Zio®/Zio Plus LCD Wall Modules

TR70, TR71, TR75 with Sylk® Bus

APPLICATION

The Zio TR70 Series (TR70, TR70-H, TR71, TR71-H, TR75, and TR75-H OS numbers) LCD Wall Modules provide an operator interface for monitoring and adjusting parameters in the wall module itself and in the programmable controller (refer to the *Honeywell Spyder® User's Guide,* form 63-2662, or the *ComfortPoint™ Programmable Controller User's Guide,* form 63-2663, depending on the programmable controller used) to which it is wired. The wall module may be customized and supports both a contractor and a tenant user interface.

NOTE: **This document illustrates the wall module configuration process using information from the** *Honeywell Spyder User's Guide* **(form 63-2662).**

The wall module has a snap in mounting to a subbase that may be mounted on a wall, on a standard utility conduit box, or on a 60 mm wall outlet box. Wiring connections to the wall module are made through a cutout in the back of the wall module.

All models have a space temperature sensor, network bus jack, and an LCD panel with three softkeys and two Up/Down adjustment keys. Models with -H also include an onboard humidity sensor.

PREFACE

This Operating Guide is intended to provide configuration information (using the Niagara Workbench tool) and a general overview of the T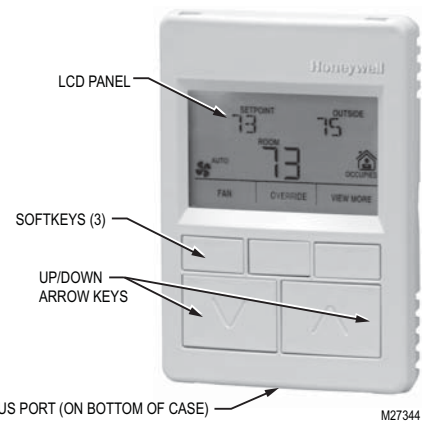R70 Series operator interface. Configuration begins with "Initial Power-Up" on page 2, and the general overview begins with "Operating the Zio Wall Module" on page 19.

It is intended to guide you through the features and operation of the TR70 Series as you interface with the programmable controller and establish pre-programmed or custom configurations.

Fig. 1. LCD Wall Module features.

Contents

TR70 SERIES FEATURES

Table 1. TR70 Series Features.

Features	Zio TR70	Zio TR71	Zio Plus TR75
Scheduling			x
Parameter Memory (bytes)	1K	2K	4.9K
Up to four Zios on Sylk	x*	x	x
Enumerated Values		x	x
Setpoint Limits as NVs – linking now possible		x	x
System and Fan command as NVs		x	x
Password protection		x	x
Firmware version/model visible on display		x	x
0.5 and 5 value increments		x	x
"-" and "/" characters in parameter names		x	x

* A maximum of four Zios may be wired on a single Sylk bus, with no more than one TR70 per bus.

Compatibility

The TR70 Series LCD Wall Modules operate with the Sylk Enhanced Spyder Controller or the Sylk Enhanced ComfortPoint Controller. The table below provides compatibility information for each model. The TR71/TR75 can replace a TR70 in an installation where an upgrade to WEBs-AX or Spyder or reprogramming is not desired. Features like scheduling, additional memory, etc. will not be available.

Likewise, a TR71 can be replaced by another TR71 or TR75 without reprogramming required. A TR75 can only be replaced with a TR75 where no reprogramming is desired.

INITIAL POWER-UP

IMPORTANT
1. *Make sure the TR70 Series wall module is properly mounted and properly wired and connected to the programmable controller.*
2. *Refer to the Zio™ LCD Wall Modules TR70 Series with Sylk™ Bus – Installation Instructions, form 62-0271, for specific installation requirements.*

Upon initial power-up before configuring the wall module, the LCD screen displays the phrase "PLEASE LOAd" in the Label/Value area of Fig. 2. This phrase alternates with any onboard sensor display such as temperature. The TR71/TR75 also display the firmware revision number, model number and Sylk bus address as shown in Fig. 27.

Fig. 2 illustrates all the possible LCD Wall Module display elements. Only those elements pertinent to the current configuration and status actually display.
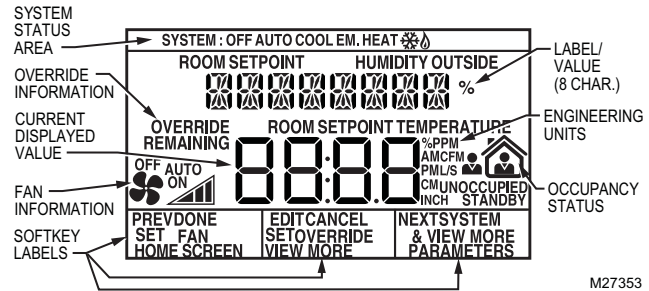

Fig. 2. TR70 Series Wall Module - LCD screen.

Table 2. Compatibility.*

Scenario	Spyder Tool	Spyder Firmware	Compatible?	Zio TR70/TR71/TR75*	What can be done?
1	5.200+	Latest	YES	New TR71/75 functionality available (if TR70 is present, then only TR70 functionality)	Ideal scenario
2	5.200+	Old	YES	Only with TR70 functionality (TR71/75 can be used, but only TR70 functionality will be there)	Spyder firmware can be upgraded (this becomes scenario 1)
3	< 5.18	Latest	NO	Tool does not recognize the new Spyder	Spyder Tool can be upgraded (this becomes scenario 1) Spyder firmware can be downgraded (this becomes scenario 4)
4	< 5.18	Old	YES	Only with TR70 functionality (TR71/75 can be used, but only TR70 functionality will be there)	Both Spyder firmware and Tool can be upgraded (this becomes scenario 1) Spyder Tool can be upgraded (this becomes scenario 2) Spyder firmware can be upgraded (this becomes scenario 3)

* The new Spyder tool (6.0 or greater) assumes the latest Spyder capability. At download, the Tool reads the brand/model of the connected Spyder and determines if it matches the features on the wire sheet. If old or new Spyder is programmed with aTR70, it can be physically replaced with a TR71 or TR75.

SETUP AND CONFIGURATION

Initial Setup and Configuration

Once the wall module is wired to the controller, you configure the wall module using the PC-based, Niagara Workbench Tool. Refer to the applicable programmable controller User's Guide. (Refer to the Honeywell Spyder User's Guide, form 63-2662, or the ComfortPoint Programmable Controller User's Guide, form 63-2663, depending on the programmable controller used.) This tool is used to configure the wall module for either the Spyder or the ComfortPoint programmable controller.

Confirm Bus Address Setting

Check to ensure that the Wall Module's bus address dial (located on the back of the module) is set to match the setting in the configuration tool. TR70 models can be set from 1–5 and TR71/TR75 can be set from 1–10 (0 on the Zio address dial is equal to 10 in the configuration tool). The address must be different for each device on the Sylk bus. Up to four Zios per Spyder are allowed with any combination of TR71/TR75s and up to three Zios are allowed if one or more is a TR70 model.

Selecting the Wall Module

You will use the Sylk S-Bus wall module function block from the Palette's Built-In folder (see Fig. 3). This configuration has nothing programmed except the room temperature parameter and occupancy status.

1. Add the Sylk S-Bus Wall Module function block to the wire sheet via a left click, drag, and drop. See callout 1 in Fig. 3.
2. Right click on the S-Bus Wall Module function block to open the Configuration Properties menu. See callout 2 in Fig. 3.
3. Left click on the title, Configuration Properties. This action starts the Configuration Wizard. The Configuration Wizard steps (see Fig. 5 on page 4) are used to configure the wall module.
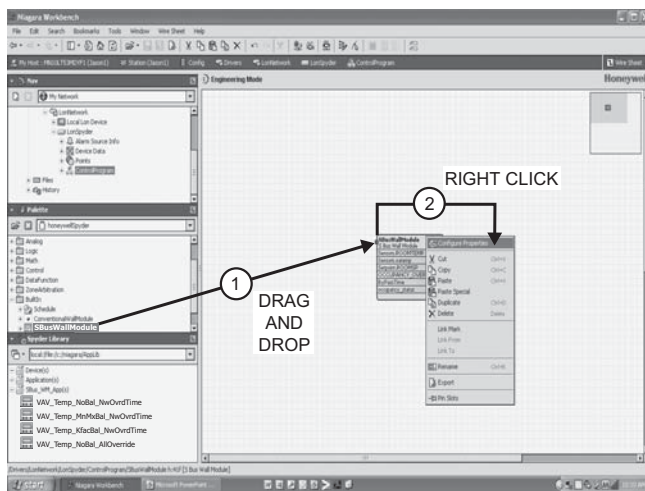
M27820

Fig. 3. Niagara Tool Interface - S-Bus wall module selection.

TR71/TR75 Labels

The TR71/TR75 allows the use of the following special characters in label fields such as Categories and Parameter Names: underscore (_) to insert a space, hyphen (-), and forward slash (/). The TR70 allows use of the underscore (_) character to insert a space.

Navigation and Memory Usage

The Honeywell Spyder Tool uses an intuitive, window-based interface. A Help button on each screen provides assistance with any entry or process.

IMPORTANT
   Use the Help button to display context specific help for the current window or pane display. See the lower left corner of Fig. 6 on page 5 for the location of the Help button.

NOTE: At any time, clicking the Preview button (lower left of main window, see Fig. 6 on page 5) displays the updated wall module LCD as a pop-up. Preview simulates the actual wall module interface and allows you to verify the operation of the current configuration of the wall module. See "Preview" on page 16.

Navigation

Table 3 describes the navigation buttons at the bottom of the wall module window. See the bottom of Fig. 7 on page 5 for the location of these buttons. Buttons are greyed when unavailable.

Table 3. Navigation Buttons.

Item	Function/Use
Help	When clicked, this button provides context sensitive help for the currently selected item or parameter.
Preview	When clicked, this button displays the updated wall module LCD in a pop-up window pane. Preview is fully interactive and simulates the actual wall module interface as currently configured (see "Preview" on page 16 for details).
Save to Library	For new custom configurations and standard configurations. Clicking the button opens the Save to Library screen (shown in Fig. 25 on page 17). This action allows you to save the entire current wall module configuration. The Save to Library button is disabled until you change the configuration (application). After a change is made, you can save the new configuration into the library under a new name.
Back	Takes you backward one step in the wizard interface.
Next	Takes you forward one step in the wizard interface.
Finish	Clicking this button commits all changes to the database, closes the Configuration Wizard, and returns you to the wire sheet.
Cancel	Prompts you with a confirmation message. If you reply Yes, then all selections/entries made since the Save to Library button or Finish button was last pressed are ignored, and the wizard interface quits.

SAVE BUTTON

A SAVE button is available on screens that allow entries or selections. It is enabled whenever any change is made on the screen, and allows you to save your selections/entries at any time. See the ROOMSP Details area of the Categories and Parameters window in Fig. 12 on page 7 for an example of the SAVE button.

Save is enabled whenever a change is made to the current page. When you press the SAVE button, the preview screen displays and your changes are reflected in the preview.

If you try to leave the current screen without saving (click another icon or press the Back or Next button) and have made changes, a warning message appears.

Memory Usage

The wall module has a fixed amount of memory available for configuration data. The TR70 has 1,020 bytes of memory, the TR71 has 2,000 bytes of memory, and the TR75 has 4,950 bytes of memory. To view the current memory use information click on the Memory Usage Details button. A new window opens and displays a bar graph indicating the percentage of current memory used in each memory category.

Each of the memory categories should be below 100%. See Fig. 4 on page 4.

