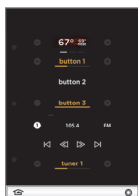


Overview

Vantage's Equinox 40 LCD Keypad has been designed to be located in the same space as a traditional keypad, installed in a single gang wall box. Scalable designs from one, two, or three pages allow a perfect fit in most areas. Each keypad can be configured with three independent mini-widgets, making this an eloquent choice for areas where lighting, AV control, climate control, etc., are wanted, without the added cost of a fully functional touchscreen or the wall clutter of multiple gang keypads. Equinox 40 introduces Vantage's commitment to a consistent *user experience* interface across touchscreens, tablets, and smart phones. The interface uses intuitive gestures; swipe left and right to change pages, touch and release for normal button operation, or press and hold for dim-cycle, volume controls, etc.



Features/Operations Overview

- Fits US/European single-gang box or low voltage bracket.
- Available in a "Black Glass" finish.
- Power & communication over station bus.
- Accepts Six-wire pigtail with all functionality.
- Update firmware from Design Center. **NOTE:** Screen turns a gradient green during a firmware update.
- Built-in ambient light sensor for "Active," AUTO mode screen brightness.
- Built-in proximity activation, 6" maximum, may be programmed to execute a task with a hand wave across front of station.
 - Proximity trigger will not re-trigger for 30 seconds after no keypad usage or when the plus/minus signs disappear (see *Steps moving from active to inactive*, page 4).
 - Re-triggering may also be controlled through task logic.
- Up to three LCD pages available through Design Center programming.
- Each LCD page may have up to 5 scene buttons depending on exclusion of AV mini-widget.
- Raise/Lower graphical buttons via *minus / plus (-/+)* for dimmable loads and volume control.
- Text tracks status using two fixed colors for ON and OFF.
- Dual operation mechanical button, bottom left and right;
 - *left* navigates to home screen or settings screens with press and hold,
 - *right* may be programmed from Design Center.
- Self discovering widgets for *fast* setup & programming.
- Five programmable event sounds through Design Center.
- Headers; select one of the following as a page header:
 - empty - displays nothing in the header;
 - temperature (only select one);
 - Internal temperature
 - External temperature
 - Heat set point
 - Cool set point
 - thermostat (select one thermostat only);
 - Displays internal temperature
 - Displays current mode setpoint - setpoint is adjustable via *minus / plus (-/+)* buttons
 - Displays current mode - blue graphic for Cool, red graphic for Heat, blue and red graphic for Auto, and gray graphic for Off
 - Displays the word "heat" or "cool" and the current mode graphic becomes more vivid when system is actively heating or cooling
 - time - *HH:MM* format;
 - twelve hour clock only
 - weather;
 - Displays current outdoor temperature and a graphic of current conditions.
- AV mode - selecting an AV zone replaces bottom two scene buttons on all three pages with pre-designed common AV interface controls.
- Local settings (accessed by a press and hold of Home button);
 - volume (touch interaction audio feedback)
 - *minus / plus (-/+)* touch interaction volume
 - *off when dark* checkbox
 - Settings

- *Auto Mode* option
- *Active & Inactive* brightness settings
- *Advanced*
 - *Low trim* - sets *minimum brightness percentage* for *auto mode*,
 - *Motion sense* - sets *proximity sensor's sensitivity*.
- *Off When Dark* option.
- Station information
 - Firmware, graphics, boot code & eeprom versions
 - Serial number
 - *use infusion settings,** (Design Center settings) option.

***NOTE:** to *unselect use infusion settings* change any setting on the *Sound* or *Brightness* setup screens.

- Possible Screen Combinations:
 - 1) Header, Scenes, Audio, 2) Header, Scenes, 3) Scenes, Audio, 4) Scenes only.
- Station Reset - simultaneously, press and hold both mechanical buttons for one second. Do not touch the screen when first powered or during the reboot process.

