NETWORK ALL YOUR HVAC EQUIPMENT

MONITOR, UPDATE AND CONTROL SYSTEM INFORMATION FROM THE MOBILE APP

Centralized DDC Communications for
Stand-Alone HVAC and Zoned Modulating Systems

Zonex SYSTEMS
comfort you control

INSTALLATION AND APPLICATIONS MANUAL

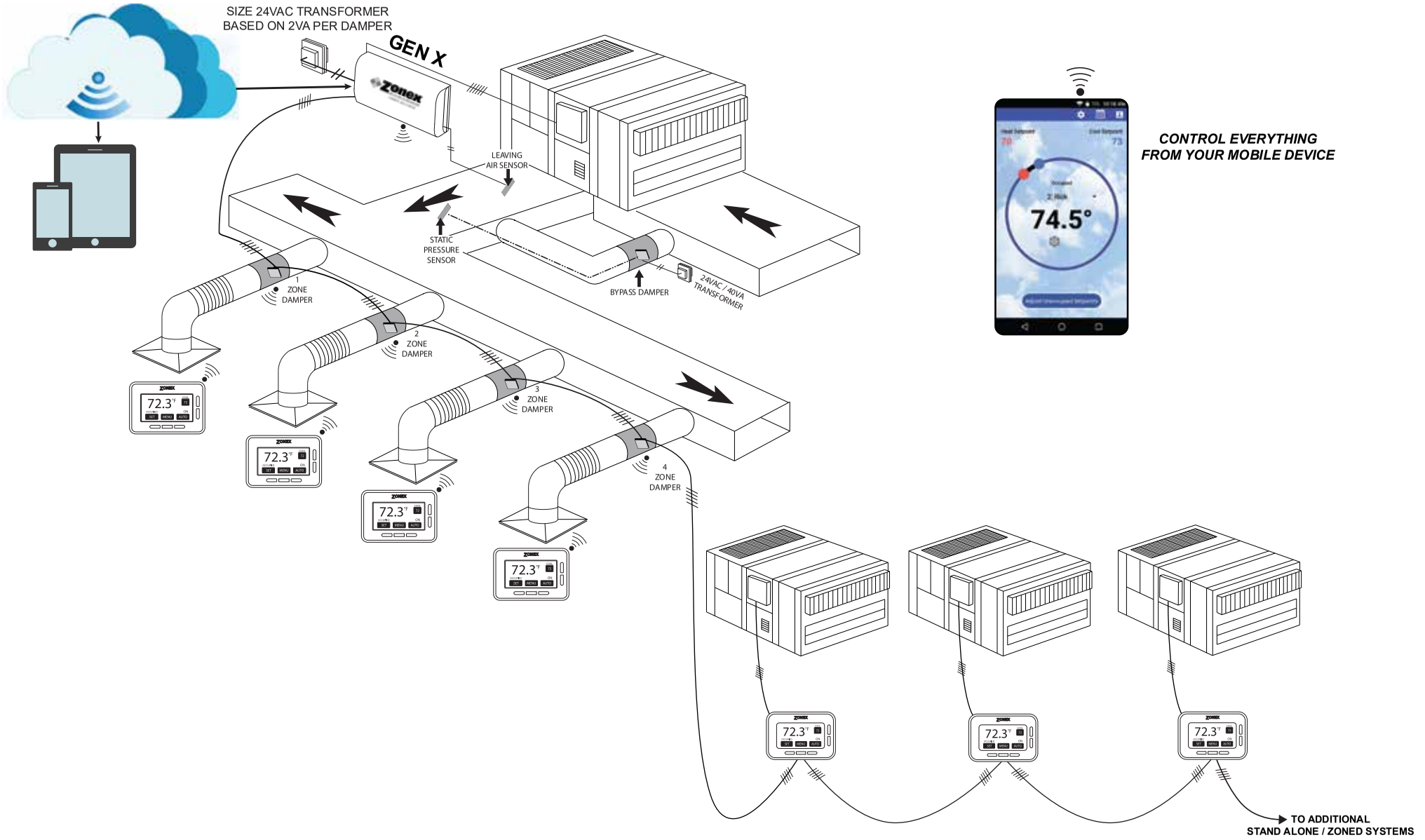
USING WIRELESS THERMOSTATS

PART # GENXMAN
APRIL 2020

CONCEPTUAL OVERVIEW

GEN X

NETWORK AND CONTROL VVT SYSTEMS
ALONG WITH MULTIPLE STAND ALONE RTU OR SPLIT SYSTEMS FROM YOUR MOBILE DEVICE



NOTE: ***USE ZONEX, 3 WIRE TWISTED PAIR COMMUNICATION LINK***

GEN X is a commercial modulating bypass VAV system controlling 2-20 independent zones per RTU or split system utilizing wireless Zonex thermostats that communicate remotely over the Internet with our App and a phone or mobile device from ANYWHERE. GEN X RM controllers are used to expand your system to control multiple zoned or stand alone units remotely. GEN X can support up to 20 RM expansion controllers providing control of up to 400 units, zone dampers or other control points in your system, seamlessly accessed via the App, or any browser from the end user interface.

The GEN X controller is designed for Auto Changeover, bypass VAV operation for multi-stage Heat Pump (2C/3H) or Gas Electric (2C/2H) applications. The GEN X supports VAV boxes and VFD type systems.

The GEN X mobile App allows for a wide range of system control and changeover strategies, allowing the contractor to tailor the GEN X 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 and optional staging strategies. Morning warm up, priority votes, and air balance features are also included. An integrated clock allows for setup, night setback, vacation scheduling, globally or individually for each wireless 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 X is recognized as the industry's easiest commercial zone control system to install and wire. The GEN X system operates over a plenum rated three wire data link, along with two 24vac power wires all daisy chained from damper to damper with no home run wiring required. Wireless thermostats do not require hardwire power or wiring between the thermostats and dampers. Each wireless thermostat is synced with its corresponding modulating damper providing effective temperature control throughout the system. Communication and configuration is all done through the GEN X mobile App. GEN X can control zoned systems along with standalone units. Wired thermostats are utilized to control stand-alone (non-zoned) HVAC equipment.

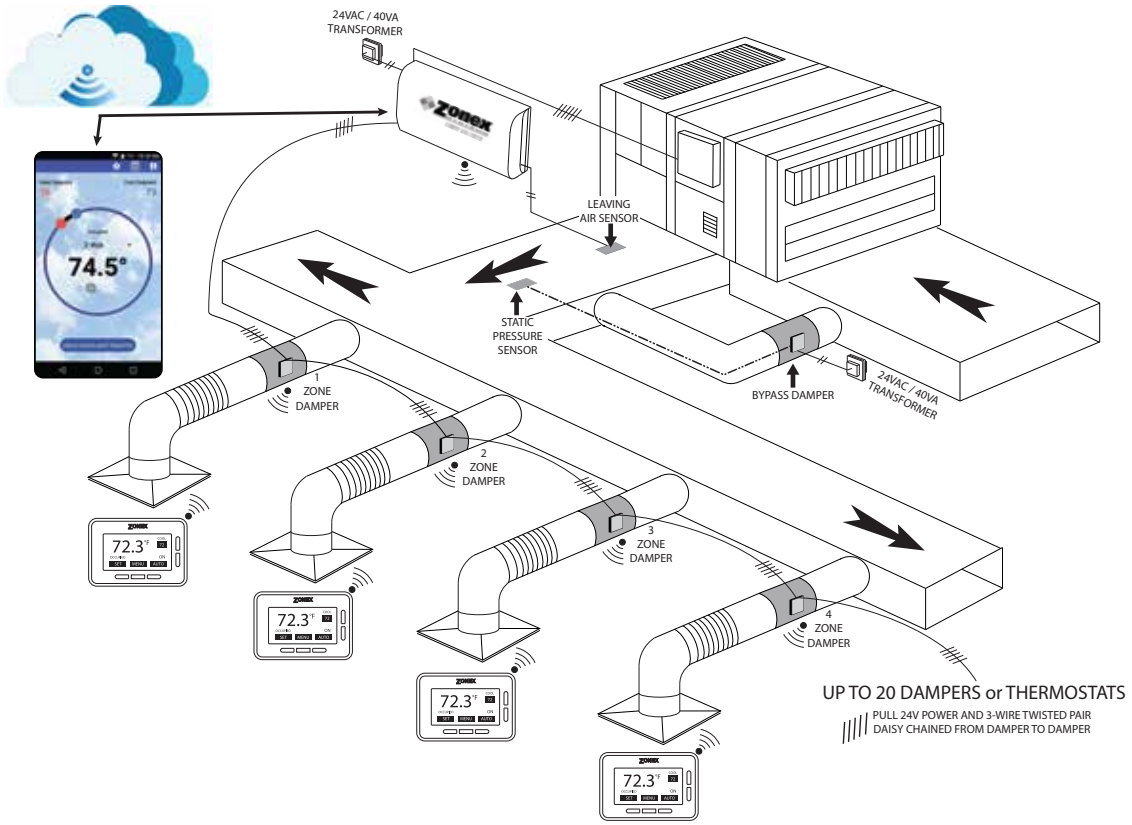
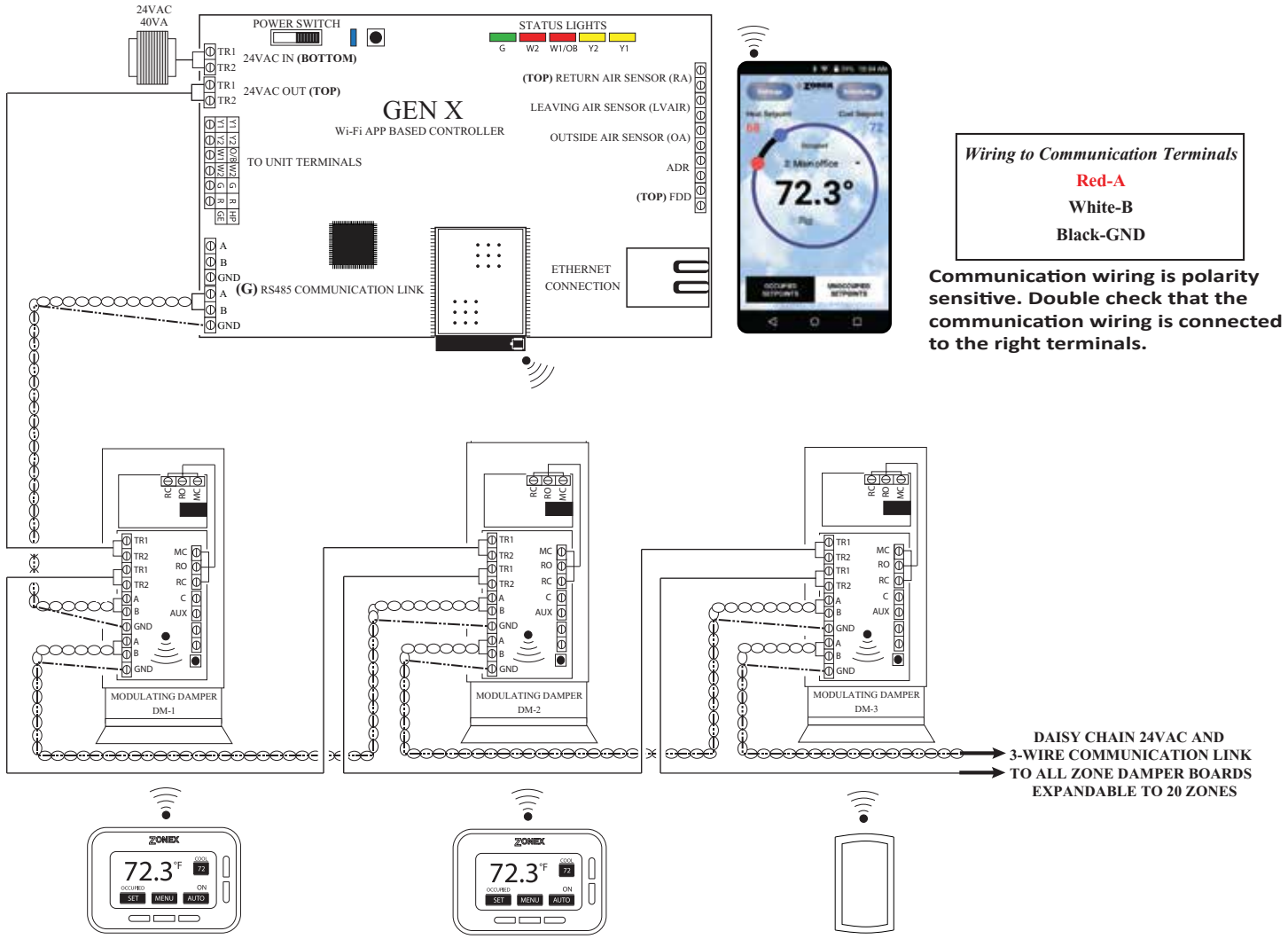


TABLE OF CONTENTS

Wiring and Installation

1. Install GEN X controller in a space that is easily accessible.
2. Install an Independent 24VAC 40va transformer, wire the secondary 24VAC output to the TR1 and TR2 (IN) bottom terminal on the GEN X controller. **DO NOT ground out the transformer.**
3. Install the Leaving air sensor (LV Air) in the supply duct, prior to the bypass. Wire the Leaving air sensor to the LV Air terminals on the GEN X controller. Install Return air sensor (RA) in the return duct, after the bypass. Wire Return air sensor to the RA terminals. (May extend sensor wire using 18/2 thermostat wiring) (See page 19).
4. Install Supply Dampers and Bypass Dampers. (See page 73)
5. Wire TR1 and TR2 (OUT) top terminal from the GEN X controller to the first Communicating Damper Board (CDBX) TR1 and TR2 using 18/2 thermostat wire. (See page 18). Continue daisy chaining TR1 and TR2 on the CDBX to the next CDBX until the last CDBX board or SA STAT in the system. Make sure TR1 and TR2 polarity is consistent throughout the system.
6. Wire A, B and GND from the GEN X controller using Zonex 3 wire Plenum rated twisted pair wire (Part #3TWP) to the first CDBX board. (See page 18). Continue daisy chaining from A, B, and GND on the CDBX to the next CDBX until the last CDBX board or SA STAT in the system. Make sure A, B, and GND polarity is consistent throughout the system.
7. Turn ON the GEN X controller, confirm that the GEN X , CDBX's, and SA STAT's (if applicable) are powered. A Blue Light on the GEN X and CDBX boards indicates it is powered. If you don't have blue power lights confirm power at the transformer and check TR1 and TR2 wiring.



Configuring and Syncing Thermostats

8. Install batteries into the wireless thermostats.(WSTATX) (See page 27).
9. Configure thermostats to be synced. (Only one thermostat can be synced at a time).
   Press **Menu** and **Auto/Off** on the zone thermostat to access the Zone Set Up menu. (See page 28).
   Select **System ID**, set the system ID to 021 using the up and down buttons; Press Save.
   Select **Set Stat ID**, set stat ID to 001; Press save.
   Select **Synchronize Damper**, Press Yes and go to the CDBX board that it will be synced to; Press the sync button on the CDBX board. Zone thermostat will say **Sync Successful** when sync is complete.
   (Repeat the steps above, All stats are SYNCED with its damper ID 001 to 020, maximum of 20 zones on each GEN X / GEN X RM system.)
10. **If GEN X RM's are being installed to support additional HVAC units see page 22. If not skip this step.**

Connecting to the GEN X 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 X 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 43** for dircet wireless connection to the GEN X using your mobile device.
13. Connect your mobile device via Wi-Fi to the same network the GEN X is connected. You may need to get the SSID/network name and password from the network administrator or IT personel.
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 X controller. If more than one is displayed, Tap the system you want to connect too.

System Configuration

15. Tap ⚙ for System Configuration Menu; scroll down to **Configure # of Dampers** and indicate how many Dampers / Zones are wired to the GEN X controller. (See page 31).
16. Tap **System Diagnostic**, confirm that the Leaving Air, Return Air, and Outdoor Air are reading temperatures. Also confirm under Thermostat Status that all Zones are Active.
17. While still in System Configuration, choose **Unit Type**. Select **Gas, Electric or Heat pump.**
18. See System Configuration Menu on page 46 to further configure the GEN X controller.
19. Scroll to Zone Overview and select, All zones should be showing room temperatures. Tap any zone to change set point for Heating and Cooling. See page 7 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 X 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 or Y1 (Yellow) and G (Green) lights for Heat pump operation.
20. Wire the GEN X controller to the RTU or split system. (See page 20).
21. Make a cool call from each zone thermostat and check register to ensure each damper opens and closes as you make and satisfy calls.

MOBILE APP OVERVIEW

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

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

- - Overview Screen
- - Schedule/Calendar
- - System Configuration Menu
- - 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.

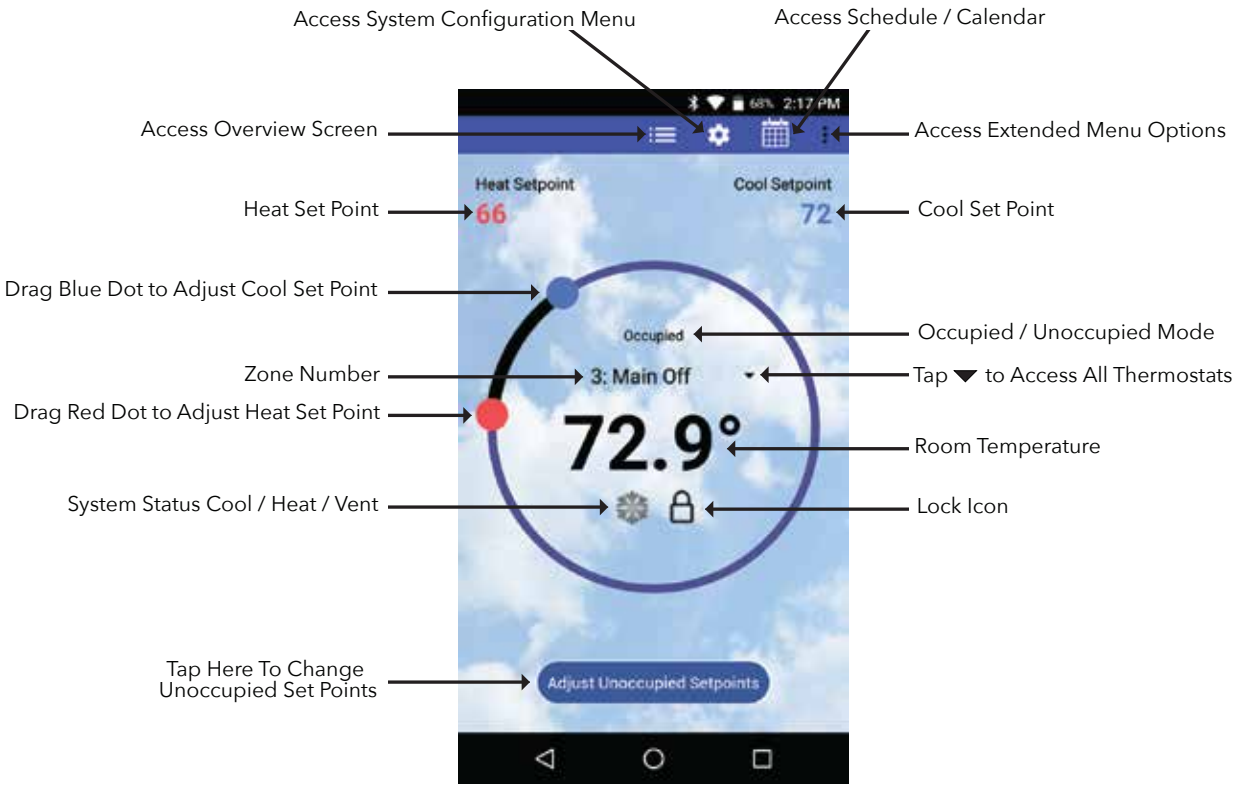
Tap the icon to access the Overview screen which displays the following:

1. Zone number
2. Zone name
3. Current room temperature of each thermostat

   Note: *Room temperatures are displayed in Blue if the zone is 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.

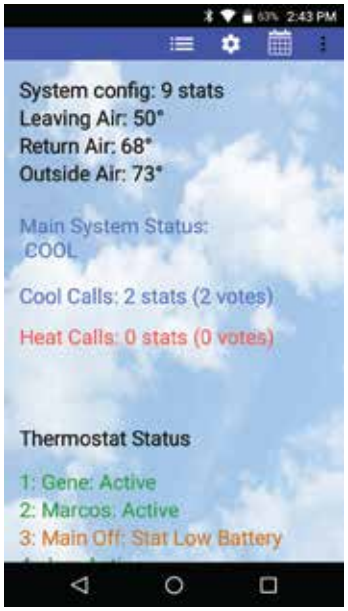
Familiarize yourself with the thermostat features and simple operation:



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 X is a vote based auto changeover system that polls each thermostat every 60 seconds to determine if a zone requires cooling, heating or is satisfied. 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. Dampers drive closed in the heating zones and modulate to the open position in zones calling for cooling.
5. Thermostat status: indicates if each thermostat is active (wired and communicating properly with the system), battery status and reports any wiring errors in the system.



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

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

1. System diagnostics
2. Log out of Account
3. Change RM/GEN X (same system)
4. Change RM/GEN X (separate system)
5. View contractor info page
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 X manual.

GEN X

Wi-Fi APP Based Controller

Part # - ***GEN X***

Includes Mobile APP

1 - Per RTU or Split System

Supports 2 – 20 Fully Modulating Zones

Add Part # **GEN X-RM** to expand your GEN X system by adding a GEN X-RM controller for each additional zoned unit.
(Each GEN X-RM supports 2-20 fully modulating Zones or thermostats)

Daisy Chain: Zonex communications wire and 24VAC from Damper to Damper with wireless stats or Stat to Stat with wired stats
1-24VAC / 40VA Transformer Powers the GEN X and All the Dampers in the System
Each GEN X-RM expansion controller requires an additional transformer to support up to 20 dampers per GEN X-RM

Wireless Thermostat

Part # - **WSTATX**

1-Thermostat per Damper
Slave Up to 3 Zone Dampers per Stat
or use Remote Sensor Part #-**WRSX**

Wired Thermostat

Part # - **ZSTAT**

1-Thermostat per Damper
Slave Up to 3 Zone Dampers per Stat
For Remote Sensor operation Part #-**ZSTATRS**

Modulating Zone Dampers*

Part #

WSTX + Damper Size - Round Dampers (up to 1.75 S.P)
WCDX + Damper Size - Rectangular Dampers (up to 1.75 S.P)

**Includes Communication Damper Board (CDBX)*

Modulating Zone Dampers

Part #

STMPD + Damper Size -Round Dampers (up to 1.75 S.P)
STCD + Damper Size -Rectangular Dampers (up to 1.75 S.P)

Wireless Unit Control for Standalone Units

Part # -**WUC***

**Includes Unit Controller and Wireless Thermostat*

Controls and Networks Standalone RTU or Split systems
With SA / RA reporting from the mobile app

Wired Thermostat to Control Standalone Units

Part # - **SASTAT**

Controls and Networks Standalone RTU or Split systems
With SA / RA / RH reporting from the mobile app
For Remote Sensor operation Part #-**SASTATRS**

Electronic By-Pass Damper

Part #

STBP + Damper Size Round By-Pass Dampers
STCDBP + Damper Size Rectangular By-Pass Dampers
(Includes Integrated Static Pressure Control)
1-24VAC / 40VA Transformer to Power By-Pass Damper

THIS COMPLETES YOUR GEN X SYSTEM

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

Zonex SYSTEMS

Vote Based Auto Changeover Bypass VAV with Programmable Wireless Thermostats Accessed Remotely or On-site from a Phone or Mobile Device

GEN X controller wires to the HVAC unit with legacy style connections Y1, Y2, W1/OB, W2, G, R, and C. Every minute the controller communicates to each damper via RS485 connection daisy chained along with 24VAC power wired damper to damper. Each damper is equipped with a damper board ID and synced to its wireless programmable thermostat in the system.

The GEN X is an auto changeover, vote based VVT system. As thermostats call for heating or cooling, votes are tallied by the GEN X controller and based on the majority of votes received the HVAC unit operates in the mode of majority votes. If majority changes, the system controller will automatically initiate a changeover sequence with built in time delays to protect the equipment before changing over to the new mode of operation.

When the last calling zone is satisfied (in either heat or cool mode), the GEN X controller will terminate outputs to the HVAC unit after the next "poll"; and the blower output will de-energize (unless controller is configured for constant fan) after a 3-minute purge cycle. During the purge cycle no heat or cool calls are recognized.

The wireless zone thermostats control and modulate the zone dampers based on variance from set point to a position that will match the demand requirement. When the HVAC unit is running, if a zone thermostat is not calling or is calling for the opposite mode, its corresponding damper fully closes. When the HVAC unit is not running, the thermostats open to the Vent mode to provide ventilation if the indoor blower fan is running continuously. When configured for Reheat operation and the zone temperature drops 2° below thermostat set point, the damper modulates to approximately 40% open providing airflow over electric heat strips or other supplemental heat source, the AUX terminal will energize and strip heat will energize.

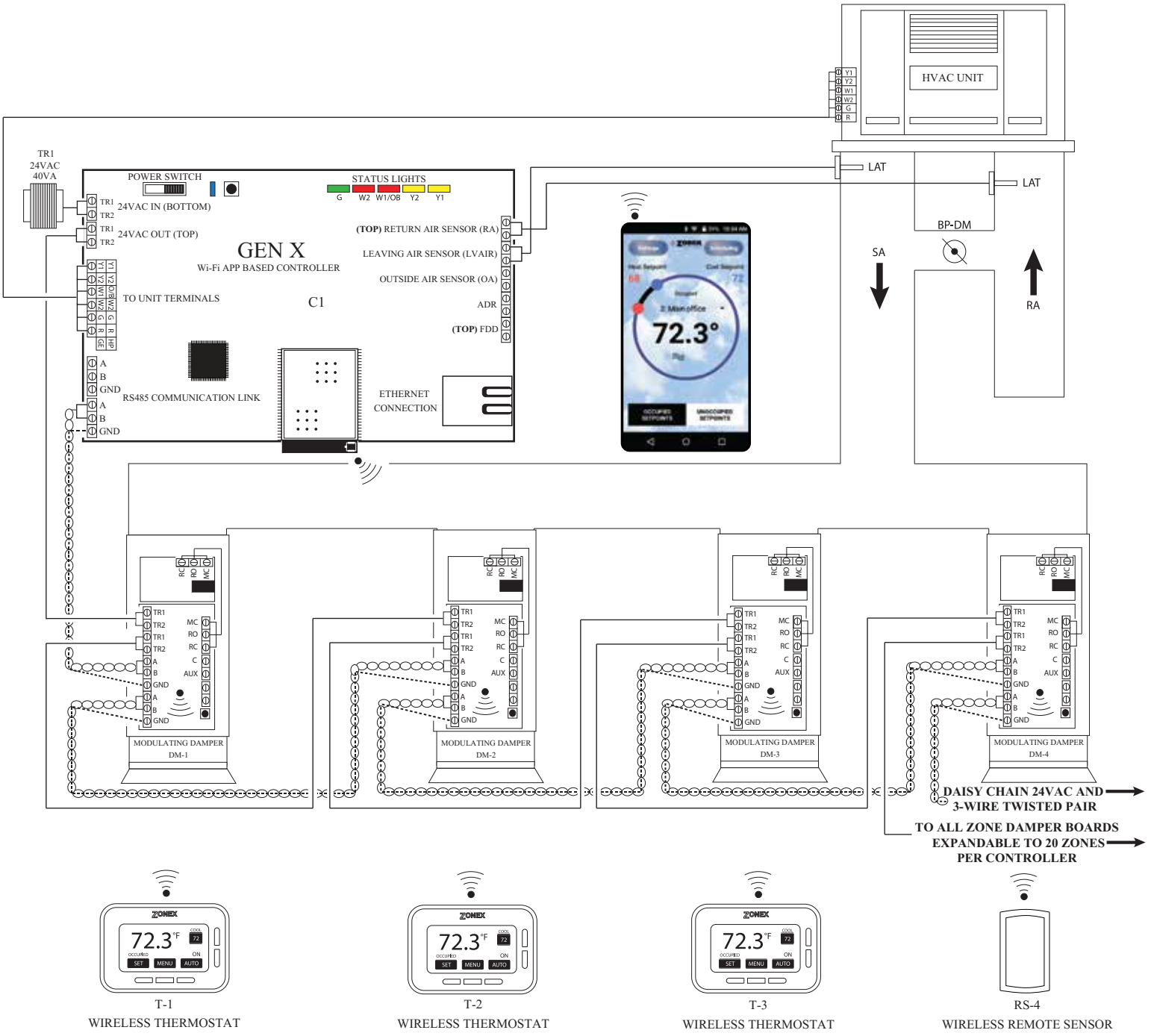
While the HVAC unit is running, the capacity control LAT (leaving air temperature sensor) monitors the leaving air temperature from the HVAC unit and will cycle the HVAC unit to maintain the air temperature with a preset range to prevent coil freeze-up and premature heat exchanger failure. When the system is in the heating mode and a majority vote changes to cooling, a changeover timer begins and will run heating for 4 minutes or until heat call is satisfied and then cycle into a changeover purge. After a 3-minute purge cycle, cooling is energized until the cool call is satisfied or there is a majority vote for heat received by the GEN X controller. If all calls have been satisfied, after the 3-minute off delay, dampers will modulate to approximately 40% open position for ventilation mode.

