



Basic Room Setup

A basic single-room Züm system consists of Züm mesh devices, i.e., dimmers, switches, keypads, and sensors. The Züm mesh devices in the room communicate directly with each other without the need for a centralized gateway or processor.

To set up a new single-room Züm system, do the following:

- Step 1a: Create a new single-room Züm system.
- Step 2: Add Züm mesh devices to the room.
- Step 3: Finish creating the single-room Züm system.

To modify an existing Züm system, do the following:

- Step 1b: Place the system in Joining mode.
- Step 2: Add Züm mesh devices to the room.
- Step 3: Finish creating the single-room Züm system.

Terms and Notes

The following symbols are used throughout this document to indicate user actions. This includes taps and holds, with parenthetical information:

- A quick button press.
- A press and hold action. The note will indicate the desired hold time.
- A 2-button press and hold action. The note indicates the desired hold time.
- A quick sequence of events to be performed together. For example, press the button 5 times and then press and hold the button for 2 seconds.

The following symbols are used throughout this document to indicate the behavior of the LEDs on the device.

- An LED on solid
- A fast-blinking LED (0.25s on, 0.25s off)
- A slow-blinking LED (1.0s on, 1.0s off)

The following symbols are used throughout this document to indicate whether the required device is powered by 120-277 V or battery. This distinction is critical as certain steps may be performed only by line voltage devices.

- Battery
- AC-Powered

Step 1a – Creating a Single-Room Züm System

To create a new single-room Züm system, first form a new room.

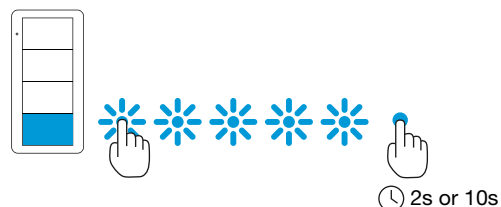
NOTE: This can be performed on only one device in the room.

NOTE: The device that is used to create the room is automatically added to the room. The device does not need to be added to the room.

NOTE: A room can be created only from an ac-powered device.

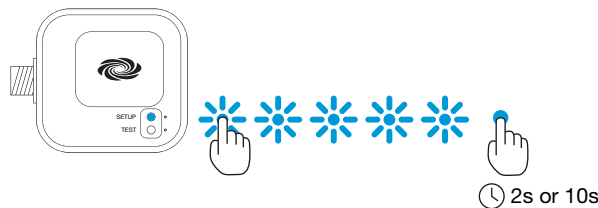
Start a New Single-Room System with a Keypad, Dimmer, or Switch

Press the bottom button 5 times, and then press and hold the bottom button for 2 seconds. If the device is not factory fresh, hold the button for 10 seconds. Release the button when the LED lights. The LED illuminates for 3 seconds and then slowly flashes to indicate that the room is in Joining mode and that other devices can join the room.



Start a Single-Room System with a J-Box Device

Press the SETUP button 5 times, and then press and hold the SETUP button for 2 seconds. If the device is not factory fresh, hold the button for 10 seconds. Release the button when the LED lights. The LED illuminates for 3 seconds and then slowly flashes to indicate that the room is in Joining mode and that other devices can join the room.

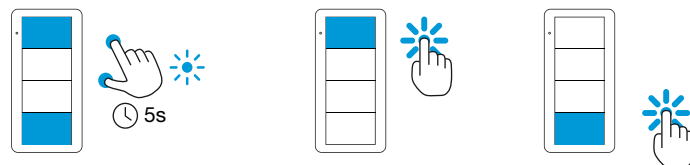


Step 1b – Expanding an Existing Single-Room Züm System

To allow other devices to join the room, place the single-room Züm system into Joining mode. Joining mode can be enabled from any ac-powered device or battery keypad that is already part of the room.

Expand a Single-Room Züm System Using a Keypad

To enter Joining mode, press and hold both the top and bottom buttons for 5 seconds, wait for the LED to light, and then tap the top button once, and then the bottom button once.



Expand a Single-Room Züm System Using a J-box Device

To enter Joining mode, tap the SETUP button 2 times, and then tap the TEST button.



Pressing any button on a device that is part of the network takes the system out of Joining mode. Joining mode ends automatically after 4 minutes.

Step 2 - Adding Züm Mesh Devices to the Room

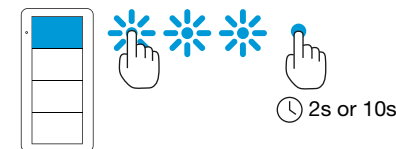
Adding Züm mesh devices to a room is quick and easy. Add devices to the room when the room is in Joining mode. Joining mode is automatically enabled after a single-room Züm system is started (see Step 1a). Joining mode can also be enabled manually (see Step 1b). The LEDs on all ac-powered devices in the system blink when the system is in Joining mode.

