Zonex VRF-VAV

PROVIDING THE BENEFITS OF VAV WITH THE EFFICIENCY OF VRF TECHNOLOGY

NETWORK ALL YOUR HVAC EQUIPMENT

Monitor, update and control System Information from the mobile app Centralized DDC Communications for VRF-VAV Systems





ZONEX SYSTEMS PATENT PENDING 800-228-2966

INSTALLATION AND APPLICATIONS MANUAL

PART # GENXVMAN Dec 2021



Providing VAV system control to VRF Equipment with VRF-VAV

VRF-VAV is an innovative concept in air delivery providing the benefits of **VAV** with the efficiency of **VRF** technology using pressure independent self-balancing **Smart Air Valves (SAVs)** to enhance VRF operation. VRF-VAV eliminates multiple indoor units, refrigerant lines, condensate lines, electrical runs and more to simplify and streamline VRF installations and operation.

Zonex Smart Air Valves **(SAV)** control an indoor fan coil's air flow while respective VRF manufacturer's outdoor and indoor units control and manage the refrigerant flows.

The Zonex system is controlled by the **GEN XV** controller, with a free mobile app that provides remote internet access and control of all fan coils, SAVs, thermostats, generic loads, accessed onsite or remotely over the internet from ANYWHERE.

The **GEN XV** controller communicates with the indoor unit or fan coil through the VRF manufacturer's 24V thermostat interface. This interface accepts standard thermostat inputs, which reside on the **GEN XV** controller, and converts standard 24V legacy connections through the VRF interface to provide VRF protocol from the information the Zonex system reports and instructs the fan coil to initiate.

This operation does not alter in any way how the VRF System operates - this is important to understand as VRF System maintains internal operations and communications as designed from the manufacturer. Smart Air Valves do not generate excess air and the air velocity controls the fan, eliminating the need for a bypass damper.

GEN XV controls 2-20 independent **Smart Air Valves (SAV)** per fan coil. SAVs intelligently operate like an indoor unit without affecting VRF operation. **GEN X RMV** controllers are used to expand the system to control multiple zoned or stand alone fan coils remotely. **GEN XV** can support up to 20 **RMV** expansion controllers providing control of up to 400 units, **SAV** or other control points. The **GEN XV** controller is designed for Auto Changeover, VAV operation.

This is an exciting system, truly innovative and game changing for the VRF market. Enabling the engineer or contractor to reduce costs, adhere to Code Requirements, and provide greater comfort and efficiency using the Zonex VRF - VAV System to simplify and streamline VRF installation while reducing ongoing maintenance and enhancing operation.





GEN XV

GEN XV is a VRF-VAV system controlling 2-20 Smart Air Valves (SAV) per VRF air handler using Zonex EzTouchXs and Smart Air Valves to communicate remotely over the Internet with our Gen X moblie App from any Apple or Android device or Webportal from ANYWHERE. GEN X RMV controllers are used to expand your system to control multiple zones remotely. GEN XV can support up to 20 GEN X RMV expansion controllers providing control of up to 400 Smart Air Valves or other control points in your system, seamlessly accessed via the App or any browser from the end user interface.

The GEN XV controller is designed for Auto Changeover, VAV operation for VRF applications.

The GEN X mobile App allows for a wide range of system control and changeover strategies, allowing the contractor to tailor the GEN XV system to a specific application, remotely or on-site.

Additional features include LED status indication of all system functions, digital leaving air temperature, return air temperature and outside air temperature display, fully adjustable capacity control with on-board limit settings. Morning warm up, email/app notification alerts, and priority votes features are also included. An integrated clock allows for setup, night setback, vacation scheduling, globally or individually for each zone thermostat, with selectable 2 to 8 hour override, and the ability to remotely lock each thermostat in the system. Additionally a unique system tool provides the installing contractor with a simple startup diagnostic to quickly alert and identify any system wiring errors, all from the palm of your hand using the GEN X mobile App.

GEN XV is recognized as the industry's easiest VRF zone control system to install and wire. The GEN XV system operates over a plenum rated three wire data link, along with two 24VAC power wires daisy chained from SAV to SAV and thermostat to thermostat with no home run wiring required. Communication and configuration is done through the GEN X mobile App.



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QUICK START AND COMMISSIONING

Wiring and Installation

- 1. Install GEN XV controller inside the conditioned space, in a area that is easily accessible.
- 2. Install an Independent 24VAC 100VA transformer, wire the secondary 24VAC output to the TR1 and TR2 (IN) bottom terminal on the GEN XV controller. **Do not ground out the transformer.**
- 3. Install the Leaving air sensor (LV Air) in the supply duct before the 1st supply take off. Wire the Leaving air sensor to the LV Air terminals on the GEN XV controller. Install Return air sensor (RA) in the return duct. Wire Return air sensor to the RA terminals. (May extend sensor wire using 18/2 thermostat wiring.) (See page 24)
- 4. Install Smart Air Valves, 3 feet off the plenum.
- 5. Wire TR1 and TR2 (OUT) top terminal from the GEN XV controller to the first SAV board TR1 and TR2 using 18/2 thermostat wire. (See page 23) Continue daisy chaining TR1 and TR2 on the SAV board to the next SAV board until the last SAV board in the system. Make sure TR1 and TR2 polarity is consistent throughout the system. Continue daisy chaining TR1 and TR2 on the last SAV board to the next EzTouchX until the last EzTouchX in the system.
- 6. Wire A and B terminal from the GEN XV controller using Zonex 2 wire plenum rated twisted pair wire (Part #STPR) to the first SAV board A and B. (See page 23) Continue daisy chaining A and B on the SAV board to the next SAV board until the last SAV board in the system. Continue daisy chaining A and B on the last SAV board to the first EzTouchX and to the next EzTouchX until the last EzTouchX in the system.





7. Turn ON the GEN XV controller, confirm that the GEN XV, EzTouchX's and Smart Air Valves are powered. A Blue Light on the GEN XV controller indicates it is powered. If you do not have a blue power light confirm power at the transformer and check TR1 and TR2 wiring.

Configuring Thermostat ID's

8. Every thermostat in the system needs a unique ID ranging from 1-20. They must be in numerical order the way the communication wire is daisy chained. Confirm no duplicate addresses.

To set the stat's ID access the Advanced Configuration menu by tapping on the degree symbol next to the room temp •. The degree symbol will change from white to green and then tap

Once in the Thermostat Advanced Menu, Select SET ID

Use the \land and \checkmark arrows and set the new ID ranging from 1-20

Tap 😰 to save changes, to return to the home screen tap 🎧

(Repeat the steps above, All stats are ID'ed as 001 to 020, maximum of 20 zones on each GEN X / GEN X RM system.)

9. If GEN X RMV's are being installed to support additional HVAC units see page 27. If not skip this step.

Select Damper Type Operation

10. The EzTouchX needs to be configured for the type of damper that it is wired to. There are 4 options, round, rectangular, spring loaded or vrf.

To set the damper type access the Advanced Configuration menu by tapping on the degree symbol next to the room temp •. The degree symbol will change from white to green and then tap

While in Thermostat Configuration Menu, Select Damper Type

Select vrf damper operation

Tap \blacksquare to save changes, to return to the home screen tap \square

Connecting to the GEN XV controller via the Mobile App

- 11. Download the GEN X mobile App from the Google Play or Apple App store and install it on your mobile device.
- 12. Connect the GEN XV to the building's Local Area Network (LAN)(Router or Switch) with an Ethernet cable. If a wired network connection is not available, **please go to page 52** for direct wireless connection to the GEN XV using your mobile device.
- 13. Connect your mobile device via Wi-Fi to the same network the GEN XV is connected. You may need to get the SSID/network name and password from the network administrator or IT personnel.
- 14. Open the GEN X mobile App and Tap **Scan LAN for GEN X**. Once the scan is complete, **Tap Select Local GEN X** at the top of the screen. A drop down menu will appear allowing you to select a GEN XV controller. If more than one is displayed, Tap the system you want to connect to.

System Configuration

- 15. Tap 🔅 for System Configuration Menu; scroll down to **Configure # of Thermostats** and indicate how many thermostats are wired to the GEN XV controller.(See page 35)
- 16. Tap **System Diagnostic**, confirm Leaving Air, Return Air, and Outdoor Air are reading temperatures. Also confirm under Thermostat Status that all Zones are Active.
- 17. In System Configuration, choose Unit Type. Select VRF
- 18. While still in System Configuration, choose Fan Mode. Select ON
- 19. See System Configuration Menu on page 55 to further configure the GEN XV controller.
- 20. Scroll to Zone Overview and select, all zones should be showing room temperatures.

Pairing the Smart Air Valve (SAV) to its Thermostat

- 21. Tap = for Zone Overview, Tap on Zone #1 and adjust Heat temperature to 60° and Cool temperature to 95°. return to the Zone Overview and confirm Zone #1 occupied Heat/Cool is set for 60° / 95°. This will send a command for pairing to all SAV boards. All SAV boards blue lights will be flashing.
- 22. Locate the SAV board that will be paired to the EzTouchX addressed as #1. When the blue light is flashing, Press and Hold the pairing button on the SAV board for 15 seconds. The pairing is complete when the blue light stops flashing.
- 23. Once the pairing is complete, adjust the Heat/Cool setting on Zone #1 back to 70° Heat and 75° Cool. Tap for Zone Overview and confirm Zone #1 occupied Heat/Cool is set for 70° / 75°.
- 24. Repeat the steps above increasing one zone # at a time till all SAV boards are paired to their EzTouchX's.
- 25. Wire the GEN XV controller to the manufacturers VRF interface controller.
- 26. Tap on Zone Overview all zones should be showing room temperatures. Tap any zone to change set point for Heating and Cooling. See page 10 on how to use the App. Adjust your cool set point and Tap = at the top of the App. This will take you back to the Zone Overview screen. The zone room temperature should show in blue and the GEN XV controller should be energized G (Green) and Y1 (Yellow) lights confirming cool call operation. Satisfy all zones calling for cooling and repeat the steps above for a heat call and confirm W1 (Red) light.





MOBILE APP OVERVIEW

The Zonex App gives you direct access and control to every thermostat connected to the GEN XV system.

These Menu shortcuts at the top of the screen allow you to quickly navigate the GEN X App.

- 🚍 Overview Screen
- 🗘 System Configuration Menu
- 📅 Schedule/Calendar
- Extended Menu Options

The Overview Screen provides a quick look at all temperatures in your system, current calls for heat or cool along with listing the occupied and unoccupied set points.

Tap the \blacksquare icon to access the Overview screen which displays the following:

- 1. Zone number
- 2. Zone name
- 3. Current room temperature of each thermostat
 - Note: Room temperatures displayed in Blue are calling for cooling or Red if the zone is calling for heat. A flashing room temperature indicates a call that has not yet been addressed. Room temperatures in black are zones that have been satisfied.
- 4. Occupied Heat / Cool set points. (Bold temperatures indicate current mode).
- 5. Unoccupied Heat / Cool set points. (Bold temperatures indicate current mode).

Tap any thermostat to make an individual or global temperature set point change.

Familiarize yourself with the thermostat features and simple operation:





System Diagnostic screen provides an overview of the system's current conditions. Tap the 🌣 icon and then locate and tap **System Diagnostic** to view the following information:

- 1. The number of thermostats in the system
- 2. Leaving, Return and Outside air temperatures
- 3. Main system status: displays current operation, either Cool, Heat, Vent mode or Changeover
- 4. Number of heating and/or cooling calls.
 - **Note:** GEN XV is a vote based auto changeover system that polls each thermostat every 60 seconds to determine if a zone requires cooling, heating or no calls. System operates on a first call, first served majority wins on changeover strategy. If the system counts more heating than cooling votes then the system will operate in the heating mode, until it detects a majority of cooling votes, at which time it will initiate a changeover cycle, energize the compressor and cooling.
- 5. Thermostat status: indicates if each thermostat is active (wired and communicating properly with the system),and reports any wiring errors in the system.

The App is a great tool to diagnose and / or avoid potential problems with your system.



Schedule/Calendar is used to schedule occupied or unoccupied periods individually or globally for each thermostat and vacation days.

Tap the 🛗 icon to configure the following:

- 1. Select 5-1-1 (Mon Fri, Sat Sun), 7 day operation or 24/7 operation
- 2. Set Daily schedule
- 2. Set 2nd Daily schedule (optional)
- 3. Set vacation schedules
- 4. Enable vacation schedules

The **Extended Menu** provides shortcut access to the following, by tapping on the **i** icon:

- 1. System diagnostics
- 2. Log out of Account
- 3. Change RM/GEN X (same system)
- 4. Change RM/GEN X (separate system)
- 6. Exit the App

This App provides direct system access, either on-site or remotely, putting control right in the palm of your hand. For more detailed information and operating instructions explore this GEN XV manual.





Part # - GEN XV Mobile App Included

1- Per VRF Coil or VRF RTU Supports 2 - 20 Smart Air Valves (SAV) *Requires manufacturer's thermostat interface

Add Part # GEN XRMV to expand your GEN XV system by adding GEN XRMV controller for each additional fan coil.

(Each GEN X RMV supports 2-20 Smart Air Valve (SAV))

Daisy Chain: Zonex communications wire and 24VAC from SAV to SAV and Stat to Stat 1-24VAC / 100VA Transformer Powers the GEN XV, All the SAV's, and Thermostats in the system Each GEN XRMV expansion controller requires an additional transformer to support up to 20 Smart Air Valves

Add Part # RLYX to energize up to 5 generic loads such as fans, pumps, blowers and lighting

Zone Thermostat

Part # - EzTouchX

1 - Thermostat per Smart Air Valve (SAV)

Smart Air Valves (SAV)

<u>Part #</u>

SAV + Damper Size - Round

SAV WxH - Rectangular

Thermostat to Control Standalone VRF's

Part # - SATouchX*

Controls and Networks Standalone VRF systems with SA / RA reporting from the mobile app *Requires manufacturer's thermostat interface

THIS COMPLETES YOUR GEN XV SYSTEM

For assistance, contact Zonex at (800) 228-2966 or visit <u>zonexproducts.com</u> for more information



GEN XV / GEN X RMV

Vote Based Auto Changeover with Programmable Thermostats Accessed Remotely or On-site from a Phone, Mobile Device or Web Browser

GENERAL OPERATION

Zonex Systems VRF-VAV System enhances VRF operations by providing engineers, contractors and building owners a means to maximize system efficiency, reduce installation costs, and provide greater comfort to individual zones within a building. This system allows for up to 20 Smart Air Valves (SAV) to be connected to a VRF Fan Coil, and uses VRF Manufacturers Legacy Interface to place calls for heating, cooling, or ventilation without compromising VRF operations or logic.

