Honeywell

STRYKER VAV ZIO

STRYKER LON VAV: CVL4022AS-VAV1 AND CVL4024NS-VAV1
STRYKER BACNET VAV: CVB4022AS-VAV1 AND CVB4024NS-VAV1

CONFIGURATION GUIDE

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Description of Devices

Stryker™ LON Configurable VAV Controller

The CVL4022AS-VAV1 and CVL4024NS-VAV1 are part of the Stryker family. These controllers are Free Topology Transceiver (FTT) LONMARK® certified devices designed to control HVAC equipment.

Stryker™ BACnet Configurable VAV Controller

The CVB4022AS-VAV1 and CVB4024NS-VAV1 are part of the Stryker family. These controllers communicate over BACnet MS/TP network, designed to control HVAC equipment.

GENERAL

Stryker VAV controllers provide many advanced system features which allow state-of-the-art, and commercial building control. Each controller is configured using the NIAGARA FRAMEWORK® software.

The Stryker controller does not require any special license. It can be configured using any brand of the Niagara workbench or JACE controller.

Each controller contains a host microcontroller to run the main HVAC application and a second microcontroller for network communications. Each controller provides flexible, universal inputs for external sensors, digital inputs, and a combination of analog outputs and digital outputs.

FEATURES

- **Stryker LON VAV controllers use an Echelon®LONWORKS® network protocol.**
- **LON uses Free Topology Transceiver (FTT) high-speed 78 kilobit communications network.**
- **Both the controller are capable of standalone operation, but Lon can also use LONWORKS® bus network communications and BACnet can use BACnet MS/TP network communications.**
- **Stryker controllers have a Sylk™ bus to use with Sylk-enabled sensors.**
- **Stryker LON VAV controllers have 120 controllers per Q7751A, B router when configured as a repeater.**
- **BACnet supports up to 30 controllers per BACnet MS/TP segment.**
- **Stryker controllers have a field used to configure control, input, and output functions using the NIAGARA FRAMEWORK® software.**
- **Stryker controllers have a built-in zone control functions including a remote wall module interface and a scheduler.**
- **Stryker controllers have pressure-independent or pressure-dependent single Variable Air Volume (VAV) control. (For Lon: CVL4022AS-VAV1 and CVL4024NS-VAV1 only and For BACnet: CVB4022AS-VAV1 and CVB4024NS-VAV1 only).**
- **Stryker controllers have a microbridge air flow sensor with dual integral restrictor design. (For Stryker LON VAV: CVL4022AS-VAV1 and CVL4024NS-VAV1 only and For Stryker BACnet VAV: CVB4022AS-VAV1 and CVB4024NS-VAV1 only).**
- **These controllers have easy user access to air flow sensor inputs.**
- **An actuator (For Lon: CVL4022AS-VAV1 and For Stryker BACnet VAV: CVB4022AS-VAV1) that mounts directly onto the VAV box damper shaft and has up to 44 lb-in. (5 Nm) torque, 90-degree stroke, and 90 second timing at 60Hz.**
- **All wiring connections are made to removable terminal blocks to simplify controller installation and replacement.**
- **Both controller housing and actuator are UL plenum rated.**
- **For more information, refer documents as mentioned in Table 1.**

Table 1. Stryker reference documents.

Form No.	Title
63–4529–03	Stryker™ LON Configurable VAV/CVAHU Controller Specification Data
62–2029–02	Stryker™ LON Configurable VAV/ CVAHU Controller Installation Instructions
31-00100	Stryker™ BACnet Configurable VAV Controller Specification Data
31-00101	Stryker™ BACnet Configurable VAV Controller Installation Instructions

ZIO®/ZIO PLUS LCD WALL MODULES

Fig. 1. Zio/Zio Plus LCD Wall Modules.

GENERAL

The TR7X Series Zio (TR71/TR71H) and Zio Plus (TR75/TR75H) are two 2-wire, non-polarity sensitive and Sylk bus communicating wall modules that are using with Stryker® and Comfort Point™ programmable controllers.

All models have a space-temperature sensor, network bus jack (LON only), and an LCD panel with three soft keys and two Up/Down adjustment keys.

The TR71-H and TR75-H models include an on-board humidity sensor.

NOTE: Refer to the Zio/Zio plus LCD Wall Modules Operating Guide (Form 63–2719) for information about customizing the wall module configuration in the Niagara Workbench, such as modifying the default Home screens or creating user's own application.

FEATURES

The TR70 Series wall modules include:

- **Ability to control tenant access to the controller parameters via password protection.**
- **Customized parameter access by using the Honeywell Niagara Workbench tool.**
- **Ability to link setpoint limits to a network variable (For Lon only).**
- **Programmable for: home screen options, tenant access, contractor access, optional password protection to contractor mode, access to controller parameters, Setpoint, override, fan, and other parameters.**
- **Ability to access and adjust most parameters in the configurable controller.**
- **TR75 can access and adjust the controller schedule.**
- **Ability to balance the VAV system from the wall module.**
- **Home screen can be selected through the contractor mode in the TR7X. The default home screen displays the room temperature in the middle of the screen and the effective room setpoint in the upper left section of the screen. There are 7 preconfigured home screens to select from, that may display any of the following: temperature setpoint, effective temperature setpoint, room temperature and outdoor temperature.**
- **Has a network bus jack (LON only).**
- **Simple 2-wire terminal connection to the configurable controller (includes power). An optional 2-wire terminal connection for the network.**
- **Permanent retention of user configuration, including setpoints after a power outage.**

For more information, refer documents as mentioned in Table 2.

Table 2. Zio reference documents.

Form No.	Title
63-1322-02	ZioR/Zio Plus LCD WallModules Wall Module Specification Data
62-0271-07	ZioR/Zio Plus LCD WallModules Wall Module Installation Instructions
63-2719	LCD Wall Modules Wall operating guide

CONTROL APPLICATION

VAV systems in commercial buildings typically incorporate a central air handler that delivers a modulated volume of air at a preconditioned temperature to multiple zones. Each zone is served by a VAV terminal box unit. Each box incorporates an airflow pickup assembly and motorized damper with optional fan and/or reheat coil. The controller determines and regulates the airflow of conditioned air to the space. The zone being served by the terminal box will use a TR2X Wall Module or a Zio (TR71/TR75 only) Digital Wall Module for space temperature determination and access to the network (LONWORKS only). Fig. 2 and Fig. 3 show a typical VAV box control application for the CVL4024NS-VAV1 and CVL4022AS-VAV1 controller. Fig. 4 and Fig. 5 shows a typical VAV box control application for the CVB4024NS-VAV1 and CVB4022AS-VAV1 controller. Table 3 and Table 4 show the capabilities of the CVL and CVB controllers respectively.

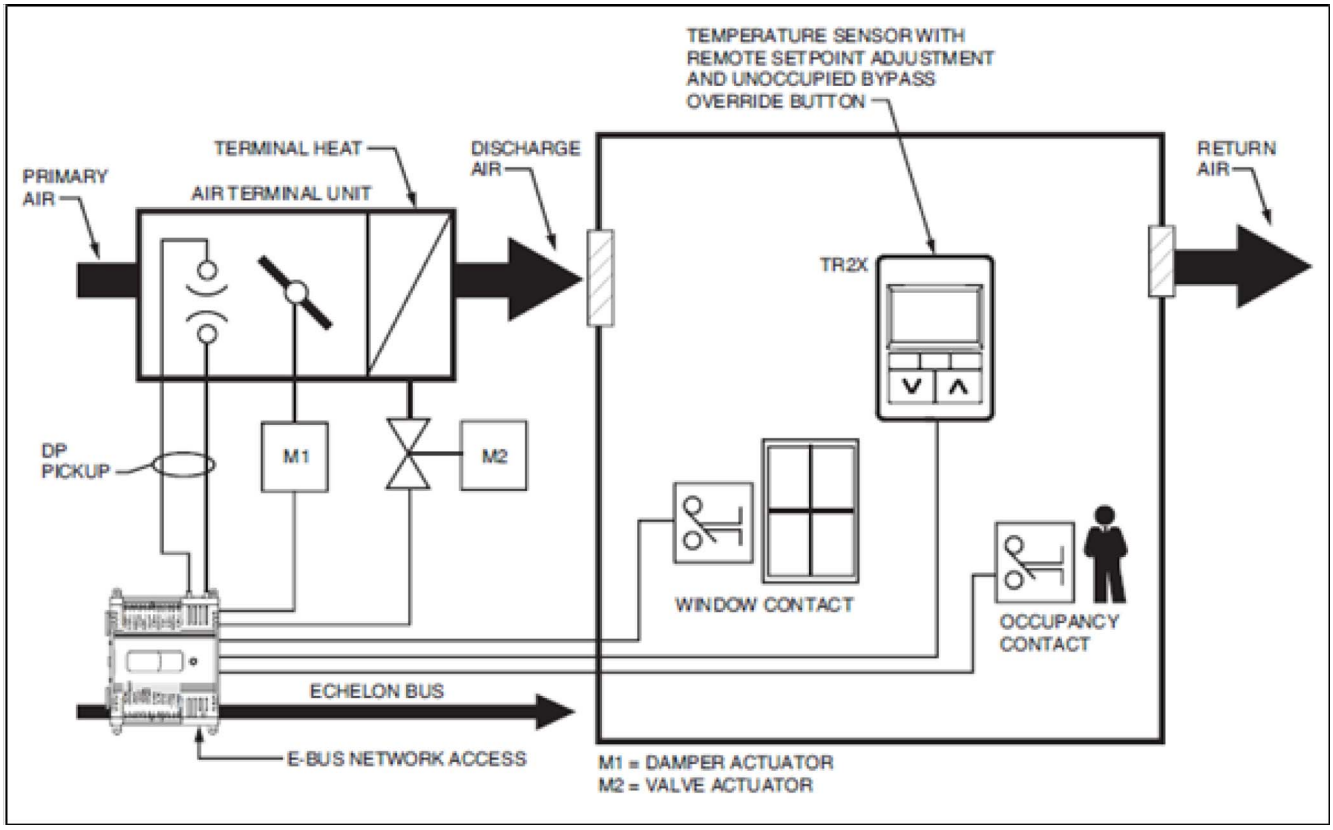

Fig. 2. Typical VAV box control application for the CVL4024NS-VAV1 controllers.

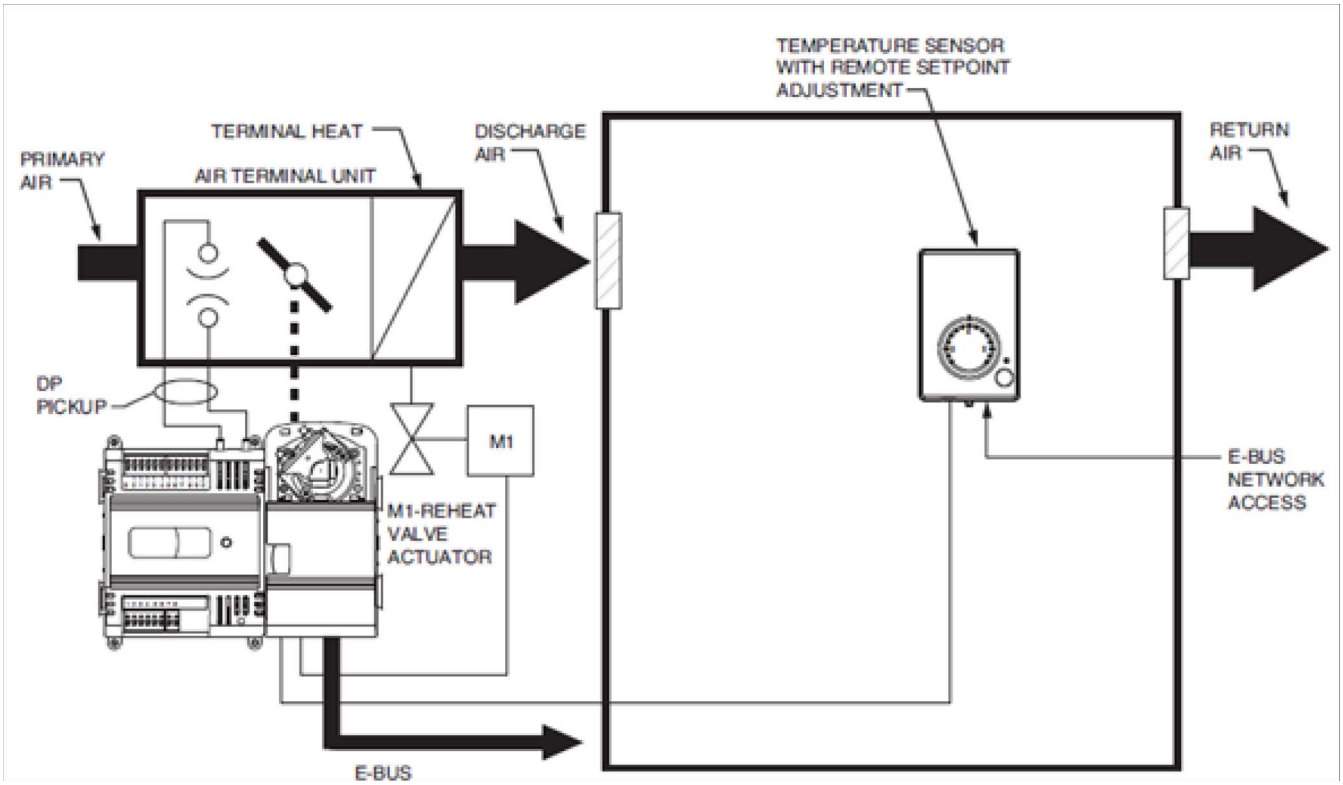

Fig. 3. Typical VAV box control application for the CVL4022AS-VAV1 controllers.

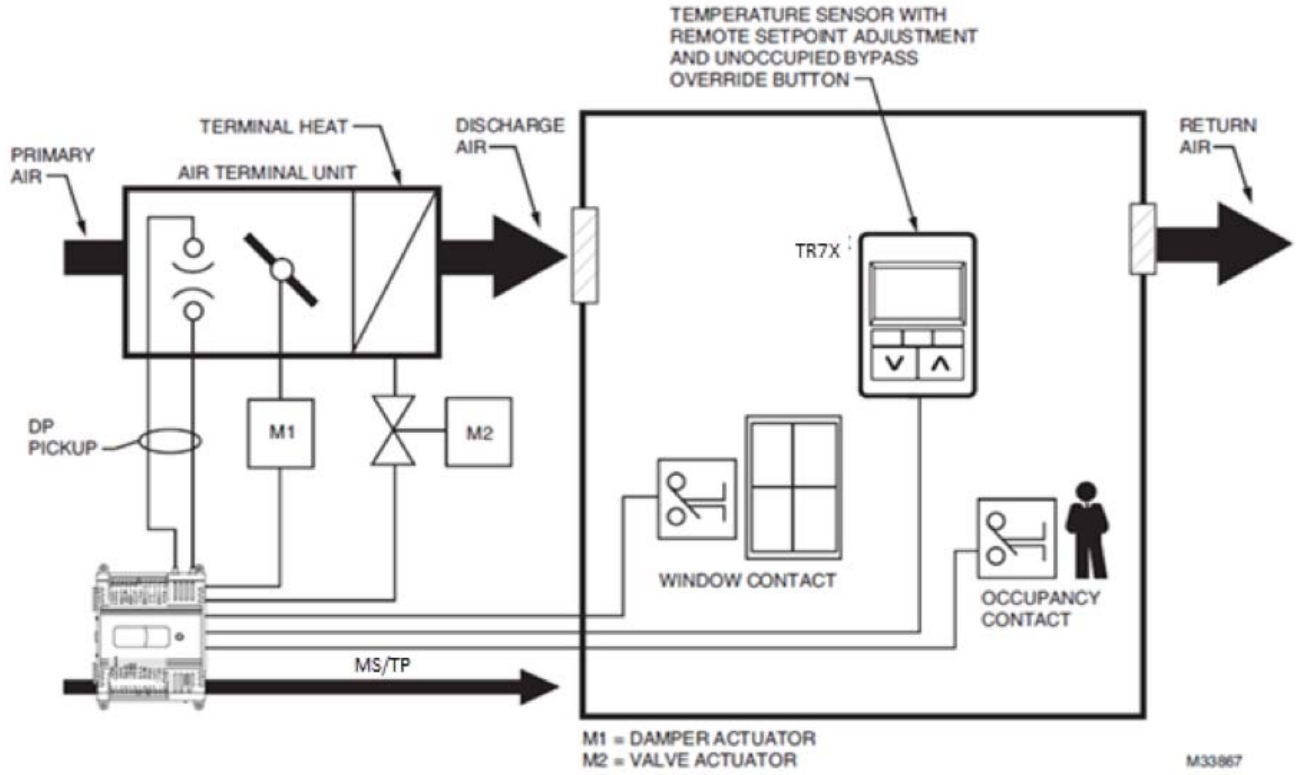

Fig. 4. Typical VAV box control application for the CVB4024NS-VAV1 controller.

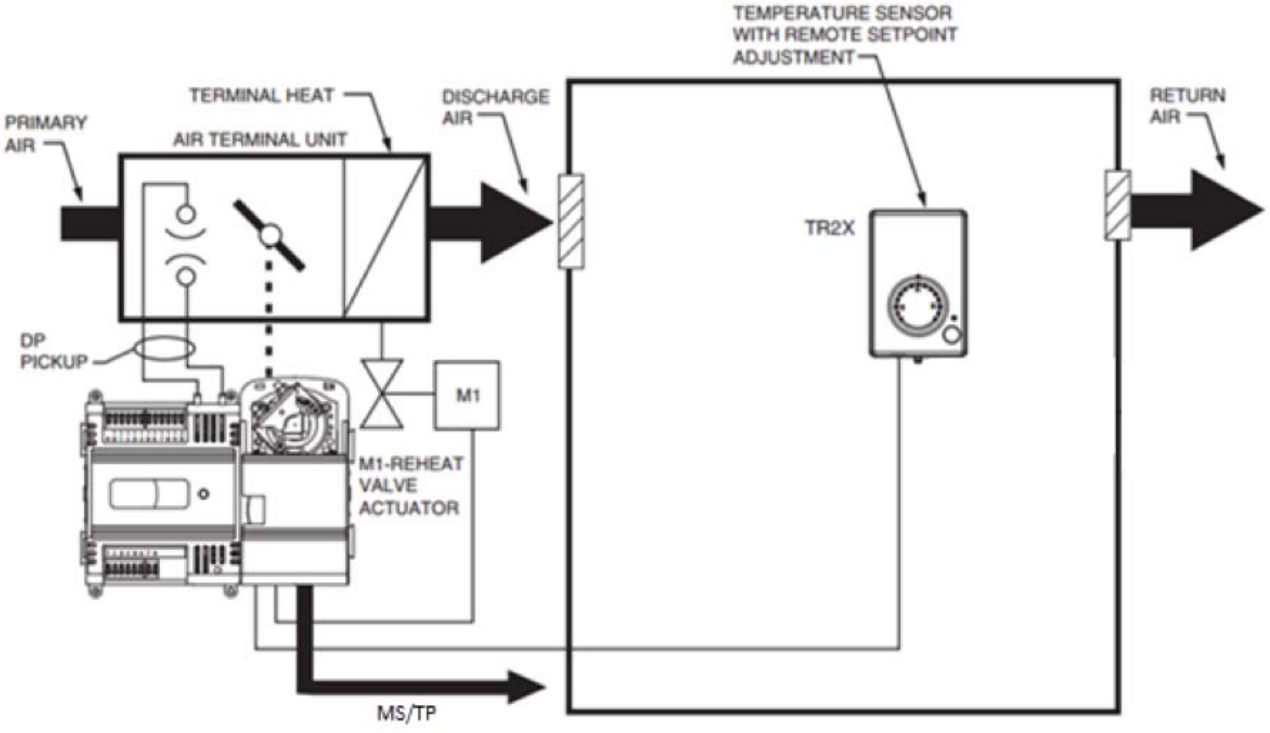

Fig. 5. Typical VAV box control application for the CVB4022AS-VAV1 controller.

Table 3. Stryker LON VAV box controller capability

Stryker LON VAV box controller capability	CVL4024NS-VAV1	CVL4022AS-VAV1
Fan		
None	X	X
Series	X	X
Parallel – Temp	X	X
Parallel – Flow Control	X	X
Parallel – Analog	X	X
Reheat		
None	X	X
One Stage Reheat	X	X
Two Stage Reheat	X	X
Three Stage Reheat	X	X
One Stage Periph	X	X
Floating Reheat (Two digital outputs)	X	X
Floating Periph (Two digital outputs)	X	X
PWM Reheat (One digital outputs)	X	X
PWM Periph (One digital outputs)	X	X
Analog Reheat	X	X
Analog Peripheral	X	X
Wall Module Type		
TR71/75	X	X
T7770/TR2X	X	X

Table 4. Stryker BACnet VAV box controller capability

Stryker BACnet VAV box controller capability	CVB4024NS-VAV1	CVB4022AS-VAV1
Fan		
None	X	X
Series	X	X
Parallel – Temp	X	X
Parallel – Flow Control	X	X
Parallel – Analog	X	X
Parallel – PMW	X[a]	X[a]
Parallel – Float	X	X
Reheat		
None	X	X
One Stage Reheat	X	X
Two Stage Reheat	X	X
Three Stage Reheat	X	X
One Stage Periph	X	X
Floating Reheat (Two digital outputs)	X	X
Floating Periph (Two digital outputs)	X	X
PWM Reheat (One digital outputs)	X[a]	X[a]
PWM Periph (One digital outputs)	X[a]	X[a]
Analog Reheat	X	X
Analog Peripheral	X	X
Wall Module Type		
TR71/75	X	X
TR2X	X	X
a – Only DO1 & DO2 can be configured as PWM outputs		

Control Provided

The CVL and CVB Controllers are primarily intended for pressure independent, single duct VAV box control. Pressure independent control specifies that the individual zone terminal unit has a means for maintaining a consistent volume of air into the zone regardless of the input static pressure. The controller modulates the airflow into the zone to satisfy the Zone Temperature Setpoint. Minimum Airflows are maintained except during emergency strategy periods or during building unoccupied periods if using physical position stops, a MIN/MAX airflow is always maintained.
(Refer to Table 5 for Lon and Table 6 for BACnet)

Pressure dependent control specifies that the damper position is controlled by space temperature only and not by a measurement of airflow volume. The amount of air delivered to the zone at any given damper position is dependent on the static pressure in the supply air duct (physical position stops, range stop pins, are used to keep the damper at a fixed position). Additional outputs are available for control of heating systems such as reheat coils for Heat mode or Morning warmup mode operation. The heating equipment can be staged resistive heating, staged 2-position (solenoid) valve, or modulated steam or hot water valve.