NOTE: A Züm mesh device can belong to only one room.

NOTE: The Züm mesh device used to create the room is already part of the network. It does not need to be added to the network.

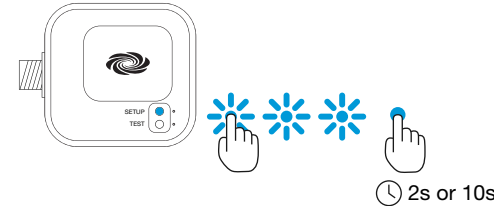
Add a Keypad, Dimmer, or Switch

To add a keypad, dimmer, or switch to the room, press the top button 3 times, and then press and hold the top button for 2 seconds. If the device is not factory fresh, hold the button for 10 seconds. Release the button when the LED lights. The LED blinks slowly to indicate that it is part of the room and that the room is still in Joining Mode.



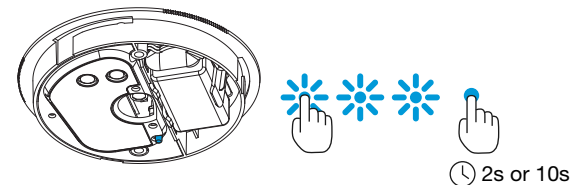
Add a J-Box Dimmer or Switch

To add a J-box dimmer or switch to the room, press the SETUP button 3 times, and then press and hold the SETUP button for 2 seconds. If the device is not factory fresh, hold the button for 10 seconds. Release the button when the LED lights. The LED blinks slowly to indicate that it is part of the room and that the room is still in Joining Mode.



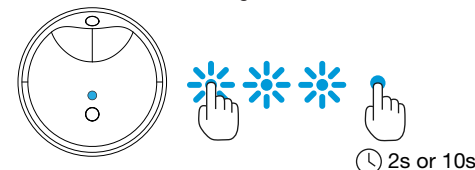
Add an Occupancy or Vacancy Sensor

To add an occupancy or vacancy sensor, press the TEST button 3 times, and then press and hold the TEST button for 2 seconds. If the device is not factory fresh, hold the TEST button for 10 seconds. Release the button when the LED lights.



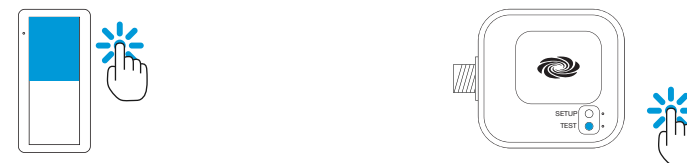
Add a Daylight Sensor

To add a daylight sensor, press the button 3 times, and then press and hold the button for 2 seconds. If the device is not factory fresh, hold the button for 10 seconds. Release the button when the LED lights.



Step 3 - Finishing the Single-Room Züm System

Press any button on a device that has already joined the network to end the setup process (e.g., the top button of a keypad or the SETUP button of a J-box device that is blinking its LED).



Advanced Setup

Steps 1-3 are designed to form a basic single-room Züm system. In a basic system, the keypads control all the lights in the room, the sensors control the lights, and the AV bridge reports information to the AV system. However, Züm is capable of also doing the following:

- Setting up the daylight sensor
- Configuring keypads to control specific loads
- Adding the network bridge
- Creating scenes
- Using the mobile application

Setting up the Daylight Sensor

Setting up the daylight sensor is quick and simple. The daylight sensor is set up after the Züm mesh system is installed and powered.

When setting up the daylight sensor, consider the following:

- Only dimmers react to daylight sensors.
- Calibrate the daylight sensor during the day when the sun is bright. Avoid light fluctuations caused from clouds that are rapidly exposing and hiding the sun.
- Do not stand between the daylight sensor and the windows. Doing so affects the readings and causes unpredictable lighting in the room.

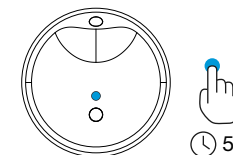
Calibrate the Daylight Sensor

To calibrate the daylight sensor, do the following:

1. Adjust the dimmer level of all loads in the room to suit the current daylight conditions. Each dimmer can be set to a different level. Typically, lights closer to windows are dimmed more than lights away from windows.

NOTE: To disable daylighting on a dimmer, do not adjust its light level. Dimmers left on SCENE 1 or brighter during calibration are not affected by daylighting.

