sensor will show invalid and there will be a sensor fail alarm.
- **Remote:** A remote humidity sensor can be hardwired to the thermostat. Select this option when the humidity input is required from a remote sensor. The thermostat is compatible to H7631A1000 (0 to 10V) or equivalent sensors.

NOTE:

1. In cases where a humidity sensor is hardwired, a valid value on Space Temperature In point will take precedence over the hardwired input.
2. The T7350A, 1H1C and T7350B, 2H2C thermostat models does not support a room humidity sensor.

**DISCHARGE AIR TEMP:**

This field allows user to configure the source for discharge air temperature input. The following options are available:

- None: Select this if discharge temperature sensor is not connected. When this option is selected, the Enable Heating DAT HiLimit and Enable Cooling DAT Low Limit in Equip Control page are disabled.
- Remote: Select this option if a discharge air temperature sensor is hardwired to the thermostat. The thermostat is compatible with the C7770A1006, C7031B1033, C7031C1031, and C7031J1050 (averaging) 20K NTC temperature sensor elements (20Kohms at 77°F).

**NOTE:** The T7350A, 1H1C thermostat model does not support the discharge air temperature sensor.

**OUTDOOR AIR TEMP:**

This field allows user to configure the source for outdoor air temperature input. The following options are available:

**None:** Select this if outdoor air temperature sensor is not connected. When this option is selected, the Enable Heating OAT Lockout and Enable Cooling OAT Lockout options in Equip Control page, cool and heat OAT @Min Ramp and OAT @Min Ramp fields in Setpoints page are disabled.

**Remote:** Select this option if an outdoor air temperature sensor is hardwired to the thermostat. The thermostat is compatible with the following Honeywell outdoor air sensors: C7170A1002, C7089A1002 PT3000 PTC temperature sensor element (3484 ohms at 77°F).

**NOTE:**

1. In cases where an outdoor air temperature sensor is hardwired, a valid value on Outdoor Temperature In point will take the precedence over the hardwired input.
2. The T7350A, 1H1C thermostat model does not support the outdoor air temperature sensor.

**OCCUPANCY SENSOR:**

This field allows user to configure the source for occupancy input. The following options are available:

- None: Select this if an occupancy sensor is not connected.
- Remote: Select this option if an occupancy sensor is hardwired to the thermostat.

**NOTE:**

1. In cases where an occupancy sensor is hardwired, a valid value on Occupancy Sensor In point will take precedence over the hardwired input.
2. The T7350A, 1H1C and T7350B, 2H2C thermostat models does not support the occupancy sensor.

**DAYLIGHT SAVINGS:**

This option allows user to configure the settings for daylight savings. The following is a description for each field:

**Enable Daylight Savings:** By default, this option is enabled. Disable this option if the daylight savings feature is not required for the thermostat. Unselecting this option will disable the Start Month, Stop Month, Start Day and Stop Day fields.

**Start Month:** This field is available for configuration only if the 'Enable Daylight Savings' option field is selected. Its default value is March. Change this option according to the daylight savings settings in the country where the thermostat is installed.

**Start Day:** This field is available for configuration only if the 'Enable Daylight Savings' option field is selected. Its default value is SECOND\_SUN. Change this option according to the daylight savings settings in the country where the thermostat is installed.

**End Month:** This field is available for configuration only if the 'Enable Daylight Savings' option field is selected. Its default value is November. Change this option according to the daylight savings settings in the country where the thermostat is installed.

**Start Day:** This field is available for configuration only if the 'Enable Daylight Savings' option field is selected. Its default value is FIRST\_SUN. Change this option according to the daylight savings settings in the country where the thermostat is installed.

**CONFIGURATION ID:**

When this button is clicked, the button label is replaced by a 16 character alphanumeric number/code with every 2 digits separated by a period. This code represents the configuration information that define the equipment that is connected to the thermostat. This code can be entered through the thermostat keypad using the installer configuration (press Run/Copy buttons simultaneously and navigate to the code. The user is presented with a number identified by C1. Enter the first 2 digits of the configuration ID that TStatSpec™ has generated. Continue entering 2 digits each for C2 to C8. Save this code using Run button). The configuration in the thermostat is changed to that in TStatSpec™. The thermostat installer setup allows the user to enter the configuration through the keypad. When the 'Configuration ID' button is pressed TStatSpec derives the configuration string that user can enter into the thermostat through keypad. This way, the configuration in thermostat is same as it is TStatSpec with respect to inputs, outputs, setpoints, loop tuning parameters, energy management parameters, bypass time.

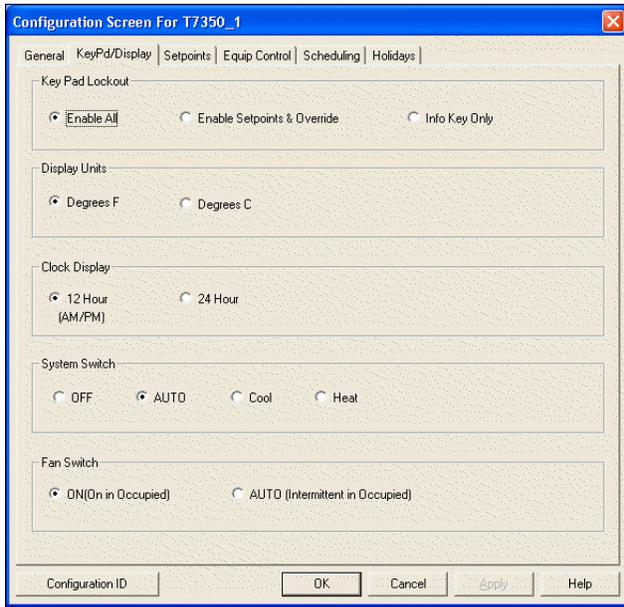
## Configuring KeyPad/Display Page

**Description:**

The KeyPd/Display page allows the user to configure the keypad lockout level, display temperature unit in the thermostat, time display format, system switch configuration and fan switch configuration.

**Procedure:**

Click the T7350 thermostat controller in the workspace to open the configuration dialog box. Choose KeyPd/Display screen, if not already displayed.



The following section details each field in this screen:

**KeyPad Lockout:**

This option allows the user to configure the keypad lockout enable/disable through special keypad sequence on the thermostat.

**Enable All:** Selecting this option will allow the user to access any keys on the thermostat. No lockout will be imposed.

**Enable Setpoints & Override:** This option will lockout all keys except Temporary Occupied, Temporary Not Occupied, Increase, Decrease, and Information.

**Info Key Only:** This option will lockout all keys except the information key.

**Display Units:**

This option allows the user to configure the display units in the thermostat for temperature fields.

**Degrees F:** Select this option to set the display unit for temperature fields as degree Fahrenheit.

**Degrees C:** Select this option to set the display unit for temperature fields as degree Centigrade.

**Clock Display:**

This option allows the user to configure the display mode of time in the thermostat.