The GEN XV system is an auto changeover, vote based VAV system. As thermostats call for heating or cooling, votes are tallied by the GEN XV controller. Each minute the GEN XV controller will poll all thermostats to determine majority vote and initiate call for Heat, Cool, or if no votes for heating or cooling are present - VENT modes of operation. If voting majority switches for Heat to Cool or vice versa, GEN XV controller will initiate a changeover sequence shutting down current mode of operation, performing a time delay and after delay, energize majority call to meet current majority demand.

System configuration, remote and onsite monitoring and system adjustments are performed via the Zonex GEN XV mobile App. Mobile App allows for system configuration, scheduling, set point changes, and monitoring from mobile devices. This includes alarming and alerts via app notifications and/or email and provides accessibility to VRF-VAV system operation at any time day or night.

Cool Call

Each SAV is controlled via a EzTouchX that monitors zone temperature. When zone temperature rises 1° above EzTouchX cooling set point, a EzTouchX will call for cooling. On the next poll of the GEN XV controller, this vote will be counted and if there is a single vote or majority vote for cooling, GEN XV controller will initiate cooling call.

Once cooling call is initiated, GEN XV controller will energize 24 volt legacy outputs to VRF 24 volt interface (Interface Is VRF Manufacturer Specific). Y will be energized for cooling operations, and VRF interface will convert 24 volt input and forward this call for cooling to VRF Air Handler. VRF Air Handler then uses proprietary logic to provide cooling call to VRF outdoor unit. VRF Air Handler will automatically set fan speed, enable compressor operations, and allow superheat to be communicated to outdoor unit to maximize efficiency and provide desired comfort.

GEN XV controller sends operational mode (heat or cool) all SAV devices connected VRF air handler and SAV dampers calling for cooling use smart SAV technology to adjust damper position and provide targeted airflow. Airflow design vary based on the size of SAV damper, see sizing and engineering charts for airflow information. SAV controller monitors air velocity continuously to automatically reposition SAV and provide targeted CFM to zone. Once room temperature has lowered to set point, EzTouchX ends call for cooling and on the next poll of GEN XV this vote will be removed from tally. If other cooling calls remain in the majority, cooling call will remain in the system, satisfied SAV will reset to a VENT position, while other calling SAVs will continue to maintain targeted air flows. VENT CFM position is set by SAV controller. During this time, a reduced amount of cool air will enter zone to assist in maintaining room temperature. If room temperature falls 2° below cooling set point, SAV will fully close or drive to its minimum position.

Heating

Each SAV is controlled via a EzTouchX that monitors zone temperature. When zone temperature falls 1° below EzTouchX heating set point, a EzTouchX will call for heating. On the next poll of the GEN XV controller, this vote will be counted and if there is a single vote or majority vote for heating, GEN XV controller will initiate heating call.

GEN XV / GEN X RMV

Once heating call is initiated, GEN XV controller will energize 24 volt legacy outputs to VRF 24 volt interface (Interface Is VRF Manufacturer Specific). W will be energized for heat operations. VRF interface will convert 24 volt input and forward this call for heating to VRF Air Handler. VRF Air Handler then uses proprietary logic to provide heating. VRF Air Handler will automatically set fan speed, enable heating operations and allow Electronic Expansion Valve to communicate with outdoor unit to maximize efficiency and provide desired comfort.

GEN XV controller sends operational mode to all SAV devices connected VRF air handler and SAV dampers calling for heating use smart SAV technology to adjust damper position and provide targeted airflow. Airflow design vary based on the size of SAV damper, see sizing and engineering charts for airflow information. SAV controller monitors air velocity continuously to automatically reposition SAV and provide targeted CFM to zone. Once room temperature has risen to set point, EzTouchX ends call for heating and on the next poll of GEN XV this vote will be removed from tally. If other heating calls remain in the majority, heating call will remain in the system, satisfied SAV will reset to a VENT position, while other calling SAVs will continue to maintain targeted air flows. VENT CFM position is set by SAV controller. During this time, a reduced amount of heated air will enter zone to assist in maintaining room temperature. If room temperature rises 2° above heating set point, SAV will fully close or drive to its minimum position.

High/Low Limit protection is built into the GEN XV controller. If during a heating or cooling call the discharge air temperature rises above or drops below the adjustable high/low limit, configured via the Zonex Mobile App, the GEN XV controller will turn off heating or cooling for 4 minutes, continue to run G – Fan. After 4 minutes GEN XV controller will evaluate discharge air temperature and if it has reduced below high limit or risen above low limit the controller will energize the heating or cooling if calls still exist.

Each EzTouchX has the ability to control auxiliary heating devices such as reheat or baseboard heat. Auxiliary heat is configured via the Zonex Mobile App. If there is a cool call, heat call, or the VRF system is a cooling only unit, the EzTouchX will energize AUX heat outputs if the zone temperature drops 2° below heat set point. If the EzTouchX is configured for reheat, SAV will position damper to provide airflow over electric strip heat, hot water coil or other heating element.

Changeover

VRF-VAV operating strategy is based on auto changeover majority vote first call first served system. GEN XV controller polls all associated EzTouchXs each minute to tally calls for cooling and heating. If the majority of calls are for cooling, the system will operate in cooling mode. If the majority of calls are for heating, the system will operate in heating mode.

If the system is operating in cooling and after system poll a majority of EzTouchXs are calling for heating, GEN XV will initiate a changeover strategy allowing cooling to run for an additional 3 -20 minutes (Configured via the Zonex Mobile App), shut down cooling operations and then run a 3 minute time delay to protect equipment. At the end of the time delay, GEN XV will initiate Heat operations.

If the system is operating in heating and after system poll a majority of EzTouchXs are calling for cooling, GEN XV will initiate a changeover strategy allowing heating to run for an additional 3 -20 minutes (Configured via the Zonex Mobile App), shut down heating operations and then run a 3 minute time delay to protect equipment. At the end of the time delay, GEN XV will initiate cool operations.

All Calls Satisfied

When all calls for cooling and heating are satisfied EzTouchX will operate in Vent Mode. Outputs for cooling and heating are de-energized and if GEN XV controller is configured for Fan On - Continuous, VRF Air Handler blower will be operational during Occupied times and ventilation air will be provided to all zones. If GEN XV controller is configured for FAN Intermittent, Air Handler blower will shut down.



ZONEX



GEN XV VRF-VAV with Smart Air Valves

Schematic Overview

GEN XV



The GEN XV is a micro-controller based, auto changeover Heat Pump, Cooling only or Gas / Electric only system controller (Part # GEN XV). The GEN XV controls zoned VRF unit and communicates with and supports up to 20 zones per air handler, utilizing Smart Air Valves (SAV) and zone thermostats. The GEN XV gathers information every 60 seconds from each EzTouchX and communicates with the system over a 2-wire plenum rated twisted pair data link directing

control based decisions to the HVAC equipment. The GEN XV is powered with one 24VAC 100VA transformer, which also powers all EzTouchXs and SAVs in the system. Power from the controller, along with a 2-wire communications loop, is daisy chained SAV to SAV and then EzTouchX to EzTouchX to streamline installation and system communications. Auto changeover operation is vote based, predicated on a first call, first served majority wins on changeover algorithm. Additional control strategies are established with your mobile device using the GEN X mobile App which initiates control decisions remotely or on-site with the GEN XV system controller. Time and Date from the phone or mobile device will automatically update on the GEN XV when you log in over the local area network (LAN) via the mobile app. Review controller terminal connections below:



- A. On /Off Power Switch
- **B.** Communication link LED
- C. Unit Status Lights
- D. 24VAC IN (Bottom Terminal) to power the GEN X board (Independent 24VAC /100VA Transformer) J. Outside Air Sensor (OA)
- E. 24VAC OUT (Top Terminal) daisy chained out to zone thermostats
- F. Unit Terminals to Manufacturers Interface

- G. A/B 2 wire communication link, daisy chained OUT to zone thermostats and GEN X RM (if utilized)
- H. Return Air Sensor (RA)
- I. Leaving Air Sensor (LVAIR)
- K. Automated Demand Response (ADR)
- L. Fault Detection Device (FDD)
- M. Network Connection

GENXRMVCONTROLLER Controller Description



The GEN X RMV is a micro-controller based, auto changeover Heat Pump, Cooling only or Gas / Electric system controller (Part **# GEN X RMV**), designed to work with the GEN XV controller to provide expansion capability to support additional zoned or stand alone fan coils. The **GEN X RMV** controls a zoned VRF air handler and communicates with and supports up to 20 zones, utilizing Smart Air Valves (SAV) and EzTouchXs. The **GEN X RMV** gathers information every 60 seconds from

each EzTouchX and communicates with the system over a 2-wire data link directing control based decisions to the HVAC equipment. The *GEN X RMV* is powered with one 24VAC 100VA transformer, which also powers all thermostats and dampers in the system. Power from the controller, along with a plenum rated 2-wire twisted pair communications loop, is daisy chained SAV to SAV and then EzTouchX to EzTouchX to streamline installation and system communications. Auto changeover operation is vote based, predicated on a first call, first served majority wins on changeover algorithm. Additional control strategies are established with your mobile device using the GEN X mobile app which initiates control decisions with the *GEN X RMV* controller. Review controller terminal connections below:



- A. On /Off Switch
- B. 24VAC IN to power the GEN X RM board (Independent 24VAC /100VA Transformer)
- C. 24VAC OUT daisy chained out to zone thermostat
- D. Return Air Sensor (RA)
- E. Leaving Air Sensor (LVAIR)
- F. Fault Detection Device (FDD)
- G. Unit Terminals to Manufacturers Interface
- H. Communication link LED / Unit Status Lights

- I. Sync Button
- J. A2/B2 2 wire communication link, daisy chained OUT to zone thermostats
- K. A2/B2 2 wire communication link, daisy chained OUT to zone thermostats
- L. A1/B1 2 wire communication link, daisy chained OUT from GEN X RM to GEN X RM or RLYX
- M. A1/B1 2 wire communication link, daisy chained IN from GEN X or GEN X RM

SMART AIR VALVE (SAV)



The Smart Air Valve (SAV) is a pressure independent self-balancing damper. This SAV works in conjunction with a VRF system to provide multiple zone control for individual air handlers within a VRF System. Smart Air Valve provide different air flow volumes depending on zone temperature demand and thermostat requirements. SAV's use pitot tubes to establish air flow velocity and set damper position to deliver designed air flow for High Position - Active Call for HEAT or COOL, or VENT/LOW position when zone call is satisfied.

Smart Air Valves are factory set for design velocity and CFM and automatically self balance to deliver design CFM to each zone. SAV's use pitot tubes to constantly measure velocity and make adjustments to valve positions as needed do to changes in system static pressure to provide consistent air flow levels to zones requiring conditioning. As room temperature approaches thermostat set points, the SAV will reset valve position to VENT/LOW and remove call for HEAT or COOL from system tally, this will allow for conditioned air at a lower volume to assist in maintaining comfort in the zone and avoid ON/OFF operations of the VRF system.



- A SP_GND voltage set point / test point
- B SP_VENT voltage set point / test point
- C SP_HEAT voltage set point / test point
- D SP_COOL voltage set point / test point
- E SYNC BUTTON used to sync to thermostat
- F "SV" SENSOR VOLTAGE test point
- G- A/B (IN) 2-wire communication link daisy chained out to the next SAV board
- H- A/B (OUT) 2-wire communication link daisy chained into SAV board
- I MC/RO/RC Factory wired to the damper actuator runs open, runs closed

- J RUN CLOSED RED LED indicates the SAV is being powered closed
- K COMM LINK BLUE LED indicates communication to the GEN XV and thermostat
- L RUN OPEN GREEN LED indicates the SAV is being powered open
- M TOTAL STATIC PRESSURE TUBE
- N STATIC PRESSURE TUBE
- O TR1/ TR2 24VAC (IN) daisy chained in to the SAV board
- P TR1/TR2 24VAC (OUT) daisy chained out to the next SAV board
- Q NOT USED on GEN XV system

RLYX CONTROLLER



The RLYX is a communicating device equipped with 5 SPST relay terminals switched between a single Common terminal (NOT as dry contacts independent from each other). The RLYX can be used to control loads such as fans, pumps, blowers, lighting, or any load that can be operated using low voltage signals of 24VAC or less. When a relay is energized a circuit is completed between Common and the corresponding relay terminal (i.e. Common and R1, Common and R2 and so

on). Status of the relays are displayed as either ON or OFF under the Zone Overview or System Diagnostics screens of the GEN X App and LED indicators on the RLYX board. Relays will energize in the Occupied mode and de-energize in the Unoccupied mode. One Occupied and one Unoccupied event can be scheduled per day for each relay/load on either a daily basis or on 5-1-1 basis (Mon-Fri, Sat-Sun). Each relay terminal on the RLYX can be configured with its own independent schedule tailored to the needs of each load. The RLYX can also be configured with Vacation Schedules for holidays or other special events when the building will be Unoccupied during the regular schedule. If more than five loads are to be controlled then additional RLYX's will be required. The GEN XV can support up to twenty RLYX and/or GEN X RMV controllers, if the application requires more than twenty RLYX and/or GEN X RMV controllers then additional GEN XV's will be required.



- A. On /Off Switch
- B. 24VAC IN to power the RLYX board (Independent 24VAC /40VA Transformer)
- C. Not Used
- D. Not Used
- E. Not Used
- F. Load Terminals
- G. Communication link LED / Relay Status Lights

- H. Sync Button
- I. Not Used
- J. Not Used
- K. A1/B1 2 wire communication link, daisy chained OUT from RLYX to GEN X RM or RLYX
- L. A1/B1 2 wire communication link, daisy chained IN from GEN X or GEN X RM

*Board Relays are Pilot Duty

ZONE THERMOSTAT

will fully close or drive to its minimum position.

DESCRIPTION



The zone thermostat part# EzTouchX is a microprocessor based, auto changeover, programmable communicating zone thermostat. The communicating zone thermostat is used with the GEN XV zoning system and communicates over 2-wire communication bus.

The EzTouchX controls a Smart Air Valve (SAV) and monitors zone temperature. When the EzTouchX calls for Cooling or Heating the SAV that it controls will adjust damper position to provide designed airflow to the zone. When the EzTouchX senses room temperature has lowered to set point, EzTouchX will end call for cooling or heating, and go into Vent mode the SAV will adjust to a vent CFM position, if room temperature falls / rises 2° of the set point the EzTouchX will set the Smart Air Valve will fully close or drive to its minimum position.

All zone thermostats are ID'd and communicate back to the GEN XV controller. The GEN X mobile App interacts with the GEN XV controller, via the Wi-Fi network and initiates control decisions for the system. Through the GEN X mobile app you can coordinate global or individual schedules for the system, lock thermostats, and provide a user interface

to make adjustments and establish master temperature settings individually or globally for the system. This GEN X mobile app also provides diagnostic functions to streamline system troubleshooting along with air balance shortcuts, password protection and many additional functions.