The system fan/blower operation can be configured for ON or intermittent AUTO operation.

All Zone thermostats are synced or paired with its respective modulating zone damper, which is equipped with a communicating damper board. Thermostats, scheduling and diagnostic reports to streamline system troubleshooting, are generated from the mobile App that interacts with all thermostats every minute and initiates control decisions for the system. The mobile App shall establish global or individual schedules for the system, lock thermostats individually and provide local adjustment, on site or remotely over internal Wi-Fi or the Internet. Air balance shortcuts, along with password protection, are also enabled from the App. Sleep and energy saving modes are available to extend battery life and enhance operation of the thermostats.

Voting demand strategy can be enhanced by adding Priority votes or by giving a NULL vote to individual thermostats in the system, thereby weighting certain zones more than others. Priority votes allow you to select 0, 1, 2, or 3 additional votes for a thermostat that has unusual loads, such as a conference room. A change to 0 for priority in that zone stat configuration will create a NULL vote for the HEAT/COOL and will not allow the stat to place a call for heat or cool, but will allow damper operation based on system mode of operation, HEAT/COOL/VENT.

Additional zoned systems, along with stand alone units and generic loads may be controlled with the GEN X RM or RLYX may be controlled with the GEN X RM expansion controller that supports and networks additional units. Mobile Wi-Fi or web based App streamlines installation, commissioning or servicing the system.



T-1
WIRELESS THERMOSTAT

T-2
WIRELESS THERMOSTAT

T-3
WIRELESS THERMOSTAT

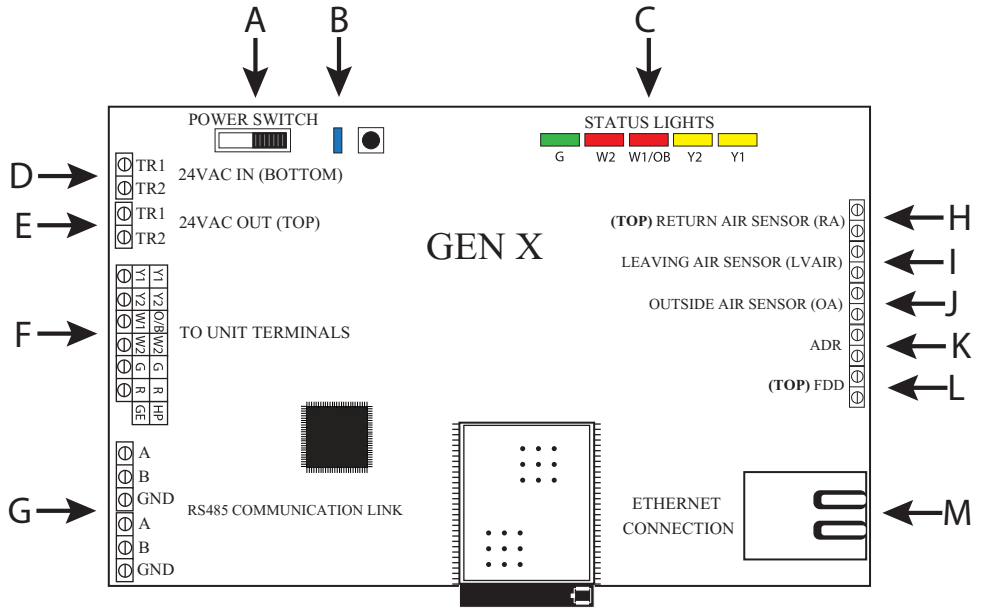
RS-4
WIRELESS REMOTE SENSOR

DEVICE	ID	DESCRIPTION
MOBILE APP, Wi-Fi BASED CONTROL BOARD	C1	GEN X CONTROLLER CONTROLS 2-20 MODULATING DAMPERS ONLY 1 24VAC 40VA TRANSFORMER POWERS ALL SUPPLY DAMPERS
THERMOSTAT	T1-T20	WIRELESS THERMOSTAT
REMOTE SENSOR	RS	WIRELESS REMOTE SENSOR
ZONE DAMPER ACTUATOR	DM	SUPPLIED WITH ZONE DAMPER (FACTORY PRE-WIRED)
SYSTEM TRANSFORMER	TR1	24VAC/40VA TRANSFORMER (SIZED @ 2VA PER ZONE DAMPER) DAISY CHAIN DAMPER TO DAMPER
BYPASS TRANSFORMER	TR2	IND. 24VAC/40VA TRANSFORMER TO POWER THE BYPASS DAMPER

DEVICE	ID	DESCRIPTION
SUPPLY / RETURN AIR LAT DISCHARGE SENSORS	LAT	SUPPLY LAT LOCATED BEFORE THE BYPASS. RETURN LAT LOCATED AFTER THE BYPASS
INTEGRATED STATIC PRESSURE CONTROL	IPC	SUPPLIED WITH THE BYPASS DAMPER (FACTORY PRE-WIRED)
STATIC PRESSURE TUBE	SPT	LOCATED AFTER THE BYPASS BEFORE THE FIRST SUPPLY TAKEOFF
BYPASS DAMPER ACTUATOR	BP-DM	SUPPLIED WITH BYPASS DAMPER (FACTORY PRE-WIRED)
WIRELESS COMMUNICATION		COMMUNICATES WITH WIRELESS DAMPER BOARD AND THERMOSTAT
RS485 COMMUNICATION LINK		3 WIRE TWISTED PAIR

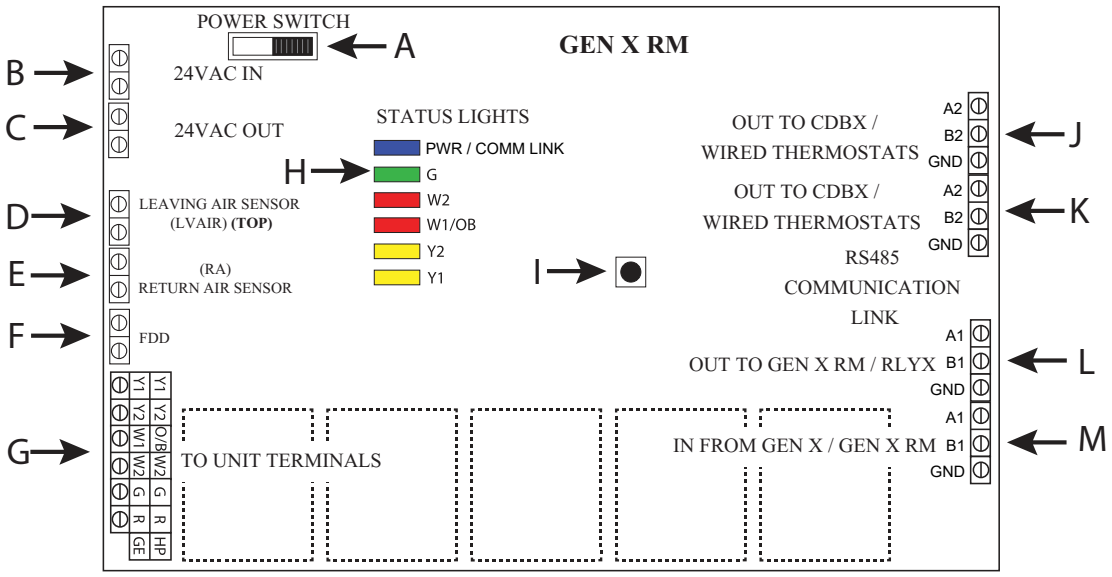
VISIT OUR ON-LINE CATALOG AT ZONEXPRODUCTS.COM
FOR APPLICATIONS ASSISTANCE CALL 800-228-2966

The GEN X is a micro-controller based, auto changeover Universal Gas/Electric or Heat Pump system controller (Part # ***GEN X***). The ***GEN X*** controls a zoned 2H/2C Gas/Electric HVAC unit or 3H/2C zoned Heat Pump unit and communicates with and supports up to 20 zones, utilizing pressure dependent, modulating dampers and wireless thermostats. The ***GEN X*** gathers information every 60 seconds from each damper board while the wireless thermostats communicate with the system over a 3-wire plenum rated twisted pair data link directing control based decisions to the HVAC equipment. The ***GEN X*** is powered with one 24VAC 40VA transformer, which also powers all dampers in the system. Power from the controller, along with a 3-wire communications loop, is daisy chained damper to damper to streamline installation and system communications. The ***GEN X*** is equipped with integrated capacity control and High and Low temperature limits to protect the compressor and heat exchanger. Outside air and return air sensors are also provided. The HVAC unit is staged based on leaving air temperature and time. 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 X*** system controller. **Review controller terminal connections below:**



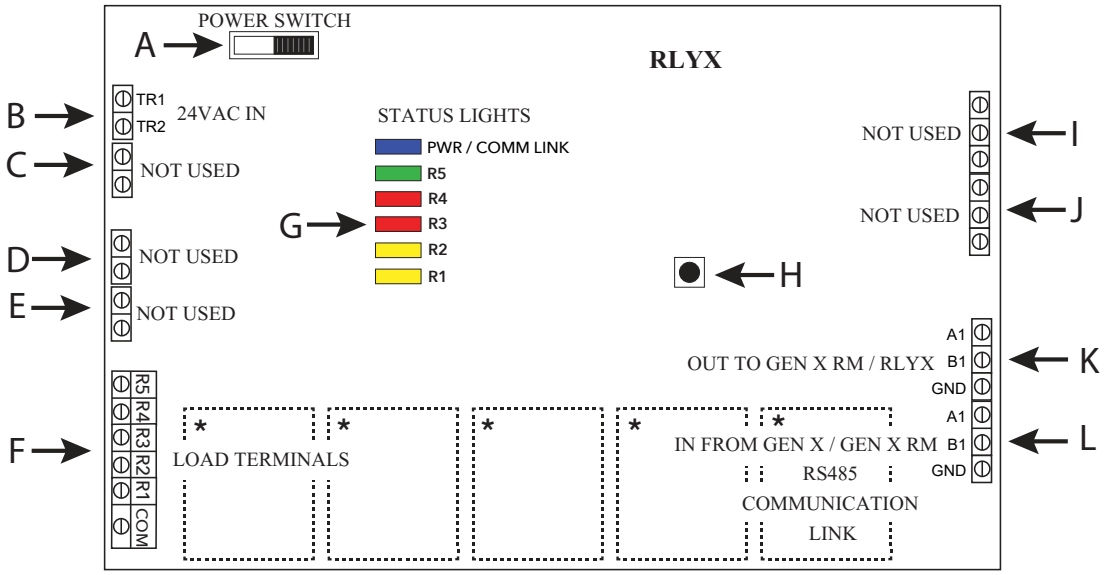
A. On /Off Power Switch
B. Communication link LED
C. Unit Status Lights
D. 24VAC IN (Bottom Terminal) to power the GEN X board (Independent 24VAC /40VA Transformer)
E. 24VAC OUT (Top Terminal) daisy chained out to zone thermostats
F. Unit Terminals
G. A/B/GND 3 wire communication link, daisy chained OUT to zone thermostats and GEN X RM (if utilized)
H. Return Air Sensor (RA)
I. Leaving Air Sensor (LVAIR)
J. Outside Air Sensor (OA)
K. Automated Demand Response (ADR)
L. Fault Detection Device (FDD)
M. Network Connection

The GEN X RM is a micro-controller based, auto changeover Universal Gas/Electric or Heat Pump system controller (Part # ***GEN X RM***), designed to work with the GEN X controller to provide expansion capability to support additional zoned or stand alone units. The ***GEN X RM*** controls a zoned 2H/2C Gas/Electric HVAC unit or 3H/2C zoned Heat Pump unit and communicates with and supports up to 20 zones, utilizing pressure dependent, modulating dampers and wireless thermostats. The ***GEN X RM*** gathers information every 60 seconds from each damper board while the wireless thermostats communicate with the system over a 3-wire data link directing control based decisions to the HVAC equipment. The ***GEN X RM*** is powered with one 24VAC 40VA transformer, which also powers all dampers in the system. Power from the controller, along with a plenum rated 3-wire twisted pair communications loop, is daisy chained damper to damper to streamline installation and system communications. The ***GEN X RM*** is equipped with integrated capacity control and High and Low temperature limits to protect the compressor and heat exchanger. Return air sensor is also provided. The HVAC unit is staged based on leaving air temperature and time. 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 RM*** controller. Review controller terminal connections below:



A. On /Off Switch
B. 24VAC IN to power the GEN X RM board (Independent 24VAC /40VA 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/GND 3 wire communication link, daisy chained OUT to zone thermostats
K. A2/B2/GND 3 wire communication link, daisy chained OUT to zone thermostats
L. A1/B1/GND 3 wire communication link, daisy chained OUT from GEN X RM to GEN X RM or RLYX
M. A1/B1/GND 3 wire communication link, daisy chained IN from GEN X or GEN X RM

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 X can support up to twenty RLYX and/or GEN X RM controllers, if the application requires more than twenty RLYX and/or GEN X RM controllers then additional GEN X'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/GND 3 wire communication link, daisy chained OUT from RLYX to GEN X RM or RLYX
L. A1/B1/GND 3 wire communication link, daisy chained IN from GEN X or GEN X RM

**Board Relays are Pilot Duty*

WIRELESS ZONE THERMOSTAT

DESCRIPTION

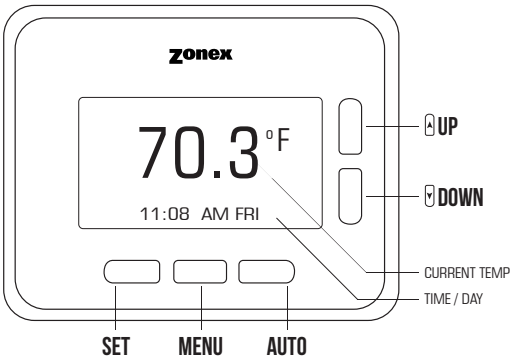
The wireless thermostat part# WSTATX is a microprocessor based, auto changeover, programmable communicating zone thermostat. The zone thermostat controls modulating round or rectangular commercial modulating dampers. The communicating zone thermostat is used with the GEN X-VVT zoning system and communicates over a proprietary wireless network protocol, with up to 75' transmission range.

The wireless zone thermostats control and modulate zone dampers based on variance from set point to a position that will match the supply load to the demand requirement. When the HVAC unit is running, if a zone thermostat is not calling or is calling for the opposite mode, its corresponding damper fully closes. When the HVAC unit is not running, the thermostats open to the Vent mode to provide ventilation, if the indoor blower fan is running continuously.

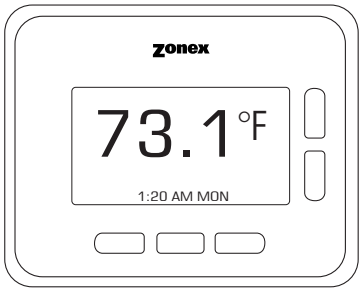
All zone thermostats are synced with its respective modulating zone damper, which is equipped with antenna and communicating damper board. The GEN X mobile app interacts with the GEN X controller, via the Wi-Fi network and initiates control decisions for the system. Through the GEN X mobile app you can 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 more functions. Sleep and Energy Saving modes are available to extend battery life and enhance operation.

Each wireless zone thermostat is synced or paired with its corresponding zone damper. Each thermostat communicates wirelessly and modulates the damper based on variance from set point at the stat.

During normal operation the Wireless Zone Stat is in the sleep mode to extend battery life. It is operating and communicating in the background, but sleep mode or energy saving mode will significantly extend battery life.

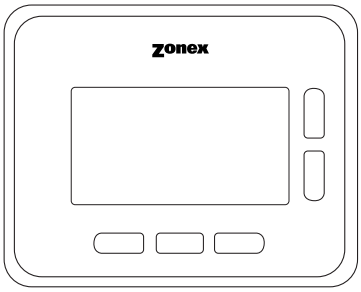


SLEEP MODE



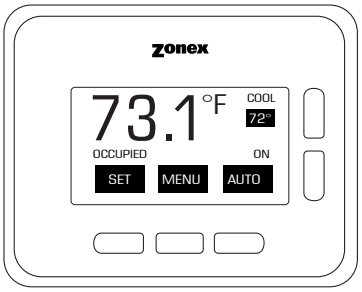
This screen represents the thermostat display in Sleep Mode with temperature, time and day

ENERGY SAVING MODE



This screen represents the thermostat in Energy Saving Mode

ACTIVE MODE



This screen represents the thermostat in Active Mode

WSTATX – Wireless GEN X Modulating Thermostat

To turn the wireless stat on, press and hold the OFF button for 15 seconds until AUTO is displayed, release button, stat is in AUTO mode. If AUTO is displayed press AUTO button for 15 seconds until OFF is displayed, release button, stat is in OFF mode.

Note: Mount wireless thermostat within 75' of the communicating damper board.

Sequence of operation

COOL CALL

When zone temperature rises 1° or more above COOL set point, thermostat transmits COOL call to communicating damper board and GEN X controller. GEN X controller evaluates calls for HEAT and COOL for majority vote. If there is a majority vote for COOL, GEN X controller initiates a call for cooling and the damper modulates open. ***ON will be displayed*** and will flash until system is operating in the COOL mode. Once system is in COOL mode, ON will remain constant. As zone cools, thermostat will communicate with damper relay board and damper will modulate to maintain zone comfort. When zone temperature reaches set point, damper is closed or at minimum position and WSTATX releases call for COOL.

HEAT CALL

When the zone temperature falls greater than 1° below HEAT set point, thermostat will initiate a call for HEAT. GEN X controller will evaluate all calls for HEAT and COOL in the system and if there is a majority of calls for HEAT, GEN X controller will initiate heat call and ***ON will be displayed.*** Once system is in the HEAT mode, ON will remain constant. Damper will modulate open and warm air will heat zone. As zone warms, thermostat will communicate with damper relay board and damper will modulate to maintain zone comfort. When zone temperature rises to set point, damper is closed or at minimum position and WSTATX releases call for HEAT.

Baseboard / Supplemental HEAT

When wireless thermostat is configured for BASEBOARD heat and zone temperature falls greater than 2° below HEAT set point, the wireless thermostat will communicate with the CDBX energizing AUX heat and BASEBOARD heat is now operating, ***ON will be displayed***. When zone temperature rises to HEAT set point, thermostat will satisfy call for AUX operations and the CDBX will de-energize the baseboard or supplemental heat.

REHEAT

When wireless thermostat is configured for REHEAT operation, and the zone temperature falls greater than 2° below HEAT set point, thermostat transmits the call to CDBX for REHEAT. The communicating damper board modulates the damper to 40% open and energizes AUX output REHEAT, ***ON will be displayed***. When zone temperature rises to HEAT set point, thermostat satisfies, releases call for AUX REHEAT and closes damper.

VENT

When all calls for HEAT or COOL are satisfied, dampers will modulate to approx. 40% open and VENT will be displayed on thermostat indicating system is in ventilation mode.

COMMUNICATING DAMPER BOARD

A communicating damper board (CDBX) resides on each zone damper to carry power and communications information from the damper to the GEN X controller. The CDBX has four LED lights providing damper and system information. See diagram below.

The BLUE LED (R) confirms communications and to sync the damper with its associated thermostat.
The RED LED (U) is illuminated when the damper is modulating to the closed position.
The GREEN LED (T) is illuminated when the damper is modulating to the open position.
The YELLOW LED (S) is illuminated when AUX heat is calling.

Once all dampers and the GEN X controller are wired into the system and the GEN X controller is turned ON, the BLUE light will flash 4 times when communicating with the GEN X controller, and 2 times when the damper control board communicates with the wireless thermostat.

The damper control board can be removed by slipping the mount away from the damper hat section, simplifying wiring from the GEN X controller and AUX heat if utilized.

Each damper control board must be synced with its respective thermostat. Once the damper is energized and associated thermostat has its ID set, press the SYNC button on the damper control board until blue light flashes continuously and then press the YES button on the wireless thermostat which will display **"SYNC SUCCESSFUL".**

L - A/B/GND (IN) 3-wire communication link daisy chained into damper board

M - A/B/GND (OUT) 3-wire communication link daisy chained out to the next damper board

N - TR1/ TR2 24VAC (IN) daisy chained into damper board

O - TR1/ TR2 24VAC (OUT) daisy chained out to the next damper board

P - MC/RO/RC Factory wired to the damper actuator runs open, runs closed

Q - C/AUX wire in the baseboard heat, electric heat or reheat if available

R - COMM LINK **BLUE** LED indicates communication to the GEN X and thermostat

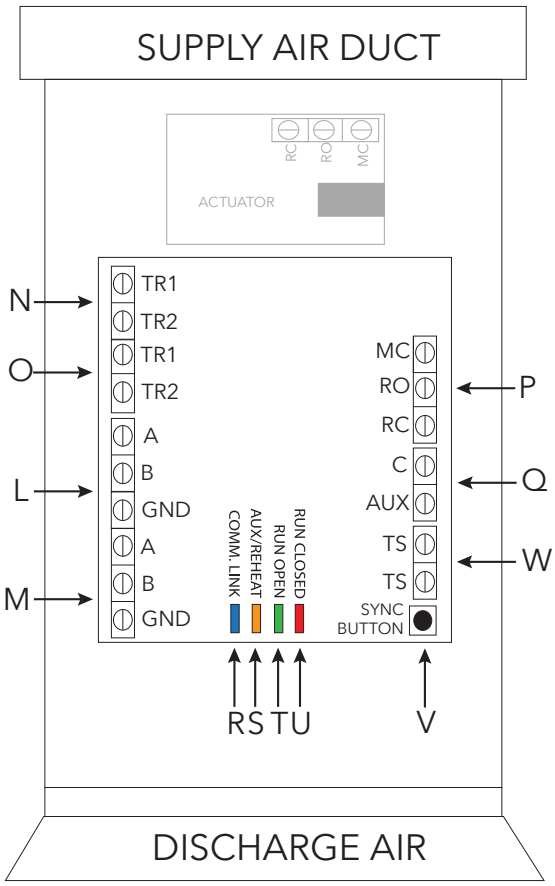
S - AUX/REHEAT **YELLOW** LED indicates Aux heat or Reheat is energized

T - RUN OPEN **GREEN** LED indicates the damper is being powered open

U - RUN CLOSED **RED** LED indicates the damper is being powered closed

V - SYNC BUTTON used to sync to wireless thermostat

W - NOT USED on GEN X system



Zone Damper Installation

Install dampers into HVAC duct so damper actuators and control boards are easily accessible. Damper 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

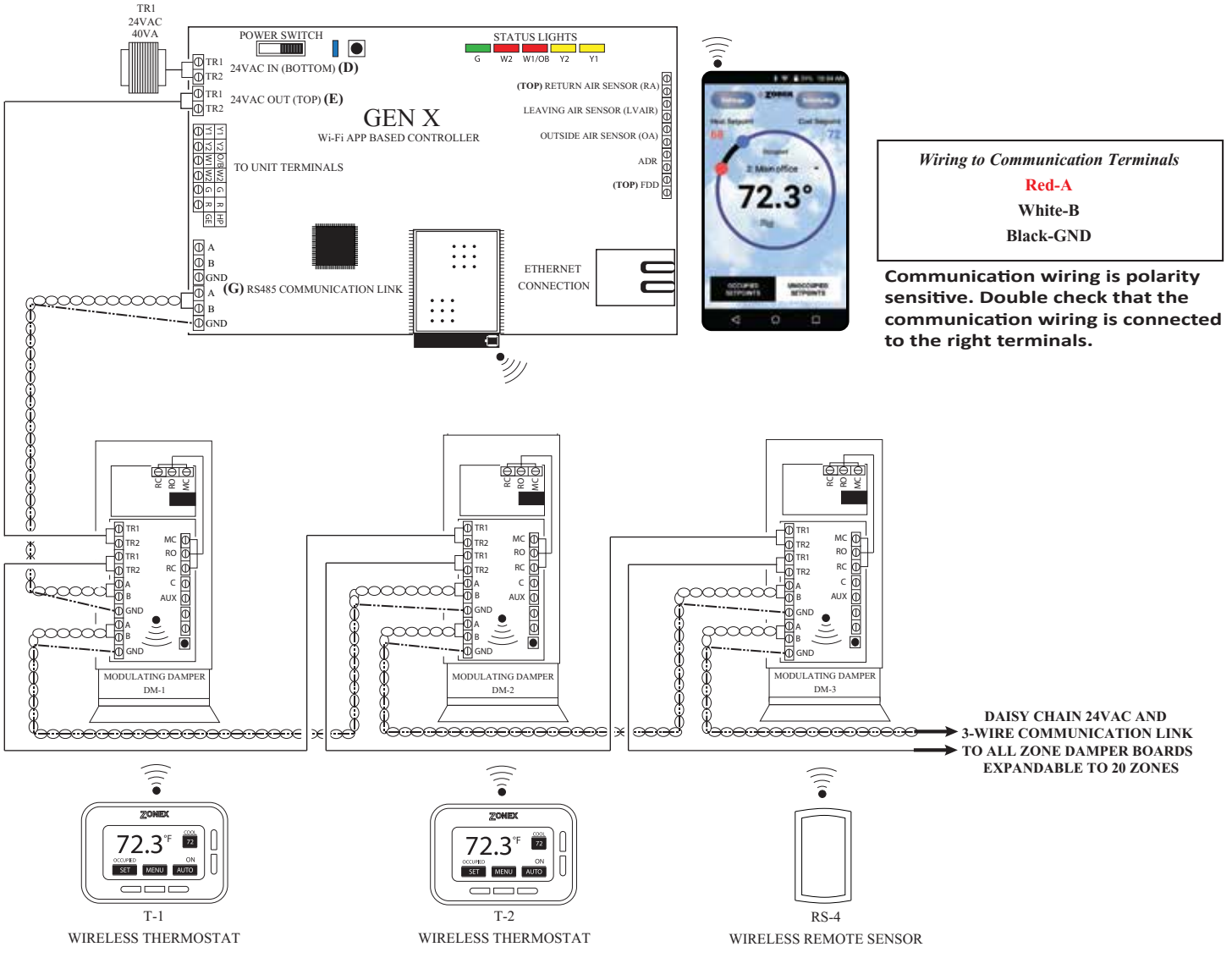
Once GEN X controller and supply dampers are installed, install one 24VAC 40va transformer, and wire secondary 24 volts to the TR1/TR2 bottom terminals on GEN X controller. Using 18 ga. thermostat wire, wire TR1/TR2 top terminals and daisy chain power wires to the first damper. Continue daisy chain wiring from first damper to second, third, etc., until all supply dampers 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

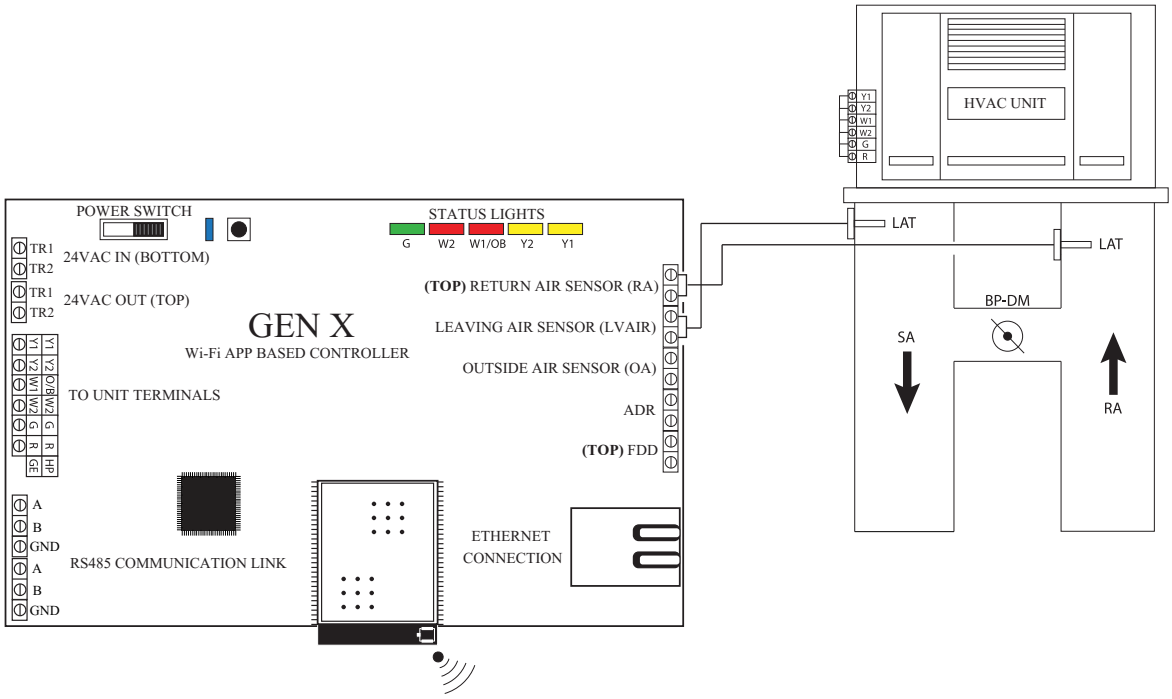
Once power wiring is daisy chained to all supply dampers in the system, use 3-TWP plenum rated twisted pair communications wire to install communications loop. Install communications wire using the A, B and GND (**G**) terminals on GEN X controller and daisy chain to the first supply damper in the system and wire to A, B and GND terminals of the communicating damper board. Continue daisy chain to the next damper using A, B and GND terminals of communicating damper board to the A, B and GND of the next damper control board, repeating this process until all supply dampers are wired into the communications loop. Communications wiring is polarity specific, if RED communications wire is on A at the GEN X controller, then RED wire is connected to A throughout the system.