NOTE: For a single Zio memory usage must be equal to or less than 100% in order to download the configuration to the programmable controller. If using multiple Zios, you should also check the Spyder Resource usage. Total Zio memory use is limited to 5K bytes on Spyder.

View the online help in the WEBs-AX Workbench to see troubleshooting tips for reducing memory usage in the TR70 Series if memory use is above 100%.

The following warning message displays when the memory usage is greater than 100%:
"Warning: Memory Limit Exceeded. The current wall module configuration requires more memory than the wall module model can support. You will need to change the configuration so that the memory usage is 100% or less before pressing the FINISH button."
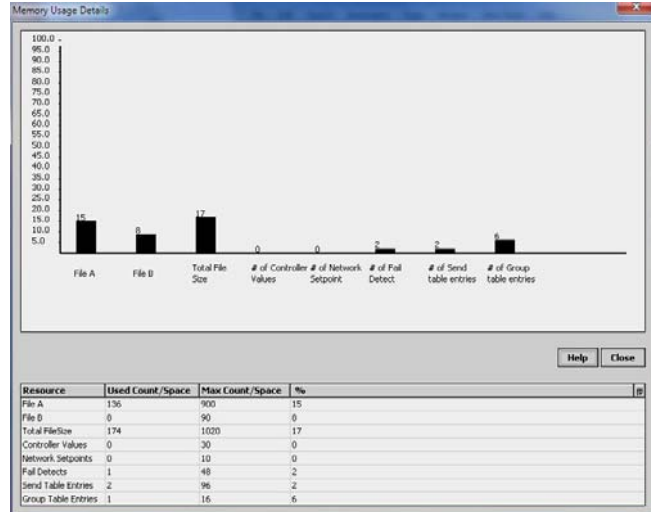

Fig. 4. Memory Usage Details screen.

Wall Module Configuration

To begin configuring the wall module:

1. Right click on the configuration's function block to open the Configuration Properties menu.
2. Left click on Configure Properties. The Configuration Wizard opens. The Configuration Wizard steps (see Fig. 5) are used to configure the wall module.
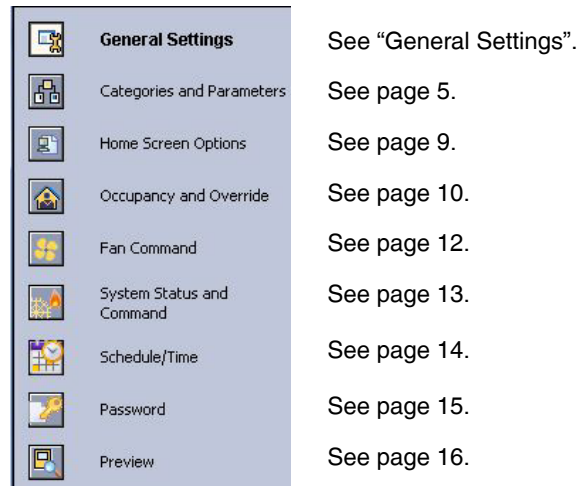

General Settings	See "General Settings".
Categories and Parameters	See page 5.
Home Screen Options	See page 9.
Occupancy and Override	See page 10.
Fan Command	See page 12.
System Status and Command	See page 13.
Schedule/Time	See page 14.
Password	See page 15.
Preview	See page 16.

Fig. 5. Wall Module - Configuration Wizard window showing Menu selections only.

General Settings

Using Fig. 6 and Table 4 as a guide, configure the General Settings. An image of the selected model and its capabilities updates in the display at the bottom of the window.
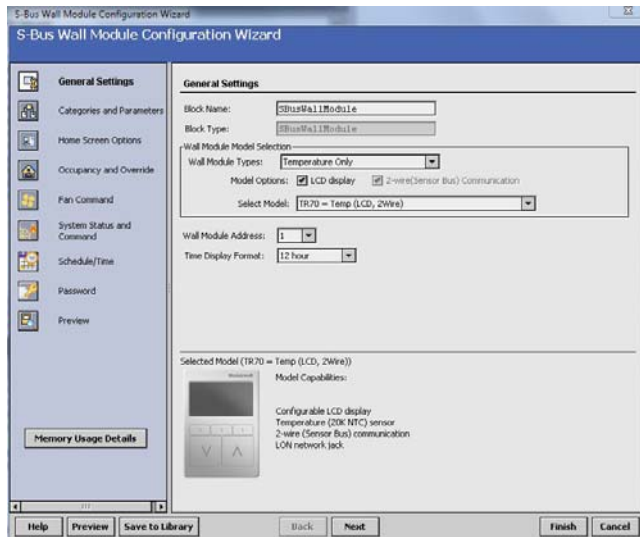

Fig. 6. General Settings screen.

Table 4. General Settings.

Item	Function/Use
Block Name	The wizard displays S-Bus Wall Module.
Wall Module Type	Select the appropriate type (Temperature Only, or a combination of Temperature, and/or Humidity) from the drop down list.
Model Options	Click LCD Display.
Select Model	Select the appropriate model, TR70, TR71, or TR75, from the drop down list.
Wall Module Address	Select a unique address for each TR70 Series devices connected to the Spyder. TR70 can be set from 1-5 and TR71/TR75s can be set from 1-10. The address selected must match the address setting at the wall module (using the rotary switches). If setting the TR71/TR75 rotary switch to 0, set the address to 10 in the configuration tool.
Time Display Format	Select 12 or 24 hour format.

If you are creating a customized configuration or modifying a pre-programmed configuration, continue with "Categories and Parameters" on page 5.

If you are using a pre-programmed configuration as is, continue with "Preview" on page 17.

Categories and Parameters

← Categories and Parameters selection from Wizard Menu

The categories and parameters menu item allows you to create, edit, and delete categories and parameters.

ADDING A CATEGORY
Fig. 7 shows the categories listed in tree format in the main window where you can add, edit, or remove them. In the bottom pane, Category Preview (at the bottom of Fig. 7) shows the current selected item.

Clicking the Add Category button displays a details pane below the category and parameter tree as shown in Fig. 8.

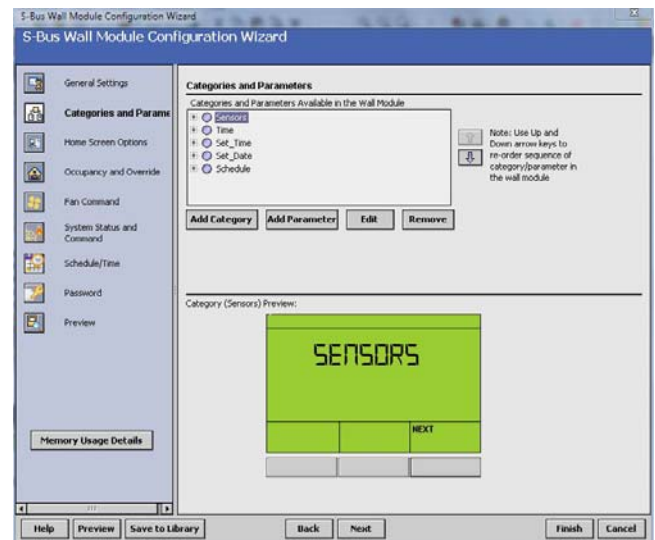**NOTE:** You can use the Remove button to delete unused categories and parameters to free up memory space.

Fig. 7. Category Preview.

CATEGORY DETAILS
When you select a category from the Categories tree list and click the Edit button, a details pane displays for that category (see Fig. 8 on page 6).

Here you can enter a category name and description. The number of parameters in this category are shown. The description text you enter is loaded to the controller but cannot be seen in the preview.
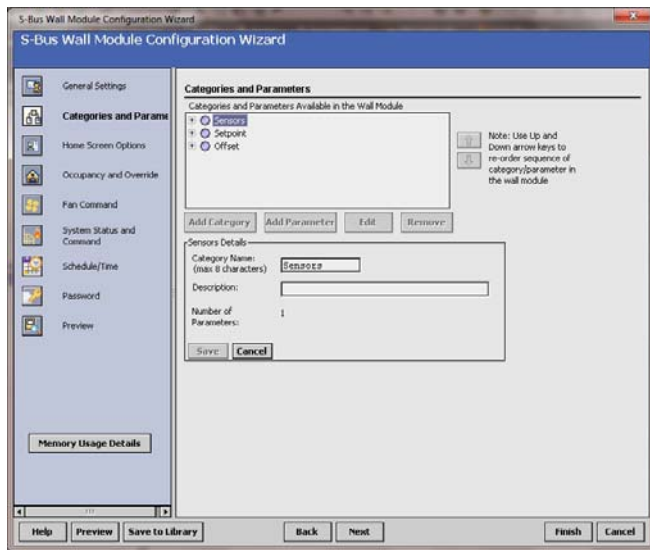
Fig. 8. Adding a Category.

ADDING A PARAMETER

Fig. 9 shows the categories and parameters listed in tree format in the main window. The parameters are listed under each category. Click on the box next to the category item to expand that item in the tree. You can add, edit, or remove parameters under each category. In the bottom pane, Category Preview (at the bottom of Fig. 9) shows the current selected item.

Clicking the Add Parameter button displays a details pane below the category and parameter tree as shown in Fig. 10.

NOTE: You can use the Remove button to delete unused categories and parameters to free up memory space.

Fig. 9. Parameter Preview.

PARAMETER DETAILS

When you select a parameter from the tree list and click the Edit button, a details pane displays for that parameter.

Here you can select Viewable by Tenant and Editable by Tenant.

As an example, Fig. 10 shows the Details for the ROOMTEMP parameter. Here you would enter the description, select the parameter type from its drop-down list, enter the decimal accuracy, default sensor offset value, temperature units, and select the desired Home screen labels for the wall module.
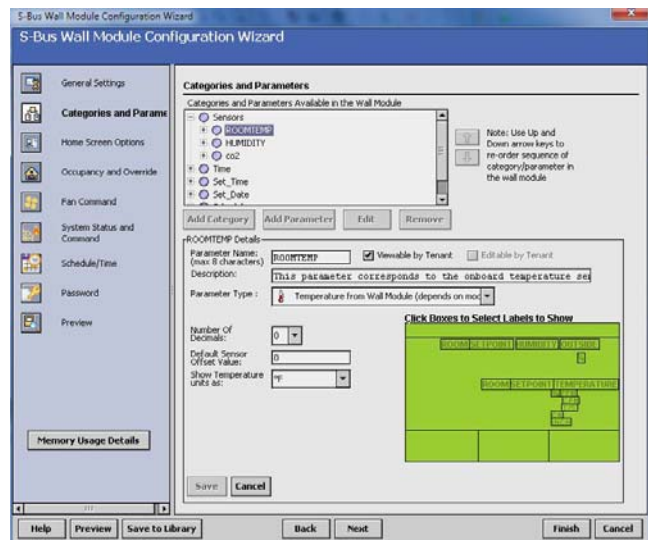
Fig. 10. Adding a Parameter.

CUT/COPY/DELETE CATEGORIES AND PARAMETERS

A right-click accessible context menu allows you to cut, copy, paste, and delete parameters across categories. See Fig. 11.

You can also drag/drop parameters in the tree and the result is a copy/paste per standard Niagara behavior.

