✶✶✶Orion
Control Systems

System Manager TS-L Technical Guide

(End-User Interface Only)

For use with the following controllers: VCCX2, VCC-X, VCB-X, VCM-X E-BUS, VCM-X, VCM, and VAV/Zone Controllers
Requires SMTS-L Code: SS7013

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System Manager Touch Screen - Limited Access

Features

The OE392-11 System Manager Touch Screen (Limited Access) - (SMTS-L) provides a direct, graphic-enhanced, menu-driven link to allow the end user to view status points, change Space Setpoints, and view certain alarms of most controllers on the Orion Controls System. **The System Manager TS-L cannot be used for full Controller configuration.**

The SMTS-L provides the following useful functions:

- Provides a 4.3" 480 x 272 WQVGA RGB TFT LCD Graphical Touch Screen LCD display

- Utilizes a graphical touch screen menu system with easy-to-understand menu options with plain English language messages

- Graphical screens provide easy setup and operation without the need for specialized training

- Provides protection from unauthorized users through passcode authorization

- Comes equipped with real-time clock backup power supply for short power losses

- Provides icons to indicate alarm conditions

- LEDs behind plastic panel indicate power, communications, and operation

- Plastic enclosure allows for easy flush wall mounting in hollow drywall or surface mounting on solid wall surface

System Requirements

- The SMTS-L is packaged and assembled as flush wall mount. Surface mount components are also included for your convenience.

- If using the surface mount version, you will need a double duplex outlet box (by others).

- The SMTS-L works with the following VCCX2, VCC-X, VCB-X, VCM-X E-BUS, VCM-X, and VCM Controller: All standard SS1016, SS1026, SS1030, SS1032, SS1033, SS1034, SS1051, SS1062, and SS1088

- The SMTS-L works with the following VAV/Zone Controllers: SS1001, SS1005, SS1025, SS8011

*• USB-Link, CommLink, or MiniLink Polling Device

*NOTE: Alarm polling must first be set up in Prism 2. This requires a personal computer with Prism 2 software and a USB-Link or CommLink and a MiniLink Polling Device. See **page 25** for details. Ongoing alarm polling on the *SMTS-L Main Screen* requires a MiniLink to be connected to the system.

Adjustable Setpoints (VCCX2 Shown)

The following VCCX2 Setpoints are a sample of what can be adjusted using the SMTS-L:

- Cooling Mode Enable Setpoint

- Heating Mode Enable Setpoint

- Unoccupied Cooling Offset

- Unoccupied Heating Offset

- Push-Button Override Duration

- Daylight Savings Start Date

- Daylight Savings End Date

Status Points (VCCX2 Shown)

The following VCCX2 Status points represent what can be viewed using the SMTS-L:

Space Temperature	Control Signal
Cooling Setpoint	Building Pressure
Heating Setpoint	Control Signal
Slide Adjust	Cooling Status
Indoor Humidity	Cooling Stages
Outdoor Air Temperature	Modulating Cooling
Outdoor Air Humidity	Economizer Status
Outdoor Air Wetbulb	Economizer
Outdoor Air Dewpoint	Heating Status
Return Air Temperature	Heating Stages
Supply Airflow	Modulating Heating
Return Airflow	Auxiliary Heat Status
Outdoor Air Airflow	Emergency Heat Status
Exhaust Airflow	Main Fan
CO_2	Fan Speed
Duct Static	

Alarms (VCCX2 Shown)

The following VCCX2 alarms represent what can be viewed using the SMTS-L:

- Sensor Failure (any Sensor)

- Mechanical Failure (Heating, Cooling, etc.)

- Out of Range Temperature (Control or Supply Temperature)

- Missing Expansion Board

- Refrigeration Module Alarm

- Dirty Filter

- Emergency Shutdown

Mounting, Wiring, Initializing, and Updating

Environmental Requirements

The SMTS-L needs to be installed in an environment that can maintain a temperature range between 14°F and 158°F with less than 90% RH levels (non-condensing).

Mounting

The SMTS-L is housed in a plastic enclosure designed for mounting in hollow drywall construction or a control panel cover with the flush wall mount version (shown in **Figure 2, page 5**) or on a concrete, brick, or other solid wall surface with the surface mount version (shown in **Figure 3, page 6**).

The flush wall mount version has integral wingnut paddles that are tightened after installation to grip the drywall and hold the SMTS-L in place. For mounting in a control panel cover or other thin material, (4) adhesive backed rubber pads are provided to assist in securing the SMTS-L into the cutout in the panel. These pads are applied to the wingnut paddles to provide a non-slip mounting against the panel's sheet metal surface. See **Figure 2** for pad placement details.

The surface mount version is designed to be installed in a double duplex outlet box (by others). Both mounting styles of the SMTS-L feature an integral, magnetically-secured face plate which can be easily removed for reset of the display when required.

The SMTS-L should be mounted at approximately eye level to allow for ease of programming and reading of the display. The SMTS-L is typically mounted in the building manager's or superintendent's office or in an equipment room, but is also quite suitable for mounting in any location or with most decors.

Care

The SMTS-L should be cleaned with a soft, dust-free cloth. Do not use any liquid to clean your SMTS-L. You should *press* the **<Suspend>** button located behind the cover to temporarily freeze the touch pad before you attempt to clean your screen. See the Troubleshooting section on **page 24** for details.

Wiring

The SMTS-L is connected to the local communications loop of the Orion system via 18 AWG 2-conductor, twisted pair with shield wire connected to the T, SHLD & R communication terminals on the back of the SMTS-L. The communications wire used can be either our Watt-Master #WR-LL-WG-18 communications wire or Belden #82760 wire or its equivalent.

The SMTS-L also requires that 24 VAC (6 VA) power be supplied (by others) to its + and – wiring terminal located on the back of the SMTS-L.

See **Figures 4-8, pages 7-11** for wiring details. These wiring diagrams depict wiring the SMTS-L to the VCC-X Controller, VCB-X Controller, VCM-X Controller, VCM Controller, and VAV/Zone Controller. The SMTS-L can also be wired to the local loop terminals on the MiniLink PD, Power Comm Board, or any other add-on controller's local loop terminals. It will still require a transformer to be wired as shown in **Figures 4-7**, **pages 7-10**.

Dipswitch and Jumper Settings

If you are using a VCC-X Controller or a VCB-X Controller set at high speed, Dipswitch OPT1 should be set to ON; in all other instances, it should be set to OFF. As of April 2014, Dipswitch OPT4 should be set to ON by default. Previous versions should be set to OFF. If you see your screen is not centered correctly, switch OPT4 to the opposite position. Dipswitches OPT2 and OPT3 should always be set to OFF. See **Figures 4-8, pages 7-11** for details.

If you have a Stand-Alone system (no CommLink or MiniLink, the TERM Jumpers must be ON. For applications with CommLink(s) and/or MiniLink(s), the TERM Jumpers must be OFF. See **Figures 4-8 pages 7-11** for details.

Technical Support

Call (866) 918-1100 to talk to a WattMaster Controls Technical Support Representative. Support is available Monday through Friday, 7:00 AM to 5:00 PM central standard time.

Rubber Pads

Place (2) Rubber Pads On Each Paddle Arm As Shown When Mounting In Sheet Metal Panel Or Other Thin Mounting Material. Pads Are Not Required For Drywall Mounting

USE 4

Left Side View

Front View (Cover Removed)
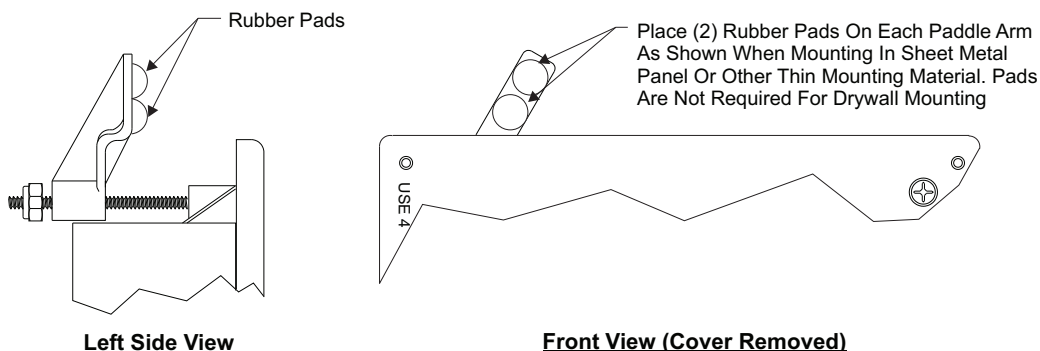
Figure 1: SMTS-L - Control Panel Mounting Pad Placement Detail (Flush Wall Mount)

Left Side View

- 2.11
- 1.78
- 0.26
- 4.53
- 4-Pin Head
- Wingnut Screw

Front View (Cover Removed)

- 5.73
- 0.97
- 3.79
- USE 4 CORNER HOLES TO MARK WALL OPENING
- USE 4 CORNER HOLES TO MARK WALL OPENING
- WARNING: LOW VOLTAGE CLASS 2 USE ONLY
- Display
- LEDs
- Button