Specifications

Description	Specification
Dimensions, HWD (at wall surface)	4.9" x 3.44" x 0.44" 124mm x 87mm x 11mm
Dimensions, HWD (overall)	4.9" x 3.44" x 1.5" 124mm x 87mm x 38mm
Finished Weight	11.2 oz. or 317.5g
Power	24V/36V via Station Bus
Surge Suppression	Yes
Maximum LCD Control Points (CP) including +/- buttons (with 3 pages)	Scenes only - 45 CP max. Scenes & Header - 47 CP max. Scenes & AV - 37 CP max. Scenes, AV, & Header - 39 CP max
Maximum Gangs	Single Gang Only
LCD Button Status	Automatic (white = off, ochre = on)
Sound Option	Independent volume for each sound: 1 - touch interaction 5 - programmable event sounds
Wiring Connections	2 Wire 600V pigtail (included) 6 wire aux. pigtail (order separate)
Power for Aux. External Devices	15 mA @ 12V DC
Station Bus Polarity	Auto-Switching
Station Wiring configuration	Daisy-chain/Star/Branch
Station Bus Specification	2C, 16AWG / 1.31mm ² , twisted, non-shielded, <30pF per foot. Separate a minimum of 12" / 30.5cm from other parallel communication and/or high voltage runs.
Station Buss Power Draw	2.85W on IC-24 / 2.85W on IC-36
Addressing	self addressing through software
Finish	• TRIM - Titanium • TOUCHSCREEN - Black Glass
Glass Surface	Chemically Strengthened
Ambient Operating Temperature	32-95°F -or- 0-35°C
Ambient Operating Humidity	5-95% non-condensing
FreeRTOS™	Real-time scheduling provided by FreeRTOS (www.freertos.org)
CE and RoHS Compliant	Yes

Character / Font Support

Equinox can render the following Unicode Codepoints*

Range	Typeface	Unicode Codepages (blocks)
U+0000 - U+00FF	Rendered in Gotham Book	Basic Latin, Latin-1 Supplement
U+0400 - U+06FF	Rendered in Arial Unicode MS	Cyrillic, Cyrillic Supplement, Armenian, Hebrew, Arabic
U+2700 - U+27FF	Rendered in Arial Unicode MS	Dingbats
U+3000 - U+30FF	Rendered in Arial Unicode MS	CJK Symbols and Punctuation, Hiragana, Katakana

*** NOTE:** Proper computer/keyboard setup or copy/paste is required to produce many international characters from the above Unicode Codepoints.

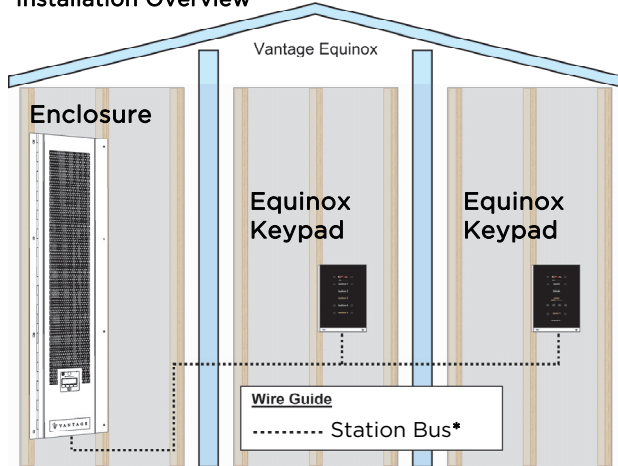
System Requirements

Equinox 40 is compatible with InFusion Design Center version 3.1 software or higher. For new projects it is recommended that firmware and software be kept to the most current release.

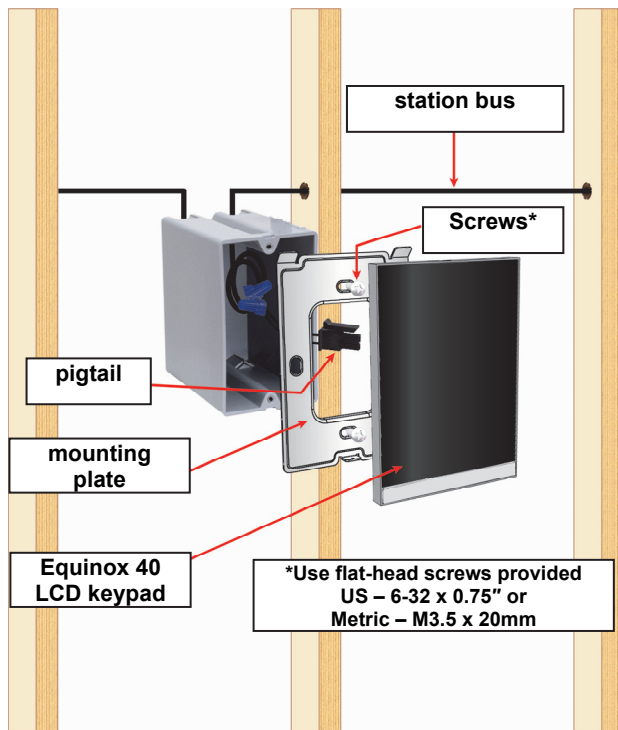
Installation

Installation of Vantage products should be performed or supervised by a *Certified Vantage Installer*. The Vantage Equinox 40 keypad installs into US/European style, single gang, wall boxes or low-voltage brackets. Connect to station bus. See *Troubleshooting, Expectations and Tips* page 5. Do not touch the screen when first powered or reset until it boots.