You can also click (highlight) any item in the tree and then click the Remove button to delete any selected parameter or its category.
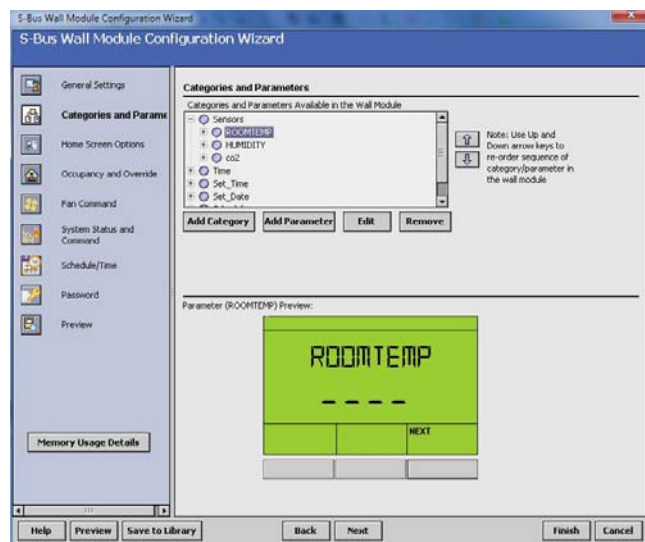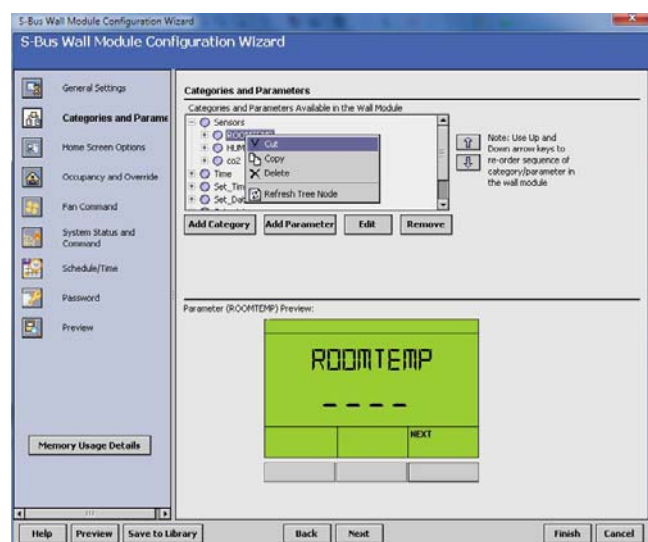

Fig. 11. Cut/Copy/Delete Categories and Parameters.

PARAMETER TYPES AND LIMITS
See Fig. 12 for an illustration of the Parameter Type drop down list. There is a limit to the number of parameters that can be configured. In addition to the parameter limit, there is also a memory limit (see "Memory Usage" on page 4).
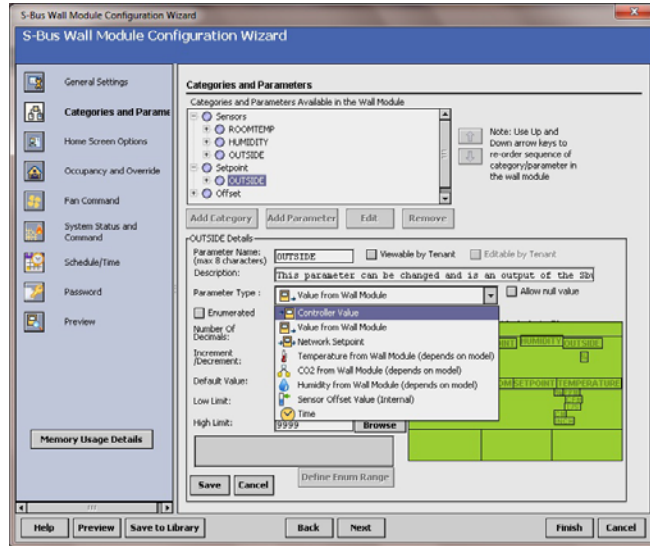

Fig. 12. Parameter Type selection.

The individual parameters are defined as:
— Controller Value
  • These are read-only inputs to the wall module from the controller and include system status and occupancy status, if configured. Controller Value parameters take up less memory than other parameters.
— Value From Wall Module
  • These are outputs from the wall module such as room setpoint.
— Network Setpoints
  • A network setpoint is a network variable from the controller that you want to view <u>and</u> change at the wall module.
— Sensors
  • 2 sensors (Temperature and Humidity)
  • 2 Sensor Offset Values (temperature and humidity)

See Table 5 for the individual parameter maximums.

IMPORTANT
> *You can <u>not</u> maximize all of these parameters together. The size of the data files limits the total number. See the memory usage tool by clicking on the Memory Usage Details button in the left pane of the Configuration Wizard.*

Table 5. TR70 Series Parameter Capacity Guidelines.*

Parameter Type	TR70	TR71	TR75
Controller Value	30	95	250
Value From Wall Module	20	50	180
Network Setpoints	10	50	125

* The TR71/TR75 may vary from these capacity numbers depending on label names, parameter limit reuse, and other devices that Zio interacts with on the Sylk bus.

NOTE: Network Variables need to be linked to the appropriate S-Bus wall module's function block slots. See "Link Slots on the Wire Sheet" on page 18 for details.

PARAMETER OPTIONS
The TR71 and TR75 support additional parameter control. See Table 1 on page 2 for details.

ENUMERATED VALUES
Meaningful enumerated values can be displayed using the Enumerated option.

From the Add/Edit parameter window check the Enumerated box and click on the Define Enum Range as shown in Fig. 13.
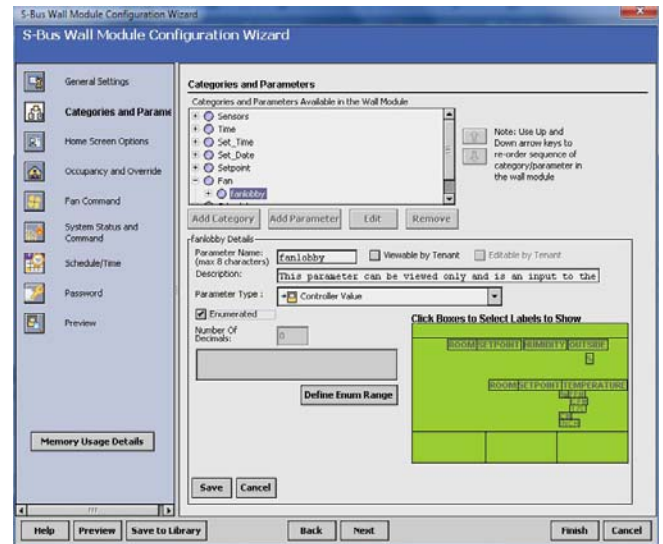

Fig. 13. Click on the Enumerated Checkbox, then the Define Enum Range button.

Once in the Zio Enum Library dialog box (Fig. 14), click on the dropdown to see pre-defined facets or define your own. For more detailed information see the online help in the Configuration Wizard.
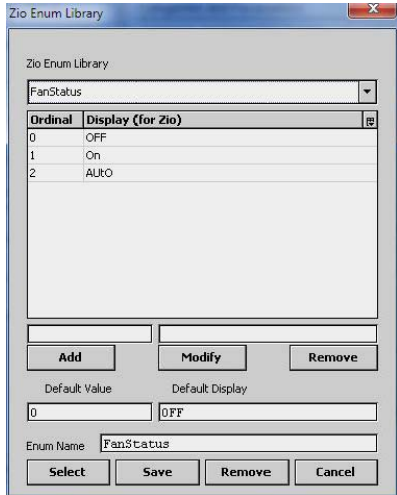
Fig. 14. Select from the existing library or define enumerated values.

HIGH/LOW LIMIT PARAMETER LINKING

This option allows for changes to a setpoint's high or low limit directly at a Zio by linking the high and low limit to a related setpoint. For example, for an occupied heat parameter, you could assign the related unoccupied heat setpoint parameter

as the low limit and the occupied cooling setpoint parameter as the high limit. To assign a setpoint to another setpoint's high or low limit, click on the Browse button next to the Low Limit or High Limit field. From the Select Parameter dialog box you can select the appropriate setpoint.

This feature is an alternative to assigning a numeric value in the High/Low Limit fields, which require any change be made in the configuration tool and then loaded to Spyder.

Continue with "Home Screen Options" on page 9.

Home Screen Options

← Home Screen Options selection from Wizard Menu
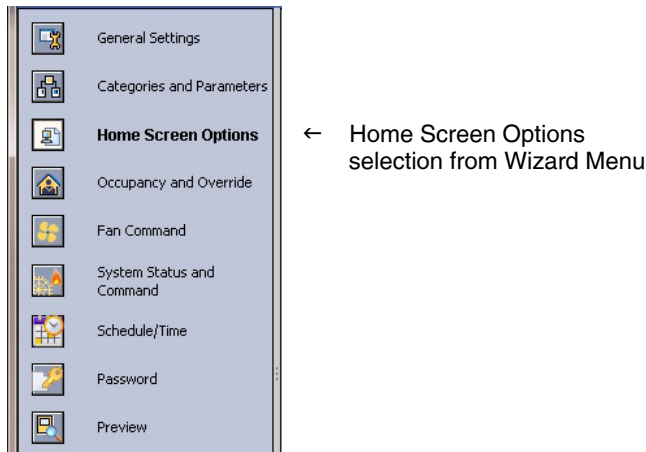
Fig. 15, shows the Home Screen Options window and lists the Home screens currently configured, where you can add, edit, or remove them.

DEFAULT HOME SCREEN
The current default Home screen always displays at the top of the list. You can select any item in the list and click the Set As Default button to change the default Home screen.

NOTE: You can use the Remove button to delete unused Home screen options to free up memory space.

PREVIEW
The bottom pane, Home Screen Option Preview, displays the current selected item's Home screen. When more than one Home screen is configured, you can click the softkey button rectangle, below "Next" in the preview pane, to cycle through all the Home screens in the list.

ADD OR CHANGE HOME SCREENS
Clicking the Add or Edit button displays the Details pane below the Home screen options tree (see Fig. 16).

You use the Details pane to create or change a Home screen:
- The **Option Name** item allows you to enter a 1 to 32 character description that displays in the Home Screen Options Available list.
- The **Set as Default** selection, if clicked, causes this Home screen to be the initial Home screen for the wall module (after the configuration is downloaded to the wall module).
- The **Description** text you enter allows more information to be entered on the home screen and will be loaded to the controller but cannot be previewed.
- Use the **Option Type** selection to choose either single or multiple (1 to 3) parameters to display on the Home screen.
  - For the Single Parameter option type, there is an option to display a custom label up to 8 characters in length.
- In the lower right of the window, you select the desired Home screen labels for the wall module. The number of parameters allowed (1-3) is based on your Option Type selection.

- When selecting a parameter to display on the Home screen, note the maximum number of digits allowed, which varies from 3 to 4 depending on where the parameter displays on the LCD.
- Click on the desired label box above each parameter to choose that label text to display on the wall module.
- When you complete your Home screen selections, click the Save button on the lower left of the Details pane.