EzTouchX - Sequence of operation

COOL CALL

The EzTouchX controls a Smart Air Valve (SAV) and monitors zone temperature. When zone temperature rises 1° above EzTouchX cooling set point, a EzTouchX will call for cooling. On the next poll of the GEN XV controller, this vote will be counted and if there is a single vote or majority vote for cooling, GEN XV controller will initiate cooling call sending 24v through the interface to the fan coil.

When cooling call has been initiated by the GEN XV controller, all SAV devices connected to this GEN XV controller are notified that VRF System is operating in cooling mode. SAV dampers calling for cooling will use smart technology located within the SAV controller to adjust damper position to provide designed airflow. Airflow design vary based on the size of SAV damper, see sizing and engineering charts for airflow information. The SAV controller monitors air velocity continuously and automatically repositions SAV in order to provide targeted CFM to zone. When EzTouchX senses room temperature has lowered to set point, EzTouchX will end call for cooling and on the next poll of GEN XV this vote will be removed from tally. If other cooling calls remain in the majority, cooling call will remain in the system, satisfied SAV will reset to a vent CFM position while other calling SAVs will continue to maintain targeted air flows. Vent CFM position is also set by SAV controller, again measuring air velocity and adjusting damper for targeted velocity and CFM. During this time, a minimal amount of cool air will enter zone to assist in maintaining room temperature. If room temperature falls 2° below cooling set point, SAV will fully close or drive to its minimum position.

HEAT CALL

When zone temperature falls 1° below EzTouchX heating set point, a EzTouchX will call for heating. On the next poll of the GEN XV controller, this vote will be counted and if there is a single vote or majority vote for heating, GEN XV controller will initiate heating call sending 24v through the interface to the fan coil.

When heating call has been initiated by the GEN XV controller, all SAV devices connected to this GEN XV controller are notified that VRF System is operating in heating mode. SAV dampers calling for heating will use smart technology located within the SAV controller to adjust damper position to provide designed airflow. Airflow design vary based on the size of SAV damper, see sizing and engineering charts for airflow information. The SAV controller monitors air velocity continuously and automatically repositions SAV in order to provide targeted CFM to zone. When EzTouchX senses room temperature has risen to set point, EzTouchX will end call for heating and on the next poll of GEN XV this vote will be removed from tally. If other heating calls remain in the majority, heating call will remain in the system, satisfied SAV will reset to a vent CFM position while other calling SAVs will continue to maintain targeted air flows. Vent CFM position is also set by SAV controller, again measuring air velocity and adjusting damper for targeted velocity and CFM. During this time, a minimal amount of warm air will enter zone to assist in maintaining room temperature. If room temperature rises 2° above heating set point, SAV will fully close or drive to its minimum position.

Baseboard / REHEAT

Each EzTouchX has the ability to control auxiliary heating devices such as reheat or baseboard heat. Auxiliary heat is configured at the EzTouchX. If there is a cool call, heat call, or the VRF system is a cooling only unit, the EzTouchX will energize AUX heat outputs if the zone temperature drops 2° below heat set point. If the EzTouchX is configured for reheat, SAV will position damper to provide airflow over electric strip heat, hot water coil or other heating element.

SYSTEM VENT MODE

When all calls for cooling and heating are satisfied EzTouchX will operate in Vent Mode. Outputs for cooling and heating are de-energized and if GEN XV controller is configured for Fan On – Continuous, VRF Air Handler blower will be operational during Occupied times and ventilation air will be provided to all zones.

SMART AIR VALVE BOARD (SAV)

A Smart Air Valve board resides on each SAV carrying power and communications information from the SAV and thermostats to the GEN XV controller. The SAV board has three LED lights providing SAV and system information. See diagram below.

The BLUE LED (J) confirms communications and to sync the damper with its associated thermostat. The RED LED (I) is illuminated when the damper is closing. The GREEN LED (K) is illuminated when the damper is opening.

Once all Smart Air Valves, thermostats and GEN XV controller are wired into the system and the GEN XV controller is turned ON, the BLUE light on the SAV boards will illuminate indicating power to the SAV.

Each SAV damper board must be synced with its respective thermostat.

A - SP_GND voltage set point / test point

ZONEX

- B SP_VENT voltage set point / test point
- C SP_HEAT voltage set point / test point
- D SP_COOL voltage set point / test point
- E SYNC BUTTON used to sync to thermostat
- F "SV" SENSOR VOLTAGE test point
- G A/B (IN) 2-wire communication link daisy chained out to the next SAV board
- H A/B (OUT) 2-wire communication link daisy chained into SAV board
- I MC/RO/RC Factory wired to the damper actuator runs open, runs closed
- J RUN CLOSED RED LED indicates the SAV is being powered closed
- K COMM LINK BLUE LED indicates communication to the GEN XV and thermostat
- L RUN OPEN GREEN LED indicates the SAV is being powered open
- M TOTAL STATIC PRESSURE TUBE
- N STATIC PRESSURE TUBE
- O TR1/ TR2 24VAC (IN) daisy chained in to the SAV board
- P TR1/TR2 24VAC (OUT) daisy chained out to the next SAV board
- Q NOT USED on GEN XV system



INSTALLATION INSTRUCTIONS

Smart Air Valve (SAV) Installation

Install dampers into HVAC duct so damper actuators are easily accessible. Smart Air Valve may be mounted in an area where the ambient temperature is between 32 and 140 degrees Fahrenheit. Round dampers should be mounted with damper actuators between 9 and 3 O'clock position.

Installing 24VAC wiring

Once GEN XV controller and Smart Air Valves are installed, install one 24VAC 100va transformer, and wire secondary 24 volts to the TR1 / TR2 bottom terminals on GEN XV controller. Using 18 ga. thermostat wire, wire TR1 / TR2 top terminals and daisy chain power wires to the first SAV board. Continue daisy chain wiring from first SAV board to second, third, etc., until all SAV boards are wired with power. Continue daisy chain wiring from last SAV baord to the first zone thermostat and to the second, third, etc., until all thermostats are wired with power. Note: Maintain TR1 and TR2 wiring polarity throughout the system to improve communications. DO NOT ground out the transformer.

Installing Communication Wire RS485

Once power wiring is daisy chained to all SAV boards and zone thermostats in the system, use Zonex 2 wire plenum rated twisted communications wire to install communications loop. Install communications wire using the A and B terminals on GEN XV controller and daisy chain to the first SAV board in the system and wire to A and B terminals. Continue daisy chain to the next SAV board using A and B boards. Continue daisy chain wiring from last SAV board to the first zone thermostat and to the second, third, etc., until all thermostats are wired into to the communications loop. Communications wiring is polarity specific, if RED communications wire is on A at the GEN XV controller, then RED wire is connected to A throughout the system.



Wiring in the Leaving and Return Air Sensors to GEN XV controller

The LAT provides information on leaving air and return air temperature viewed via the Gen X mobile app

Install Leaving Air Temperature Sensor (LAT) to the LVAIR terminals on the GEN XV controller and place the sensor in the supply duct. Install Return Air Temperature Sensor (LAT) to the RA terminals on the GEN XV controller and place the sensor in the return duct.

(Note: If extension of wire is needed, 18 ga. thermostat wire may be used).



Wire Unit to GEN XV Controller

Using standard 18 ga. thermostat wire, connect GEN XV unit outputs to interface controller and than to the VRF fan coil. Terminal designations are used, R Y1 Y2 W1 W2 G.



Note: Follow the manufacturers interface installation instructions, when wiring the GEN XV to the interface.





Wiring in the Automated Demand Response (ADR) to GEN XV controller

ADR (Automated Demand Response) is a load shedding strategy implemented by local utilities to curb electricity usage during high demand periods. The local utility provider sends out a signal from a VTN or DRAS (Virtual Top Node or Demand Response Automated Server) from their facility and is received by a VEN (Virtual End Node) located at the customer's location. The purpose of the signal is it to setback thermostat set points 4° for both the heating and cooling modes of the facility's HVAC equipment. The GEN XV does not directly accept signals from the local utility provider. For the GEN X to setback thermostat set points it must be used in conjunction with a VEN hardware device that supports Open ADR (contact the local utility provider for the most current protocol requirements for your area) and must be equipped with a set of dry normally open contacts that close during an ADR event. The contacts of the VEN are wired to the ADR terminal of the GEN XV (see diagram below). When the VEN receives an ADR signal from the VTN or DRAS its contacts close, the GEN XV & RMV's set back their thermostats 4° for both the heating & cooling modes and lock the thermostat set points so they cannot be adjusted at the thermostat during the ADR event. Once the ADR event has concluded the thermostats unlock and return to their original set points. For a list of Open ADR products please visit http://products.openadr.org or contact your local utility provider. This feature can be enabled/disabled on a thermostat by thermostat basis. Go to Settings -> Change ADR settings -> Check the boxes to enable ADR for that thermostat on the GEN X app.



Wiring in the Fault Detection and Diagnostics (FDD) to GEN XV controller

The purpose of the Fault Detection & Diagnostics (FDD) is to meet the requirement of Title 24 Part 6 section 120.2(i)6A in the event that a fault is detected by the economizer/unit controller so that appropriate facility personnel are notified. FDD must be triggered at the GEN XV by a 24 VAC signal from the economizer/unit controller in the event of a fault. Facility personnel can receive FDD alerts via e-mail once they subscribe to alarms (see the Alarm Subscription Settings section on page 52). No additional configuration is required to make this feature operational. Verify with the HVAC unit manufacturer that a 24 VAC for FDD alerting is provided prior to installation.



INSTALLATION INSTRUCTIONS

Wiring the GEN X V to the GEN X RMV

With the GEN XV controller installed, if you have additional zoned RTU's or Split systems, install the GEN X RMV expansion controller using the 2 wire twisted communication wire. Wire from the Gen XV A and B out to the GEN X RMV A1 and B1 (IN) on the GEN X RMV controller as shown below. If there are multiple GEN X RMV's or RLYX's in the system, continue the 2 wire twisted pair in a daisy chain fashion from the GEN X RMV to the next GEN X RMV or RLYX. Note: Up to 20 GEN X RMV's may be daisy chained to the Gen XV controller.





Smart Air Valve (SAV) Installation

Install dampers into HVAC duct so damper actuators are easily accessible. Damper may be mounted in an area where the ambient temperature is between 32 and 140 degrees Fahrenheit. Round and Rectangular dampers should be mounted with damper actuators between 9 and 3 O'clock position.

Installing 24VAC wiring

Once GEN X RMV controller and SAV dampers are installed, install one 24VAC/100VA transformer, and wire secondary 24 volts to the TR1 / TR2 IN terminals on GEN X RMV controller. Using 18 ga. thermostat wire, wire TR1 / TR2 OUT terminals and daisy chain power wires to the first SAV damper. Continue daisy chain wiring from first SAV damper to second, third, etc., until all SAV dampers are wired with power. Continue daisy chain wiring from last SAV damper to the first zone thermostat and to the second, third, etc., until all thermostats are wired with power.

Note: Maintain TR1 and TR2 wiring polarity throughout the system to improve communications. DO NOT ground out the transformer.

Installing Communication Wire RS485

Once power wiring is daisy chained to all SAV dampers and zone thermostats in the system, use Zonex 2 wire plenum rated twisted communications wire to install communications loop. Install communications wire using the A and B terminals on GEN X RMV controller and daisy chain to the first SAV damper in the system and wire to A and B terminals. Continue daisy chain to the next SAV damper using A and B terminals to the A aof the next SAV damper, repeating this process until all SAV dampers. Continue daisy chain wiring from last SAV damper to the first zone thermostat and to the second, third, etc., until all thermostats are wired into to the communications loop. Communications wiring is polarity specific, if RED communications wire is on A at the GEN XV controller, then RED wire is connected to A throughout the system.





Wiring in the Leaving and Return Air Sensors to GEN X RMV Controller

Install Leaving Air Temperature Sensor (LAT) to the LVAIR terminals on the GEN X RMV controller and place the sensor in the supply duct. Install Return Air Temperature Sensor (LAT) to the RA terminals on the GEN X RMV controller and place the sensor in the return duct.

(Note: If extension of wire is needed, 18 ga. thermostat wire may be used)



Wire Unit to GEN X RMV Controller

Using standard 18 ga. thermostat wire, connect GEN X RMV unit outputs to interface controller and then to the VRF fan coil. Terminal designations are used, R Y1 Y2 W1W2 G.



Note: Follow the manufacturers interface installation instructions, when wiring the GEN XV to the interface.

Wiring in the Fault Detection and Diagnostics (FDD) to GEN X RMV controller

The purpose of the Fault Detection & Diagnostics (FDD) is to meet the requirement of Title 24 Part 6 section 120.2(i)6A in the event that a fault is detected by the economizer/unit controller so that appropriate facility personnel are notified. FDD must be triggered at the GEN X RMV by a 24 VAC signal from the economizer/unit controller in the event of a fault. Facility personnel can receive FDD alerts via e-mail once they subscribe to alarms (see the Alarm Subscription Settings section on page 52). No additional configuration is required to make this feature operational. Verify with the HVAC unit manufacturer that a 24 VAC for FDD alerts no installation.



Installing 24VAC wiring

Once the RLYX controller is installed, install one 24VAC 40VA transformer and wire secondary 24 volts to the TR1 / TR2 (IN) terminals on RLYX controller. Using 18 ga. thermostat wire.

Note: Maintain TR1 and TR2 wiring polarity throughout the system to ensure effective communications. DO NOT ground out the transformer.

Installing Communication Wire RS485

Using Zonex 2 wire twisted communications wire to install communications loop. Install communications wire using the A and B IN from GEN XV / GEN X RMV terminals on RLYX controller. Continue daisy chain from the OUT to GEN X RM / RYLX terminals using A and B to the A and B IN on the next GEN X RMV / RYLX controller, repeating this process until controllers are wired into the communications loop. Communications wiring is polarity specific, if RED communications wire is on A at the RYLX controller, then RED wire is connected to A throughout controls communications loop.

Wiring in the 24VAC Coil Relay's and Relay Transformer

Install a second independent 24VAC 40VA transformer, using 18 ga wire run one side of the 24VAC to **"COM"** on the RYLX load terminals. Install a field supplied 24VAC coil relay and wire in the other leg of the 24VAC transformer to one side of the 24VAC coil on the relay or relay's.

Now wire from "R1" off the RYLX load terminal strip using 18 ga wire to the other side of the 24VAC coil relay, this should complete the circit for the "R1" load. Repeat the steps above for any additional relay's using load terminals "R2, R3, R4 or R5".