Table 5. Modes of Operation for Stryker LON VAV controller.

Mode	Description	Events Causing a Controller to Switch to This Mode
Effective Occupancy		
OCCUPIED	Controller is in occupied mode.	Any of the following: **1.** Local schedule state Zio wall module schedule. **2.** Network input (nviTodEvent) containing time- of-day schedule, An occupancy sensor field input. **3.** Flag from either an Occupancy Sensor Digital Input. **4.** From the Network input (nviManOcc) for manual override to OCCUPIED mode.
STANDBY	Controller is in standby mode.	Any of the following: **1.** Local schedule. **2.** Network input (nviTodEvent) containing time-of-day schedule. **3.** Flag from the network must be OCCUPIED. **4.** The Occupancy Sensor Digital Input must be UNOCCU-PIED.
UNOCCUPIED	Controller is in unoccupied mode.	Any of the following: **1.** Local schedule. **2.** Network input (nviTodEvent) containing time-of-day schedule. **3.** Flag from either an OccupancySensor Digital Input. **4.** From the Network input (nviManOcc) has a value of UNOCCUPIED.
Override Modes		
OCCUPIED	Controller is in occupied mode.	Any of the following: **1.** Network input (nviTodEvent) containing time-of-day schedule. **2.** Flag from the Network input (nviManOcc) for manual override toOCCUPIED mode.
UNOCCUPIED	Controller is in unoccupied mode.	Any of the following: **1.** Network input (nviTodEvent) containing time-of-day schedule. **2.** Flag from the network input (nviManOcc) has a value ofUNOCCUPIED.
BYPASS	User-initiated bypass of the Unoccupied mode.	Digital input (wall module override push button) has been pressed OR Override initiated from Zio and the Bypass duration timer has not yet expired, or the network input nviBypass received.
NOT ASSIGNED	No Bypass action.	No Override input received.
Operational Modes		
START-UP AND WAIT (followed by)	Configurable flow Diversity on power-up provides a staggered start sequence to evenly apply the load to the supply fan and electrical system.	These modes occur on controller power-up, and after downloading to the controller from the tool OR Going to auto mode to manual mode. Temperature and flow control loops are disabled.
COOLING	The VAV Controller is controlling the Cooling mode.	Network input nviApplicMode containing AHU operational mode information from other LONWORKS Bus controllers that have the value of COOL/AUTO.
HEATING	The VAV Controller is controlling the Heating mode.	Network input nviApplicMode containing AHU operational mode information from other LONWORKS Bus controllers that have the value of HEAT/AUTO. Unit switches to Heat mode when warm air is supplied to the terminal unit
REHEAT	The VAV Controller is controlling the Reheating mode.	Network input nviApplicMode has the value of AUTO, so that when cool air is supplied to the box and the space temperature is below the Heating Setpoint, causes the control algorithm to energize the Reheat coil(s).

Table 5. Modes of Operation for Stryker LON VAV controller.

Mode	Description	Events Causing a Controller to Switch to This Mode
MORNING WARMUP	The main AHU is supplying warm air and the box damper is set at warm up damper position	Network input nviApplicMode containing AHU operational mode information from LONWORKS Bus controllers that have the value of MORINING WARM-UP.
NIGHT PURGE	The main AHU is supplying fresh (100 percent outdoor) air, and box damper is set at purge damper position.	Network input destination HVAC mode containing AHU operational mode information from LONWORKS bus controllers. They have the value of night purge.
FLOW TRACKING	Temperature control is turned off. The box maintains a Flow Setpoint based on the sum of all of the controllers supplying the zone (the source controller provides other controllers with nvoFlowTrack input).	Configuration parameter is box type (Flow_Tracking). TrackModeOffset (Flow Offset) determines the differential between the boxes that are the supply air flow and the exhaust air flow.
MANUAL POSITION	Box damper is set to manual damper position.	Typically is typically triggered during air flow balancing
MANUAL FLOW	Flow is controlled to manual value	Typically this is done through Niagara Workbench by setting the point supply flow to manual mode.
FREEZE PROTECTION	Controller is in freeze protection mode. Heating setpoint is reset to freeze protection setpoint.	Window is open
EMMERGENCY PRESSURIZE	Move the damper to the emergency pressurize position, Fan disabled	Emergency network command received (nviEmergCmd=1)
EMMERGENCY DEPRESSURIZE	Move the damper to the emergency depressurize position, Fan disabled	Emergency network command received (nviEmergCmd=2)
PURGE	Move the damper to the Purge position, Fan disabled	Emergency network command received (nviEmergCmd=3)
EMERGENCY COMMAND SHUTDOWN	Shuts down box	Effective mode is changed via network
HEAT AND COOL DISABLED	Disables heating and cooling	Effective mode is changed via network
FAN ONLY	Only fan is enabled	Effective mode is changed via network

Table 6. Modes of Operation for Stryker BACnet VAV controller.

Mode	Description	Events Causing a Controller to Switch to This Mode
Effective Occupancy		
OCCUPIED	Controller is in occupied mode.	Any of the following: Local schedule state Zio wall module schedule. Network input (TodEventTimeToNextStateIn) containing time- of-day schedule, an occupancy sensor field input. Flag from either an Occupancy Sensor Digital Input. From the Network input (ManOccIn) for manual override to OCCUPIED mode.
STANDBY	Controller is in standby mode.	Any of the following: Local schedule Network input (TodEventTimeToNextStateIn) containing time-of-day schedule Flag from the network must be OCCUPIED The Occupancy Sensor Digital Input must be UNOCCUPIED.
UNOCCUPIED	Controller is in unoccupied mode.	Any of the following: Local schedule Network input (TodEventTimeToNextStateIn) containing time-of-day schedule Flag from either an Occupancy Sensor Digital Input From the Network input (ManOccIn) has a value of UNOCCUPIED.
Override Modes		
OCCUPIED	Controller is in occupied mode.	Any of the following: Network input (TodEventTimeToNextStateIn) containing time-of-day schedule Flag from the Network input (ManOccIn) for manual override to OCCUPIED mode.
UNOCCUPIED	Controller is in unoccupied mode.	Any of the following: Network input (TodEventTimeToNextStateIn) containing time-of-day schedule Flag from the network input (ManOccIn) has a value of UNOCCUPIED.
BYPASS	User-initiated bypass of the Unoccupied mode.	Digital input (wall module override push button) has been pressed OR Override initiated from Zio and the Bypass duration timer has not yet expired, or the network input ByPassIn (AV-1473) received.
NOT ASSIGNED	No Bypass action.	No Override input received.
Operational Modes		
START-UP AND WAIT (followed by)	Configurable flow Diversity on power-up provides a staggered start sequence to evenly apply the load to the supply fan and electrical system.	These modes occur on controller power-up, and after downloading to the controller from the tool OR Going to auto mode from manual mode. Temperature and flow control loops are disabled.
COOLING	The VAV Controller is controlling the Cooling mode.	Network input ApplicModeIn (AV-1471) containing AHU operational mode information from other BACnet controllers that have the value of COOL/AUTO.

Table 6. Modes of Operation for Stryker BACnet VAV controller.

Mode	Description	Events Causing a Controller to Switch to This Mode
HEATING	The VAV Controller is controlling the Heating mode.	Network input ApplicModeIn (AV-1471) containing AHU operational mode information from other BACnet controllers that have the value of HEAT/AUTO. Unit switches to Heat mode when warm air is supplied to the terminal unit
REHEAT	The VAV Controller is controlling the Reheating mode.	Network input ApplicModeIn (AV-1471) has the value of AUTO, so that when cool air is supplied to the box and the space temperature is below the Heating Setpoint, causes the control algorithm to energize the Reheat coil(s).
MORNING WARMUP	The main AHU is supplying warm air and the box damper is set at warm up damper position	Network input ApplicModeIn (AV-1471) containing AHU operational mode information from BACnet controllers that have the value of MORINING WARM-UP.
NIGHT PURGE	The main AHU is supplying fresh (100 percent outdoor) air, and box damper is set at purge damper position.	Network input destination HVAC mode containing AHU operational mode information from controllers. They have the value of night purge.
FLOW TRACKING	Temperature control is turned off. The box maintains a Flow Setpoint based on the sum of all of the controllers supplying the zone (the source controller provides other controllers with FlowTrackOut input).	Configuration parameter is box type (Flow_Tracking). CfgTrackModeOffset (Flow Offset) determines the differential between the boxes that are the supply airflow and the exhaust airflow.
MANUAL POSITION	Box damper is set to manual damper position.	Typically is typically triggered during airflow balancing
MANUAL FLOW	Flow is controlled to manual value	Typically this is done through Niagara-AX/N4 or TR71/75 by setting the Flow Override.
FREEZE PROTECTION	Controller is in freeze protection mode. Heating setpoint is reset to freeze protection setpoint.	Window is open
EMMERGENCY PRESSURIZE	Move the damper to the emergency pressurize position, Fan disabled	Emergency network command received [EmergCmdIn, (AV-1182)]
EMMERGENCY DEPRESSURIZE	Move the damper to the emergency depressurize position, Fan disabled	Emergency network command received (EmergCmdIn =2)
PURGE	Move the damper to the Purge position, Fan disabled	Emergency network command received (EmergCmdIn =3)
EMERGENCY COMMAND SHUTDOWN	Shuts down box	Effective mode is changed via network
HEAT AND COOL DISABLED	Disables heating and cooling	Effective mode is changed via network
FAN ONLY	Only fan is enabled	Effective mode is changed via network

Products Covered

This System Engineering Guide describes how to configure the Stryker VAV controller via TR71/75 Zio wall module.

The Stryker VAV Controllers and related accessories for typical applications are:
- Stryker VAV controller.
- TR71/75 wall modules.
- 209541B termination module (LON only).

Organization of Manual

This manual is divided into two basic parts, Introduction and Configuration.

Introduction provides the information for Stryker VAV controllers and TR7X series Zio/Zio Plus LCD wall modules, control application, control provided, product covered, and abbreviations.

Configuration steps provide information for the engineering of Stryker VAV controllers by TR7X series Zio/Zio Plus LCD wall modules using its various function keys.

The organization of the manual assumes a project is being engineered from installation to finish

Applicable Literature

List of documents contain information related to the configurable lighting controllers as shown in Table 7.

Table 7. List of applicable literature.

Form No.	Title
63-4529-03	Stryker™ Lon Configurable VAV/ CVAHU Controller Specification Data
62-2029-02	Stryker™ Lon Configurable VAV/ CVAHU Controller Installation Instructions
63-1322-02	Zio®/Zio Plus LCD Wall Modules Wall Module Specification Data
62-0271-07	Zio®/Zio Plus LCD Wall Modules Wall Module Installation Instructions
63-2719	LCD Wall Modules Wall operating guide
209541B	LONWORKS® Bus Wiring Guidelines/ Termination Module Installation Instructions
31-00100	Stryker™ BACnet Configurable VAV Controller Specification Data
31-00101	Stryker™ BACnet Configurable VAV Controller Installation Instructions

For latest documents and updates for Stryker VAV and Zio wall module visit http//www.customer.honeywell.com, and search for Stryker VAV and Zio wall module respectively.

Product Names

Stryker VAV controllers are available in Four models (two models for LON and two models for BACnet).

CVL4022AS-VAV1: Variable Air Volume Controller from Stryker LON family with inbuilt actuator.

CVL4024NS-VAV1: Variable Air Volume Controller from Stryker LON family without actuator.

CVB4022AS-VAV1: Variable Air Volume Controller from Stryker BACnet family with inbuilt actuator.

CVB4024NS-VAV1: Variable Air Volume Controller from Stryker BACnet family without actuator.

The TR7X series Zio wall module is available in following models (for LON and BACnet):
- TR71
- TR71H

The TR7X series Zio Plus wall module is available in two models (for LON and BACnet):
- TR75
- TR75H

NOTE: All models have a space-temperature sensor, network bus jack (LON only), and an LCD panel with three soft keys and two up/down adjustment keys. The TR71H and TR75H models include an onboard humidity sensor.

Abbreviations

AHU: Air Handling Unit. The central fan system includes the blower, heating equipment, cooling equipment, ventilation air equipment, and other related equipment.

CO: Carbon Monoxide. It is occasionally used as a measure of indoor air quality.

CO_2: Carbon Dioxide. It is often used as a measure of indoor air quality.

CPU: Central Processing Unit.

cUL: Underwriters Laboratories Canada.

CVAHU: Constant Volume Air Handling Unit; refers to a type of air handler with a single-speed fan that provides a constant amount of supply air to the space it serves.

Echelon: The Company that developed the LON® bus and the Neuron® chips used to communicate on the E-bus.

Economizer: Mixed-air dampers that regulate the quantity of outdoor air that enters the building. In cool outdoor conditions, fresh air can be used to supplement the mechanical cooling equipment. The dampers, referred to as economizer dampers are used often, since this action saves energy.

EMI: Electromagnetic Interference. Electrical noise that can cause problems with communications signals.

EMS: Energy Management System; refers to the controllers and algorithms responsible for calculating optimum operational parameters for maximum energy savings in the building.

Enthalpy: The energy content of air measured in BTUs per pound (Kilojoules per Kilogram).

Firmware: Software stored in a nonvolatile memory medium such as an EPROM.

Floating Control: Floating Control utilizes one digital output to pulse the actuator open, and another digital output to pulse it closed.

FTT: Free Topology Transceiver.

IAQ: Indoor Air Quality. It refers to the quality of the air in the conditioned space, as it relates to occupant health and comfort.

I/O: IInput/Output; the physical sensors and actuators connected to a controller.

I * R: I times R or current times resistance; refers to Ohm's Law: V = I x R.

K: Degrees Kelvin.

NV: Network Variable; a Stryker VAV parameter that can be viewed or modified over the Lon/S-bus network.

OAT: Outdoor Air Temperature.

PWM: Pulse Width Modulated output; allows analog modulating control of equipment using a digital output on the controller

RTD: Resistance Temperature Detector; refers to a type of temperature sensor whose resistance output changes according to the temperature change of the sensing element.

TPT: Twisted Pair Transceiver.

VA: Volt Amperes; a measure of electrical power output or consumption as applied to an AC device.

Vac: Voltage alternating current; AC voltage rather than DC voltage.

VAV: Variable Air Volume; refers to either a type of air distribution system, or VAV Box Controller that controls a single zone in a variable air volume delivery system.

Constructions of Controller and Wall Module

For more details, refer below mentioned literature

63–4529–03: Stryker™ Lon Configurable VAV/CVAHU Controller Specification Data

62–2029–02: Stryker™ Lon Configurable VAV/CVAHU Controller Installation Instructions

63–1322–02: Zio®/Zio Plus LCD Wall Modules Wall Module Specification Data

62–0271–07: Zio®/Zio Plus LCD Wall Modules Wall Module Installation Instructions

63–2719: LCD Wall Modules Wall operating guide.

209541B: LONWORKS® Bus Wiring Guidelines/Termination Module Installation Instructions

31-00100: Stryker™ BACnet Configurable VAV Controller Specification Data.

31-00101: Stryker™ BACnet Configurable VAV Controller Installation Instructions.

STRYKER VAV CONFIGURATION BY ZIO WALL MODULE

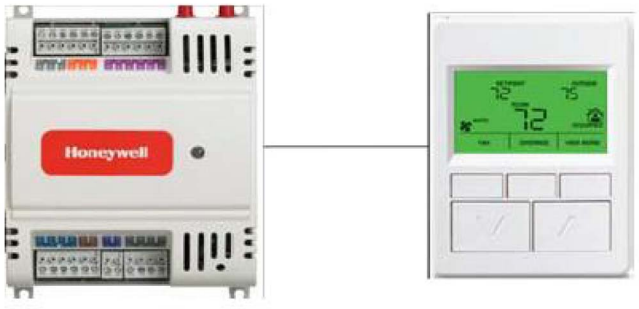

Fig. 6. Stryker VAV Configuration by Zio Wall Module.

Strykers can be configured by the TR71/75 wall modules. Nearly every configuration parameter is available at the Zio wall module. User can so configure and balance by powering up the controller, connecting a Zio and then configuring the parameters available.

Since Stryker has the capability to utilize Zio, an installer could use a conventional sensor on all installed Stryker units. It can then use a single Zio to configure as many Strykers as desired. Since the Zio's program and configuration are stored in the Stryker, each time the Zio is connected to a new Stryker, it gets its program from that device.

This document serves as a configuration guide for an installer who is configuring a Stryker VAV controller via a TR71 or TR75 wall module. Parameters are grouped into logical categories rather than a large list. To access the "contractor" mode for configuration, press the up, down and middle keys simultaneously. During this time the model number and firmware revision of the TR71/75 are displayed. User is then prompted to enter a password (parameter default setting: 0000).

Compatibility

The TR7X Series LCD Wall Modules operate with the Sylk Enhanced Stryker controller. The TR71/TR75 can replace a TR70 in an installation where an upgrade to WEBs- AX or Stryker or reprogramming is not desired. Features like scheduling, additional memory, etc. are not available. Likewise, a TR71 can be replaced by another TR71 or TR75 without reprogramming. A TR75 can be replaced with a TR75 or a TR71 (TR71 will not display schedule parameters).

Contractor Mode: Introduction

Contractor mode: User can then navigate to the desired category of parameters and then begin configuring and viewing information from the device.

Each screen below has a brief explanation of the data. Values within the contractor mode can be viewed in English (U.S.) units of measure. Temperatures however can be shown on the home screen as C or F.

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 soft key at the same time (see key positions of wall module as shown in Fig. 7).

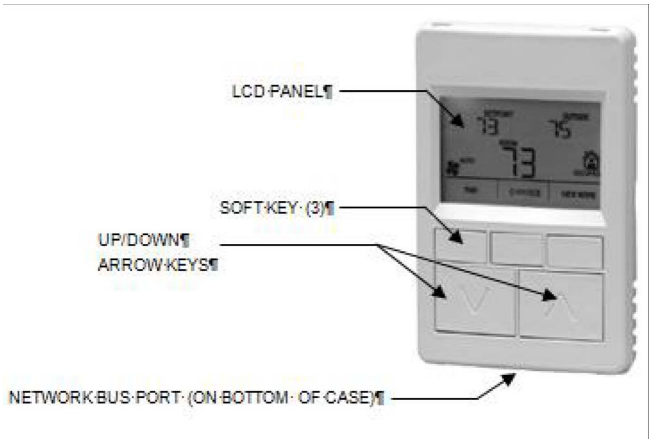

Fig. 7. Key Position of Wall Module.

Contractor mode allows advanced options (such as modifying configured parameters) using the soft keys. Contractor mode also allows 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.

INITIAL POWER-UP

IMPORTANT:

1. *Make sure the TR7X Series wall module is properly mounted and properly wired and connected to the configurable controller.*
2. *Refer to the Zio™ LCD wall modules TR7X Series with Sylk™ bus – installation instructions, form no. 62 – 0271, for specific installation requirements.*

Upon initial power-up before configuring the wall module, the LCD screen of the wall module displays status as "PLEASE LOAD". The startup screen of the wall module is displayed where the status is displayed as shown in Fig. 8.

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

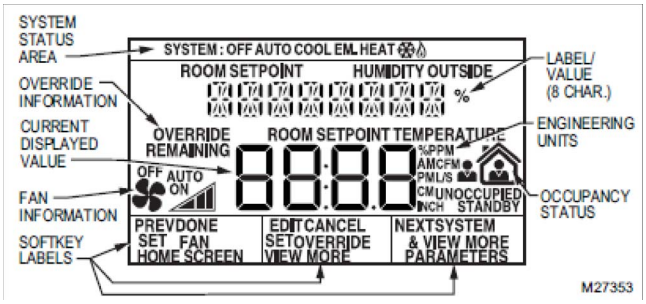

Fig. 8. TR70 Series Wall Module - LCD screen.

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. 9.

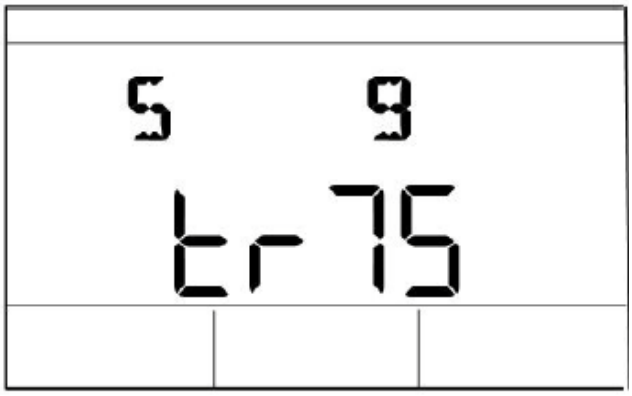

Fig. 9. Model number and Sylk bus address.

On power-up, screen displays revision and Zio model number.

CONTROLLER FEATURES NOT SUPPORTED BY ZIO CONFIGURATION

- Network functionality
- Accessory loops
- Custom sensors
- Local sensor (UI 1-4) calibration

VAV CONTROLLER ZIO DEFAULT CONFIGURATION

- Wall module: Zio
- Center setpoint source: Zio
- Center setpoint: disabled (controller ignores center setpoint value)
- Center setpoint high limit: 100
- Center setpoint low limit: -10
- Room temperature source: Zio (TR71/75)

Contractor Mode: Configuration Steps

The Contractor mode screen as shown in Fig. 10.

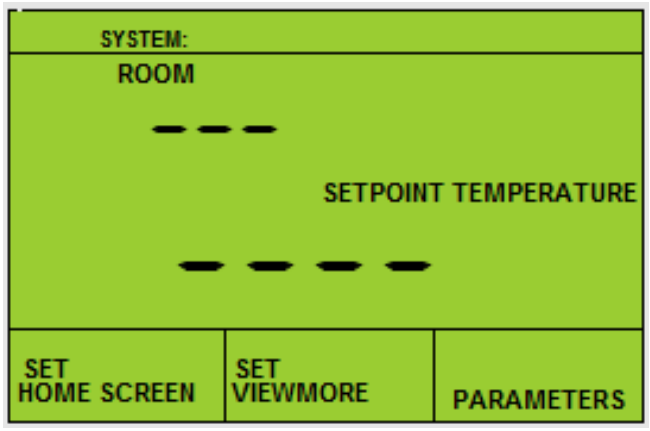

Fig. 10. Contractor Mode Default Home Screen.

The three soft keys on the contractor home screen provide the following three options

1. Set home screen
2. Set view more
3. Parameters

Set Home Screen

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

The tenant's home screen choices are preconfigured and can be changed through the contractor mode. Each wall module may have different home screen choices. The contractor, using the soft keys, can choose which home screen will be used. It may configure the Tenant view to show a subset (or none) of the configured parameters.