After you choose the settings, use the Preview at the bottom left of the wizard window to exercise the Home screen and cycle through its options.
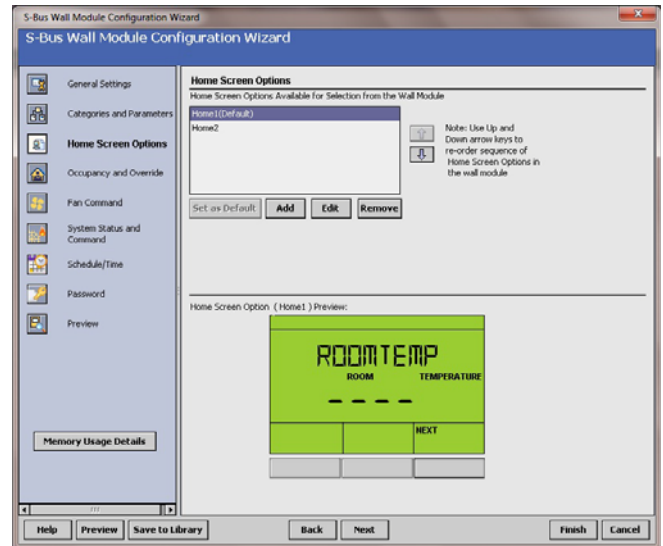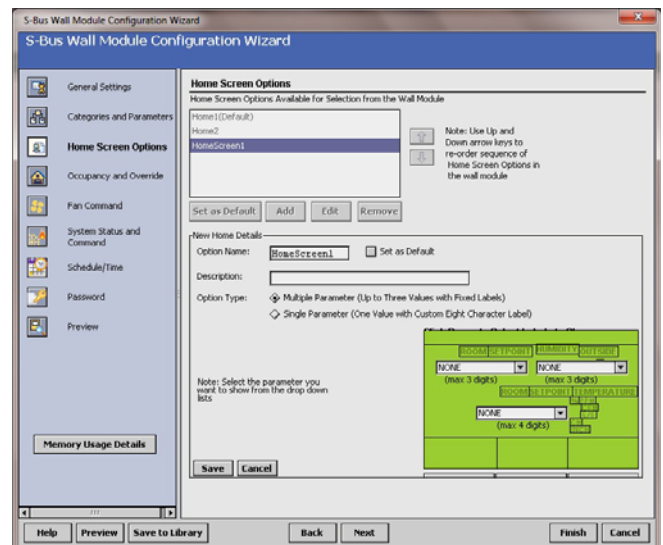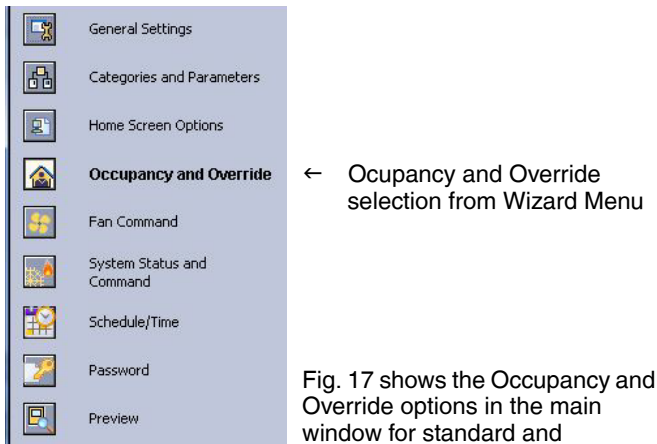

Fig. 15. Home Screen Options.

Fig. 16. Home Screen Details.

Occupancy and Override

← Ocupancy and Override selection from Wizard Menu

Fig. 17 shows the Occupancy and Override options in the main window for standard and

advanced settings. Clicking the Show Advanced Settings button displays the advanced settings.

NOTES:
1. The preview at the bottom of the window displays the occupancy option currently selected.
2. If an Override option is selected, the Override softkey displays in the preview. Pressing the Override softkey cycles through the available override options.

ENABLE OCCUPANCY OVERRIDE

Clicking the Enable Occupancy Override box enables this feature and also enables the current Occupancy status (3:00 hours as shown in Fig. 17).

Clicking on the Settings button for the Valid States That You Can Override section opens the Override to Occupied Settings dialog box where you can configure values to any desired number from 0 to 255. To conserve Zio memory, choose the same Override Type and Timed Override Details for Occupied, Unoccupied and Standby.

STANDARD SETTINGS
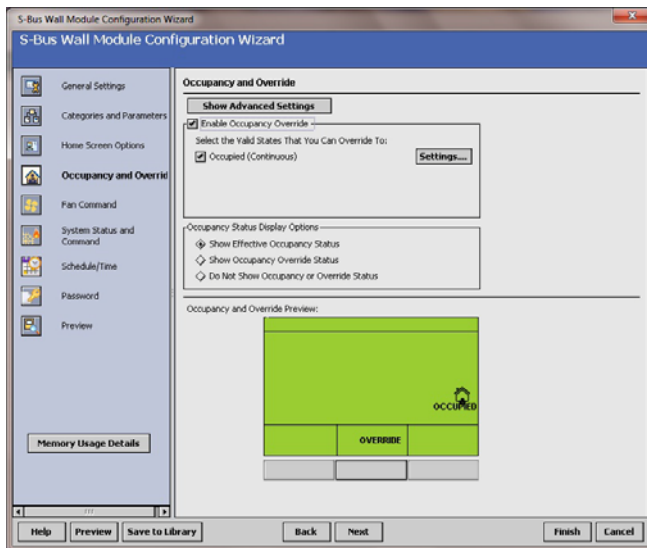
ADVANCED SETTINGS
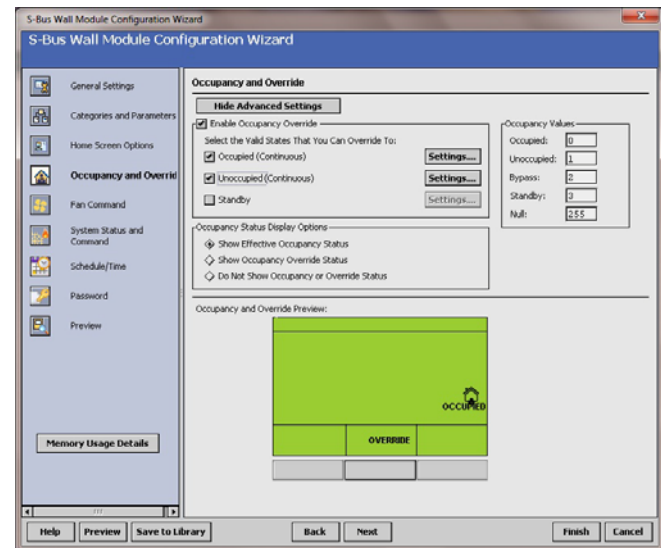
Fig. 17. Occupancy and Override screens.

OCCUPANCY STATUS DISPLAY OPTIONS

Here you select how the override status displays on the LCD. The options are:
- Show effective occupancy status – LCD shows the actual occupancy status taking into account the programmable controller configuration.

- Show occupancy override status – LCD shows the occupancy override status initiated from the LCD, independent of the programmable controller configuration.
- Do not show occupancy or override status – LCD does not show occupancy or override, regardless of what the user initiates and the programmable controller configuration.

OVERRIDE SETTINGS
Clicking the Settings button displays the Override to Occupancy settings pop-up (see Fig. 18), where you can select Continuous (default) or Timed (hours or days) Override settings.

TIMED OVERRIDE IN HOURS
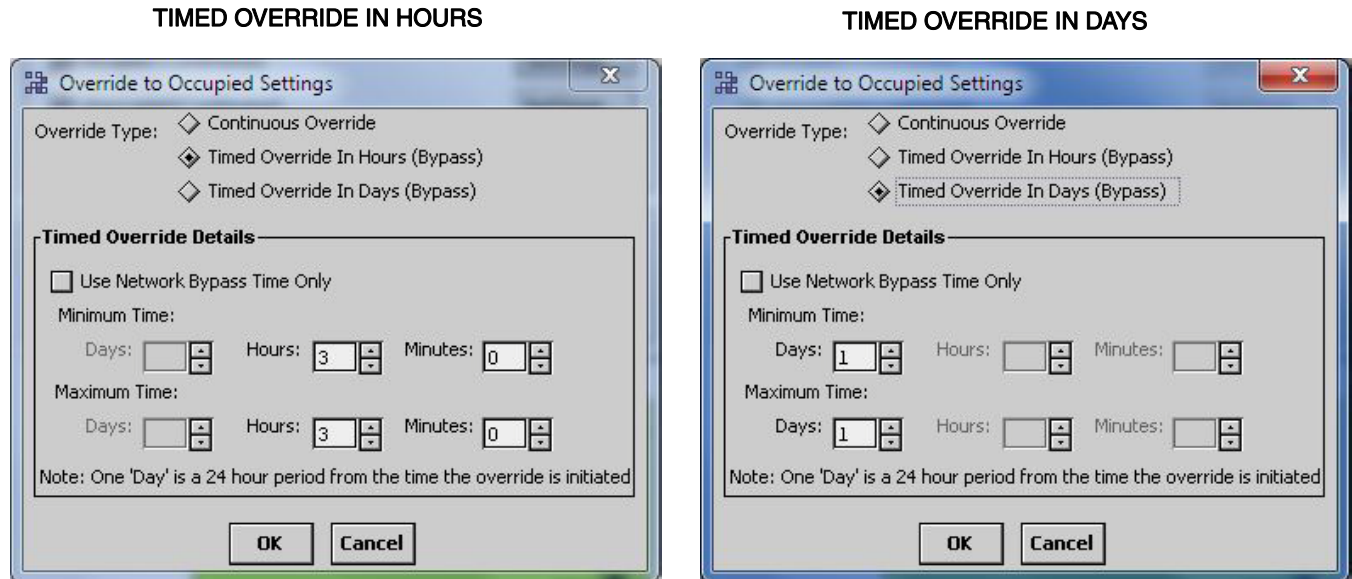
TIMED OVERRIDE IN DAYS

Fig. 18. Override to Occupied Settings (Hours or Days).

Clicking the Timed Override in Hours/Days boxes enable the Override details where you can enter the desired override timings.

Clicking the Use Network Bypass Time Only box disables all other override details. The timed override details will be determined by the programmable controller configuration. This option only applies to Occupancy override settings. Unoccupied and Standby do not use bypass.

ADVANCED SETTINGS
When the Show Advanced Settings button is clicked, overrides to Occupied, Unoccupied, and Standby options are possible.

The Override to Unoccupied selection's Settings button displays pop-ups similar to the Override to Occupied Settings shown in Fig. 18, but the timings apply to Unoccupied status.

NOTE: The Override to Unoccupied Settings does not have a Network Bypass option.

If you are finished with your configuration, go to "Preview" on page 16, otherwise continue with "Fan Command" on page 12.