Wiring in the Leaving and Return Air Sensors

The LAT Capacity Controller protects both the air conditioner and furnace by constantly monitoring the leaving air temperature. If the air gets too cold (drops below the cool cut-out set point), it breaks the"Y" connection, disengaging the compressor. If the air gets too warm (rises above the heat cut-out set point), it breaks the "W" connection, de-energizing the furnace. To prevent short cycling, the compressor or furnace cannot re-energize for at least 4 minutes after cut-out. The heating and cooling cut-out set points can be changed by the installer from the App.

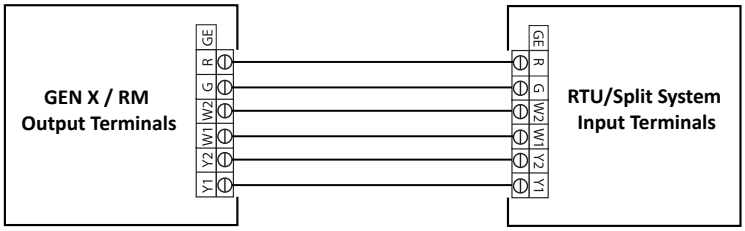
Install Leaving Air Temperature Sensor (LAT) (I) to the LVAIR terminals on the GEN X controller and place the sensor in the supply duct prior to the bypass takeoff. Install Return Air Temperature Sensor (LAT) (K) to the RA terminals on the GEN X controller and place the sensor in the return duct after the bypass takeoff.
(Note: If extension of wire is needed, 18 ga. thermostat wire may be used).



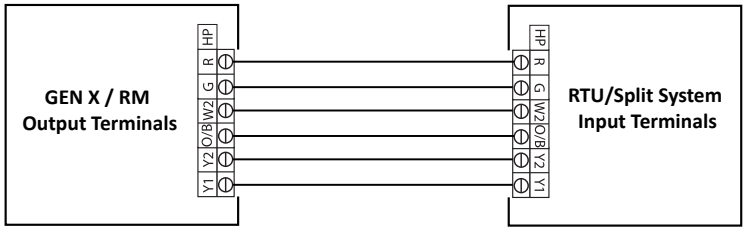
Wire Unit to GEN X Controller

Using standard 18 ga. thermostat wire, connect GEN X unit outputs to HVAC unit. Standard HVAC control terminal designations are used, R Y1 Y2 W1(O/B) W2 G, and energize HVAC unit.

1. Gas/Electric Wiring

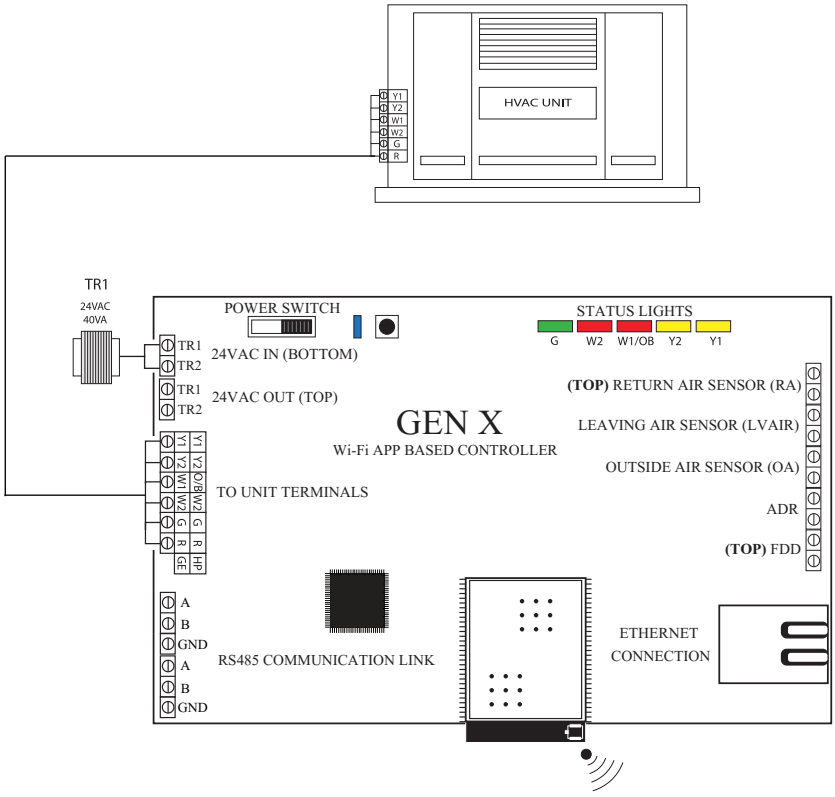


2. Heat Pump Wiring– O/B operation



Note: 1. Single stage systems will not use Y2 or W2 terminals for operation. Please confirm your system operation to ensure proper wiring.

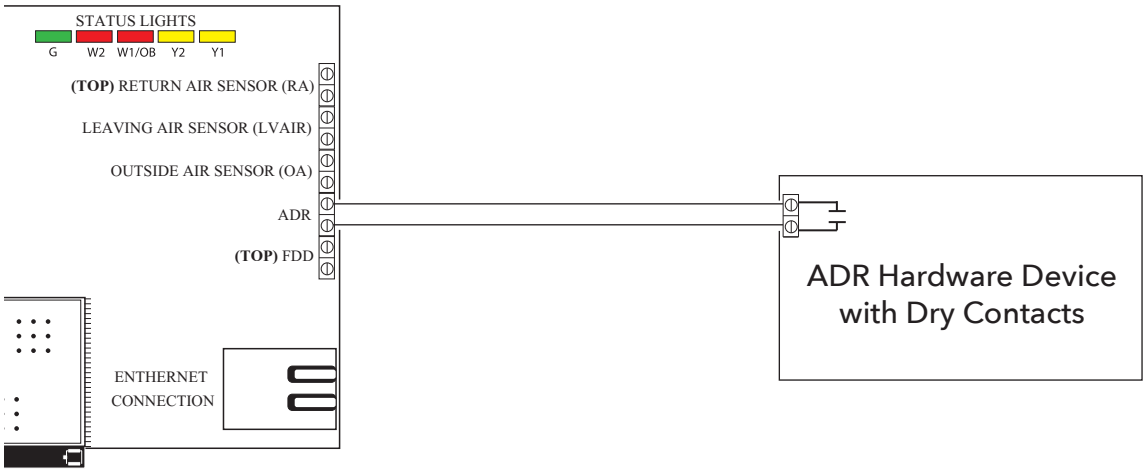
2. For Heat Pump applications with Gas/Electric inputs, set system for gas operation and reset high limit on the App to 115 degrees.



Note: GEN X does not control the unit economizer.

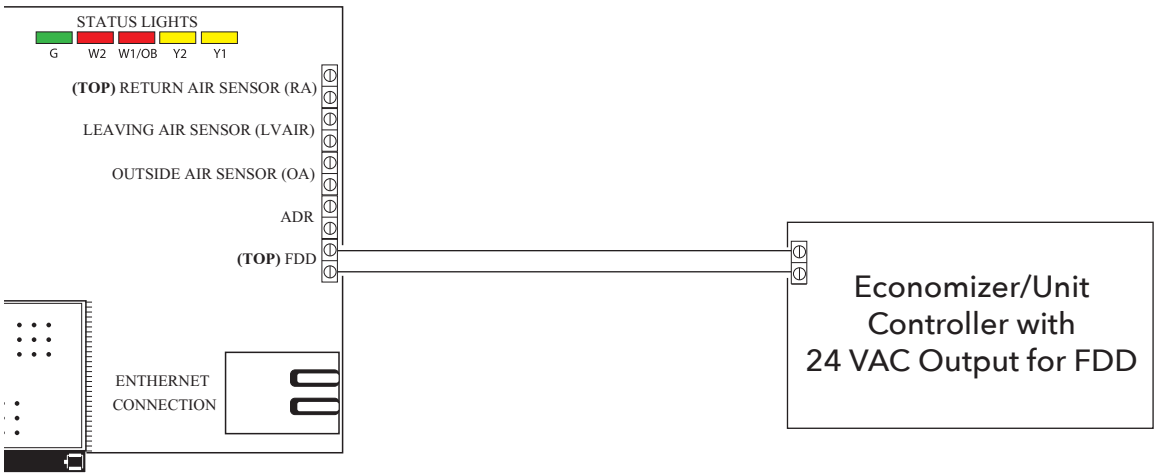
Wiring in the Automated Demand Response (ADR) to GEN X controller

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 X 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 X (see diagram below). When the VEN receives an ADR signal from the VTN or DRAS its contacts close, the GEN X & RM'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.



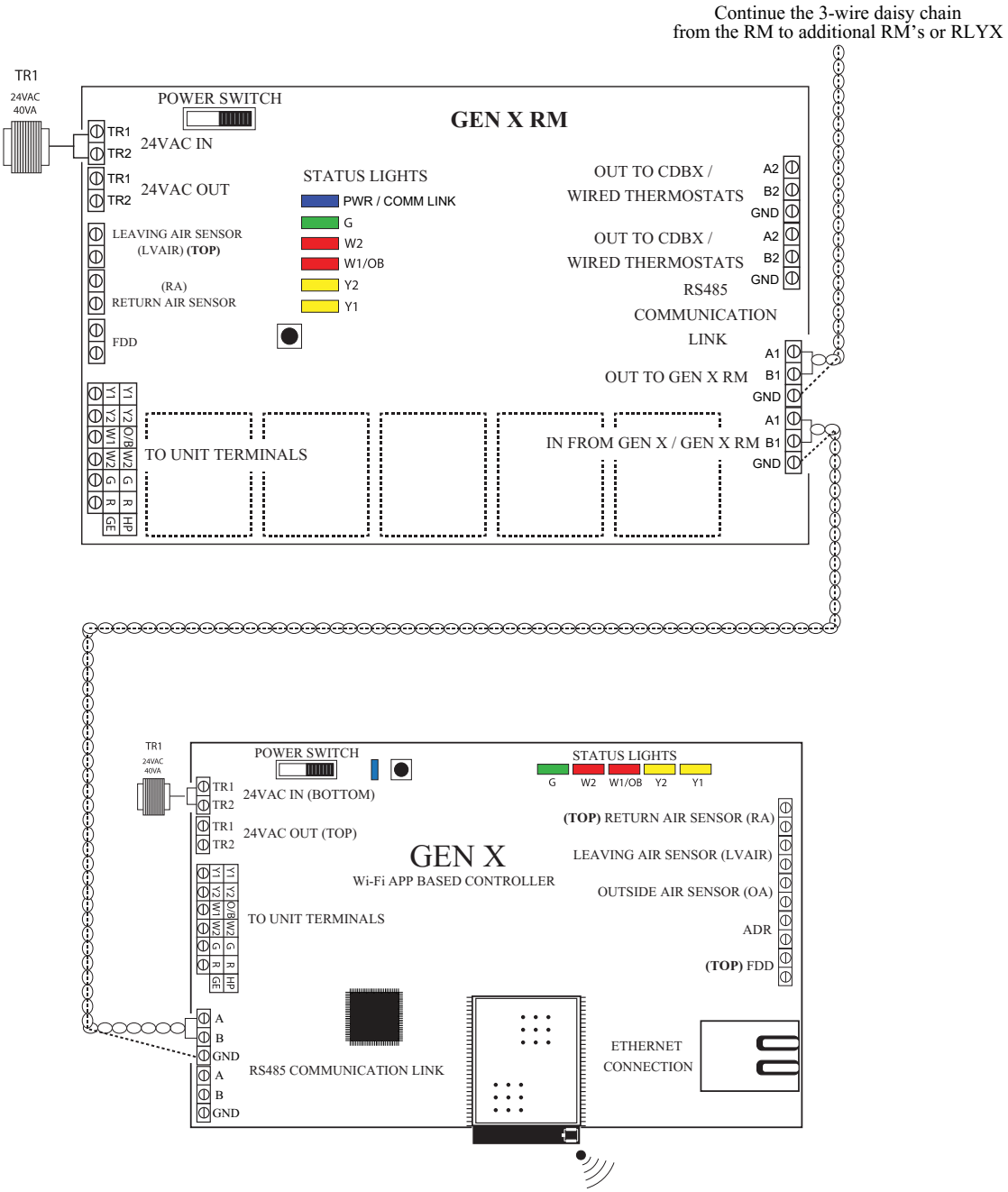
Wiring in the Fault Detection and Diagnostics (FDD) to GEN X controller

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 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.**



Wiring the GEN X to the GEN X RM

With the GEN X controller installed, if you have additional zoned RTU's or Split systems, install the GEN X RM expansion controller using the 3 wire twisted pair communication wire. Wire from the Gen X A, B, and GND out to the GEN X RM A1, B1, and GND (IN) on the GEN X RM controller as shown below. If there are multiple GEN X RM's or RLYX's in the system, continue the 3 wire twisted pair in a daisy chain fashion from the GEN X RM to the next GEN X RM or RLYX. Note: Up to 20 GEN X RM's may be daisy chained to the Gen X controller.



Zone Damper Installation

Install dampers into HVAC duct so damper actuators and control boards are easily accessible. Damper 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

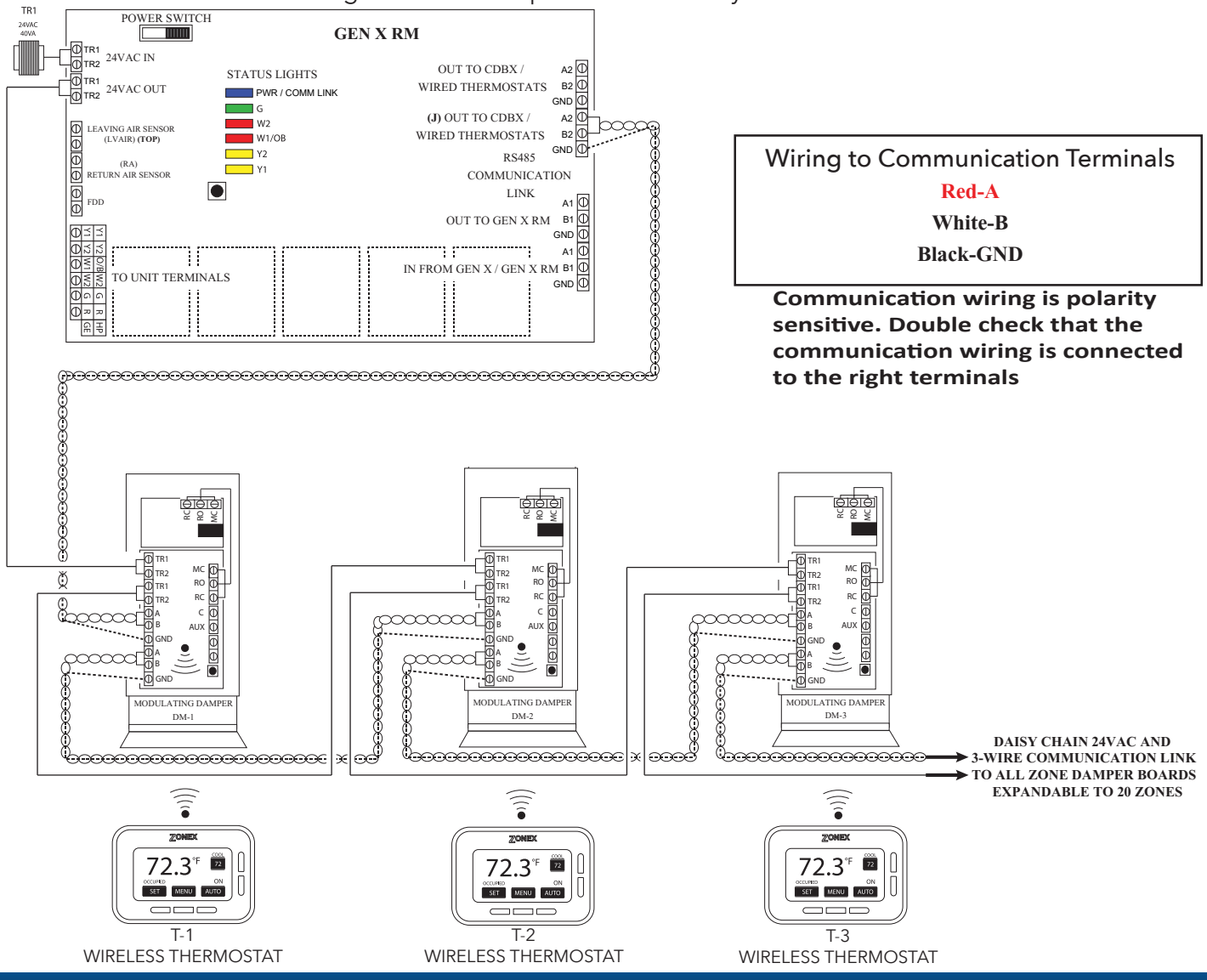
Once RM controller and supply dampers are installed, install one 24VAC 40va transformer and wire secondary 24 volts to the TR1/TR2 IN terminals on GEN X RM controller. Using 18 ga. thermostat wire, wire TR1/TR2 24VAC OUT terminals and daisy chain power wires to the first damper land on TR1 and TR2 (IN) terminals of the communicating damper board. Continue daisy chain wiring from TR1 and TR2 on first damper to TR1 and TR2 on second damper terminals of the communicating damper board. Continue daisy chaining the wire to the third damper, and on until all supply dampers are wired with power.

Note: Maintain TR1 and TR2 wiring polarity throughout the system to ensure effective communications.

DO NOT ground out the transformer.

Installing Communication Wire RS485

Once power wiring is daisy chained to all supply dampers in the system, use 3-TWP twisted pair communications wire to install communications loop. Install communications wire using the A2, B2 and GND terminals on GEN X RM controller and daisy chain to the first supply damper in the system wiring to A, B and GND terminals of the communicating damper board. Continue daisy chain to the next damper using A, B and GND terminals of communicating damper board to the A, B and GND of the next damper control board, repeating this process until all supply dampers are wired into the communications loop. Communications wiring is polarity specific, if RED communications wire is on A at the RM controller, then RED wire is connected to A throughout each damper board in the system.



Wiring to Communication Terminals

Red-A

White-B

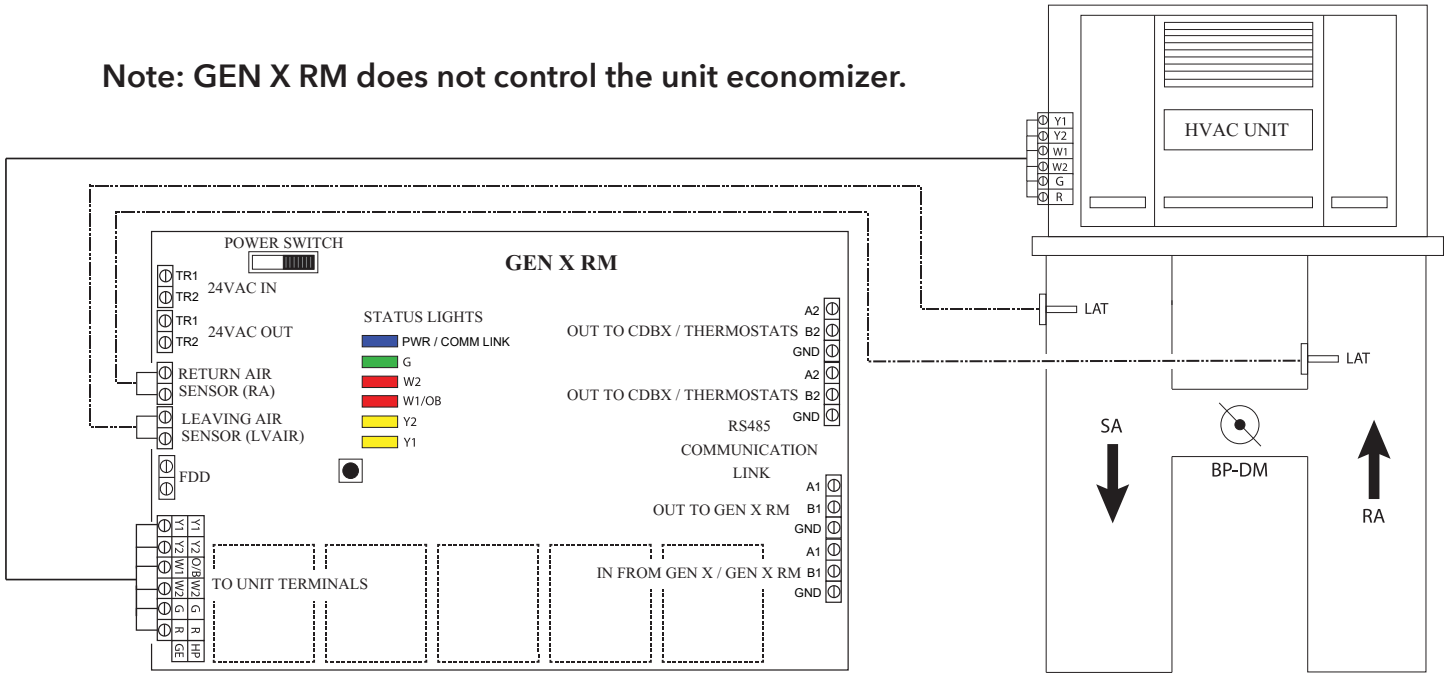
Black-GND

Communication wiring is polarity sensitive. Double check that the communication wiring is connected to the right terminals

Wiring in the Leaving and Return Air Sensors

Install Leaving Air Temperature Sensor (LAT) to the LVAIR terminals on the RM controller and place the sensor in the supply duct prior to the bypass takeoff. Install Return Air Temperature Sensor (LAT) to the RA terminals on the RM controller and place the sensor in the return duct after the bypass takeoff.
(Note: If extension of wire is needed, 18 ga. thermostat wire may be used).

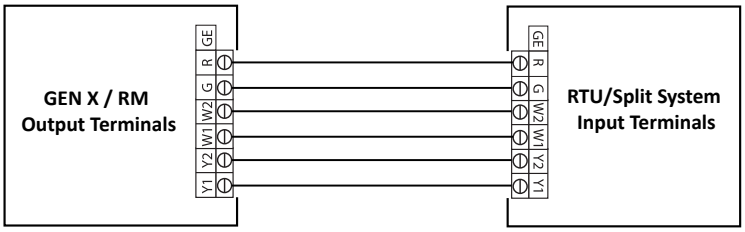
Note: GEN X RM does not control the unit economizer.



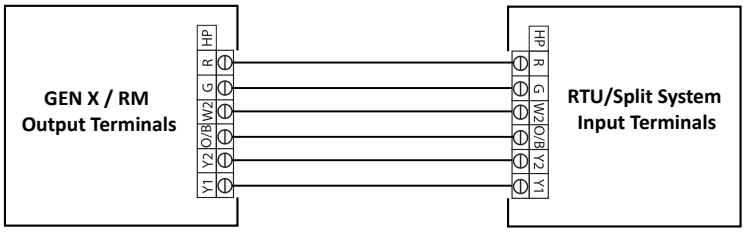
Wire Unit to GEN X RM Controller

Using standard 18 ga. thermostat wire, connect RM unit outputs to HVAC unit. Standard HVAC control terminal designations are used, R Y1 Y2 W1(O/B) W2 G, and energize HVAC unit.

1. Gas/Electric Wiring



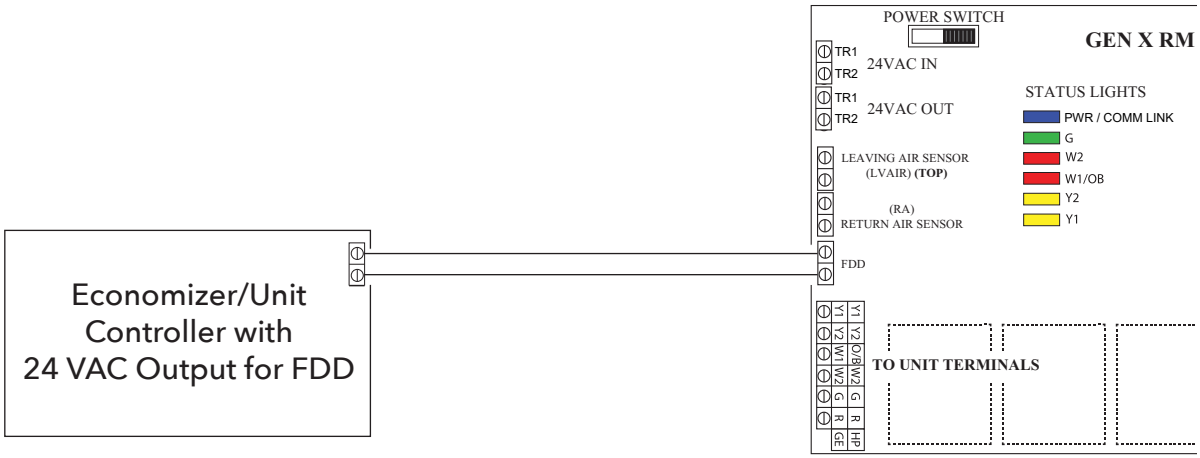
2. Heat Pump Wiring– O/B operation



Note: 1. Many systems are single stage and will not use Y2 or W2 terminals for operations. Please confirm your system operation to ensure proper wiring.
2. For Heat Pump applications with Gas/Electric inputs, set system for gas operation and reset high limit on the app to 115 degrees.

Wiring in the Fault Detection and Diagnostics (FDD) to GEN X RM 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 RM 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.**



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

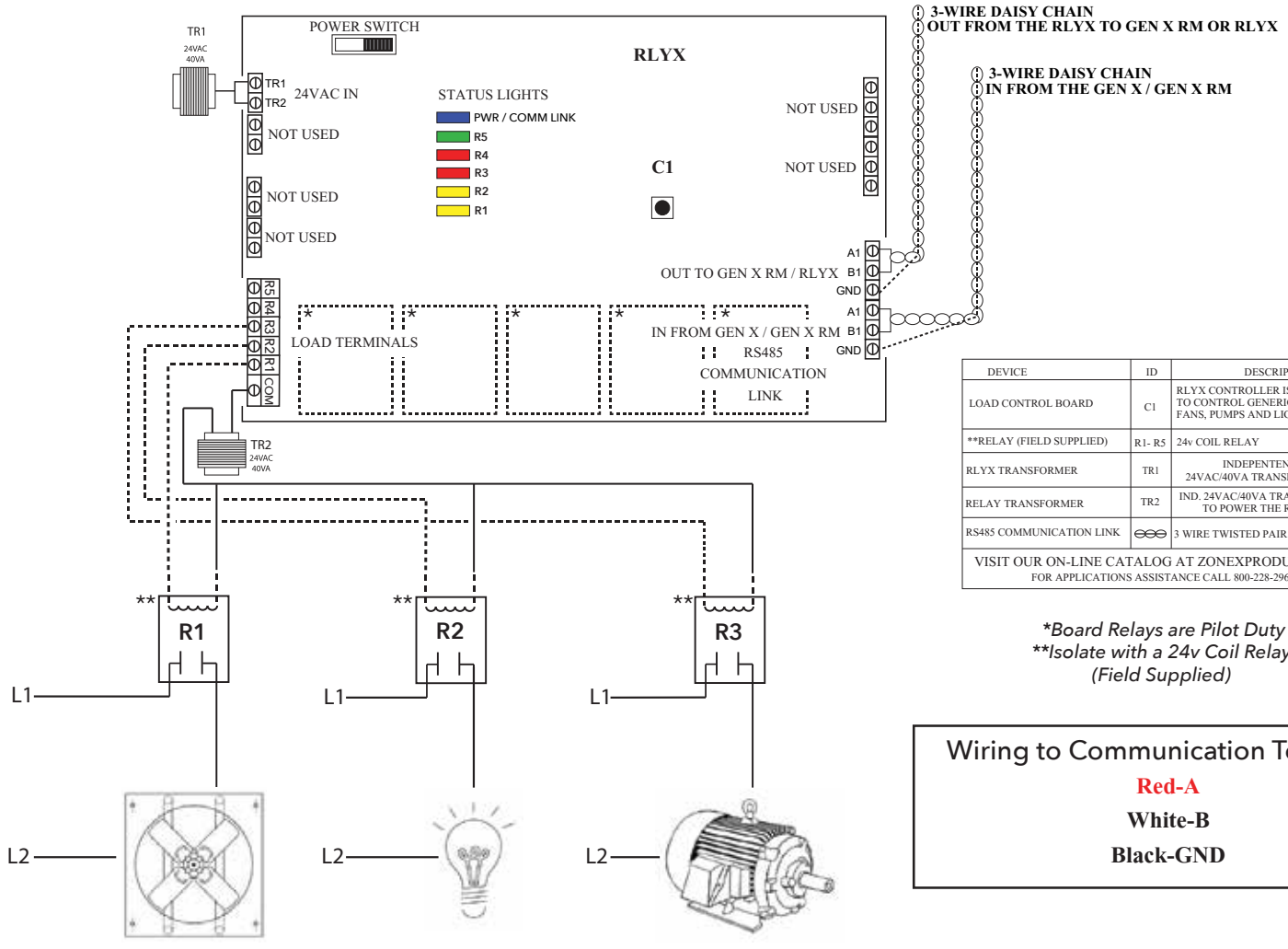
Using Zonex 3-TWP twisted pair communications wire to install communications loop. Install communications wire using the A, B and GND IN from GEN X/GEN X RM terminals on RLYX controller. Continue daisy chain from the OUT to GEN X RM/RYLX terminals using A, B and GND to the A, B and GND IN on the next GEN X RM/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 requirements.



