

Wall Station Installation Manual



Avi-on Bluetooth® Lighting Controls

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FCC Compliance

This device complies with part 15 of the FCC and Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Important note: No change to the antenna or the device is permitted. Any change to the antenna or the device could void user's authority to operate the device and result in the device exceeding the RF exposure requirements.

Other Information

Product information is subject to change without notice. Check the Avi-on support website for the latest information.

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All trademarks are recognized as the property of their respective owners.

To ensure optimal reliability and to meet warranty requirements, Avi-on products must be installed according to the instructions in this manual.

Audience

This manual is intended for use by skilled professional installation and maintenance personnel. Safety and shock hazards may be present during installation.

Table of Contents

FCC Compliance	2
Other Information	2
Audience	2
Table of Contents	3
Important Safety Information	4
Wall Station	5
Installation	6
Battery-powered Wall Station Installation	9
Commissioning	10
Configuration	11
Associate Actions to Scene Buttons	12
Other Information	14

Important Safety Information

Read this First

This manual contains important instructions for use during installation and maintenance of Avi-on Pro Bluetooth® Lighting Controls solutions.

Safety and Advisory Symbols

To reduce electric shock risk and to support safe installation and operation of the Avi-on Labs lighting control solution, safety symbols appear throughout this document to highlight important safety conditions and instructions.

	Danger	Indicates a hazardous situation which could result in serious injury or death.
	Warning	Indicates a situation in which failure to follow instructions may result in a safety hazard or equipment malfunction. Use caution and follow all instructions.
	Note	Indicates very important information for optimal system operation. Follow instructions closely.

Safety Instructions

	DANGER: Risk of Electric Shock	- Only qualified personnel should install, troubleshoot, or replace AC-powered Avi-on components. - Only qualified personnel should install, troubleshoot or replace battery-powered Avi-on components in AC wall boxes. - Do not install AC components or work in AC wall boxes without first switching off AC power at the breaker. - Ensure that all AC and DC wiring is correct and that none of the AC or DC wires are pinched or damaged before applying power. - Always de-energize AC circuits before servicing.
	WARNING: Risk of Equipment Damage	Before installing Avi-on components, read all instructions and cautionary markings on the products and in this manual.
	NOTE: Ensure Optimal Performance	To ensure optimal performance and meet warranty requirements, the Avi-on system must be installed according to the instructions in this manual.

Wall Station

The Avi-on Wall Station has a seven button array for manual control of lighting. The top four buttons are programmable to each select a lighting scenario which may comprise one or more lights, dimming and color settings, timers and transitions. Out of the box, the buttons are labeled 1, 2, 3, and 4 from top to bottom. It is also available as a Dimming Wall Station with buttons labeled 100%, 75%, 50%, 25% from top to bottom. Below the four scene buttons are up and down dimming buttons for manual adjustment of the current scene, and the bottom button performs a push button on/off function.

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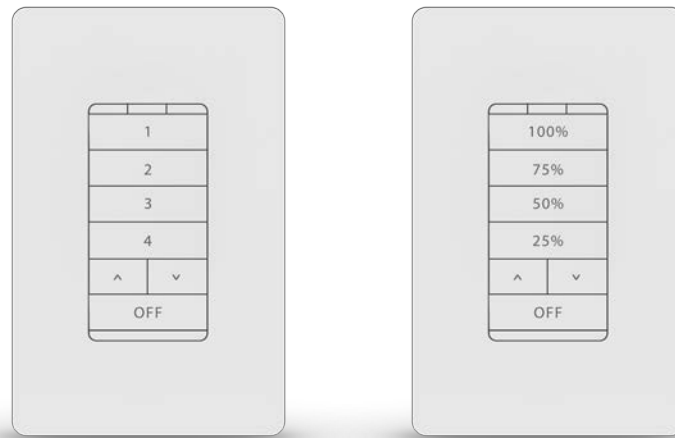


Figure 1. Avi-on Wall Station Button Arrays

The Avi-on Wall Station operates as a Bluetooth wireless controller in an Avi-on Pro Bluetooth Lighting Controls system. The Wall Station does not switch an AC load. Rather, the Wall Station wirelessly communicates commands to an Avi-on device, such as an In-wall Switch or Powered by Avi-on™ lighting fixture, when a button is pressed. Figure 2 shows a representative view of Wall Station interaction in an Avi-on enabled fixture.-on system.