I. Installation Overview



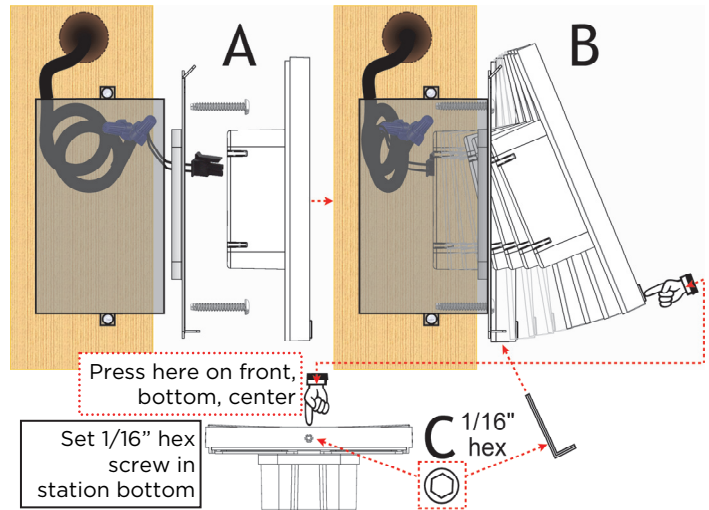
* See Vantage Station Bus Specification – table, page 1.
Vantage Station Bus may be ordered separately.



Station Install Steps

1. Run station bus to boxes.
2. Install mounting plate **with screws provided** (see A in **Side View Illustration*). Do not bend mounting plate
3. Connect pigtail to station.
4. Install station by rotating (see B in **Side View Illustration*) and connecting the top first. Then press station in and hold on bottom center while securing the hex screw with provided allen wrench (see C in **Side View Illustration*).

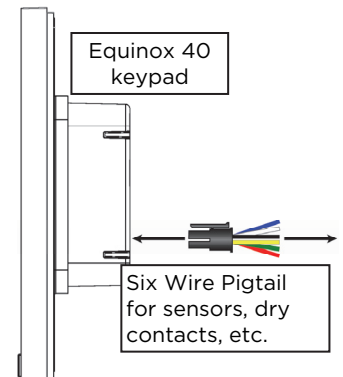
*Side View Illustration:



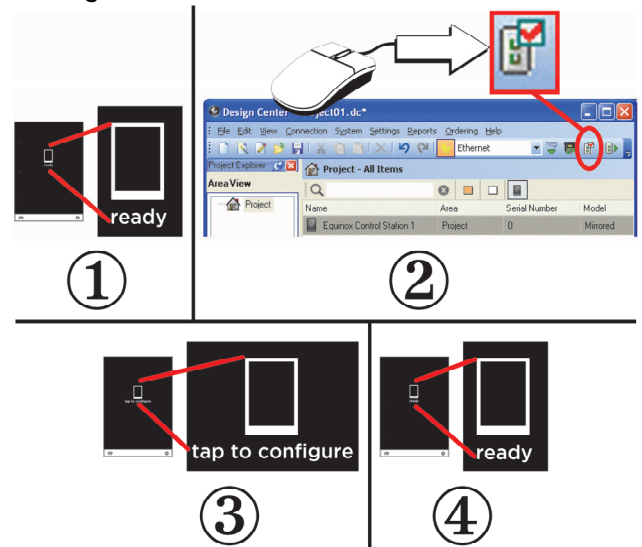
CAUTION: Do not over tighten the 1/16" hex screw in station bottom. If screw will not go in, the mounting plate may need slightly loosened and/or have a thin spacer inserted between the wall and mounting plate. The wall must be repaired if there is still a problem.

Auxiliary Connections

Auxiliary connections to the station are wired to a six wire pigtail, including motion detectors, door contacts, light sensors, etc. Each aux. connection supplies a 15mA @ 12V DC power source, eliminating the need for an external power supply. Aux. powered devices using the Black wire should not be earth grounded unless isolated.