Fan Command

← Fan Command selection from Wizard Menu
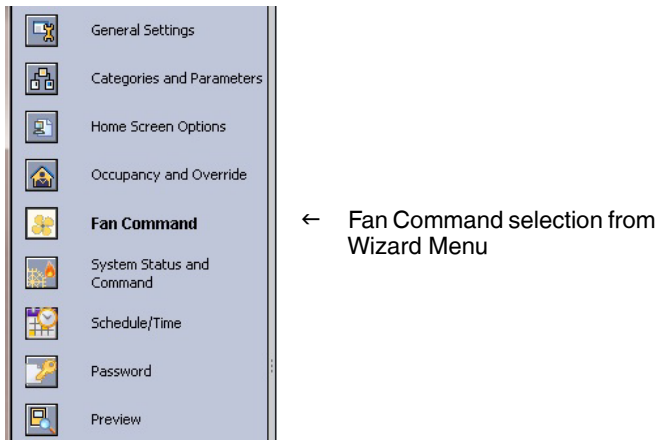
Fig. 19, shows the Fan Command options in the main window for standard and advanced settings. Clicking the Show Advanced Settings button displays the advanced settings.
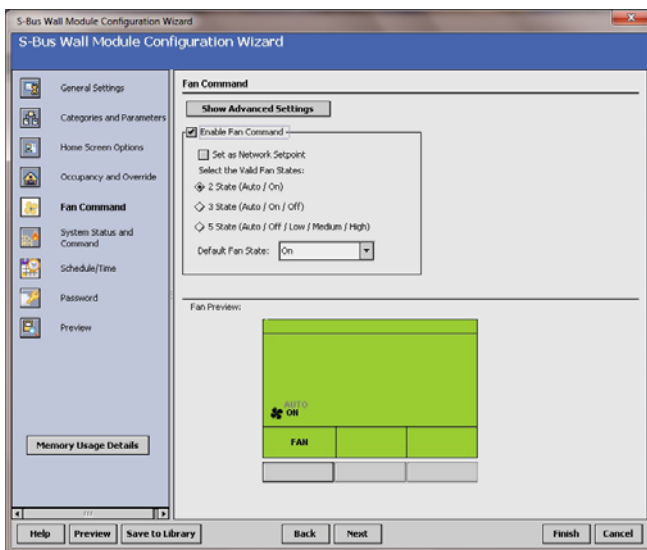
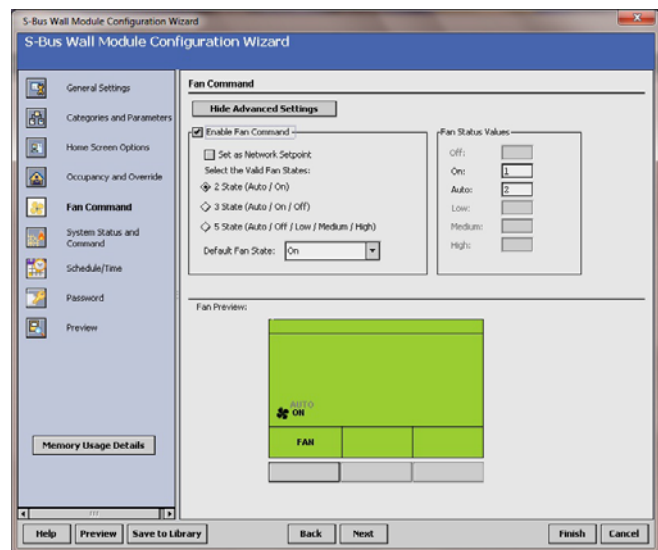STANDARD SETTINGS   ADVANCED SETTINGS

Fig. 19. Fan Command screens.

Clicking the Enable Fan Command box enables the fan state value selections.

The TR71/TR75 has the Set as Network Setpoint checkbox allowing the fan command to be configured as a network setpoint. This option is not available on the TR70.

The default Fan Command option is: 2 State (On / Auto). The default for the Fan State is selectable if Zio is commanding the fan. If the fan commend is a network setpoint, then the default value is set on the controller's network setpoint. The Fan command value cannot be changed from Zio in the Contractor mode.

Table 6. Fan State Values.

Selectable Fan State	Fan State Values
2 State	On / Auto
3 state	On / Off / Auto
5 State	Off / Auto / Low / Medium / High • Low, medium, and high are the three states of the fan speed indicator triangle. See Fig. 29 on page 19 for an example.

After you choose the setting, use the Fan Command Preview at the bottom of the window to exercise the Fan softkey to cycle through the options. If the Set as Network Setpoint box is checked for the TR71/TR75, the Preview screen will not emulate Zio's device behavior.

If you are finished with your configuration, go to "Preview" on page 16, otherwise continue with "System Status and Command" on page 13.
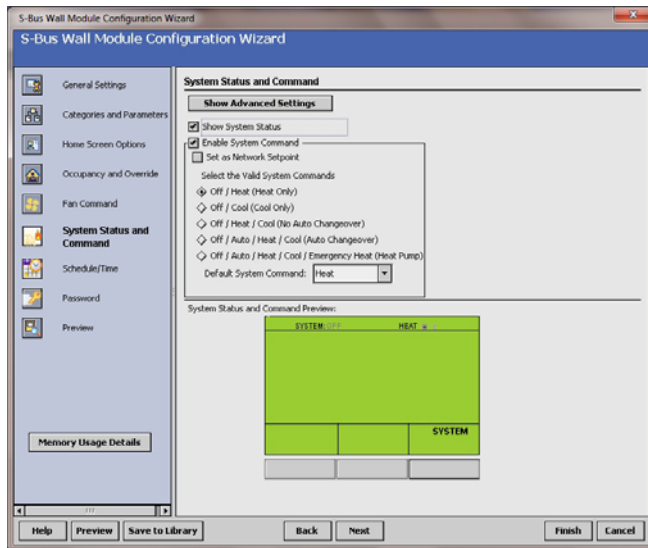
System Status and Command

General Settings

Categories and Parameters

Home Screen Options

Occupancy and Override

Fan Command

System Status and Command

Schedule/Time

Password

Preview

← System Status and Command selection from Wizard Menu

Fig. 20 shows the System Status and Command options in the main window. Clicking the Show Advanced Settings button displays the advanced settings.
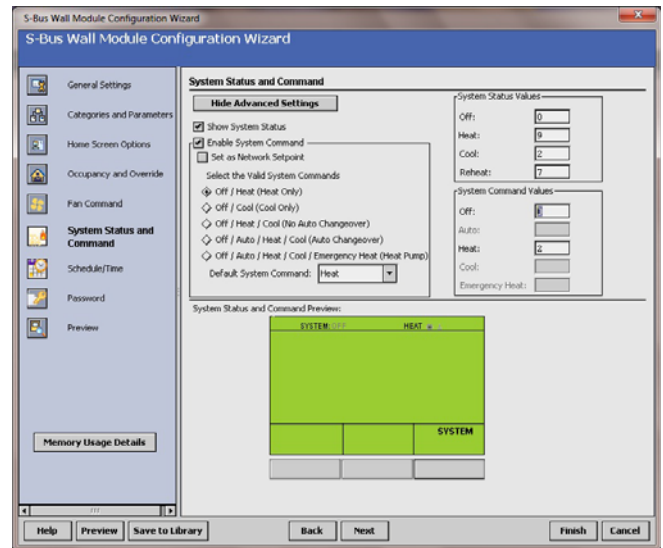
STANDARD SETTINGS

ADVANCED SETTINGS

Fig. 20. System Status and Command screen.

Clicking the Show System Status box enables the System Status line including the snowflake (cool) and flame (heat) icons and the System softkey on the LCD as shown in the Preview area at the bottom of the screen.

The System softkey on the LCD is enabled only when the Enable System Command option is selected.

The Enable System Command selections control the values that display on the System Status line at the top of the wall module's LCD screen.

For TR71/TR75s click on the System Command checkbox to allow the System Command to be configured as a network setpoint.

The default System Command option is: Off / Heat (Heat Only). The System commands are selectable. The System command value cannot be changed from Zio in the Contractor mode.

Table 7. System State Values.

Selectable System States
Off / Heat (Heat Only)
Off / Cool (Cool Only)
Off / Heat / Cool (No Auto Changeover)
Off / Auto / Heat / Cool (Auto Changeover)
Off / Auto / Heat / Cool / Emergency Heat (Heat Pump)

After you choose the setting, use the Preview button at the bottom of the window to verify your configuration. If the Set as Network Setpoint box is checked for the TR71/TR75, the Preview screen will not emulate Zio's device behavior.

If you are finished with your configuration, go to "Preview" on page 16, otherwise continue with "Schedule/Time" on page 14.

Schedule/Time

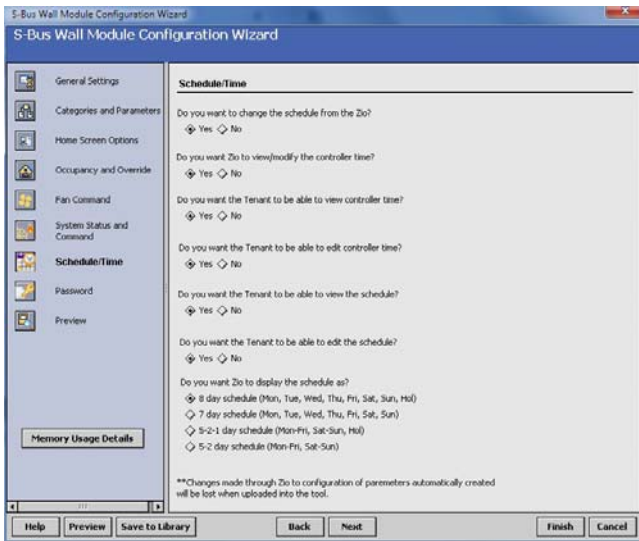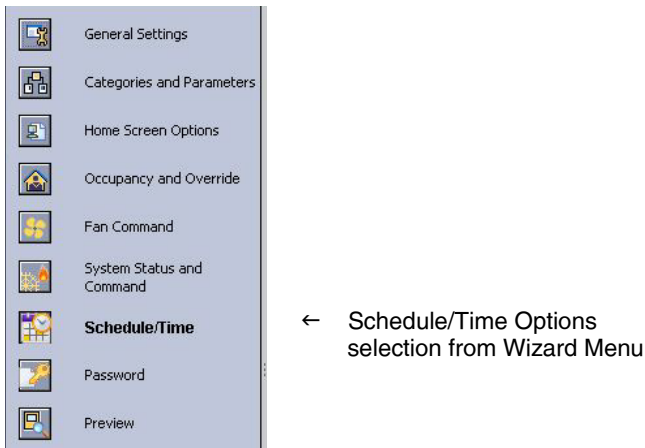← Schedule/Time Options selection from Wizard Menu
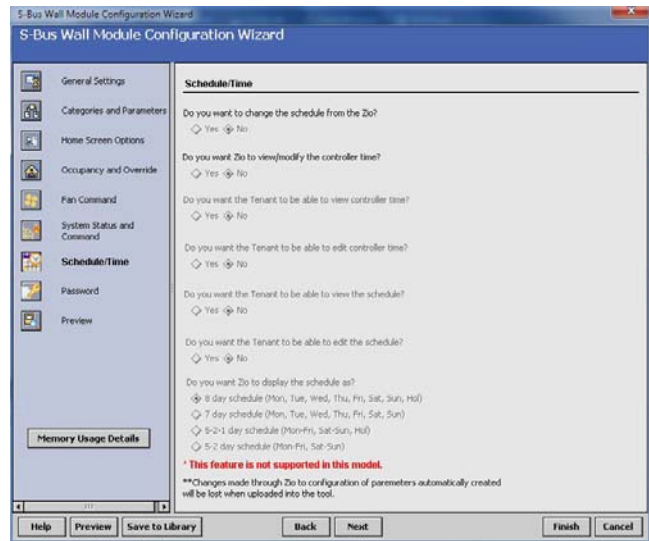

Fig. 21. Schedule/Time for TR75.

Fig. 22. Schedule/Time for TR70/TR71 is not supported so all options are grayed out.

As shown in Fig. 21, the TR75 can provide access to the Spyder Schedule. This option is not available for use with the TR70/TR71 as shown in Fig. 22.

The Schedule/Time options allow for if and how the Spyder schedule and Spyder time clock is accessed from Zio, whether or not the tenant can view or edit, etc. We recommend setting the time in Spyder before configuring the Schedule/Time in the configuration tool.

NOTE: Setting an invalid time at Zio will cause Spyder to set the time to invalid.

You also have the ability to configure how the Spyder schedule will display at the TR75: 8 day schedule, 7 day schedule, 5-2-1 day schedule, or the 5-2 schedule. If using the 5-2-1 or 5-2 day schedule, you should configure the Spyder for the same schedule.

NOTE: If multiple Zios are used, we recommended using the same schedule display option for all Zios.

If you are finished with your configuration, go to "Preview" on page 16, otherwise continue with "Password" on page 15.