When the contractor clicks the SET HOME SCREEN soft key, the display changes as shown in Fig. 11 to Fig. 17 and the soft keys changes to DONE, CANCEL**,** and NEXT as per configuration requirement.

- Click NEXT soft key to cycle through the configured home screens.
- Click DONE soft key when the desired home screen to be set as default home screen for Tenant view
- The CANCEL soft key exits the home screen display without saving any changes.

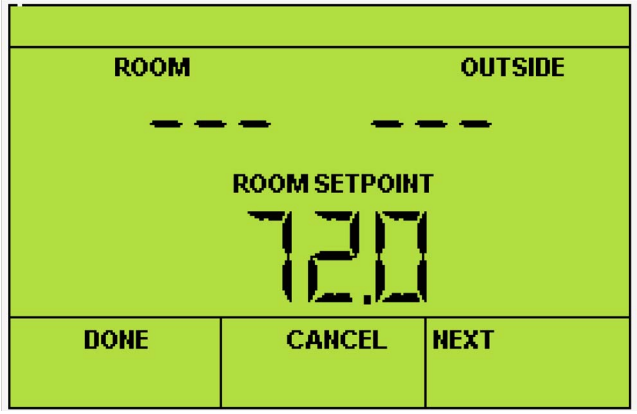

Fig. 11. Home Screen Room, Outside, Room Setpoint.

Home screen: ROOM OUTSIDE ROOM SETPOINT

Description: Home screen displays room temperature, room temperature setpoint, and outside air temperature.

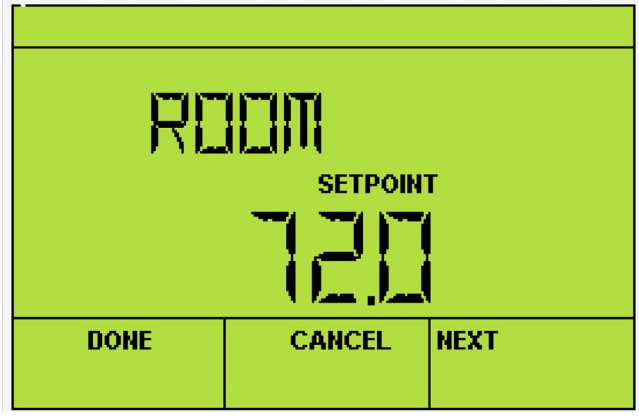

Fig. 12. Home Screen Room Setpoint.

Home Screen: ROOM SETPOINT

Description: Displays effective room temperature setpoint.

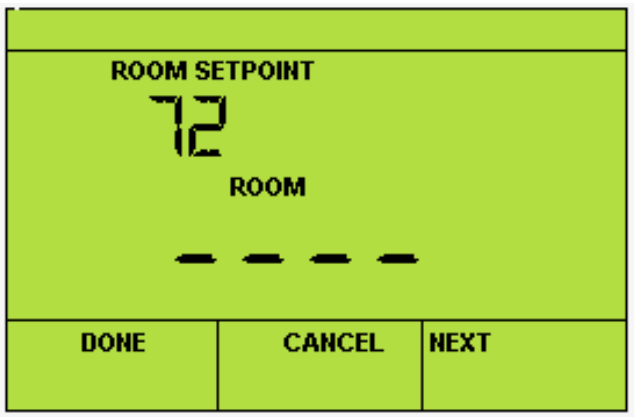

Fig. 13. Home Screen Room Setpoint, Room.

Home Screen: ROOM SETPOINT ROOM

Description: Displays room temperature setpoint and room temperature.

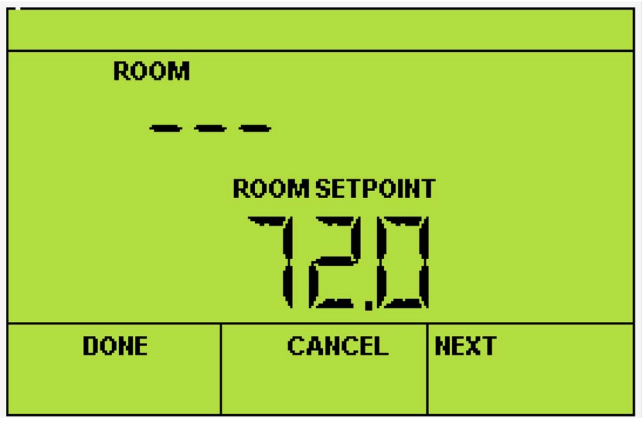

Fig. 14. Home screen Room, Room Setpoint.

Home Screen: ROOM SETPOINT, ROOM (Default Home Screen)

Description: Displays effective room setpoint temperature (setpoint is not adjusted from this home screen) and room temperature.

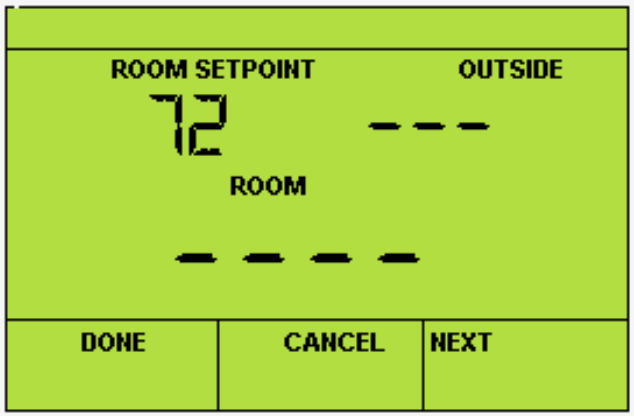

Fig. 15. Home Screen Room Setpoint, Outside, Room.

Home Screen: SETPOINT TEMPERATURE, ROOM and OUTSIDE.

Description: Displays room setpoint temperature (setpoint is adjusted from this home screen) room temperature and outside temperature.

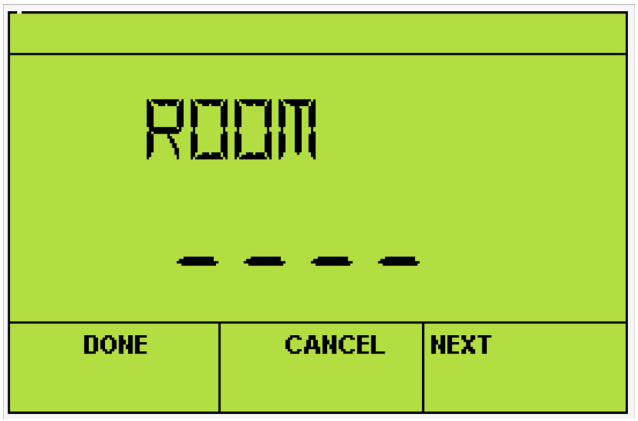

Fig. 16. Home screen Room.

Home Screen: ROOM

Description: Displays room temperature.

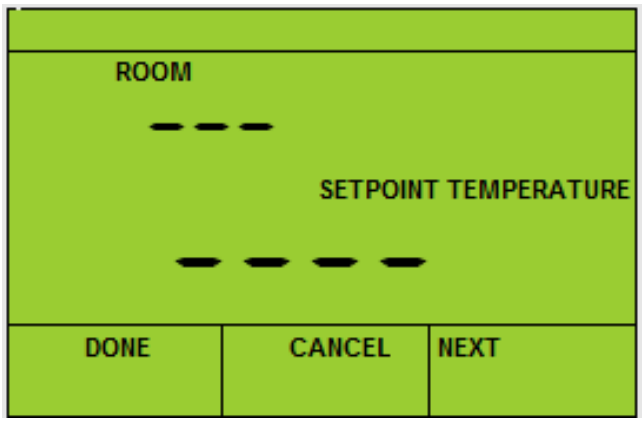

Fig. 17. Home screen Room and Room Setpoint (BACnet only).

Home Screen: ROOM, ROOM SETPOINT

Description: Displays room temperature and room setpoint temperature. This home screen is only available on BACnet Stryker VAV

Set View More

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

Click SET VIEW MORE soft key to display the first configured parameter as shown in Fig. 18.

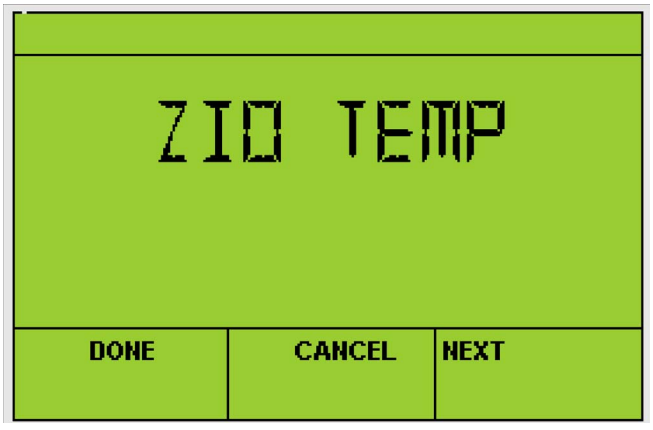

Fig. 18. Set view more first screen.

The soft keys changes to DONE, CANCEL, and NEXT as per configuration requirement.

- 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 on the VIEW MORE screen.
    - NO means that the tenant does not have access to the parameter.
    - If NO is selected for all parameters, then the VIEW MORE soft key does not display in tenant mode.
- Click NEXT soft key to cycle through the configured VIEW MORE screen's next parameter or category.
- Click DONE soft key to save configuration changes.
- Click CANCEL soft key to exit VIEW MORE without saving any changes.

NOTE: Click NEXT, DONE, and CANCEL to do YES or NO configuration for below mentioned parameters.

Click NEXT as shown in Fig. 18, following parameters are displayed in order:

1. ZIO HUM
2. ROOMTEMP
3. RH
4. CO2
5. SPPLYAIR
6. DSCHRG
7. OAT
8. AIRFLOW
9. PRS UCAL
10. FLOPRESS
11. OCC SNSR
12. WINDOW
13. DAMPER
14. AIRFLOSP
15. RH MOD
16. 0RH STGS
17. PRPH MOD
18. PRPH STG
19. DMD LIMT
20. AUX OUT
21. FAN
22. FAN MOD
23. OCC CLG
24. OCC HTG
25. UNOCC CLG
26. UNOCC HTG
27. STBY CLG
28. STBY HTG
29. SETPOINT
30. FRZ PRTC
31. EFF SP
32. ZIO SP (for Stryker BACnet VAV only)
33. FLO OVRD
34. FAN OVRD
35. FSPD OVD
36. RH OVRD
37. PHT OVRD
38. LOW FLOW
39. AFLOOVRD
40. EMRGOVRD
41. HTG OVRD
42. FAN OVRD
43. FROST
44. IAQ ALM
45. INVLD SP
46. SPCTEMP
47. K OFFSET
48. MAXFLOSP
49. MAX FLOW
50. MINFLOSP
51. MIN FLOW
52. P DPNDNT
53. AREASQFT

54. K FACTOR
55. UNOC FLO
56. STBY FLO
57. MIN FLO
58. MAX FLO
59. RH FLO
60. UNOC FLO
61. STBY FLO
62. MIN FLOW
63. MAX FLO
64. RH FLO
65. PRESS OF
66. ZIO T OF
67. ZIO H OF
68. C74 T OF
69. C74 H OF
70. UNITS
71. TYPE
72. CNTR SP
73. CNTSP HI
74. CNTSP LO
75. BYPS MIN
76. HTGSP HI
77. HTGSP LO
78. CLGSP HI
79. CLGSP LO
80. EFHTG HI
81. EFHTG LO
82. EFCLH HI
83. EFCLG LO
84. TR200VRD
85. TR20 BUT
86. CNTR SPT
87. SPC TEMP
88. HTG CNFG
89. HTG SEQ
90. RHMODAIR
91. HTG TR
92. HTG IT
93. FAN TYPE
94. OC SNROP
95. DA MODRH (for Stryker BACnet VAV only)
96. RHMOD IT (for Stryker BACnet VAV only)
97. RHMOD TR (for Stryker BACnet VAV only)
98. UI1
99. UI2
100. UI3
101. UI4
102. C7400S
103. DSCG AIR
104. SPLY AIR
105. OD ETMP
106. OCC SNSR
107. WINDOW
108. REV ACT
109. TRVL SEC (for Float1)
110. REV ACT
111. TRVL SEC (for Float2)
112. RANGE (for AO1)
113. RANGE (for AO2)
114. RH STG1
115. RH STG2
116. RH STG3
117. RH MOD
118. PRPH STG
119. PRPH MOD
120. AUX RLY
121. AUXP ON
122. AUXP OF
123. FAN DIG
124. FAN MOD
125. DAMPER
126. WM LED
127. TIME
128. HOURS
129. MIN
130. YEAR
131. MONTH
132. DAY
133. ROOM SETPOINT
134. ROOM
135. SCHEDULE

Parameters

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

Click PARAMETERS soft key on contractor mode default home screen to display the first configured category as shown in Fig. 19.

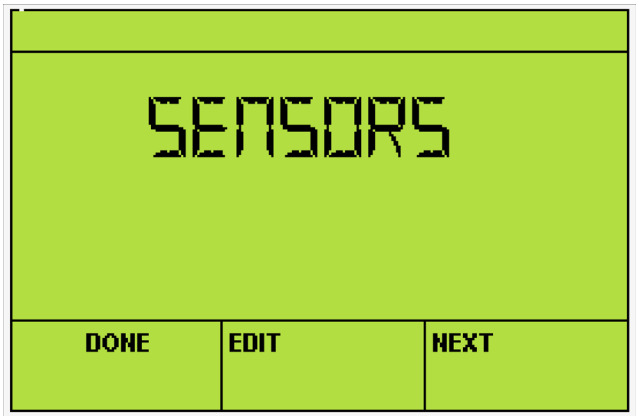

Fig. 19. Parameter Group Sensors.

- The soft keys changes to DONE, EDIT, and NEXT as per configuration requirement.
- Click the EDIT soft key. It drops user into the parameter list for the displayed category. It displays the first parameter in that category (e.g. ZIO TEMP parameter in the SENSORS category as shown in Fig. 20.

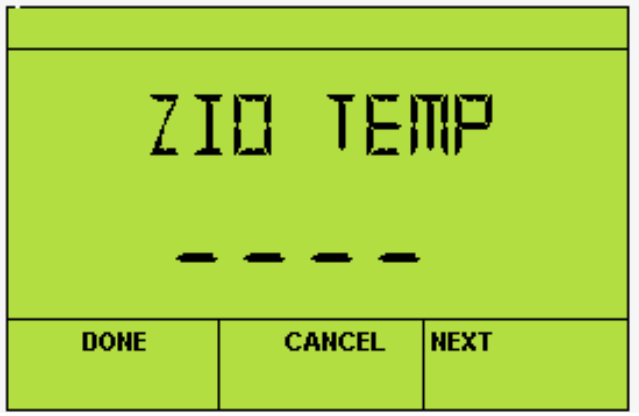

Fig. 20. Parameter Sensors Zio Temp.

- If the parameter has been configured as adjustable by the tenant, the up and down arrow keys adjust the value of the parameter. If the parameter is not configured as adjustable then the screen will show “LOCKED” if the up and down key is pressed.
- Click NEXT soft key to display the next parameter or category.
- Click DONE soft key to save configuration changes.
- CANCEL soft key to the exit PARAMETER group or PARAMETER without saving any changes.

Click NEXT on SENSORS parameter group screen, other parameter group screens are displayed in the following order.

1. Status
2. Temp SP
3. Override
4. Alarms
5. Balance
6. Flo Cnfg
7. Airflosp
8. Dmp Cnfg
9. Snsr Cal
10. Wm Cnfg
11. Cnfg Ctl
12. Cnfg Ui
13. Cnfgsbus
14. Cnfg In
15. Float1
16. Float2
17. AO1
18. AO2
19. Cnfg Out
20. Time
21. Set Time
22. Set Date
23. Schedule

Sensors

VAV SENSOR VALUE DISPLAY

Click PARAMETERS soft key to display the first configured category which is SENSORS. Under this category, one sample Zio display is shown for reference and the remaining parameters are available for view only as per the following order.

Use the following path to access Zio temperature screen as shown in Fig. 21:

CONTRACTOR>PARAMETERS>SENSORS>ZIO TEMP

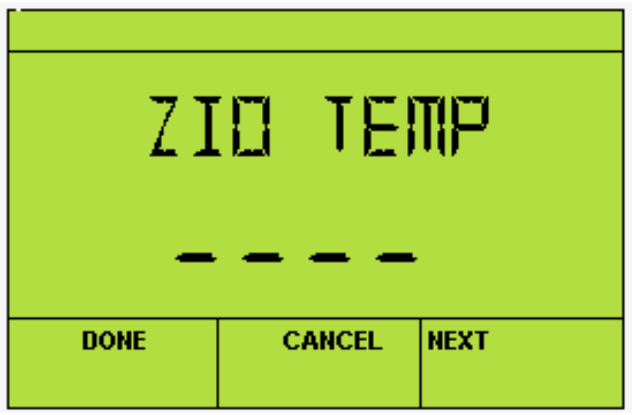

Fig. 21. Parameters Sensors Zio Temp.

ZIO TEMP: Displays Zio temperature which corresponds to the onboard temperature sensor and is an output of the Sbus wall module function block.

- Click CANCEL or DONE to return to SENSORS. It is the parameter group for this parameter.
- Click NEXT to access following parameters in order.

ZIO HUMIDITY: Displays Zio humidity (%) sensor from wall module.

ROOMTEMP: Displays room temperature and is an input to the Sbus wall module function block.

RH: Displays room relative humidity (%) and is an input to the Sbus wall module function block.

CO2: Displays room CO2 (PPM) and is an input tothe Sbus wall module function block.

SPPLYAIR: Displays supply air temperature and is an input to the Sbus wall module function block.

DSCHRG: Displays discharge air temperature and is an input to the Sbus wall module function block.

OAT: Displays outside air temperature and is an input to the Sbus wall module function block.

AIRFLOW: Displays airflow (CFM) and is an input to the Sbus wall module function block.

PRS UCAL: Displays Pressure unit calibration to Pascal and is an input to the Sbus wall module function block.

FLOPRESS: Displays flow pressure in inch and is an input to the Sbus wall module function block.

OCC SNSR: Displays occupancy sensor and is an input to the Sbus wall module function block.

Status is displayed as follows:

OCC, UNOC, BYPS, STBY, UNDEFINED

Configuration settings in program are as follows:

0 = OCC (Occupancy Mode)

1 = UNOC (Unoccupancy Mode)

2 = BYPS (Bypass Mode)

3 = STBY (Standby Mode)

4 = UNDEFINED

WINDOW: Displays window open/closed contact status and is an input to the Sbus wall module function block.

Status is displayed as follows:

CLOS, OPEN, UNDEFINED

Configuration settings in program are as follows:

0 = CLOS (Window close status)

1 = OPEN (Window open status)

2 = UNDEFINED

Status

VAV PARAMETER STATUS DISPLAY

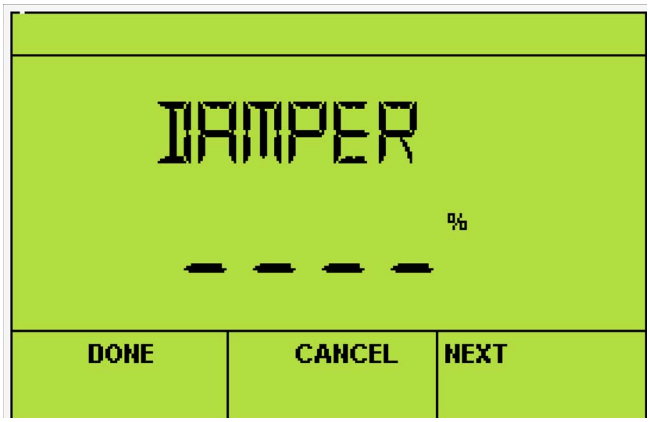

Fig. 22. Parameter Status Damper.

DAMPER: Displays damper (%) output signal.

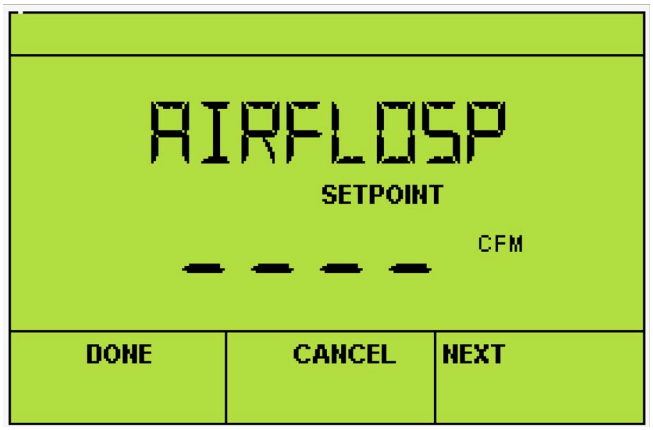

Fig. 23. Parameter Status Airflosp.

AIRFLOSP: Displays air flow setpoint in CFM.

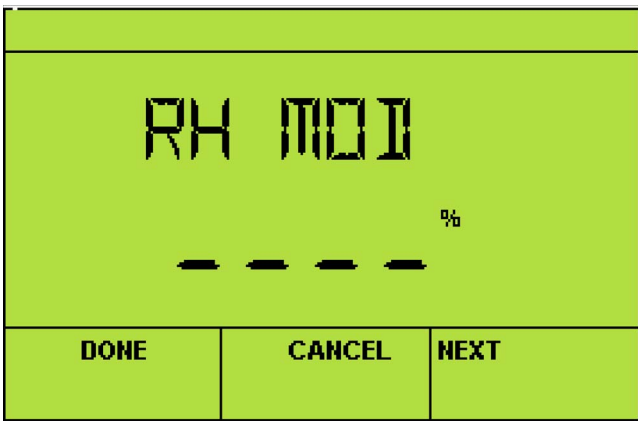

Fig. 24. Parameter Status Rh Mod.

RH MOD: Displays reheat modulating output in %.

Fig. 25. Parameter Status Rh Stgs.

RH STGS: Displays reheat stages output status.

Fig. 26. Parameter Status Prph Mod.

PRPH MOD: Displays Peripheral heat modulating output in %.

Fig. 27. Parameter Status Prph Stg.

PRPH STG: Displays Peripheral heat stages output status.

Fig. 28. Parameter Status Dmd Limit.

DMD LIMIT: Displays Demand limits setpoint shift status as ON or OFF.

Configuration settings in program are as follows:

0 = OFF, 1 = ON, 255 = OFF

Fig. 29. Parameter Status Aux Out.

AUX OUT: Displays direct acting accessory loop digital output auxiliary control as ON or OFF. Output is active with the modulating output value or staged output.