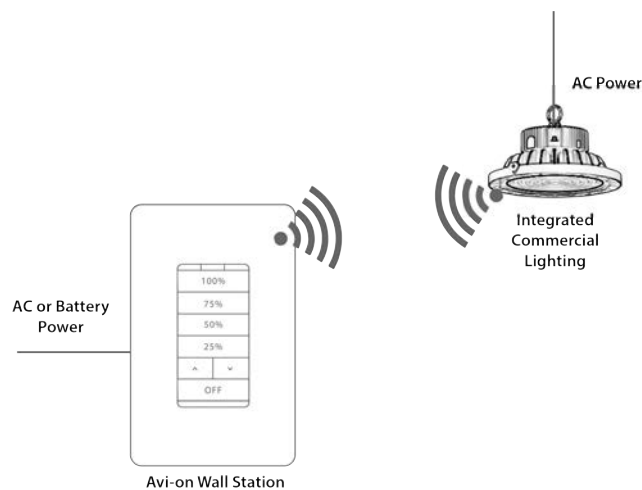


Figure 2. Wall Station Role in Avi-on Pro Bluetooth Lighting Controls

The Avi-on Wall Station comes in two versions, an AC line voltage powered version and a battery powered version. The AC-powered version comes with pigtail leads for Line (Black), Load (Black), Neutral (White) and Ground (Green). The battery version comes with two CR17345 batteries, but has the capacity to function with a single battery. The battery powered Wall Station is designed for long battery life with an expected lifetime of 10 years with a single battery and 15+ years with two batteries, under typical use.

The Wall Station comes with its own screw-less wall plate and trim plate suitable for single-gang installation. For multi-gang installation, or to use an alternative wall plate, the wall and trim plates may be removed allowing the Wall Station to mount in a wall box like a typical switch. The Wall Station is formatted to work with Decora-style wall plates.

Summary Specifications

- **Model Number:**
 - AC-powered: 2401AC
 - Battery-powered: 2402BAT
- **Input Voltage:**
 - AC-powered: 120VAC, 60Hz
 - Battery-powered: 3.0VDC using one or two 3V CR17345 Lithium Manganese Dioxide batteries (may also be labeled CR123 or CR123A)
- **Operating Temperature: 32° F to +104° F (0 C to 40 C)**
- **Storage Temperature: -22° F to +113° F (-30 C to 45 C)**
- **Indoor use only**

Installation

The Wall Station wall plate and trim plate must be removed for multi-gang installations, or if an alternate wall plate is desired for single-gang installation.

Installation of the Wall Station varies depending on whether it is AC-powered or battery-powered. Follow the process listed for the type of Wall Station being installed.

Preparing the Wall Station Wall Plate and Trim Plate

For installation, the finish wall plate of the Wall Station must be removed. Grasp a corner of the wall plate while holding the Wall Station body and pull the wall plate away from the trim plate. The wall plate will snap off of the trim plate. Work around the wall plate, pulling it from the trim plate until they are separated. If the Wall Station will be installed in a single-gang box using the supplied wall plate, the unit is ready for installation.

For multi-gang installation, or when not using the supplied wall plate, the supplied trim plate must be removed from the Wall Station body by removing the two screws holding them together. Figure 3 shows the Wall Station with the wall plate in place (left) and removed (right) showing the trim plate underneath.



Figure 3. Wall Station with Wall Plate on (left) and removed (right)

AC-powered Wall Station Installation

	DANGER: Risk of Electric Shock	• Only qualified personnel should install, troubleshoot, or replace AC-powered Avi-on components. • Do not install AC components or work in AC wall boxes without first switching off AC power at the breaker. • Ensure that all wiring is correct and that none of the wires are pinched or damaged before applying power.
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1. With power off to the wall-box, connect the Green Wall Station Ground wire to the ground conductor of the AC service wiring. Then connect the Wall Station Black (Line) wire to the service Line conductor and the Wall Station White (Neutral) wire to the service Neutral conductor. Refer to Figure 4.