Password

← Password Option selection from Wizard Menu
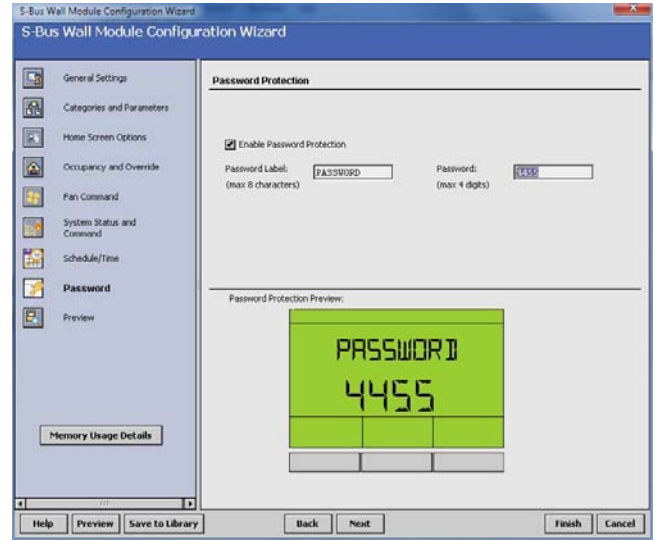
Fig. 23. Assign Password for TR71/TR75

As shown in Fig. 23, the TR71/TR75 can be configured with a password that limits access to contractor level system changes from the TR71/TR75. The password option is not available for the TR70.

The password can be assigned an eight character label that is displayed at the TR71/TR75 and a four digit password from 0000 to 9999. All TR71/TR75s on a Spyder can have the same or unique passwords.

If the password option is enabled and the password is forgotten, it can be retrieved through the WEBs-AX Workbench in the Configuration Wizard.

Go to "Preview" on page 16.

Preview

← Preview selection from Wizard Menu

Preview is a great way to verify all your configuration and setup parameters to ensure that they work exactly the way you want them to function.

Preview simulates the actual wall module interface and allows you to verify the operation of the current configuration of the wall module. Clicking on the three softkey rectangles below the labels of the preview display exercises the features you have configured.

NOTE: Since the up and down arrow keys do not display in Preview mode, no adjustments to parameters (e.g setpoint temperature) can be made.

Fig. 24 shows your current configuration of the wall module Home screen. You can select either the Tenant or Contractor view. The three softkeys in the preview LCD display are interactive and function just like the ones on the physical wall module display.
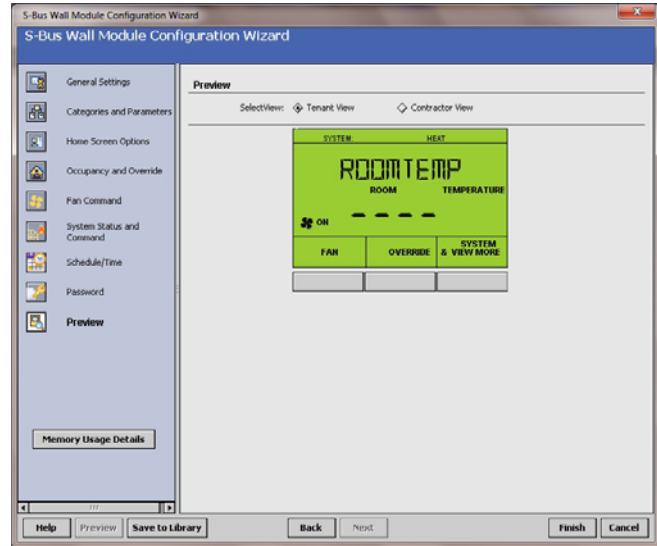
Fig. 24. Preview screen.

To complete the configuration, continue with "Completing the Setup and Configuration" on page 17.

Completing the Setup and Configuration

For custom configurations, begin with "Custom Configurations Only", otherwise continue with "All Configurations".

Custom Configurations Only

If you are customizing a configuration, use the Save to Library button to save your configuration. Clicking the button displays a pop-up window as illustrated in Fig. 25.
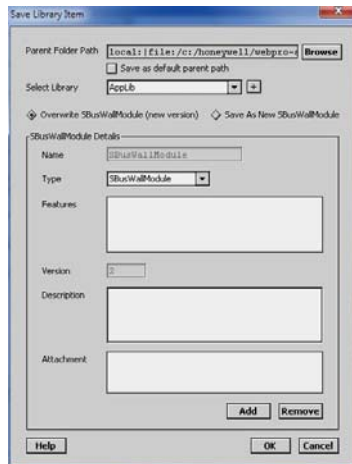
Fig. 25. Save to Library screen pop-up.

All Configurations

To complete the configuration process, perform the following sections in this order:
1. "Preview"
2. "Confirm Memory Usage is within Limits"
3. "Finish the Configuration"
4. "Link Slots on the Wire Sheet" on page 18

Preview

Use the Preview button or Preview menu selection to see how the wall module LCD screen will operate for your selected configuration (see "Preview" on page 16).

Confirm Memory Usage is within Limits

To view the current memory use information click on the Memory Usage Details button. A new window opens and displays a a bar graph indicating the percentage of current memory used in each memory category.

Each of the memory categories should be below 100%. You can also click on the Memory Usage button below the bar graph to quickly view the percent used by each of the memory categories in the last column of the table. See Fig. 4 on page 4 for an illustration. If necessary, go back and remove unneeded categories, parameters, or Home screens.

If using multiple Zios on one Sylk bus, check Spyder Resource usage also.

Finish the Configuration

Click the Finish button to commit all your changes to the database, close the Configuration Wizard, and return to the wire sheet.

Link Slots on the Wire Sheet

This section describes how parameters may be linked to the wall module. Refer the user to the Spyder User Guide, form 63-2662, for more specific information on variables and wire sheet logic.

The S-Bus Wall Module function block can be dropped into existing applications to replace the Conventional Wall Module block. You can see an example in Fig. 26. A maximum of four Zios may be wired on a single Sylk bus, with no more than one TR70 per bus.

When making links from existing blocks to the wall module function block input slots, there is no need to break the existing links from these existing blocks. The new tool allows for multiple output connections.

When connecting to slots on function blocks which lie on different wire sheets, remember that you can save time by using the Link Mark method, a standard Niagara Workbench linking mechanism.
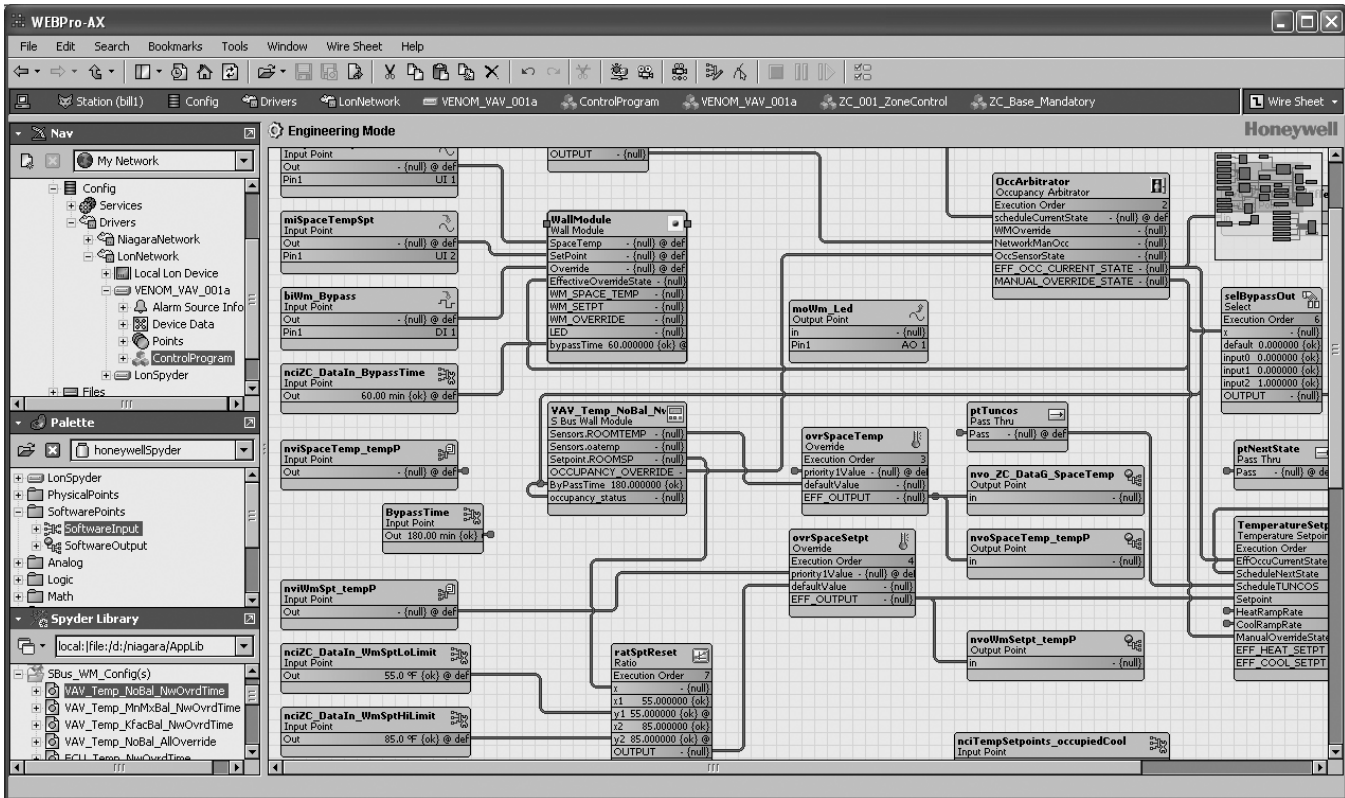
Fig. 26. Example of the S-Bus Wall Module block dropped into a Venom VAV application.

OPERATING THE ZIO WALL MODULE

There are two modes of operation:
• **Contractor** mode provides features a contractor would use such as selecting the Home screen, selecting parameters the tenant can view, and monitoring/modifying controller parameters, which includes balancing.
• **Tenant** mode provides features a tenant would use such as changing the setpoint, fan speed or system mode, initiating override, or monitoring/modifying permitted controller parameters. See page 22 for information about Tenant Mode operation.

Contractor Mode (Entering and Exiting)

Contractor mode allows access to the Setup function of the wall module.

To enter and exit the Setup function – Press the Up and Down arrow keys and the middle softkey all at the same time (see Fig. 1 on page 1 for key positions). The TR71/TR75 will display the revision and model before going to the next screen as shown in Fig. 27.
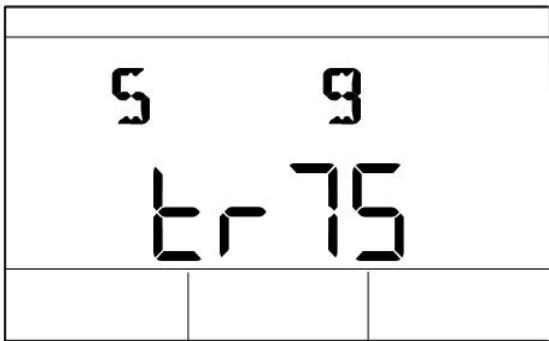
Fig. 27. On power-up, screen displays revision and Zio model number.

If the password option is enabled you will be prompted to enter a four digit password as shown in Fig. 28. Use the up/down arrow keys to change the first number and use the Done and Next softkeys to navigate from one digit to the next.
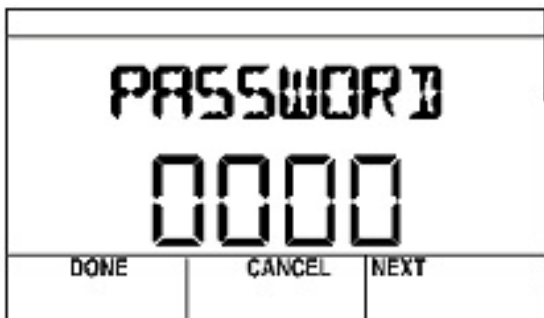
Fig. 28. Password entry screen.