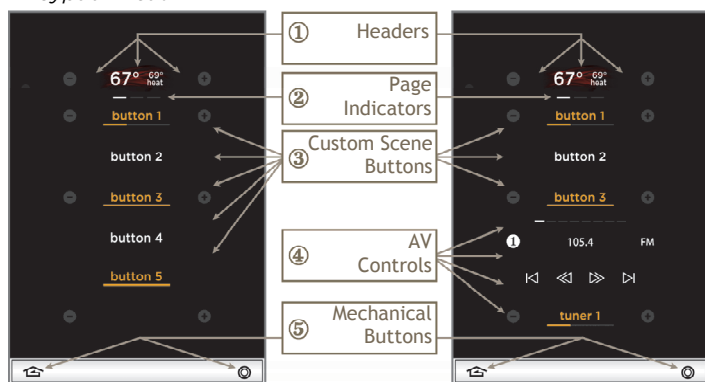
II. Configuration



1. Connect station bus and confirm it says *ready*.
 2. Highlight station in Design Center; click *Configure Stations*.
 3. Station displays *tap to configure* – tap station.
 4. When configured station goes back to *ready* until programmed.
- OR-
5. The station may also be configured by typing the serial number in the project file, using this method the station will automatically be configured when the system is programmed.

III. Design Overview

Keypad Areas:



1. Headers – top portion of keypad, may be set to:

- Empty,
- Temperature,
- Thermostat,
- Time,
- Weather.

2. Page indicators 0, 2, or 3 dashes – beneath header:

- In Design Center, setup the Equinox keypad with 1, 2, or 3 pages. Dashes are added for two and three page layouts.
 - Use a left or right swipe gesture to navigate the pages.

3. Scene Buttons – middle portion of keypad:

- Button text uses a variable width font, allowing approx. 9 to 15 lower case characters & spaces that change color for status. In Design Center, text turns red if text is too long.
 - White = off and ochre = on.

spots spots

- Dimmable load tasks, in addition to text, also display a horizontal load level indicator.

◦ Example: 33% 100%

- Dimmable loads/tasks also display ⊖ ⊕, −/+ (minus/plus) buttons that support *press and hold* for fading or ramping and *press and release* for stepping down or up.

4. AV Zone – bottom portion of keypad:

- When enabled, the AV Zone replaces the bottom two scene buttons on all three pages. Using a mini-widget, common AV controls are *automatically programmed*.
 - AV controls are dynamic and self-changing depending on the AV Zone's source equipment and the *Driver Designer*, driver used.
 - Vantage's 850D-DA and NūVō® or DMM-4S-(T) are great examples using this integration. (See AV Zone below)

5. Mechanical Buttons – bottom bar left/right buttons:

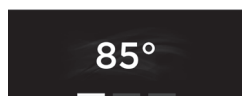
- Pressing the home (mechanical) button on the bottom left will return to page 1.
- Press and hold the home button for station setup.
- Note: The right button may have a task assigned to it.

IV. Equinox Headers and AV Zone Graphics Overview

Headers

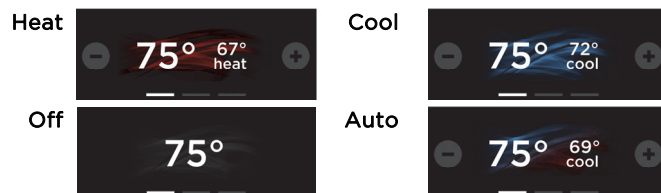
- **Empty** – may be left blank.
- **Temperature Header Widget**

- Select thermostat sensor or setpoint property, (e.g., indoor or outdoor temperature)
- Displays sensor or setpoint value.



- **Thermostat Header Widget:**

- Select one thermostat.
- ⊖ ⊕, −/+ (minus/plus) buttons change the current mode's setpoint.
- The text *heat* or *cool* appear under the setpoint when the call for either is active.



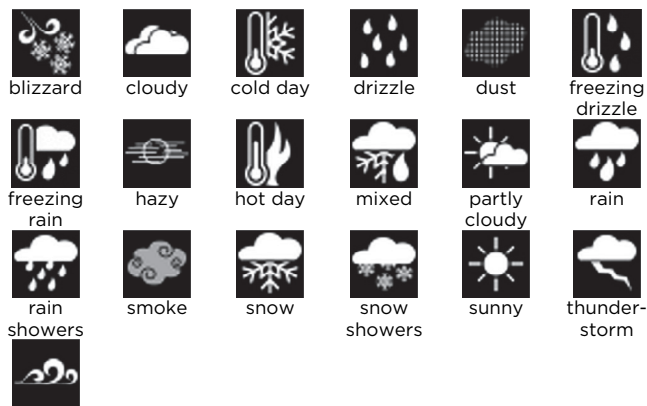
Time Header:

- Displays current time in hours and minutes.