Parameter Default Setting: UNDEFINED

Configuration settings in program are as follows:

0 = OFF, 1 = ON, 255 = OFF

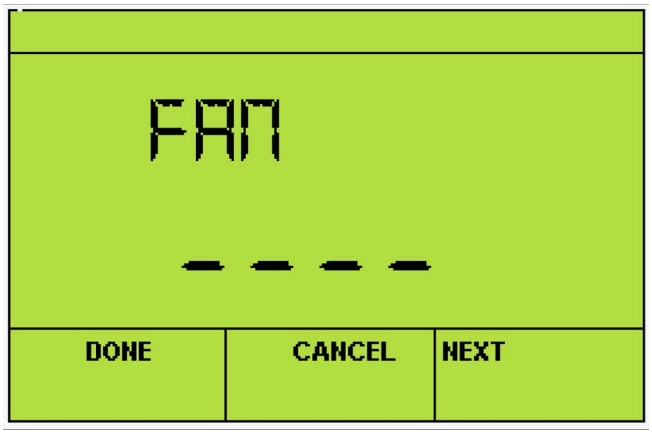

Fig. 30. Parameter Status Fan.

FAN: Displays fan digital output status as ON or OFF.

Configuration settings in program are as follows:

0 = OFF, 1 = ON, 255 = UNDEFINED

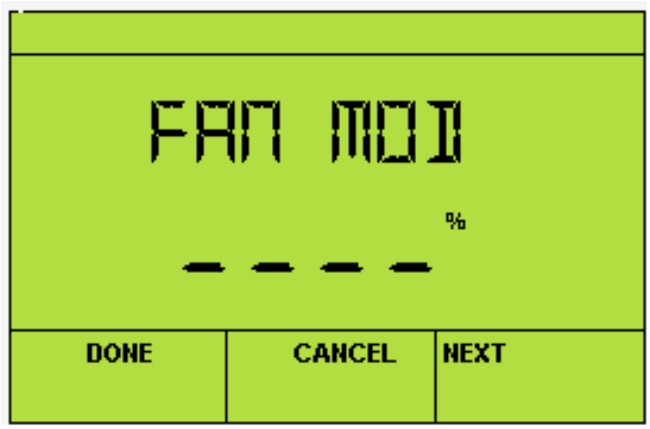

Fig. 31. Parameter Status Fan Mod.

FAN MOD: Displays fan modulating output signal in %. Its value ranges from 0 to 255.

Configuration settings in program are as follows:

Output Type: PWM, Float, Analog current or voltage

Parameter Default Setting: AO2

Temp Sp

VAV TEMPERATURE SETPOINT CONFIGURATION

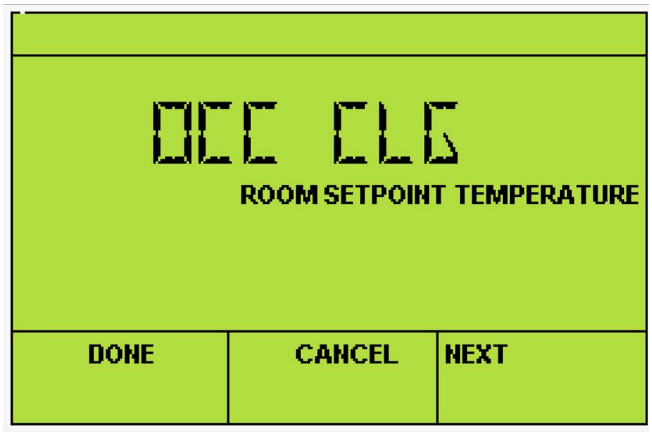

Fig. 32. Parameter Temp Sp Occ Clg.

OCC CLG: Displays and allows modification of occupied cooling setpoint. Its value ranges from EFCLG LO to EFCLG HI.

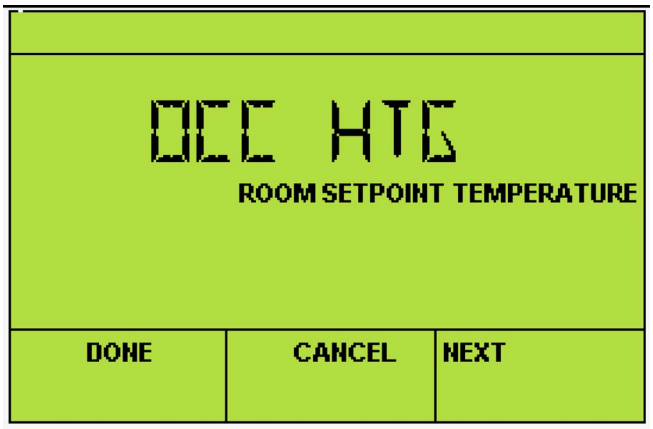

Fig. 33. Parameter Temp Sp Occ Htg.

OCC HTG: Displays and allows modification of an occupied heating setpoint. Its value ranges from EFHTG LO to EFHTG HI.

Fig. 34. Parameter Temp Sp Unoc Clg.

UNOC CLG: Displays and allows modification of unoccupied cooling setpoint. Its value ranges from STBY CLG to 100.

Fig. 35. Parameter Temp Sp Unoc Htg.

UNOC HTG: Displays and allows modification of an unoccupied heating setpoint. Its value ranges from 40 to STBY HTG.

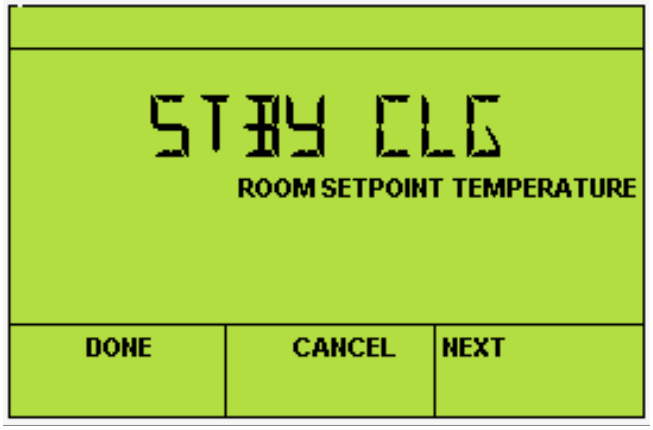

Fig. 36. Parameter Temp Sp Stby Clg.

STBY CLG: Displays and allows modification of standby cooling setpoint. Its value ranges from OCC CLG to UNOC CLG.

Fig. 37. Parameter Temp Sp Stby Htg.

STBY HTG: Displays and allows modification of standby heating setpoint. Its value ranges from UNOC HTG to OCC HTG.

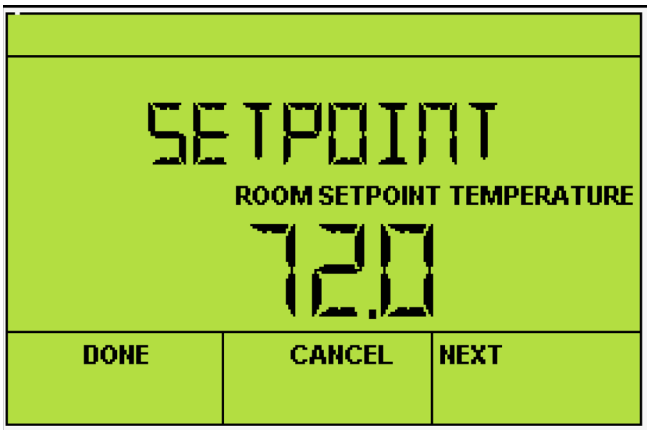

Fig. 38. Parameter Temp Sp Setpoint.

SETPOINT: Displays and allows modification of center setpoint read from wall module. Its value ranges from CNTSP LO to CNTSP HI.

Parameter Default Setting: 72.0

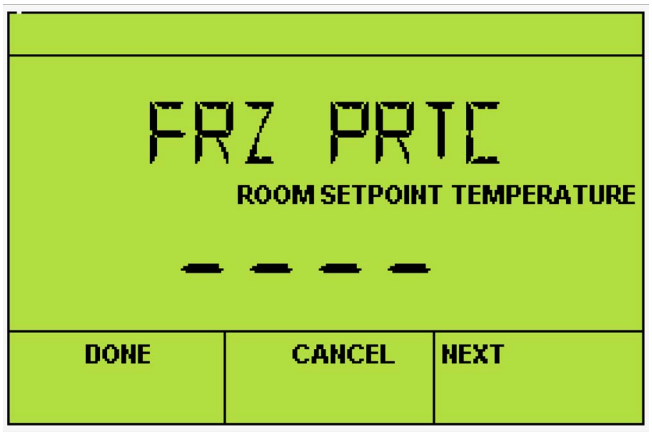

Fig. 39. Parameter Temp Sp Frz Prtc.

FRG PRTC: Displays and allows modification of Space freeze protection setpoint. Its value ranges from: 0 to 99. The space heating setpoint is shifted to this value when a window is opened.

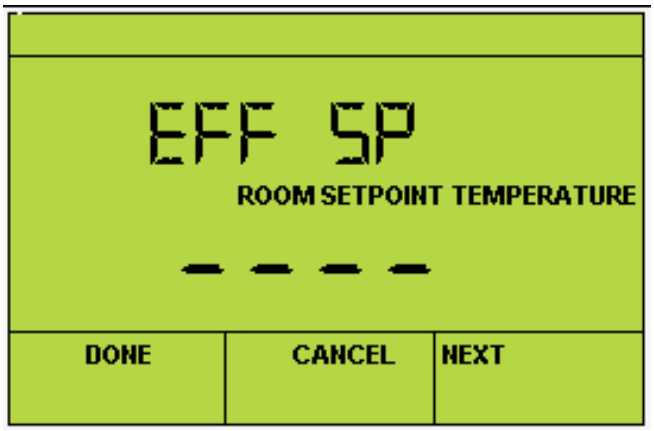

Fig. 40. Parameter Temp Sp Eff Sp.

EFF SP: Displays room temperature effective setpoint.

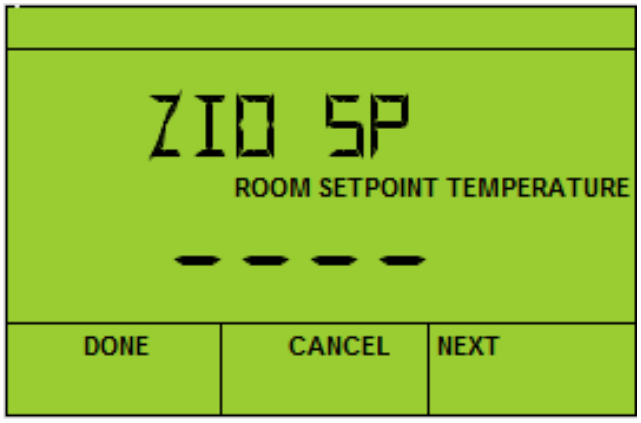

Fig. 41. Parameter Temp Sp Zio Sp (for Stryker BACnet VAV only).

ZIO SP: Displays room setpoint temperature.

Override

VAV OVERRIDE USED FOR FAN

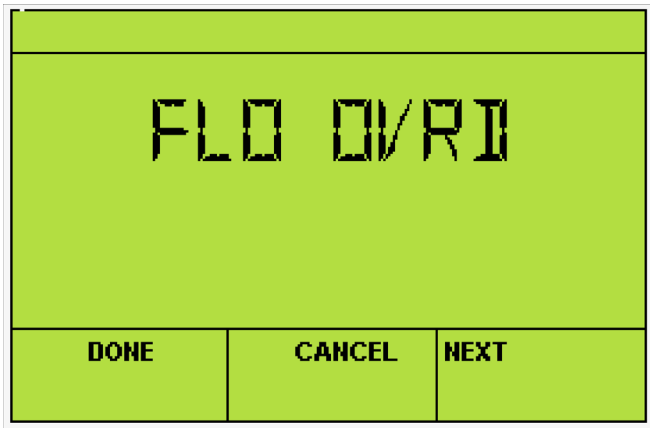

Fig. 42. Parameter Override Flo Ovrd.

FLO OVRD: Displays and allows modification of flow override command as UNDEFINED, OPEN, CLOS, LOSP and HISP

Parameter Default Setting: UNDEFINED

Configuration settings in program are as follows:

0 = UNDEFINED, 4 = OPEN, 5 = CLOS, 6 = LOSP,

7 = HISP

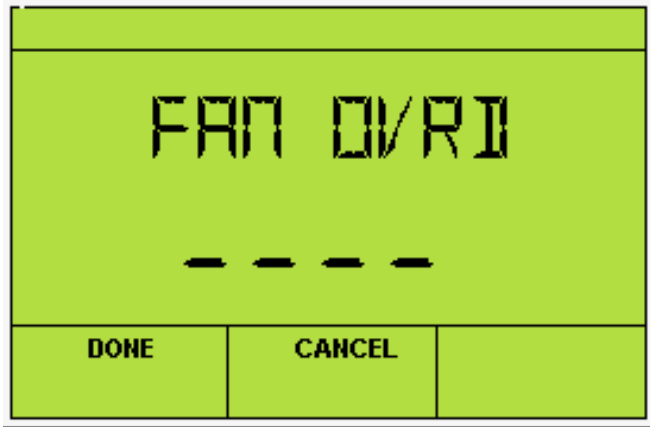

Fig. 43. Parameter Override Fan Ovrd.

FAN OVRD: Displays and allows modification of supply fan override command as ON, OFF or UNDEFINED.

Parameter Default Setting: UNDEFINED

Configuration settings in program are as follows:

0 = OFF, 1 = ON, 255 = UNDEFINED

Fig. 44. Parameter Override Fspd Ovrd.

FSPD OVRD: Displays and allows modification of supply fan speed override in %.

Its value ranges from 0 to +100.

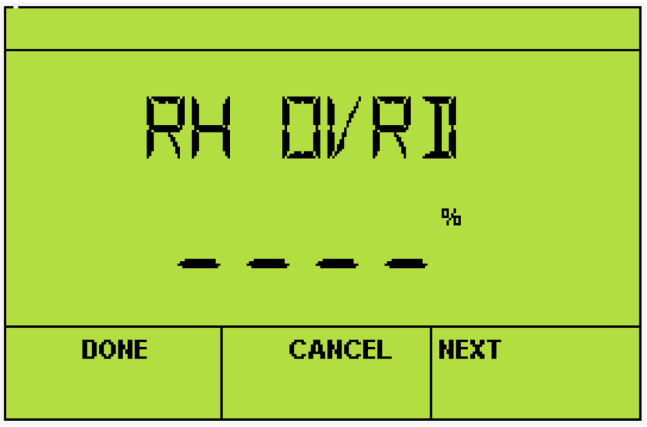

Fig. 45. Parameter Override Rh Ovrd.

RH OVRD: Displays and allows modification of reheat modulating override in %.Its value ranges from 0 to +100.

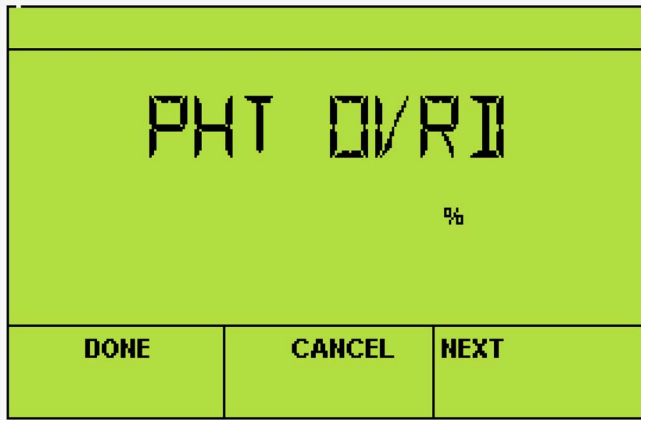

Fig. 46. Parameter Override Rh ovrd.

PHT OVRD: Displays and allows modification of Peripheral heating override in %.Its value ranges from 0 to +100.

Alarms

VAV PARAMETER ALARMS

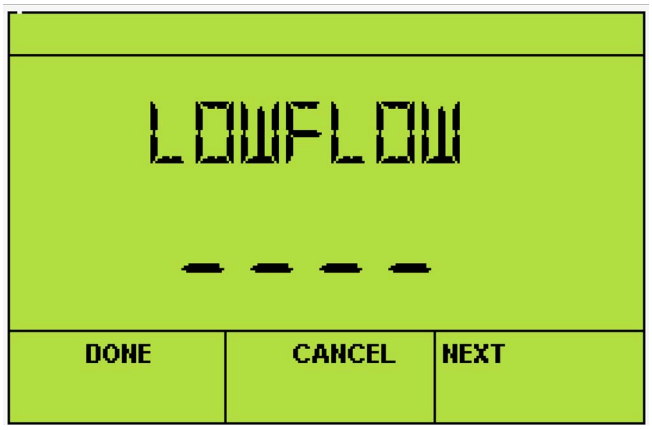

Fig. 47. Parameter Alarms Low Flow.

LOW FLOW: Displays low flow status as FALS, TRUE or UNDEFINED.

Configuration settings in program are as follows:

0 = FALS, 1 = TRUE, 255 = UNDEFINED

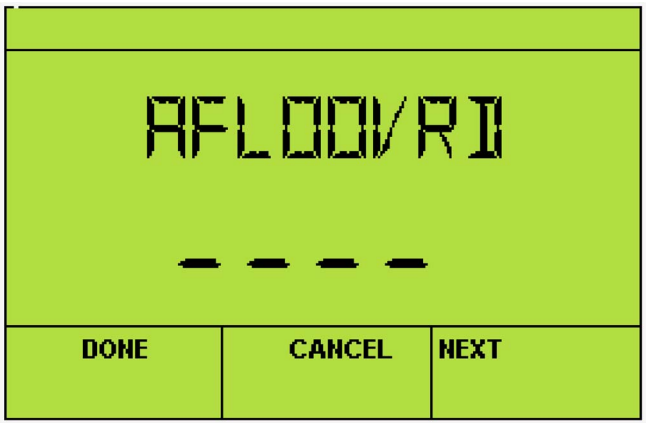

Fig. 48. Parameter Alarms Afloovrd.

AFLOOVRD: Displays air flow override status as FALS, TRUE or UNDEFINED.

Configuration settings in program are as follows:

0 = FALS, 1 = TRUE, 255 = UNDEFINED

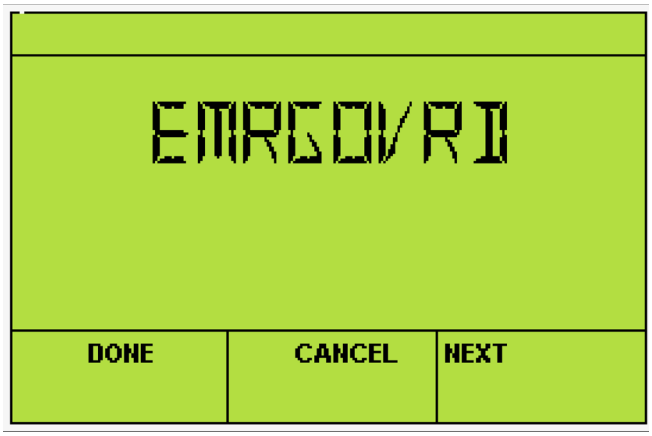

Fig. 49. Parameter Alarms Emrg Ovrd.

EMRG OVRD: Displays smoke detector status as FALS, TRUE or UNDEFINED.

Configuration settings in program are as follows:

0 = FALS, 1 = TRUE, 255 = UNDEFINED

Fig. 50. Parameter Alarms Htg Ovrd.

HTG OVRD: Displays heating override status as FALS, TRUE or UNDEFINED.

Configuration settings in program are as follows:

0 = FALS, 1 = TRUE, 255 = UNDEFINED

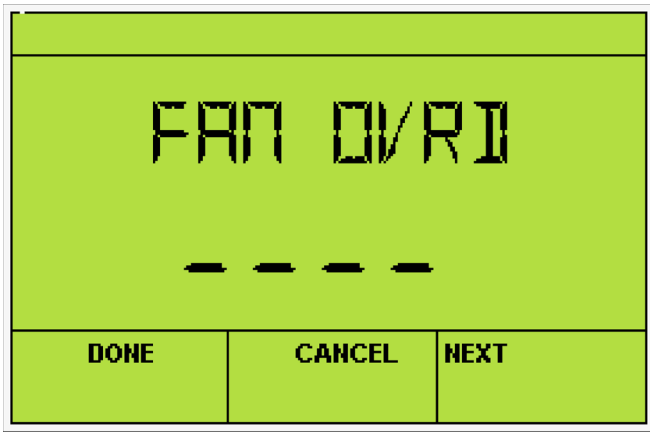

Fig. 51. Parameter Alarms Fan Ovrd.

FAN OVRD: Displays fan override status as FALS, TRUE or UNDEFINED.

Configuration settings in program are as follows:

0 = FALS, 1 = TRUE, 255 = UNDEFINED

Fig. 52. Parameter Alarms Frost.

FROST: Displays frost override status as FALS, TRUE or UNDEFINED.

Configuration settings in program are as follows:

0 = FALS, 1 = TRUE, 255 = UNDEFINED

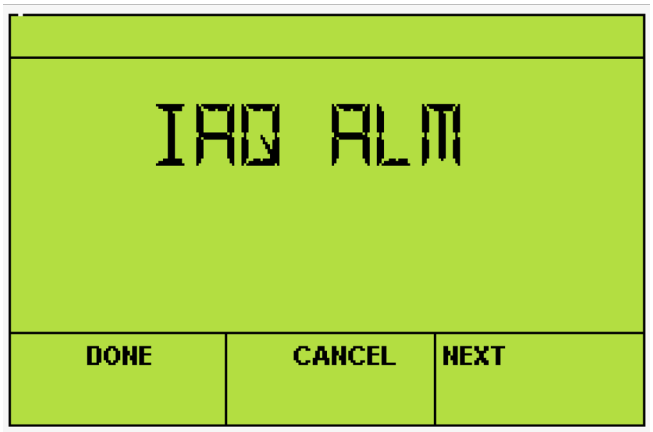

Fig. 53. Parameter Alarms Iaq Alm.

IAQ ALM: Displays IAQ alarm override status as FALS, TRUE or UNDEFINED.

Configuration settings in program are as follows:

0 = FALS, 1 = TRUE, 255 = UNDEFINED

Fig. 54. Parameter Alarms Invld Sp.

INVLD SP: Displays invalid setpoint override status as FALS, TRUE or UNDEFINED.