2. Press and hold the button for 5 seconds to initiate the daylight calibration process. The LED blinks red to indicate that the calibration process is running. The calibration process runs for 60 seconds. During the calibration, the lights cycle from calibration set point level, to Scene 1 level, then off, then back to Scene 1 level.



3. After daylight calibration, the room enters Test mode to verify that the proper levels were set. The LED blinks twice, pauses, then repeats to indicate that it is in Test mode. Refer to "Test Mode" for details.

Test Mode

To manually enter Test mode, press and hold the button for 2 seconds.

During Test Mode, standard delays that allow smooth light transitions are removed, which allows rapid natural light level changes to cause faster artificial light changes. The LED blinks twice, pauses, then repeats to indicate that it is in Test mode. The device exits Test mode after 2 minutes.

To verify daylight sensor calibration, open and close the blinds or block the cover of the sensor to simulate low outside natural light conditions. The light level should increase. Opening the blinds or unblocking the cover of the sensor should cause the light level to decrease.

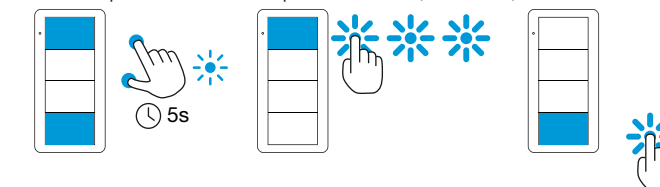
Configuring Keypads to Control Specific Loads

In default operation of a Züm system, a keypad controls all of the loads in the room. If the installation scenario requires that a keypad controls only a specific load or loads (i.e., the keypad can be linked to any number of loads in the room), link the keypad to the load. Loads can be linked locally or remotely.

NOTE: Keypads do not control J-box plug controllers.

Link Load Locally

1. On the keypad, press and hold the top and bottom buttons for 5 seconds until the LED lights, and then tap the top button 3 times, and then tap the bottom button 1 time. Taps need to occur in quick succession; otherwise, the function times out.

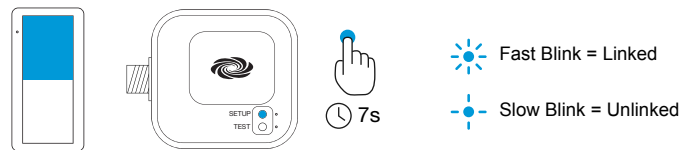


The LED on all dimmers and switches in the room begins a slow or fast blink. A slow blink LED indicates that the dimmer or switch is not linked to a keypad, and a fast blink LED indicates that it is linked to a keypad.

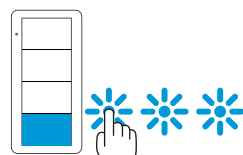
NOTE: If no devices are linked to the keypad, all devices are controlled by the keypad.

2. Link or unlink keypads.
 - Press and hold the top button of the dimmer or switch, or the SETUP button of the J-box device, for 7 seconds to link it to a keypad. The LED blinks fast to indicate that it is linked.

- To unlink a keypad, press and hold its top button for 7 seconds. To unlink a J-box device, press and hold the SETUP button for 7 seconds. The LED slowly blinks to indicate that it is not linked.



- Repeat step 2 for all other dimmers and switches that need to be linked or unlinked to the keypad.
- Tap the bottom button on the keypad 3 times in quick succession to exit.

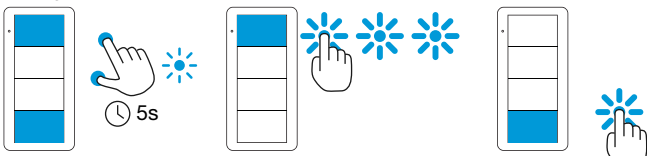


Link Load Remotely

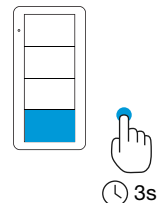
If the load controller, such as a J-box dimmer, is not accessible, perform the remote linking method.

Use the keypad that has been selected for controlling the load to perform the entire remote linking process.

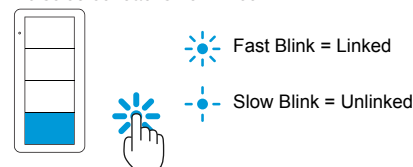
- On the keypad, press and hold the top and bottom buttons for 5 seconds until the LED lights, and then quickly tap the top button 3 times, and then the bottom button 1 time.



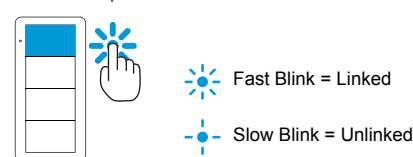
- Hold the bottom button for 3 seconds until one of the loads in the room begins to flash. The load that is flashing is the "Selected" load.