• Weather Header Widget:

- Select Header Data Weather.
- Create *Weather Data* in Design Center's programming view. To create a location, right click and select the Add Weather icon.
- Weather Location formats may be typed in as: (1) *City, State*, (2) *City, Country*, or (3) *U.S. Zip Code*.
- Weather Icons and Descriptions
 - *Current Condition* icons are updated automatically from Vantage's weather service provider.



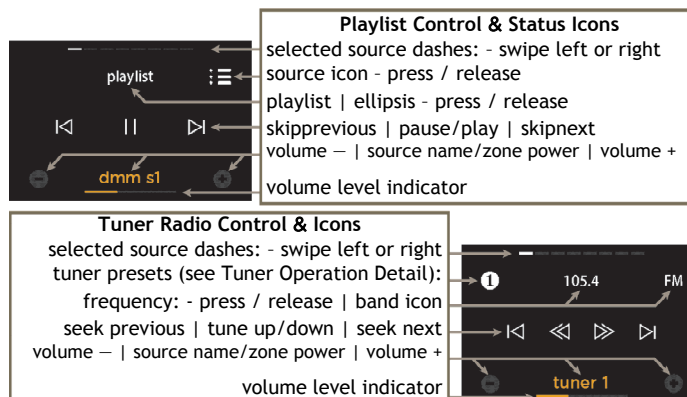
AV Zone

- **May be left blank:**

- Allows for two additional scene buttons at the bottom of all three pages.

- **Select an AV Zone:**

- In Design Center, select a multi-room zone or filtered zone; for example select Zone 1 from the 850D-DA Amplifier. The sources available to that AV Zone and the current source selected determine the controls that will be available in the AV section of the keypad.
- Vantage recommends naming sources with short names using lower case letters. Equinox changes all text to lower case characters in each source name.
 - Examples; **dmm s1** or **technics s2**.
- Some AV Zone display icons are dynamic to include appropriate information and/or interface controls depending on the source selected.
 - Example: If the selected source is a DMM playlist or an AM/FM tuner, the control buttons and other metadata update automatically.



Tuner Operation Detail

Each Equinox 40 station, on a project, supports six, independent, *learnable presets* for each tuner/band source available to the assigned AV Zone. *Follow steps in order.*

1. Press/Release on frequency to select presets 1-6.
 2. |< or >|, seek
 3. << or >>, tune to station
 4. Press and hold frequency to learn to selected preset.
 5. Preset selection turns white when learned.
- AV Source Icons and Descriptions
- Icons are updated automatically from selected source driver.



Binding Methods, Substitutions, and Driver Implementation

Play Interface	Standard Binding Method	Binding Method Substitute 1	Binding Method Substitute 2
<	SkipPrevious	Rewind	ScanPrevious
	Pause	—	—
>	Play	—	—
>	SkipNext	Forward	ScanNext
Tuner Interface	Standard Binding Method	Binding Method Substitute 1	Binding Method Substitute 2
<	SeekDown	ScanDown	—
<<	TuneDown	—	—
>>	TuneUp	—	—
>	SeekUp	ScanUp	—
Channel Interface	Standard Binding Method	Binding Method Substitute 1	Binding Method Substitute 2
<	ScanDown	CategoryPrevious (Tuner Interface)	—
<<	Down	—	—
>>	Up	—	—
>	ScanUp	CategoryNext (Tuner Interface)	—

Zone Switching Implementation

Drivers utilizing switching for the Equinox 40 must support the AVZone2 model with implementation of the AVZone2, AVSource, Power and Volume2 interfaces.

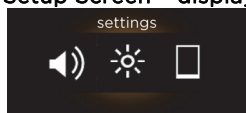
Media Server Implementation

Media server support must implement the data provider interface using the Equinox 40 data model.

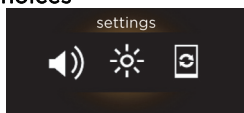
V. Equinox 40 Configuration Pages

Setup – To enter the settings screens, press and hold the Home button for about 2 seconds (mechanical button, bottom left). Press and hold again to select a different settings page or press and release to exit.