Configuration settings in program are as follows:

0 = FALS, 1 = TRUE, 255 = UNDEFINED

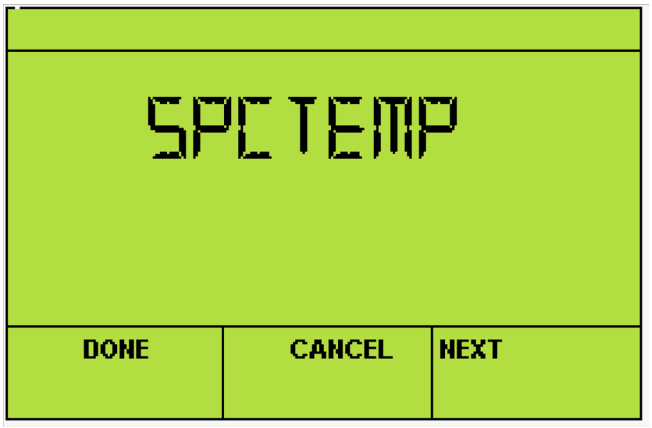

Fig. 55. Parameter Alarms Spc Temp.

SPC TEMP: Displays space temperature override status as FALS, TRUE or UNDEFINED.

Configuration settings in program are as follows:

0 = FALS, 1 = TRUE, 255 = UNDEFINED

Balance

VAV AIR FLOW BALANCING SET POINTS

Fig. 56. Parameter Balance K Offset.

K offset: Displays and allows modification of K factor offset. Its value ranges from –999 to 9999.

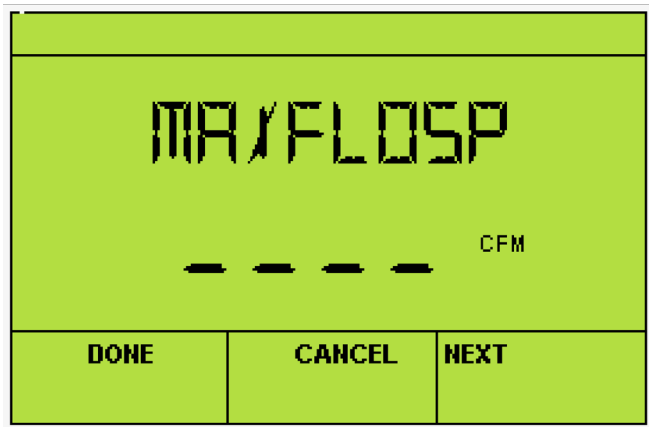

Fig. 57. Parameter Balance Maxflosp.

MAXFLOSP: Displays and allows modification of maximum flow set point in CFM. Its value ranges from 0 to 9999.

Parameter Default Setting: 1000 CFM

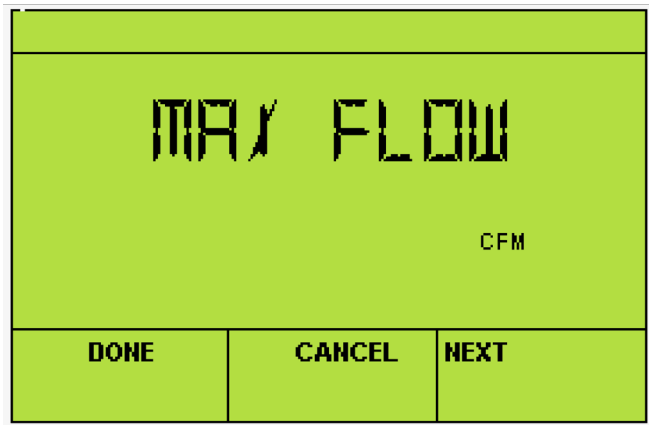

Fig. 58. Parameter Balance Max Flow.

MAXFLOW: Displays and allows modification of maximum flow in CFM. Its value ranges from 0 to 9999.

Parameter Default Setting: 1000 CFM

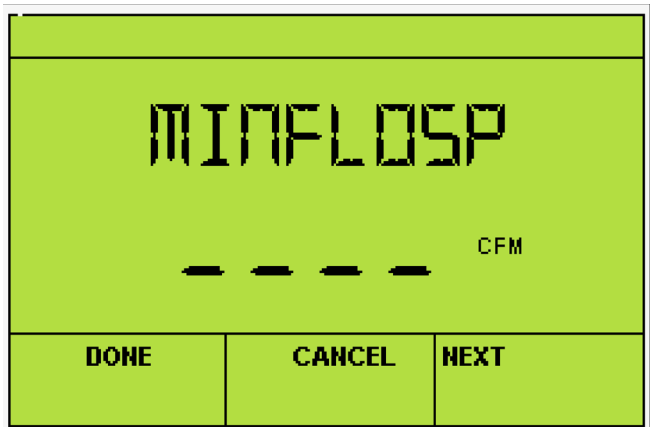

Fig. 59. Parameter Balance Minflosp.

MINFLOSP: Displays and allows modification of minimum flow set point in CFM. Its value ranges from 0 to 9999.

Parameter Default Setting: 0 CFM

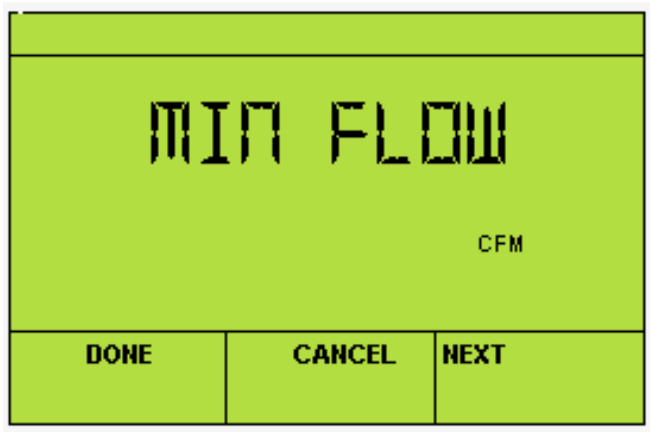

Fig. 60. Parameter Balance Min Flow.

MINFLOW: Displays and allows modification of minimum flow in CFM. Its value ranges from 0 to 9999.

Parameter Default Setting: 0 CFM

Flo Cnfg

VAV FLOW CONFIGURATION SETTINGS

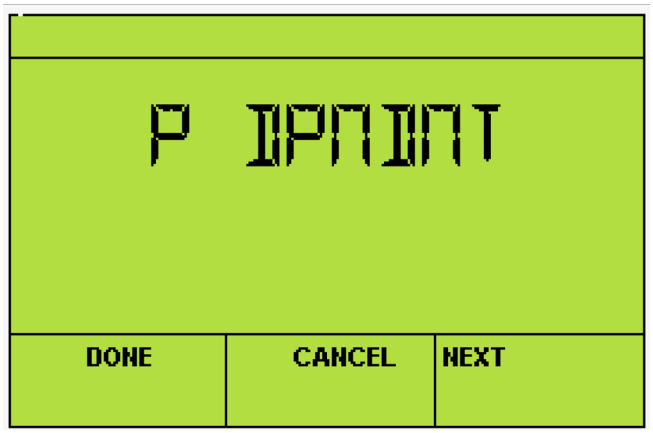

Fig. 61. Parameter Flo Cnfg P Dpndnt.

P DPNDNT: Displays and allow modification of pressure dependant status as FALS, TRUE or UNDEFINED.

Parameter Default Setting: UNDEFINED

Configuration settings in program are as follows:

0 = FALS (Pressure Independent control), 1 = TRUE (Pressure Dependent control)

Fig. 62. Parameter Flo Cnfg Areasqft.

AREASQFT: Displays and allows modification of area square feet settings. Its value ranges from 0.0 to 9999.0.

Parameter Default Setting: 0.545 Sq ft (10.0 in. Dia round duct)

Fig. 63. Parameter Flo Cnfg K Factor.

K FACTOR: Displays and allows modification of K factor. Its value ranges from 0 to 9999.

Parameter Default Setting: 0

Airflosp

VAV AIR FLOW SET POINTS

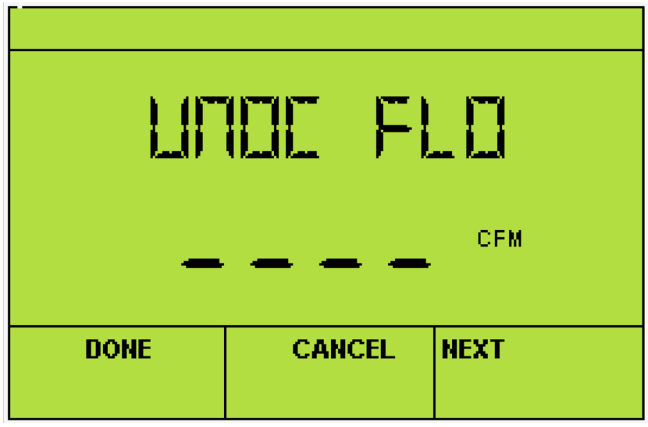

Fig. 64. Parameter Airflosp Unoc Flo.

UNOC FLO: Displays and allows modification of unoccupied air flow set point in CFM. Its value ranges from 0 to 9999.

Parameter Default Setting: 0 CFM

Fig. 65. Parameter Airflosp Stbyflo.

STBYFLO: Displays and allows modification of standby unoccupied air flow set point in CFM. Its value ranges from 0 to 9999.

Parameter Default Setting: 100 CFM

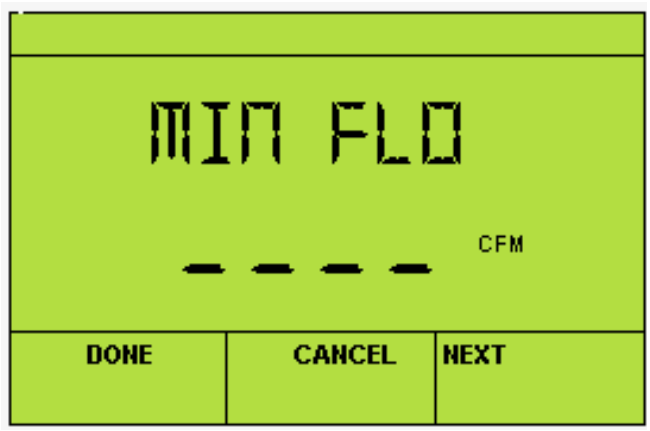

Fig. 66. Parameter Airflosp Min Flo.

MIN FLO: Displays and allows modification of minimum air flow set point in CFM. Its value ranges from 0 to airflosp.max flo.

Parameter Default Setting: 200 CFM

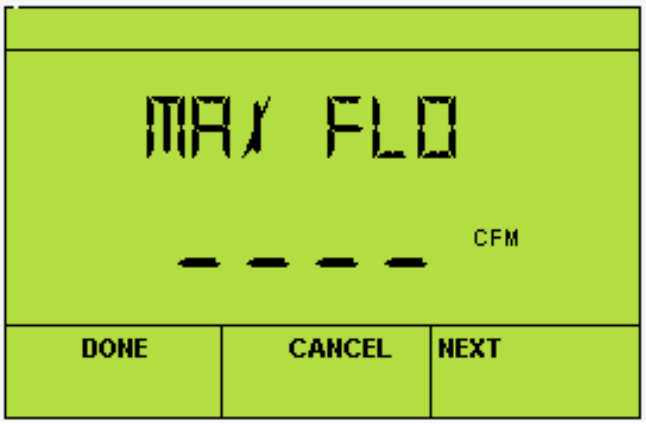

Fig. 67. Parameter Airflosp Max Flo.

MAX FLO: Displays and allows modification of maximum air flow set point in CFM. Its value ranges from airflosp.min flo to 9999.

Parameter Default Setting: 1000 CFM

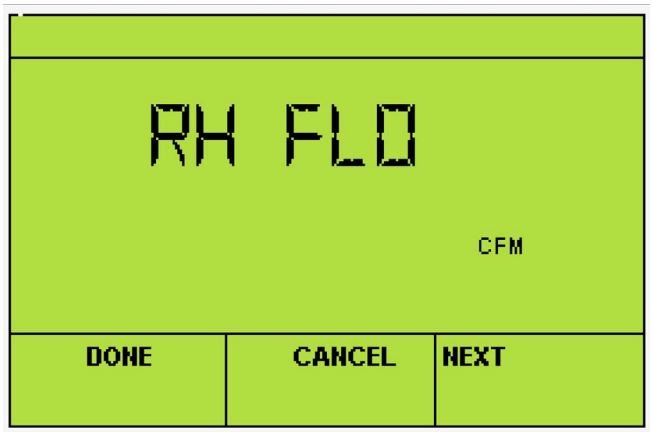

Fig. 68. Parameter Airflosp Rh Flo.

RH FLO: Displays and allows modification of Reheat air flow set point in CFM. Its value ranges from 0 to 9999.

Parameter Default Setting: 300 CFM

Dmp Cnfg

VAV DAMPER CONFIGURATION AIR FLOW SET POINTS

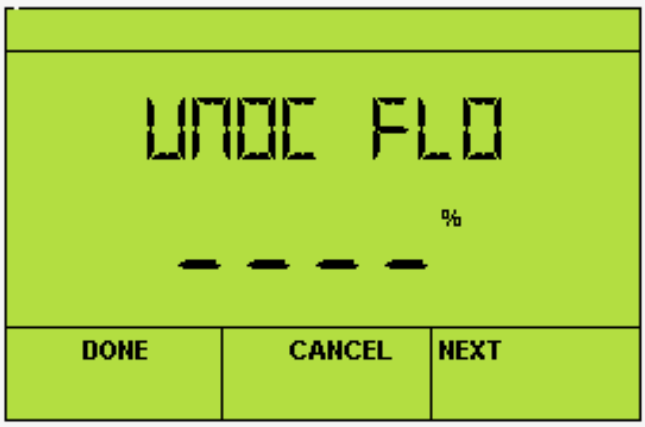

Fig. 69. Parameter Dmp Cnfg Unoc Flo.

UNOC FLO: Displays and allows modification of unoccupied airflow set point in %. Its value ranges from 0 to MaxFlowPos.

Parameter Default Setting: 0%

Fig. 70. Parameter Dmp Cnfg Stbyflo.

STDBYFLO: Displays and allows modification of standby unoccupied airflow set point in %. Its value ranges from 0 to MaxFlowPos.

Parameter Default Setting: 0%

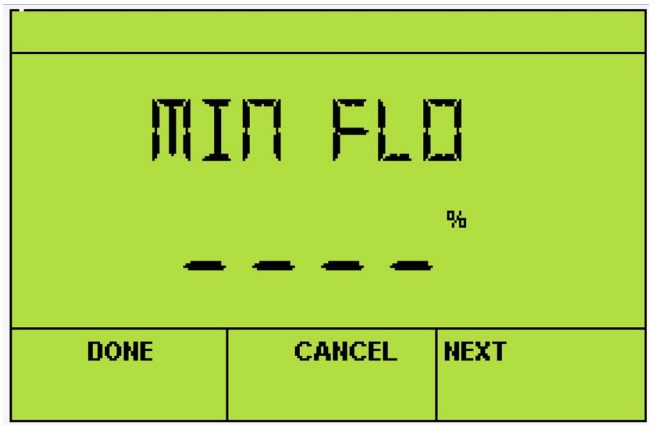

Fig. 71. Parameter Dmp Cnfg Min Flo.

MIN FLO: Displays and allows modification of minimum airflow set point in %. Its value ranges from 0 to MaxFlowPos.

Parameter Default Setting: 15%

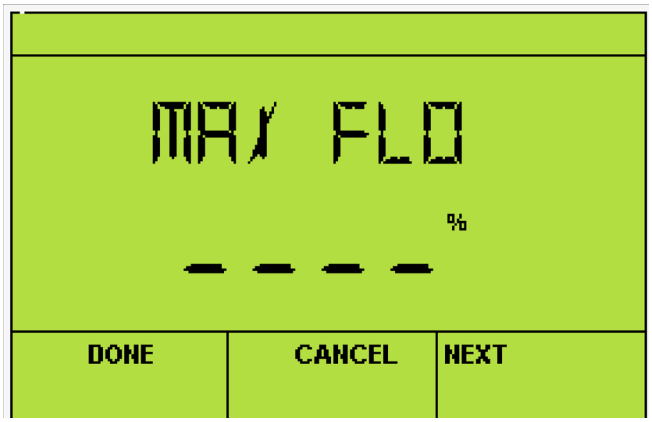

Fig. 72. Parameter Dmp Cnfg Max Flo.

MAX FLO: Displays and allows modification of maximum airflow set point in %. Its value ranges from MinFlowPos to 100.

Parameter Default Setting: 60%

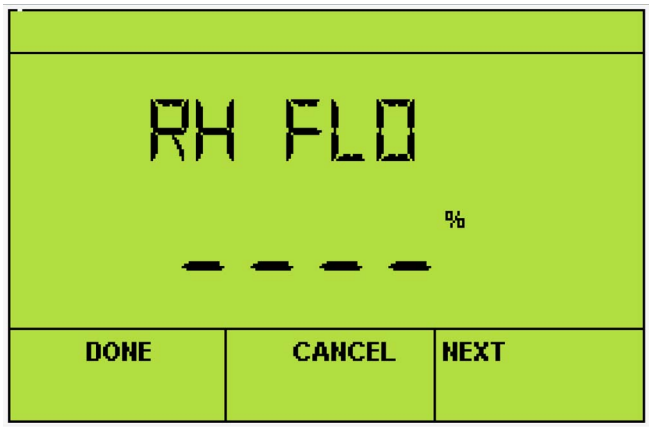

Fig. 73. Parameter Dmp Cnfg Rh Flo.

RH FLO: Displays and allows modification of Reheat airflow set point in %. Its value ranges from 0 to 100.

Parameter Default Setting: 20%

Snsr Cal

VAV SENSOR CALIBRATION

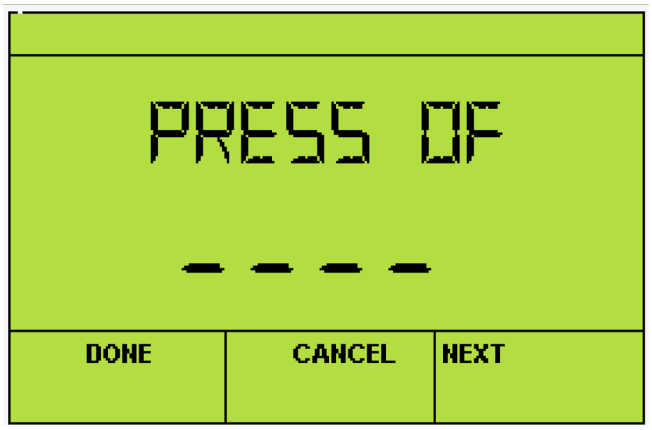

Fig. 74. Parameter Snsr Cal Press Of.

PRESS OF: Displays and allows modification of pressure offset in Pascal's. Its value ranges from: –999 to 9999.

Parameter Default Setting: 0.0 Pa

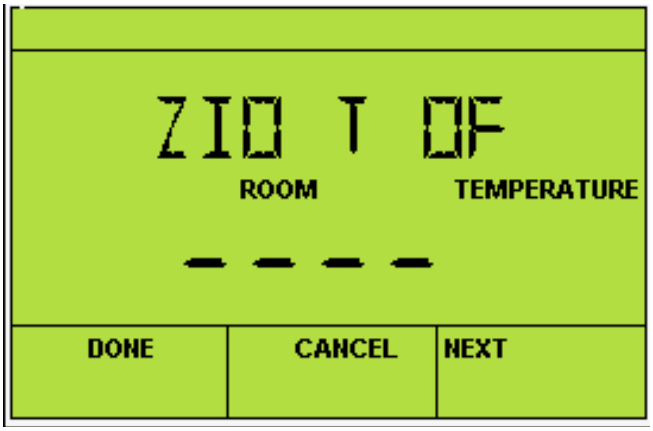

Fig. 75. Parameter Snsr Cal Zio T Of.

ZIO T OF: Displays and allows modification of Zio temperature offset. Its value ranges from –99 to 99.

Parameter Default Setting: 0.0 Delta F

Fig. 76. Parameter Snsr Cal Zio H Of.

ZIO H OF: Displays and allows modification of Zio humidity (%) offset. Its value ranges from –99 to 99.

Parameter Default Setting: 0.0%

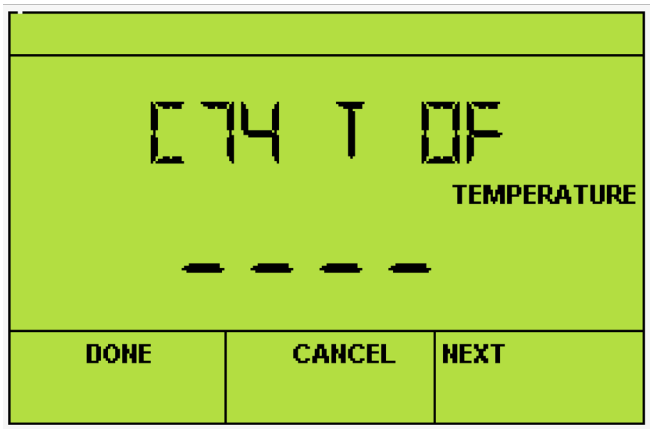

Fig. 77. Parameter Snsr Cal C74 T Of.

C74 T OF: Displays and allows modification of C7400S temperature offset. Its value ranges from: –99 to 99.

Parameter Default Setting: 0.0 Delta F

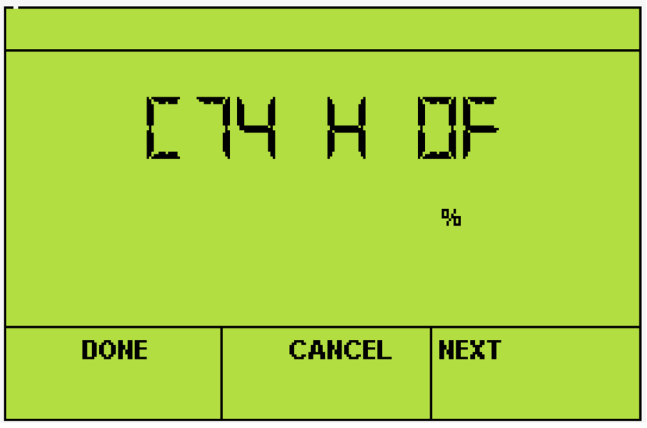

Fig. 78. Parameter Snsr Cal C74 H Of.

C74 H OF: Displays and allows modification of C7400S humidity (%) offset. Its value ranges from: –99 to 99.