**12 Hour(AM/PM):** Selecting this option will display the thermostat time in 12 hour format.

**24 Hour:** Selecting this option will display the thermostat time in 24 hour format.

**System Switch:**

This option allows the user to configure the system operation of the thermostat.

**OFF:** When this option is selected, heat and cool states are disabled.

**AUTO:** The thermostat is configured for Automatic Changeover. When this option is selected, heating and cooling stages are enabled to maintain heating and cooling setpoints.

**Cool:** When this option is selected, cooling stage operates on call for cooling. Heating stages are disabled.

**Heat:** When this option is selected, heating stage operates on call for heating. Cooling stages are disabled.

**Emergency Heat:** This option is available only when the equipment type is selected as Heat Pump. Auxiliary heat serves as stage one. Compressor stages are locked off.

**Fan Switch:**

This option allows the selection of fan switch.

**ON(On in Occupied):** When this option is selected, fan operates continuously in scheduled occupied and stand by periods and bypass mode. Fan cycles with call for heating or cooling during unoccupied periods.

**AUTO(Intermittent in Occupied):** When this option is selected, fan cycles with call for heating or cooling during scheduled occupied, standby and unoccupied periods.

If the T7350 is scheduled for occupied and occupancy sensor is unoccupied (thus effective occupancy is standby), then the fan is off and will turn on with a call for heating and cooling. This applies to both On and Auto. This follows the action of the auxiliary relay when configured for TOD. This is further modified by the selection of conventional (OFF with Heat) or electric heat (ON with Heat).

**Configuring SetPointPage**

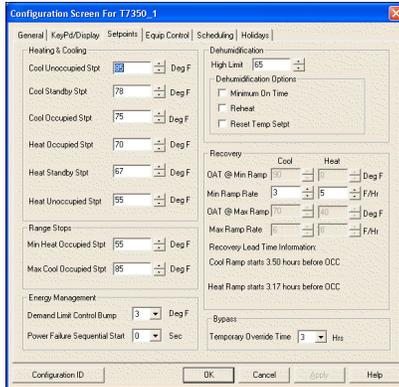
**Description:**

The Setpoints page allows the user to configure the heating and cooling setpoints, energy management features, dehumidification features, recovery setpoints and bypass timer.

**Procedure:**

Click the T7350 thermostat controller in the workspace to open the configuration dialog box. Choose the Setpoints screen, if not already displayed.

**Fig. 28. Configuration Screen**



The following section describes each field in this screen:

**Heating and Cooling setpoints:** This section allows user to specify the heating and cooling setpoints.

The following table gives the default value for each setpoint and its valid range.

Setpoint	Default value	Min. and Max. ranges	Description
<b>Cool Unoccupied Stpt</b>	85 degF or 29 degC	45-99 deg F or 7-37 deg C	Unoccupied cooling setpoint  Display resolution: 1 deg F/deg C.  Unoccupied Cool >= Occupied Cool >= Occupied Heat +2 deg F ( 1 deg C)  Unoccupied Cool >= Standby Cool >= Standby Heat +2 deg F ( 1 deg C)
<b>Cool Standby Stpt</b>	78 deg F or 26 deg C	45-99 deg F or 7-37 deg C	Standby cooling setpoint  Display resolution: 1 deg F/deg C.  Unoccupied Cool >= Standby Cool >= Standby Heat +2 deg F ( 1 deg C)
<b>Cool Occupied Stpt</b>	78 deg F or 26 deg C	45-99 deg F or 7-37 deg C	Occupied cooling setpoint  Display resolution: 1 deg F/deg C.  Unoccupied Cool >= Occupied Cool >= Occupied Heat +2 deg F ( 1 deg C)  Max Occupied Cool >= Occupied Cool >= Occupied Heat +2 deg F ( 1 deg C)
<b>Heat Occupied Stpt</b>	70 deg F or 21 deg C	40-90 deg F or 4 -32 deg C	Occupied heating setpoint  Display resolution: 1 deg F/deg C.  Unoccupied Heat <= Occupied Heat <= Occupied Cool -2 def ( 1 deg C)  Min Occupied Heat <= Occupied Heat <= Occupied Cool -2 deg F ( 1 deg C)

<b>Heat Standby Stpt</b>	67 deg F or 19 deg C	40-90 deg F or 4 -32 deg C	Standby heating setpoint  Display resolution: 1 deg F/deg C. Unoccupied Heat <= Standby Heat <= Standby Cool -2 def ( 1 deg C)
<b>Heat Unoccupied Stpt</b>	55 deg F or 13 deg F	40-90 deg F or 4 -32 deg C	Unoccupied heating setpoint  Display resolution: 1 deg F/deg C. Unoccupied Heat <= Occupied Heat <= Occupied Cool -2 def ( 1 deg C) Unoccupied Heat <= Standby Heat <= Standby Cool -2 def ( 1 deg C)
<b>Min Heat Occupied Stpt</b>	55 deg F or 13 deg C	40-90 deg F or 4 -32 deg C	Lowest the programmed occupied heating setpoint can be allowed.  Display resolution: 1 deg F/deg C. Min Occupied Heat <= Occupied Heat <= Occupied Cool -2 deg F (1 deg C)
<b>Max Cool Occupied Stpt</b>	85 degF or 29 degC	45-99 deg F or 7-37 deg C	Highest the programmed occupied cooling setpoint can be allowed.  Max Occupied Cool >= Occupied Cool >= Occupied Heat + 2 deg F (1 deg C)

This screen will allow the user to change the setpoints using spin buttons or typing in the values into the setpoint fields. As soon as one of the above validations is violated, TStatSpec™ conveys the rule that is applicable for the currently selected field by:

- Highlighting the field that is the limit for the currently selected field
- Displaying the validation test below the currently selected field
- Changing the value of the selected field to the appropriate value as per the rule.

### Energy Management:

#### Power failure Seq Start:

Configure the value for power sequential start by choosing one of the options 0 to 150 seconds. This allows the thermostat to delay start of the fan heating and cooling stages after power is restored to thermostat. After a power outage, it is desirable to start multiple units sequentially instead of all at once to avoid a peak in power consumption.

#### Dehumidification:

This field allows the user to configure a dehumidification strategy. If the system is in heat mode, dehumidification is not allowed.

#### High Limit:

This allows the user to specify the high limit for the dehumidification is started.

Any combination of the following 3 strategies is allowed:

#### Dehumidification using Minimum On Time:

This option is available to configure only when the humidity input is configured in the General page. This is the minimum time the auxiliary relay configured for dehumidification is ON. When this option is selected, the user will be provided with an option to configure the minimum on time ranging from 5 to 15 minutes.

#### Dehumidification using Reheat. (not supported on subbase 4):

This option is only available to configure when the humidity input is configured in the General page. When this is selected, the thermostat switches on the first heating stage when the dehumidification is required. This option is not available for T7350A, 1H1C and T7350B, 2H2C model types.

**Dehumidification using Reset Temp Setpt:** This option is available to configure only when the humidity input is configured in the General page. When this is selected, the user is allowed to specify a temperature value. When this option is selected, the thermostat reduces the effective cooling temperature setpoint by the amount specified by the user.