DEVICE	ID	DESCRIPTION
LOAD CONTROL BOARD	C1	RLYX CONTROLLER IS DESIGNED TO CONTROL GENERIC LOADS, LIKE FANS, PUMPS AND LIGHTS
**RELAY (FIELD SUPPLIED)	R1- R5	24v COIL RELAY
RLYX TRANSFORMER	TR1	INDEPENTENT 24VAC/40VA TRANSFORMER
RELAY TRANSFORMER	TR2	IND. 24VAC/40VA TRANSFORMER TO POWER THE RELAYS
RS485 COMMUNICATION LINK		3 WIRE TWISTED PAIR
VISIT OUR ON-LINE CATALOG AT ZONEXPRODUCTS.COM FOR APPLICATIONS ASSISTANCE CALL 800-228-2966		

**Board Relays are Pilot Duty*
***Isolate with a 24v Coil Relay (Field Supplied)*

Wiring to Communication Terminals

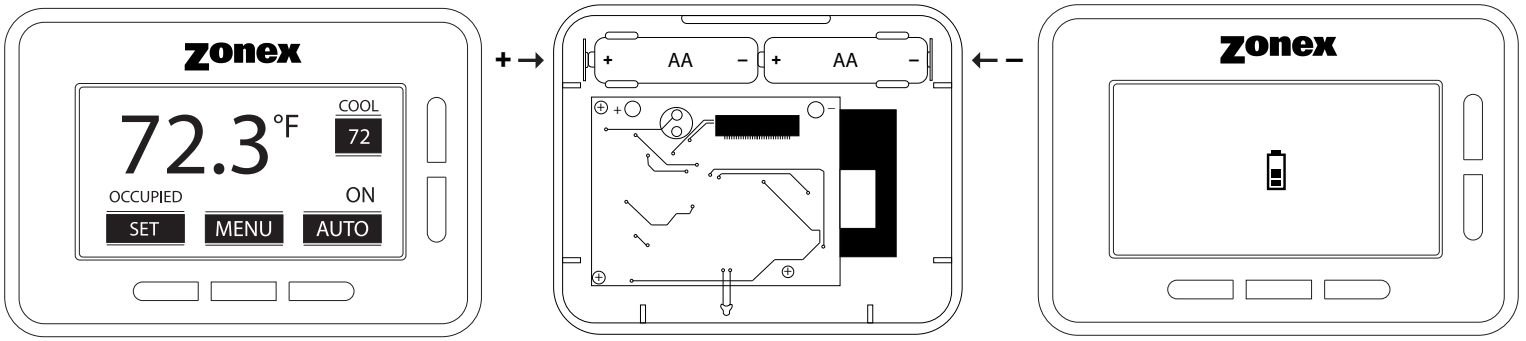
Red-A

White-B

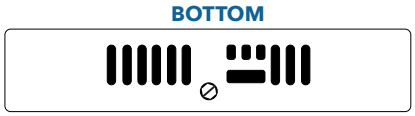
Black-GND

Battery Installation/Replacement

Wireless Thermostat requires two AA batteries. Expected life with thermostat in active operation is based on end user interaction. An energy saving mode is available to prolong battery life to a year or more. Refer to Zone setup, menu item (D) for energy saving mode setup. To access batteries, locate set screw on the bottom of the thermostat. Turn screw clockwise into stat sub-base. Once set screw is clear of wireless stat, remove stat from sub-base. Remove batteries from the back of thermostat and insert replacement batteries, ensuring positive and negative poles match battery to thermostat. Place thermostat on sub-base and turn set screw counter clockwise to fasten thermostat to sub-base. Make semi-annual battery changes part of your preventive maintenance on your HVAC equipment for optimal system operation. When replacing batteries use ultra lithium batteries for long battery life.



Replace with AA batteries and install the thermostat back on the mounting plate.

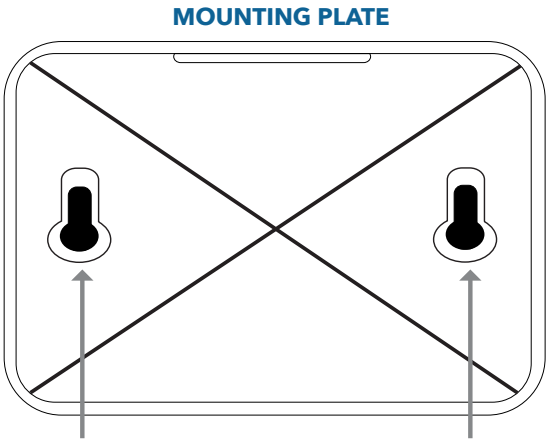


With a flat head screwdriver unscrew CW to release the thermostat from the mounting plate.

Mounting the Wireless Thermostat

Once you have determined where you want to place the thermostat place the mounting plate in that spot and with a pencil mark where the drill holes will be. Drill holes using a 1/8 drill bit. Install screw anchors supplied with the thermostat. Install the screws into the screw anchors halfway and place the mounting plate over the screws. Once the mounting plate is level tighten the screws down to secure the plate to the wall. Install the thermostat back on the mounting plate and turn the flat head screw CCW to secure the thermostat back to the plate.

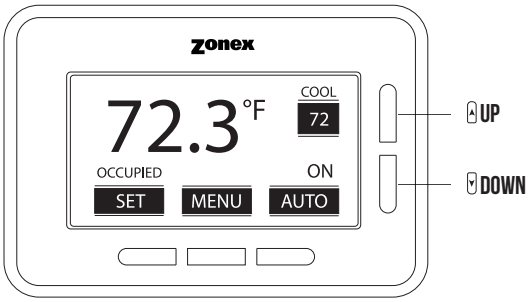
Note: Install the thermostat within 75' or less of its communicating damper board. In some applications, concrete walls, floors or other dense structures may interfere with thermostat communications.
Contact factory to review alternatives
(800) 228-2966



Sync Dampers to Wireless Thermostats

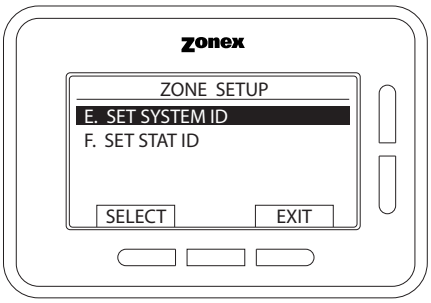
Each Damper must be ID'd and Synced with its control thermostat. Beginning with the first damper in the daisy chain closest to the GEN X controller, place provided white label #1 on the damper. Locate associated zone thermostat and insert batteries, confirm display appears on stat. If no display is seen, check battery installation. At this time power and turn ON the GEN X and GEN X RM controllers at the ON/OFF switch located on the left hand corner of the controllers.

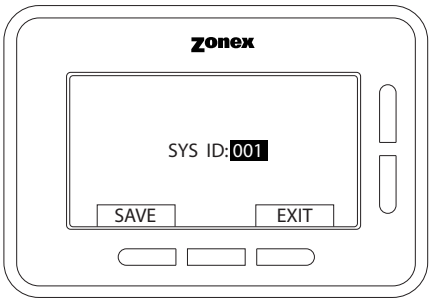
On the wireless thermostat, press and hold the MENU button followed by the **AUTO/OFF** button, release when display reads **ZONE SETUP**.



Setting SYSTEM ID for the GEN X and GEN X RM Controllers

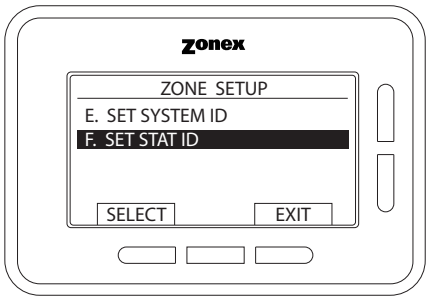
Use the UP or DOWN button to highlight item **(E) SET SYSTEM ID** and press SELECT. Set the SYSTEM ID to 021 for the GEN X controller in the building. (If you have GEN X RM controllers wired to a GEN X controller you will need to give each one its own SYSTEM ID ranging from 001-020). Do not duplicate a SYSTEM ID when using more than one GEN X or GEN X RM controller in a building. Once System ID is set, press SAVE.

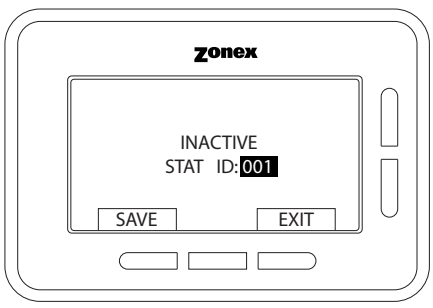




Setting STAT ID for the Zone Thermostat

While still in the Zone Setup screen, use the UP or DOWN buttons to highlight item **(F) SET STAT ID** menu item and then press SELECT. Set STAT ID for the first stat to 001, Once Stat ID is set, press SAVE. Place provided yellow label #1 on the inside of the thermostat sub-base (All stats are SYNCED with its damper ID 001 to 020, maximum of 20 zones per GEN X and GEN X RM controllers.)

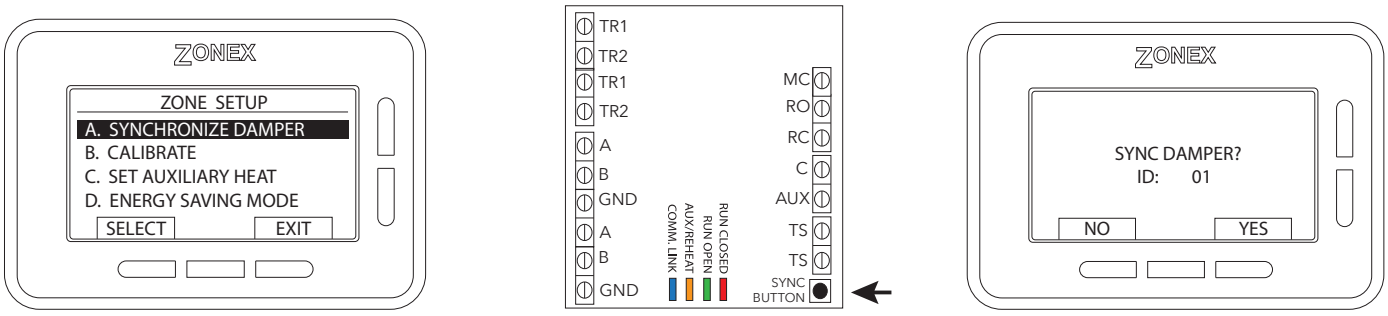




Note: You can only Sync one damper at a time.

Syncing Zone thermostat to its Zone Damper

While still in ZONE SETUP use the UP or DOWN buttons to highlight and select item **(A) SYNCHRONIZE DAMPER**. Go to the damper control board and press the SYNC button and hold until blue communication light flashes on the damper control board continuously and then press YES on thermostat to Synchronize. When damper and stat are synced, the message SYNC IS COMPLETE will be displayed on the thermostat. Press Exit to return to normal operation. Continue to the next damper and thermostat in daisy chain and repeat syncing process increasing stat IDs in numerical order.



Note: Install the thermostat within 75' or less from its communicating damper board. In some applications, concrete walls, floors or other dense structures may interfere with thermostat communications.
If the wireless thermostat is having trouble communicating to the damper board, relocate the wired communicating damper board closer to the wireless thermostat.

Downloading the Mobile App and Connecting to the GEN X

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 X'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 43 for direct wireless setup instructions.

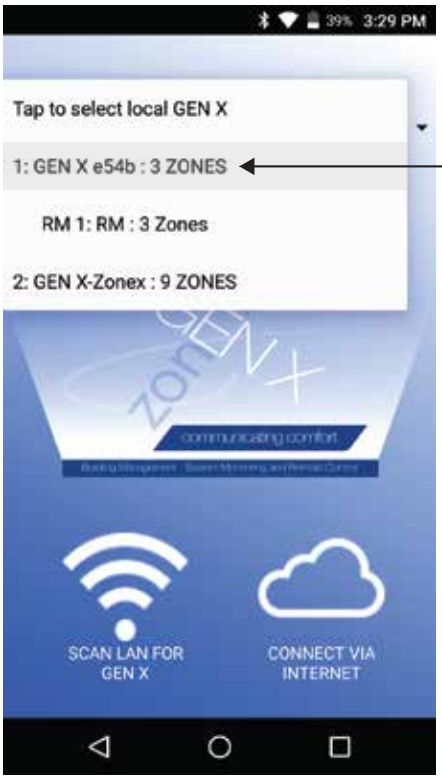
Ensure that your mobile device is connected to the same network as the GEN X via a Wi-Fi connection. If you are connecting to the customer's network then you must obtain the network name /SSID and password (you may need to contact your customer's IT personnel).

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 X 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 X 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 X controller. The GEN X app will remember the IP address and load it the next time you log in.

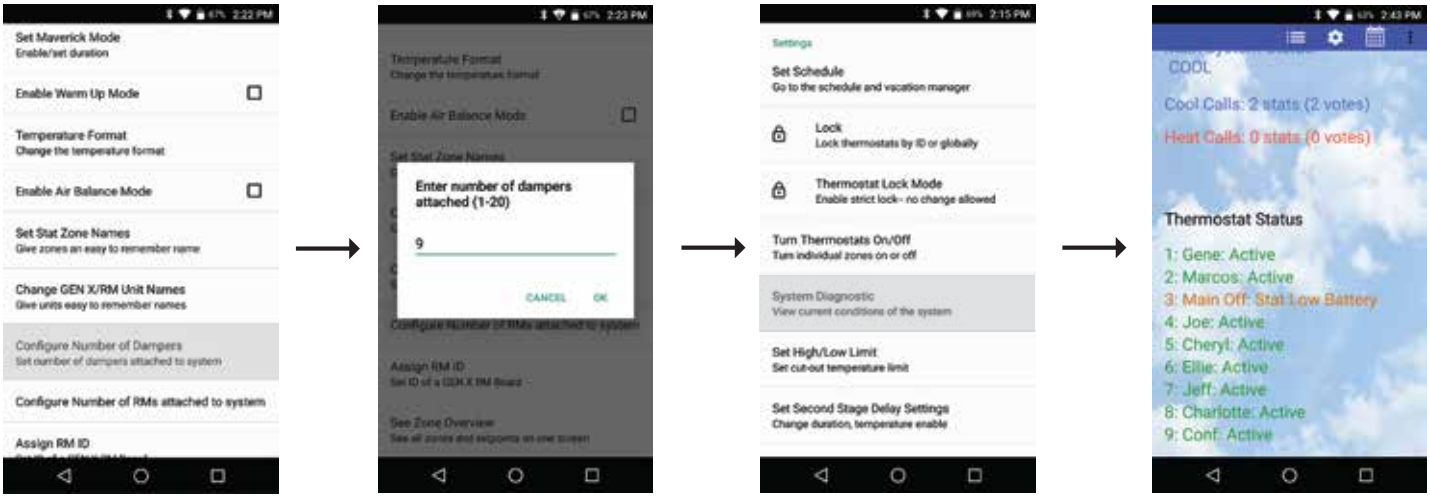
Select the GEN X or RM you wish to access by tapping on it.



Once GEN X controller is mounted, and associated damper and zone stats are synced with their associated dampers, system is ready to be commissioned and started up. Turn on the GEN X controller and confirm all communicating damper boards (CDBX) are flashing blue lights, this indicates that all dampers are powered. If damper lights are not flashing, check power wires and confirm communications wiring.

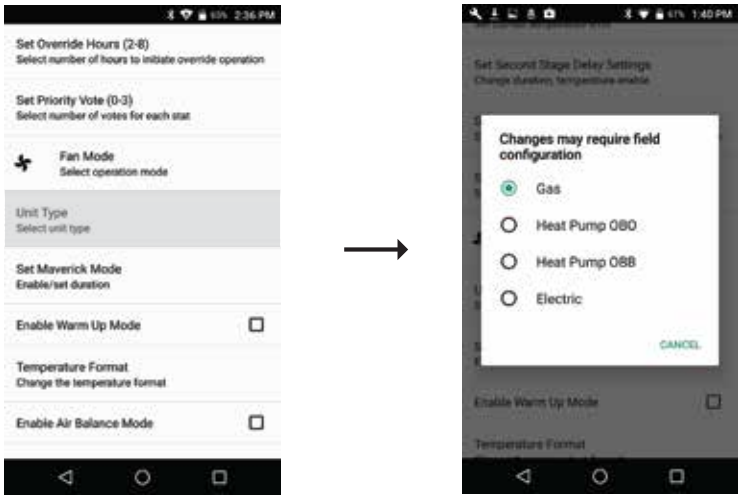
Confirm Wireless Thermostat Communications

Open the Gen X app, tap the ⚙ for System Configuration Menu and choose Configure Number of Dampers. Enter the number of zones that are in the system. While still in the Configuration menu select System Diagnostic and confirm that all the zones are showing Active under the thermostat status. If it shows RF error check power at the CDBX and confirm zone stat is synced to the CDBX board. If it shows Err: Check wiring / Stat ID confirm wiring is correct and check Stat ID.



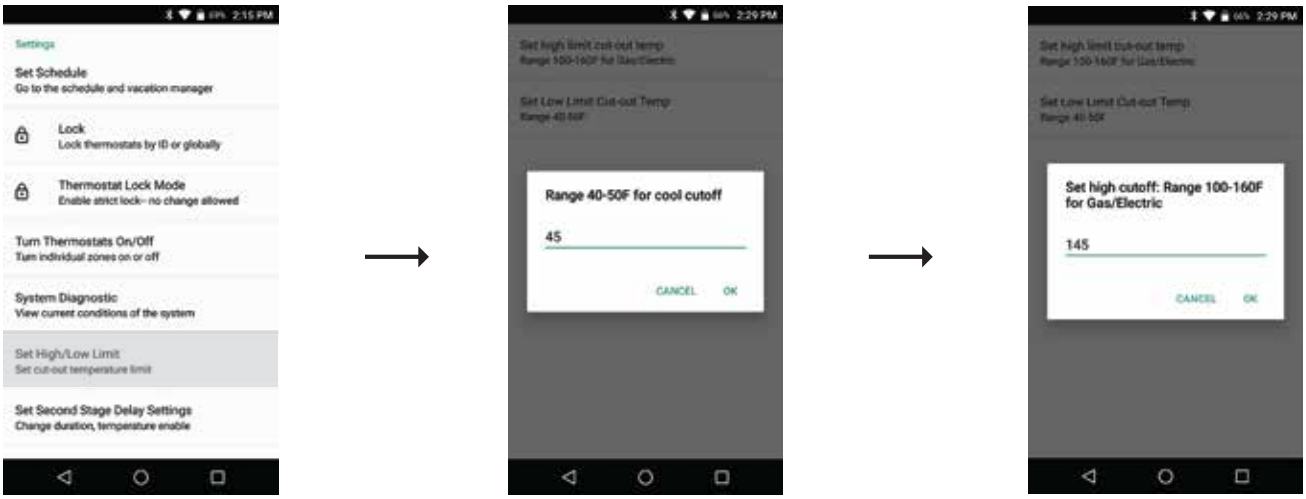
Set Type of Unit

Confirm the type of unit the GEN X is controlling: GAS, ELECTRIC, HEAT PUMP (O), or HEAT PUMP (B). Factory default for UNIT TYPE is GAS, if application is ELECTRIC or HEAT PUMP, you will need to adjust this through the mobile App. Select Unit Type in the configuration menu, choose Heat Pump O/B or Electric.



Confirm High/Low Limits

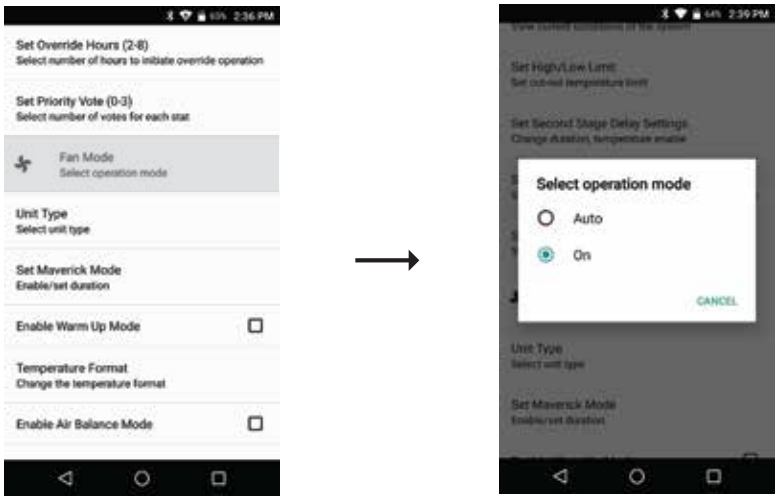
Factory defaults for GAS/ELECTRIC units are set for 40 degrees Low Limit and 145 degrees High Limit. Heat Pump O and B machines are set for 40 degrees Low Limit and 115 degrees High Limit. These may be adjusted in the field to meet unit specification. To confirm or adjust, use the mobile app to access the configuration menu. Select High/ Low Limits, choose High or Low limit and confirm limit set point.



*Check the RTU / Spilt System's High / Low Limits and adjust them on the GEN X / GEN X-RM below the units cut out limit.

Set Fan Operation

Configuration of FAN is set at the factory for AUTO 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. Select FAN mode, choose AUTO or ON.**



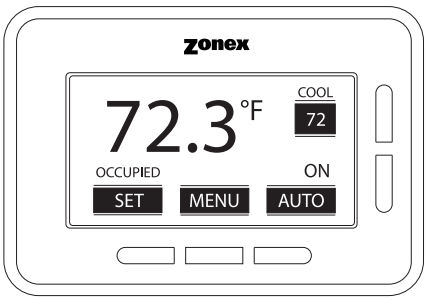
Confirm Cool Call and Damper Operation

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 X controller. Confirm Y1 and G lights are on at the GEN X controller. Go to each zone and confirm damper is open and "ON" appears on thermostat display indicating an active cool call. Once all dampers 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 "ON" disappeared and damper closes once call is satisfied. Continue to satisfy all cool calls one at a time until all calls are satisfied and dampers are closed. If damper does not close confirm power 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.

OVERVIEW SCREEN

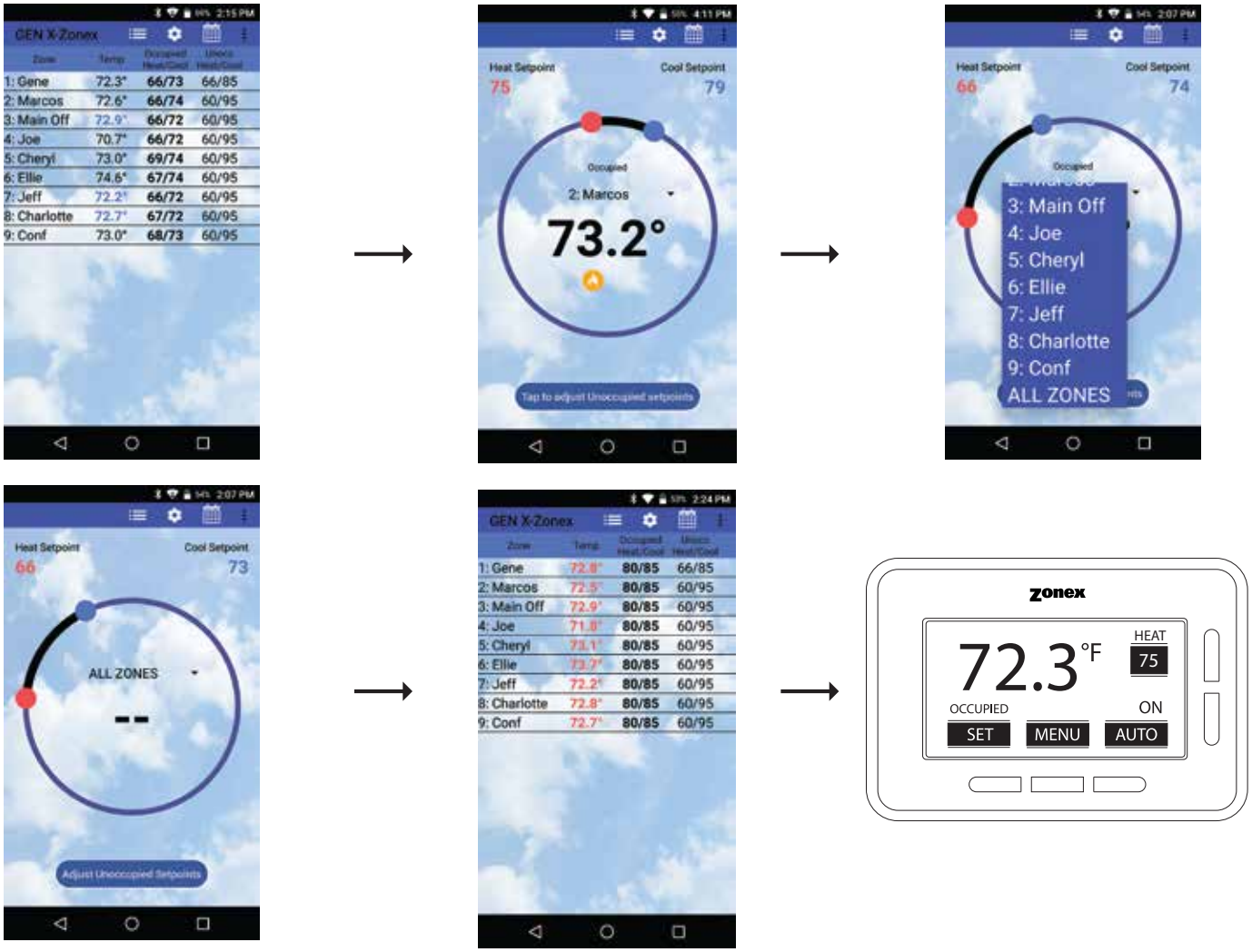
RING OF COMFORT

▼ ACCESS ALL THERMOSTATS



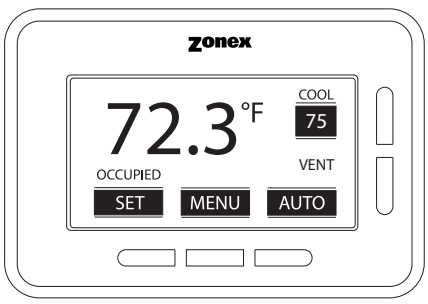
Confirm Heat Call and Damper Operation

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 heating will be made from GEN X controller and confirm W1(Y1 for HP) light is on at the GEN X controller. Go to each zone and confirm damper is open and "ON" appears on thermostat display indicating an active heat call. Once all dampers are confirmed open, satisfy heating calls at each zone thermostat. At each zone stat, lower heat set point by using the DOWN button to lower the set point. Confirm "ON" disappears and damper closes once call is satisfied. Continue to satisfy all heat calls one at a time until all calls are satisfied and dampers are closed. If damper does not close confirm power and communication wiring installation. Within 1 minute of all calls satisfying W1 (Y1 for HP) will de-energize, and a 3 minute purge follows, no calls are allowed during this time.



Vent

With all calls satisfied all dampers modulate to VENT position, approximately 40% open, confirm stat display indicates "VENT".



Syncing the GEN X RM to the GEN X Controller

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

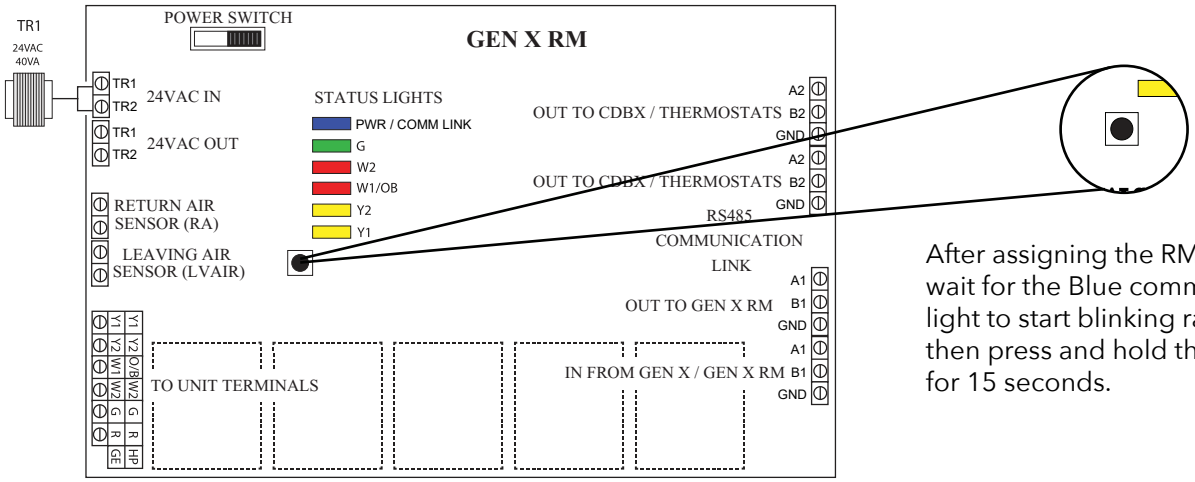
Connect to the GEN X via the mobile app. Go into the "System Configuration Menu" and tap "Configure Number of RM's Attached to System". Enter the number of GEN X RM's wired to the GEN X controller.