Back View

- 5.10 Wall Cutout Dimension
- Wingnut
- Circuit Board
- Communications & Power Terminals
- 3.83 Wall Cutout Dimension
- 0.32
- 0.36
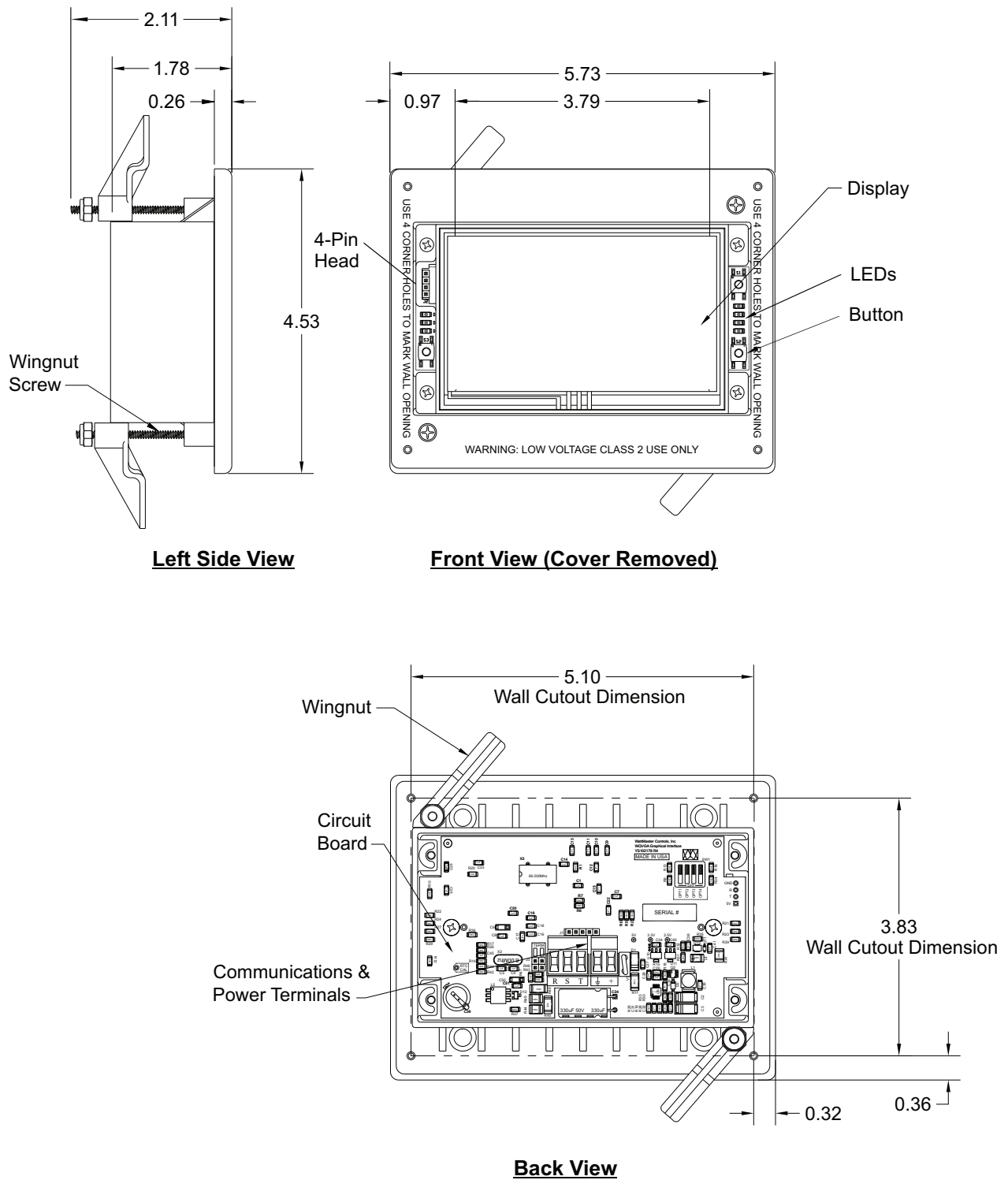
Figure 3: SMTS-L Dimensions and Components (Flush Wall Mount)

Surface Mount Components and Dimensions

Display

LEDs

Buttons

4-Pin Head

1.24

4.54

5.73

0.97

3.79

USE 4 CORNER HOLES TO MARK WALL OPENING

USE 4 CORNER HOLES TO MARK WALL OPENING

WARNING: LOW VOLTAGE CLASS 2 USE ONLY

Left Side View   **Front View (Cover Removed)**

2.83

0.16 Dia. Mounting Hole

0.59

0.16 Dia. Mounting Slot

2.25

3.32

R S T

3.26

1.21

Back View

Figure 3: SMTS-L Dimensions and Components (Surface Mount)

ToT Terminal On VCCX2 Controller
To S Terminal On VCCX2 Controller
To R Terminal On VCCX2 Controller

BLACK (R)
BARE (S)
WHITE (T)

To (24 VAC) Transformer -
To (24 VAC) Transformer +

BROWN (GND)
RED (24 VAC)

WHITE (T)
BARE (S)
BLACK (R)

BROWN (GND)
RED (24 VAC)

R S T

24 VAC Transformer 5 VA Minimum
Line Voltage

Run 2 Conductor Twisted Pair W/Shield Cable. WattMaster WR-LL-WG-18 Cable Or Equivalent From System Manager TS To VCCX2 Controller

Run 2 Conductor 20 Ga. Minimum Cable From System Manager TS Terminals To 24 VAC Transformer.

SW1

OPT1 OPT2 OPT3 OPT4

OFF

NOTE: Dip Switch OPT1 Should Be Set To ON When VCB-X Is Set To High Speed. OPT2 & OPT3 Should Be Set To Off. As Of April 2014, OPT4 Should Be Set To ON By Default. Previous Versions Should Be Set To OFF. If You See Your Screen Is Not Centered Correctly, Switch OPT4 To The Opposite Position.

System Manager TS - Back View

TERM

NOTE: For Stand-Alone Installations (No CommLink or MiniLink), Both TERM Jumpers Must Be ON. For All Applications With CommLink(s) Or MiniLink(s), Both Jumpers Must Be OFF.

WHITE (T)
BARE (S)
BLACK (R)

T S R

RS-485 COMM LOOP WIRE "R" TO "R" "T" TO "T" "SHLD" TO "SHLD"

ALARM

M MENU
UP
DOWN
✓ ENTER

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www.orioncontrols.com

ASSEMBLED IN USA

SERIAL #

VCCX2 CONTROLLER
Orion No.: OE338-26B-VCCX2

AAON No.: V87900

BINARY INPUTS
BI1 = PROOF OF AIRFLOW
BI2 = DIRTY FILTER
BI3 = HOOD ON/OFF
BI4 = REMOTE OCCUPIED
BI5 = REMOTE COOLING
BI6 = REMOTE HEATING
BI7 = REMOTE DEHUMIDIFICATION
BI8 = EMERGENCY SHUTDOWN

ANALOG INPUTS
AI1 = SPACE TEMPERATURE
AI2 = SPACE SLIDE OFFSET
AI3 = SUPPLY AIR TEMPERATURE
AI4 = RETURN AIR TEMPERATURE
AI5 = BUILDING PRESSURE
AI6 = SUPPLY AIR TEMP RESET
AI7 = OUTDOOR AIR TEMPERATURE
AI8 = NOT CONNECTED USE DUCT STATIC CONNECTOR

RELAY CONTACT RATING IS 1 AMP MAX @ 24 VAC

MAIN FAN
RELAY 2
RELAY 3
RELAY 4
RELAY 5
RELAY 6
RELAY 7
RELAY 8
RELAY COMMON

DUCT STATIC

BACNET − T
BACNET SHIELD = SH
BACNET − +

MAIN SUPPLY FAN VFD = AO1
ECONOMIZER ACTUATOR = AO2
MODULATING HEATING = AO3
EXHAUST FAN VFD = AO4

DUAL E-BUS

VCCX2 Controller - Front View

Figure 4: SMTS-L to VCCX2 / VCC-X Controller Wiring

SMTS-L to VCB-X Controller Wiring

To T Terminal On VCB-X Controller
To S Terminal On VCB-X Controller
To R Terminal On VCB-X Controller

BLACK (R)
BARE (S)
WHITE (T)

To (24 VAC) Transformer -
To (24 VAC) Transformer +

BROWN (GND)
RED (24 VAC)

WHITE (T)
BARE (S)
BLACK (R)

BROWN (GND)
RED (24 VAC)

R S T   +

24 VAC Transformer
5 VA Minimum

Line Voltage

Run 2 Conductor Twisted Pair W/Shield Cable. WattMaster WR-LL-WG-18 Cable Or Equivalent From System Manager TS To VCB-X Controller

Run 2 Conductor 20 Ga. Minimum Cable From System Manager TS Terminals To 24 VAC Transformer.

NOTE: Dip Switch OPT1 Should Be Set To ON When VCB-X Is Set To High Speed. OPT2 & OPT3 Should Be Set To Off. As Of April 2014, OPT4 Should Be Set To ON By Default. Previous Versions Should Be Set To OFF. If You See Your Screen Is Not Centered Correctly, Switch OPT4 To The Opposite Position.