Contractor Mode Operation

Contractor mode allows advanced options (such as modifying configured parameters) using the softkeys. Contractor mode also allows for customizing the tenant's view including setting the tenant's Home screen and controlling the tenant's "View More" access, which can provide the tenant with a view of the configured parameters.
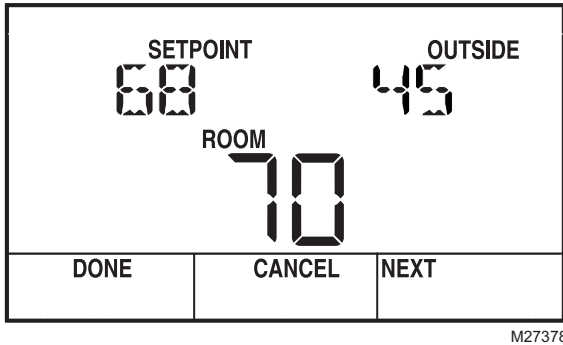
Contractor Home Screen Softkeys
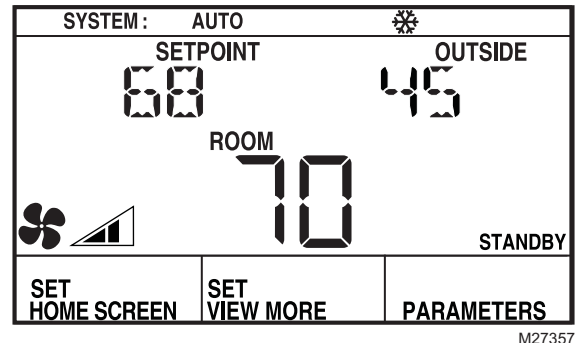
Fig. 29. Typical Contractor LCD display.

The three softkeys on the contractor Home screen (see Fig. 29) provide the following:

SET HOME SCREEN allows the contractor to choose among multiple Home screen options for the tenant.

The tenant's Home screen choices are created by the Configuration Wizard and downloaded to the wall module. Each wall module may have different Home screen choices. The contractor, using the softkeys, may choose which Home screen should be used, and may configure the Tenant view to show a subset (or none) of the configured parameters.

• When the contractor clicks the SET HOME SCREEN softkey, The display changes as shown in Fig. 30, and the softkeys change to DONE, CANCEL, and NEXT.
• Clicking the NEXT softkey cycles through the configured Home screens (see "Home Screen Options" on page 9).
• Click the DONE softkey when the desired Home screen displays.
• The CANCEL softkey exits the Home screen display without saving any changes.

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Fig. 30. Sample Contractor display showing Home screen setup.

SET VIEW MORE allows the contractor to provide parameter access (view only or adjustable) to the tenant's VIEW MORE softkey.

- Clicking the VIEW MORE softkey displays the first configured parameter as shown Fig. 31, and the softkeys change to DONE, CANCEL, and NEXT.
- The Up and Down arrow keys switch the parameter between YES and NO (view or no view in Tenant Mode). YES means that the tenant has access to the parameter in the View More screen. NO means the tenant does not have access to the parameter.
- If NO is selected for <u>all</u> parameters, then the VIEW MORE softkey does not display in tenant mode.
- The NEXT softkey moves to the next parameter.
- Click the DONE softkey when finished.
- The CANCEL softkey exits VIEW MORE without saving changes to that parameter.
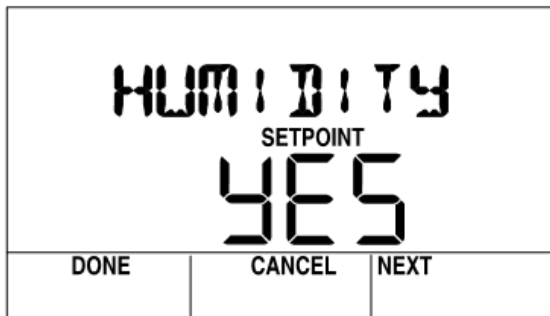
Fig. 31. Set View More parameter display.

PARAMETERS allows the contractor to monitor and/or adjust parameters in the programmable controller.

- Clicking the PARAMETERS softkey displays the first configured category as shown in Fig. 31, and the softkeys change to DONE, EDIT, and NEXT.

- When clicked, the EDIT softkey drops you into the parameter list for the displayed category and displays the first parameter in that category (e.g. the HUMIDITY parameter in the SET PNTS category as shown in Fig. 32).
- If the parameter has been configured as adjustable by the tool, the Up and Down arrow keys adjust the value of the parameter.
- The NEXT softkey displays the next parameter or category.
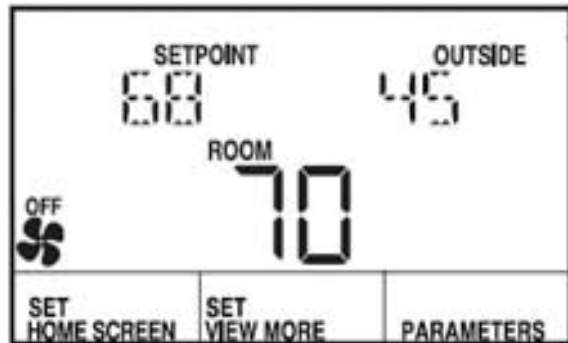- Click the DONE softkey when finished.
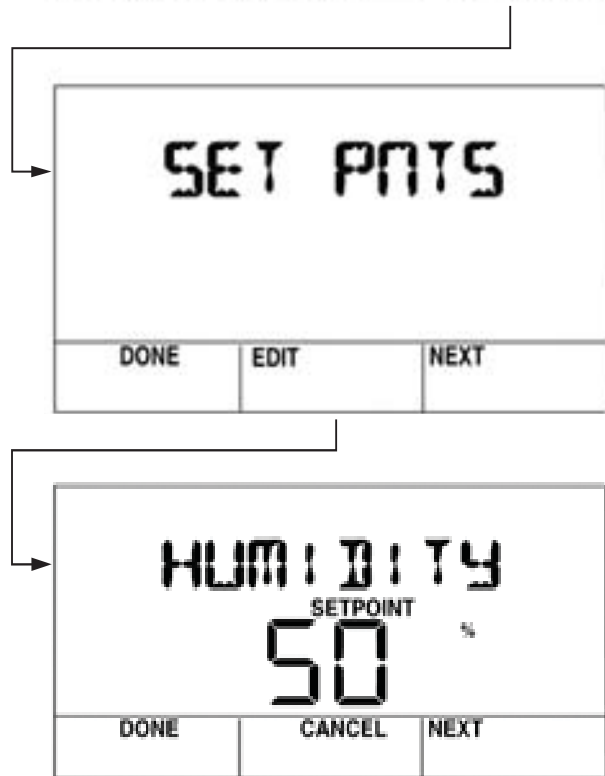
Fig. 32. Parameter display showing editing sequence.

Sample Contractor LCD Displays

The contractor mode allows advanced options using the softkeys. Contractor mode also allows for customizing the Tenant view including setting the tenant's Home screen and View More access.

The LCD display may be customized for the contractor. This section includes three examples of the various contractor Home and Parameter screens that are configurable for the LCD Wall Module. Not all possible screens are illustrated here. There are many other configurable screens.
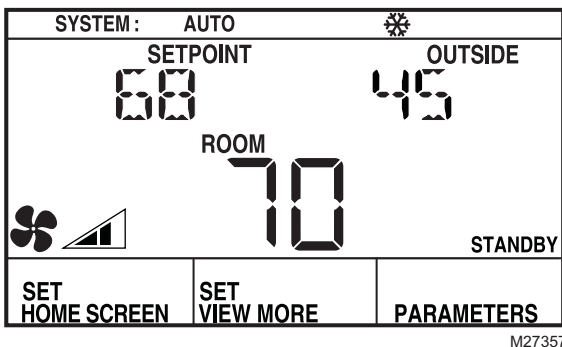

Fig. 33. Sample Contractor Home screen display with System Status, Setpoint, Outside Temperature, and Room Temperature (predominant).
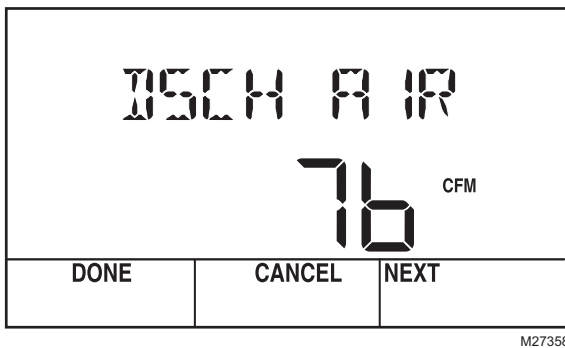
Fig. 34. Sample Contractor parameter display showing a user-created discharge air parameter value.
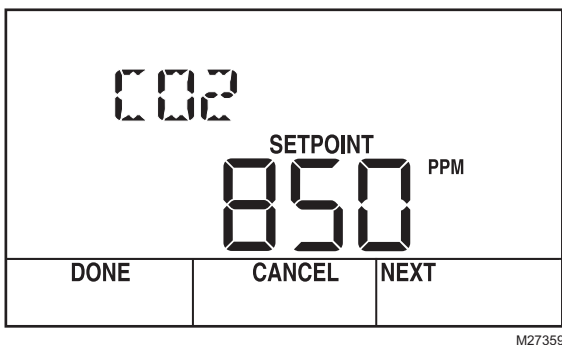
Fig. 35. Sample Contractor parameter display showing sensor setpoint value (CO$_2$ sensor from controller).
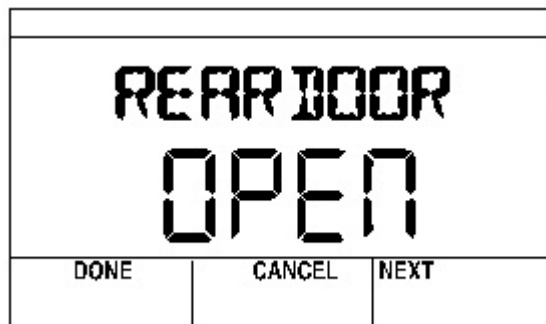
Fig. 36. Sample Contractor parameter display for TR71/TR75 showing enumerated value displays with label instead of numeric value.

NOTE: Any configured parameter may be displayed.

Editing the Schedule or Time

The Schedule option lets you modify the schedule and change Spyder's time. The desired scheduling option (8 day, 7 day, etc.) is setup in the Configuration Wizard (see "Wall Module Configuration" on page 4) and based on that selection, option screens vary. The example below shows the flow for viewing/editing a schedule. Use the Edit softkey to move to the next screen and use the up/down arrows to change values. When editing an event, use the Next softkey to go between editing the time and changing the state (OCC/UNOCC/STANDBY).

To remove a programmed event, use the up/down arrow keys to scroll the time to either 12:00 p.m. or 12:00 a.m. Just before reaching 12:00 the time will change to four dashes (- - - -). Press the Done softkey at this point to remove a programmed event.