The dehumidify setpoint must be smaller than the difference between the cooling and heating occupied setpoints and the difference between the cooling and the heating standby setpoints. When one of these setpoints change, TStatSpec™ automatically adjusts the dehumid reset setpoint such that the above condition is satisfied.

When Reset Temp Setpt and Reheat option are selected, TStatSpec™ displays a warning message:



## CAUTION

Selecting both Reheat and Reset Temp Setpt may cause frequent setpoint adjustments under certain dehumidification load conditions. This selection is not recommended. But TStatSpec will proceed with this configuration.

### Recovery:

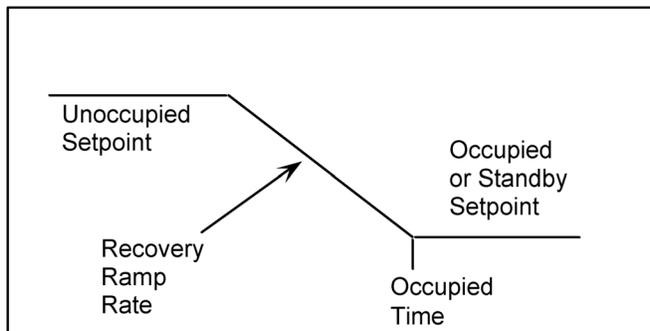
The thermostat allows the adaptive intelligent recovery ramp to continue to the next setpoint during schedule mode changes. The Setpoints screen allows the user to configure the recovery parameters. Setpoint recovery will apply to setpoint changes associated with the following schedule mode changes:

- Unoccupied to Standby
- Unoccupied to Occupied

Setpoint changes on *occupied mode* or *standby mode* to *unoccupied mode*, *occupied mode* to *standby mode*, and *standby to occupied* will use a step change in setpoint. The heating or cooling recovery ramp will begin before the next mode transition time. During the recovery ramps, the heating and cooling set points will be ramped from the existing mode setpoint to the next mode setpoint.

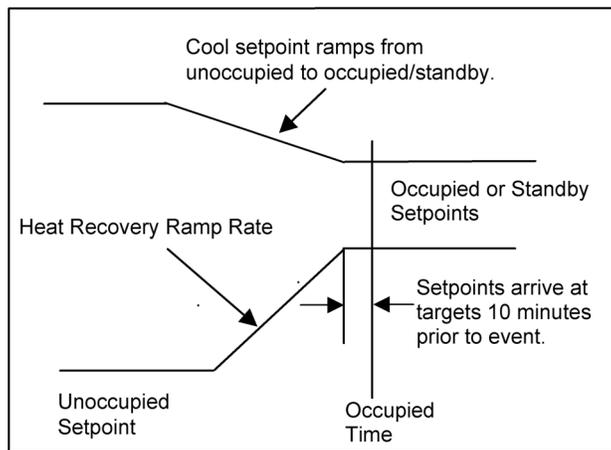
Refer the following figure

**Fig. 29. Cool Recovery Ramp (Heat is upside down)**



The setpoint ramp will be at the target setpoint 10 minutes prior to the occupied/standby event time. This allows the HVAC equipment an extra 10 minutes to get the space temperature to the target setpoint during recovery.

**Fig. 30. Heat and Cool setpoint Recovery Ramp**



There will be two (2) standard options available for choosing the heating and cooling ramp rates: Single Recovery and Variable Recovery Ramp Rate.

For heating or cooling recovery, minimum and maximum recovery ramp rates are provided. Making both of these the same is called Single Recovery. Making these rates different is called Variable Recovery.

See the section below for the description of each of the fields that can be configured:

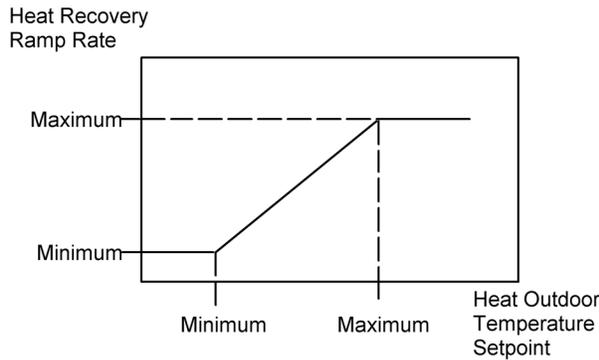
#### MINIMUM RAMP RATE:

Minimum Cool and heat recovery ramp rates are selectable from 0 to 20 DDF/hr ( 0 - 11 DDK/hr). A ramp rate of 0 means no recovery ramp (the setpoint steps from one setpoint to the other).

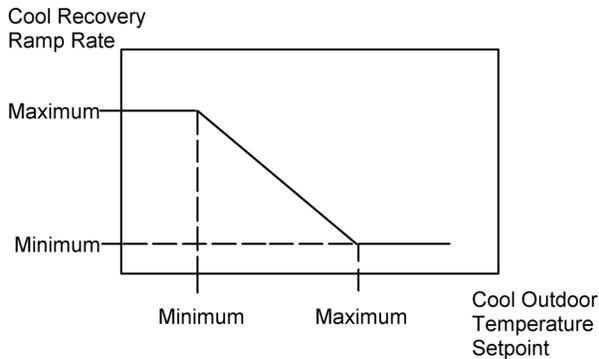
The recovery ramp rate will vary as a function of outdoor temperature.

The minimum and maximum outdoor temperature corresponds to the minimum and maximum recovery rate. Refer to Figure A for heating variable ramp rates and Figure B for cooling variable ramp rates as given below.

**Fig. 31. Heat Recovery Ramp**



**Fig. 32. Cool Recovery Ramp**



**MAX RAMP RATE:**

Maximum Cool and heat recovery ramp rates are selectable from 0 to 20 DDF/hr ( 0 – 11 DDK/hr). A ramp rate of 0 means no recovery ramp (the setpoint steps from one setpoint to the other). This field is enabled only if the outdoor air temperature input is configured in the General Page.

**OAT @ MIN RAMP:**

The minimum and maximum outdoor corresponds to the minimum and maximum recovery rate. Configure the Outdoor air temperature setpoint for cool and heat recovery at which the minimum rate is equal to the value specified in the cool and heat 'Min Ramp Rate' fields. The value is configurable from –20 to 100 deg F( -29 to 38 deg C). This option is available to configure only if the outdoor air temperature input in the General page is configured.

**OAT @ MAX RAMP:**

The minimum and maximum outdoor corresponds to the minimum and maximum recovery rate. Configure the Outdoor air temperature setpoint for cool and heat recovery at which the maximum rate is equal to the value specified in the cool and heat **Max Ramp Rate** fields. The value is configurable from –20 to 100 deg F( -29 to 38 deg C). This option is available to configure only if the outdoor air temperature input in the General page is configured.