Wire in the generic load power so that the relay breaks the loads power. Wire in all generic loads to meet local code requrements.





Setting ID on the EzTouchX Thermostat

Each thermostat must be ID'd. Beginning with the first thermostat in the daisy chain closest to the GEN XV controller, place provided white label #1 on the SAV damper for that thermostat. Locate associated zone thermostat and confirm display appears on stat. If not, turn ON the GEN XV and GEN X RMV controllers at the ON/OFF switch located on the left hand corner of the controllers. If no display is seen, check that you have 24VAC between TR1 and TR2 on the GEN XV or GEN X RMV controller and then at the thermostat.

To access the Thermostat Advanced Menu: Tap on the degree symbol next to the room temp **O**.

The degree symbol will change color from white to green and then tap 🧮 .



Setting STAT ID for the Zone Thermostat

While in the Thermostat Advanced Menu, Select SET ID

Use the \land and \checkmark arrows to set the new ID ranging from 1-20

Tap 🛐 to save changes, to return to the home screen tap 🎧

Note: (All thermostats recieve a unique ID 01 to 20, maximum of 20 zones per GEN XV and GEN X RMV controllers.)





COMMISSIONING START-UP

Select Damper Type Operation

The EzTouchX needs to be configured for the type of damper that it is wired to.

To set the damper type access the Advanced Configuration menu by tapping on the degree symbol next to the room temp •. The degree symbol will change from white to green and then tap

EzTouchX - Thermostat Advanced Menu, Select Damper Type

Select vrf operation

Tap 🛐 to save changes, to return to the home screen tap 🏠

Note: Only select VRF damper type when SAV dampers are installed on VRF systems.



Downloading the Mobile App and Connecting to the GEN XV

The GEN X mobile App provides local or remote access to your system, providing direct access to zoned systems or stand alone units.

Download and install the GEN X App on your mobile device from Google Play or Apple App Store.

Connect an Ethernet cable from the customer's network into the GEN XV's Ethernet connection (this should be provided by the customer). (Skip the step below if you were able to connect to the customer's network.)

If a network connection is not available please go to pg 52 for direct wireless setup instructions.

Ensure that your mobile device is connected to the same network as the GEN XV via a Wi-Fi connection. If you are connecting to the customer's network then you must obtain the network name /SSID and password (you may need to contact your customer's IT personnel).

Open the Zonex App and tap the "SCAN LAN FOR GEN X" icon at the bottom of the screen.

Allow the App time to scan the network for the GEN XV control board (this could take up to 60 seconds).

You will then see the message "Tap to select your local GEN X system" at the top of the App. Tap the down arrow on the right and a drop down menu will appear indicating the GEN X or RM system(s) connected to the network. If no GEN X is listed power off the GEN XV for a few moments, power it back on and reopen the Zonex App so the scan process can be restarted. **Note:** You only need to scan once, after you have successfully scanned and found the GEN XV controller. The GEN X app will remember the IP address and load it the next time you log in.



COMMISSIONING AND STARTUP

Once GEN XV controller is mounted, and zone stats are ID'd the system is ready to be commissioned and started up. Turn on the GEN XV controller and confirm the blue power light is ON.

Confirm Thermostat Communications

Open the Gen X app, tap the for System Configuration Menu and tap Configure Number of Thermostats / Dampers. Enter the number of zones that are in the system. While still in the Configuration menu tap System Diagnostic and confirm that all the zones are showing Active under the thermostat status. If it shows Err: Check wiring / Stat ID confirm wiring is correct and check Stat ID.



Set Type of Unit

Configure the UNIT TYPE for VRF on the GEN XV. Factory default for UNIT TYPE is GAS.

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Set Override Hours (2-8) Select number of hours to initiate over	ride operation		Sar high/s one Links Sar hub and last passions links			
Set Priority Vote (0-3) Select number of votes for each stat			Changes may require	field		
Fan Mode Select operation mode			O Gas	- 1		
Unit Type Select unit type			O Heat Pump 08	0		
Set Maverick Mode Erable/set duration		\rightarrow	O Heat Pump 08 O Electric	8		
Enable Warm Up Mode			VRF			
Temperature Format Change the temperature format			2	CANCEL.		
Enable Air Balance Mode	D		Enable Warm Up Mode	۵		
4 O	0		⊲ 0	۵		



Set Fan Operation

Configuration of FAN is set at the factory for ON operation. When there is a call for HEAT or COOL, fan will run. If continuous fan is required, fan will need to be configured for fan ON and will run anytime during Occupied time, and AUTO during unoccupied. To set fan mode, **using the Mobile App access the configuration menu. Tap FAN mode, choose AUTO or ON.**

8 🎔 🖮 105 236 PM			\$ ♥ 🖬 4/1 239 PM		
Set Override Hours (2-8) Select number of hours to indiate overid Set Priority Vote (0-3) Select number of votes for each stat	e operation		Set High-Low Land Set calved temperature term		
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Pairing the Smart Air Valve to its Thermostat

Tap 📻 for Zone Overview, Tap on Zone #1 and adjust Heat temperature to 60° and Cool temperature to 95°. Return to the Zone Overview and confirm Zone #1 occupied Heat/Cool is set for 60° / 95°. This will send a command for pairing to all SAV boards. All SAV boards blue lights will be flashing.

Locate the SAV board that will be paired to the thermostat addressed as #1. When the blue light is flashing, Press and Hold the pairing button on the SAV board for 15 seconds. The pairing is complete when the blue light stops flashing.

Once the pairing is complete, adjust the Heat/Cool setting on Zone #1 back to 70° Heat and 75° Cool. Tap 🗮 for Zone Overview and confirm Zone #1 occupied Heat/Cool is set for 70° / 75°. Repeat the steps above increasing one zone # at a time till all SAV boards are paired to there EzTouchXs. Note: You can only pair one SAV at a time.




Confirm Cool Call and SAV Operation

Open the Gen X app and go to the Zone overview screen ≒ , select Zone 1 by tapping on that zone. The Ring of Comfort screen should appear. Tap on ▼ in the middle of the ring and choose All Zones. Slide or Drag the Blue circle counter clockwise to drop the temperature below the current room temperature. Tap back on the phone to return to zone overview screen. All zones should have a current room temperature that is blinking blue, indicating a cool call. Within 2 minutes, a call for cooling will be made from GEN XV controller. Confirm Y1 and G lights are on at the GEN XV controller. Go to each zone thermostat and confirm blue light appears on the the display indicating an active cool call. Confirm the the RED and GREEN LED's on the SAV's control boards are flashing ON and OFF, this indicates the SAV's are communicating to the prospective thermostats. Once all SAV's are confirmed open, satisfy cooling calls at each zone thermostat. At each zone stat, raise COOL set point by using the UP button to raise the set point. Confirm blue light disappears and SAV is in Vent position once call is satisfied. Continue to satisfy all cool calls one at a time until all calls are satisfied and SAV's are in Vent position. If SAV's control boards, LED's are not flashing confirm power, SAV pairing and communication wiring installation. Within 1 minute of all calls satisfying Y1 will de-energize, and a 3 minute purge follows, no calls are allowed during this time.





Confirm Heat Call and SAV Operation

Open the Gen X app and go to the Zone overview screen ≒ , select Zone 1 by tapping on that zone. The Ring of Comfort screen should appear. Tap on ▼ in the middle of the ring and choose All Zones. Slide or Drag the Red circle clockwise to raise the temperature above the current room temperature. Tap back on the phone to return to zone overview screen. All zones should have a current room temperature that is blinking red, indicating a heat call. Within 2 minutes, a call for cooling will be made from GEN XV controller. Confirm W1 light is on at the GEN XV controller. Go to each zone thermostat and confirm red light appears on the the display indicating an active heat call. Confirm the the RED and GREEN LED's on the SAV's control boards are flashing ON and OFF, this indicates the SAV's are communicating to the prospective thermostats. Once all SAV's are confirmed open, satisfy heating calls at each zone thermostat. At each zone stat, drop the HEATING set point by using the DOWN button to lower the set point. Confirm red light disappears and SAV is in Vent position once call is satisfied. Continue to satisfy all heat calls one at a time until all calls are satisfied and SAV's are in Vent position. If SAV's control boards, LED's are not flashing confirm power, SAV pairing and communication wiring installation. Within 1 minute of all calls satisfying W1 will de-energize, and a 3 minute purge follows, no calls are allowed during this time.





Syncing the GEN X RMV to the GEN XV Controller

Each GEN X RMV controller communicates to the GEN XV over an RS-485 communications bus. GEN XV is the communications hub for the system providing time clock functions along with interpreting any calls or system updates at the RMV level and communicates that information to the cloud. Each RMV controller must be synced with the GEN XV controller to communicate and transmit information to and from the mobile App.

Connect to the GEN XV via the mobile app. Go into the "System Configuration Menu" and tap "Configure Number of RM's Attached to System". Enter the number of GEN X RM's wired to the GEN XV controller.

While still in the "System Configuration Menu", tap "Assign RM ID". Enter 1 for the first GEN X RMV in the system and press "OK". When the Blue light starts flashing on the GEN X RM controller, press and hold the sync button on the GEN X RMV board for 15 seconds. When the light stops flashing the sync has been completed.

Repeat the "Assign RM ID" for each additional GEN X RMV in the system, making sure to increase the RM ID for each GEN X RM. For example, if you have 7 GEN X RMV's in the system they will be ID'd 1-7 in the order of how the communication wire is daisy chained.



Enter number of RMs attached to the system (1-20)



Each RM needs to be assigned its own ID



Syncing the RLYX to the GEN XV Controller

zonex

Each RLYX controller communicates to the GEN XV over an RS-485 communications bus. GEN XV is the communications hub for the system providing time clock functions along with interpreting any calls or system updates at the RLYX and communicates that information to the cloud. Each RLYX controller must be synced with the GEN XV controller to communicate and transmit information to and from the mobile App.

Connect to the GEN XV via the mobile app. Go into the "System Configuration Menu" and tap "Configure Number of RLYX's Attached to System". Enter the number of RLYX's wired to the GEN XV controller.

While still in the "System Configuration Menu", tap "Assign RLYX ID". Enter 1 for the first RLYX in the system and press "OK". When the Blue light starts flashing on the RLYX controller, press and hold the sync button on the RLYX board for 15 seconds. When the light stops flashing the sync has been completed.

Repeat the "Assign RLYX ID" for each additional RLYX in the system, making sure to increase the RLYX ID for each RLYX. For example, if you have 3 RLYX's in the system they will be ID'd 1-3 in the order of how the communication wire is daisy chained.







Each RLYX needs to be assigned its own ID





Addressing Zone Thermostats

zonex

Every thermostat in the system needs a unique ID ranging from 1-20. They must be in numerical order the way the communication wire is daisy chained. Confirm no duplicate addresses.

To set the stat's ID access the Advanced Configuration menu by tapping on the degree symbol next to the room temp O. The degree symbol will change from white to green and then tap

Once in the Thermostat Advanced Menu, Select SET ID

Use the \land and \checkmark arrows and set the new ID ranging from 1-20

Tap 🛃 to save changes, to return to the home screen ta

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Select Damper Type

The EzTouchX needs to be configured for the type of damper that it is wired to. There are 4 options, round, rectangular, spring loaded or vrf.

To set the damper type access the Advanced Configuration menu by tapping on the degree symbol next to the room temp O. The degree symbol will change from white to green and then tap 🧮

While in Thermostat Configuration Menu, Select Damper Type

Select vrf damper operation

Tap 🛃 to save changes, to return to the home screen tap





Display Temperature Calibration

Thermostats are calibrated at the factory and should require no further adjustment. However, the display space temperature may be field calibrated by the following procedure:

To access the Thermostat Configuration Menu: Tap

While in Thermostat Configuration Menu, Select Calibrate Display

Use the / and / arrows to calibrate the thermostat display to a external temperature probe temperature reading.

Tap 🛐 to save changes, to return to the home screen tap

Adjusting Set Points

The Heat or Cool set points are displayed at the bottom of the screen. To adjust the set points, tap on the heat-to or cool-to temperatures; the set points will be displayed on the screen.

Use the \land and \checkmark arrows over the flame/snowflake icons to set the desired heat and cool set points.

Tap To save changes

Changing Mode

The thermostats are auto changeover, but specific modes may be selected. Heat/Cool mode is the default.

System Heat/Cool - Tap on modes, select "Heat/Cool". Tap it to save changes
System Heat Only - Tap on modes, select "Heat Only". Tap ito save changes
System Cool Only - Tap on modes, select "Cool Only". Tap for save changes
System Off - Tap on modes , select "Off". Tap 🎧 to save changes

Override Operation

When the thermostat displays the unoccupied icon **F** a 2-hour temporary override may be initiated by tapping the **F** "Override" will appear. When additional override time is required, tap the unoccupied icon again.

Auxiliary Heat / Reheat

The zone thermostat provides the following Auxiliary Heat options; Baseboard, Baseboard W1 and Reheat (see figure on the following page for more details) with configurable dead band of 2°, 3°, or 4°. Note: Reheat has a fixed 2° dead band. And when using in duct electric strip heater, an airflow proving switch is required for safe operation.

Configuration of Auxiliary Heat/Reheat is accomplished by selecting "SELECT AUX HEAT" function in the Advanced Menu. To access the Advanced Menu tap the \bigcirc degree symbol of the room temperature (the degree symbol should change color to green) then tap the \blacksquare in the upper right corner of the thermostat, Tap "Select Aux Heat", Select the desired Auxiliary Heat/Reheat and dead band (2°, 3°, or 4°). Tap on \blacksquare to save desired settings. To return to the home screen tap

THERMOSTAT USER MENU

To access the Thermostat User Menu: Tap

The THERMOSTAT USER MENU allows you to:

Select Occupied Light Calibrate Display Time & Date (view only) Select Unoccupied Light Temperature F/C (view only)

Set Display Accuracy Current Schedule (view only)



SELECT OCCUPIED LIGHT



The brightness of the thermostat during occupied mode is adjustable from 100% down to off.

While in Thermostat Configuration Menu, Select Occupied Light

Select the desired brightness.

Tap 🛐 to save changes, to return to the home screen tap



Note: If "off" is selected, just touch stat to wake it up.

SELECT UNOCCUPIED LIGHT



The brightness of the thermostat during unoccupied mode is adjustable from 100% down to off.

While in Thermostat Configuration Menu, Select Unoccupied Light

Select the desired brightness.



Tap 😫 to save changes, to return to the home screen tap



Note: If "off" is selected, just touch stat to wake it up.

SET DISPLAY ACCURACY



ZONEX

Display accuracy allows the thermostat to display the room temperature in 1/10° or 1°.