While still in the "System Configuration Menu", tap "Assign RM ID". Enter 1 for the first GEN X RM 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 RM board for 15 seconds. When the light stops flashing the sync has been completed.

Repeat the "Assign RM ID" for each additional GEN X RM in the system, making sure to increase the RM ID for each GEN X RM. For example, if you have 7 GEN X RM'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



After assigning the RM with its ID wait for the Blue communication light to start blinking rapidly and then press and hold the sync button for 15 seconds.

Syncing the RLYX to the GEN X Controller

Each RLYX controller communicates to the GEN X over an RS-485 communications bus. GEN X 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 X controller to communicate and transmit information to and from the mobile App.

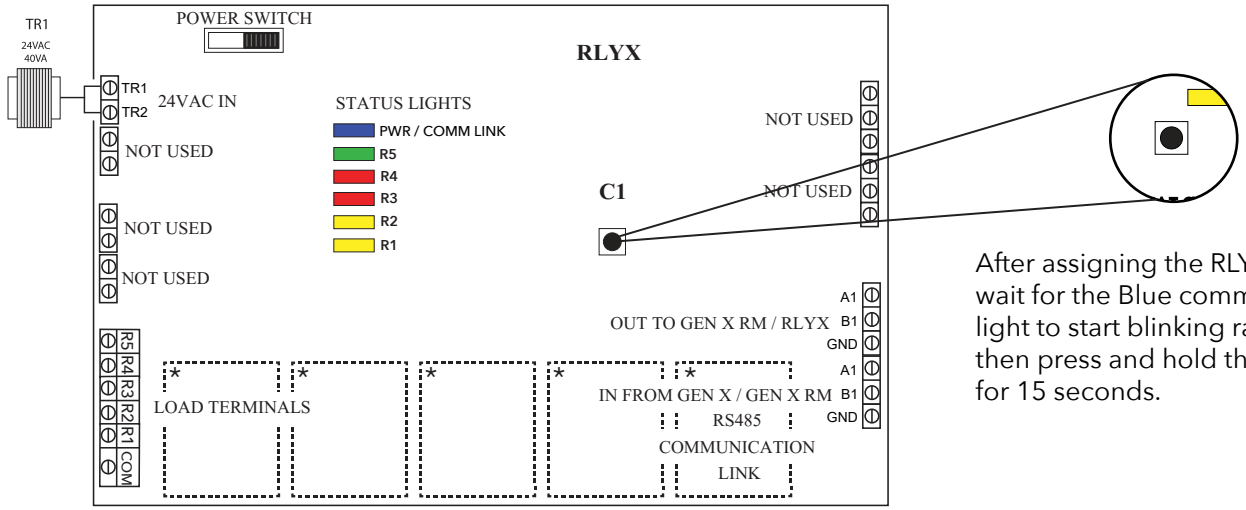
Connect to the GEN X via the mobile app. Go into the "System Configuration Menu" and tap "Configure Number of RLYX's Attached to System". Enter the number of RLYX's wired to the GEN X controller.

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.

Enter number of RLYX's attached to the system (1-20)

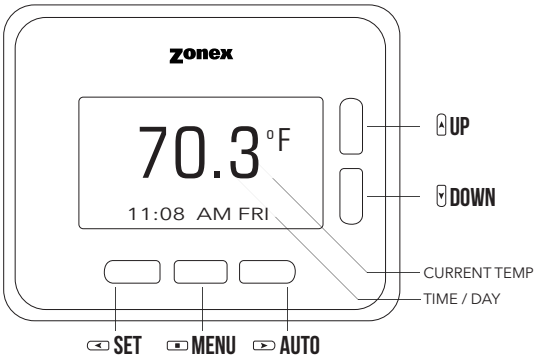
Each RLYX needs to be assigned its own ID



After assigning the RLYX with its ID wait for the Blue communication light to start blinking rapidly and then press and hold the sync button for 15 seconds.

How to make a call for HEAT or COOL

Press any button to access Operations Mode of the Thermostat
Press SET to toggle Heating or Cooling mode



Cool Call

If cooling is desired, set COOL set point 1 or more degrees below room temperature. Once desired temperature is set, "ON" will appear below set point. "ON" will flash until system is operating in COOL mode. Once system is in cooling mode, "ON" will remain constant.

Heat Call

If heating is desired, set HEAT set point 1 or more degrees above room temperature. Once desired temperature is set, "ON" will appear below set point. "ON" will flash until system is operating in HEAT mode. Once system is in heating mode, "ON" will remain constant.

Vent Mode

When all calls for heating and cooling are satisfied, damper controller will set the damper into VENT position and will be indicated by the word "VENT" below set point. During this time if GEN X controller is configured for FAN ON, air will be circulated to all zones.

Lock / Unlock Thermostats

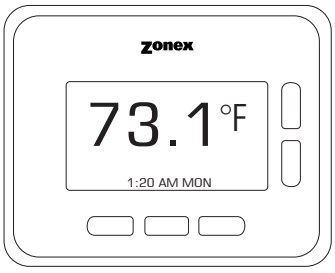
This is done through the GEN X mobile app. Contact building manager for advanced configuration.

Override

To override thermostat operations when in the Unoccupied mode, press the AUTO button once and system will run in the Occupied mode for configured override time. The word OVERRIDE will be displayed below the room temperature when in this mode. System will terminate override after configured run time, if scheduled changeover occurs, or if AUTO button is pressed again.

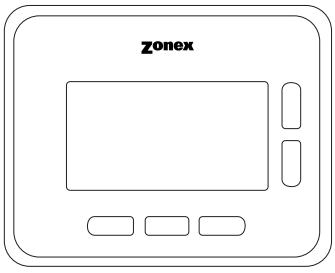
Confirm thermostat is in the Auto Mode. If OFF is displayed, hold OFF button for 15 seconds, OFF icon will change to AUTO, then release button for AUTO operation.

SLEEP MODE



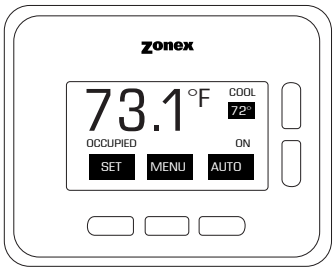
This screen represents the thermostat display in Sleep Mode

ENERGY SAVING MODE



This screen represents the thermostat in Energy Saving Mode

ACTIVE MODE



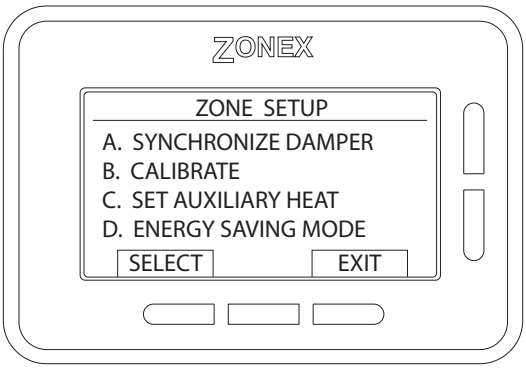
This screen represents the thermostat in Active Mode displaying the temperature, set points and operating functions

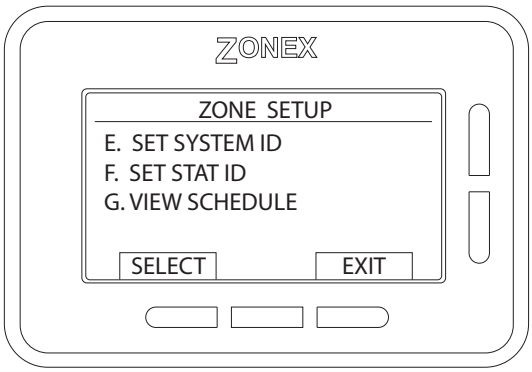
Replace Batteries

Use a flat head screwdriver to unscrew clockwise to release the thermostat from the sub-base. Set screw will recess into the sub-base.

Remove batteries from the thermostat and replace with new batteries confirming polarity of batteries. Place the thermostat back on sub-base and tighten set screw counterclockwise.

ZONE SETUP MENU AND OPERATION





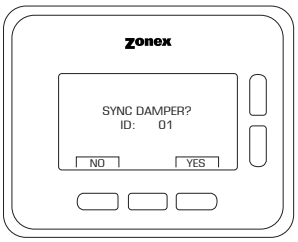
ZONE SETUP MENU is available from every thermostat in the system.

TO ACCESS THE
ZONE SETUP MENU

Press any key to display operations mode on the thermostat then press **MENU** once
Press and hold the **MENU** and **AUTO** button simultaneously until the Zone Setup Menu is displayed.
Use the **UP** and **DOWN** buttons to scroll through Zone Setup Menu options.

A SYNCHRONIZE DAMPER

Once your zone thermostat has been assigned an ID number you will need to synchronize with its corresponding zone damper. Two steps are required to Sync the thermostat to the damper.



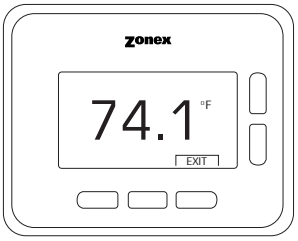
SYNCHRONIZE DAMPER

1. Place damper in Sync mode by pushing the black button in the lower corner of the communicating damper board.
   This will energize a blue flashing light indicating Sync or pairing mode is active.

2. Once damper light is blinking and in active Sync mode return to the thermostat and enter **Zone Setup Menu**. Use the **UP** and **DOWN** buttons to scroll and highlight item (A) **SYNC DAMPER**. Press **SELECT** confirm ID matches the ID# you assigned earlier. Push **YES** to Sync.

B CALIBRATE THERMOSTAT

Thermostat is equipped with an accurate temperature sensor.

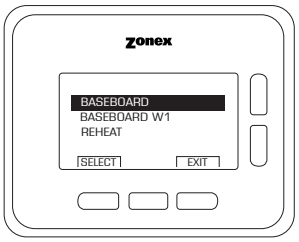


CALIBRATE THERMOSTAT

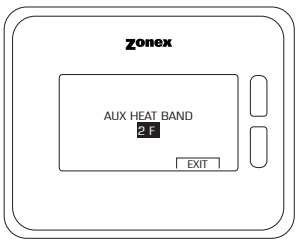
If you require field calibration return to the **Zone Setup Menu** and scroll to item (B) **CALIBRATION**.
Use the **UP** and **DOWN** buttons to calibrate the temperature display with your external thermostat, then push **EXIT** to save changes.
Confirm temperature display now reports the updated room temperature you provided.

C SET AUXILIARY HEAT

SET AUXILIARY HEAT



AUX HEAT BAND



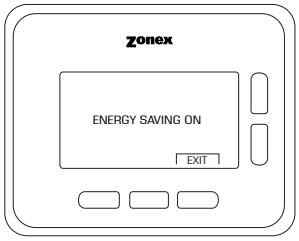
Access the **Zone Setup Menu** select item (C) **SET AUXILIARY HEAT** press **SELECT**. Select BASEBOARD, BASEBOARD W1 or REHEAT using the **UP** and **DOWN** buttons. Then press **SELECT** and enter the temperature range you would like to energize base board or reheat.

Default settings initiate supplemental heat 2 degrees below the heat set point. You can select 2,3,or 4 degrees using the **UP** and **DOWN** buttons.

D ENERGY SAVING MODE

Energy saving mode prolongs battery life and starts 10 minutes after your selection. Display will appear blank.

ENERGY SAVING MODE



In the **Zone Setup Menu** select item (D), **Energy Saving Mode** and press **SELECT.**

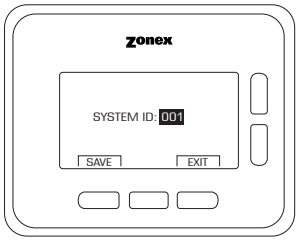
Use **UP** and **DOWN** buttons to toggle between Energy Saving OFF or ON. Then exit to save.

Note: Thermostat is operating behind the scenes and is fully operational. Touching any button will immediately refresh the display. During Unoccupied period, Energy Saving Mode (blank screen) is also displayed on each thermostat.

E SET SYSTEM ID

Each GEN X and GEN X RM controller will require a unique ID number to correspond and communicate with its respective zone dampers.

SET SYSTEM ID



In the **Zone Setup Menu** select item (E) **SET SYSTEM ID** and press **SELECT.**

Use the **UP** and **DOWN** buttons to select a **System ID** number for this zone thermostat.

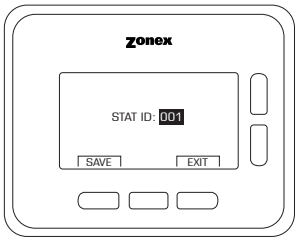
Press **SAVE** to save settings and return to **Zone Setup Menu**

Note: If you have more than one GEN X controller, each will require a unique system ID ranging from 001 - 100.

F SET STAT ID

Each Thermostat will require a unique ID number to correspond and communicate with its respective zone damper.

SET STAT ID



In the **Zone Setup Menu** select item (F) set **STAT ID** and press **SELECT.**

Use the **UP** and **DOWN** buttons to select a **STAT ID** number for this zone thermostat.

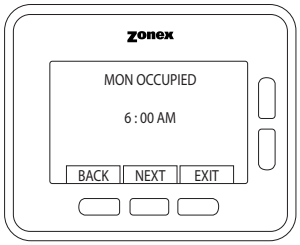
Press **SAVE** to save settings and return to **Zone Setup Menu**.

Note: It is recommended to use and record a map to list each damper ID number and damper location.

G VIEW SCHEDULE

This will allow you to view the schedule that has been given to the zone thermostat. To change the schedule use the mobile App.

VIEW SCHEDULE



In the Zone Setup Menu select item (G) **VIEW SCHEDULE** and press **Select**.

Press **NEXT** to scroll through the schedule for that zone.

Press **EXIT** again to return to normal operation.

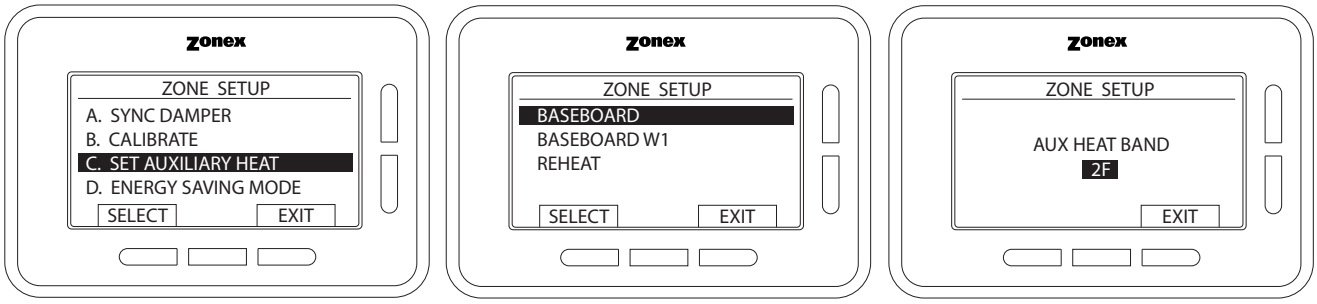
AUXILIARY HEAT/REHEAT

The zone thermostat provides Auxiliary Heat options; Baseboard, Baseboard W1 and Reheat options are configured using the menu screen on the thermostat. When zone temperature drops 2 degrees below heat set point, auxiliary heat operations are energized. If configured for Reheat operation when zone temperature drops 2 degrees below thermostat set point, damper will modulate to approximately 40% open providing air flow over electric heat strips, the AUX terminal will energize and strip heat will provide reheat.
Note: When using electric strip heater, an airflow switch is required to prove airflow for safe operation.

If the Thermostat is configured for Baseboard heat operation, auxiliary output will energize at 2 degrees below heat set point. Auxiliary operations will remain energized until heat call is satisfied.

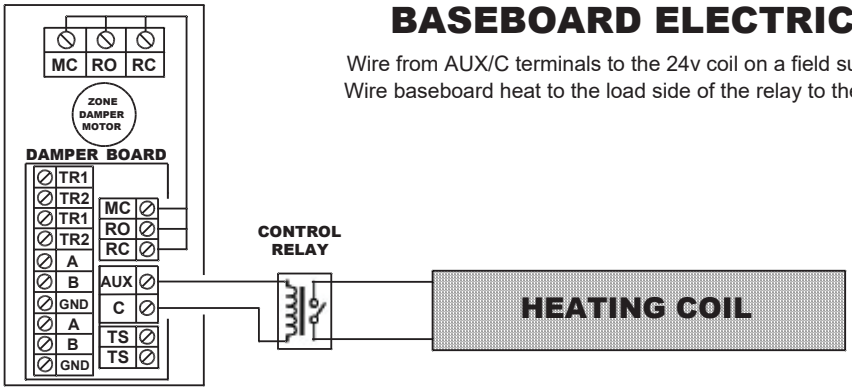
If you desire the Auxiliary heat to energize before the unit heat, you will want to configure the thermostat for Baseboard W1 heat operation auxiliary output energizes first at 1 degree below set point and at 2 degrees below set point, the unit heater will energize and remain energized until the heat call is satisfied.

Configuration of Auxiliary Heat/Reheat is accomplished by selecting the "**SET AUXILIARY HEAT**" function in **ZONE SETUP** Menu. To do this press MENU and AUTO buttons and scroll down to (C) **SET AUXILIARY HEAT**. When **SET AUXILIARY HEAT** option is highlighted, press select. Three options are offered, BASEBOARD, BASEBOARD W1 or REHEAT. If **BASEBOARD** is desired press select, display will provide an option for heat deadband setup. Auxiliary heat can be set up for 2, 3, or 4 degrees, use UP/DOWN buttons to select desired temperature deadband, when selection is highlighted, press EXIT to return to previous menu, EXIT again to get back to main menu. If **BASEBOARD W1** is desired press SELECT, display will provide an option for heat deadband setup. Auxiliary heat can be set up for 2, 3, or 4 degrees, use UP/DOWN buttons to select desired temperature deadband, when selection is highlighted, press EXIT to return to previous menu, EXIT again to get back to main menu. If **REHEAT** operations are desired, press the MENU button and scroll through menu options until SET AUX HEAT is highlighted, press SELECT. Use UP/DOWN button to highlight REHEAT and press SELECT button, display will provide an option for auxiliary heat deadband setup. Reheat can be set up for 2, 3, or 4 degrees, use UP/DOWN buttons to set deadband. Once desired HEAT DEADBAND is set, press EXIT to return to previous menu, EXIT again to return to main menu.



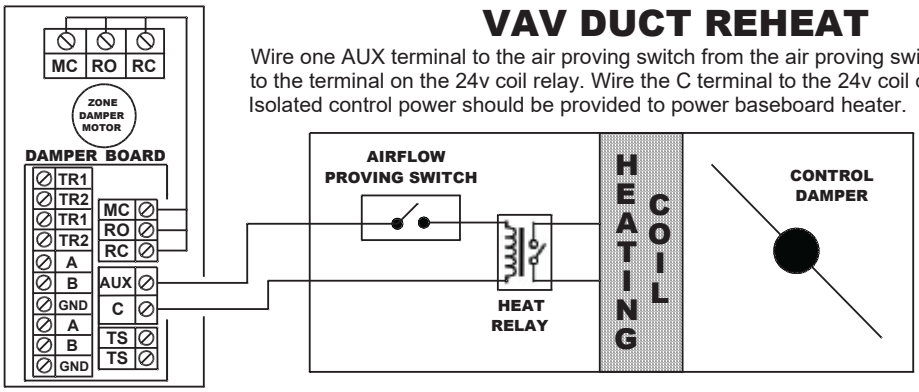
BASEBOARD ELECTRIC HEAT

Wire from AUX/C terminals to the 24v coil on a field supplied SPDT relay.
Wire baseboard heat to the load side of the relay to the baseboard heater.



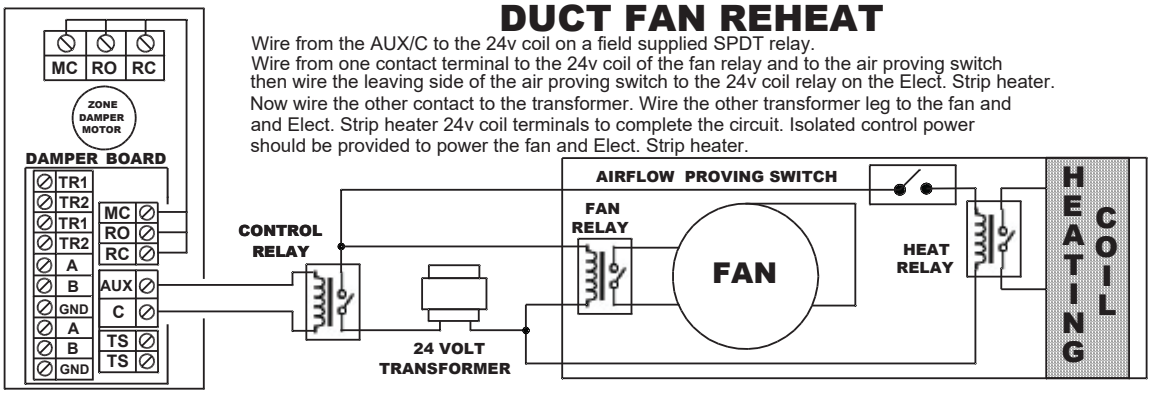
VAV DUCT REHEAT

Wire one AUX terminal to the air proving switch from the air proving switch complete wiring to the terminal on the 24v coil relay. Wire the C terminal to the 24v coil on the relay. Isolated control power should be provided to power baseboard heater.



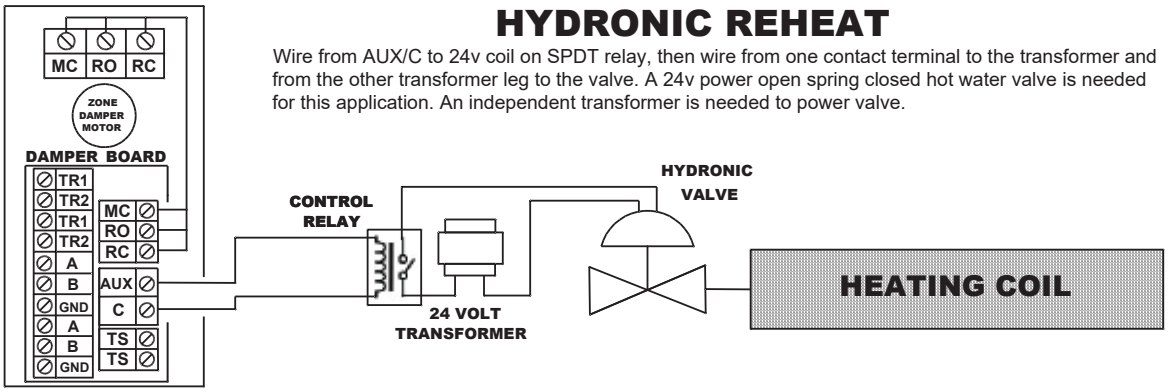
DUCT FAN REHEAT

Wire from the AUX/C to the 24v coil on a field supplied SPDT relay.
Wire from one contact terminal to the 24v coil of the fan relay and to the air proving switch then wire the leaving side of the air proving switch to the 24v coil relay on the Elect. Strip heater.
Now wire the other contact to the transformer. Wire the other transformer leg to the fan and and Elect. Strip heater 24v coil terminals to complete the circuit. Isolated control power should be provided to power the fan and Elect. Strip heater.



HYDRONIC REHEAT

Wire from AUX/C to 24v coil on SPDT relay, then wire from one contact terminal to the transformer and from the other transformer leg to the valve. A 24v power open spring closed hot water valve is needed for this application. An independent transformer is needed to power valve.



The GEN X 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 X (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 X 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 pop-up 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".**

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 X from the drop down list at the top of the app.

9. Your mobile device is now connected to the GEN X via wireless connection. Configuration changes can now be made to the GEN X. If the GEN X 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 X Wi-Fi range is approx 50 feet.**

Wireless connection for **Apple** devices

1. Ensure that an Ethernet cable is NOT plugged into the GEN X (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.

4. If the GEN X 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.

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 **GENX** 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 X from the drop down list at the top of the app.

9. Your mobile device is now connected to the GEN X via wireless connection. Configuration changes can now be made to the GEN X. If the GEN X 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 X Wi-Fi range is less the 50 feet.**

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**

Enter your information to sign up

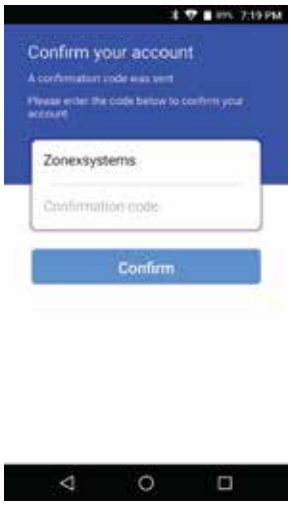
USERNAME (case senstive)

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.

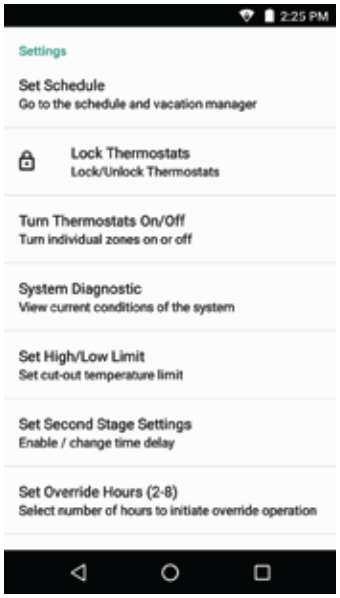
GEN X MOBILE APP

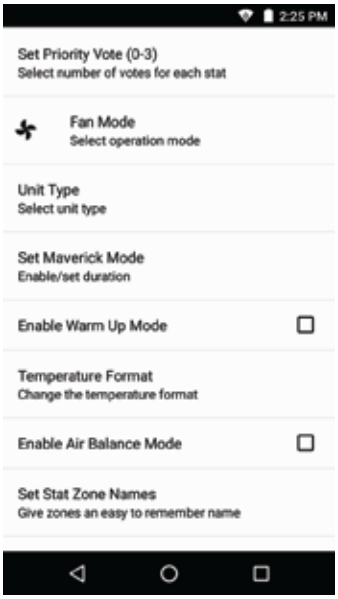
The mobile App commicates with the GEN X controller, via the Wi-Fi network and initiates control decisions for the system. Through the GEN X mobile app you can coordinate global or individual schedules for the system, lock thermostats individually and provide a user interface to make adjustments and 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 25 unique functions that the GEN X offers:

System Configuration Menus

System feature changes are configured through the GEN X Mobile App for all zone stats and the GEN X System controller, along with additional RTU or Split systems controlled by their RM board.





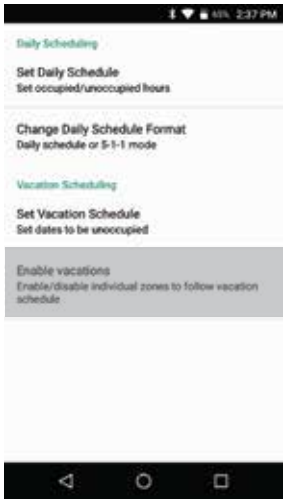
MENU FEATURES:

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

01 SCHEDULE / VACATION

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**



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

Thermostats can be locked independently or globally through your Mobile device, when a thermostat is locked the end user will have limited operation (+/- 2°) 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

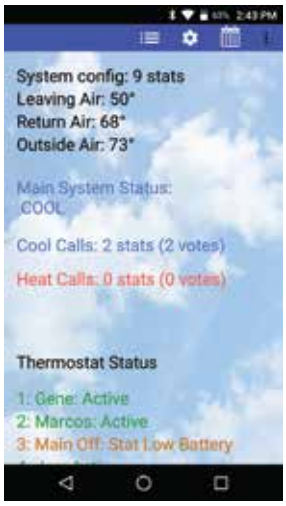
The thermostat On and Off function will allow you to turn individual thermostats On and Off.

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.

04 SYSTEM DIAGNOSTIC



Allow the user to review the current conditions for the GEN X 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.