**Recovery Lead Time Information:**

The setpoint ramp will be at the target setpoint 10 minutes prior to the occupied/standby event time. This allows the HVAC equipment an extra 10 minutes to get the space temperature to the target setpoint during recovery. (The T7300 series 1000 did a similar method). Based on the heat and cool setpoints configured and the minimum and maximum ramp rates configured, TStatSpec™ automatically calculates the lead time information for both cool and heat recovery ramps and displays it in this section.

NOTE: This data is applicable when the unoccupied setpoints change to occupied or standby modes.

When the setpoint changes from occupied or standby mode to unoccupied mode or when the minimum or maximum ramp rates are 0, there will be step change in the setpoint.

**Bypass:**

The temporary override time is the maximum time the controller stays in the occupied mode when its unoccupied mode was overridden and put in bypass mode. This value is selectable from 1 – 8 hrs.

When no outdoor air temperature sensor is available, the minimum recovery ramp rate is used. The recovery ramps have the following configuration parameters:

- Minimum heating recovery ramp rate.
- Maximum heating recovery ramp rate.
- Minimum heating outdoor air temperature.
- Maximum heating outdoor air temperature.
- Minimum cooling recovery ramp rate.
- Maximum cooling recovery ramp rate.
- Minimum cooling outdoor air temperature.
- Maximum cooling outdoor air temperature.

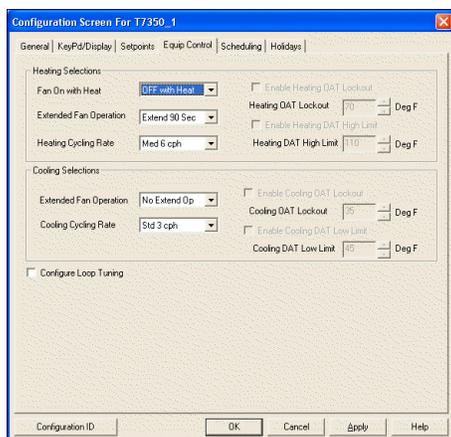
**Configuring Equip Control page**

**Description:**

The Equip Control Page allows the user to configure the heating and cooling selections, and loop tuning parameters.

**Procedure:**

Click the T7350 thermostat controller in the workspace to open the configuration dialog box. Choose Equipment Control tab, if not already displayed.

**Fig. 33. Configuring Equip Control page**

Following section explains about each field in this screen:

**Heating Selections:****FAN ON WITH HEAT:**

This field specifies the selection of fan operation:

**OFF with Heat:**

The equipment (i.e. plenum switch) controls the fan operation in heat mode. The thermostat controls the fan operation in cool mode.

**ON with Heat:**

The thermostat controls the fan operation in both heat and cool modes.

**EXTENDED FAN OPERATION:**

This option allows the user to configure the time for extended fan operation after heating turns off. The choices are No Extend Op(0) or Extend 90 sec( 90 sec).

**HEATING CYCLING RATE:**

This option allows the user to configure the heating cycling option for standard or fast response systems. Available choices are: Slow 3 cph (standard response), Med 6 cph (medium), Fast 9 cph (fast), and Fast!! 20 cph (super fast).

**ENABLE HEATING OAT LOCKOUT:**

This option is enabled only if the outdoor air temperature input is configured in the General page. This will enable the heating lockout based on the outdoor air temperature.

**HEATING OAT LOCKOUT:**

This option is available only if the outdoor air temperature input is configured in the General page and Enable Heating OAT Lockout option is selected. If outdoor air temperature is greater than Heat Lockout Setpoint then the heating is locked out.

**ENABLE HEATING DAT HI LIMIT:**

This option is enabled only if the discharge air temperature input is configured in the General page. This will enable the usage of the discharge air high limit.

**HEATING DAT HI LIMIT:**

This option is available only if the discharge air temperature input is configured in the General page and Enable Heating DAT Hi Limit option is selected.

**Cooling Selections:****EXTENDED FAN OPERATION:**

This option allows the user to configure the time for extended fan operation after cooling turns off. The choices are No Extend Op(0) or Extend 40 sec( 40 sec).

**COOLING CYCLING RATE:**

This option allows the user to configure the cooling cycling option for standard or fast response systems. Available choices are: Std 3 cph (standard response), Fast 4 cph( fast).

**ENABLE COOLING OAT LOCKOUT:**

This option is enabled only if the outdoor air temperature input is configured in the General page. This will enable the cooling lockout based on the outdoor air temperature.

**COOLING OAT LOCKOUT:**

This option is available only if the outdoor air temperature input is configured in the General page and Enable Cooling OAT Lockout option is selected. If outdoor air temperature is less than the Cooling OAT Lockout setpoint then cooling is locked out.

**ENABLE COOLING DAT LOW LIMIT:**

This option is enabled only if the discharge air temperature input is configured in the General page. This will enable the usage of discharge air low limit.

**COOLING DAT LOW LIMIT:**

This option is available only if the discharge air temperature input is configured in the General page and Enable Cooling DAT Low Limit option is selected.

**CONFIGURE LOOP TUNING:**

This section allows the user to configure the loop tuning parameters.

**THROTTLING RANGE:**

This screen allows the user to configure the heat and cool throttling ranges. TStatSpec™ automatically modifies the heat and cool throttling ranges when the number of stages configured is changed.

*For a conventional RTU:*

Cool Stages = configured cool stages

Heat Stages = configured heat stages

*For a heat pump RTU:*

Cool Stages = configured compressor stages (cool stages)

Heat Stages = configured compressor stages (cool stages) + Configured Aux heat stages

Heat/Cool Stages	1	2	3	4
Default Throttling Range	3	4	7	8
Default Integral Time	3100	2500	1650	1250

If the user changes the number of stages to zero, the throttling range remains unchanged.

The heat and cool throttling range values are selectable from 1-30 deg F(1-17 deg C).

When user enters some invalid values, TStatSpec™ automatically modifies it to nearest valid value.

**Integral time:**

This allows the user to configure the heat and cool integral time values. TStatSpec™ automatically modifies the heat and cool throttling ranges when the number of stages configured is changed. Please see Table 1 for the default values of integral time values for different stages.

If the user changes the number of stages to zero, the integral time remains unchanged.

A value of 0 means that the integral time is disabled.

Valid range is 100-5000 seconds. 0 also is a valid value. Values from 1 – 99 are invalid values. When user enters some invalid values, TStatSpec automatically modifies it to nearest valid value.

**Derivative time:**

This allows user to configure the heat and cool derivative time for PID loop tuning. The value is selectable from 10 to 3000 seconds. 0 also is a valid value. A value of 0 means derivative time is disabled. When user enters some invalid values, TStatSpec automatically modifies it to nearest valid value.

**Anticipator Authority:**

Configure the anticipator authority value. The value is selectable from 2 – 15. The default value is 4.

Select the **Apply to Heat only** field if it is to be applied for heating only.