Figure 4. AC-powered Wall Station Wires

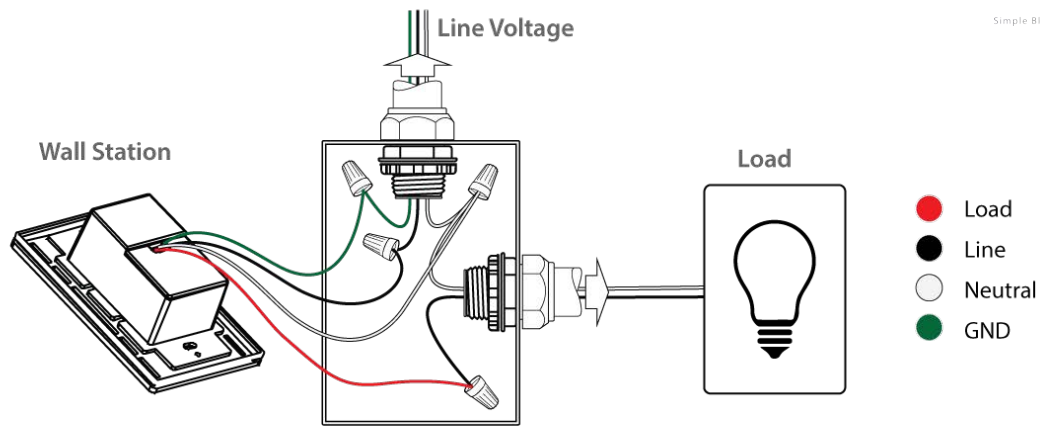


Figure 5. Wiring Diagram

2. If a load wire is present in the box and there is a desire to maintain continuous (unswitched) power to the load fixtures, connect the Red Wall Station Load wire to the existing load wire running to the fixture(s). If not used, cap the Wall Station Load wire.

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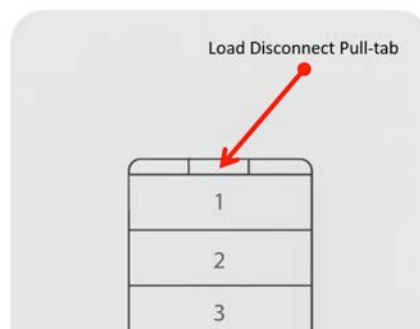


Figure 5. Load Disconnect Tab Location

3. Dress the wires in the wall-box and mount the Wall Station to the box using the supplied screws.
4. Reinstall the supplied wall plate by snapping it into place on the trim plate, or install a decora-style wall-plate.
5. Do not apply AC power to the Wall Station or open wall box until the Avi-on App is installed on a mobile device and prepared for commissioning.

Battery-powered Wall Station Installation

	DANGER: Risk of Electric Shock	• Only qualified personnel should install, troubleshoot, or replace Avi-on components in a wall-box containing AC power. • Do not install components or work in AC wall boxes without first switching off AC power at the breaker. • Only qualified personnel should replace batteries installed in a wall box Wall Station even if AC power is not connected
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1. If the battery-powered Wall Station is to be installed in a wall-box containing AC power, ensure that power has been turned off at the breaker prior to installation.
2. Install the supplied CR17355 batteries in the Wall Station. Remove the battery cover by sliding the cover in the direction of the embossed arrow (downward). Either battery compartment may be used for single battery installation. Install the battery, ensuring that the plus (+) terminal of each battery aligns with the plus (+) marking inside the battery compartment. Replace the battery cover by sliding and snapping it back into position.
3. Install the battery-powered Wall Station in the wall-box using the supplied screws.
4. Reinstall the supplied wall plate by snapping it into place on the trim plate, or install a decora-style wall-plate.
5. If the Wall Station is installed in an AC-powered wall box, do not restore AC power.