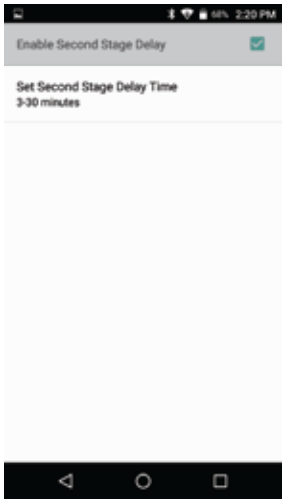
05 HIGH/LOW LIMIT

For system protection the GEN X has High and Low limit set point built into the Mobile Device configurations. Factory defaults for Gas/Electric operations are High Limit of 145° F and Low Limit of 45 °F, for Heat Pump operations factory defaults are High 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



The GEN X 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**

☑ **Enable 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.**

07 OVERRIDE HOURS

Select the number of hours to initiate override operation. Select 2-8 hours in the setback mode. Pressing the AUTO button once on the thermostat will initiate override operation. Pressing the AUTO button again will terminate the 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.

08 PRIORITY VOTE

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**

09 FAN MODE

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**

10 UNIT TYPE

The Gen X is designed as a universal GAS/ELECTRIC/HEAT PUMP Controller. Factory default is set for GAS operations, and may require field configuration when applying this product to Electric or Heat Pump applications.

Tap **Unit Type**
Choose **Unit Type (Gas, Heat Pump O/B, Electric)**

11 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**

12 ENABLE WARM UP MODE

In cold climates a MORNING WARM UP sequence will assist in preheating the building prior to occupancy. The GEN X 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)**

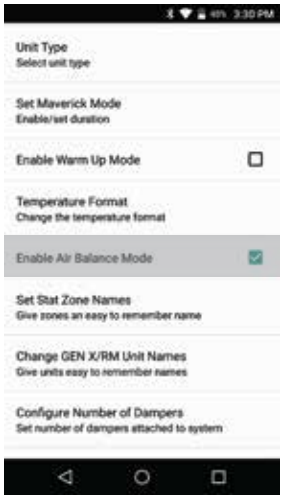
13 TEMPERATURE FORMAT

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

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

14 AIR BALANCE MODE

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)**

15 SET STAT ZONE NAMES

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

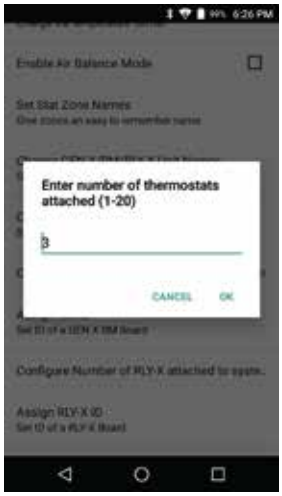
16 CHANGE GEN X / RM UNIT NAMES

This allows you to give the GEN X and GEN X RM'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

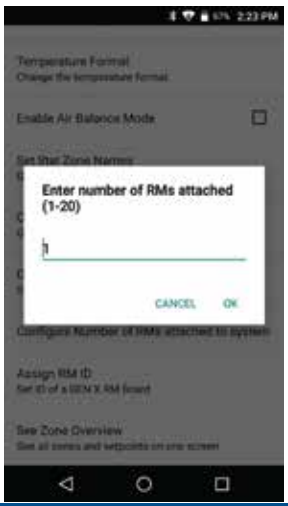
Installer must set the number of thermostats in the system. This reduces the need for the GEN X controller to poll and review each zone's needs. Installer can set the number of thermostats from 1-20.



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

18 CONFIGURE NUMBER OF RM'S ATTACHED TO SYSTEM

Configuring the number of RM's attached to system allows the GEN X to know how many RM's it will be communicating with. It also needs to know how many RM'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

19 ASSIGN RM ID

Each GEN X RM receives an ID number ranging from 1-20. This allows the GEN X mobile app the ability to communicate with multiple RM's through the GEN X controller. The RM'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 TO SYSTEM

Configuring the number of RLYX allows the GEN X 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.

21 ASSIGN RLYX ID

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 X 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.

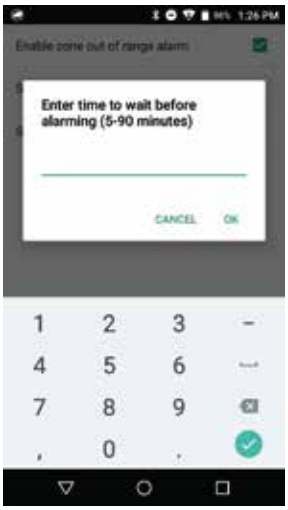
22 SEE ZONE OVERVIEW

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

Once enabled this allows email/text 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 text and email alarm subscriptions.

Select **Sign up for alarm notifications** email or text and enter the email addresses or phone #'s 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, entire the email address or phone # in the Unsubscribe from alarms.

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

24 CHANGE ADR SETTINGS

When the device receives an ADR signal from the utility service provider its contacts close, the GEN X & RM'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 X 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.

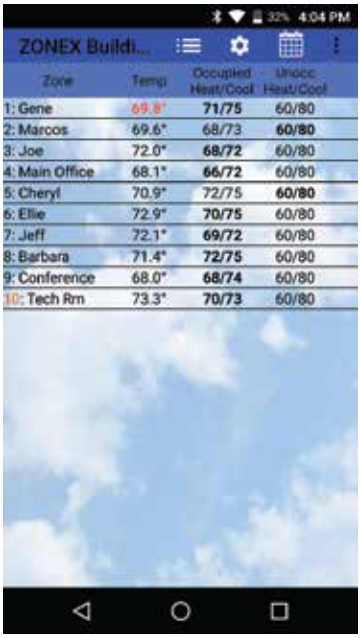
Log Out of Account – Will log you out of your account and takes you back to the option screen for logging in to the system over the internet or accessing a system on the same local network that your mobile device is also connected too.

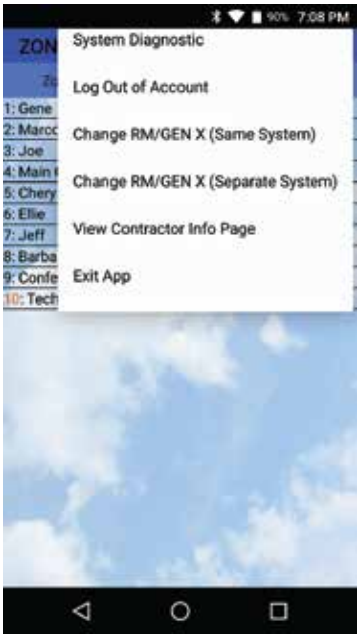
Change RM/GEN X (Same System) – Allows you to switch between a GEN X and RM's on the same system you are currently connected to. This option can be used for over the internet or local network connections.

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

View Contractor Info Page - Conveniently stores the contact information for the servicing mechanical contractor such as a contact name, phone number, email address and company logo in the event that assistance is needed. This information needs to be provided prior to the account setup.

Exit App – Closes the GEN X app.





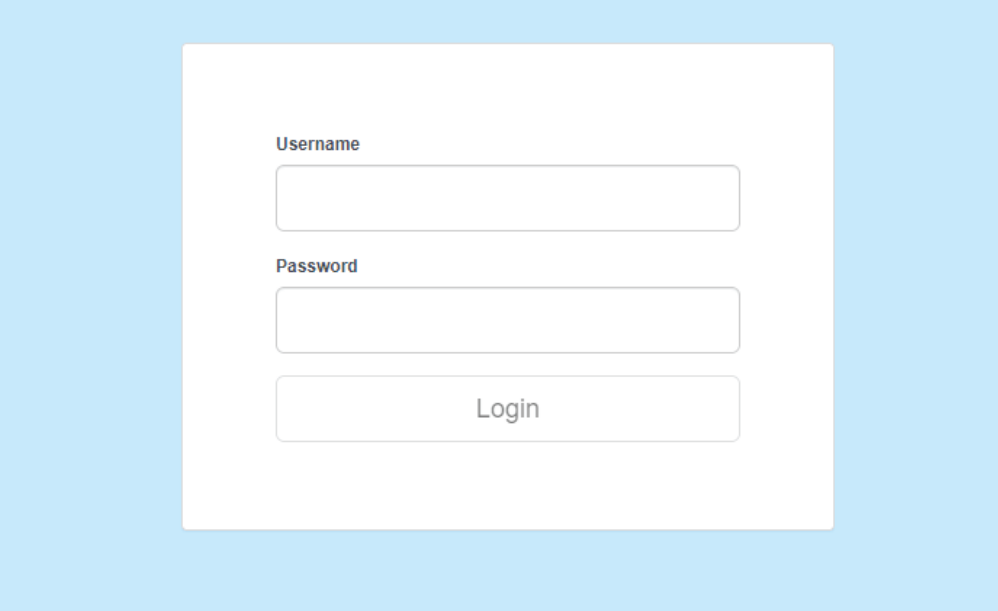
GEN X WEB-PORTAL LOGIN - END USER INTERFACE

The GEN X controller can be accessed from any web browser. Accesing the GEN X 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 X go to: www.genxcontrol.com

Enter the user name and password: Click Login



END USER INTERFACE OVERVIEW

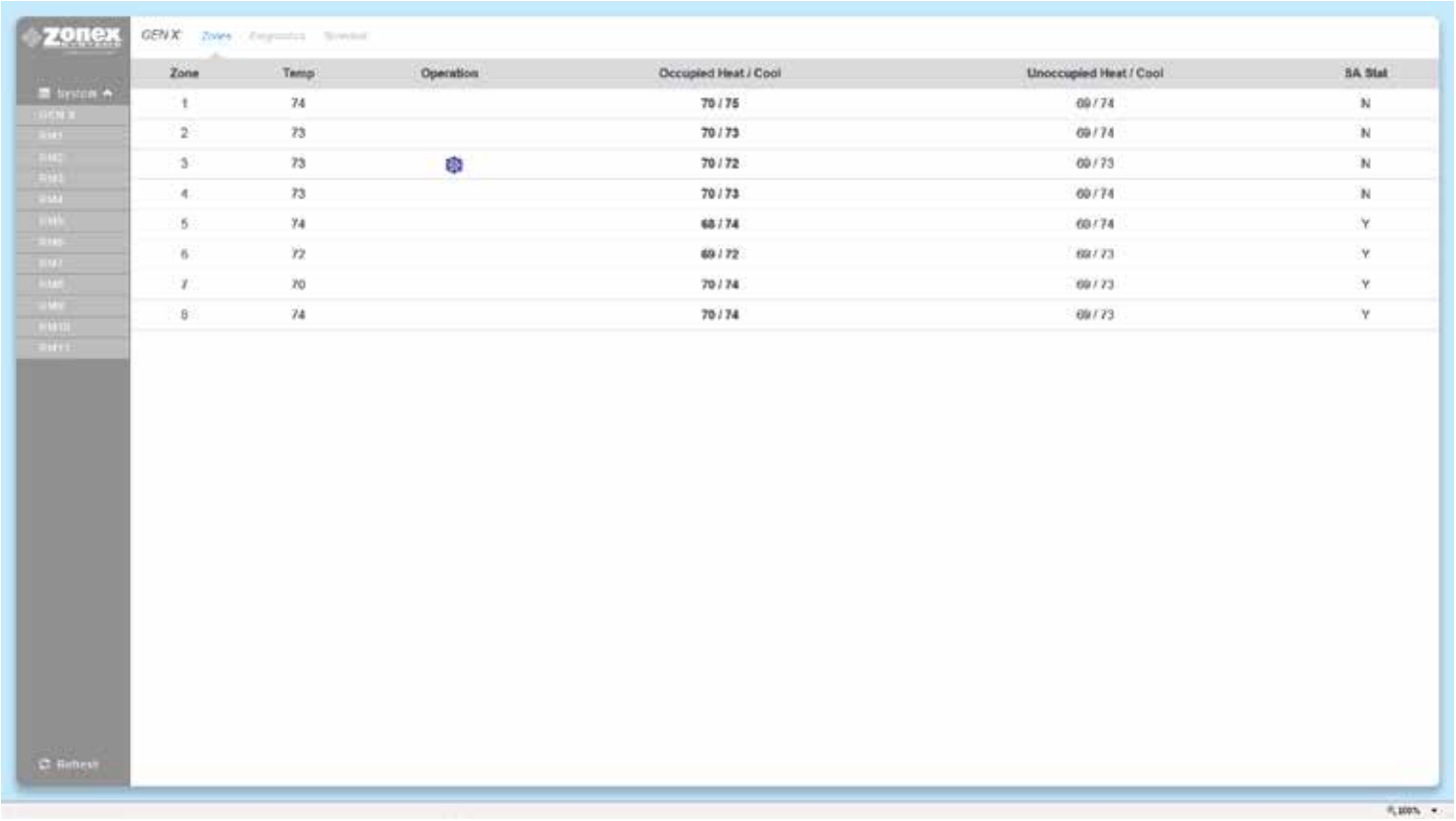
You can review and perform the following:

-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

Once you have logged in to the end user interface you will see all the zone thermostats associated with the GEN X 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 RM controller that you wish to view.



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.

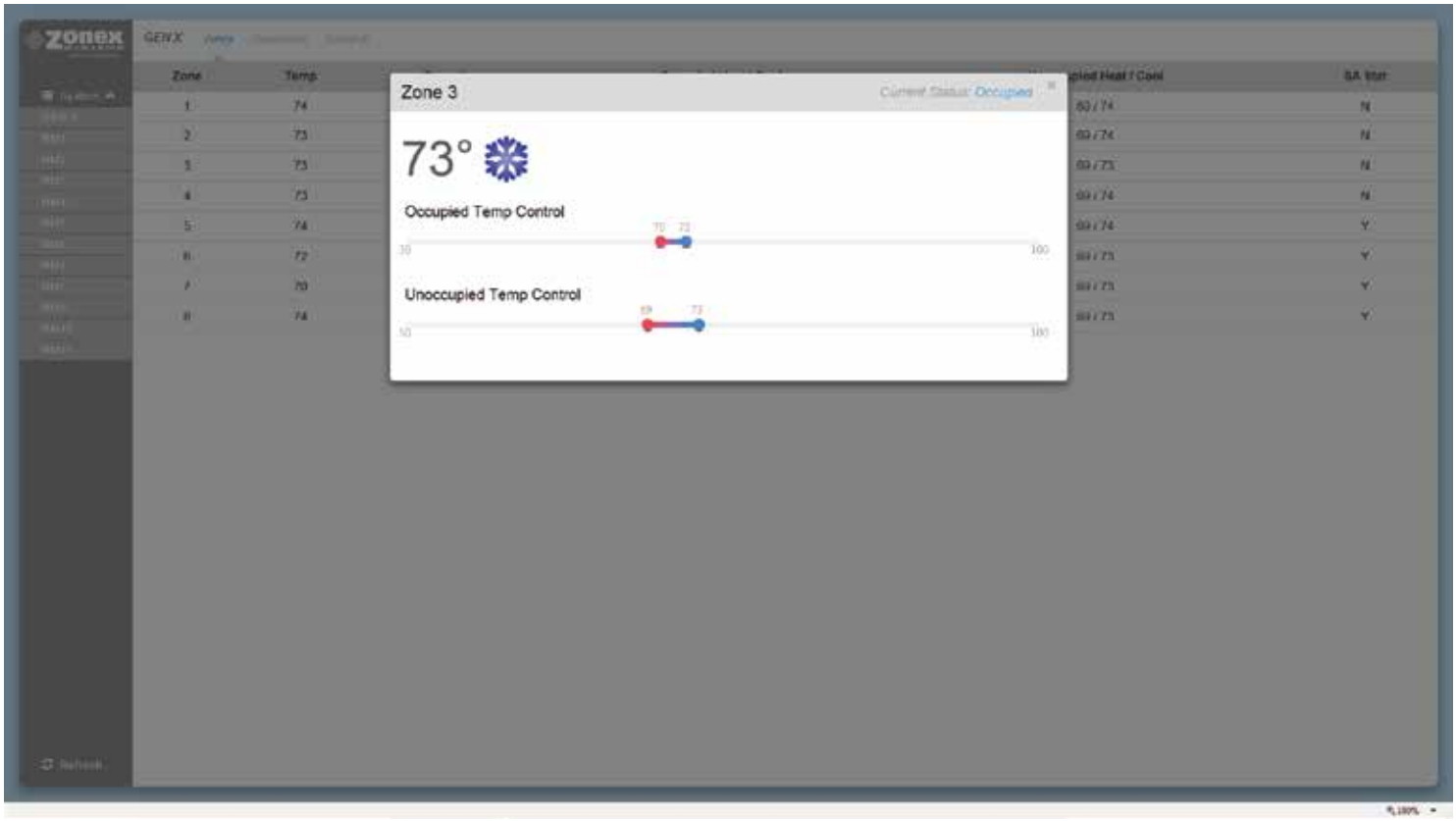
CHANGING ZONE THERMOSTAT TEMPERATURES

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

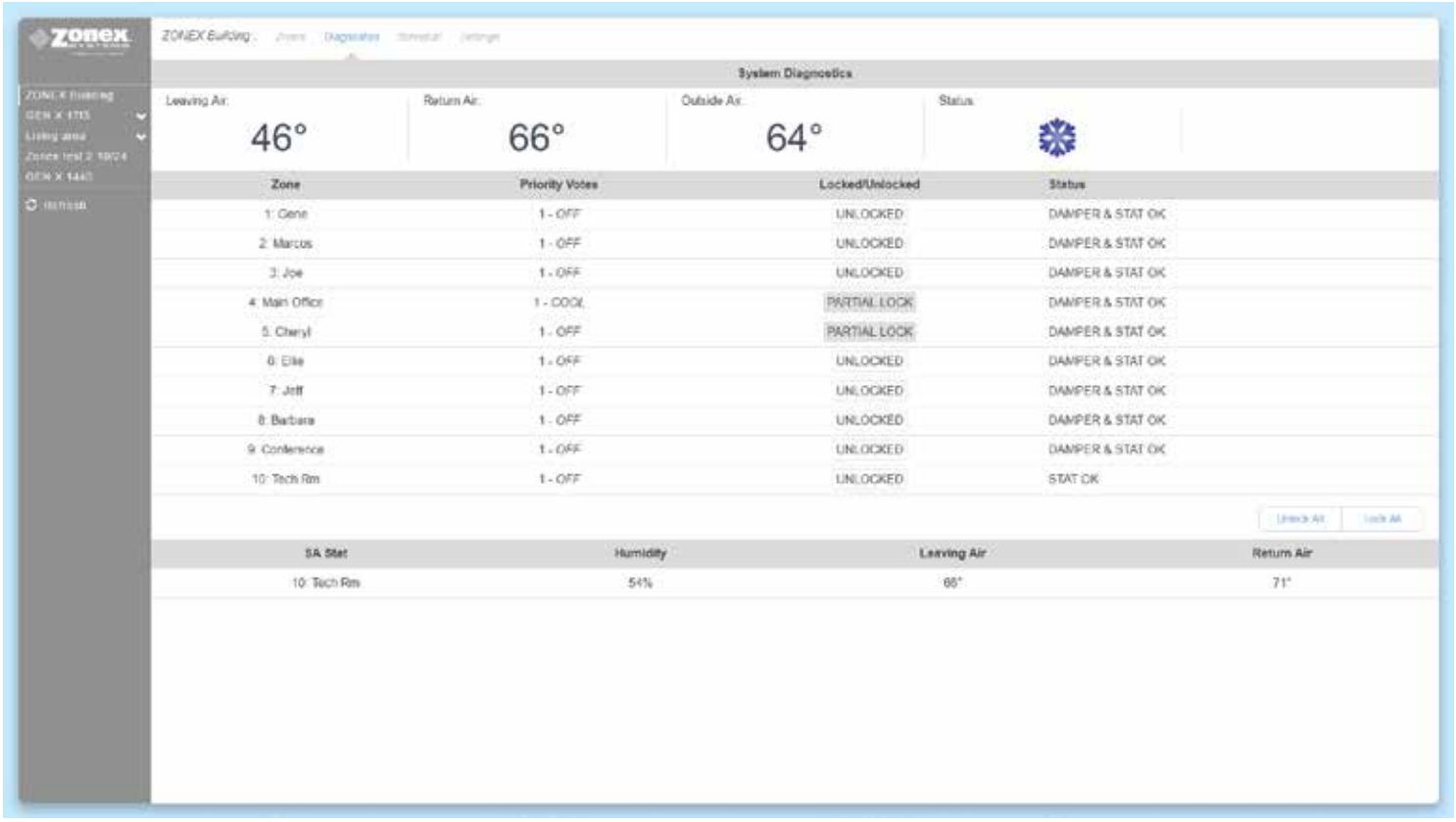
The diagnostic screen allows you to view the leaving, return, and outside air temperatures and the current status of the system.

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, PARTIAL LOCK 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 X controller.

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



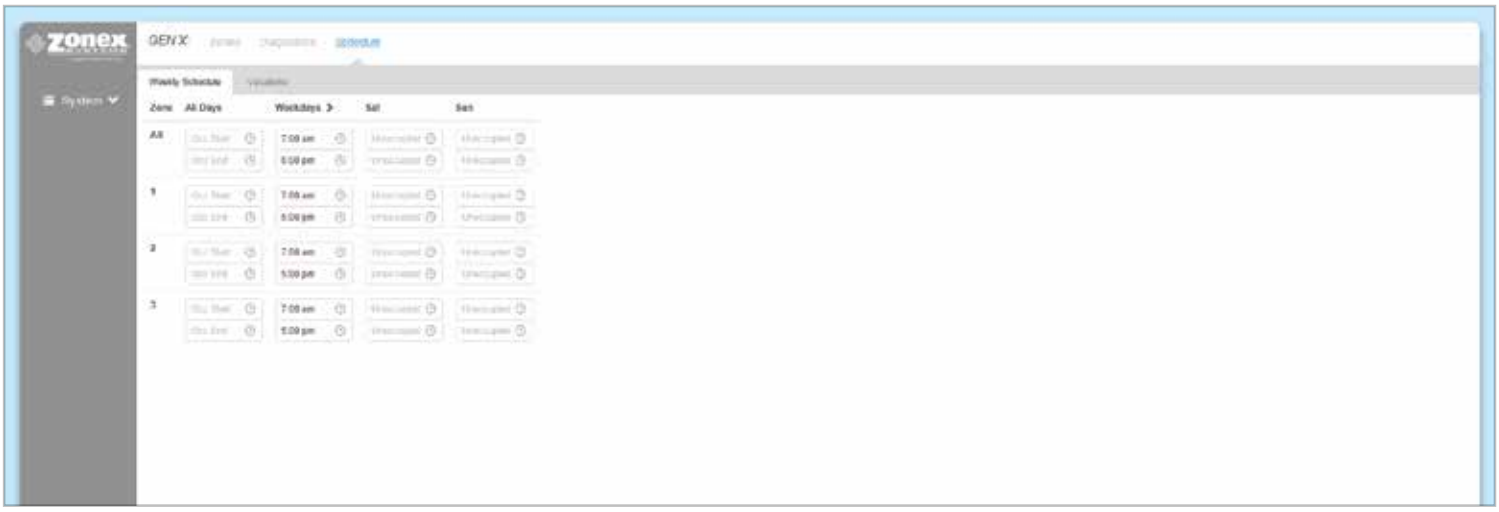
SCHEDULE / VACATION SET UP

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.

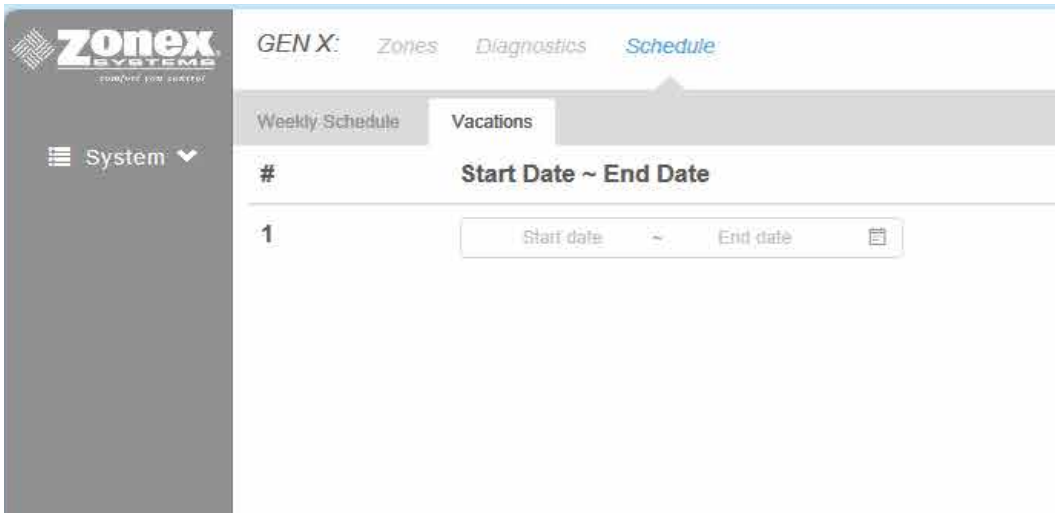


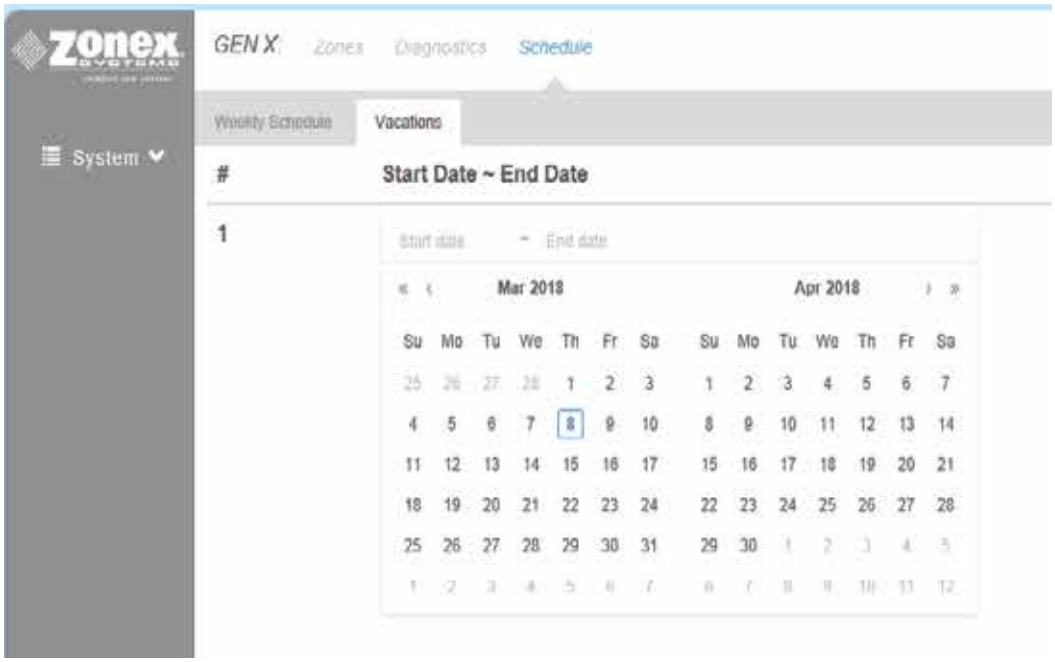
VACATION SET UP

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.



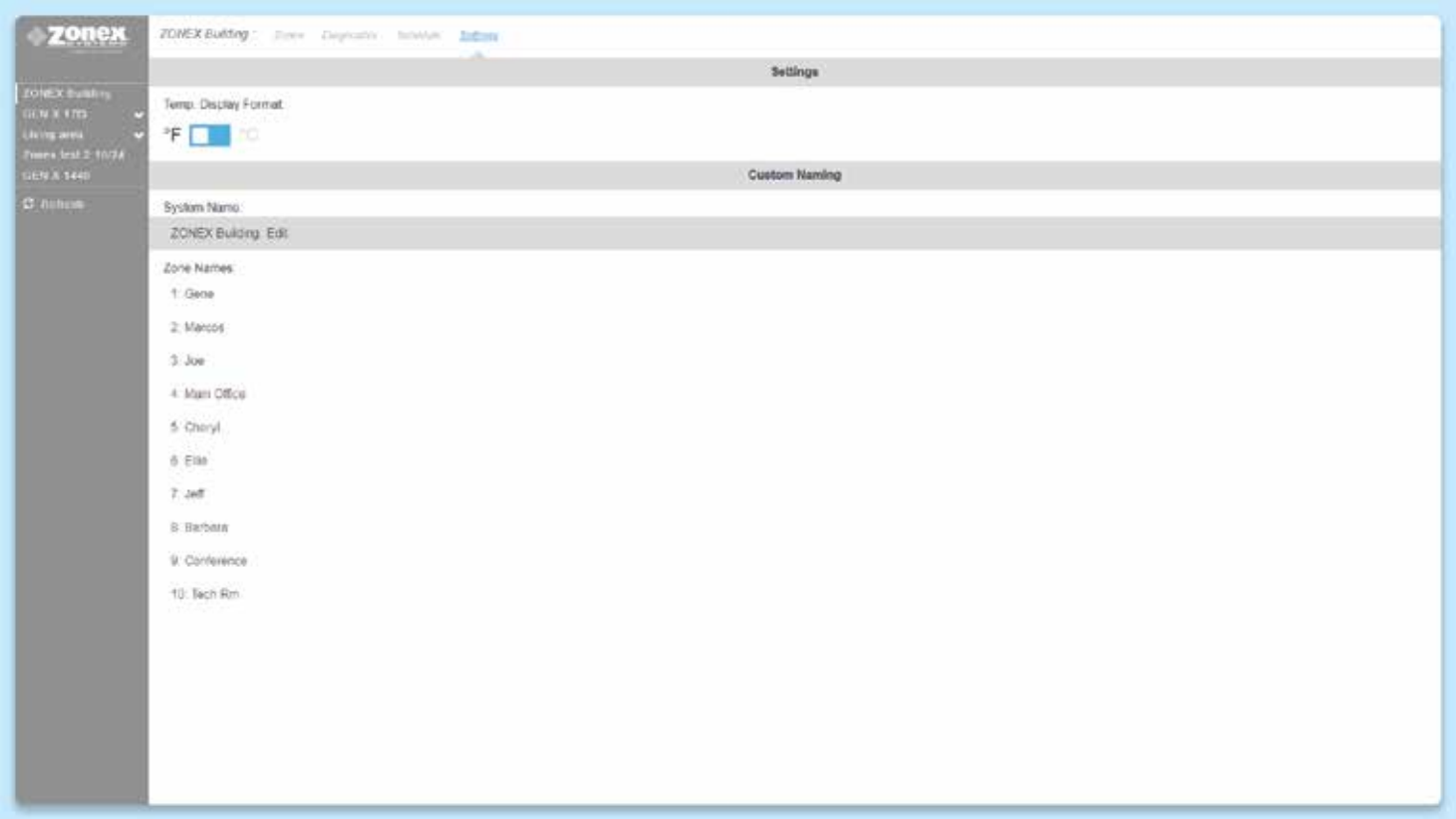


CHANGING TEMPERATURE FORMAT AND ZONE NAMES

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.