**Configuring Scheduling page**

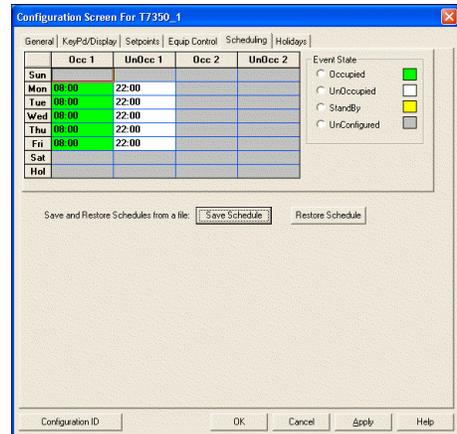
**Description:**

The Scheduling page allows the user to configure the schedule to controller.

**Procedure:**

Click the T7350 thermostat controller in the workspace to open the configuration dialog box. Choose Scheduling if not already displayed.

**Fig. 34. Scheduling Page**



**To configure schedules:**

T7350 has one schedule. This screen allows the user to configure occupancy schedules for 8 days of the week- Monday through Sunday and a holiday. Each day schedule has four events per day with one mode/time per event. Event 1 and Event 3 can be configured to be in occupied or standby or unconfigured modes. Event 2 and Event 4 can be configured to be in unoccupied or standby or unconfigured modes. Time for each event can be configured in the 24 hour format.

Follow the procedure given below to configure a schedule:

Select the appropriate row and double click on a cell in the Schedule control containing the days and events names.

Use the up and down arrows that appear near the end of the cell to select the required time.

Select the appropriate mode from the 'Event State' section to the right corner next to the schedule control. Select the desired mode. Notice that the cell turns green if occupied mode is selected, white if unoccupied mode is selected, yellow if standby mode is selected, and Windows' default background color if the unconfigured option is selected.

**NOTE:** There cannot be more than two occupied, unoccupied, or standby events per day. TStatSpec™ displays the error message when more than two standby events are selected and does not proceed further until any other mode is selected.

The scheduled events will execute in order based on time of day.

For example, the thermostat may have events entered sequentially with the following schedule:

Event 1	Occupied 1	8:00 a.m.
Event 2	Unoccupied 1	1:00 p.m.
Event 3	Occupied 2	6:00 p.m.
Event 4	Unoccupied 2	10:00 p.m.

Event 1	Occupied 1	1:00 p.m.
Event 2	Unoccupied 1	10:00 p.m.
Event 3	Standby 1	11:00 a.m.
Event 4	Unoccupied 2	8:00 a.m.

The events will occur in the following order: Event 4 at 8:00am, Event 3 at 11:00am, Event 1 at 1:00pm, and Event 2 at 10:00pm. The thermostat may also have un-programmed events with the following schedule.

Event 1	Occupied 1	8:00 a.m.
Event 2	Not Programmed	
Event 3	Standby 1	02:00 p.m.
Event 4	Unoccupied 2	5:00 p.m.

The events will occur in the following order: Event 1 at 8:00am, Event 2 never, Event 3 at 2:00pm, and Event 4 at 5:00pm. Event times can be equal to one another. In this case, the second (and 3<sup>rd</sup> and 4<sup>th</sup>) events are ignored.

**To unconfigure a schedule:**

To unconfigure a day schedule/event:

- Select the row/cell to unconfigure the schedule from.
- Right click on the row/cell and select **Delete** from the right click menu. The schedule for that row/cell is unconfigured.
- Another way to unconfigure is to select the row/cell and select **Unconfigured** from the **Event state** options.

The screen allows the user to copy one day's schedule to other days, one event configuration to other event.

**To copy a schedule from one day/event to other:**

Copying the schedule from one day/event to another can be done in two ways:

1. Select the row/cell whose configuration is to be copied to another cell. Use **Ctrl + C** key to copy the day/event's configuration and use **Ctrl + V** keys to paste the selection onto the other day/event. Both the time and the mode are copied.
2. Select the day/event and right click on the selection. Select **Copy** option. Select the destination row/cell and select **Paste** option from the right click menu.

Multiple rows can also be copied.

**Save and Restore Schedules from a file:**

**Save Schedule:**

This allows the user to backup a currently configured schedule to a file, so that it can be restored later to any T7350.

Selecting this option brings up a Save As dialog where user can specify a file name with .qss extension to save the schedule configuration.

**Restore Schedule:**

This allows the user to restore the previously saved schedule from a .qss file. When this option is selected, a warning message is displayed:

**⚠ WARNING**

**This will replace the currently configured schedule. Do you wish to continue?. If user selects to proceed, an Open dialog is invoked where user can specify a .qss file to restore schedule from. This operation overrides the currently configured schedule with the restored schedule.**

**Configuring Holidays page**

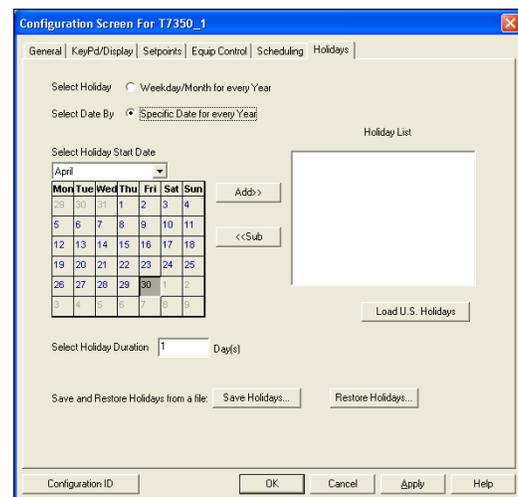
**Description:**

The Holidays page allows the user to configure the list of holidays that the selected T7350 will follow.

**Procedure:**

Click the T7350 thermostat controller in the workspace to open the configuration dialog box. Choose Holidays tab, if not already displayed.

**Fig. 35. Configure Holiday Page**



A T7350 holiday is configured by a start date and duration. The start date can be a specific date or a relative day in a month. A holiday is not specific to a particular year, so each

holiday configuration is applicable for every year. T7350 supports a maximum of 10 holidays. A holiday follows a holiday schedule configured in the Scheduling page.

**To configure a holiday:**

A holiday can be configured by either specifying a date or by specifying a day in a month.

**Select Holiday:**

Select the option **Weekday/Month for every year** to configure a holiday by selecting a weekday in a month. When this option is selected, **Select Holiday Start Date** and **Start Holiday Start Day** options are enabled which allow the user to configure the holiday start month and a start day respectively. The days are the relative days, like FIRST\_SUN, FOURTH\_MON, etc.

**Select Date By:**

Select the option **Specific Date for every year** to configure a holiday by selecting a Specific Date for every Year. When this option is selected **Select Holiday Start Date** option is enabled, which allows the user to configure the holiday start date. The default selection is the system date.

Both the options are accompanied by duration to be configured through **Select Holiday Duration** option. The duration can be configured from 1 to 99 days.

Select one of the above options and click on **Add** button to add to the holiday list. Select a holiday in the **Holiday list** to remove it from the holiday list.

**Load U.S. Holidays:**

When this option is selected, pre-configured US holidays are loaded into the holiday list.