- **Setup Screen** – displays three choices



Using Local Settings



Using Design Center settings (notice icon on right)

Press and hold the home button to select one of the following three categories:

- **Sound Settings** – touch interaction feedback
 - Adjustable volume level
 - *off when dark* check box
- **Brightness Settings**
 - *auto mode* check box – auto sets *active* brightness to ambient light
 - *active* – sets active brightness level
 - *inactive* – sets brightness to *inactive* level after 60 seconds of non-use
 - *advanced (advanced brightness)*
 - *Low trim* – sets minimum brightness percentage for auto mode,
 - *Motion sense* – sets proximity sensor's sensitivity level.
 - *off when dark* – when checked turns LCD screen off, if ambient light level is very low, when going to *inactive* level.

Steps moving from active to inactive

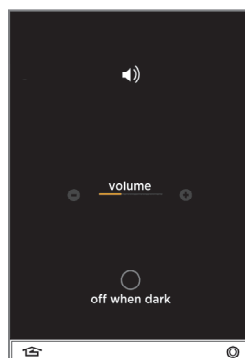
- after 30 seconds the *minus/plus* buttons and load levels disappear.
- After another 30 seconds (1 minute total) the screen dims to *inactive level* or off, if *off when dark* is checked and ambient light is very low.



- **Information Settings**
 - Station firmware version
 - G(xx), B(xx), & E(xx) – *graphics, boot, and eeprom* versions
 - Station serial number
 - *use infusion settings* check box*

***Note:** To uncheck the *use infusion settings* check box, make changes to the *Sound* or *Brightness* settings.

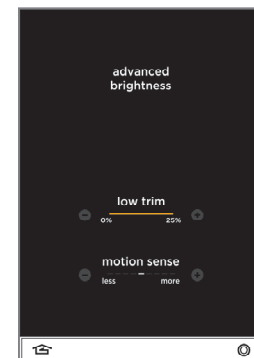
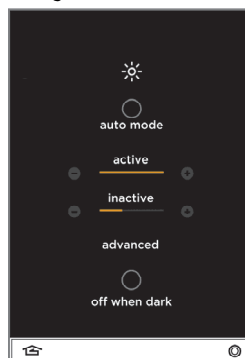
Configuration Screens:



Sound (left) touch interaction configuration screen

NOTE: Play Sound Effects is available through Design Center programming. In the Procedure Wizard, Select *Advanced | Stations | Play Sound Effect*. This feature does not change the Equinox interaction sound when touching the screen. Uses would be as an alert triggered by a motion sensor, etc.

Brightness (below, left) – (active / inactive) configuration screen and advanced

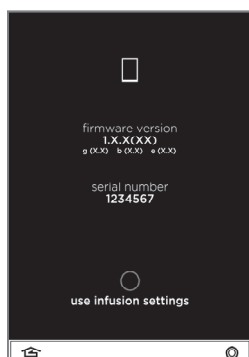


Advanced Brightness (above, right) *Low trim* – sets minimum brightness percentage in auto mode, *Motion sense* – proximity sensor's sensitivity.

(Configuration Screens continued)

Information (right)
Firmware*, graphics, boot code, and
eprom versions & use infusion settings
configuration screen.

NOTE: Firmware may be updated
from Design Center. Screen turns a
gradient green color during a
firmware update.



Troubleshooting, Expectations and Tips

1. Header Widget Area - Comfort/Weather/Clock/Blank

Provides relevant thermostat, weather or clock information

- **Thermostats Supported** - Vantage CC-STAT and Aprilaire 8870 or 8800, including internal and external temperature sensors - thermostat in thermostat mode only - no support for Humidistat.
- **Weather Supported** - Current outside temperature and conditions.

Tips/Troubleshoot -

- **Auto Mode** - last known mode setpoint shown, +/- buttons increment BOTH heat and cool modes at the same time, unknown currently if it is heat or cool when walked up to.
- **Weather** - check gateway and DNS on controller
- **Time** - may take up to one minute to synchronize with system time if controller time is changed.

2. Middle Button Area - Scenes/Tasks

Provides standard button control and feedback for any scene

- **Supported Button Count** - Max three per page with audio; Max five per page without audio
- **Supported Page Count** - Max three
- **Supported Scenes** - All Vantage tasks for lighting, shades, a/v, pool/spa, drivers, conditional logic, etc.

Tips/Troubleshoot -

- **+/- Buttons** - Check conditional logic on tasks, confirm power profile standard/dimmable (use of simple conditional logic and dimmable loads).