SA STAT UNIVERSAL THERMOSTAT

DESCRIPTION

The SA STAT (Part# SASTAT) is a universal programmable G/E or H/P thermostat, microprocessor based, auto changeover, stand alone thermostat used to control stand alone units with the GEN X system. The SA STAT is configured for Gas/Electric (2H, 2C) or Heat Pump (3H, 2C) with selectable fan operation. The SA STAT reports the supply and return air temperatures and has a large, easy to read LCD display.

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

The SA STAT 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. SA STAT 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.

INSTALLATION

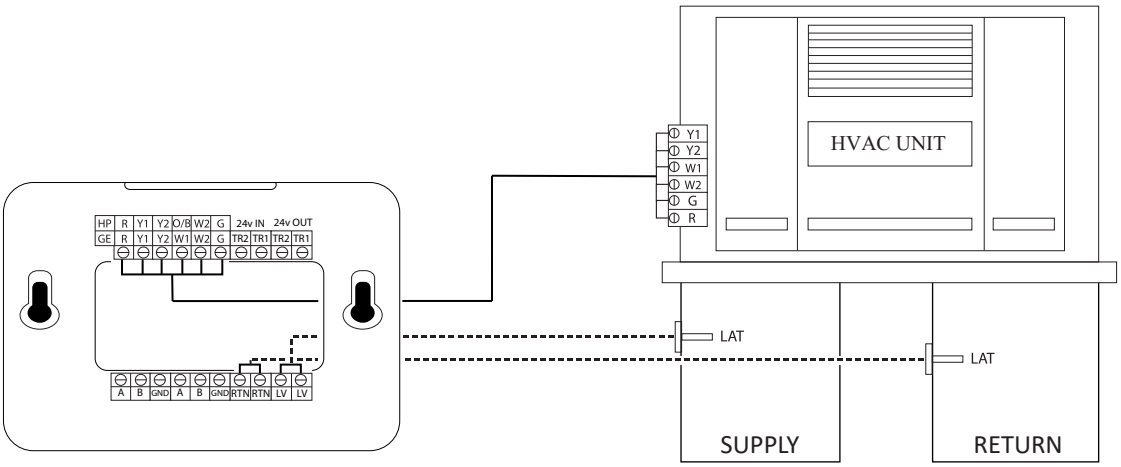
Thermostat and Terminal base

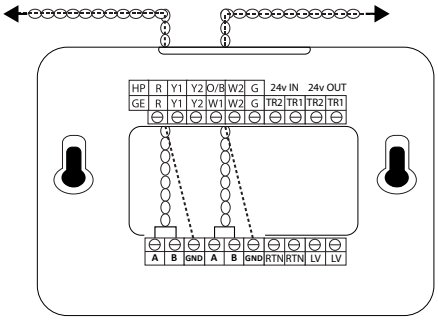
1. Install the thermostat on an interior wall, away from drafts, supply air currents and direct sunlight or any heat generating source.
2. To remove the thermostat from its sub-base, turn the screw clock wise into the sub-base than grasp the cover at the top and bottom and rotate it up and pull straight up; do not pivot the cover from the base.
3. Install the thermostat sub-base to the wall using the provided anchors and screws.

WIRING THE UNIT, SUPPLY AND RETURN AIR SENSORS TO THE SA STAT

Use 18/6 thermostat wire, wire from RTU to SA STAT. Make sure to match up unit terminals R, Y1, Y2, W1/O/B, W2 , G to the SA STAT 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.

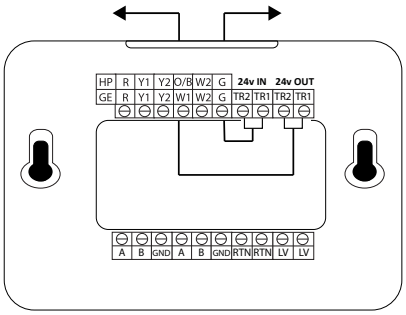




DAISY CHAIN THE COMMUNICATION WIRE

Using Zonex 3-TWP communication wire. Wire to A, B, GND **IN** and A, B, GND **OUT**, to and from SA STAT's in a daisy chain configuration.

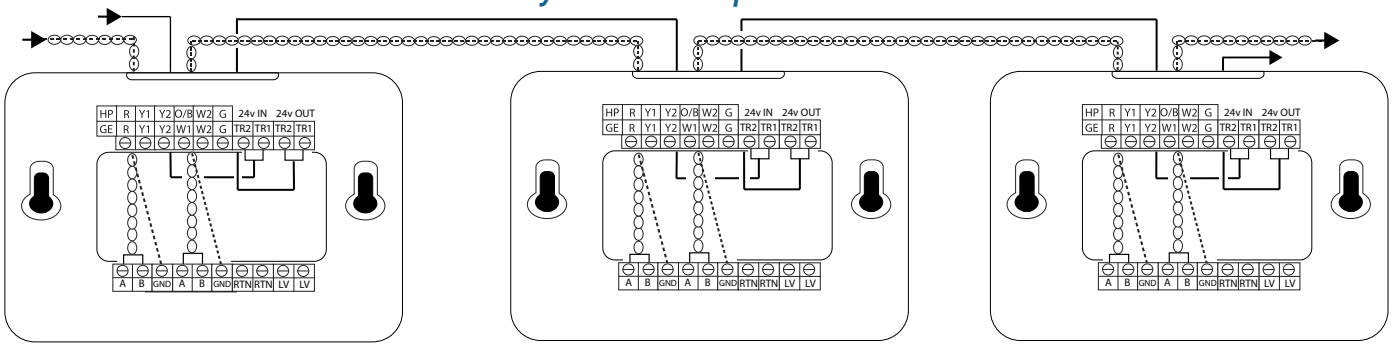
Wiring to Communication Terminals
Red-A
White-B
Black-GND



DAISY CHAIN 24V POWER FROM GEN X , GEN UC or CDBX

SA STAT is powered by the independent transformer connected to the GEN X or GEN UC. Using 18/2 wire for the 24VAC power, daisy chain from TR1, TR2 **IN** and **OUT** to and from the SA STAT's.

Daisy Chain Multiple SA STAT's

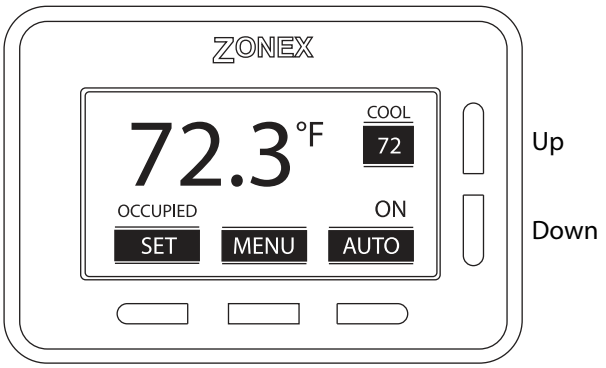


Thermostat Configuration

1. Set a unique ID for each thermostat ranging from 01-20
   (See Thermostat Configuration Menu on the next page on how to set)
2. Configure the thermostat for the type of unit operation. Gas, Heat Pump or Electric. (Factory set for Gas)
3. Configure Fan mode for Auto or On operation. (Factory set for Auto)
4. Configure 2nd stage delay. Temperature range is 2°- 8°F. (Factory set 2°F)

Manual Adjustments

Heat and Cool set point Display
Press the "SET" button to toggle between the Heat or Cool set points.



Temperature Set Points

COOL SET POINT
1. Press the "SET" button to display the Cool set point in the upper right.
2. Press the "UP or DN" buttons to change the Cool set points.

HEAT SET POINT
1. Press the "SET" button to display the Heat set point in the upper right.
2. Press the "UP or DN" buttons to change the Heat set points.

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 - Gas / Electric - 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.

HEAT - Heat Pump - The thermostat will make a Y1 heat call when the space temperature is 1° below the heat set point. Y2 will energize when the space temperature is 2° below the heat set point or whatever the 2nd stage temperature is set for. W2 (Aux Heat) will energize when the space temperature is 1° below what the 2nd stage temperature is set for. When the room temperature reaches set point Y1,Y2 and W2 will de-energize.

EMERGENCY HEAT - When Emergency Heat is selected in the configuration menu on the thermostat on a call for heat, there is an output signal on "W2" for backup heat and "G" for the fan. The compressor circuits Y1 and Y2 are locked out during heat calls, until the emergency heat function has been turned off in the configuration menu.

FAN MODE - Is factory set for "AUTO", to configure the thermostat to run the fan constant "ON" you will need to go into the configuration menu and select fan mode and change it from "AUTO" to "ON".

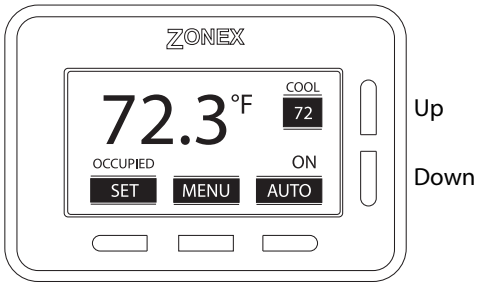
OVERRIDE - When the system is in the Unoccupied mode, the thermostat provides an adjustable override ranging from 2 to 8 hours for after-hours system operation. To select the override function, press the "AUTO" button and note "OVERRIDE" is indicated on the display. When additional override is required, press the "AUTO" button again. (Override is factory set for 2 hours.) To disable override push AUTO button again to return to unoccupied mode.

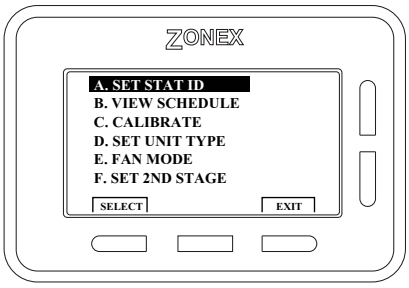
THERMOSTAT CONFIGURATION MENU

To access the System Configuration Menu, Hold “MENU” and “AUTO” at the same time.

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

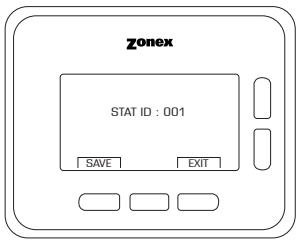
A. Set stat ID
B. View Schedule
C. Calibrate
D. Set Unit Type
E. Fan Mode
F. Set 2nd Stage
G. Emergency Heat





A SET STAT ID

Every thermostat in the system needs a unique ID. And must be in numerical order the way the communication wire is daisy chained. Confirm no duplicate addresses.



STAT ID

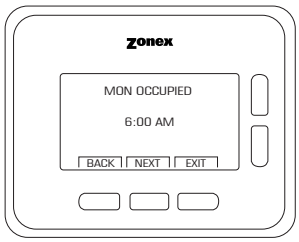
While in the Thermostat Configuration Menu, press **Select** on (A) Set Stat ID.

Use the **UP** and **DOWN** buttons to give the thermostat an ID ranging from 1-20.

Press **Exit** to return to the Thermostat Configuration Menu.
Press **Save** to save settings.

B VIEW SCHEDULE

You can only review the schedule given to the thermostat. To change the schedule you will need to log in to the GEN X controller via the mobile app.



VIEW SCHEDULE

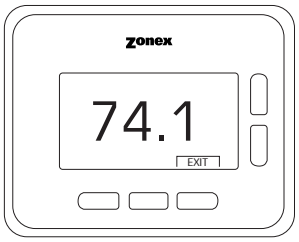
While in the Thermostat Configuration Menu, press **Down** and press **Select** on (B) View Schedule

You can review the schedule by pushing **Next**, to scroll through it.

Press **Exit** to return to the Thermostat Configuration Menu.

C CALIBRATE

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



CALIBRATE THERMOSTAT

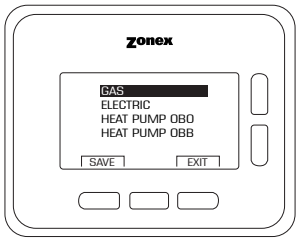
While in the Thermostat Configuration Menu, press **Down** and press **Select** on (C) Calibrate

Use the **UP** and **DOWN** buttons to calibrate the temperature display with your external thermostat, press **EXIT** to save changes.

Confirm temperature display now reports the updated room temperature you provided.

D SET UNIT TYPE

The SA STAT is designed as a universal GAS/ELECTRIC/HEAT PUMP thermostat. Factory default is set for GAS operations, and may require field configuration when applying this product to Electric or Heat Pump applications.



SET UNIT TYPE

While in Thermostat Configuration Menu, press **Down** and press **Select** on (D) Unit Type menu item.

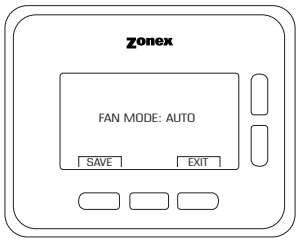
Use the **Up** or **Down** to set the desired Unit Type for each thermostat. Select Gas, Heat Pump OBO, Heat Pump OBB, Electric.

Press **Exit** to return to the Thermostat Configuration Menu.
Press **Save** to save settings.

Note: Some heat pump units use GAS/ELECTRIC inputs - confirm your unit's operation to ensure proper configuration.

E FAN MODE

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.



FAN MODE

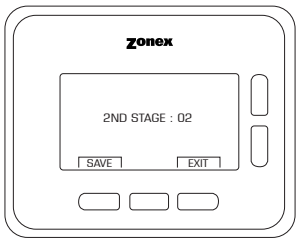
While in Thermostat Configuration Menu, press **Down** and press **Select** on (E) FAN MODE menu item.

Use the **Up** or **Down** to set the Fan mode to AUTO or ON.

Press **Exit** to return to the Thermostat Configuration Menu.
Press **Save** to save settings.

F SET 2ND STAGE

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



SET 2ND STAGE

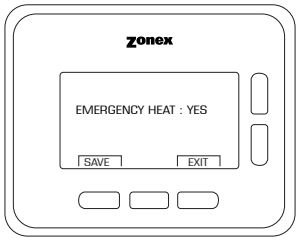
While in Thermostat Configuration Menu, press **Down** and press **Select** on (F) Set 2nd Stage menu item.

Use the **Up** and **Down** buttons to select the desired staging temperature range.

Press **Exit** to return to the Thermostat Configuration Menu.
Press **Save** to save settings.

G EMERGENCY HEAT

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



EMERGENCY HEAT

While in Thermostat Configuration Menu, press **Down** and press **Select** on (G) Emergency Heat menu item.

Use the **Up** and **Down** buttons to select Yes or No for Emergency Heat operation.

Press **Exit** to return to the Thermostat Configuration Menu.
Press **Save** to save settings.

WIRELESS REMOTE SENSOR

Description

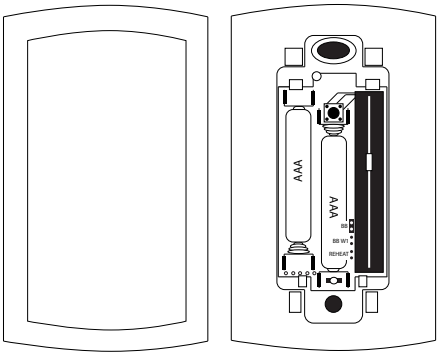
The wireless remote sensor part # WRSX is a microprocessor based, auto changeover, programmable communicating zone thermostat without a local display. The zone sensor controls modulating round, rectangular dampers or WD-Fusers. The communicating remote sensor is used with the GEN X VVT zoning system.

The wireless remote sensor controls and modulates zone dampers based on variance from set point to a position that will match the supply load to the demand requirement. When the HVAC unit is running, if a remote sensor is not calling or is calling for the opposite mode, its corresponding damper fully closes. When the HVAC unit is not running, the remote sensor will instruct its corresponding damper to go into Vent mode to provide ventilation, if the indoor blower fan is running continuously.

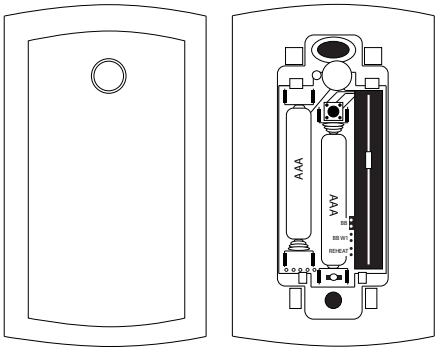
The Remote Sensor provides local adjustment of +/- 2 degrees from set point using the sensor's slide pot. Auxiliary or supplemental heat sources, i.e. baseboard, radiant panels, or reheat coils may also be controlled and energized from each remote sensor if required.

Use the mobile App to set and review one or more remote sensors. Sensors can be set up with daily schedules, priority votes and override functions which are all programmed to the remote sensor from the mobile App.

A Wireless Occupancy Remote Sensor is also available, and when it detects a first body movement it will quickly blink the LED and read the slide pot.



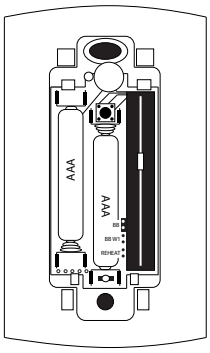
Wireless Remote Sensor



Wireless Occupancy Remote Sensor

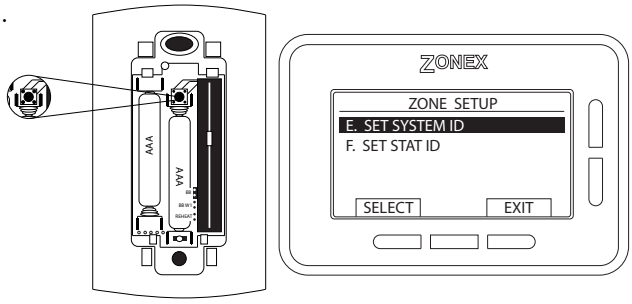
Battery Installation

1. Remove wireless remote sensor cover plate.
2. Install two AAA batteries provided with the wireless remote sensor.



Procedure To Synchronize ID On Wireless Remote Sensor

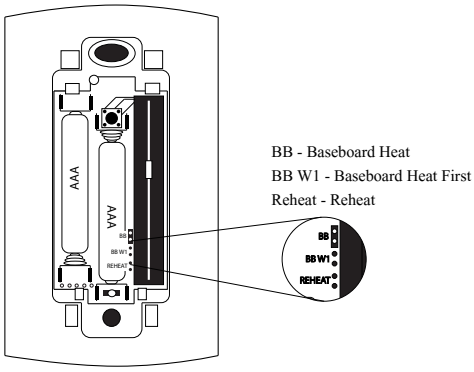
1. Use any wireless LCD stat to sync up.
2. Hold down the button on the damper control board that is needed to pair with the wireless remote sensor until the LED blinks.
3. Hold down the button on the wireless remote sensor until its LED blinks.
4. Go to Zone Setup by holding down Menu and Auto and select (E) System ID and set it to what your system ID is.
5. While still in the Zone Setup, select (F) Stat ID and set your ID.
6. Continue to menu item (A) in Zone Setup to synchronize damper.
7. When the screen displays "Sync is completed" and both LEDs stop blinking, synchronization is successful.
8. Remember to change the ID on the wireless LCD stat to a different ID to avoid ID conflicts, because now the wireless remote sensor and the wireless LCD stat have the same ID.



To clear the wireless ID, Remove the batteries and hold down the button while putting the batteries back in for 5 seconds. This will reset the wireless remote sensor system ID to 0 and stat ID to 21 to avoid communication.

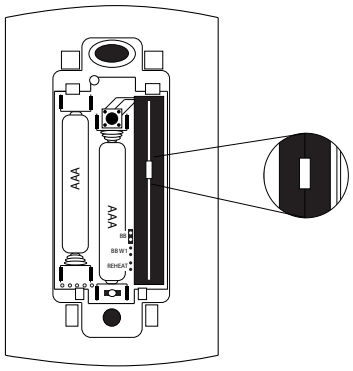
Set Auxiliary Heat

Remove the battery, set the jumper to select Baseboard, Baseboard W1, or Reheat. Heat band is 2 degrees. Do not set jumper while the power is on. The code only checks it one time right after power up.



Slide Pot

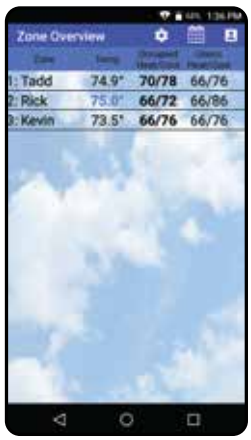
Use slide pot to adjust temperature setting offset +/- 2 degrees. Center position is offset 0. Top position is plus, and bottom position is minus. Slide pot should be on the right hand side.

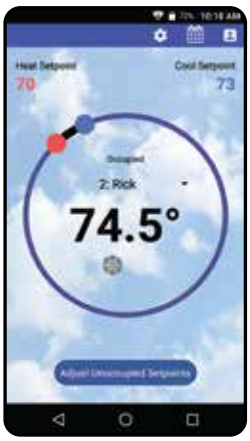


To override the stat in unoccupied schedule, move the slide pot to a different position. Due to it being in unoccupied mode, it may take a few minutes to initiate override.

Temperature Settings

Use the Mobile App to set and review the room temperature on any remote sensor.





Remote Sensor Operation for the end user

The Wireless Remote Sensor provides local adjustment of +/- 2° from set point using the sensor's slide pot. The Remote Sensor temperature set points are set though the mobile App.

Changing temperature
To change the temperature, adjust the slide pot up or down +/- 2° from center point. For a warmer set point slide the pot up. For a cooler set point slide the pot down.

Overriding a Remote Sensor
When in Unoccupied mode, adjust the slide pot either up or down. This will place the remote sensor into override mode. It may take a few minutes to initiate the override.

Reference the GEN X manual to set schedule or change temperature set points for the wireless remote sensors.

ZONE DAMPERS

GEN X modulating zone dampers are used in cooling/heating systems to provide room by room zone control. The damper is provided with a factory mounted actuator and communicating damper board. Each zone damper is controlled by a zone thermostat. More than one damper can be controlled by one zone thermostat. Use this table to determine which zone dampers to use.

DAMPER MODEL	DIFFERENTIAL PRESSURE	MAXIMUM SYSTEM SIZE	MAXIMUM DUCT SIZE
WSTX Round Med. Pressure	1.75"	Any Size	18"
WMRTDX Rect. Med. Pressure	1"	6.0 Tons	24"W x 20"H
WCDX Rect. Heavy Duty	1.75"	Any Size	48"W x 48"H
WRDX Round Heavy Duty	1.75"	Any Size	24"
WD-FUSERX	0.1"	Any Size	10"

Maximum Differential Pressure refers to the maximum static pressure drop in inches of water column between the input (upstream) of the zone damper and the output (downstream) when the damper is closed.

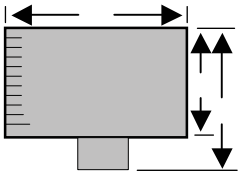
Round Medium Pressure Zone Dampers

Zonex Systems round (part # WSTX size) medium pressure zone dampers are recommended for systems with a maximum differential static pressure up to 1.75". The damper is equipped with a damper board designed to support and communicate with a Zonex wireless programmable thermostat. This modulating power open/power close damper is manufactured from 20-22 gauge galvanized steel with rolled-in stiffening beads for superior rigidity. Mechanical minimum and maximum set stops are provided and are easily adjustable. The damper is elliptical, which allows the airflow to be tracked linearly. The damper pipe is furnished with one crimped end and one straight end for easy installation. Do not install damper in an inverted position. A hat section supports a reversing 24VAC, 60Hz, 2 VA motor. A magnetic clutch allows for continuous power to the motor and longer motor life. Motor drive time from full open to full close is 90 seconds.

MEDIUM PRESSURE (WSTX)

Round Medium Pressure Damper

PART NUMBERS AND SIZES



PART#	SIZE	D	L	W
WSTX06	6	6"	10"	9"
WSTX08	8	8"	10"	11"
WSTX10	10	10"	12"	13"
WSTX12	12	12"	14"	15"
WSTX14	14	14"	16"	17"
WSTX16	16	16"	18"	19"
WSTX18	18	18"	20"	21"
WRDX20	20	20"	24"	27"
WRDX22	22	22"	24"	27"
WRDX24	24	24"	24"	27"

Note: Round dampers over 18" will be heavy duty style WRDX dampers. Part # WRDX size

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	NOMINAL CFM	DUCT VELOCITY FPM	DAMPER ΔP " WC
6"	110	540	.014
8"	250	700	.015
10"	410	750	.015
12"	660	850	.022
14"	1000	925	.035
16"	1450	1070	.036
18"	2000	1100	.036
20"	2600	1200	.039
22"	3250	1250	.039
24"	4100	1325	.041

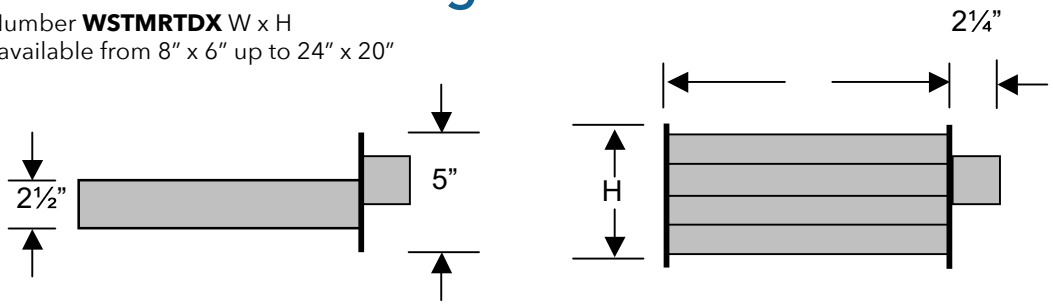
The rectangular zone dampers are available in either medium pressure or heavy duty. For systems under 6 tons, use medium pressure dampers, (part # WSTMRTDX size). For systems 6 tons or over, use heavy duty dampers, (part #WCDX size). Motor drive time open and close is 90 seconds.

Rectangular Medium Pressure Zone Dampers (WSTMRTDX)

Zonex Systems rectangular medium pressure dampers are recommended for systems under 6 tons with a maximum differential static pressure of 1". The damper is equipped with a damper board designed to support and communicate with a Zonex wireless programmable thermostat. These are fully modulating, power open, power close dampers. They are constructed from heavy duty aluminum and stainless steel. The damper is an opposed blade type that slips into a 3 1/4 - inch wide cutout in the existing duct and attaches with screws via a duct mounting plate. The duct mounting plate is 5 inches wide. A hat section supports a reversing 24vac, 60Hz, 2 VA motor. A magnetic clutch allows for continuous power to the motor and longer motor life. Two set screws connect the motor to the damper shaft, allowing quick motor replacement if necessary. Motor drive time from full open to full close is 90 seconds.