The following are the pr-configured US holidays:

- January 1
- Memorial Day
- July 4
- Labor Day
- Thanksgiving and Day After
- Christmas Eve and Christmas Day

If there are more than four holidays already configured then the Load US Holidays option will not load all of the six pre-configured holidays because they would exceed the maximum holiday count. The first few US holidays are loaded until the total count has reached the maximum of 10 holidays.

No duplicate holidays are allowed.'

NOTE: TStatSpec™ maintains an internal numbering to each holiday. So, if a holiday is deleted from the middle of a list and a new holiday is added, it will occupy the empty slot in between the list.

**Save and Restore Holidays from a file:**

This option allows the user to backup the configured holiday list so that it can be restored later.

**Save Holidays:**

This allows the user to backup the current holiday configuration to a file, so that it can be restored later to any T7350s.

Selecting this option brings up a **Save As** dialog where the user can specify a file name with .qhs extension to save the holiday configuration.

**Restore Holidays:**

This allows the user to restore the previously saved holiday configuration from a .qhs file. When this option is selected, a warning message is displayed:

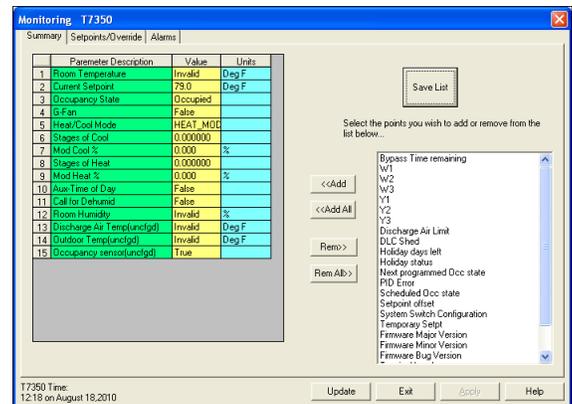
**⚠ WARNING**

This will replace the currently configured holiday list with the new holiday list. Do you wish to continue?. If user selects to proceed, an Open dialog is invoked where user can specify a .qhs file to restore holidays from. This operation overrides the currently configured holiday list with the restored holiday configuration.

**T7350 Monitoring**

Summary screen:

Fig. 36. Monitor Summary Page



**Description:**

This screen displays the default set of points along with value and units for a given device of type T7350. The screen also provides a list of points other than default ones. User can add or remove points to be monitored from the list, as well as saving the customized list of points.

**Procedure:**

The monitor option of the selected T7350 device will be displayed as below. A default set of network variables along with their parameter description, current value and the corresponding unit will be displayed as spreadsheet on the left hand side of the screen. Clicking on Modify list button will display a list of network variables.

When the **Modify Summary** button is clicked, the modify list appears and variables can be added or subtracted to/from the default list using **Add**, **Add All**, **Rem**, **Rem All** buttons.

Select list of variables to be monitored in the list box and select **Add** button. The new list of variables will get appended to the spreadsheet and corresponding values will be updated along with units. Similarly the variables in the spreadsheet can be removed. Save the list using the **Save List** button. The customized list that is saved will be shown next time the monitor screen is opened.

After clicking the **Modify List** button, the **Modify List** button will be changed to **Save List**, and the **Copy Summary** button will be changed to the **Cancel** button. The new list box with the new list of points will appear under **Select the Parameters You Wish to Add or Subtract** from the Summary option.

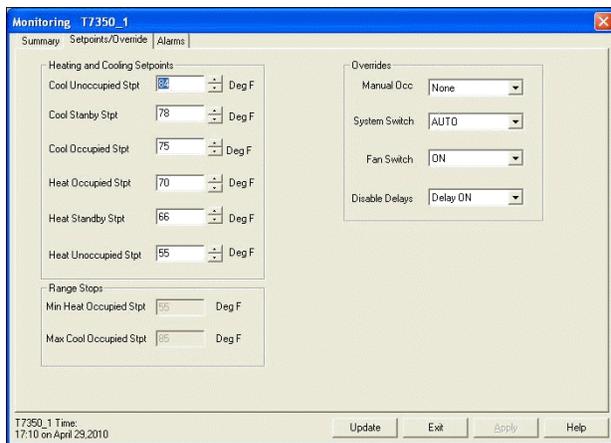
Clicking on **Save List** button will change it back to **Modify List**. The default list will be updated with the additional points added from the modify list so that the default list contains those points when the screen is displayed next time.

The customized default list is specific to the currently selected T7350.

Some points related to the configured sensors are invalid if the corresponding sensor is not configured. Such points are indicated with *the point names are with '(uncfgd)'*. These points will not be included in the default list of points even if they were previously saved to be displayed in the default list.

Example: ODTemp will be shown as ODTemp(Uncfgd) if the outdoor air temperature sensor is not configured.

**Set Points/Override Screen:**



**Description:**

The Setpoints/Override screen displays the heating and cooling setpoints and occupancy override options. The values can be monitored and modified and updated to the device.

**Procedure:**

The validation rules for setpoints are same as shown in the configuration screens. The overrides are Manual Occ, System Switch, Fan Switch and Disable Delays.

The manual occupancy is read and written to nviOccManCmd. The Manual Occ option displays the following options:

- UNOCCUPIED
- STANDBY
- BYPASS
- OCCUPIED
- NONE

The System Switch will display the following options: *The NV that is read and written to is nviApplicMode.nviApplicMode*

- OFF
- AUTO
- COOL
- HEAT
- EMERG HEAT

EMERG HEAT option will be displayed only if equipment type is configured as heat pump in the T7350 configuration screen.

The Fan Switch shall display the following options: *The NV that is read and written to is nviFanAuto*

- ON
- AUTO

The Disable Delays option shall have the following options: *The NV that is read and written to is nviRequest.object\_request*

- Delay ON
- Delay OFF

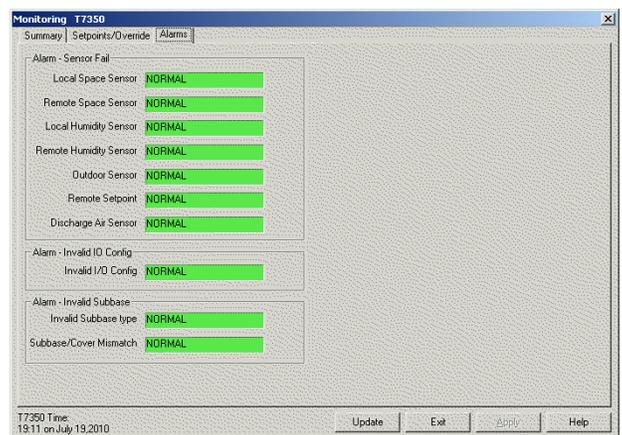
If the option Delay OFF is selected and tries to navigate to other page, a message will be displayed asking to put back the option to Delay ON(enable the delays), with a Yes/No button.

If the user selects Yes, the option is put back to Delay ON (the delays are enabled).

The user shall be able to change the setpoints and overrides and update back to the controller by clicking on the Apply button.