SW1

OPT1 OPT2 OPT3 OPT4

System Manager TS - Back View

TERM

NOTE: For Stand-Alone Installations (No CommLink or MiniLink), Both TERM Jumpers Must Be ON. For All Applications With CommLink(s) Or MiniLink(s), Both Jumpers Must Be OFF.

WHITE (T)
BARE (S)

BLACK (R)

T
S
R

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www.aaon.com
Orion Control Systems
www.orioncontrols.com

VCB-X CONTROLLER - Front View

Figure 5: SMTS-L to VCB-X Controller Wiring

BLACK (R)
BARE (S)
WHITE (T)

To T Terminal On VCM-X
To S Terminal On VCM-X
To R Terminal On VCM-X

To (24 VAC) Transformer -
To (24 VAC) Transformer +

BROWN (GND)
RED (24 VAC)

WHITE (T)
BARE (S)
BLACK (R)

BROWN (GND)
RED (24 VAC)

R S T   +

24 VAC Transformer 5 VA Minimum

Line Voltage

Run 2 Conductor Twisted Pair W/Shield Cable. WattMaster WR-LL-WG-18 Cable Or Equivalent From System Manager To VCM-X Controller

Run 2 Conductor 20 Ga. Minimum Cable From System Manager TS Terminals To 24 VAC

SERIAL #

NOTE: Dip Switches OPT1, OPT2 & OPT3 Should Be Set To Off. As Of April 2014, OPT4 Should Be Set To ON By Default. Previous Versions Should Be Set To OFF. If You See Your Screen Is Not Centered Correctly, Switch OPT4 To The Opposite Position.

OPT1 OPT2 OPT3 OPT4

TERM

System Manager TS Back View

NOTE: For Stand-Alone Installations (No CommLink or MiniLink), Both TERM Jumpers Must Be ON. For All Applications With CommLink(s) Or MiniLink(s), Both Jumpers Must Be OFF.

WHITE (T)
BARE (S)
BLACK (R)

T
S
R

OE332-23-VCMX VCM-X CONTROLLER

VCM-X Controller - Front View

Figure 6: SMTS-L to VCM-X Controller Wiring

SMTS-L to VCM Controller Wiring

To T Terminal On VCM-X Controller
To S Terminal On VCM-X Controller
To R Terminal On VCM-X Controller

BLACK (R)
BARE (S)
WHITE (T)

To (24 VAC) Transformer -
To (24 VAC) Transformer +

BROWN (GND)
RED (24 VAC)

WHITE (T)
BARE (S)
BLACK (R)

BROWN (GND)
RED (24 VAC)

R S T ⏚ +

24 VAC Transformer
5 VA Minimum

Line Voltage

Run 2 Conductor Twisted Pair W/Shield Cable. WattMaster WR-LL-WG-18 Cable Or Equivalent From System Manager To VCM Controller

Run 2 Conductor 20 Ga. Minimum Cable From System Manager TS Terminals To 24 VAC Transformer.

NOTE: Dip Switches OPT1, OPT2 & OPT3 Should Be Set To Off. As Of April 2014, OPT4 Should Be Set To ON By Default. Previous Versions Should Be Set To OFF. If You See Your Screen Is Not Centered Correctly, Switch OPT4 To The Opposite Position.

OPT1 OPT2 OPT3 OPT4

TERM

System Manager TS - Back View

NOTE: For Stand-Alone Installations (No CommLink or MiniLink), Both TERM Jumpers Must Be ON. For All Applications With CommLink(s) Or MiniLink(s), Both Jumpers Must Be OFF.

WHITE (T)
BARE (S)
BLACK (R)

T
S
R

VCM Controller - Front View

Figure 7: SMTS-L to VCM Controller Wiring

SMTS-L to VAV/Zone Controller Actuator Package Wiring

ToT Terminal On VAV/Zone Controller
To S Terminal On VAV/Zone Controller
To R Terminal On VAV/Zone Controller

BLACK (R)
BARE (S)
WHITE (T)

To (24 VAC) Transformer -
To (24 VAC) Transformer +

BROWN (GND)
RED (24 VAC)

BLACK (R)
BARE (S)
WHITE (T)
GREEN (GND)
BROWN (GND)
RED (24 VAC)

WHITE (T)
BARE (S)
BLACK (R)

BROWN (GND)
RED (24 VAC)

R S T   ⏚ +

R S T   ⏚ +

Power/Comm Pigtail Cable From VAV/Zone Controller Actuator Package Or Power/Comm Distribution Board

R S T   ⏚

OPT1 OPT2 OPT3 OPT4

SERIAL #

Back View

NOTE: Dip Switches OPT1, OPT2 & OPT3 Should Be Set To Off. As Of April 2014, OPT4 Should Be Set To ON By Default. Previous Versions Should Be Set To OFF. If You See Your Screen Is Not Centered Correctly, Switch OPT4 To The Opposite Position.

NOTE: For Stand-Alone Installations (No CommLink or MiniLink), Both TERM Jumpers Must Be ON. For All Applications With CommLink(s) Or MiniLink(s), Both Jumpers Must Be OFF.

TERM

Figure 8: SMTS-L Terminal Connection to VAV/Zone Controller or Modular Wiring to Power/Comm Distribution Board / VAV/Zone Actuator Package

Main Screen Icons and Button Functions

Icons and Button Functions

System settings and screens are easily accessible by simply *touching* one of the six icons on the *Main Screen*. The subscreens contain yellow high-lighted data entry boxes with accessible number keypads for data entry and screen maneuvering buttons such as **<Esc>**, **<Back>**, and **<OK>**.

NOTE: Do not attempt to make changes to the Touch Screen while the Unit Controller is initializing. This can cause programming errors.

Main Screen Icons

There are six *Main Screen* icons. See **Table 1** for a list of the *Main Screen* icons and their functions.

Icon	Main Screen Icons
My System	The **<My System>** icon takes you to a *Unit Selection Screen* which takes you directly to the selected controller's *Status Screen*.
Active Alarms / No Alarms	When bright red, the **<Alarms>** icon takes you to the *Alarms Screen*. When bright green, no alarms are present. This icon is only useful when your SMTS-L is set for multiple managers or network mode and you have configured alarm polling using Prism 2 software.
Login	The **<Login>** icon takes you to the *Login Screen* where you enter your passcode.
User Passcodes	The **<User Passcodes>** icon takes you to the *System Manager Passcode Levels Screen*. This screen is accessible to a Level 2 user.
Settings	The **<Settings>** icon takes you to the *System Settings Screen* where you can change the Backlight settings, set the System Manager address, and enable alarm polling. System settings are only accessible to Level 1 & 2 users.
Set Time & Date	The **<Set Time & Date>** icon takes you to the *Set Time and Date Screen*. Only Level 1 or Level 2 users can set the time and date.

Table 1: Main Screen Icon Functions

Navigation Buttons

See **Table 2** for a list of Navigation buttons and their functions.

Button	Function
Esc	Use the **<Esc>** (Escape) key to exit from data entry without saving any new data.
Back / Back	Use the small **<Back>** button located in the top right corner of a *Data Entry Screen* to return to the controller's *Status Screen*. Use the large **<Back>** button located at the bottom left of other screens to return to the previous screen.
+	Use the **<+>** key to step to the next screen.
-	Use the **<->** key to step to the previous screen.

Table 2: Navigation Button Functions

Selection, Configuration, and Setpoint Buttons

See **Table 3** for a list of Selection, Configuration, and Setpoint buttons and their functions.

Button	Function
OK	Use the **<OK>** key to save the data you just selected or entered.
☐ ☐	*Touch* the grey square selection box to make your selection. A white square will designate that the item is selected. You can make numerous square box item selections per screen.
Setpoints	The **<Setpoints>** button, appearing on the controller's *Status Screen,* takes you directly to the controller's *Setpoint Screen*.
Overrides	The **<Overrides>** button, appearing on various controllers' *Status Screens,* takes you directly to the controller's *Force Schedules Screen*.
Schedules	The **<Schedules>** button, appearing on various controllers' *Status Screens,* takes you directly to the controller's *Schedule Screen*.
Holidays	The **<Holidays>** button, appearing on various controllers' *Status Screens,* takes you directly to the controller's *Holidays Screen*.
ALARM	The **<Alarm>** button, appearing on the controller's *Status Screen*, takes you directly to the controller's *Alarms Screen*. If red, alarm(s) are present. If black, no alarm(s) are present.

Table 3: Configuration Selection Buttons

First Things First

The first thing you need to do when setting up your Touch Screen is to Login. The second thing you need to do is establish a user passcode for staff access. The third thing you need to do is set the clock. After you complete these simple tasks, you are ready to set your system's settings, view controller status screens, and change schedules and setpoints.

NOTE: Do not attempt to make changes to the Touch Screen while the Unit Controller is initializing. This can cause programming errors.

Main Screen

Once you have connected your SMTS-L to a controller and have powered it up with the proper power supply, the *Main Screen* will appear. See **Figure 9**.

Figure 9: Main Screen

NOTE: The **<ALARMS>** icon will only appear on the Main Screen when alarm polling is selected and when there are MiniLink(s) detected.

Entering Your System Manager Passcode

NOTE: There are three passcode/access levels. Level 0 is no passcode, Level 1 defaults to 1111, and Level 2 defaults to 9288. You cannot change the Level 2 passcode, only the Level 1 passcode. The Level 1 passcode can only be changed by a Level 2 user.