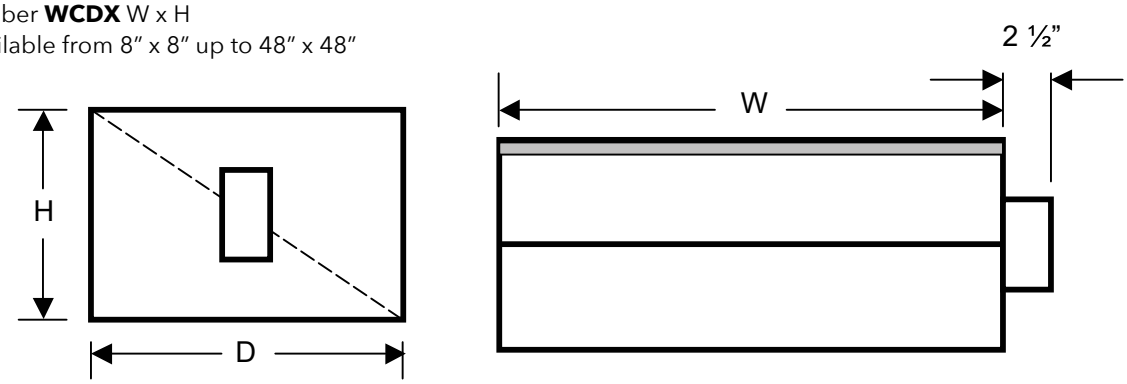
Medium Pressure Rectangular Dimensional Data

Part Number **WSTMRTDX** W x H
Sizes available from 8" x 6" up to 24" x 20"



Heavy Duty Rectangular Dimensional Data

Part Number **WCDX** W x H
Sizes available from 8" x 8" up to 48" x 48"



Rectangular Heavy Duty Zone Dampers (WCDX)

Zonex Systems rectangular heavy duty dampers are recommended for systems 6 tons or larger with a maximum differential static pressure of 1.75". The damper is equipped with a damper board designed to support and communicate with a Zonex wireless programmable thermostat. These are fully modulating, power open / power close dampers made of 20 gauge "snap lock" steel frame with S & Drive duct connections. Allow a 16" gap in the duct for the damper. Formed steel blade stops incorporate a gasket for quiet operation and improved structural rigidity. Rectangular dampers under 10" in height incorporate a single blade design. Dampers 10" or over use opposed blade design. A full stall motor, drawing 2 VA, drives the motor from full open to full close in 90 seconds.

Rectangular Damper Capacities*

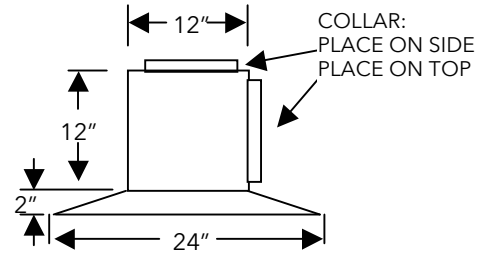
WIDTH IN INCHES

HEIGHT IN INCHES	8	10	12	14	16	18	20	22	24	26	28	30	32
8	300	400	500	610	710	820	925	1050	1175	1250	1400	1500	1600
10	400	540	680	825	975	1125	1300	1400	1590	1750	1975	2100	2175
12	500	680	850	1000	1200	1400	1600	1850	2000	2300	2550	2700	2850
14	610	825	1000	1250	1500	1750	2000	2250	2500	2900	3150	3425	3625
16	710	975	1200	1500	1800	2100	2450	2700	3000	3600	3950	4200	4425
18	820	1125	1400	1750	2100	2500	2850	3080	3600	4400	4600	4950	5100
20	925	1300	1600	2000	2450	2850	3400	3775	4000	4800	5500	5700	6000
22	1050	1400	1850	2250	2700	3080	3775	4300	4800	5100	6000	6350	6800
24	1175	1590	2000	2500	3000	3600	4000	4800	5400	6100	7000	7150	7600
26	1250	1750	2300	2900	3600	4400	4800	5100	6100	6700	7800	8400	8900
28	1400	1975	2550	3150	3950	4600	5500	6000	7000	7800	8400	9150	10000
30	1500	2100	2700	3425	4200	4950	5700	6350	7150	8400	9150	10000	11000
32	1600	2175	2850	3625	4425	5100	6000	6800	7600	8900	10000	11000	11250

* These air quantities were derived from duct sizing chart . 1" friction loss per 100' of duct.
All CFMs listed are approximate.
For accurate selection use duct sizing table or device.

WD-FuserX Zone Damper

Zonex Systems WD-FuserX is a combination zone damper and diffuser. It mounts in a standard 2′ x 2′ T-bar ceiling opening, providing for simple installation and easy maintenance access. The WD-FuserX is a cone shaped fluidic nozzle with a platen that modulates up and down to control air flow. As the platen moves up, the air volume is reduced; but the air velocity and throw remain constant. This keeps the air hugging the ceiling, which maximizes room air mixing and minimizes the "waterfall" effect. The damper is equipped with a damper board designed to support and communicate with a Zonex wireless programmable thermostat. The WD-FuserX is a fully modulating power open / power close damper using a 24vac 60Hz 2 VA motor. Motor drive time from full open to full close is 90 seconds. The D-Fuser connects to round duct either on the side or top. Collars are available for 6", 7", 8", 9" and 10" duct.

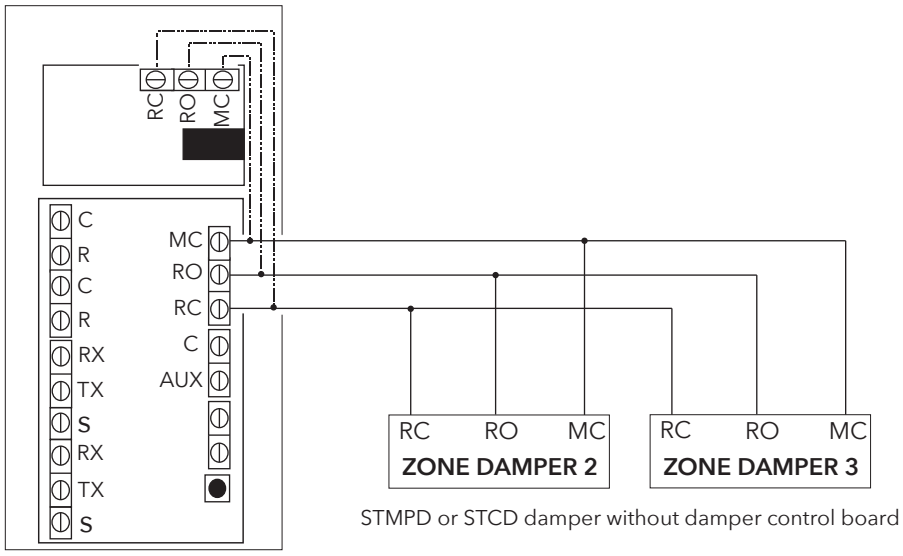


AT NECK VELOCITIES UP TO 700 FPM
NC LESS THAN 25

6"	**Neck Vel**	400	500	600	700	800	900
	ΔP	0.011	0.016	0.023	0.035	0.04	0.055
	CFM	80	98	120	135	157	176
	Throw 50 FPM	4′	4′	5′	6′	6′	7′
8"	**Neck Vel**	400	500	600	700	800	900
	ΔP	0.019	0.03	0.045	0.056	0.041	0.093
	CFM	140	170	207	247	280	315
	Throw 50 PM	5′	6′	7′	8′	9′	10′
10"	**Neck Vel**	400	500	600	700	800	900
	ΔP	0.029	0.045	0.066	0.09	0.12	0.146
	CFM	218	273	330	382	438	497
	Throw 50 FPM	6′	8′	9′	10′	11′	12′

Slaving Up To Three Zone Dampers

Up to three dampers can be directly controlled by one GEN X damper control board. The first damper must be a WSTX round or WCDX rectangular damper, this damper is equipped with a communicating damper board or CDBX. Slave dampers will be STMPD round or STCD rectangular dampers without damper control boards. To wire two or three dampers for a zone, use the following wiring diagram. Remember to size the power transformer for the total number of zone dampers in the system, 2VA per damper.

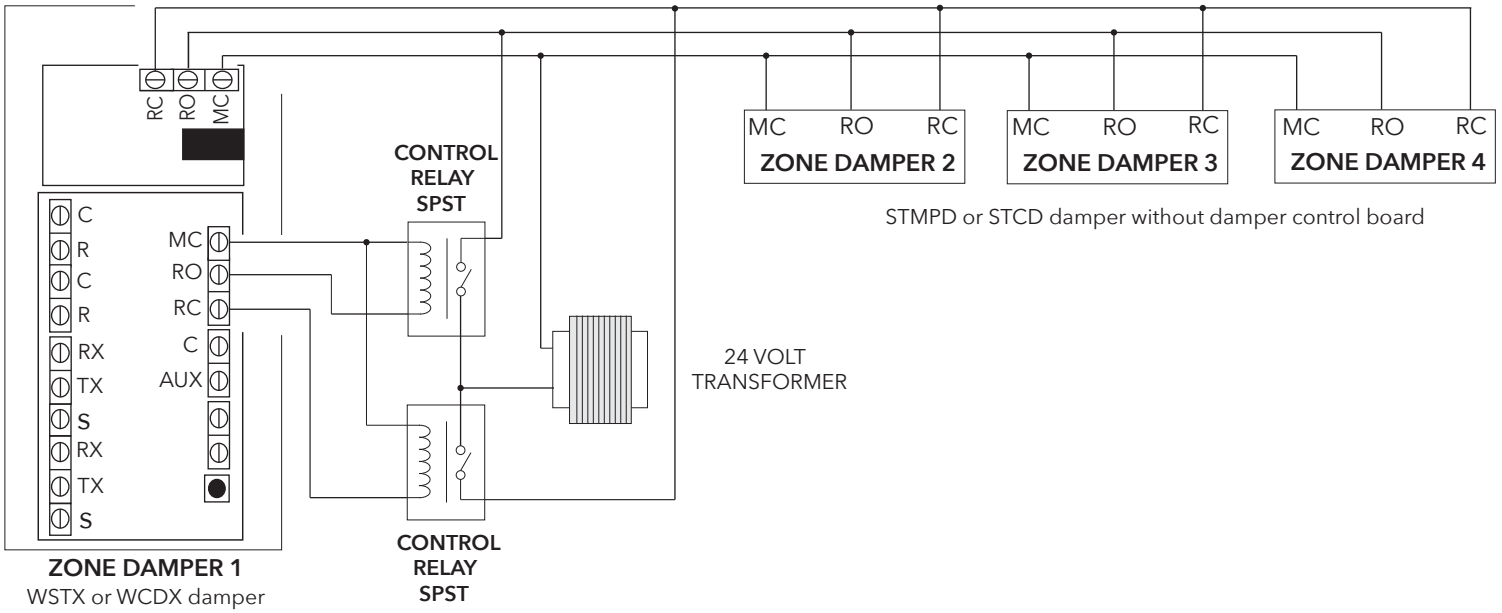


ZONE DAMPER 1
WSTX or WCDX damper

STMPD or STCD damper without damper control board

Slaving More Than Three Zone Dampers

When slaving more than three zone dampers, use the following diagram. An additional 24VAC transformer and control relays are needed for these applications.
Note: All slave dampers need to be model STMPD / STCD



ZONE DAMPER 1
WSTX or WCDX damper

STMPD or STCD damper without damper control board

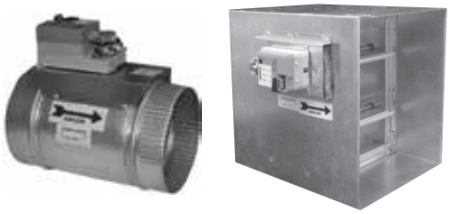
BYPASS DAMPERS – ELECTRONIC

with integrated static pressure control

Electronic Bypass Dampers

Modulating Bypass dampers are used to provide constant air delivery through the air handling unit. This is done by bypassing excess air from the supply duct back to the return duct. As a zone is satisfied, its zone damper closes. When this happens, the bypass damper modulates just enough to bypass the excess air. This will control static pressure and noise at the diffusers.

The Electronic Bypass Damper is used on any size system over 5 tons. The damper can be round **(STBP)** or rectangular **(STCDBP)** with integrated static pressure control; and multiple dampers can be slaved together.



Sizing Electronic Bypass Dampers

The bypass damper is to be sized for the total system CFM @ 1500 FPM. System CFM should be calculated at 400 CFM per ton.

Example: A 5-ton system is rated at 2000 CFM (5x400 = 2000). When calculated at 1500 FPM, the bypass damper should be 16".
Never undersize the bypass damper.

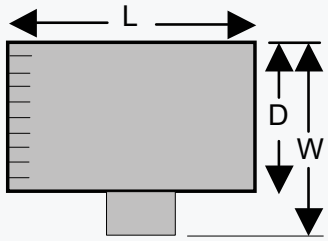
ROUND BYPASS SELECTION

DIAMETER	CFM	PART #	SIZE	D	L	W
8"	560	STBP08	8	8"	10"	11"
10"	900	STBP10	10	10"	12"	13"
12"	1250	STBP12	12	12"	14"	15"
14"	1700	STBP14	14	14"	16"	17"
16"	2200	STBP16	16	16"	18"	19"
18"	2600	STBP18	18	18"	20"	21"
20"	3300	STRDBP20	20	20"	24"	27"
22"	4000	STRDBP22	22	22"	24"	27"
24"	4700	STRDBP24	24	24"	24"	27"

Round Bypass Damper Selection

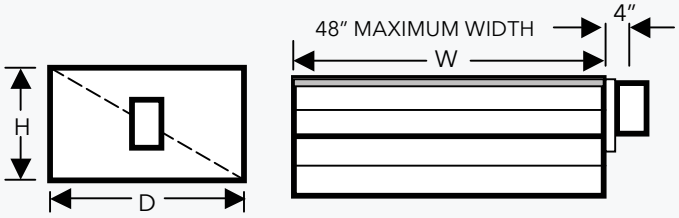
The Zonex Systems STBP damper is used for round bypass applications. When you know the bypass CFM requirements, use the ROUND BYPASS SELECTION TABLE to confirm the round damper size.

NOTE: Multiple round dampers can be slaved from one static pressure control to provide the correct capacity. One large rectangular bypass damper may be used instead of multiple round dampers. See below.



Rectangular Bypass Damper Selection

The Zonex Systems **STCDBP WxH** damper is used for rectangular bypass applications. These dampers are also sized for the total system CFM rated at 1500 FPM. Multiple dampers can be slaved from a single static pressure control.



RECTANGULAR BYPASS DAMPERS
SELECT FROM 8 x 8 thru 48 x 48

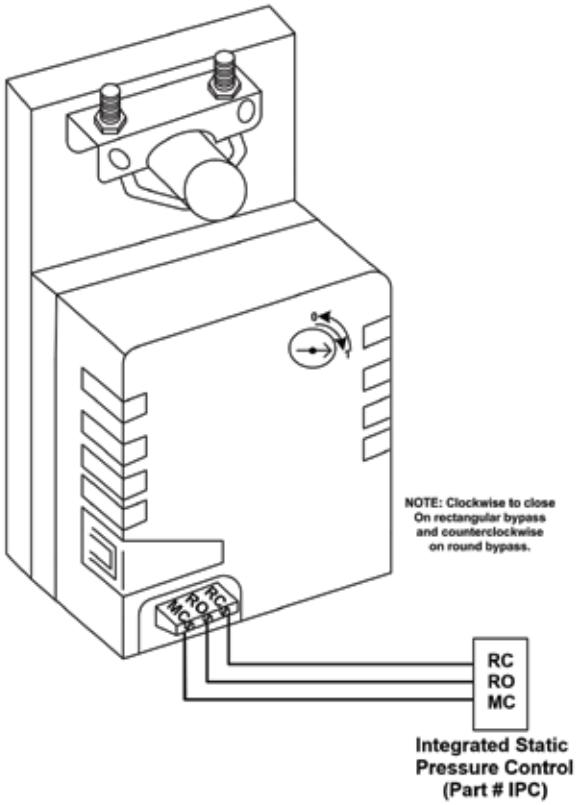
RECTANGULAR BYPASS SELECTION TABLE

WIDTH IN INCHES

HEIGHT IN INCHES	8	10	12	14	16	18	20	22	24	28	32	36	40	44	48
8	667	833	1000	1167	1333	1500	1667	1833	2000	2333	2667	3000	3333	3667	4000
10	833	1042	1250	1458	1667	1875	2083	2292	2500	2917	3333	3750	4167	4583	5000
12	1000	1250	1500	1750	2000	2250	2500	2750	3000	3500	4000	4500	5000	5500	6000
14	1167	1458	1750	2042	2333	2625	2917	3208	3500	4083	4667	5250	5833	6417	7000
16	1333	1667	2000	2333	2667	3000	3333	3667	4000	4667	5333	6000	6667	7333	8000
18	1500	1875	2250	2625	3000	3375	3750	4125	4500	5250	6000	6750	7500	8250	9000
20	1667	2083	2500	2917	3333	3750	4167	4583	5000	5833	6667	7500	8333	9167	10000
22	1833	2292	2750	3208	3667	4125	4583	5042	5500	6417	7333	8250	9167	10083	11000
24	2000	2500	3000	3500	4000	4500	5000	5500	6000	7000	8000	9000	10000	11000	12000
28	2333	2917	3500	4083	4667	5250	5833	6417	7000	8167	9333	10500	11667	12833	14000
32	2667	3333	4000	4667	5333	6000	6667	7333	8000	9333	10667	12000	13333	14667	16000
36	3000	3750	4500	5250	6000	6750	7500	8250	9000	10500	12000	13500	15000	16500	18000
40	3333	4167	5000	5833	6667	7500	8333	9167	10000	11667	13333	15000	16667	18333	20000
44	3667	4583	5500	6417	7333	8250	9167	10083	11000	12833	14667	16500	18333	20167	22000
48	4000	5000	6000	7000	8000	9000	10000	11000	12000	14000	16000	18000	20000	22000	24000

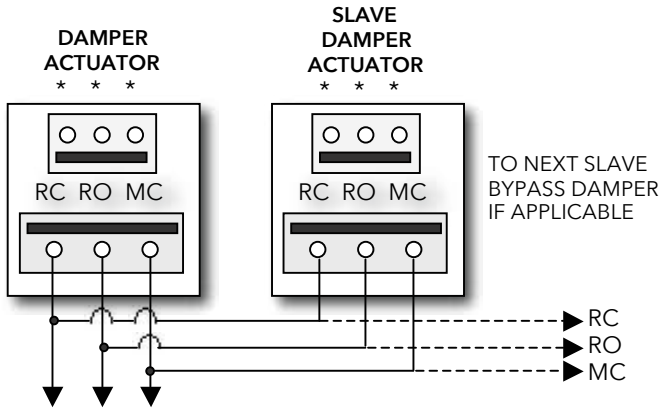
Bypass air in CFM. Calculated at 1500 FPM.
Formula used: B = W x H / 144 x 1500, where B = Bypass air in CFM, W = damper width in inches, H = damper height in inches, 144 = 144 sq. inches per sq. ft., 1500 = 1500 FPM.

ROUND AND RECTANGULAR BYPASS DAMPER MOTORS



Slaving Bypass Dampers

Use only one Pressure Sensor when slaving two or more Bypass Dampers together. Connect the Pressure Sensor to one damper as described above. Connect the slave dampers in parallel as shown. Up to 4 dampers can be slaved to one Sensor. The slaved dampers will self-synchronize each time the dampers reach full open or full close.



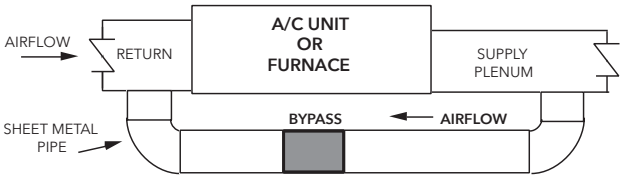
To Static Pressure Control, as shown on the Bypass Wiring Diagram on the next page.

INSTALLATION

The round and rectangular bypass damper can be installed in any position. Do not run speed screws into damper housing. Screws may interfere with damper travel.

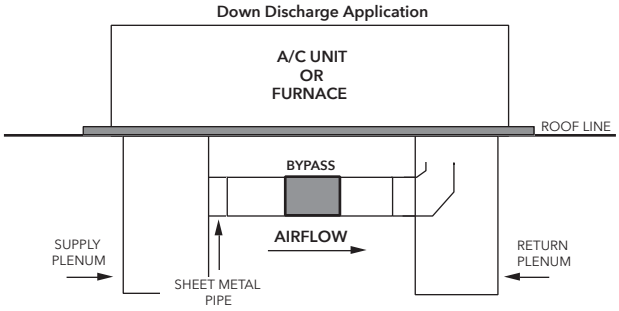
1. Install the bypass damper between the supply and return plenums of the unit. It must be the first tap off the supply plenum. (Bypass damper sizing is recommended for 100% of system CFM.)
2. Be sure the air flows through the damper in the proper direction as indicated by the arrow on the damper. Airflow is always from supply to return plenum.
3. Do not install the bypass damper outside.
4. Bypass damper and controller are powered by a dedicated 24vac 40VA transformer.
5. Follow the steps on the next page for Integrated Pressure Controller installation and set up.

HORIZONTAL APPLICATION

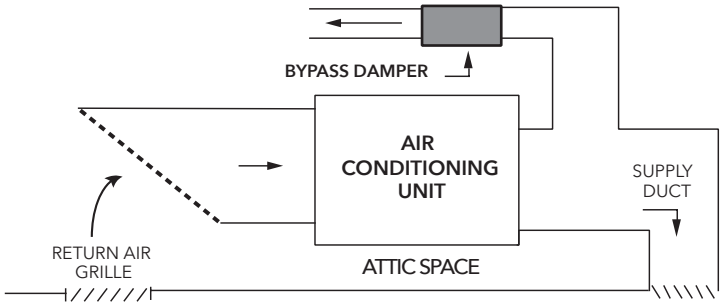


ROOFTOP INSTALLATION

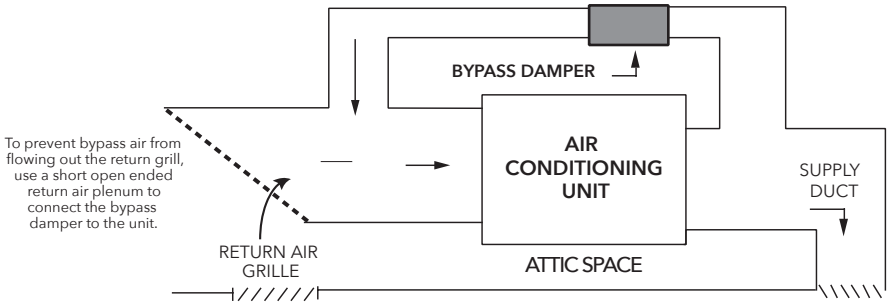
Down Discharge Application



OPEN RETURN PLENUM AND BYPASS APPLICATION



OPEN RETURN PLENUM BYPASS APPLICATION



INTEGRATED STATIC PRESSURE CONTROL SETUP

Bypass Damper with Integrated Pressure Control is used to control bypass operations. The bypass damper modulates to maintain static pressure as zone dampers open and close. The bypass system reduces air noise from the supply registers caused by excessive air velocity. If the system is configured for intermittent fan mode and the system satisfies, there will be a 3-minute delay to allow for system purge, after which the bypass damper will open to 25%, preventing noisy rush of air through supply registers when fan starts up on a call for heat or cool. If the system is configured for fan continuous operation, the **STBP** (Round) or **STCDBP** (Rectangular) Electronic Bypass will monitor static pressure continuously, providing constant control of system static.

Integrated Pressure Control Description

A. Supply air tube
B. 24vac R and C
C. Damper Terminal RO, RC, MC
D. LED lights
E. Adjustable Potentiometer
F. TP1 Test Point

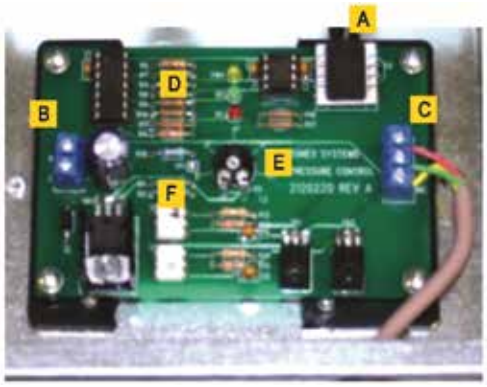
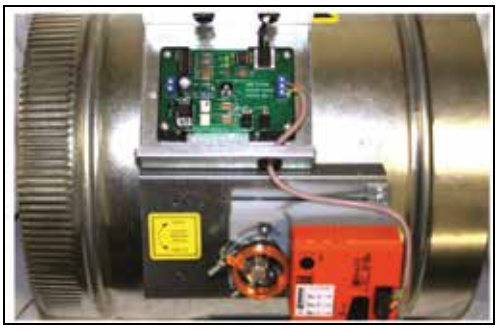


Fig. 1

IPC Installation



1. Locate the Integrated Pressure Control (IPC) and air tube on the bypass damper.
   Drill hole into the side of the supply duct 2' after the bypass and before the 1st supply take-off.

2. Mount pressure supporting block over hole, align hole in block with hole in duct. Use provided sheet metal screws.

3. Install air tube into supply air duct by slipping supplied plastic tubing into holes in support block and duct. Slip tube 3" into the duct. Pickup tubing fits snugly into provided hole.

4. Connect pressure tube from static air pickup to Integrated Pressure Controller (port closest to you).

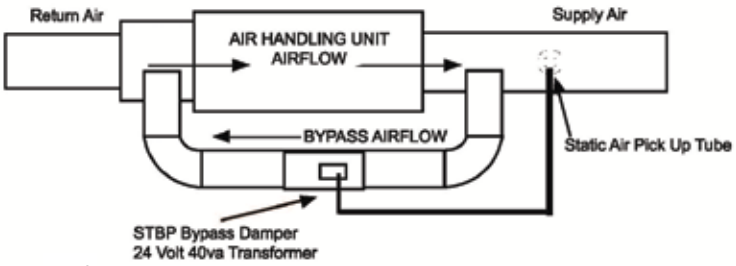


Fig. 2

Bypass Damper With Integrated Bypass Control Setup

1. Run all supply dampers to the full open position and have blower motor running at 100% fan speed. (See Note #1)

2. Manually close the bypass damper by pressing in the release lever on the motor side of the actuator. With the release lever pressed, rotate the damper actuator collar to close the damper and release the lever to lock the damper closed.

3. Quick Set Option: Turn the potentiometer on the damper control board to the full left position and slowly rotate RIGHT, until the "RC" RED LED turns on. Now rotate LEFT just slightly, until RC LED turns off. The **IPC** is ready for operation.

   "RC" RED LED means damper closing.
   "RO" GREEN LED means damper opening.

4. Static Pressure Option: The Integrated Pressure Control Board can be field configured for specified static pressure using a multi meter and the static pressure – voltage chart. (Exhibit A). This chart shows voltage (DC) to inches of W.C. (static pressure) relationship. Use a multi meter set on VDC and place the leads on the "C" terminal and "TP1" (test point one) next to the potentiometer. The Voltage reading translates to inches of W.C.

Static Pressure Voltage Chart

STATIC PRESSURE	TP1	STATIC PRESSURE	TP1
INCH W.C.	VOLTAGE (DC)	INCH W.C.	VOLTAGE (DC)
0.1	1.49	0.5	2.22
0.15	1.62	0.55	2.27
0.2	1.69	0.6	2.42
0.25	1.81	0.65	2.48
0.3	1.85	0.7	2.6
0.35	1.91	0.75	2.68
0.4	1.94	0.8	2.81
0.45	2.06	N/A	N/A

EXHIBIT A

Note # 1: To open all dampers, it may be necessary to remove Y outputs to unit on the zone control board and to make full cool calls on all thermostats. This will modulate dampers fully open and lock out compressor.

On GEN X use air balance mode on the mobile App for simplified bypass setup.

Bypass Checkout For Static Pressure Controller

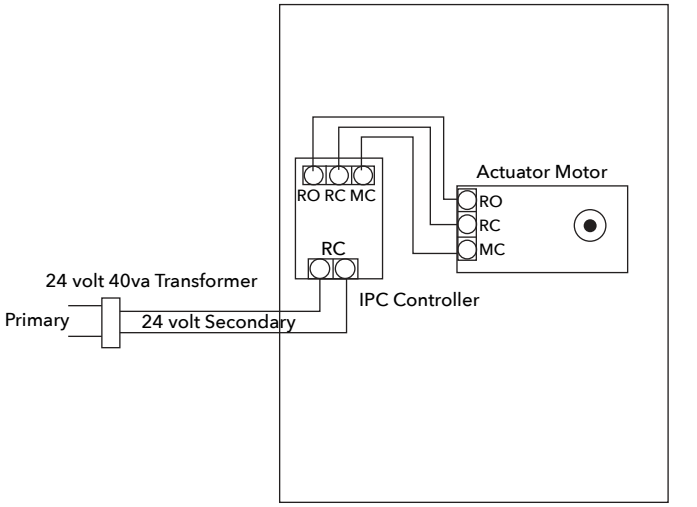
1. Make cool call at the zone thermostat of the smallest zone.

2. Verify all zone dampers are closed except for calling zone.

3. Verify noise at zone registers is not excessive. Adjust the Integrated Pressure Control LEFT to lower noise (airflow) or RIGHT to increase airflow until too noisy.

Bypass Damper Wiring Diagram With Integrated Bypass Control

BYPASS DAMPER WITH INTEGRATED BYPASS CONTROL



SYSTEM SETUP DIRECTORY

INSTALLING CONTRACTOR	DATE OF INSTALL
PHONE NUMBER	**SYSTEM ID#**

ZONE ID	ZONE / ROOM NAME	NOTES

NOTES

NETWORK ALL YOUR HVAC EQUIPMENT

MONITOR, UPDATE AND CONTROL SYSTEM INFORMATION FROM THE MOBILE APP

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