While in the Thermostat Configuration Menu, Select Set Display Accuracy

Select the desired display accuracy



Tap 🛐 to save changes, to return to the home screen tap

CALIBRATE DISPLAY



Thermostat is equipped with an accurate temperature sensor. If you require field calibration, follow the steps below.

While in Thermostat Configuration Menu, Select Calibrate Display

Use the \land and \lor arrows to calibrate the thermostat display to a external temperature probe temperature reading.



Tap 🛐 to save changes, to return to the home screen tap 🏠



TEMPERATURE F/C



Thermostats can be configured for F° or C° operation through the GEN X app..

While in the Thermostat Configuration Menu, Select Temperature F/C

To view the current temperature operation (View only function)

Tap 🛐 to go back to the menu, to return to the home screen tap 🍙

CURRENT SCHEDULE

11:15	am	P B
	P	F
moh	6:00am	2:30pm
tue	6:00am	2:30pm
wed	6:00am	2:30pm
:hu	6:00am	2:30pm
fri	6:00am	2:30pm
sat	1	
sun	J.	
CU	rrent sch	edule
	•	•

View the current thermostat schedule, given by the Gen XV system

While in the Thermostat Configuration Menu, Select Current Schedule

This allows you to view the schedule for that zone. Changes to the schedule are done through the GEN X app. (*View only function*)

Tap 🛐 to go back to the menu, to return to the home screen tap

TIME & DATE



View the current time and date, given by the Gen XV system.

While in the Thermostat Configuration Menu, Select Time & Date

To view the current time and date on the Gen XV system (View only function)

Tap 🛐 to go back to the menu, to return to the home screen tap 🏫

THERMOSTAT ADVANCED MENU

To access the Thermostat Advanced Menu: Tap on the degree symbol next to the room temp ${f O}$

The degree symbol will change color from white to green and then tap

The THERMOSTAT ADVANCED MENU allows you to: Set ID Select damper type Select Aux Heat **Temp Source**

Menu Type Diagnostic



STAT ID



Every thermostat in the system needs a unique ID. They must be ID'ed in numerical order the way the communication wire is daisy chained. No duplicate addresses.

While in the Thermostat Advanced Menu, Select SET ID

Use the \bigwedge and \bigvee arrows to set the new ID ranging from 1-20



Tap 🛃 to save changes, to return to the home screen tap



Note: (All thermostats recieve a unique ID 01 to 20, maximum of 20 zones per GEN XV and GEN X RMV controllers.)

SELECT AUX HEAT



The zone thermostat provides the following Auxiliary Heat options; Baseboard, Baseboard W1 and Reheat with configurable dead band of 2°, 3°, or 4°.

While in the Thermostat Advanced Menu, Select Aux Heat

Select the the desired auxiliary heat operation and dead band



Tap 🔁 to save changes, to return to the home screen tap



Note: Reheat has a fixed 2° dead band.

SELECT DAMPER TYPE



The EzTouchX needs to be configured for the type of damper that it is wired to. There are 4 options, round, rectangular, spring loaded or vrf.

While in the Thermostat Advanced Menu, Select Damper Type

Select round, rectangular, spring loaded or vrf damper operation

Tap 🔁 to exit diagnostic screen, to return to the home screen tap

Note: If you are running a VRF system, the damper operation needs to be set to vrf.

TEMP SOURCE



Temp source allows the thermostat to display the outside air temperature, supply air duct or relative humidity at the top on the home screen. A LAT sensor needs to be installed to report this reading. It will read 00 if no sensor is installed.

While in the Thermostat Advanced Menu, Select Temp Source

Select outside, duct, humidity or no display to diplay or not display the duct temperature



Tap 🛐 to save changes, to return to the home screen tap



MENU TYPE



Menu type will allow you to see the advanced menu options under the user menu when advanced is selected.

While in the Thermostat Advanced Menu, Select Menu Type

Select user to hide the advanced options Select **advanced** to show the advanced options under the user menu



Tap 🛐 to save changes, to return to the home screen tap 🍙



DIAGNOSTIC

11:15 am	6 9	
communic duct temper	ation OK ature 52	
damper	CLOSED	
aux relay	OFF	
blue led	ON	
red led	OFF	
select diagn	ost citest	
•	•	

The EzTouchX Diagnostic screen will allow you to confirm communication with the GEN XV controller and allow you to confirm damper, aux relay, and LED operation.

While in the Thermostat Advanced Menu, Select Diagnostic

Tap damper to confirm closed/open operation - Disabled when using SAV dampers Tap aux relay to confirm it energizes and de-energizes Tap **blue led** to confirm the blue led illuminates

Tap **red led** to confirm the red led illuminates

Tap 🛐 to exit diagnostic screen, to return to the home screen tap ightarrow



AUXILIARY HEAT/REHEAT

The zone thermostat provides the following Auxiliary Heat options; Baseboard, Baseboard W1 and Reheat (see figure on the following page for more details) with configurable dead band of 2°, 3°, or 4°. Note: Reheat has a fixed 2° dead band.

Baseboard: the thermostat's auxiliary output will energize when the room temperature drops 2° - 4° below the heat set point. Auxiliary heat operations will remain energized until the heat call is satisfied.

Baseboard W1: the auxiliary output will energize before the unit heater at 1° below heat set point. When the room temperature drops 2° - 4° below set point the thermostat will send a heat call to the unit heater. Auxiliary heat operations will remain energized until the heat call is satisfied.

Reheat: when the zone temperature drops 2° below the heat set point the damper will modulate to approximately 40% providing air flow over the electric heat strips, the AUX terminal will energize, and strip heat will provide reheat. Note: When using in duct electric strip heater, an airflow proving switch is required for safe operation.

Configuration of Auxiliary Heat/Reheat is accomplished by selecting "SELECT AUX HEAT" function in the Advanced Menu. To access the Advanced Menu tap the • degree symbol of the room temperature (the degree symbol should change color to green) then tap the E in the upper right corner of the thermostat, see Fig 1. Tap "Select Aux Heat", see Fig 2. Select the desired Auxiliary Heat/Reheat and dead band (2°, 3°, or 4°) see Fig 3. Tap on To save desired settings. To return to the home screen tap





SUPPLEMENTAL HEAT APPLICATIONS





The GEN XV can be configured to connect directly wirelessly between a mobile device for the purpose of communication and configuration. A connection between mobile devices is done with a static IP address. The following steps below outline this procedure.

Wireless connection for Android devices

- 1. Ensure that an Ethernet cable is NOT plugged into the GEN XV (when a cable is plugged in the WiFi capability is automatically disabled).
- 2. Download the GEN X App from the Google Play store and install it on your mobile device.
- 3. On your mobile device open your Wi-Fi settings and scan for networks.
- 4. If the GEN XV is powered ON and within range "GENX" should appear in the list of the networks available to connect to.
- 5. Tap on "GENX" in the list of networks, your mobile device will attempt to connect to the GEN X and a popup list should appear. On the popup list select "Show advanced options". If the popup list does not appear press and hold "GENX" until a popup list does appear, then tap "Modify network" and then select "Show advanced options".



DENY ODISAS	
UCHA_UDISHY	
Security	
Auto reconnect	
Show advanced options	
P settings	
Static 💌	
Paddiyse	
10.10.10,10	
Determiny	
10.10.10.1	
Network profix longiti	
24	
DND 1	
1344	
-	
None *	

6. Under **"IP settings"** change **"DHCP"** to **"Static"**, under the **IP address** field type in 10.10.10.10, under the **Gateway** field type in 10.10.10.1 under the Subnet field (if present) type in 255.255.255.0 and then save the settings or tap **"Connect"**.

- 7. The word "Connected" should appear under "GENX" in the network list of your mobile device.
- 8. Open the GEN X mobile app, tap **"Yes"** for local access, tap **"SCAN LAN FOR GEN X"** and once the scan is complete select the GEN XV from the drop down list at the top of the app.
- 9. Your mobile device is now connected to the GEN XV via wireless connection. Configuration changes can now be made to the GEN XV. If the GEN XV is to be connected to an existing wireless network please call Zonex tech support to help with this set up. **Please note that the GEN XV Wi-Fi range is approx 50 feet.**



Wireless connection for Apple devices

- 1. Ensure that an Ethernet cable is NOT plugged into the GEN XV (when a cable is plugged in the WiFi capability is automatically disabled).
- 2. Download the GEN X App from the Apple App Store and install it on your mobile device.
- 3. On your mobile device tap on **Settings** and then tap on **Wi-Fi**. Ensure **Wi-Fi** is turned on.
- If the GEN XV is powered ON and within range "GENX" should appear under CHOOSE A NETWORK. Tap on GENX once, GENX will then be automatically moved under Wi-Fi, tap GENX one more time.



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<a< th=""><th>el.</th><th></th><th>C</th><th>onfig</th><th>are IP</th><th>4</th><th></th><th>4</th><th>aya .</th></a<>	el.		C	onfig	are IP	4		4	aya .
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- 5. Under IPV4 ADDRESS tap Configure IP. On the next menu tap Manual. A menu will appear just below labeled MANUAL IP.
- 6. In the **IP address** field type in 10.10.10.10, in the **Subnet Mask** field type in 255.255.255.0 and in the **Router** field type in 10.10.10.1, and then tap **Save**.
- 7. Once connected the mobile device should have a check mark next to **GEN X** indicating a connection.
- 8. Open the GEN X mobile app for local access, tap **"SKIP ACCOUNT LOGIN -- LOCAL CONNECTION ONLY"** and once the scan is complete select the GEN XV from the drop down list at the top of the app.
- 9. Your mobile device is now connected to the GEN XV via wireless connection. Configuration changes can now be made to the GEN XV. If the GEN XV is to be connected to an existing wireless network please call Zonex tech support to help with this set up. Please note that the GEN XV Wi-Fi range is approx 50 feet.

ACCOUNT SET UP



An account needs to be created to access the GEN X system over the internet. Follow the steps below on how to create an account.

Open the Zonex mobile app and go to the log in screen.

Select - CREATE NEW ACCOUNT

ANSWORD aven NAME John Doe EMAL ADDRESS phm@izonexsystems.com Proce Numeer (+1851234567) +18002282966]	Zonexsystems	
ahow pvete NAME John Doe exat, Aoberss phin@izonexsystems.com phone Numer (+1551234567) +18002282966] Ston Up	PASSWORD	
BVEN NAME John Doe EMAIL ADDRESS john@zonexsystems.com PHONE NUMBER (+1551234567) +18002282966		show
John Doe Inwa, ADDRESS John Quanexsystems.com PHONE NUMBER (+15851234567) +18002282966	GIVEN NAME	
EMAL ADDRESS (ohn@zonexsystems.com PHONE NUMBER (+15851234567) +18002282966	John Doe	
ohn@zonexsystems.com PHONE NUMBER (+15851204967) +18002282966	EMAIL ADDRESS	
PHONE NUMBER (+15851204567) +18002282966	john@zonexsystem	s.com
Sign Up	PHONE NUMBER (+1585 +18002282966	1234567)
A 12 24 10 40	Sign U	p

Enter your information to sign up

USERNAME (case senstive) PASSWORD (case senstive) GIVEN NAME EMAIL ADDRESS PHONE NUMBER



A confirmation code will be emailed to confirm the new account creation

ENTER THE CONFIRMATION CODE AND CONFIRM

NOTE: If you do not receive the confirmation code email, check the spam folder.

Once this step is completed you will need to contact Zonex tech support at 800-228-2966 to confirm and complete the account set up.



GEN X MOBILE APP

The mobile App commicates with the GEN XV controller, via the Wi-Fi network and initiates control decisions for the system. Through the GEN X mobile app you can coordinate global or individual schedules for the system, lock thermostats individually and provide a user interface to make adjustments and establish master temperature settings individually or globally for the system. This user interface provides diagnostic functions to streamline system troubleshooting along with air balance shortcuts, password protection and many additional functions.

You will find outlined below the 23 unique functions that the GEN XV offers:

System Configuration Menus

System feature changes are configured through the GEN X Mobile App for all thermostats and the GEN XV system controller, along with additional Fan coils controlled by their GEN X RMV board.

💎 🔒 2:25 PM	💎 🔒 2:25 PM	🛎 🛛 🕏 🛢 100%. 2:12 PM
Settings Set Schedule	Set Priority Vote (0-3) Select number of votes for each stat	Configure Number of RMs attached to system
Go to the schedule and vacation manager	Fan Mode Select operation mode	Assign RM ID Set ID of a GEN X RM Board
Lock/Unlock Thermostats	Unit Type Select unit type	Configure Number of RLY-X attached to syste
Turn Thermostats On/Off Turn individual zones on or off	Set Maverick Mode	Assign RLY-X ID Set ID of a RLY-X Board
System Diagnostic View current conditions of the system	Enable Warm Up Mode	See Zone Overview See all zones and setpoints on one screen
Set High/Low Limit Set cut-out temperature limit	Temperature Format Change the temperature format	Change Alarm Settings Enable/change alarm threshold
Set Second Stage Settings Enable / change time delay	Enable Air Balance Mode	Change Network Settings Configure WiFi settings/Connect to a network
Set Override Hours (2-8) Select number of hours to initiate override operation	Set Stat Zone Names Give zones an easy to remember name	Change ADR settings Automated Demand Response
< ○ □		⊲ 0 □

MENU FEATURES:

- 01 SET SCHEDULE / VACATION SCHEDULE 13 TEMPERATURE FORMAT F° / C° 02 LOCK **14 ENABLE AIR BALANCE MODE 03** TURN THERMOSTATS ON/OFF **15 SET STAT ZONE NAMES 04** SYSTEM DIAGNOSTIC 16 CHANGE GEN X / RM UNIT NAME 05 SET HIGH / LOW LIMITS **17** CONFIGURE NUMBER OF THERMOSTATS 06 SET SECOND STAGE DELAY TIME **18** CONFIGURE NUMBER OF RM'S ATTACHED TO SYSTEM **07 SET OVERRIDE HOURS** 19 ASSIGN RM ID **08 SET PRIORITY MODE 20** CONFIGURE NUMBER OF RLY-X ATTACHED TO SYSTEM 09 FAN MODE 21 ASSIGN RLY-X ID **10** UNIT TYPE 22 SEE ZONE OVERVIEW **11 SET MAVRICK MODE 23 CHANGE ALARM SETTINGS 12 ENABLE WARM UP MODE**
 - **24 CHANGE ADR SETTINGS**

SCHEDULE / VACATION

Sette	Q4
Set.5	chedule
Go to	the schedule and vacation manager
A	Lock
8	Lock thermostata by ID or globally
A	Thermostat Lock Mode
u	Enable strict lock- no change allowed
Turn	Thermostats On/Off
Turni	ndividual zones on or off
Syste	em Diagnostic
View	current conditions of the system
Set F	ligh/Low Limit
Set o	d out temperature limit
Set 5	econd Stage Delay Settings