Parameter Default Setting: 0.0%

Wm Config

VAV WALL MODULE CONFIGURATION

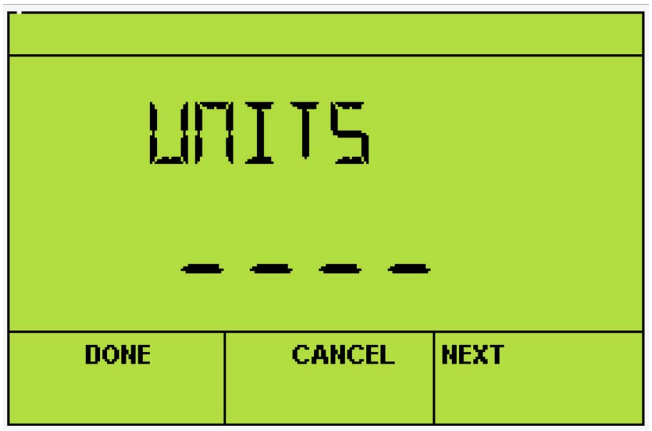

Fig. 79. Parameter Wm Config Units.

UNITS: Displays and allows modification of units to be displayed for temperature parameters as C, F, UNDEFINED.

Parameter Default Setting: 0 (Deg. F)

Configuration settings in program are as follows:

0 = F (Deg. F), 1 = C (Deg. C), 255 = UNDEFINED

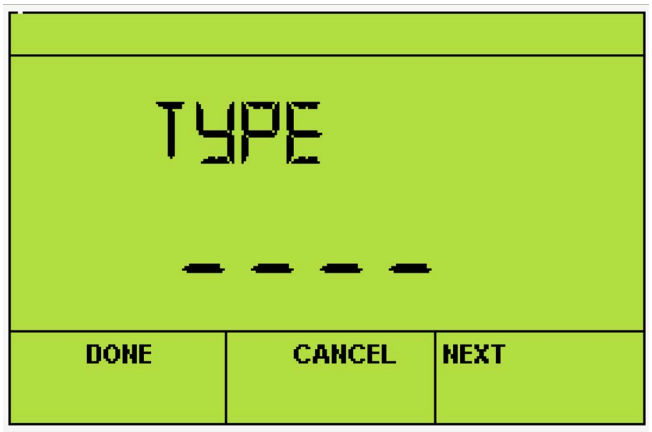

Fig. 80. Parameter Wm Config Type.

TYPE: Displays and allows modification of type for wall module to be used as NONE, TR20, ZIO, UNDEFINED.

Parameter Default Setting: UNDEFINED

Configuration settings in program are as follows:

0 = NONE (No wall module)

1 = TR20 (Conventional wall module TR20)

2 = ZIO (ZIO TR71/TR75)

255 = UNDEFINED

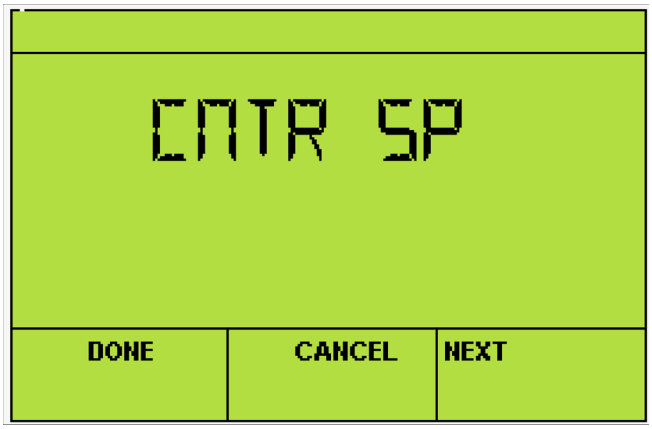

Fig. 81. Parameter Wm Config Cntr Sp.

CNTR SP: Displays and allows modification of centre setpoint as FALS, TRUE, UNDEFINED. This parameter will define centre Setpoint to be used or not.

Parameter Default Setting: UNDEFINED

Configuration settings in program are as follows:

0 = FALS, 1 = TRUE, 255 = UNDEFINED

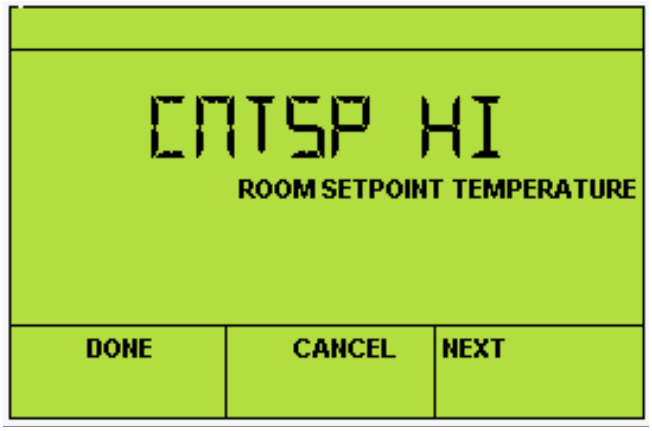

Fig. 82. Parameter Wm Config Cntsp Hi.

CNTSP HI: Displays and allows modification of center setpoint high limit. Its value ranges from Wm Config CNTSP LO to 100.

Parameter Default Setting: 100

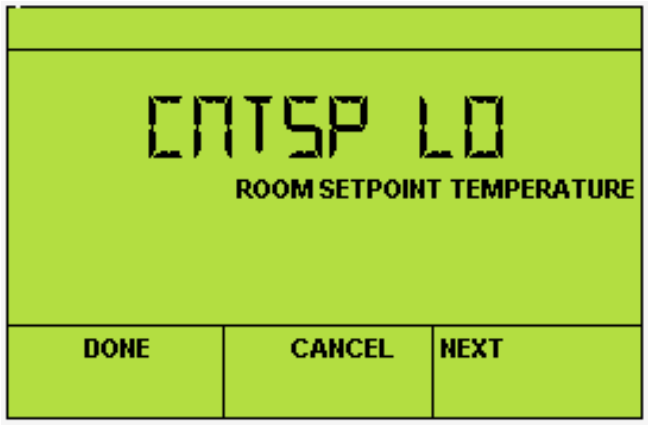

Fig. 83. Parameter Wm Config Cntsp Lo.

CNTSP LO: I Displays and allows modification of center setpoint low limit. Its value ranges from –10 to Wm Config CNTSP HI.

Parameter Default Setting: -10

Fig. 84. Parameter Wm Config Byps Min.

BYPS MIN: Displays and allows modification of wall module bypass time setpoint in minutes. Its value ranges from 0 to 1092.

Parameter Default Setting: 180 Min.

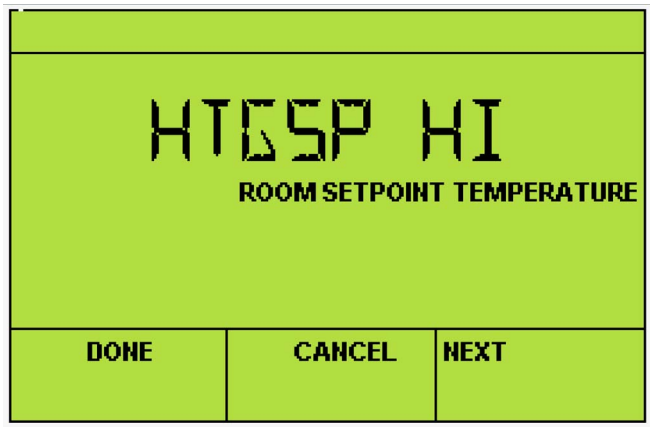

Fig. 85. Parameter Wm Config Htgsp Hi.

HTGSP HI: Displays and allows modification of heating setpoint high limit. Its value ranges from Wm Config HTGSP LO to 100.

Parameter Default Setting: 100.0 F

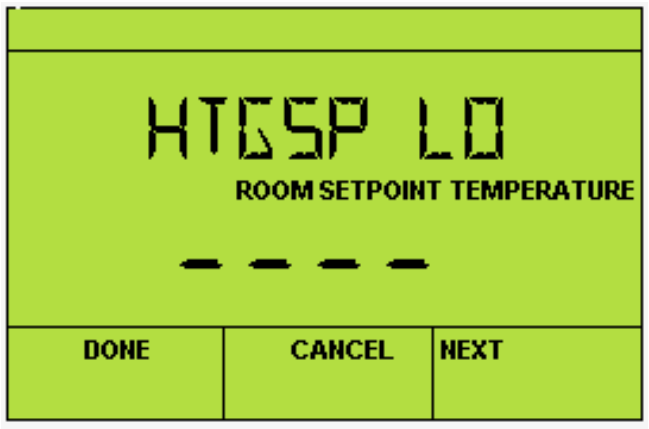

Fig. 86. Parameter Wm Config Htgsp Lo.

HTGSP LO: Displays and allows modification of heating setpoint low limit. Its value ranges from 0 to Wm Config HTGSP HI.

Parameter Default Setting: 0.0 F

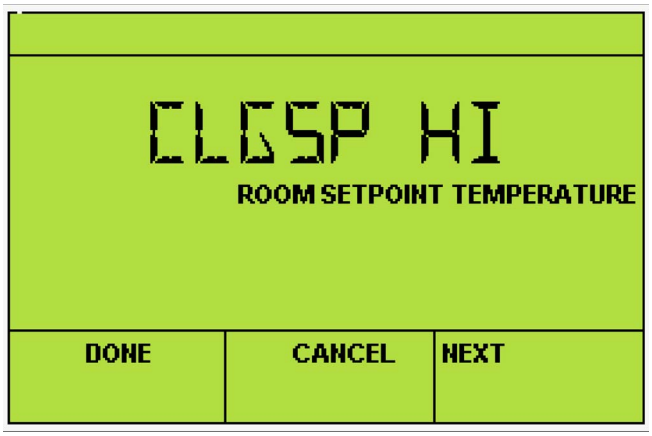

Fig. 87. Parameter Wm Config Clgsp Hi.

CLGSP HI: Displays and allows modification of cooling setpoint high limit. Its value ranges from Wm Config CLGSP LO to 100.

Parameter Default Setting: 100.0 F

Fig. 88. Parameter Wm Config Clgsp Lo.

CLGSP LO: Displays and allows modification of cooling setpoint low limit. Its value ranges from 0 to Wm Config CLGSP HI.

Parameter Default Setting: 0.0 F

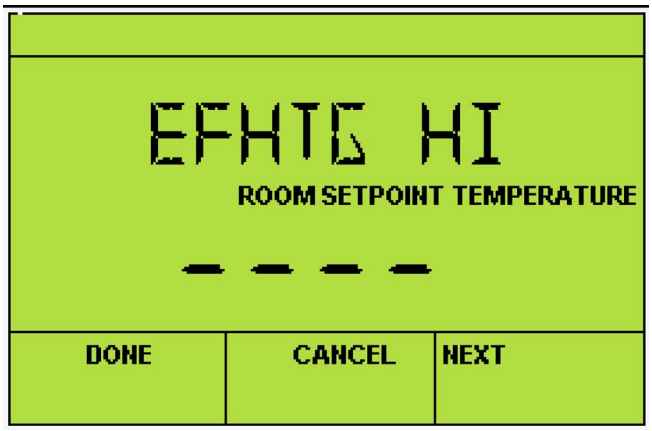

Fig. 89. Parameter Wm Config Efhtg HI.

EFHTG HI: Displays effective heating high setpoint.

Fig. 90. Parameter Wm Config Efhtg Lo.

EFHTG LO: Displays effective heating low setpoint.

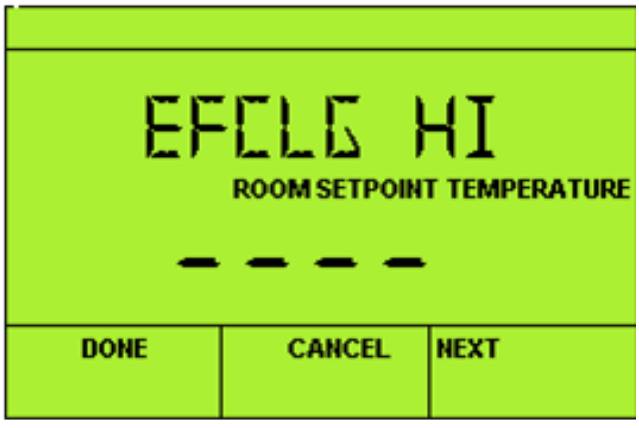

Fig. 91. Parameter Wm Config Efclg HI.

EFCLG HI: Displays effective cooling high setpoint.

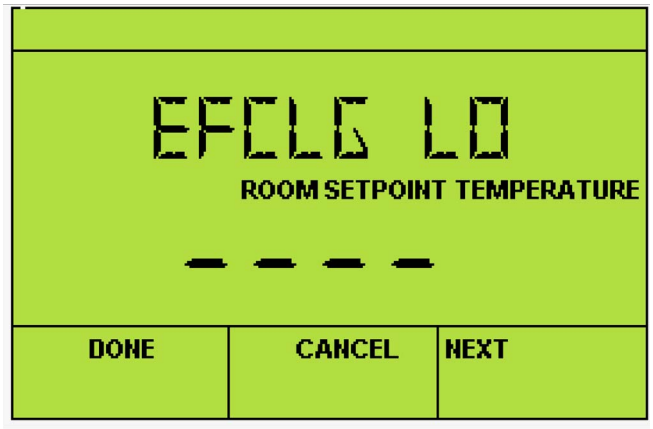

Fig. 92. Parameter Wm Config Efclg Lo.

EFCLG LO: Displays effective cooling low setpoint.

Fig. 93. Parameter Wm Config TR20ovrd.

TR20OVRD: Displays and allows modification of TR20 override setting. This setting is used to enable the TR20 override push button.

Parameter Default Setting: 0 (Normal)

Configuration settings in program are as follows:

0 = STRD (Normal)

1 = BYPS (Bypass only)

2 = DSBL (Disabled)

255 = UNDEFINED

Fig. 94. Parameter Wm Config TR20 But.

TR20 BUT: Displays and allows modification of TR20 override button setting as DI 1 or UNDEFINED.

Parameter Default Setting: UNDEFINED

Configuration settings in program are as follows:

4 = DI 1 (DI 1 as fast binary input to support Wall Module push button)

255 = UNDEFINED

Fig. 95. Parameter Wm Config Cntr Spt.

CNTR SPT: Displays and allows modification of centre setpoint setting as UI 3, ZIO or UNDEFINED

Parameter Default Setting: 25 ZIO

Configuration settings in program are as follows:

2 = UI 3 (UI3 live out)

25 = ZIO (Zio Centre Set Point)

255 = UNDEFINED

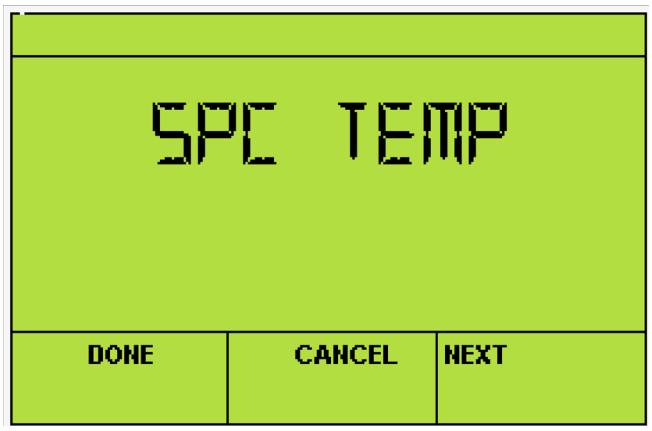

Fig. 96. Parameter Wm Config Spc Temp.

SPC TEMP: Displays and allows modification of logical input configuration /terminal assignment for space temperature. This can be changed as UI 1, UI 2, UI 3, UI 4, ZIO, and UNDEFINED.

Parameter Default setting: ZIO

Configuration settings in program are as follows:

0 = UI 1

1 = UI 2

2 = UI 3

3 = UI 4

20 = ZIO

255 = UNDEFINED

Cnfg Ctl

VAV CONFIGURATION FOR CONTROL

Fig. 97. Parameter Cnfg Ctl Htg Cnfg.

HTG CNFG: Displays and allows modification of heat configuration /heat cool change over switch such as CLG, 1 RH, 2 RH OR 3 RH, A RH or UNDEFINED. This parameter determines the warm air supplied to the zone terminal.

Parameter Default Setting: 0 CLG (Cool Mode)

Configuration settings in program are as follows:

0 = CLG (Cool Mode)

1 = 1 RH (1 Reheat Stage)

2 = 2 RH (2 Reheat Stages)

3 = 3 RH (3 Reheat Stages)

10 = A RH (Analog Reheat control)

255 = UNDEFINED

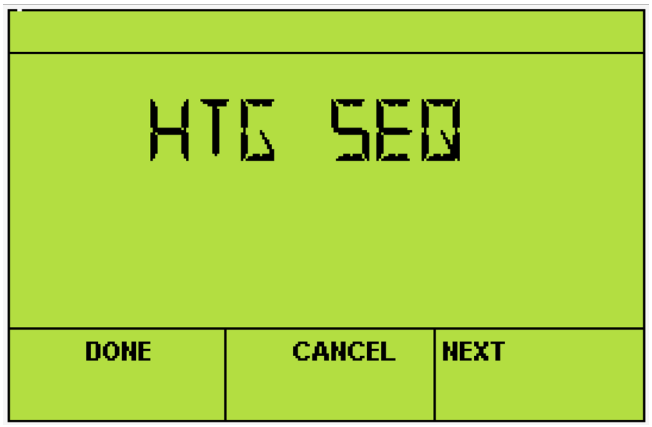

Fig. 98. Parameter Cnfg Ctl Htg Seq.

HTG SEQ: Displays and allows modification of heating sequence as RH, P RH, RH P, RP A, PRPH, UNDEFINED

Parameter Default Setting: 0 RH (reheat only)

Configuration settings in program are as follows:

0 = RH (reheat only)

1 = P RH (peripheral then reheat)

2 = RH P (reheat then peripheral)

3 = RP A (reheat and peripheral then reheat airflow. At the end of the sequence, reheat airflow is modulated with heating demand or constant based on the CfgReheatControl Config value.

0: fixed airflow at maxReheatFlow

1: modulated airflow up to maxReheatFlow

NOTE: Sequence #3 is not appropriate for electric reheat coils)

4 = PRPH (peripheral only)

255 = UNDEFINED

Fig. 99. Parameter Cnfg Ctl Rhmodair.

RHMODAIR: Displays and allow modification of reheat modulating air configuration status as FALS, TRUE or UNDEFINED.

Parameter Default Setting: 0 FALS (Normal sequence)

Configuration settings in program are as follows:

0 = FALS, 1 = TRUE, 255 = UNDEFINED

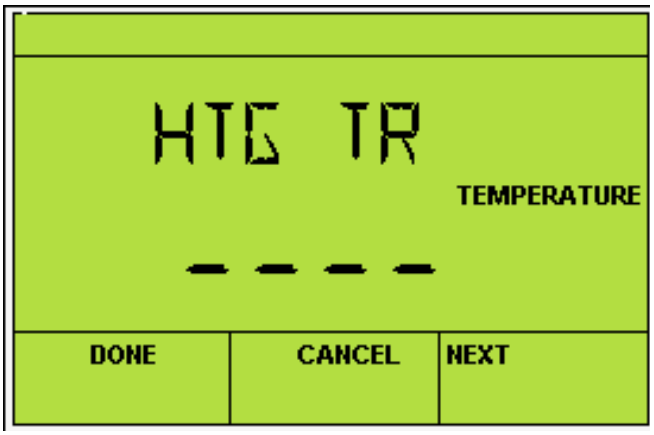

Fig. 100. Parameter Cnfg Ctl Htg Tr.

HTG TR: Displays and allows modification of space heating PID control throttling range. Its value ranges from 2 to 30ΔF.

The Tool sets the TR based on the value of the parameter “HTG CNFG” (CfgReheatConfig).

Table 8 shows the TR values used by the space heating PID control.

Table 8. TR values used by the space heating pid control.

Type	TR (F)
Mod	5
1stg	3
2stg	4
3stg	7
4stg	8

Table 9 shows the IT values used by the space heating PID control.

Table 9. IT values used by the space heating pid control.

Type	IT
Mod	2400
1stg	3100
2stg	2500
3stg	1650
4stg	1200

Fig. 101. Parameter Cnfg Ctl Htg It.

HTG IT: Displays and allows modification of heating PID control integral time. Its value ranges from 0 to 5000 sec.

The Tool sets the IT based on the value of the parameter “HTG CNFG” (CfgReheatConfig).

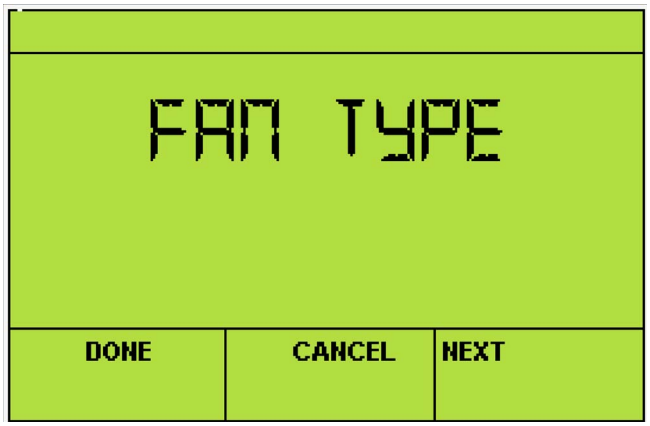

Fig. 102. Parameter Cnfg Ctl Fan Type.

FAN TYPE: Displays and allows modification of fan type to be used for VAV. This can be changed as NONE, SERS, P TC, P AF, PSPD and UNDEFINED.

Parameter Default Setting: 0 (None)

Configuration settings in program are as follows:

0 = NONE (No Fan)

1 = SERS (Series Fan, fan runs when occupied or standby (when OccStandby = 1). A Series Fan configuration should be combined with pressure independent airflow control. This is necessary in order to avoid energy waste by dumping uncontrolled primary air through the induction (return air) inlet.
If the Mode is: Morn warm-up, reheat, heat with demand for heating; Or night purge, and then the fan speed is ON).

2 = P TC (Parallel fan, temperature control, fan runs with reheat)

3 = P AF (Parallel fan, airflow control, fan runs intermittently based on primary airflow and occupancy.)

4 = PSPD (Parallel fan, speed control (inverse to cooling demand or constant volume
If the Effective Occupancy is: Occ/Standby/Bypass/Unoccupied with a demand calling for cool and No Htg demand, then the fan speed is: Inversely proportional to the "demand for cooling" and varies between 0 and 100%.
If the Mode is: Morn warm-up, reheat, heat with demand for heating; or night purge, then the fan speed is (100%), else fan speed is: 0 %.)

255 = UNDEFINED

Fig. 103. Parameter Cnfg Ctl Oc Snorp.

OC SNROP: Displays and allows modification of occupancy sensor operation status. This can be changed as CLN, CONF, TNNT, and UNDEFINED.