Supported Cases -

1. Procedures and loads support adjust/dimmable.
 2. All devices are same type (no mixed scenes).
 3. Same objects in all branches of conditional logic.
 4. Dimmable Loads required (for loads)
 - a. If all power profiles are relay, adjust/dim is not supported
 5. Make sure all objects support required methods
- **LED Status** - Status using fixed colors for ON and OFF.
 - **Character counts** - based on non-proportional characters used, typically 9-15. Turns red if too long.
 - **No Capital letters** - not allowed based on Industrial Design guides.
 - **Button allocation on Pages** - only draws pages with buttons assigned, Only draws buttons if text or task assigned

3. Bottom AV Widget Area - Audio Zone/Sources

Provides single zone audio control for power, volume, source selection, playlists, tuner presets and transport commands.

- **Supported Multi-room Systems** - Vantage 450, 850, and Nuvo Grand Concerto.
- **Sources Supported** - Vantage DMM, Vantage IMS, Autonomic Mirage MMS - playlists & Pandora, Mozaex Solo (use DMM object renamed), Nuvo Music Port, Nuvo T2, Nuvo iPod Dock, Russound ST2, Speakercraft STT2, Elan DTNR, Onkyo T4555, Integra TUN 3.7, iPod FS/IW.

Tips/Troubleshoot -

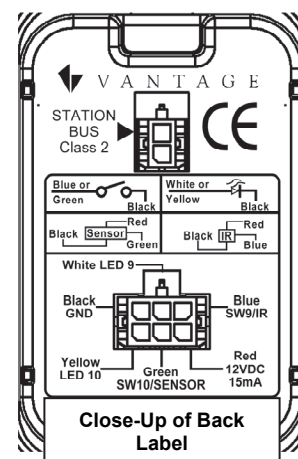
- Initially tuner presets are empty; the initial project file does not have tuner presets.
- Tuner presets are read back in from system every time there is full program or firmware update once they exist. Project file must be open for read back to work and then saved.
- Tuner presets are lost if keypad is deleted from Design Center project.
- Check to see if using supported drivers
- Check source parameters for drivers assigned
- Check AV zone or filtered AV zone selections
- Check firmware on 450/850
- Check to see if using unsupported drivers, IR (discrete play/pause), interfaces implemented?
- Check source parameters, check zone parameters
- For unsupported systems use keypad/scene buttons

Firmware Update / Boot Code Operation Mode -

If station appears to be locked and will not accept a firmware update from Design Center, place the station in boot code operation mode.

- Press and hold both buttons until station resets.
- Release left button and a second later the right button.
- The screen will turn to gradient green and should now accept a firmware update from Design Center.
- Firmware updates to EQ40 screens take just under three minutes-approximately.
- When the firmware update is complete the station should automatically boot to normal application mode.

Back Label (right)



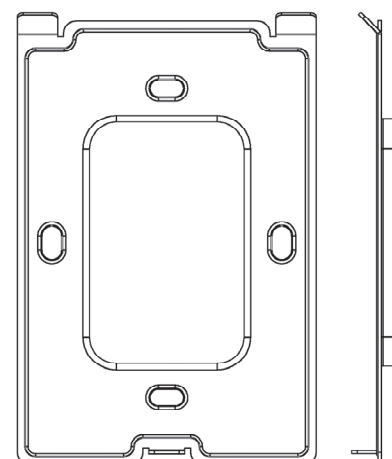
Mounting Plate

Use **flat-head** screws provided to mount the **Mounting Plate**.

Pan-head screws will not allow the station to fit snugly to the wall and may damage electronics. Do not bend mounting plate.

Use either type screw supplied:

- 2 Each - US:
 - US: VHC-01090-SCREW, 6-32 X .750" P-FH, ZINC
- 2 Each - Metric:
 - VHC-01089-SCREW, M3.5 X 20mm P-FH, ZINC



Equinox 40 $\ominus$ $\oplus$ -/+ (minus/plus) Adjust Buttons Descriptions For Press and Release or Press and Hold