In the 5-2 or 5-2-1 schedule options: "5" means Monday - Friday and Monday's events are shown on the Zio. The "2" means Saturday and Sunday and Saturday's events are shown on the Zio. And "1" means holiday. When Monday is changed, the TR75 copies that event to Tuesday - Friday and sends the controller the change for Monday through Friday. The same occurs for Saturday and Sunday when a change is made to Saturday. When a Holiday is modified it is also sent to the controller.
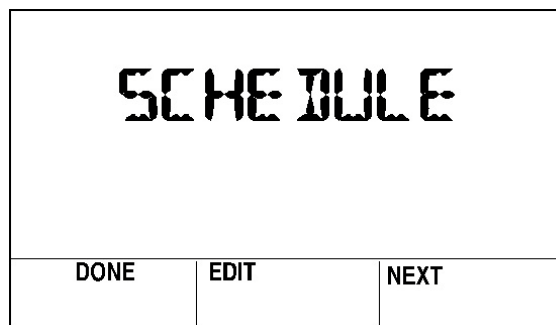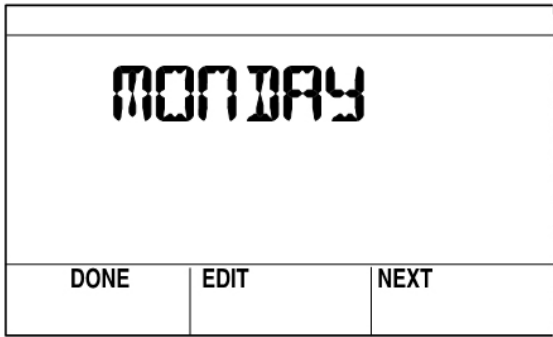

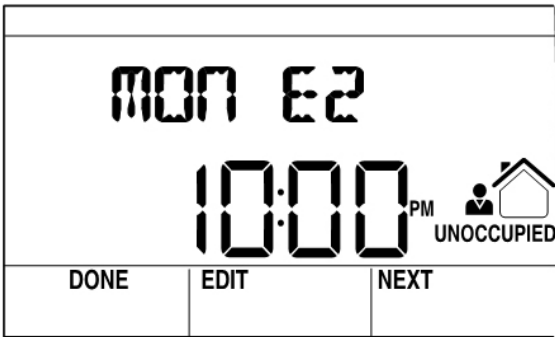Fig. 37. Schedule display for contractor.

Fig. 38. Select the day.

Fig. 39. Select the Event to edit the time and occupancy state.

Tenant Mode Operation

The tenant, using the softkeys and arrow keys, may change the setpoint, fan speed, system mode (heat/cool), or initiate override, if these features are configured. The tenant may change the Occupancy Override parameter to Occupied, Unoccupied, or Standby. And, the override can be timed in minutes, days, or be continuous.
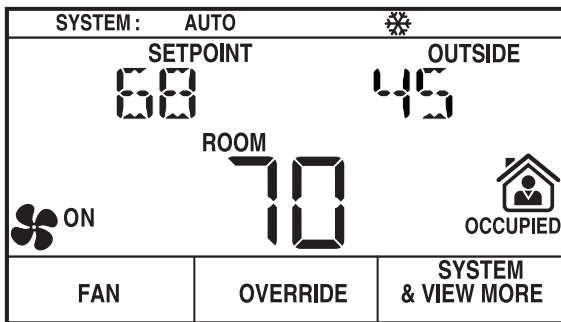
Fig. 40. Typical Tenant LCD display.

TENANT HOME SCREEN SOFTKEYS
As shown in Fig. 40, there can be three softkeys configured for the tenant's Home screen – FAN, OVERRIDE, and SYSTEM & VIEW MORE.

NOTES:
1. The Fan and Override settings are optional for Home screen setup.
2. If the System Command option is not enabled, then the SYSTEM softkey does not display on the tenant's Home screen.
3. If there are no parameters configured for tenant access, the VIEW MORE softkey does not display on the tenant's Home screen.

FAN allows the tenant to adjust the fan settings depending on the fan options (2, 3, or 5 position) configured.

As shown in Fig. 41, each click of the FAN softkey changes the fan icon display between:

• 2 position: ON and AUTO
• 3 position: OFF, AUTO, and ON
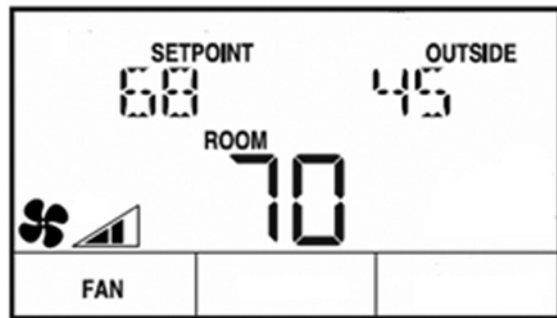• 5 position: OFF, AUTO, and the three states of the fan speed indicator (low, medium, and high)

Fig. 41. Fan display for Tenant showing 5-position setting with fan at medium speed.

OVERRIDE allows the tenant to override the Occupancy settings (see Fig. 42).

• Depending on the occupancy/override configuration, each click of the OVERRIDE softkey changes the occupancy icon displays between STANDBY, OCCUPIED, and UNOCCUPIED.
• If an override is set by the tenant, the OVERRIDE softkey changes to CANCEL OVERRIDE.
• Clicking the CANCEL OVERRIDE softkey cancels the override.

Fig. 42. Override display for Tenant.

SYSTEM & VIEW MORE Depending on the configuration, this softkey allows the tenant to change the system state and view/adjust configured parameters (see Fig. 43).

- The first click displays the system information and the Up and Down arrow keys change the system state between OFF, AUTO, COOL, HEAT, and EM.HEAT (emergency heat).
- Clicking the VIEW MORE/NEXT softkey displays each viewable parameter.
- If the contractor enables tenant access to a parameter, then the tenant can use the Up and Down arrow keys to adjust the parameter's value, otherwise the tenant is able to only view the parameter and its value.

NOTE: When the contractor configures a parameter and selects the Editable by Tenant check box, this enables the tenant to adjust the parameter's value. See Fig. 12 on page 7 for an example.

- Click the CANCEL softkey to exit the display without saving changes to the parameter.
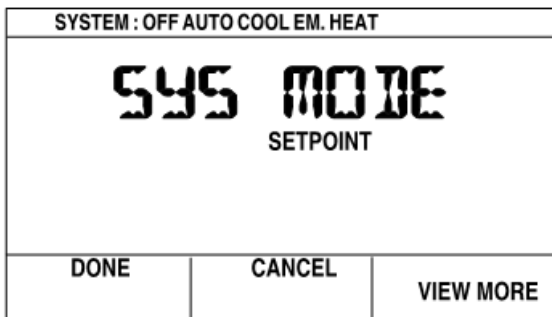- Click the DONE softkey when finished.

Fig. 43. System and View More display for Tenant.

Tenant Home Screen Display

The LCD display may be customized for the tenant. This section includes a few examples of the various tenant Home screens that are configurable for the LCD Wall Modules. Not all possible Home screens are illustrated here. There are many other configurable Home screens.

NOTE: Home screens can display one to three of any of the following parameters: temperature setpoint, room temperature, room humidity, outdoor humidity, and outdoor temperature, and time, or one of virtually any parameter in the controller.

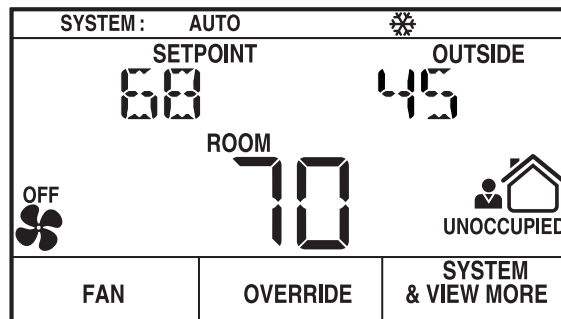SAMPLE TENANT HOME SCREEN DISPLAYS
Figures Fig. 44 through Fig. 49 illustrate typical tenant home screens.
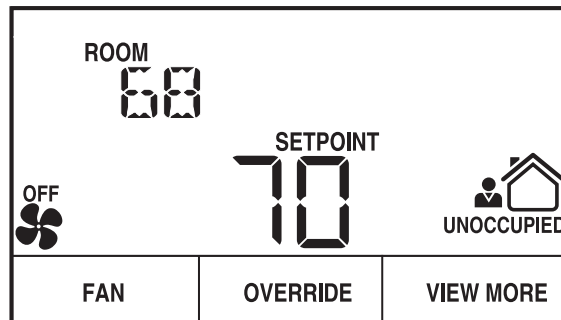
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Fig. 44. Sample Tenant Home screen with Room Temperature and Setpoint (predominant).

The Fan and Occupied settings are optional for Home screen setup. If there are no parameters configured for tenant access, the "View More" softkey does not display on the tenant's Home screen.
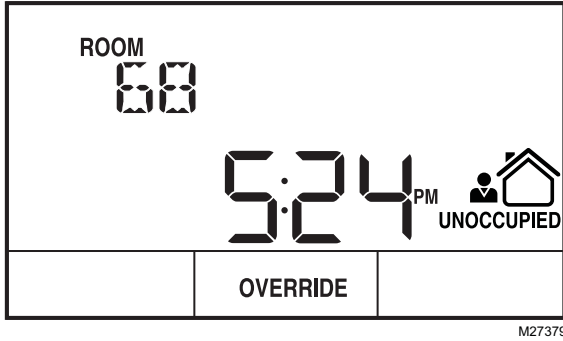

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Fig. 45. Sample Tenant Home screen with System Status, Setpoint, Outside Temperature, and Room Temperature (predominant).
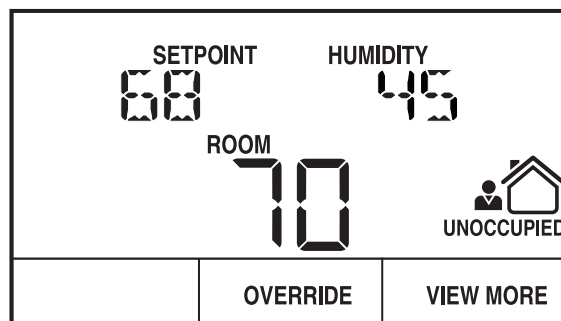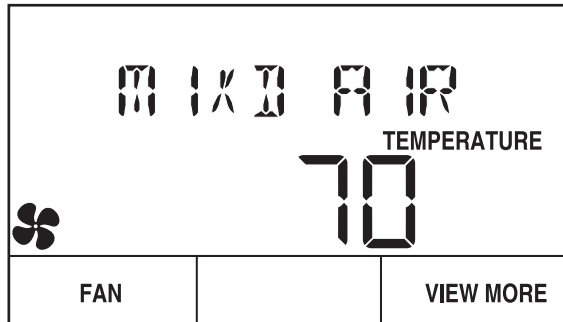

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Fig. 46. Sample Tenant Home screen with Humidity and Room Temperature (predominant).

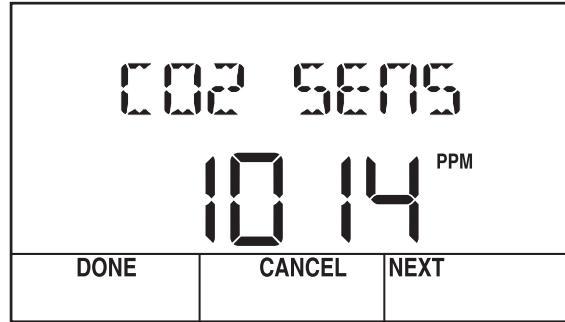Fig. 47. Sample Tenant Home screen with Room Temperature and Time (predominant).

NOTE: In Fig. 47, there are no Fan, System, or View More softkey options configured for this Home screen.

Fig. 48. Sample Tenant Home screen with a single, custom parameter.

NOTE: In Fig. 48, the Home screen is configured with only a single, custom parameter. See "Preview" on page 9.

Fig. 49. View More display showing CO_2 sensor value from controller.

NOTE: As shown in Fig. 49, any configured parameter may be displayed to the tenant.