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		= *	: 🗎
.Deg.	200	Burr Oct	the D
M-F	ALL	5.45AM	4.25PM
Sat	ALL	Unocc	- 2 A A A A A A A A A A A A A A A A A A
Sun	ALL	Unocc	11
M-F	1: Gene	\$45AM	4:25PM
MF	2: Marc.	5:45AM	4:25PM
M-F	3 Main.	5:45AM	4:25PM
M-F	4: Joe	5:45AM	4:25PM
M-F	5: Cher.	5:45AM	4.25PM
M-F	6: Elli	5:45AM	4:25PM
M-F	7: Jeff	5:45AM	4:25PM
M-F	8: Char.	S:45AM	4:25PM
M-F	9: Conf	5:45AM	4:25PM
Sat	1: Gene	Unocc	
Sat	2: Marc.	Unooc	
Sat	3: Main.	Unooc	1.1.1
Sat	4: Joe	Unocc	
Sat	5: Cher.	Unocc	
	4	0	

Tap Set Schedule or Tap on Tap Change Daily Schedule format Choose your format 5-1-1, 24/7 or Daily Schedule Tap Set Daily Schedule Tap M-F ALL Choose Set Occupied Time or Set Unoccupied Set Occupied Start Time, Press Ok Set Occupied End Time, Press Ok

Tap Sat or Sun ALL Choose Set Occupied Time or Set Unoccupied Set Occupied Start Time, Press Ok Set Occupied End Time, Press Ok

SETTING 2ND SCHEDULE (OPTIONAL)

Tap Set 2nd Daily Schedule Tap M-F ALL Choose Set Occupied Time or Set Unoccupied Set Occupied Start Time, Press Ok Set Occupied End Time, Press Ok

Tap Sat or Sun ALL Choose Set Occupied Time or Set Unoccupied Set Occupied Start Time, Press Ok Set Occupied End Time, Press Ok

VACATION SCHEDULE

Tap Set Schedule Choose Set Vacation Schedule Press Add Vacation Tap a Date on the Calendar to Start Vacation and another to End Vacation, Press Ok Tap Enable Vacations Choose Individual zones or All Zones to follow vacation schedule

TO NAME A VACATION SCHEDULE

Tap the Vacation schedule that you want to name Tap Change name and enter the new name, Press Ok

TO DELETE OR EDIT A VACATION SCHEDULE

Tap the current Vacation Schedule you want to Delete or Edit Tap Delete or Edit









02 LOCK THERMOSTATS

			. II. I
All Zones	O Unlock	O Lock	O Lock (+/-27)
1: Stat 1	O Unlock	O Lock	(+/-2')
2. Starl 2	O Unlock	O Lock (07)	(+/- 2')
2: Start 3	OLIVIock	O Lock (0)	(*/* 2")

Thermostats can be locked independently or globally through your Mobile device, when a thermostat is locked the end user will have limited operation $(+/-2^{\circ})$ or no variance (0°) of the theromstat from heating or cooling set points.

Tap Lock Thermostats Select Zone Stat or All Zones and choose +/- 2° or 0° lock.

• Confirms zone thermostat is locked.

03 TURN THERMOSTAT ON / OFF

1: Gene	1
2. Marcos	2
3: Main Off	
4: Joe	2
5: Cheryl	2
6. Elle	
7: Jeff	2
8: Charlotte	2
9: Conf	2

The thermostat On and Off function will allow you to turn individual thermostats On and Off.

Tap Turn Thermostat On/Off Select the zone or zones you want to turn Off or On

To turn OFF the thermostat uncheck the box.

Note: Off is displayed on the thermostat.

GEN X MOBILE APP



Allow the user to review the current conditions for the GEN XV systems. Number of Active thermostats in the system, how many are communicating, thermostats that are off, Unit status, Leaving Air Temperature, Return Air Temerature and Outside Air Temperature all from your mobile device.

Tap System Diagnostic or access from Extended feature menu.

Scroll Down to view Active Zones and unit conditions.

Tapping on a zone thermostat, (under **Thermostat Status**) will allow you to adjust the zone set point.

Troubleshooting Note: System Diagnostic is a great tool to use to confirm communications with thermostats and detect communication errors or wiring errors in the system.

05 HIGH/LOW



For system protection the GEN XV has High and Low limit set points built into the mobile app configurations. Factory defaults for Gas/Electric/VRF operations are High Limit 145°F and Low Limit 45°F, fro Heat Pump operations factory defaults are Hight Limit 115°F and Low Limit of 45°F. These can be field configured as required.

> Tap Set High/Low Limit Tap Set High Limit, Confirm or Change High Limit (Range 100° F - 160° F) Select OK when done

Tap Set High/Low Limit Tap Set Low Limit, Confirm or Change Low Limit (Range 40 ° F- 50 ° F) Tap OK when done

06 SECOND STAGE DELAY

e Second Stage Dela

Set Second Stage Delay Time

0

CANCEL

1 T 8 415 220 PM

The GEN XV controller can be configured for TIME/TEMP or TIME ONLY second stage operation. TIME/TEMP strategy uses both run time and leaving air temperature to determine when to initiate second stage heat or cool. TIME ONLY strategy uses run time to stage second stage heat/cool operation. Factory default is TIME/TEMP, the run time is preset to 3 minutes; however this can be reset up to 30 minutes.

Time / Temp Configuration

Tap Set Second Stage Delay Settings Carbon Second Stage Delay Tap Set Second Stage Delay Time Choose 3-30 minutes, Tap OK

Time only Configuration

Tap Set Second Stage Delay Settings Tap Set Second Stage Delay Time Choose 3-30 minutes, Tap OK Disable Second Stage Delay by tapping the checked box.

Select the number of hours to initiate override operation. Select 2-8 hours in the setback mode. Tap for once on the thermostat to initiate override operation. The "override" can be tapped again to terminate override operation.

Tap Set Override Hours Choose 2-8 hours for override operation, Tap OK

This is a global function, all thermostats on this unit will operate with the override time selected.

07 OVERRIDE HOURS

3-30 minutes



GEN X MOBILE APP

08 PRIORITY VOTE

	8 🖤 🖥 645, 2:41 PM
1: Gene (1)	
2: Marcos (1)	
3: Main Off (3)	
4: Joe (1)	
5: Cheryl (1)	
6: Ellie (1)	
7: Jeff (1)	
8: Charlotte (1)	
9. Conf (0)	
4	0 0

FAN MODE

This function allows system configuration to determine the weight of the vote sent from each thermostat. Factory default is set to 1 vote per thermostat. When needed, a thermostat can be configured for higher weight by adding up 2 additional votes for a total of 3 votes maximum granting higher priority to that zone. Additionally, if there is a desire for a thermostat to not place a call for heating or cooling, a null vote may be configured by using a value of 0 in the priority vote menu, when null vote is selected the thermostat is a slave to the GEN X system.

Tap Set Priority Vote Tap Zone Stat of Choice Enter 0-3 Votes for Zone Stat, Press OK

Fan operation for either Fan ON or AUTO. When system is configured for ON operation, the Fan will run during Occupied Schedule and will revert to Auto operations during unoccupied schedule. When system is configured for Auto operation, Fan will only run when there is a call for heating or cooling,

Tap **Operation Mode (ON or AUTO)** Tap **Fan Mode** Choose **AUTO or ON**

The Gen XV is designed as a universal GAS/ELECTRIC/HEAT PUMP/VRF controller. Factory default is set for GAS operations and will need to be configured for VRF operations.

> Tap **Unit Type** Choose **Unit Type set to VRF**

0



0



SET MAVERICK

Maverick operations allow the system to recognize an outlier call in the system. When most zones in a system are calling for heat and 1 zone is calling for cooling, the system will initiate a MAVERICK CALL protocol by starting a time clock. Logic in the controller will provide a time period for first calls to satisfy, and then run a purge cycle and energize the maverick call. Maverick call will remain on until zone satisfied, then run purge and return to majority operations.

Tap Set Maverick Mode Enable Maverick Mode (Enabled when box is checked) Choose 3-30 minutes, Press OK



Note: Maverick mode only works when there are 3 or more zones installed.

12 ENABLE WARM UP MODE



In cold climates a MORNING WARM UP sequence will assist in preheating the building prior to occupancy. The GEN XV system provides a strategy for morning warm up based on a sophisticated algorithm built into the system controller. When enabled, the system will switch from Unoccupied to Occupied two hours prior to system start time and run heating for 20 minutes to evaluate time needed to raise building temperature, after 20 minutes system will return to Unoccupied mode. Using the information gathered from the 20 minute warm up evaluation, thermostats will reset individual occupied start times to provide morning warm up for each zone in the building.

Enable Warm up Mode (Enabled when box is checked)









Enter sone to	
1: Gene	
	CANCEL OK
Charlotte	

GEN XV may be configured for F° or C° operations.

Tap **Temperature Format** Choose **F° or C°**

During the start up and commissioning of the system, an air balance may be required. Enable the air balance mode to Start, this will drive all dampers to the open position, energize the fan and lock out compressor or heat function. When air balance is complete, Tap the Enable Air Balance mode to STOP air balance mode and place the system back to normal operation.

Enable Air Balance Mode (Enabled when box is checked)

Note: Air Balanced Mode not used with VRF systems

This allows you to give each zone a specific name.

Tap Set Stat Zone Names Tap Zone stat that you want to name Enter name of zone, Press OK Repeat for all additional zones that need to be named

16 CHANGE GEN X / RM UNIT NAMES



This allows you to give the GEN XV and GEN X RMV's a specific name.

Tap Change GEN X / RM Unit Names Tap Unit you want to name Enter name for that unit, Press OK Repeat for all additional units that need to be named

17 CONFIGURE NUMBER OF THERMOSTATS



Installer must set the number of thermostats in the system. This reduces the need for the GEN XV controller to poll and review each zone's needs. Installer can set the number of thermostats from 1-20.

Tap Number of Thermostats Enter how many zones in this system 1-20, Press OK

18 CONFIGURE NUMBER OF RM'S ATTACHED



Configuring the number of RMV's attached to system allows the GEN XV to know how many RMV's it will be communicating with. It also needs to know how many RMV's will be in the system to sync properly.

> Tap **Configure Number of RM's Attached to System and enter the number of RM's attached to the system.** Note: Each RM can support up to 20 thermostats or zones





Each GEN X RMV receives an ID number ranging from 1-20. This allows the GEN X mobile app the ability to communicate with multiple RMV's through the GEN XV controller. The RMV's need to be ID'd and synced in the order of the daisy chain.

Tap Assign RM ID

Enter the ID of the first RM in the system, press OK

When the blue light on the RM you wish to sync starts flashing rapidly, hold the sync button on the RM controller that you wish to sync for 15 seconds. When the light stops flashing the sync is complete.

20 CONFIGURE NUMBER OF RLYX ATTACHED



Configuring the number of RLYX allows the GEN XV to know how many it will be controlling for the syncing process

> Tap Configure Number of RLYX's attached to system and enter the number of RLYX that are attached to the GEN X.

Note: Each RLY-X can support up to 5 generic loads.



V 12451

Enter ID	number, t	hen pres	s but-
ton on R	£Y-X when	n lights fi	ash
	3	CANCEL	~
Zone Dee	North Color	CONTRACT.	

Each RLYX receives an ID number ranging from 1-20. This allows the GEN X mobile app the ability to communicate with multiple RLYX's through the GEN XV controller. The RLYX's need to be ID'd and synced in the order of the daisy chain.

Tap **Assign RLYX ID** Enter the ID of the first RLYX in the system, press OK

When the blue light on the RLYX you wish to sync starts flashing rapidly, hold the sync button on the RLYX controller for 15 seconds when the light stops flashing the sync is complete.



72.3*	Heat Could	Advert Grant
72.3*	10.000	
and the second se	00/13	66/85
72.6*	66/74	60/95
72.9*	66/72	60/95
70.7*	66/72	60/95
73.0"	69/74	60/95
74.6*	67/74	60/95
72.21	66/72	60/95
72.7	67/72	60/95
73.0*	68/73	60/95
	14	
	72.9' 70.7" 73.6" 72.2" 72.7" 73.0"	72.9' 66/72 70.7' 66/72 73.0' 69/74 74.6' 67/74 72.2' 66/72 72.7' 67/72 73.0' 68/73

Zone overview will let you review all the zones, current room temperatures, active cooling calls in blue, active heating calls in red along with Occupied and Unoccupied set points.

Select Zone Overview to see all zone set points and current room temperatures

23 ALARM SETTINGS

CANCEL

3

6

0

63

10 . 126

e put of range at

Enter time to wait before alarming (5-90 minutes)

2

5

8

0

Enter temperature threshold for

ng (3-10 degrees)

CANCEL

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Once enabled this allows email/App notifications of faults in the system such as low battery, temerature out of range.

Select Change Alarm Settings Enable zone out of range alarm

Select **Set time out of range for alarm (5-90 minutes)** Enter the time to wait before alarming; Press Ok

Select **Set temperature out of range for alarm (3-9°)** Enter temperature threshold for alarming; Press Ok

Select **Alarm Subscription Settings** to add/remove app notifications and email alarm subscriptions.

Select **Sign up for alarm notifications** and enter the email addresses of the individuals that want to receive the alarm notifications.

You will receive a Subscription Confirmation email, to activate the alarming you will need to confirm the subscription.

To Unsubscribe from Alarms, enter the email address in the Unsubscribe from alarms.

* For alarming to function, account set up is required.

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5

8

24 CHANGE ADR SETTINGS

1- Zone 1	3 W 1000 21000
L 2006 I	
2: Zone 2	
3: Zone 3	
4: Zone 4	0
5: Zone 5	
6: Zone 6	
7: Zone 7	
8: Zone 8	

When the 3rd party device receives an ADR signal from the utility service provider its contacts close, the GEN XV & RMV's set back their thermostats 4° for both the heating & cooling modes and lock the thermostat set points so they cannot be adjusted at the thermostat during the ADR event. Once the ADR event has concluded the thermostats unlock and return to their original set points.

Tap Change ADR Settings

Select the zone or zones you want to enable

☑ To enable the thermostat for ADR

The Extended Menu Options will allow access to additional control systems tied to the GEN XV controller or account, check the system diagnostic, view contractors information and log out or exit the app.

System Diagnostic - Gives an overview of the system you are currently connected to including number of Thermostats the system is configured for, Leaving, Return & Outside air temps, System Status (Heat, Cool or Vent operation), number of Heat and Cool calls and Thermostat Status.

Log Out of Account - Will log you out of your account and takes you back to the option screen for logging in to the system over the internet or accessing a system on the same local network that your mobile device is also connected to.