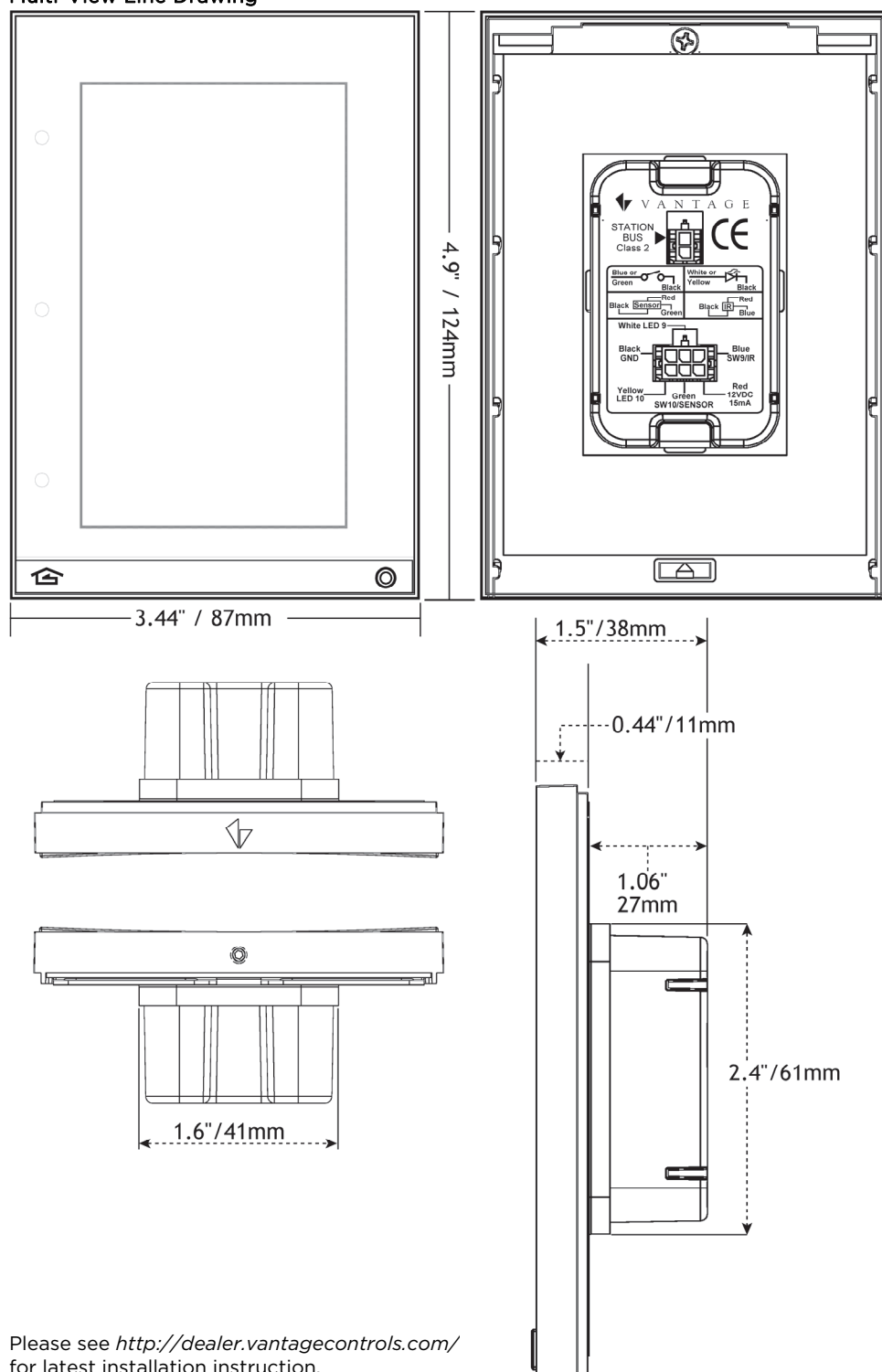
The following task procedures will cause the Equinox 40 to display the -/+ (minus/plus) adjust buttons and status bar.

The percentage of change when tapping the minus/plus buttons is adjustable in Design Center by clicking on *Settings | Procedure Preferences | System Defaults* and adjusting the *Bump Percentage* (default is 10%).

$\ominus$ **button 1** $\oplus$

- | | | |
|--|---|--|
| <ul style="list-style-type: none"> • Dim • Dim Cycle • Dim Scene • Off with Lower • On with Raise | <ul style="list-style-type: none"> • Default Dimmer Behavior • Toggle • Toggle With Auto Off • Toggle With Auto Learn • On | <ul style="list-style-type: none"> • On With Auto Off • On With Auto Learn • Standard Fan Control • Set Blind Position • Set Volume (Volume2) |
|--|---|--|

Multi-View Line Drawing



Please see <http://dealer.vantagecontrols.com/> for latest installation instruction.