**Alarms Screen**

Fig. 37. Alarm Screen



The Alarms screen will display the status of all system alarms and associated errors in the T7350 controller.

The following list of system alarms will be shown in the Alarms screen:

The first group Alarm –Sensor Fail" shows following errors associated with alarm:

- Local Space Sensor
- Remote Space Sensor
- Outdoor Sensor
- Loc Humidity Sensor
- Rem Humidity Sensor
- Remote Setpt
- Disch Air Sensor

The Second group Alarm – Invalid I/O Config shows the following error associated with alarm:

- Invalid I/O Config

The Third group Alarm – Invalid Subbase shows the following errors associated with alarm:

- Subbase/Cover Mismatch
- Bad Subbase Type

Systems in alarm status will display the text ALARM next to them in red color, while those that are not will display the text NORMAL in green color.

The timer field on all monitor screens displays the current times from the corresponding T7350 device that is being monitored.

Button	Description
<b>Print</b>	Prints the current screen along with values to the configured printer. (Opens the default Windows print option screen)
<b>Update</b>	Updates the existing values of all the fields of current screen with latest values from device.
<b>Apply</b>	Saves the current changes to device and as well database
<b>Exit</b>	Exit from the monitoring screen
<b>Help</b>	Open the help screen (this document)

**NOTE:** If the time is not configured in Thermostat, the monitoring shows invalid time and date. After setting a valid time and date in the thermostat, the monitoring screens display a proper time.

## T7350 Calibration

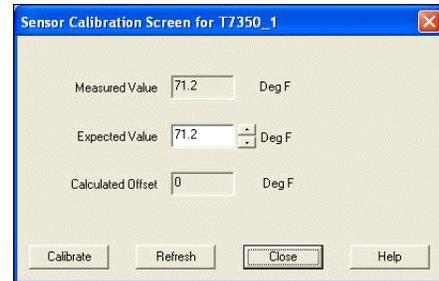
### Description:

The **T7350 Calibration** screen allows the user to calibrate the space temperature sensor. This option is available only for online controllers.

### Procedure:

1. Click **Calibrate** in the workspace or select **Calibrate** from the **Controller** menu. T7350CS calibration screen opens.

**Fig. 38. Calibration Page**



The following is a description for each of the fields.

#### MEASURED VALUE:

This is the actual value of space temperature read by the controller. This is inclusive of any calibration offsets that a particular controller applies to the actual value read.

#### EXPECTED VALUE:

Takes the user input value as the true value the sensor should be detecting.

#### CALCULATED OFFSET:

Displays the difference between the actual and edit value.

#### CALIBRATE:

Enter the user input value for the temperature and click and Calibrate button. The Space Temperature is calibrated to the value entered by the user. The space temperature can be calibrated to a minimum of – 4 deg F (– 2.2 deg C) and to a maximum of 3 deg F (1.7 deg C). If the user enters out-of-range values, TStatSpec™ warns about the above limits and calibrates to the nearest valid offset value.

#### REFRESH:

Click on this button to refresh the temperature values.

#### CLOSE:

Closes the calibration screen.

#### HELP:

Click on this button to display help.

**NOTE:** When the space temperature is calibrated, it causes a change in the configuration and the configuration ID. It is a good idea to get the configuration ID again from TStatSpec™ configuration screens and input the it into the thermostat.

## T7350 Diagnostics

### Description:

After configuration and downloading, the controller is put into diagnostic mode and checked for proper operation. This operation forces the outputs to manual mode and checks their operation. In this mode, the controller outputs are not driven

by control logic and can be commanded by TStatSpec™. This is also referred to as Controller Diagnostic mode in TStatSpec™.



## CAUTION

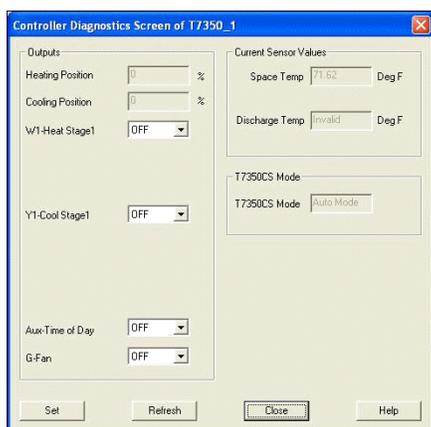
**Equipment Damage Possible.**  
**May cause short-cycling of compressors, or cause damage to other heating or cooling equipment.**  
**You must take appropriate and recommended precautions when initiating the Test Mode. This mode directly drives controller outputs to the manually-entered states.**

### Procedure:

1. Click **Controller Diagnostics** in the workspace or select **Controller Diagnostics** from the **Controller** menu.

The **Controller Diagnostics** screen opens.

**Fig. 39. Controller Diagnostics**



The T7350 diagnostic screen displays the Outputs section where outputs can be commanded, current sensor values to enable the user to watch the effect of the outputs on the various values, and the current mode the T7350 is in.

The following is a description of each of the fields:

#### HEATING POSITION:

This field enables the heat modulating output value to be commanded from TStatSpec™. The value range is from 0-100%. This field is enabled only for T7350M, Mod & T7350H, Mod, Com models.

#### COOLING POSITION:

This field enables the cool modulating output value to be commanded from TStatSpec™. The value range is from 0-100%. This field is enabled only for T7350M, Mod & T7350H, Mod, Com models.

#### W1:

This is the first heating relay. In the T7350A, 1H1C; T7350B, 2H2C, T7350D, 3H3C, RH & T7350H, 3H3C, and Com models (for equipment type *Heat Pump*) this is used as change over valve and is labeled as **W1/O/B Valve**. For

equipment type *Standard*, this is labeled as **W1-Heat Stage1** if it is configured, if not it is labeled as **W1**. This output can be commanded to ON/OFF.

#### W2:

This is the second heating relay. In the T7350B, 2H2C; T7350D, 3H3C, RH & T7350H, 3H3C, Com models (for equipment type *Heat Pump*) this is used as first heating stage, if it is configured and labeled as "**W2-Aux Heat Stage1**". For equipment type *Standard* this is labeled as **W2-Heat Stage2** if configure; if it is not configured then it is labeled as **W2**. This output can be commanded to ON/OFF. The models T7350M, Mod & T7350H, Mod, and Com do not support this relay and so it is hidden for these models.

#### W3:

This is the third heating relay. In the T7350D, 3H3C, RH & T7350H, 3H3C, Com models (for equipment type *Heat Pump*) this is used as second heating stage if it is configured and labeled as "**W3-Aux Heat Stage2**". For equipment type *Standard*, this is labeled as W3-Heat Stage3 if configured as the third heating stage. If it is configured as the fourth cooling stage, it is labeled as **W3/Y4-Cool Stage4**. If it is not configured it is labeled as **W3**. This output can be commanded to ON/OFF. The models T7350M, Mod & T7350H, Mod, and Com do not support this relay and so it is hidden for these models.