Change RM/GEN X (Same System) – Allows you to switch between a GEN XV and RMV's on the same system you are currently connected to. This option can be used for over the internet or local network connections.

Change RM/GEN X (Separate System) - Allows you to connect to any of the GEN XV systems that are associated with your user account. This option is used for over the internet connections only.

Exit App - Closes the GEN X app.







The GEN XV controller can be accessed from any web browser. Accessing the GEN XV over the internet requires a user name and password that is set up through the Zonex moblie app and confirmed by Zonex tech support.

If you need help setting up an account call Zonex tech support at 800-228-2966.

To access the GEN XV go to: www.genxcontrol.com

Enter the user name and password: Click Login

zonex

Username
Password
Login

END USER INTERFACE OVERVIEW

You can review and perform the following:

- -Review all zones on a system by system basis
- -Change occupied and unoccupied thermostat setpoints
- -Lock/unlock thermostats
- -Review the system status, leaving and return air temperatures
- -Review priority votes on zone thermostats
- -Review and change zone schedules and vacation days
- -Review and change zone names
- -Set temperature format

ZONE OVERVIEW

Zonex

Once you have logged into the end user interface you will see all the zone thermostats associated with the GEN XV controller.

To see other zoned roof top units or split systems. Click in the left hand column, a drop down will appear. Click on the RMV controller that you wish to view.

10000000	Zone	Temp	Operation	Occupied Heat J Cool	Unoccupied Heat / Cool	SA Stat
nice 🛧	- t	74		70/75	09/74	N
	2	73		70 / 73	69/74	N
	3	73	0	70 / 72	09/73	N
-	4	73	-7. C	70/73	69/74	- N
0	5	74		68774	69/74	Y
	6	72		69.172	692 / 23	Y
		20		795.1 9.4	4007.271	
-		20		70774	00773	- T
1	8	/4		76 / 74	69/73	Ŷ

Note: If the web-portal doesn't seem to load right, delete the cash and cookies in the web browser and reload the web-portal.



CHANGING ZONE THERMOSTAT TEMPERATURES

To change temperatures on a zone thermostat. Click the zone you wish to change the temperature on.

To change either the Cool set point (Blue Dot) or Heat set point (Red Dot) slide the corresponding dot to the left to lower the temperature and to the right to raise the temperature. After making temperature changes click on the X in the upper right corner of the pop up box to exit this screen. Changes will be transmitted to thermostats remotely.

Both Occupied and Unoccupied set points can be changed at this screen.

Note: The system is designed to maintain a 2° dead band between the heating and cooling set points.



DIAGNOSTICS SCREEN

The diagnostic screen allows you to view the leaving, return, and outside air temperatures and the current status of the system.

Under the Priority Votes column you can view the number of votes assigned to a thermostat as well as the mode of operation the thermostat is calling for (Cool, Heat, or Off/No Call).

The buttons under the Locked/Unlocked column are used to change thermostats so they can be LOCKED with 0° variance, PARTIAL LOCK +/- 2° or UNLOCKED. If you wish to lock or unlock all zone thermostats click on Unlock All / Lock All in the bottom right corner below the last zone status.

The Status column indicates the current status of communication between the thermostat and GEN XV controller.

If you have standalone thermostats (SASTAT) connected to the GEN XV / GEN X RMV controllers, the humidity, leaving and return air temperatures are displayed at the bottom of the diagnostic screen.

Return Air: 66° Priority Vistes 1 - OFF 1 - OFF	Outside Ax. 64 ° UNLOCI UNLOCI PRETIALI PRETIALI UNLOCI UNLOCI UNLOCI	Status scked Status ED DAMPER & STAT OK ED DAMPER & STAT OK ED DAMPER & STAT OK OCK DAMPER & STAT OK ED DAMPER & STAT OK ED DAMPER & STAT OK	
Priority Votes 1 - 0FF 1 - 0FF	LeckedUe UNLOCI UNLOCI PRATIALI PARTIALI UNLOCI UNLOCI	Status ED DAMPER & STAT OK ODR DAMPER & STAT OK ED DAMPER & STAT OK ODR DAMPER & STAT OK ED DAMPER & STAT OK ED DAMPER & STAT OK ED DAMPER & STAT OK	
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1 - 064 1 - 000(1 - 064 1 - 064 1 - 064 1 - 064 1 - 064	UNLOC PARTIAL UNLOC UNLOC	ED DAMPER & STAT OK ODK DAMPER & STAT OK ODK DAMPER & STAT OK ED DAMPER & STAT OK ED DAMPER & STAT OK	
1 - 000), 1 - 06# 1 - 06# 1 - 06# 1 - 06#	PARTIAL PARTIAL UNLOCK UNLOCK	OCK DAMPER & STAT OK OCK DAMPER & STAT OK IED DAMPER & STAT OK IED DAMPER & STAT OK	
1 - 055 1 - 055 1 - 055 1 - 055	PARTIAL UNLOC UNLOC	DAMPER & STAT OK DED DAMPER & STAT OK ED DAMPER & STAT OK	
1 - 06# 1 - 07# 1 - 07#		ED DAMPER & STAT OK ED DAMPER & STAT OK	
1 - OFF 1 - OFF	UNLOCI UNLOCI	ED DAMPER & STAT OK	
1 - OFF	LINEOCO		
	014200	ED DAMPER & STAT OK	
1 - OFF	UNLOCH	ED DAMPER & STAT OK	
1 - OFF	UNLOG	ED STAT OK	
			Interaction (Sector)
tet H	umidilty	Leaving Air	Return Air
⊳Rm.	54%	66*	.71*
5	1 - QFF Stet H	1 - OFF UNLOOP Stat: Humidity CD Rm 54%	1 - OFF LINLOCKED STAT DK Stat Humidity Leaving Air ch Rm 51% 05*

SCHEDULE / VACATION SET UP

To set up schedules for the thermostats, click on Schedule.

To set the same schedule for all thermostats for all 7 days click on Occ Start under All Days in the All row. Select the time (hour, minute, and am/pm) you want the thermostats to start cooling / heating the zones. Next click on Occ End and enter the time you want the thermostats to stop cooling / heating the zones.

To set the schedule for all thermostats for weekdays ONLY (Monday - Friday) click on the field under the Weekdays column and the All row and follow the steps for changing time outlined above. Repeat this process for Saturday and Sunday fields. If a zone is to be unoccupied for the entire day select Unoccupied All Day.

Each thermostat can also be configured to follow its own unique schedule by clicking on the appropriate field in the row that corresponds to the thermostat you wish to setup.



VACATION SET UP

zonex

To set a new vacation schedule or modify an existing one click on the Schedule menu and then click on the Vacations tab.

Under the Start Date ~ End Date column click on the Start date field and a calendar will pop up. The first date selected is the vacation start date and second date selected is the vacation end date. The system will go into unoccupied mode during these days and will follow the normal schedule thereafter.

To delete a vacation schedule simply click on the DELETE button next to the one you wish to delete.

	Weekly Schedule	Vacations						
🗏 System 💙	#	# Start Date ~ End Date						
	1	Start date 🔷 Erid date 🗒						

	Wooldy Schodule	Vacation	10												
ystem 🗙	#	Start	Date	ə ~ E	ind I	Date									
	1	Start	itte		2	Epd de	viù								
		π	é.	м	lar 20	18					٨	pr 201	18		1 1
		Su	Mo	Tu	We	Th	Fr	Sa	Su	Мо	TU	Wa	Th	Fr	Sa
		25	26	27	21	1	2	3	٦	2	3	4	5	ő	7
		4	5	6	7	8	8	10	8	9	10	11	12	13	14
		11	12	13	14	15	16	17	15	16	17	18	19	20	21
		18	19	20	21	22	23	24	22	23	24	25	26	27	28
		25	26	27	28	29	30	31	29	30	\mathcal{A}	22	3	16	з
			a			-		7		10		÷.	310	15	12


CHANGING TEMPERATURE FORMAT AND ZONE NAMES

The options under the Settings menu will allow changes to the temperature format, system name and zone names.

To change the temperature scale click on the button below Temp. Display Format and the switch will move to the left for Fahrenheit and to the right for Celsius.

To change either the System Name or Zone Names move the pointer over the name to be changed, click on Edit, change the field to the desired name and click on Save.

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Zonex	ZDHEX Building: Dave Deposition Indexide Informe						
and the second second	Settinge						
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Litring sereta 🛶	** 💶 🕫						
Process lead 2 10/24	Custom Namina						
C autom							
CONTRACTOR OF	System sume.						
	zunez Bolorgi egi						
	Zone Names						
	1. Gene						
	2. Mexcos						
	3. Joe						
	4: Main Office						
	5 Cheryl						
	6 Elas						
	7.00						
	B: Barbana						
	8. Conference						
	10: Tech Rm						
13 C							

STAND ALONE UNIVERSAL THERMOSTAT

The SATouchX is a universal color touch screen programmable G/E or H/P thermostat, microprocessor based, auto changeover, stand alone thermostat used to control stand alone fan coil units with the GEN XV system. The SATouchX is configured for Gas/Electric (2H, 2C) with selectable fan operation. The SATouchX reports the supply and return air temperatures and has a large, easy to read display. Note: A field supplied manufacturers VRF thermostat interface is needed when connecting to a VRF unit.

The SATouchX is very easy to configure through the mobile App or by manually adjusting settings at the thermostat.

The SATouchX features an on board thermistor for precise temperature measurement. In the event of power loss, the Heat and Cool set points are stored in non-volatile memory, without the need for battery backup.

Space ambient temperature is continually displayed with large, easy-to-read numbers. SATouchX temperature display range is 47° - 95°F. Heat and Cool set points and operation modes are all indicated on the display.

Programmed set points can be manually adjusted at the thermostat or electronically locked through the mobile app to provide limited manual set point adjustment. During unoccupied hours, temporary operation can be overridden with a touch of a button.

Thermostat Operation

COOL - The thermostat will make a Y1 cool call when the space temperature rises 1° above set point. Y2 will energize when the space temperature rises 2° above the cool set point or whatever the 2nd stage temperature is set for. When the room temperature reaches set point Y1 and Y2 will de-energize. O or B energize for the reversing valve circuit, depending on configuration. The G circuit is energized for fan.

HEAT - The thermostat will make a W1 heat call when the space temperature is 1° below the heat set point. W2 will energize when the space temperature is 2° below the heat set point or whatever the 2nd stage temperature is set for. When the room temperature reaches set point W1 and W2 will de-energize.

Note: When the thermostat is configured for GAS operation the fan circuit is not energized in heat mode. Note: When the thermostat is configured for ELECTRIC operation the fan circuit is energized in heat mode.

EMERGENCY HEAT - Not used on VRF systems.

FAN MODE - Is factory set for "Auto", to configure the thermostat to run the fan constant "On". Go to Thermostat Advanced Menu, Select Fan Mode; Select the the desired fan operation "Auto" or "On".

INSTALLATION

Thermostat and Terminal base

- 1. Install the thermostat on an interior wall, away from drafts, supply air currents and direct sunlight or any heat generating source.
- 2. Remove the thermostat from its sub-base, by pulling the thermostat and sub-base appart.
- 3. Install the thermostat sub-base to the wall using the provided anchors and screws.

INSTALLATION INSTRUCTIONS

WIRING THE UNIT, SUPPLY AND RETURN AIR SENSORS TO THE SATouchX

Use 18/6 thermostat wire, wire from SATouchX to the VRF interface. Make sure to match up the VRF interface terminals to the SATouchX terminals R, Y1, Y2, W1/O/B, W2, G. Wire in the Supply and Return air sensors using 18/4 thermostat wire.

Install the Supply and Return air LAT sensors 18 to 24" downsteam of the unit.





DAISY CHAIN THE COMMUNICATION WIRE

Using Zonex 2 wire communication wire. Wire to A and B **IN** and A and B **OUT**, to and from SATouchX's in a daisy chain configuration.

Wiring to Communication Terminals Red-A White-B



DAISY CHAIN 24V POWER FROM GEN XV, GEN X RMV

SATouchX is powered by the independent transformer connected to the GEN XV. Using 18/2 wire for the 24vac power, daisy chain from TR1, TR2 **IN** and **OUT** to and from the SATouchX's.

Daisy Chain Multiple SATouchX's





Addressing StandaloneThermostats

Every thermostat in the system needs a unique ID ranging from 1-20. They must be in numerical order the way the communication wire is daisy chained. Confirm no duplicate addresses.

To set the stat's ID access the Advanced Configuration menu by tapping on the degree symbol next to the room temp **O**. The degree symbol will change from white to green and then tap

Once in the Thermostat Advanced Menu, Select SET ID

Use the \land and \checkmark arrows and set the new ID ranging from 1-20

Тар	to

to save changes, to return to the home screen tap

Select Unit Type

The SATouchX is designed as a universal GAS/ELECTRIC/HEAT PUMP thermostat. Factory default is set for GAS operations.

While in the Thermostat Advanced Menu, Select Unit Type

Select the the desired unit type operation

Tap 🔁 to save changes, to return to the home screen tap



Display Temperature Calibration

Thermostats are calibrated at the factory and should require no further adjustment. However, the display space temperature may be field calibrated by the following procedure:

To access the Thermostat Configuration Menu: Tap

While in Thermostat Configuration Menu, Select Calibrate Display

Use the / and / arrows to calibrate the thermostat display to a external temperature probe temperature reading.

Tap 🛐 to save changes, to return to the home screen tap

Adjusting Set Points

The Heat or Cool set points are displayed at the bottom of the screen. To adjust the set points, tap on the heat-to or cool-to temperatures; the set points will be displayed on the screen.

Use the \land and \checkmark arrows over the flame/snowflake icons to set the desired heat and cool set points.

Tap for save changes

Changing Mode

The thermostats are auto changeover, but specific modes may be selected. Heat/Cool mode is the default.

System Heat/Cool - Tap on (modes), select "Heat/Cool". Tap [] to save changes
System Heat Only - Tap on modes , select "Heat Only". Tap 🏠 to save changes
System Cool Only - Tap on modes , select "Cool Only". Tap 🕋 to save changes
System Off - Tap on modes , select "Off". Tap 🏠 to save changes

Override Operation

When the thermostat displays the unoccupied icon **a** 2-8 hour temporary override may be initiated by tapping the **b** "Override" will appear. When additional override time is required, tap the unoccupied icon again.

THERMOSTAT CONFIGURATION MENU

11:15 am

To access the Thermostat Configuration Menu: Tap

The **THERMOSTAT CONFIGURATION MENU** allows you to:

Override/Unoccupied Set Temperature Select Occupied Light

Select Unoccupied Light Mode Set Display Accuracy

Current Schedule Time & Date Temperature F/C

Calibrate Display



OVERRIDE/UNOCCUPIED





When a thermostat displays "unoccupied mode 📴 ", a 2-8 hour temporary override maybe initiated.