When you power-up your SMTS-L, the message **System Secured** is displayed under the time in the upper right corner of the *Main Screen*.

Touch the **<Login>** icon found on bottom left of the *Main Screen* and *type* the default Level 2 passcode of "**9288**" using the number keypad to gain access to all setpoint and configuration items. See **Figure 10**.
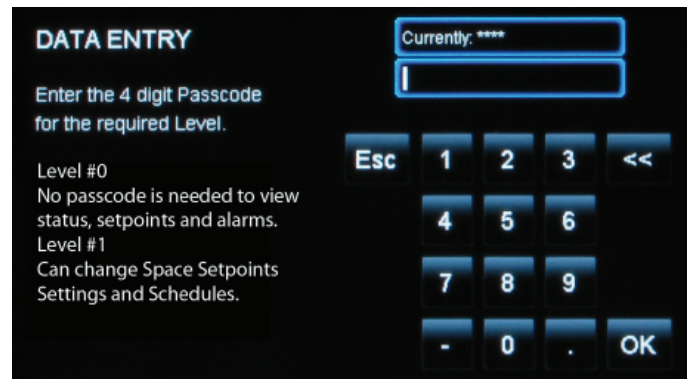
Figure 10: Login Screen

NOTE: For security reasons, the current passcode characters displayed at the top of the screen are never shown and appear as asterisks.

Touch **<OK>**. *Touch* **<Esc>** if you accessed this screen by mistake and do not wish to change the current access level.

The *Login Screen* will automatically close, and the status message **System Access** will now be displayed under the time at the top right of the *Main Screen*.

NOTE: System Access will automatically default to **System Secured** after the time set for **Backlight Timeout** in the *System Manager Settings Screen* has elapsed (see **Figure 15**, **page 16**). If timeout is set to zero, the passcode will timeout after two minutes.

Editing Passcodes

Passcode Clearance Levels

Below is a list of the passcode levels, default codes, and actions that can be performed at the various levels.

Level 0—No Passcode Needed, System Secured

Level 0 users can view controller status points, setpoints, schedules, holidays, and alarms. No changes to the time and date, controller setpoints, or schedules can be made.

Level 1—Default: 1111

Level 1 users can change available system settings, space setpoints, and schedules and can also clear alarms.

Level 2—9288

Level 2 users have the same access as Level 1 plus the ability to change the Level 1 passcode.

Edit Passcodes

WARNING: MAKE SURE YOU CHANGE THE LEVEL 1 PASSCODE AS SOON AS POSSIBLE TO SECURE THE SYSTEM!

From the *Main Screen*, *touch* the **<User Passcodes>** icon. The *Passcode Levels Screen* will appear. See **Figure 11**.
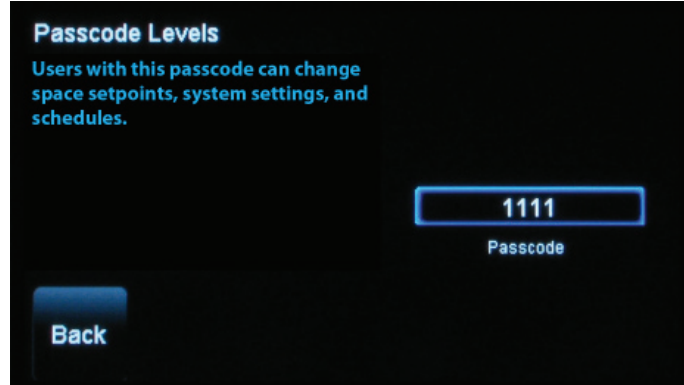
Figure 11: Passcode Levels Screen

To change the passcode, *touch* the blue highlighted box containing the current passcode. The keypad will appear with instructions for changing the passcode. See **Figure 12**.
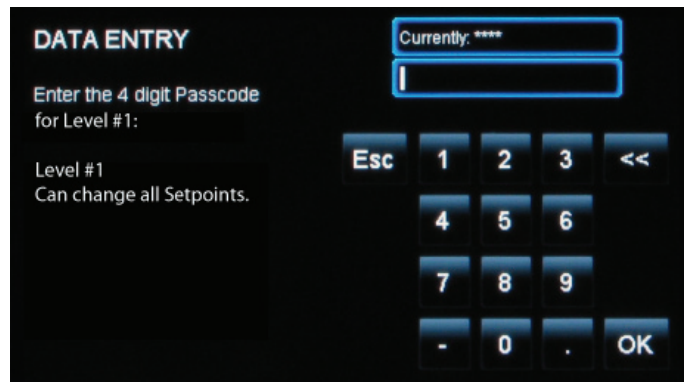
Figure 12: Change Passcode Screen

The current passcode will appear on the top menu bar. *Type* in the new four-digit passcode. You cannot use the period or minus characters in your passcode. Use the **<<<>** key if you make a mistake. *Touch* **<Esc>** to return to the previous screen without changing the passcode. When you have typed in the new passcode, *touch* **<OK>**. The *Change Passcode Screen* should display the passcode you entered.

Touch **<Back>** to return to the *Main Screen*.

Set Time and Date

When you first power up your SMTS-L, you will need to change the day of the week, the time, and the month, day, and year to the current time and date. If your system has been turned off or has been down for a long time, you may have to do the same, although the time and date can maintain itself for several days. Only Level 1 & 2 users can change the time and date settings.

The day of the week, the time, and the date appear at the top right on the *Main Screen*. See **Figure 9, page 13**.

From the *Main Screen*, *touch* the **<Set Time & Date>** icon. The *Set Time & Date Screen* will appear. See **Figure 13**.
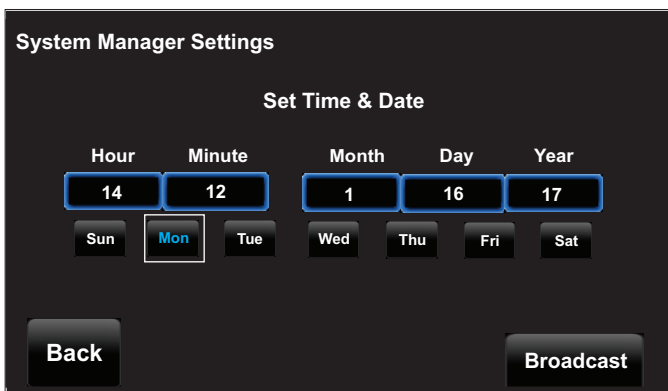
Figure 13: Set Time & Date Screen

In the example above, the current time and date is 2:12 PM, January 16, 2017. And the selected day of the week is Monday.

Set Day of the Week: Select the day of the week by simply *touching* your selection. The day of the week text will change from white to blue.

Set Hour, Minute, Month, Day, and Year: *Touch* the blue high-lighted box to have each selection screen appear. See **Figures 13 & 14**. Read the instructions on each screen for entering data.

Broadcast: When you are finished setting the clock and day of the week, *touch* the **<Broadcast>** button to broadcast the Time and Date to all Units. The following message will appear:

Time & Date Broadcast to All Units.

OK
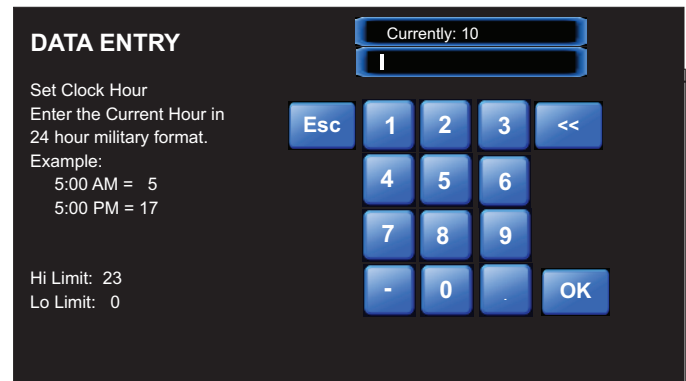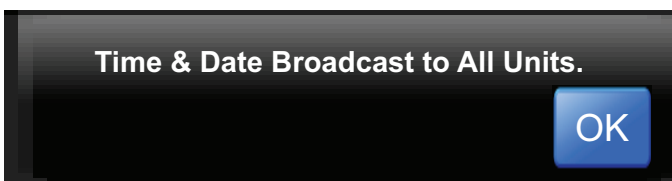
Figure 14: Set Clock Hour

Set Clock Hour: *Touch* the number buttons to enter the current hour in 24 hour military format. Valid entries are from 0-23. *Press* **<OK>**.

NOTE: See **Appendix** for Military Time Conversion table.

Set Clock Minute: *Touch* the number buttons to enter the current minutes. Valid entries are from 0-59. *Press* **<OK>**.

Set Clock Month: *Touch* the number buttons to enter the current month. Valid entries are from 1-12. *Press* **<OK>**.

Set Clock Day: *Touch* the number buttons to enter the current day of the month. Valid entries are from 1-31. *Touch* **<OK>**.

Set Clock Year: *Touch* the number buttons to enter the current year. Valid entries are from 0-99. *Touch* **<OK>**. **Note:** The year is based on the current century; therefore, 12 = 2012. If you enter more than two digits, e.g. 2017, the system will not recognize your entry.