Parameter Default Setting: 2 CONF (Conference Room)

Configuration settings in program are as follows:

1 = CLN (Unoccupied Cleaning Crew, When scheduled to be unoccupied and the occupancy sensor is active, switch to standby for the comfort of the cleaning crew)

2 = CONF (Conference Room When scheduled to be unoccupied stay unoccupied independent of the occupancy sensor activity)

3 = TNNT (Unoccupied Tenant, When scheduled to be unoccupied and the occupancy sensor is active, switch to occupied for the comfort of the tenant.)

255 = UNDEFINED

NOTE:

1. If an occupancy sensor is configured and the space is scheduled for occupied and the occupancy sensor is inactive, the mode switches to standby.
2. Manual override commands have priority over the schedule and the occupancy sensor.
3. Occupancy Sensor Behavior

(a)1 – No occupancy detected (inactive)
(b)0 – Occupancy detected (active)

Fig. 104. Parameter Cnfg Ctl Da Modrh (for Stryker BACnet VAV only).

DA MODRH: Displays and allow modification of modulating reheat. This can be changed as A rh and dArH.

Configuration settings in program are as follows:

0 = A_rH (No Modulating reheat flow when reheat is selected).

1 = dArH (Modulates reheat flow when reheat is selected).

Parameter Default Setting: 0 (A rH – No modulating reheat flow when reheat is selected)

Fig. 105. Parameter Cnfg Ctl Rhmod It (for Stryker BACnet VAV only).

RHMOD IT: Displays and allows modification of reheating discharge air PID control integral time. Its value ranges from 0 to 5000 sec.

Parameter Default Setting: 1000

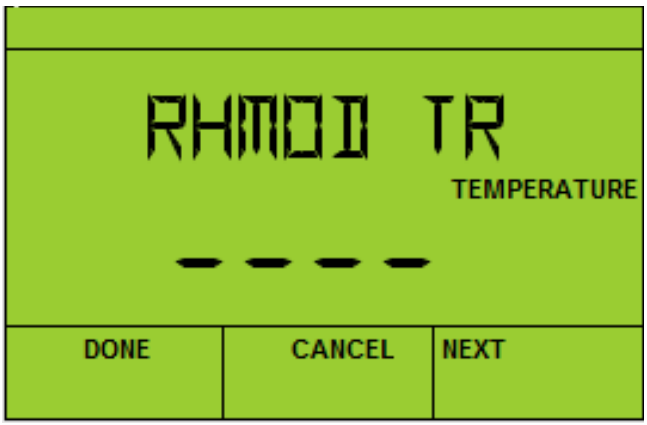

Fig. 106. Parameter Cnfg Ctl Rhmod Tr.

RHMOD TR: Displays and allows modification of the reheat discharge air PID control throttling range. Its value ranges from 2 to 30 ΔF

Parameter Default Setting: 25 ΔF

Cnfg Ui

CONFIGURATION OF VAV UNIVERSAL INPUTS

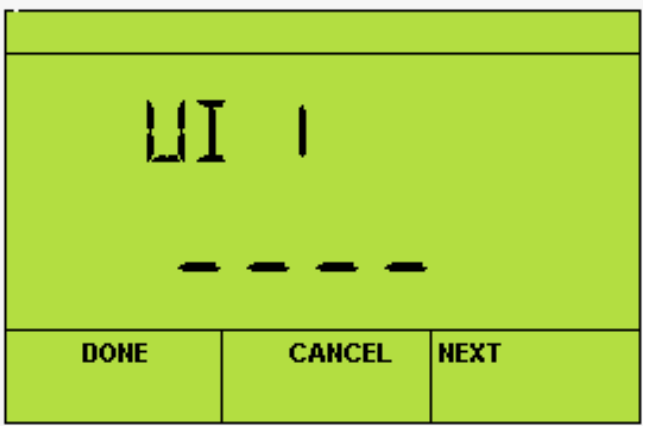

Fig. 107. Parameter Cnfg Ui Ui 1.

UI 1: Displays and allows modification of input type for universal input 1. This can be changed as: NTC, TR T, DGNO and DGNC

Parameter Default Setting: 13 DGNO (Digital Normally Open).

Configuration settings in program are as follows:

0 = NTC (20 KNTC)

13 = DGNO (Digital Normally Open)

14 = DGNC (Digital Normally Closed)

1 = TR T (TR2x 20KNTC)

Click NEXT, UI2 (Universal Input 2) is available with configuration settings similar to UI1.

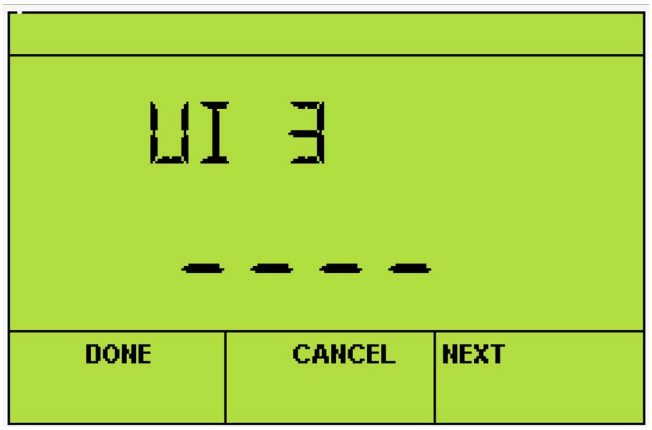

Fig. 108. Parameter Cnfg Ui Ui 3.

UI 3: Displays and allows modification of input type for universal input 3. This can be changed as: NTC, TR T, TRRL, TRAB, DGNO, DGNC and UNDEFINED.

Parameter Default Setting: 13 DGNO (Digital Normally Open).

Configuration settings in program are as follows:

0 = NTC (20 KNTC)

13 = DGNO (Digital Normally Open)

14 = DGNC (Digital Normally Closed)

2 = TRAB (TR2x SetPt Absolute)

3 = TRRL (TR2x SetPt Relative)

1 = TR T (TR2x 20KNTC)

Click NEXT, UI4 (Universal Input 4) is available with configuration settings similar to UI1.

Cnfgsbus

CONFIGURATION OF S BUS

Fig. 109. Parameter Cnfgsbus C7400S.

C7400S: Displays and allows modification of S bus sensor C7400S temperature and relative humidity. This can be changed as: ENBL, DSBL.

Parameter Default Setting: 1 DSBL (Disable Sbus configuration).

Configuration settings in program are as follows:

0 = ENBL (Enable Sbus configuration)

1 = DSBL (Disable Sbus configuration)

NOTE: The C7400S sensor address must be programmed as Sbus address 8.

Sbus Address	C7400S1000 DIP Switch		
	1	2	3
8	OFF	OFF	OFF

Cnfg In

CONFIGURATION OF VAV INPUTS

Fig. 110. Parameter Cnfg In Dscg air.

DSCG AIR: Displays and allows modification of logical input configuration/terminal assignment for discharge air temperature. This can be changed as UI 1, UI 2, UI 3, UI 4, SBUS and UNDEFINED

Parameter Default Setting: UNDEFINED

Configuration settings in program are as follows:

0 = UI 1 (Universal Input 1)

1 = UI 2 (Universal Input 2)

2 = UI 3 (Universal Input 3)

3 = UI 4 (Universal Input 4)

19 = SBUS (C7400s Temp sensor)

255 = UNDEFINED

Fig. 111. Parameter Cnfg In Sply air.

SPLY AIR: Displays and allows modification of logical input configuration /terminal assignment for supply air temperature. This can be changed as UI 1, UI 2, UI 3, UI 4, SBUS and UNDEFINED.

Parameter Default Setting: 26 SupplyTempIn (Network Input – Application default)

Configuration settings in program are as follows:

0 = UI 1 (Universal Input 1)

1 = UI 2 (Universal Input 2)

2 = UI 3 (Universal Input 3)

3 = UI 4 (Universal Input 4)

19 = SBUS (C7400s Temp sensor)

255 = UNDEFINED

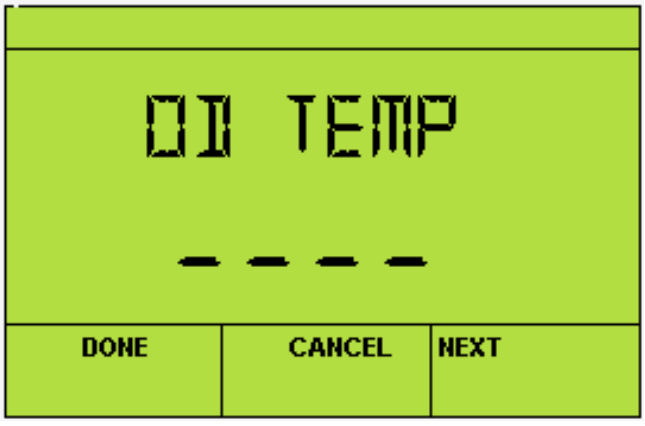

Fig. 112. Parameter Cnfg In Od Temp.

OD TEMP: Displays and allows modification of logical input configuration /terminal assignment for outside air temperature. This can be changed as UI 1, UI 2, UI 3, UI 4, SBUS and UNDEFINED.

Parameter Default Setting: UNDEFINED

Configuration settings in program are as follows:

0 = UI 1 (Universal Input 1)

1 = UI 2 (Universal Input 2)

2 = UI 3 (Universal Input 3)

3 = UI 4 (Universal Input 4)

19 = SBUS (C7400s Temp sensor)

255 = UNDEFINED

Fig. 113. Parameter Cnfg In Occ Snsr.

OCC SNSP: Displays and allows modification of logical input configuration /terminal assignment for occupancy sensor. This can be changed as UI 1, UI 2, UI 3, UI 4 and UNDEFINED.

Parameter Default Setting: UNDEFINED

Configuration settings in program are as follows:

0 = UI 1 (Universal Input 1)

1 = UI 2 (Universal Input 2)

2 = UI 3 (Universal Input 3)

3 = UI 4 (Universal Input 4)

255 = UNDEFINED

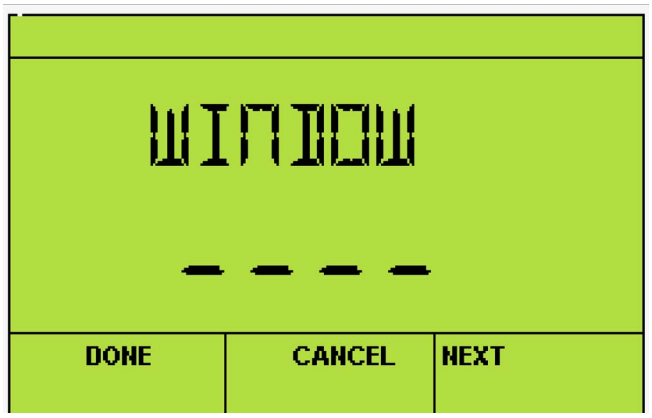

Fig. 114. Parameter Cnfg In Window.

WINDOW: Displays and allows modification of logical input configuration /terminal assignment for window contacts. This can be changed as UI 1, UI 2, UI 3, UI 4 and UNDEFINED.

Parameter Default Setting: UNDEFINED

Configuration settings in program are as follows:

0 = UI 1 (Universal Input 1)

1 = UI 2 (Universal Input 2)

2 = UI 3 (Universal Input 3)

3 = UI 4 (Universal Input 4)

255 = UNDEFINED

Float1

VAV FLOAT1 CONFIGURATION

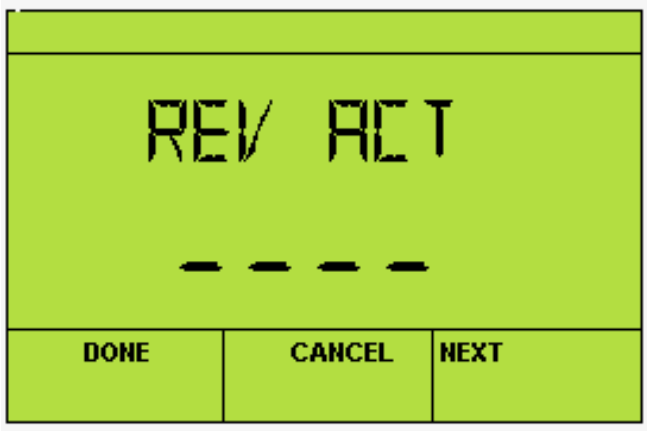

Fig. 115. Parameter Float1 Rev Act.

REV ACT: Displays and allow modification of float1 reverse acting status as FALS, TRUE or UNDEFINED.

Configuration settings in program are as follows:

0 = FALS (False, 100%=full open, 0% = full closed)

1 = TRUE (True 100%=full closed, 0% = full open)

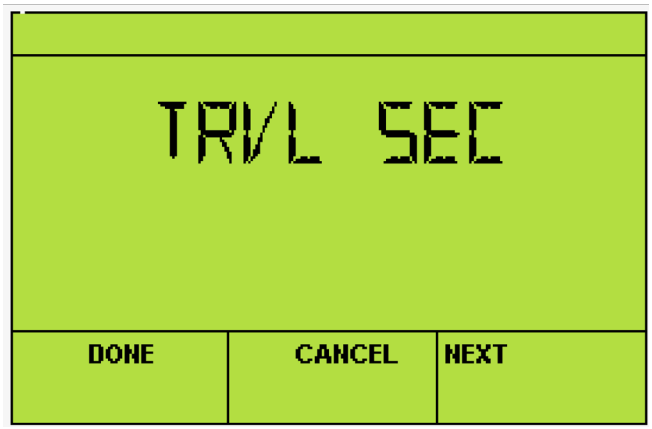

Fig. 116. Parameter Float1 Trvl Sec.

TRVL SEC: Displays and allow modification of float1 motor travel time. Its value ranges from 0 to 999.

Parameter Default Setting: 90 Seconds

NOTE: Set the travel time to zero, to disable the Floating Output and free up DO3 and DO4.

Float2

VAV FLOAT2 CONFIGURATION

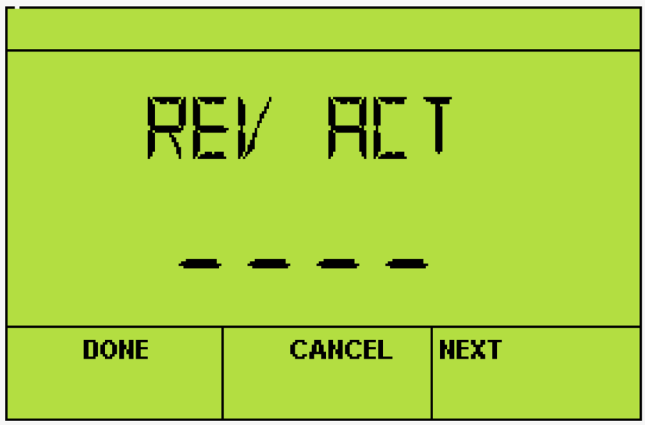

Fig. 117. Parameter Float2 Rev Act.

REV ACT: Displays and allow modification of float2 reverse acting status as FALS, TRUE or UNDEFINED.

Configuration settings in program are as follows:

0 = FALS (False, 100%=full open, 0% = full closed)

1 = TRUE (True 100%=full closed, 0% = full open)

Fig. 118. Parameter Float2 Trvl Sec.

TRVL SEC: Displays and allow modification of float2 motor travel time. Its value ranges from 0 to 999.

Parameter Default Setting: 0 Seconds

NOTE: Set the travel time to zero, to disable the Floating Output and free up DO1 and DO2.

AO1

ANALOG OUTPUT1 RANGE CONFIGURATION

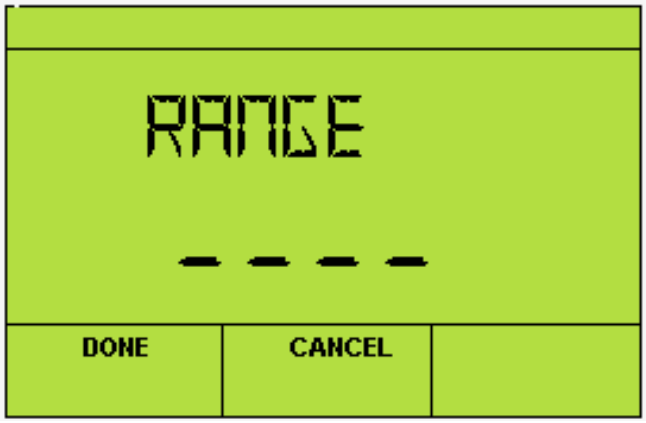

Fig. 119. Parameter AO1 Range.

RANGE: Displays and allows modification of analog output1 range. This can be changed as 0D10, 10D0, 2D10, 10D2, 0A20, 20A0, 0A22, 22A0, 4A20, 20A4, DIG, and UNDEFINED.

Parameter Default setting: 0D10

Configuration settings in program are as follows:

0 = 0D10 (Analog voltage 0 to 10VDC direct output)

1 = 10D0 (Analog voltage 0 to 10VDC reverse output)

2 = 2D10 (Analog voltage 2 to 10VDC direct output)

3 = 10D2 (Analog voltage 2 to 10VDC reverse output)

4 = 0A20 (Analog current 0 to 20 mA direct output)

5 = 20A0 (Analog current 0 to 20 mA reverse output)

6 = 0A22 (Analog current 0 to 22 mA direct output)

7 = 22A0 (Analog current 0 to 22 mA reverse output)

8 = 4A20 (Analog current 4 to 20 mA direct output)

9 = 20A4 (Analog current 4 to 20 mA reverse output)

10 = DIG (Analog as binary output)

AO2

ANALOG OUTPUT2 RANGE CONFIGURATION

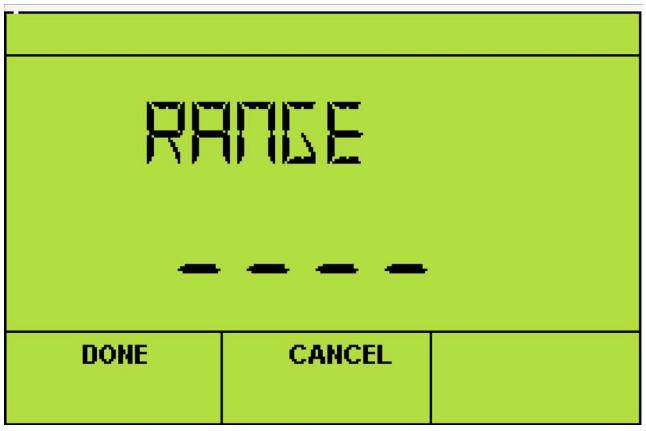

Fig. 120. Parameter AO2 Range.

RANGE: Displays and allows modification of analog output2 range. This can be changed as 0D10, 10D0, 2D10, 10D2, 0A20, 20A0, 0A22, 22A0, 4A20, 20A4, DIG, and UNDEFINED.

Parameter Default setting: 0D10

Configuration settings in program are as follows:

0 = 0D10 (Analog voltage 0 to 10VDC direct output)

1 = 10D0 (Analog voltage 0 to 10VDC reverse output)

2 = 2D10 (Analog voltage 2 to 10VDC direct output)

3 = 10D2 (Analog voltage 2 to 10VDC reverse output)

4 = 0A20 (Analog current 0 to 20 mA direct output)

5 = 20A0 (Analog current 0 to 20 mA reverse output)

6 = 0A22 (Analog current 0 to 22 mA direct output)

7 = 22A0 (Analog current 0 to 22 mA reverse output)

8 = 4A20 (Analog current 4 to 20 mA direct output),

9 = 20A4 (Analog current 4 to 20 mA reverse output)

10 = DIG (Analog as binary output)

Cnfg Out

CONFIGURATION OF VAV ANALOG AND DIGITAL OUTPUTS

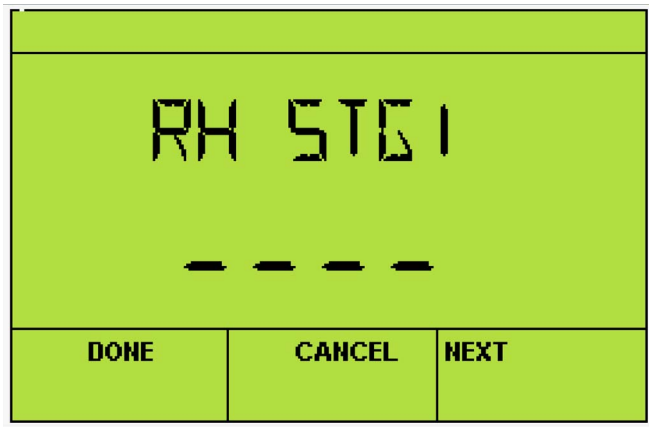

Fig. 121. Parameter Cnfg Out Rh Stg1.

RH STG1: Displays and allows modification of logical output configuration /terminal assignment for Reheat stage 1 Command. This can be changed as AO 1, AO 2, DO 1, DO 2, DO 3, DO 4 and UNDEFINED..

Parameter Default Setting: UNDEFINED

Configuration settings in program are as follows:

0 = AO 1

1 = AO 2

2 = DO 1

3 = DO 2

4 = DO 3

5 = DO 4

255 = UNDEFINED

Fig. 122. Parameter Cnfg Out Rh Stg2.

RH STG2: Displays and allows modification of logical output configuration /terminal assignment for Reheat stage 2 Command. This can be changed as AO 1, AO 2, DO 1, DO 2, DO 3, DO 4 and UNDEFINED.

Parameter Default Setting: UNDEFINED

Configuration settings in program are as follows:

0 = AO 1

1 = AO 2

2 = DO 1

3 = DO 2

4 = DO 3

5 = DO 4

255 = UNDEFINED

Fig. 123. Parameter Cnfg Out Rh Stg3.

RH STG3: Displays and allows modification of logical output configuration/terminal assignment for Reheat stage 3 Command. This can be changed as AO 1, AO 2, DO 1, DO 2, DO 3, DO 4 and UNDEFINED.

Parameter Default Setting: UNDEFINED

Configuration settings in program are as follows:

0 = AO 1

1 = AO 2

2 = DO 1

3 = DO 2

4 = DO 3

5 = DO 4

255 = UNDEFINED

Fig. 124. Parameter Cnfg Out Rh Mod.

RH MOD: Displays and allows modification of logical output configuration/terminal assignment for Reheat modulating output signal. This can be changed as AO 1, AO 2, FL 1, FL 2 and UNDEFINED.

Parameter Default Setting: UNDEFINED

Configuration settings in program are as follows:

0 = AO 1

1 = AO 2

6 = FL 1

7 = FL 2

255 = UNDEFINED

Fig. 125. Parameter Cnfg Out Prph Stg.

PRPH STG: Displays and allows modification of logical output configuration /terminal assignment for Peripheral stage command. This can be changed as AO 1, AO 2, DO 1, DO 2, DO 3, DO 4 and UNDEFINED.