While in the Thermostat Configuration Menu, Select Override/Unoccupied

Tap "override" to place the thermostat into a override mode.



Tap 🛃 to save changes, to return to the home screen tap



Shortcut note: Tap on F to place the thermostat into override mode

SET TEMPERATURE



When in the "Set Temperature" screen you can adjust the heat/cool set points to their desired temperature settings.

While in the Thermostat Configuration Menu, Select Set Temperature

Use the \bigwedge and \bigvee arrows over the flame/snowflake icons to set the desired heat and cool set points.



Tap 🛐 to save changes, to return to the home screen tap



Shortcut note: Tap on cool to/heat to to adjust setpoints.

SELECT OCCUPIED LIGHT



The brightness of the thermostat during occupied mode is adjustable from 100% down to off.

While in Thermostat Configuration Menu, Select Occupied Light

Use the \land and \lor arrows to select the desired brightness.

Tap 🛃 to save changes, to return to the home screen tap

Note: If "off" is selected, just touch stat to wake it up.

SELECT UNOCCUPIED LIGHT



The brightness of the thermostat during unoccupied mode is adjustable from 100% down to off.

While in Thermostat Configuration Menu, Select Unoccupied Light

Use the \land and \lor arrows to select the desired brightness.



Tap 🛐 to save changes, to return to the home screen tap 🎧



Note: If "off" is selected, just touch stat to wake it up.

MODE



Thermostat mode allows the thermostat to be set to heat/cool, cool only, heat only of off operation.

While in the Thermostat Configuration Menu, Select Mode

Select the the desired operation mode

Tap 🛃 to save changes, to return to the home screen tap



Shortcut note: Tap modes on the home screen to access the mode selection screen

SET DISPLAY ACCURACY



Display accuracy allows the thermostat to display the room temperature in 1/10° or 1°.

While in the Thermostat Configuration Menu, Select Set Display Accuracy

Select the the desired display accuracy



Tap 🛃 to save changes, to return to the home screen tap 🍙

CURRENT SCHEDULE

11:15	am	
	P	Ŀ
moh	6:00am	2:30pm
tue	6:00am	-2:30pm
wed	6:00am	-2:30pm
thu	6:00am	2:30pm
fri	6:00am	2:30pm
sat	۲.	
sun	F	
CL	rrent sch	nedule
	•	•

View the current thermostat schedule, given by the Gen X system

While in the Thermostat Configuration Menu, Select Current Schedule

This allows you to view the schedule for that zone. Changes to the schedule are done through the Gen X app.



Tap 🛐 to go back to the menu, to return to the home screen tap 🏫

TIME & DATE



View the current time and day, given by the Gen X system

While in the Thermostat Configuration Menu, Select Time & Date

View the current time and date on the Gen X system



Tap 🛐 to go back to the menu, to return to the home screen tap



TEMPERATURE F/C



ZONEX

The SATouchX can be configured for F° or C° operation through the Gen X app

While in the Thermostat Configuration Menu, Select Temperature F/C

View the current temperature operation



Tap 🛐 to go back to the menu, to return to the home screen tap



CALIBRATE DISPLAY



Thermostat is equipped with an accurate temperature sensor. If you require field calibration, follow the steps below.

While in Thermostat Configuration Menu, Select Calibrate Display

Use the \land and \checkmark arrows to calibrate the thermostat display to a external temperature probe temperature reading.



Tap 🛐 to save changes, to return to the home screen tap



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THERMOSTAT ADVANCED MENU

To access the Thermostat Advanced Menu: Tap on the degree symbol next to the room temp ${f O}$

The degree symbol will change color from white to green and then tap

The THERMOSTAT ADVANCED MENU allows you to: Set ID Select Fan Mode Select Unit Type Set 2nd Stage Temp



Set Emergancy Heat Diagnostic

Temp Source Menu Type



STAT ID



Every thermostat in the system needs a unique ID. They must be ID'ed in numerical order the way the communication wire is daisy chained. No duplicate addresses.

While in the Thermostat Advanced Menu, Select SET ID

Use the \bigwedge and \bigvee arrows to set the new ID ranging from 1-20



Tap 🛃 to save changes, to return to the home screen tap



Note: (All thermostats recieve a unique ID 001 to 020, maximum of 20 zones per GEN XV and GEN X RMV controllers.)

SELECT UNIT TYPE



The SATouchX is designed as a universal GAS/ELECTRIC/HEAT PUMP thermostat. Factory default is set for GAS operations.

While in the Thermostat Advanced Menu, Select Unit Type

Select the the desired unit type operation



Tap 🛃 to save changes, to return to the home screen tap



SELECT FAN MODE



zonex

Fan operation is configured for either Fan ON or AUTO. When system is configured for ON operation, the Fan will run during Occupied schedule and will revert to Auto operations during Unoccupied schedule. When thermostat is configured for Auto operation, Fan will only run when there is a call for heating or cooling.

While in the Thermostat Advanced Menu, Select Fan Mode

Select the the desired fan operation "Auto" or "On".

Tap 🛐 to save changes, to return to the home screen tap



SET 2ND STAGE TEMP



The SATouchX's 2nd stage operation is based on room temperature. Staging is adjustable from 2°-8° from thermostat room temperature.

While in the Thermostat Advanced Menu, Select Set 2nd Stage Temp

Use the \land and \checkmark arrows to set the 2nd stage temp range from 2°-8°



Tap 🔁 to save changes, to return to the home screen tap

SET EMERGANCY HEAT



The SATouchX has an emergency heat function that will lock out the compressor, and energize the Aux heat in the unit.

While in the Thermostat Advanced Menu, Select Set Emergancy Heat

Select "Enabled" for emergancy heat operation.



Tap 🛐 to save changes, to return to the home screen tap



Note: Only emergancy heat calls will be seen when enabled.

DIAGNOSTIC

11:15 am	P 👌
communicatio	n ok
leaving temp	52°
return temp	70°
humidity	37%
relays	OFF
blue led	OFF
red led	OFF
select diagnost	ic test
•	•

The SATouchX Diagnostic screen will allow you to confirm communication with the GEN X controller and allow you to confirm the relays operation, LED operation and report the leaving/return temperatures as well as the relative humidity.

While in the Thermostat Advanced Menu, Select Diagnostic

Tap **relays** to confirm they energize and de-energize Tap **blue led** to confirm the blue led illuminates Tap red led to confirm the red led illuminates

Tap 🛐 to exit diagnostic screen, to return to the home screen tap

TEMP SOURCE



Temp source allows the thermostat to display the leaving air temperature or the relative humidity at the top on the home screen. A LAT sensor needs to be installed to report this reading. It will read 00 if no sensor is installed.

While in the Thermostat Advanced Menu, Select Temp Source

Select leaving air, humidity or no display to diplay or not display the temperature



Tap 🛃 to save changes, to return to the home screen tap

MENU TYPE



Menu type will allow you to see the advanced menu options under the user menu when advanced is selected.

While in the Thermostat Advanced Menu, Select Menu Type

Select user to hide the advanced options Select **advanced** to show the advanced options under the user menu



Tap 🛃 to save changes, to return to the home screen tap



What the SAV Self Balancing Damper does?

It measures the amount of air being delivered to the zone, controlling air flow independent of the VRF system. Each SAV damper is wired to a zone sensor which provides the SAV with load requirements for the zone it is controlling. Based on this information, the SAV will request a call for cooling or heating to the GEN XV controller which in turn sends information via the Interface to the air handler. Air handler will then control VRF operations as designed by manufacturer. SAV dampers are configured to deliver a targeted quantity of CFM through the damper and into the zone, based on variance from zone set point and zone temperature and emulate the operations of a VRF air handler.

When the zone load increases, SAV damper board will send a signal to GEN XV controller, GEN XV will forward to the VRF Interface and Air Handler will energize fan and call to outdoor unit. SAV damper will then Balance its damper position to provide 100 % of its targeted airflow to the zone. This is done by measuring air velocity through the SAV Self Balancing Damper and positioning damper to provide specified air flow requirement. As the zone sensor updates and the zone begins to approach set point, SAV will adjust its CFM requirement, adjusting damper position to provide a lower CFM to the zone in order to maintain comfort and allow the VRF system to maximize efficiency. The reduction in air flow will change refrigerant demand and EEV will sense this change and communicate with Outdoor unit reducing the speed of the compressor as is designed by the manufacturer. Added efficiency is gained as SAV damper provides a maintenance level of conditioned air to maintain zone comfort while allowing the VRF system to continue to operate without shutting the system off, more efficient.



SAV DAMPERS

The SAV, (Smart Air Valve) is pressure independent, self-balancing damper utilized in VRF applications to deliver specific CFM to each zone in a ducted system. The Smart Air Valve has a built-in pitot tube measuring section that controls adjustable air velocities, that are measured by differential pressure sensors. The SAV velocity setting potentiometers will assign a target air velocity at each SAV. The SAV air delivery will adjust itself to locate the target velocity. Then the SAV will hold this assigned air delivery regardless of static pressure changes in the system.

The EzTouchX used with a Smart Air Valve can request various preset air volume targets and send specific target request to the SAV. As the room temperature or zone approaches set point the thermostat will reduce the CFM or cooling to the space to the Vent mode to limit on/off compressor operation.

Round VRF-SAV (SMART AIR VALVE)

The 6" - 10" damper cylinders are fabricated from 22-gauge steel; the 12" - 14" cylinders from 20-gauge steel. Each cylinder features two rolled beads, which provide maximum structural integrity. The trailing end is crimped for ease of installation. A positive air seal is accomplished through use of a high-density foam gasket around the blade perimeter. The damper blade is bolted to the hexagonal damper shaft.

SAV dampers feature 24VAC, full stall motor, which do not require use of end switches to terminate travel. Each SAV is powered and controlled from its respective EzTouchX.



Damper motors are easily removed for damper shaft and motor inspection. Each actuator hat section is insulated to prevent condensation.

Round Smart Air Valve Damper PART NUMBERS AND SIZES



PART#	SIZE	L	w	
SAV05	5″	30″	8″	
SAV06	6″	30″	9″	
SAV07	7″	30″	10″	
SAV08	8″	30″	11″	
SAV09	9″	30″	12″	
SAV10	10″	30″	13″	
SAV12	12″	30″	15″	
SAV14	14″	32″	17″	

Typical Round Capacities

These air quantities were derived from a duct sizing chart 0.1" friction loss per 100' of duct. All CFMs

DUCT DIAMETER	*CFM HI	DUCT VELOCITY FPM	BTU HI		
5″	120	800	3,677		
6″	172	800	5,155		
7″	234	800	7,016		
8″	305	800	9,164		
9″	387	800	11,598		
10″	477	800	14,319		
12″	687	800	20,619		
14″	936	800	28,065		

*Air delivery may very +/- 10% based on altitude, air density or installation.



SAV DAMPERS

Rectangular VRF-SAV (SMART AIR VALVE)

Rectangular Smart Air Valves feature parallel blade construction for height dimensions to 14".

The damper assembly is enclosed in a 16" long, 20-gauge galvanized steel sleeve, with standard slip and drive connections. Damper blades are bolted to a hexagonal damper shaft. Damper blades close against steel blade stops. The damper linkage is non-adjustable and fully enclosed within the damper.



SAV dampers feature 24VAC, full stall motor, which do not

require use of end switches to terminate travel. Each SAV is powered and controlled from its respective EzTouchX.

Damper motors are easily removed for damper shaft and motor inspection. Each actuator hat section is insulated to prevent condensation.





Typical Rectangular Capacities

Designing a Rectangular Smart Air Valve (SAV)

CFM x .205 = Area in Square Inches Divide Square Inches by desired duct Height to find the duct Width

BTU	*CFM	SQ inches	SAV WxH		SAV WxH		SAV WxH		SAV WxH
16,745	558	102	13x8	or	10x10	or	9x12	or	7x14
17,894	596	109	13x8	or	11x10	or	9x12	or	8x14
18,551	618	113	14x8	or	11x10	or	9x12	or	8x14
19,536	651	119	15x8	or	12x10	or	10x12	or	8x14
20,439	681	125	15x8	or	12x10	or	10x12	or	9x14
21,342	711	130	16x8	or	13x10	or	11x12	or	9x14
22,245	741	136	17x8	or	13x10	or	11x12	or	10x14
23,148	772	141	17x8	or	14x10	or	12x12	or	10x14
24,050	802	147	18x8	or	14x10	or	12x12	or	10x14
24,953	832	152	19x8	or	15x10	or	12x12	or	11x14
25,856	862	158	19x8	or	15x10	or	13x12	or	11x14
26,759	892	163	20x8	or	16x10	or	13x12	or	11x14
27,662	922	169	20x8	or	16x10	or	14x12	or	12x14
28,565	952	174	21x8	or	17x10	or	14x12	or	12x14
29,468	982	180	22x8	or	17x10	or	15x12	or	12x14
30,371	1012	185	22x8	or	18x10	or	15x12	or	13x14
31,274	1042	191	23x8	or	18x10	or	15x12	or	13x14
32,177	1073	196	24x8	or	19x10	or	16x12	or	14x14
33,080	1103	202	24x8	or	19x10	or	16x12	or	14x14
33,983	1133	207	25x8	or	20x10	or	17x12	or	14x14
34,885	1163	213	26x8	or	20x10	or	17x12	or	15x14
35,788	1193	218	26x8	or	21x10	or	17x12	or	15x14
36,691	1223	224	27x8	or	22x10	or	18x12	or	15x14
37,594	1253	229	28x8	or	22x10	or	18x12	or	16x14
38,497	1283	235	28x8	or	23x10	or	19x12	or	16x14
39,400	1313	240	29x8	or	23x10	or	19x12	or	16x14
40,303	1343	246	29x8	or	24x10	or	20x12	or	17x14
41,206	1374	251	30x8	or	24x10	or	20x12	or	17x14
42,109	1404	257	31x8	or	25x10	or	20x12	or	18x14

*Air delivery may very +/- 10% based on altitude, air density or installation. These air quantities were derived from duct sizing chart .1" friction loss per 100' of duct. All CFMs listed are approximate. The pressure drop for these dampers is .1"

SYSTEM SETUP DIRECTORY

	INSTALLING CONTRACTOR	DATE OF INSTALL
	PHONE NUMBER	SYSTEM ID#
ZONE ID	ZONE / ROOM NAME	NOTES

NOTES

Zonex VRF-VAV IS YOUR SOLUTION !

- Eliminate multiple fan coils
- Eliminate extensive refrigerant piping
- Reduce compressor ON/OFF cycling
- Fewer fans, lower power consumption
- Easily integrates with most VRF manufacturers



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