System Manager Settings

Additional system settings are available under the **<Settings>** icon. These include setting the Backlight Timeout, the Backlight Intensity Percentage, the System Manager Address, Alarm Polling, and One to One Unit Connection. Only Level 1 & 2 users can change the System Manager Settings.

From the *Main Screen*, *touch* the **<Settings>** icon. The *System Manager Settings Screen* will appear. See **Figure 15**.

System Manager Settings

■ Alarm Polling Enabled	30 / Minutes — Backlight Timeout
■ One to One Unit Connection	50 / % — Backlight Intensity
	0 — System Manager Address

Back

System Manager Version: 1.00
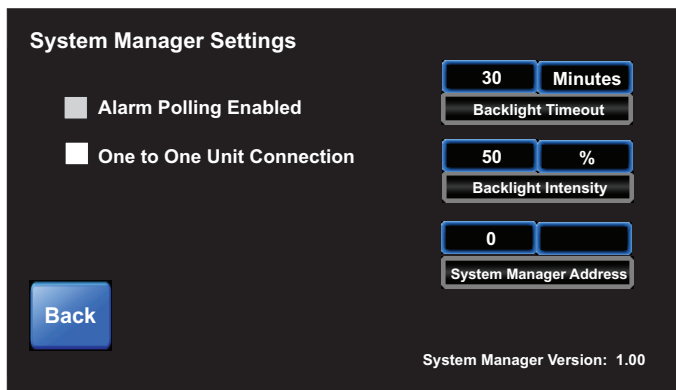
Figure 15: System Manager Settings Screen

Backlight Timeout: This setting is actually a setting for three separate functions—Backlight Timeout, *Main Screen* Timeout, and Passcode Timeout. To set the Backlight Timeout, e*nter* the amount of time you wish the screen to maintain the active intensity level after the last touch pad activity occurs. The High limit is 30 minutes and the Low limit is 0. 0 = No Timeout. The SMTS-L will return to the *Main Screen* display at the same rate as the Backlight Timeout, except that if set to 0, the *Main Screen* will display after 2 minutes. The Passcode will timeout at the same rate as the Backlight Timeout, except that if set to 0, the Passcode will timeout after 2 minutes and will return to System Secured Setting.

Backlight Intensity Percentage: *Enter* the percentage of light level you wish to maintain whenever touch pad activity occurs. The High limit is 100 and the Low limit is 0.

System Manager Address: *Enter* the address of the SMTS-L. 0 = Stand Alone Mode. 63 = Network System. 1-60 = Multiple Managers based on the following definitions:

- **Stand Alone**—If your SMTS-L is connected to one controller and you are not using a CommLink or MiniLink anywhere on the loop, your system is **Stand Alone**. If your SMTS-L is connected to more than one controller daisy-chained together and you are not using a CommLink or MiniLink anywhere on the loop, your system is **Interconnected**. If you have either a **Stand Alone** or **Interconnected** system, you must *enter* **<0>** for **Stand Alone Mode**. In order to view all controllers on an **Interconnected System**, make sure that One to One Unit Connection, described below, is not selected.

- **Network**—If you are using this SMTS-L on a communications loop that has a MiniLink or CommLink installed and you have a single SMTS-L for your entire system, you must *enter* **<63>** for **Network System**.

- **Multiple Managers**—If you are using this SMTS-L on a communications loop, have a MiniLink or CommLink installed, and have more than one SMTS-L, then you need to operate in **Multiple Managers Mode**. *Enter* the address **<1-60>** at which you want this particular SMTS-L to be set. When more than one SMTS-L is used on a local loop, each must be set with a unique address different from any other device on that loop. If you want one of the SMTS-L's to be able to indicate alarms for the entire system, you must *ente*r **<63>** for **Network System** for that particular SMTS-L.

Alarm Polling Enabled: If you wish for the system to poll for alarms, *touch* the black box to the left of this item to select it. The box will turn white and the system will immediately check all loops for alarms. *Touch* **<Cancel>** to stop the process. If you wish to have Alarm Polling Disabled, you must now *touch* the white box to deselect this option. The box will return to its previously fully black state.

NOTE: For the SMTS-L to poll for alarms, you must also configure the unit(s) to poll for alarms on the *MiniLink Polling Device Setpoints Screen* using Prism 2. See the *Appendix* in this guide for more information.

One to One Unit Connection: If your SMTS-L is directly connected to only one unit, you may wish to select this option to bypass the *Unit Selection Screen* and go directly to the unit's *Status Screen*. The controller must be set to address #1 for this to work. *Touch* the black box to the left of this item on the screen to select it. The box will turn white. If you wish to deselect this option, simply *touch* the box again.

System Manager Version: The version number of the System Manager software appears on the bottom menu bar. This version number is important to know for troubleshooting purposes.

Alarm Polling

In order for Alarm Polling to appear on the *Main Screen,* you must have the following items in place:

1. **Alarm Polling Enabled** must be selected in the *Systems Settings Screen* (see **Figure 15, page 16**).

2. You must have a MiniLink connected to your system and have your SMTS-L set to Network Mode.

3. You must configure each unit to poll for alarms on the *MiniLink Polling Device Setpoint Screen* using Prism 2. See **page 25** in this guide for more information.

The **<Alarms>** icon on the *Main Screen* allows you to check for alarms, review alarms, and clear alarms. Only Level 1 & 2 users can clear the alarm log.

A green **<No Alarms>** icon appears on the Main Screen when no alarms are present. This icon changes to a red **<Active Alarms>** icon when alarms are present.

To check for alarms, review alarms, or clear alarms, from the *Main Screen*, *touch* the **<Active Alarms>** icon. The *System Alarm Status Screen* will appear. See **Figure 16**.

NOTE: Even if you don't set up Alarm Polling using Prism 2, a controller's first status screen will still alert you of an active alarm.
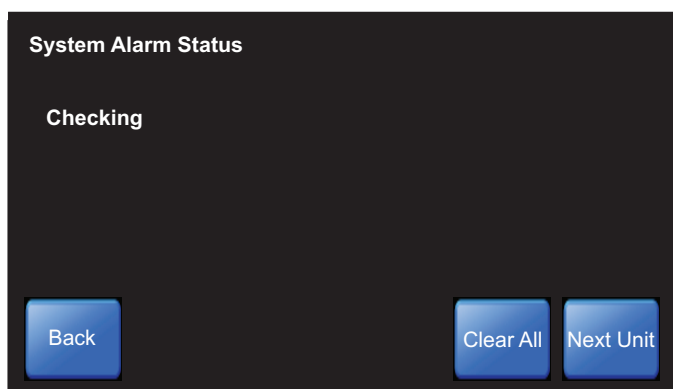
Figure 16: System Alarm Status Screen

Next Unit: *Touch* **<Next Unit>** to access the next unit's alarms.

NOTE: You can also view alarms while in individual controller's status screens by pressing the ALARMS button.
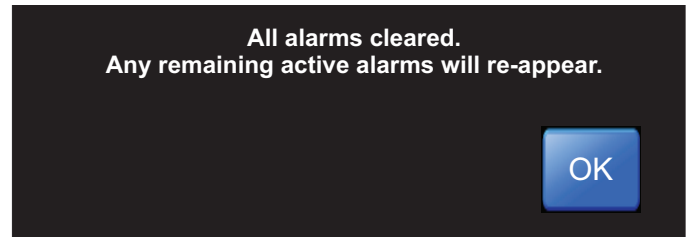
Clear All: *Touch* **<Clear All>** to clear all alarms logs. Active alarms will remain. You must be a Level 1 or 2 user to access this option. When all alarms have cleared, the following message will appear on the screen:

My System Unit Selection

From the *Main Screen*, *touch* the **<My System>** icon. The *Selected Unit Screen* will appear. See **Figure 17**.

NOTE: If you have chosen the **One to One Unit Connection** in the *System Manager Settings Screen*, this screen will not appear. Instead, the unit's *Status Screen* will appear.
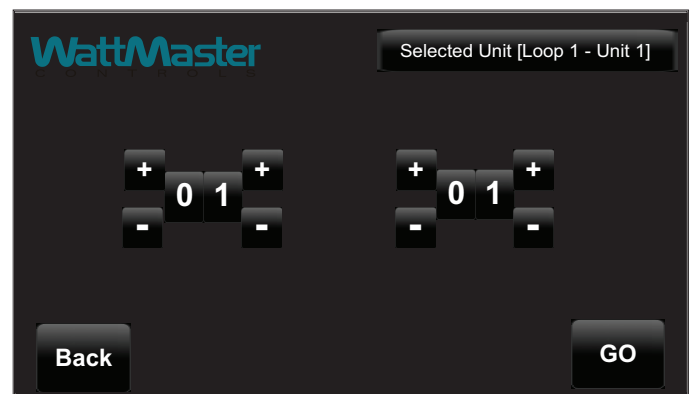
Figure 17: Unit Selection Screen

In **Figure 17**, Loop 1 and Unit 1 are selected as indicated in the figure with white text. They also appear in the *Top Menu Bar* in brackets.

Use the **<+>** and **<->** buttons to move up and down through the loops and units. *Enter* the desired **Loop #** and **Unit #** and then *touch* **<GO>** to access the unit's *Status Screen*.