Commissioning

Wall Station commissioning entails adding the controller to an accounts in the Avi-on App using the ADD (+) function.

Install the Avi-on App

To begin commissioning, download and install the Avi-on App on a reliable iOS or Android mobile device (Mobile) to be used throughout the commissioning process. Links for app download may be found at <http://avi-on.com/download/>. For best results set the Mobile to perform automatic updates of the Avi-on App to assure you always have the latest version.

	NOTE: Mobile Radio Quality	Bluetooth and Wi-Fi radio performance varies dramatically across different Mobiles. Installation performance relies on the quality of the Mobile radio and antenna that is used to set up and operate the network.
	NOTE: Bluetooth Low Energy	The Mobile used for system commissioning and management must support Bluetooth Low Energy (Bluetooth 4.0 or greater). Most high quality Mobiles available since 2013 support Bluetooth Low Energy.
	NOTE: Mobile Compatibility	Use an iOS Mobile or a high quality Android Mobile for installing new networks.

Create an Account

Create and validate an account on the Avi-on App. Follow the instructions in the Avi-on App.

	NOTE: Account Validation	The account will require email validation before it can be used. Be sure the email address used to establish the account can receive the confirmation email, and that validation is completed before commissioning begins. For validation problems, contact Avi-on support at http://support.avi-on.com .
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Commissioning the Wall Station

	NOTE: Stable Power	Ensure stable AC power, and fresh batteries, as appropriate for all devices in the Avi-on operating environment.
	WARNING: Data Loss	Data loss may occur in the Avi-on system if changes made in the Avi-on App are not properly synchronized to the Cloud via the Internet. Always ensure that a stable Internet connection is available to the Mobile before attempting to close the Avi-on App or power down the Mobile. Always ensure a full battery on a Mobile being used to make changes to the Avi-on system, if working remotely.

1. Log in to the Avi-on App.
2. Apply power to any circuits that were de-energized during the installation of the Wall Station. The AC-powered Wall Station has a blue LED below the button array which double-flashes when the controller is initialized and ready for commissioning.
3. Tap the plus (+) icon at the upper right of the Devices screen.
4. If commissioning a battery-powered Wall Station, press the POWER (⏻) button once to wake up the controller.
5. The Wall Station will appear on the app screen. Tap the listing to add it. The listing should change from greyed-out to bright with a check mark (✓).
6. Press "Done" at the upper right hand corner of the screen.

Configuration

This section steps through Wall Station configuration using an example configuration. Screen captures from the Avi-on App show what the user will see as the sensor is configured (with possible slight variation due to mobile device configuration, software releases, etc.).

This guide assumes the user has an operating Avi-on Pro Bluetooth Lighting Controls network with at least one light, switch, and a mobile device running the Avi-on App with a validated account. For more information, please visit support.avi-on.com.

For best results, review all steps and plan all settings prior to starting sensor configuration. Steps requiring no change in settings may be skipped.

Instructions for configuring the Wall Station use the following notation:

⌘ Symbol	User action in the Avi-on App.
[Bracketed Words]	On-screen target of the action in the Avi-on App.
<Value>	Example value to be entered or selected in the Avi-on App. The actual value for configuration will depend on user goals.

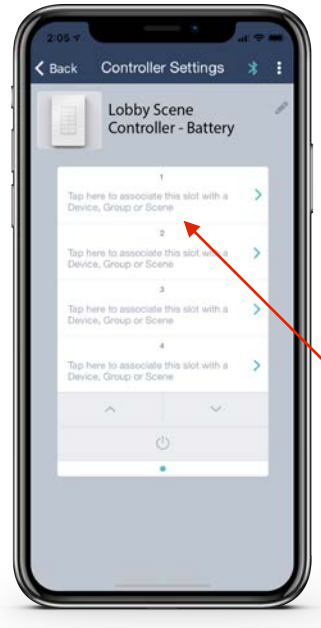
The wall station can be operated in two configurations:

Scene Controller: In this state the 4 buttons can be associated to 4 different pre-set scenes or zones.