Parameter Default Setting: UNDEFINED

Configuration settings in program are as follows:

0 = AO 1

1 = AO 2

2 = DO 1

3 = DO 2

4 = DO 3

5 = DO 4

255 = UNDEFINED

Fig. 126. Parameter Cnfg Out Prph Mod.

PRPH MOD: Displays and allows modification of logical output configuration /terminal assignment for Peripheral modulating output signal. This can be changed as AO 1, AO 2, FL 1, FL 2 and UNDEFINED.

Parameter Default Setting: UNDEFINED

Configuration settings in program are as follows:

0 = AO 1

1 = AO 2

6 = FL 1

7 = FL 2

255 = UNDEFINED

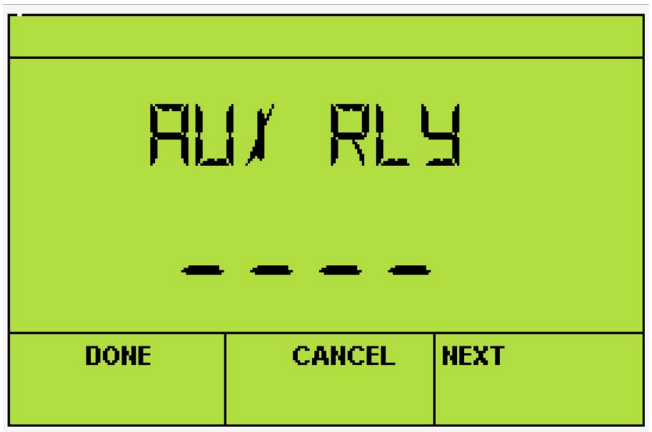

Fig. 127. Parameter Cnfg Out Aux Rly.

AUX RLY: Displays and allows modification of logical output configuration /terminal assignment for Auxiliary digital output. This output is active when the effective occupancy = Occupied.

This can be changed as AO 1, AO 2, DO 1, DO 2, DO 3, DO 4 and UNDEFINED.

Parameter Default Setting: UNDEFINED

Configuration settings in program are as follows:

0 = AO 1

1 = AO 2

2 = DO 1

3 = DO 2

4 = DO 3

5 = DO 4

255 = UNDEFINED

Fig. 128. Parameter Cnfg Out Auxp On.

AUXP ON: Displays and allows modification of logical output configuration /terminal assignment for Auxiliary pulse ON output. It is typically connected to a lighting relay. The output is pulsed when the effective occupancy changes to occupied.

This can be changed as AO 1, AO 2, DO 1, DO 2, DO 3, DO 4 and UNDEFINED.

Parameter Default Setting: UNDEFINED

Configuration settings in program are as follows:

0 = AO 1

1 = AO 2

2 = DO 1

3 = DO 2

4 = DO 3

5 = DO 4

255 = UNDEFINED

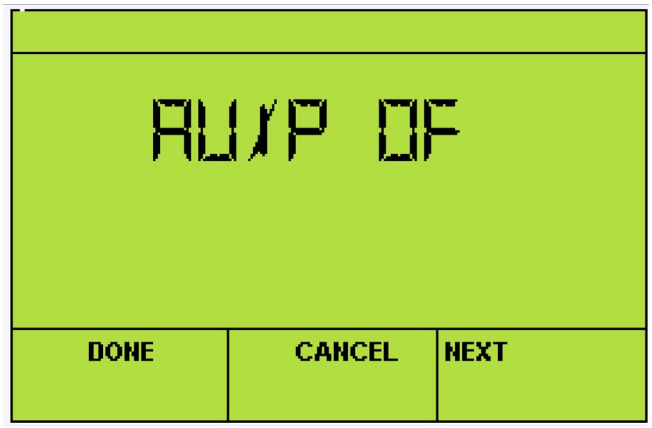

Fig. 129. Parameter Cnfg Out Auxp Of.

AUXP OF: Displays and allows modification of logical output configuration /terminal assignment for Auxiliary pulse OFF output. It is typically connected to a lighting relay. The output is pulsed when the effective occupancy changes to not occupied mode.

This can be changed as AO 1, AO 2, DO 1, DO 2, DO 3, DO 4 and UNDEFINED.

Parameter Default Setting: UNDEFINED

Configuration settings in program are as follows:

0 = AO 1

1 = AO 2

2 = DO 1

3 = DO 2

4 = DO 3

5 = DO 4

255 = UNDEFINED

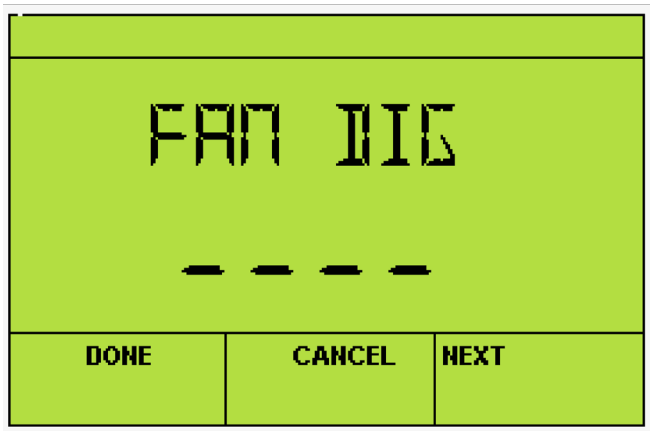

Fig. 130. Parameter Cnfg Out Fan Dig.

FAN DIG: Displays and allows modification of logical output configuration /terminal assignment for Fan start stop command.

This can be changed as AO 1, AO 2, DO 1, DO 2, DO 3, DO 4 and UNDEFINED.

Parameter Default Setting: UNDEFINED

Configuration settings in program are as follows:

0 = AO 1

1 = AO 2

2 = DO 1

3 = DO 2

4 = DO 3

5 = DO 4

255 = UNDEFINED

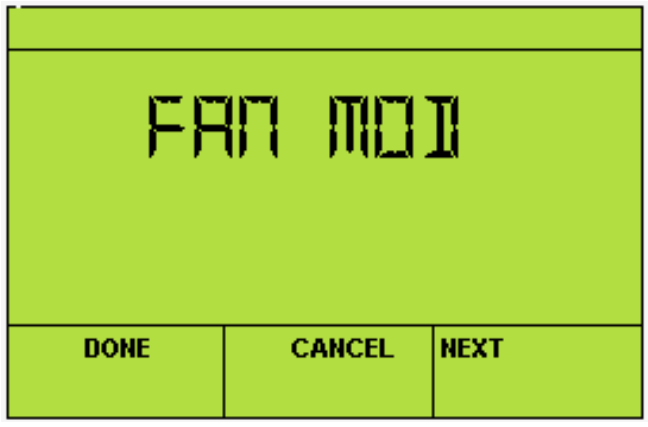

Fig. 131. Parameter Cnfg Out Fan Mod.

FAN MOD: Displays and allows modification of logical output configuration /terminal assignment for Fan modulating output signal. This can be changed as AO 1, AO 2, FL 1, FL 2 and UNDEFINED.

Output Type: PWM, Float, Analog current or voltage

Parameter Default Setting: UNDEFINED

Configuration settings in program are as follows:

0 = AO 1

1 = AO 2

6 = FL 1

7 = FL 2

255 = UNDEFINED

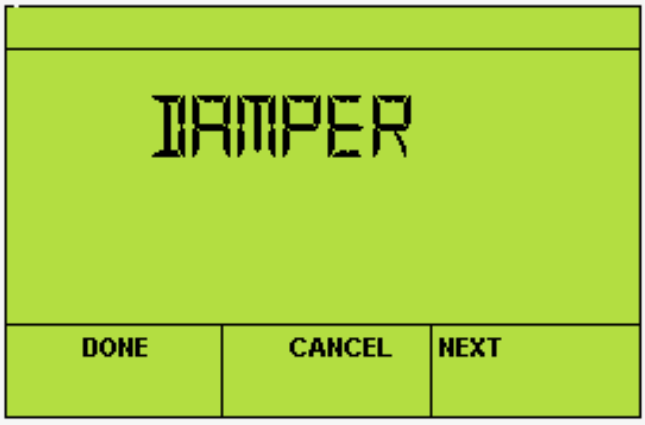

Fig. 132. Parameter Cnfg Out Damper.

DAMPER: Displays and allows modification of logical output configuration /terminal assignment for Damper modulating output signal. This can be changed as AO 1, AO 2, FL 1, FL 2 and UNDEFINED.

Output Type: PWM, Float, Analog current or voltage

Parameter Default Setting: UNDEFINED

Configuration settings in program are as follows:

0 = AO 1

1 = AO 2

6 = FL 1

7 = FL 2

255 = UNDEFINED

Fig. 133. Parameter Cnfg Out Wm Led.

WM LED: Displays and allows modification of logical output configuration /terminal assignment for Wall module Occupancy status LED output. This can be changed as AO 1, AO 2 and UNDEFINED.

Parameter Default Setting: UNDEFINED

Configuration settings in program are as follows:

8 = AO 1

9 = AO 2

255 = UNDEFINED

Time

VAV CONTROLLER TIME DISPLAY

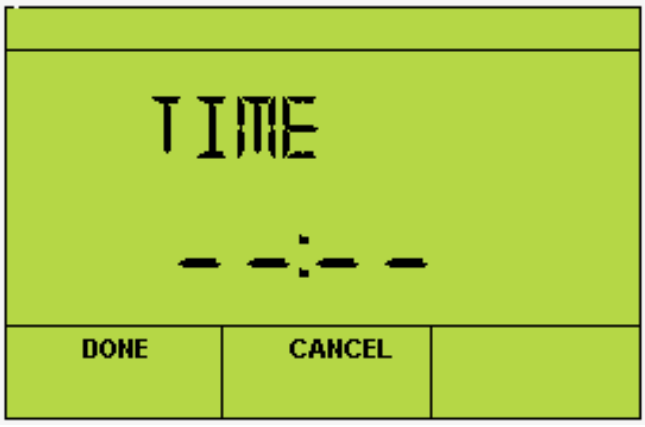

Fig. 134. Parameter Time Time.

TIME: Displays current time in HH MM format.

Set Time

VAV CONTROLLER TIME CONFIGURATION/SETTINGS

Fig. 135. Parameter Set Time Hours.

HOURS: Displays and allows modification of time in hours. Its value ranges from 1 to 12.

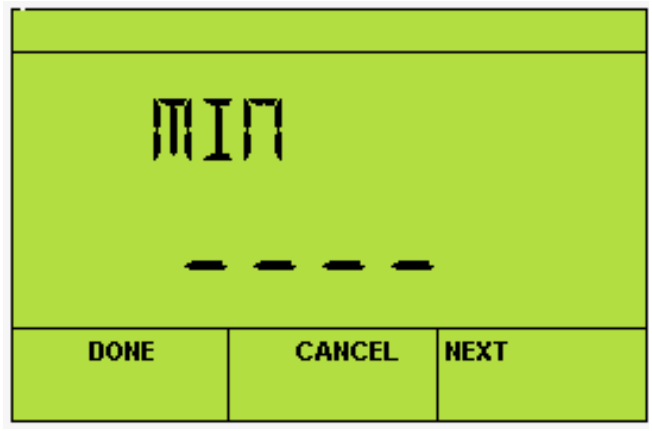

Fig. 136. Parameter Set Time Min.

MIN: Displays and allows modification of time in minutes. Its value ranges from 0 to 59.

Set Date

VAV CONTROLLER DATE CONFIGURATION/SETTINGS

Fig. 137. Parameter Set Date Year.

YEAR: Displays and allows modification of date in years. Its value ranges from 2008 to 2099.

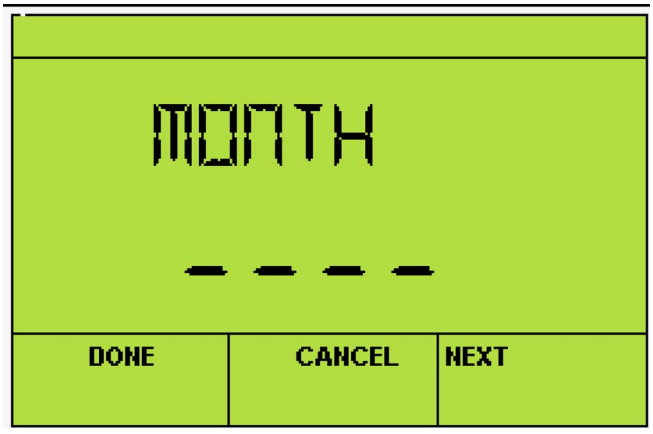

Fig. 138. Parameter Set Date Month.

MONTH: Displays and allows modification of date in months. Its value ranges from 0 to 12.

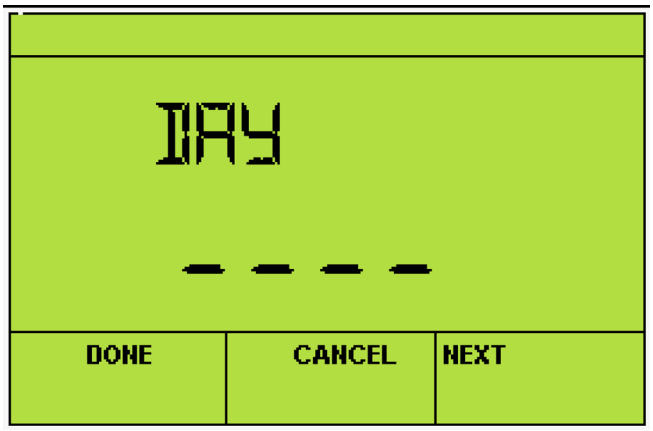

Fig. 139. Parameter Set Date Day.

DAY: Displays and allows modification of date in days. Its value ranges from 0 to 31.

Schedule

The Schedule option modifies the schedule day/holiday and event time. The desired scheduling option (8 day, 7 days etc.) is setup in the Configuration Wizard (refer 63–2719: LCD Wall Module Wall Operating Guide). The option screens vary, based on the selected option.

Use the following steps to view/edit a schedule. User can use the steps to view/edit a schedule for Monday and similarly for Saturday and holiday.

Step 1: To access schedule parameter group, refer to “Parameters” on page 22.

Fig. 140. Parameter Schedule.

Step 2: Use the EDIT soft key to access Monday schedule screen.

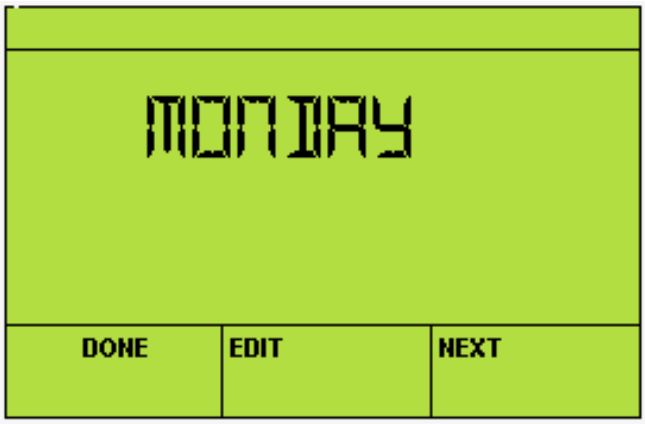

Fig. 141. Parameter Schedule Monday.

Step 3: Use the EDIT soft key to access Monday Event 1 screen.

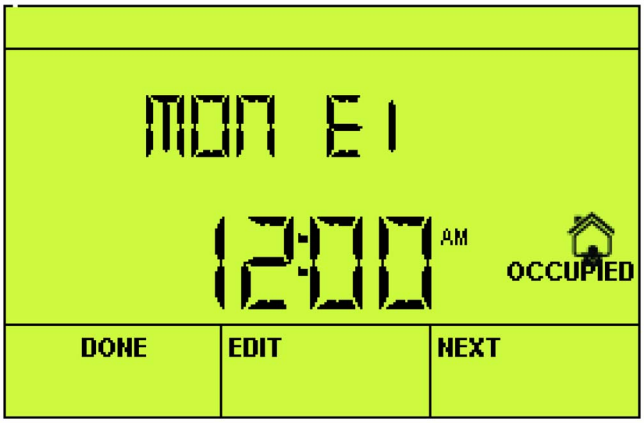

Fig. 142. Parameter Schedule Monday Mon E1.

Click the EDIT soft key to change the time and occupancy state for this event.

1. Use the up/down arrows to change the time.
2. When editing an event, use the NEXT soft key to toggle between editing the time and changing the occupancy state (i.e. OCC/UNOCC/STANDBY).
3. Use the up/down arrows to change occupancy state.
4. Click DONE soft key to apply changed time and occupancy state settings.
5. Click CANCEL soft key to exit the MON E1 screen display without saving any changes.
6. Click NEXT and follow above mentioned steps (Step 1 to step 6), to view or edit next three events i.e. MON E2, MON E3, and MON E4.

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 to 12:00, the time will change to four dashes (- - - -). Press the DONE soft key at this point to remove a programmed event.

In the 5-2 or 5-2-1 schedule options:
- “5” means Monday to Friday, and Monday’s events are shown on the Zio.
- “2” means Saturday and Sunday, and Saturday’s events are shown on the Zio.
- “1” means holiday.

When Monday is changed, the TR75 copies that event to Tuesday to Friday and update this schedule into the controller for Monday through Friday. The same schedule occurs for Saturday and Sunday when a change is made on Saturday. When a holiday is modified, it is also updated into the controller.

TENANT MODE: INTRODUCTION

The tenant can change/view following features using the soft keys and arrow keys.

1. Initiate Override
   The tenant can change the occupancy override parameter to occupied, unoccupied, or standby. The override can be timed in minutes, days, or be continuous.
2. View More

NOTE: The parameters/in home screen’s in the Tenant view/adjust mode are for reference only and may change as per configuration done in the contractor mode

TENANT MODE: VIEW STEPS

Tenant mode default home screen is as shown in Fig. 143 for reference.

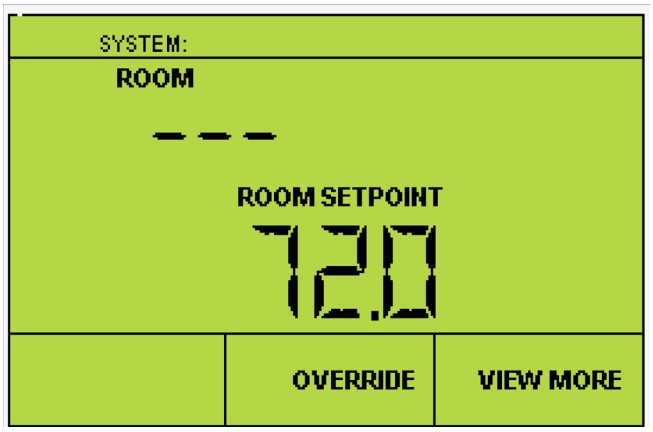

Fig. 143. Tenant Mode Home Screen.

NOTE: Tenant mode default home screen may be any one of the above mentioned home screens, set by the contractor. Refer to “Set Home Screen” on page 19.

HOME SCREEN label: ROOM

Description: Displays system status and room temperature.

By referring to Fig. 143, Tenant mode home screen, the two soft keys on the Tenant home screen provide following options which are explained in detail below:

1. Override
2. View More

NOTES:
1. The override settings are optional for home screen setup.
2. If the system command option is not enabled, then the SYSTEM soft key does not display on the tenant’s home screen.
3. If there are no parameters configured for tenant’s access, the VIEW MORE soft key does not display on the tenant’s home screen.

Override

Override allows the tenant to override the occupancy settings (see Fig. 144).

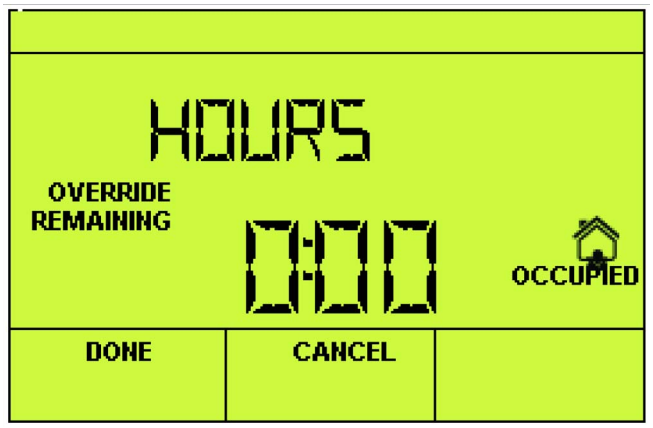

Fig. 144. Tenant Override.

Description: Override is used to make VAV ON before or after an occupied schedule or time. Override remaining shows duration left (in hours and minutes) for the override.

For example, if occupied duration is 9:00 AM to 6:00 PM and override operation is configured for one hour, at 6.35 PM, override remaining will be 0:25 i.e. 25 minutes

- Depending on the occupancy/override configuration, each click on the OVERRIDE soft key changes the occupancy icon displays between STANDBY, OCCUPIED, and UNOCCUPIED.
- If an override is set by the tenant, the OVERRIDE soft key changes to CANCEL OVERRIDE.
- Click the CANCEL OVERRIDE soft key to cancel the override.

View More

Click the view more key to view/adjust configured parameters

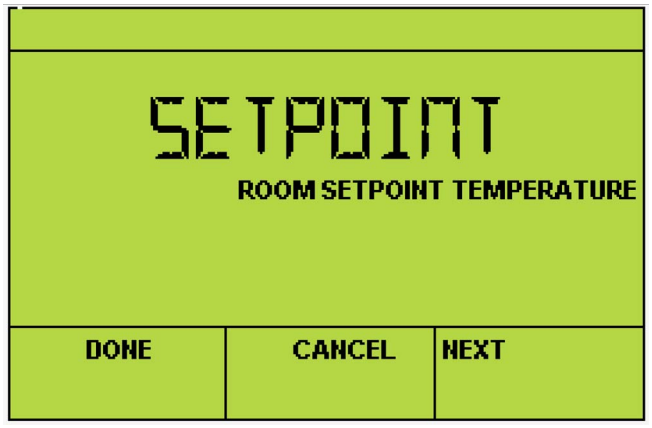

Fig. 145. Parameter Temp Sp Setpoint.

SETPOINT: Displays and allows modification of centre setpoint read from wall module. Its value ranges from CNTSP LO to CNTSP HI.

- If the contractor enables tenants access to a parameter, then the tenant can use the up and down arrow keys to adjust the parameter's value, else the tenant is able to only view the parameter and its value.
- Use the UP/DOWN arrow keys on Zio module to increase or decrease the value or state for tenant adjustable parameters.
- Click DONE soft key to save configuration changes.
- Click the CANCEL soft key to exit the display without saving any changes
- Click VIEW MORE soft key to display each viewable parameter.

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.

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