Viewing VCC-X, VCB-X, VCM-X & VCM Status Screens

Figures 18 & 19 depict the first *Controller Status Screens*. Notice that the controller is identified by loop number and unit number - in this case, 0102 represents Loop 1, Unit 2. Images vary based on controller type.

While in the *Status Screen*, *touch* the **<+>** and **<->** buttons to view more status screens displaying relays and operating setpoints. These screens roll back to the first *Status Screen*.

Figure 18: VCC-X/VCB-X Controller Status Screen 1
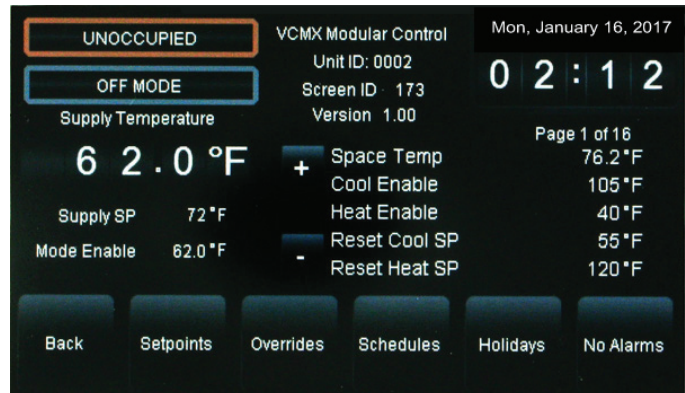
Figure 19: VCM/VCM-X Controller Status Screen 1

Viewing Controller Alarm Status

 To view alarm status, *touch* the **<ALARM>** button on the unit's first *Status Screen*. See **Figure 20**. The *Alarm Status Screen* will display. See **Figure 21.**

NOTE: The **<ALARM>** button will be red when an active alarm exists. At its normal or inactive state, the button will be grayed and display, "No Alarms".

NOTE: Even if you don't set up Alarm Polling in Prism 2, a controller's first status screen will still alert you of an active alarm.

NOTE: Alarms are configured using Prism 2 and active alarms can only be cleared using Prism 2.
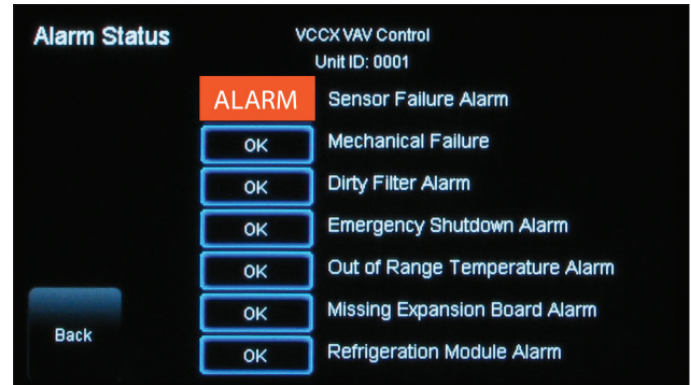
Figure 21: Controller Alarm Status Screen (VCC-X Shown)

In the example above (**Figure 21**), there is an ALARM (designated by the word ALARM in red.) If there is no alarm condition, the word OK appears next to the alarm condition.

Touch the **<Next>** button to go to the next *Alarm Status Screen*.

Figure 20: Controller Status Screen (VCC-X Shown)

Viewing and Setting Schedules & Holidays

Viewing and Setting Schedules

Schedules

To view and set schedules for the controller, *touch* the **<Schedules>** button found at the bottom of the *Status Screen*. The *Schedules Screen* will appear. See **Figure 22**. The default day will be Sunday and the default event start/stop times will be midnight.
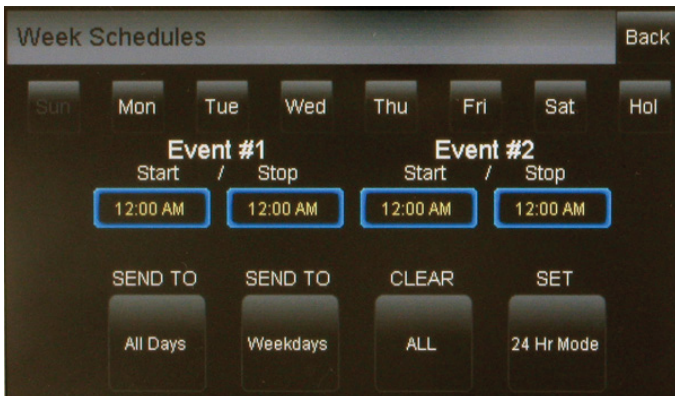
Figure 22: VCCX2/VCC-X/VCB-X/VCM-X & VCM Controller Schedules

A Level 1 or 2 user can set two schedules per day for individual days of the week, all weekdays, weekends, and holidays. All times are entered in military time format.

If you wish to enter a schedule for a certain day of the week, first *touch* the day of the week at the top of the screen. Otherwise, the day defaults to Sunday. *Touch* the start and stop time for each Event and enter the desired times. See **Figure 23**. All times must be entered in military time format. See the Military Time Table in the Appendix.
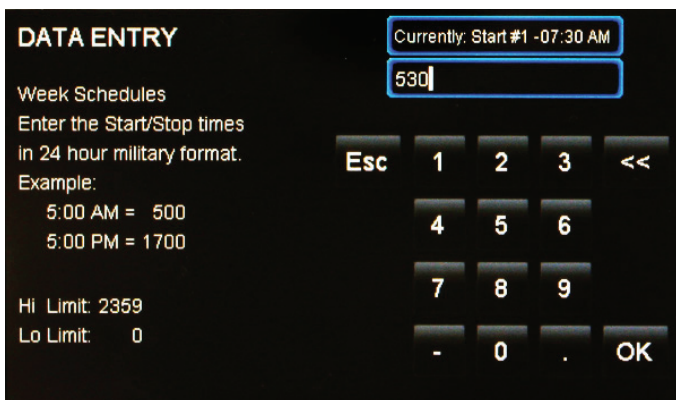
Figure 23: Schedule Times Screen

Touch **<OK>** to save the time you entered or *touch* **<Esc>** to exit the *Schedule Times Screen* without changing the time and return to the *Schedules Screen* (**Figure 22**).

To eliminate a schedule from any event, simply enter a zero for the Start and Stop time for that day. The screen will display 12:00 am for both the Start and Stop times, indicating that the equipment will not activate on that day.

Once back at the *Schedules Screen*, you can continue setting schedules day by day or use the following options:

SEND TO <All Days> - *Touch* this button to send the schedule appearing on the screen to all days of the week, except for holidays.

SEND TO <Weekdays> - *Touch* this button to send the schedule to weekdays only. You will need to set up a separate schedule for Saturday and Sunday when selecting this option.

CLEAR <All Schedules> - *Touch* this button to clear all schedules.

SET <24 Hr Mode> - *Touch* this button to have the system run continuously, 24 hours a day, 7 days a week including holidays. All event times will display 11:59 PM.

Viewing and Setting Holidays

Holidays

To view and set holidays for the controller, *touch* the **<Holidays>** button found at the bottom of the *Status Screen* (**Figure 20**). The *Holidays Schedule Screen* will appear. See **Figure 24**. The holidays in the screen will initially not be set. You can only set holidays for the current year. You must be a Level 1 or 2 user in order to set holidays.
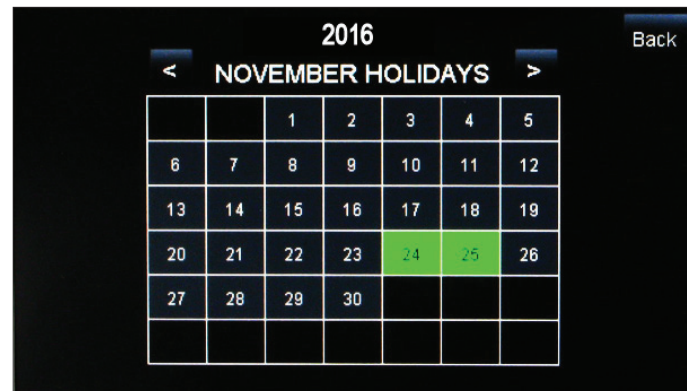
Figure 24: Holidays Schedule Screen

Simply *touch* the day(s) of the month to select holidays. *Touch* the **<<>** button to go back one month and the **<>>** button to go forward one month.

There are 14 holiday periods available for each year. These holiday periods can be a single day or they can span days, weeks, or even months.

For example, if you want to schedule a summer break, you need only schedule one holiday period to define a two or three month break from operating in the occupied mode.

Every defined holiday uses the Holiday operating schedule programmed in the controller's *Schedules Screen*.

Holidays can only be programmed for the current year. You cannot program holidays before the next year occurs. Holidays do not automatically adjust for the new year, so you will need to access this screen after the new year and make necessary adjustments to the days that float, such as Memorial Day.

Schedule Override

Schedules

To Force Schedules, from the *VCCX2, VCC-X, VCB-X, VCM-X* or *VCM Main Status Screen*, touch the **<Overrides>** button located at the bottom of the screen. The following options will appear:

Schedule Auto Mode
Touch the radio button to select the schedule option. Default is Schedule AUTO Mode. This selection will remain in effect unless it is changed again on this screen. Schedule overrides do not automatically time out after a certain period of time.