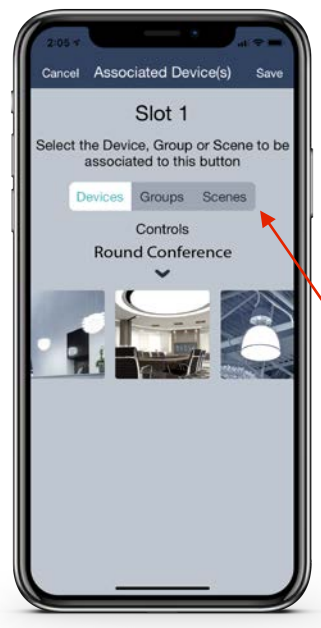
Dimming Wall Station: In this state the wall station controls a single zone with pre set dimming levels for each button.

To change between modes, simply change the button on the wall station configuration screen.

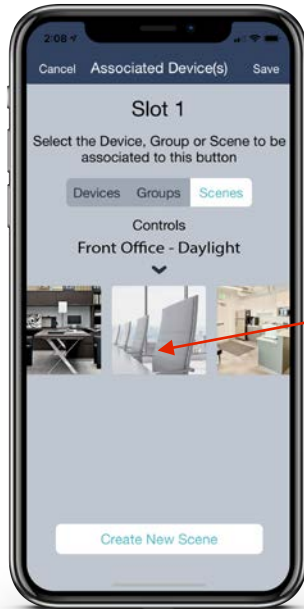
Associate Actions to Scene Buttons



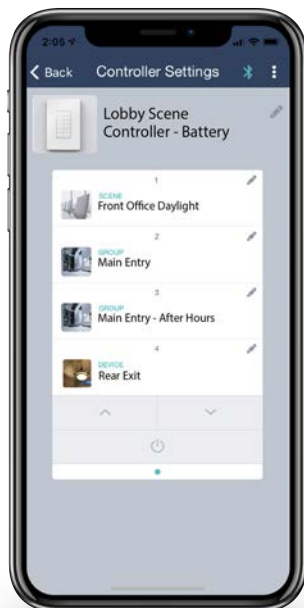
- Open the Avi-on App, go to the Controller menu, and select the Scene Controller to be configured.
- The Controller Settings screen for the Scene Controller will appear with any existing parameter values programmed for the buttons. In the app, the programmed associations with buttons are called "slots."
- Tap the desired slot (1-4) to associate a device, group or scene to the correlating button.
- EXAMPLE: To associate Slot 1 with a Device, Group or Scene, ⌘ Tap [1]



- Select the button for the type of association that is to be made with Slot 1 and the top button on the Scene Controller: [Devices], [Groups] or [Scenes]. [Devices] is highlighted by default. In the example screen, [Scenes] will be selected.
- ⌘ Tap [Scenes]



- The existing scenes which may be associated with Slot 1 are shown. Only one scene may be associated with each slot. In the example screen, three scenes, "Exec Office", "Front Office - Daylight," and "Kitchen" are available. A scene may be selected by swiping the group icons left or right until the desired group is highlighted in the center of the screen. In this example, "Front Office - Daylight" will be selected.
- ☞ Swipe left-right to highlight [Front Office - Daylight]
- ☞ Tap [Save]
- If a mistake was made and a device or scene was desired for Slot 1, cancel and select the appropriate button.
- ☞ Tap [Cancel]



- The "Front Office - Daylight" scene is now associated Slot 1 of the Scene Controller in the app, and with Button 1 in the Scene Controller button array.
- All of the functions of the Scene Controller may be operated from the Avi-on App or from the Scene Controller button array.
- To change the function of a Scene Controller Slot/Button, select the pencil icon next to the slot label. The name of the Scene Controller in the app may also be changed by selecting the pencil icon at the top of the screen. A photo or image may also be associated with the Scene Controller by tapping on the camera icon at the top left of the screen.