#### Y1:

This is the first cooling relay. In the T7350A, 1H1C; T7350B, 2H2C; T7350D, 3H3C, RH & T7350 (for equipment type *Heat Pump*) this is labeled as **Y1/Compressor Stage1**. For equipment type *Standard* this is labeled as **Y1-Cool Stage1** if it is configured; if it is not configured then it is labeled as **Y1**. This output can be commanded to ON/OFF.

#### Y2:

This is the second cooling relay. In the T7350B, 2H2C; T7350D, 3H3C, RH & T7350H, 3H3C, Com models (for equipment type *Heat Pump*) this is labeled as **Y2/Compressor Stage2**. For equipment type *Standard*, this is labeled as **Y2-Cool Stage2** if it is configured; if it is not configured then it is labeled as **Y2**. This output can be commanded to ON/OFF. The models T7350M, Mod & T7350H, Mod, and Com do not support this relay and so this is hidden for these models.

#### Y3:

This is the third cooling relay. In the T7350D, 3H3C, RH & T7350H, 3H3C, Com models (for equipment type *Heat Pump*) this is labeled as **Y2/Compressor Stage3**. For equipment type *Standard*, this is labeled as **Y3-Cool Stage3** if it is configured; if it is not configured then it is labeled as **Y3**. This output can be commanded to ON/OFF. The models T7350M, Mod & T7350H, Mod, and Com do not support this relay and so this is hidden for these models.

#### AUX DO:

This commands the auxiliary relay status to ON/OFF. This is the auxiliary relay. Auxiliary relay can be configured for Time of Day output, economizer output or as dehumid output and is labeled as **Aux-TOD**, **Aux-Econ** and **Aux-Dehumid** respectively. For models T7350A, 1H1C ; T7350B, 2H2C it can be used as an additional heating/cooling relay. In this case, it is labeled accordingly. For T7350M, Mod & T7350H, Mod, and Com models this can be used as one of the above

outputs or it can be used as second heating or cooling stage. In this case, it will be labeled as **Aux-Heating Stage2** or **Aux-Cooling Stage2**.

**G-FAN:**

This is the fan output. This output can be commanded to ON/OFF.

**Current Sensor Values:**

**SPACE TEMP:**

This is the space temperature value.

**DISCHARGE TEMP:**

This is the discharge temperature value.

**NOTE:** The value will always be displayed as **INVALID** for T7350A, 1H1C thermostat.

**T7350CS MODE:**

This reflects the current T7350CS mode. If the outputs are in manual mode, this field should reflect manual mode and if they are driven by the control algorithm, these outputs should reflect the auto mode.

**SET:**

Change the desired outputs and click on 'Set' button to set the controller to manual mode and write the output values to the controller. When the controller is set to manual mode, the T7350CS Mode field reflects the manual mode.

**REFRESH:**

Click on this button to refresh the values in the screen.

**CLOSE:**

Click on this button to close the screen. When the controller is put into manual mode through the 'Set' button and the screen closed, a warning message is displayed:



**Controller is in Manual Mode. Do you want to put to Auto Mode?**

Selecting Yes will put back the controller to auto mode, while selecting No will retain the controller in manual mode.

**HELP:**

Displays help for the T7350 diagnostic screen.

**Upload from T7350**

TStatSpec allows the user to upload configuration from a device to TStatSpec. The T7350 allows configuration data to be entered through keypad. It is possible that some invalid data is entered to the thermostat. While uploading, TStatSpec detects the invalid configuration and replaces those with default values. If any such change is made, TStatSpec™ informs the user that an invalid configuration has been replaced by the default configuration.

## GETTING CONNECTED TO THE DEVICE

### Connecting to the device

This section describes the procedure of connecting to the USB-TIM adapter. When you launch TStatSpec™, it automatically detects the USB-TIM adapters connected to the PC and establishes the connection to the first USB-TIM it comes across.

If TStatSpec™ is already launched and then you connect the USB-TIM adapter, press F2 or click on the 'Connect to USB-TIM' icon in the toolbar to connect to the USB-TIM adapter. You can also select 'Connect' option from USB-TIM menu.

Click on the 'Disconnect from USB-TIM' icon in the toolbar or press Ctrl+F2 to close connection between TStatSpec™ and the USB-TIM.

#### Icons:

	<p>Indicates that the USB-TIM adapter is disconnected. Click this button to establish the connection between USB-TIM adapter and TStatSpec™ tool.</p>
	<p>Indicates that the USB-TIM adapter is connected. Click this button to close the connection between USB-TIM adapter and TStatSpec™ tool.</p>

If the USB-TIM adapter is disconnected from the PC at any point (after TStatSpec™ is established connection to USB-TIM), the following warning message is displayed and any subsequent online operations will fail. Re-connect the USB-TIM adapter and press F2 or click on the 'Connect to USB-TIM' icon in the toolbar.



#### NOTE:

1. Connection status indicates connection to USB-TIM only, it does not indicate if T7350 is actually connected.
2. Connect and Disconnect options are available only if a Configuration is opened in the TStatSpec™.
3. When other USB devices other than USB-TIM are connected to the PC, TStatSpec might not be able to detect USB-TIM and hence cannot communicate to T7350. Workaround: If TStatSpec is unable to connect to the USB-TIM inspite of proper connections, remove other Prolific devices and connect only the USB-TIM device.

## REFERENCE

### Temperature Conversions

A Fahrenheit degree is smaller than a Celsius (Centigrade) degree, one Fahrenheit degree being  $\frac{5}{9}$  of a Celsius degree.

To convert Fahrenheit degrees into Celsius, subtract 32, multiply by 5, and divide by 9.

To convert Celsius into Fahrenheit, multiply by 9, divide by 5, and add 32.

The freezing point of water is 32°F, 0°C. The boiling point is 212°F, 100°C.

## HOW TO REACH US

### Send Feedback

To send feedback on TStatSpec, please write to:

**Honeywell International**

**1985 Douglas Drive North**

**Attn: Building Automation Product Management Leader**

**Golden Valley, MN 55422**

Your comments are welcome!

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### About TStatSpec

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The purpose of this help file or user's guide is to provide the reader with a fundamental understanding of TStatSpec, how to install the software, how to navigate the software after it is installed, and a basic understanding of how T7350 controllers operate with the software in conjunction with commercial heating, ventilating, and air conditioning applications. It is not a manual on the fundamentals of these controllers.

Many aspects of building management control are presented including air handling units, remote units, and displays. Control fundamentals, theory, and types of controls are not provided or are not provided in detail. It is assumed that the user already has an understanding of these fundamentals and theories including access to engineering data such as equipment sizing, use of psychrometric charts, and conversion formulas. However, to enhance understanding, some definitions are provided. For maximum usability, each section of this guide is to be treated as a separate document.

In addition, it is assumed the user has knowledge of the basics of building management systems and configurations.

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It is hoped that the scope of information in this guide will provide the user with the tools to begin using their TStatSpec software and make adjustments using their TStatSpec software.

#### Automation and Control Solutions

Honeywell International Inc.  
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