- **Schedule AUTO Mode**—Select this to restore normal schedule operations.

- **Schedule FORCED ON**—Select this to Force the unit into continuous Occupied Mode operation.

- **Schedule FORCED OFF**—Select this to Force the unit into continuous Unoccupied Mode operation.
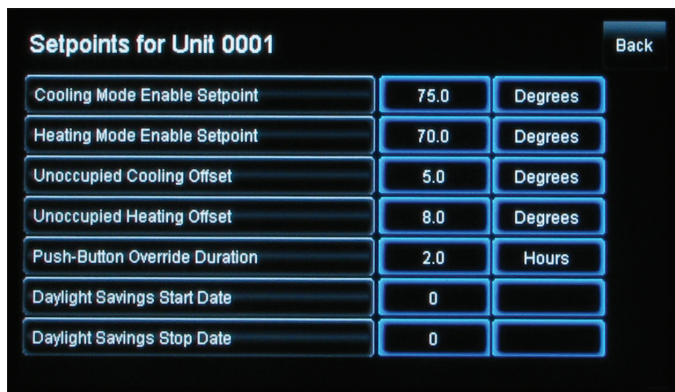
NOTE: Only a Level 1 or Level 2 user can override schedules.

Viewing Setpoints

Setpoints

To access the controller's setpoints, from the *VCCX2, VCC-X, VCB-X, VCM-X* or *VCM Main Status Screen*, touch the **<Setpoints>** button located at the bottom of the screen. The *Setpoints Screen* will appear (**Figure 25**):

NOTE: All users can view setpoints. However, only Level 1 & 2 users can change setpoints.
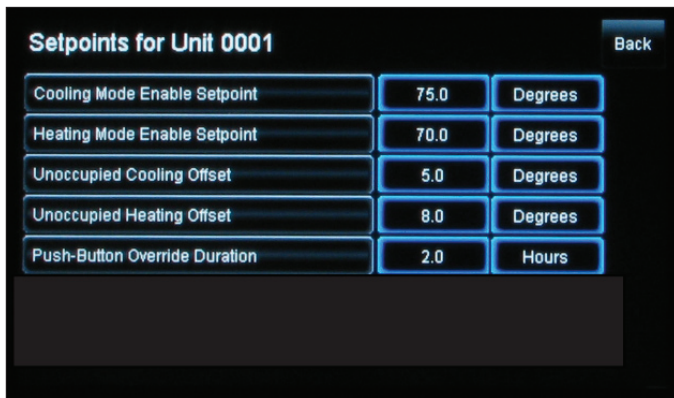

Figure 25: Controller Setpoints (VCC-X Shown)

Changing Setpoints

There are a limited number of setpoints that a Level 1 or Level 2 user can change. Configuration of the majority of setpoints must be performed using Prism 2 or the Modular Service Tool SD.

To change the setpoints that are available on the *Setpoints Screen*, simply *touch* the blue highlighted box to change the setpoint. Each setpoint data entry screen will provide a definition of the setpoint and specific instructions for entering the setpoint and will include the setpoint range as in the example below, **Figure 26**.

Touch **<OK>** to have the system accept the new value. If you enter a setpoint that is not in the valid range, the setpoint will remain as is and will not change.

Each setpoint data entry screen is self-explanatory; however, each setpoint and configuration is explained in detail in each Controller's *Modular Service Tool SD Technical Guide*.
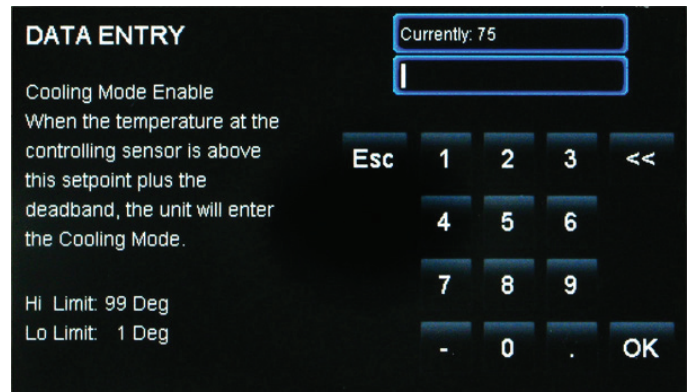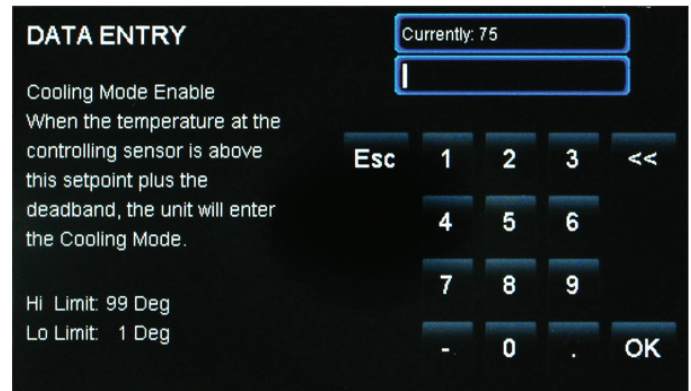

Figure 26: Cooling Mode Enable Setpoint Data Entry Screen (VCC-X Shown)

Viewing VAV/Zone Status Screens and Alarms

Viewing VAV/Zone Status Screens and Alarms

Figure 27 depicts a *VAV/Zone Controller Status Screen*. Notice that the controller is identified by loop number and unit number - in this case, 0101 represents Loop 1, Unit 1.
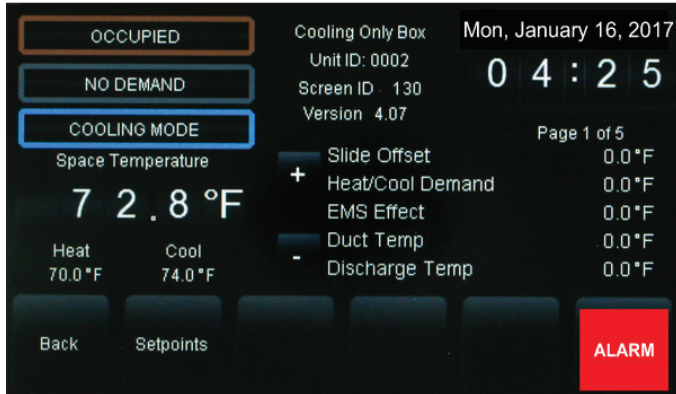
Figure 27: VAV/Zone Controller Status Screen
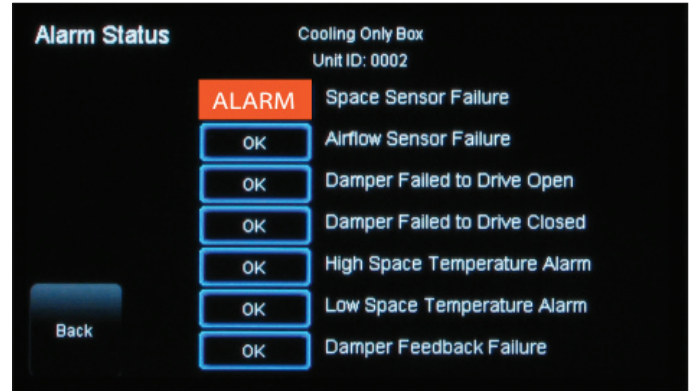
Figure 28: VAV/Zone Controller Alarm Status Screen

Viewing Alarm Status

To view alarm status, *touch* the red **<ALARM>** button on the unit's *Status Screen* located at the bottom right. See **Figure 27**. The *Alarm Status Screen* will display. See **Figure 28**.

NOTE: The **<ALARM>** button will be red when an active alarm exists. At its normal or inactive state, the button will be grayed and display, "No Alarms".

NOTE: Even if you don't set up Alarm Polling in Prism 2, a controller's first status screen will still alert you of an active alarm.

NOTE: Alarms are configured using Prism 2 and active alarms can only be cleared using Prism 2.

Viewing and Changing VAV/Zone Setpoints

Viewing VAV/Zone Setpoints

To access the VAV/Zone Controller's setpoints, touch the **<Setpoints>** button located at the bottom of the screen. The *Setpoints Screen* will appear (**Figure 29**).

NOTE: All users can view setpoints. However, only Level 1 or 2 users can change setpoints.

Figure 29: VAV/Zone Controller Setpoints Screen

Changing Setpoints

There are a limited number of setpoints that a Level 1 or Level 2 user can change. Configuration of the majority of setpoints must be performed using Prism 2 or the Modular Service Tool SD.

To change the setpoints that are available on the *Setpoints Screen*, simply *touch* the blue highlighted box to change the setpoint. Each setpoint data entry screen will provide a definition of the setpoint and specific instructions for entering the setpoint and will include the setpoint range as in the example below, **Figure 30**.

Touch **<OK>** to have the system accept the new value. If you enter a setpoint that is not in the valid range, the setpoint will remain as is and will not change.