Other Information

Button Replacement

Wall Station scene buttons are replaceable to create a customized list of scenes. To change a scene button, remove the wall plate, by unsnapping or unscrewing it, depending on the style used. Remove the entire button array by depressing the plastic catches on both sides of the top of the button array (see Figure 6) and gently lifting the array away from the controller body. Repeat on the bottom set of catches to remove the button array.

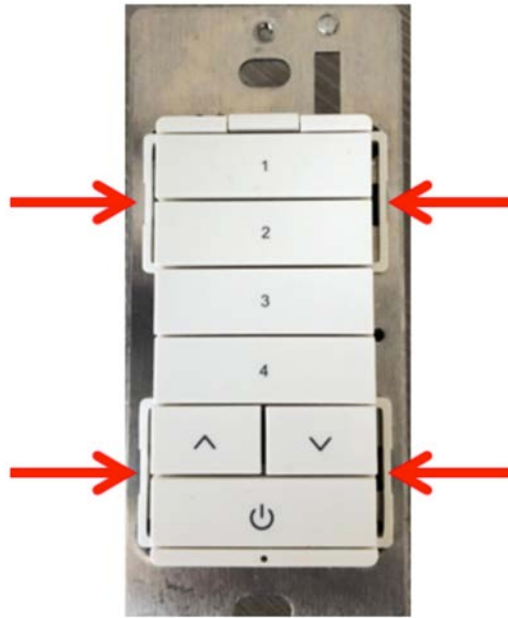


Figure 6. Button Array Removal Press-points.

With the button array removed from the controller body, individual buttons may be removed by gently prying the button catches away from the button assembly frame (see figure). To reassemble, press the desired button into place, ensuring that any text on the button is properly oriented.

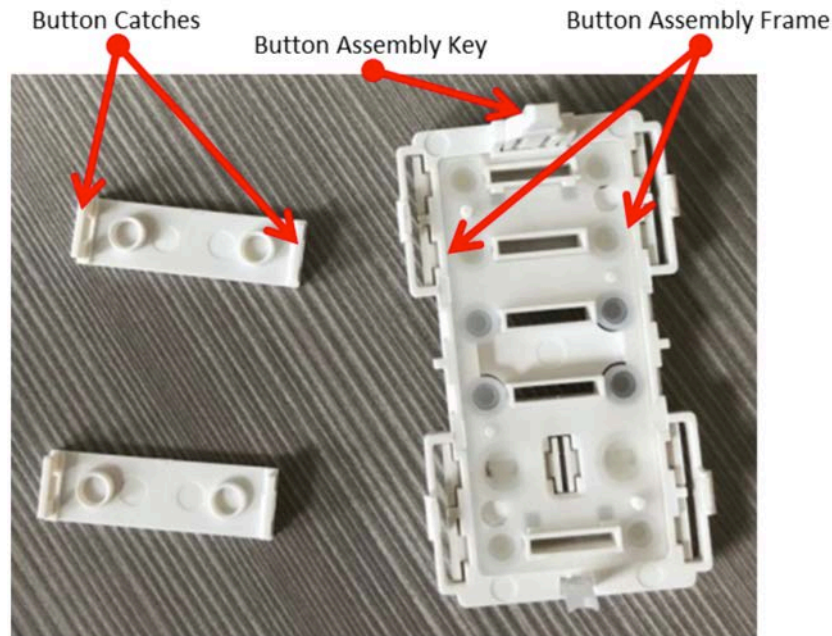


Figure 7. Button Catch Removal Points

Replace the entire button array assembly on the controller body by aligning the button assembly key with the opening near the top of the controller body and pressing it in place. Ensure that all four button assembly frame catches snap into the controller body. Replace the wall plate.

Avi-on App Capabilities

The Avi-on App supports many capabilities beyond the scope of the Wall Station user manual. Visit support.avi-on.com for more information on getting the most from the Avi-on App.

Reset Button

The Wall Station supports a reset button to the right of the button array when the wall plate is removed. The reset button is only used to remove the controller from an inaccessible Avi-on App account so that it can be added to a new account, or if unable to add the controller in the Avi-on App when there is a possibility that it was previously added to a different account. In normal usage there



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