Each setpoint data entry screen is self-explanatory; however, each setpoint and configuration is explained in detail in each Controller's *Modular Service Tool SD Technical Guide.*

Figure 30: Cooling Mode Enable Setpoint Data Entry Screen

Troubleshooting

SMTS-L LEDs, Buttons, Dipswitches & Jumpers

LEDs and system function buttons are located behind your SMTS-L's cover. See **Figure 31** for locations. Dipswitches and jumpers are located on the back of your SMTS-L.

Power LED

This LED will light up and stay on as long as power is supplied to your TS.

Operation LED

This LED will blink once a second to indicate that the system is alive.

Update LED

This LED will turn on when the Update program is running.

Screen Refresh LED

This LED will turn on when the screen refreshes.

Communications LED

This LED will light up and blink when there is a connection with the CommLink and/or network. If you are using your SMTS-L in stand-alone mode, this LED will not light up.

Reset Button

Press this button to reset the screen. The screen should refresh itself to the *Main Screen* within 2 minutes.

Diagnostics Button

Under the direction of WattMaster Controls Technical Support, you may have to perform diagnostics on your SMTS-L. *Press* this button to do so.

Touch Screen Suspend Button

Press this button to temporarily freeze the touch screen function of your SMTS-L in order to clean the screen. Always use a dry, dust-free cloth to clean the screen.

OPT1 Dipswitch

For High Speed applications, the OPT1 Dipswitch should be ON. For all other applications, it should be OFF. This Dipswitch is located on the back of the SMTS-L. See **Figures 4-8**, **pages 7-11** for location.

OPT4 Dipswitch

Dipswitch OPT4 should be set to ON by default. If you see your screen is not centered correctly, switch OPT4 to the opposite position. This Dipswitch is located on the back of the SMTS-L. See **Figures 4-8**, **pages 7-11** for location.

TERM Jumpers

Both TERM Jumpers must be ON for Stand-Alone applications (No CommLink or MiniLink). Both TERM Jumpers must be OFF for applications with CommLink(s) and/or MiniLink(s). See **Figures 4-8**, pages **7-11** for location.

Figure 31: SMTS-L LEDs and Buttons

Setting Up Alarm Polling for Controllers

In order to set up Alarm Polling to work with the SMTS-L, you must have a CommLink and MiniLink Polling Device installed on your system. The following procedure must be done for the MiniLink Polling Device on each loop.
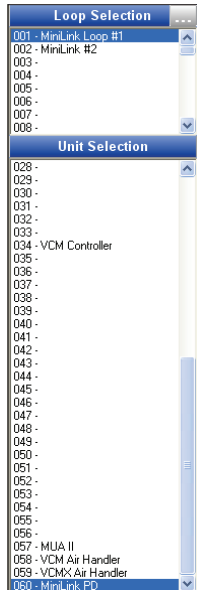
In the *Loop Selection Window* of the *Prism 2 Main Screen, select* the loop where your MiniLink Polling Device is located. Then, in the *Unit Selection Window scroll down* to Address 60 - MiniLink PD and click once on your selection. (**Figure 32**)

Figure 32: Loop & Unit Selection Window

The *Polling Device Window* will appear. (**Figure 33**)
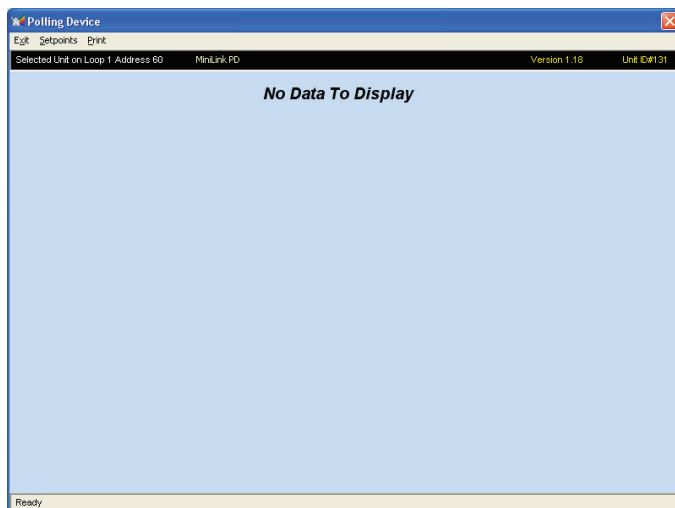
Figure 33: Polling Device Window

Click **<Setpoints>** at the top of the screen. The P*olling Device Setpoints Window* will appear. (**Figure 34**)
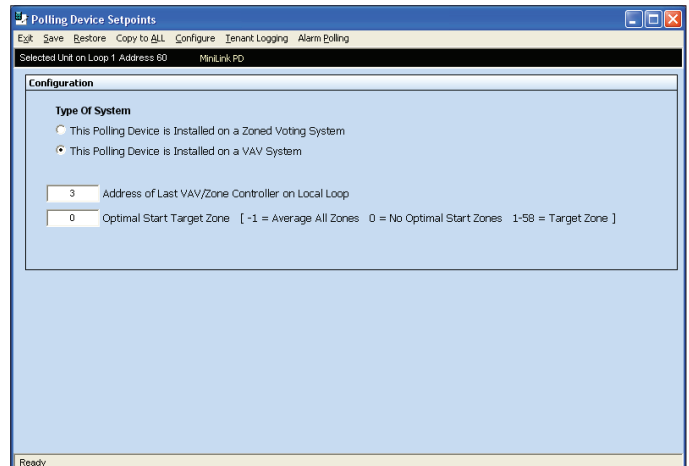
Figure 34: Polling Device Setpoints Window

Click the **<Alarm Polling>** option at the top far right of the *Polling Device Setpoints Window*. The *Alarm / Override Polling Window* will appear. (**Figure 35**)
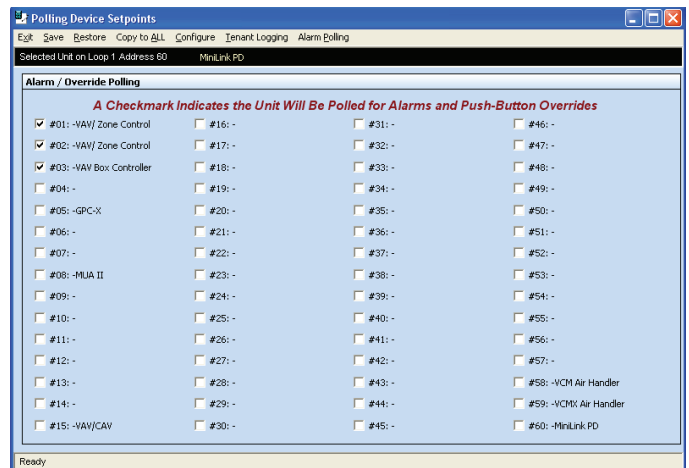
Figure 35: Alarm / Override Polling Window

In the *Alarm / Override Polling Window*, *click* the box to the left of each controller to choose alarm polling and push-button overrides for that controller. A check mark in the box designates alarm polling/push-button override.

Military Time Conversion

The main difference between regular and military time is how hours are expressed. Regular time uses numbers 1 to 12 and a.m. and p.m. to identify each of the 24 hours in a day. In military time, the hours are numbered from 0000 to 2300.

Military time is based on a 24-hour day. Hours are numbered 0000 through 2300 and are recorded first. The last two digits indicate the minute after the hour. Military time does not exceed 2359 hours. For example, midnight is recorded as 0000; one minute past midnight is 0001; 1 a.m. is 0100, 1 p.m. is 1300, and so on.

Regular and military time express minutes and seconds in exactly the same way. When converting from regular to military time and vice versa, the minutes and seconds do not change.

Regular time requires the use of a.m. and p.m. to clearly identify the time of day. Since military time uses a unique two-digit number to identify each of the 24 hours in a day, a.m. and p.m. are unnecessary.

The following table summarizes the relationship between regular and military time.

Regular Time	Military Time
12:00 a.m.	0000
12:30 a.m.	0030
1:00 a.m.	0100
1:30 a.m.	0130
2:00 a.m.	0200
2:30 a.m.	0230
3:00 a.m.	0300
3:30 a.m.	0330
4:00 a.m.	0400
4:30 a.m.	0430
5:00 a.m.	0500
5:30 a.m.	0530
6:00 a.m.	0600
6:30 a.m.	0630
7:00 a.m.	0700
7:30 a.m.	0730
8:00 a.m.	0800
8:30 a.m.	0830
9:00 a.m.	0900
9:30 a.m.	0930
10:00 a.m.	1000
10:30 a.m.	1030
11:00 a.m.	1100

Table 4: Military Time Conversion

Regular Time	Military Time
11:30 a.m.	1130
12:00 p.m.	1200
12:30 p.m.	1230
1:00 p.m.	1300
1:30 p.m.	1330
2:00 p.m.	1400
2:30 p.m.	1430
3:00 p.m.	1500
3:30 p.m.	1530
4:00 p.m.	1600
4:30 p.m.	1630
5:00 p.m.	1700
5:30 p.m.	1730
6:00 p.m.	1800
6:30 p.m.	1830
7:00 p.m.	1900
7:30 p.m.	1930
8:00 p.m.	2000
8:30 p.m.	2030
9:00 p.m.	2100
9:30 p.m.	2130
10:00 p.m.	2200
10:30 p.m.	2230
11:00 p.m.	2300
11:30 p.m.	2330

Table 4, cont.: Military Time Conversion