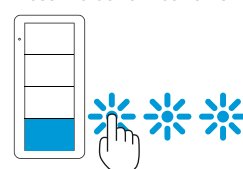
- Tap the bottom button to cycle through the loads until the desired load is flashing. The LED on the keypad blinks fast if the selected load is linked and blinks slowly if the selected load is not linked.



- Press the top button to link or unlink the load to the keypad.



- Repeat steps 3 and 4 for all loads to be linked to the keypad.
- Press the bottom button on the keypad 3 times to exit.



Creating Scenes

Setting the scenes alters the default presets to allow customization of the brightness levels when a button is pressed. Set scenes using the End-User Method, Manual Method, or Remote Method.

NOTE: Only load controllers bound to this keypad can be in the keypad's scenes.

NOTE: All load controllers bound to this keypad must be in this keypad's scenes.

End-User Method

The end-user method allows fast and efficient setting of the presets. The end-user method is applicable only to SCENE 2 and SCENE 3. It cannot be used on 2-button keypads, and it cannot be used to save the ON (scene 1 preset) scene.

To customize presets, do the following:

- Go to each load controller that is bound to the keypad and set the loads to the desired brightness level for the scene.
- Hold the SCENE 2 or SCENE 3 button for 5 seconds to save the current light levels to the pressed button.

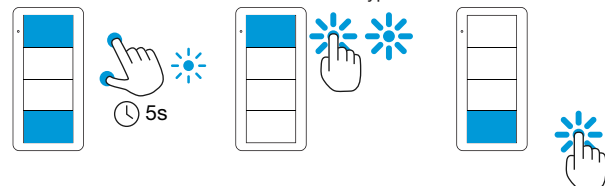
Manual Method

Use the Manual Method when each load controller is physically accessible.

To customize presets, do the following:

- Using the keypad in the room, hold the top and bottom buttons simultaneously for 5 seconds until the LED flashes. Then press the top button 2 times, and then the bottom button 1 time.

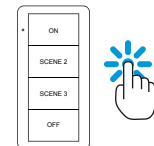
- The keypad blinks its LED 2 times every 2 seconds.
- Load controllers that are linked with the keypad fast blink their LED.



- Adjust the load levels.

- Using the dimmers, adjust all load levels in the room by pressing and holding the top button to raise the light level or the bottom button to lower the level.
- Using the switches, turn the loads on or off by pressing the top button to turn the load on or the bottom button to turn the load off.
- Using the J-box load controllers, press and hold the TEST button on the J-box device to cycle-dim the load.

- Using the keypad in the room, press the ON, SCENE 2, or SCENE 3 button that should recall the current levels. This saves the levels to the scene.



- Repeat steps 2 and 3 for all scenes.

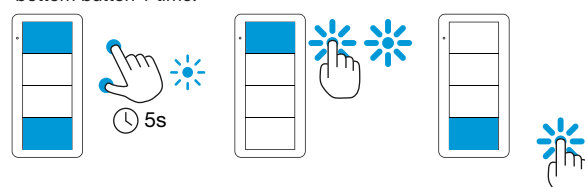
- Tap the bottom button on the keypad 3 times to exit scene setting.

Remote Method

Use the Remote Method when load controllers are not physically accessible.

To customize presets, do the following:

- Using the keypad in the room, hold the top and bottom buttons simultaneously for 5 seconds until the LED flashes. Then press the top button 2 times, and then the bottom button 1 time.



- Hold the bottom button for 3 seconds until one of the loads in the room begins to flash. The load that is flashing is the "Selected" load.

- Tap the bottom button to cycle through the loads until the desired load flashes. The load flashes twice and then returns to its previous light level to indicate that it is selected.

- Adjust the brightness by holding the top button on the keypad to raise the light level or by holding the bottom button to lower the light level.

- To save the light level to a scene, press the ON, SCENE 2, or SCENE 3 button.

- Press the bottom button to select the next load controller that is bound to this keypad. The load flashes twice and then returns to its previous light level to indicate that it is selected.

- Repeat steps 3 through 6 for additional load controllers until all load controllers and all scenes are defined.

- Tap the bottom button 3 times to exit.

Adding the Network Bridge

The Zūm network bridge enables Zūm device setup from the Zūm mobile app. It also integrates the single-room Zūm system with the Zūm hub to form a centrally managed, enterprise-wide lighting control system.

To connect the network bridge to the Zūm hub, place the gateway into Acquire mode. On the network bridge, press the SET button 3 times, and then press and hold it until the LED blinks once (this can take up to 10 seconds). The LED turns on for 5 seconds to show that the network bridge has successfully joined the Zūm hub. The LED blinks fast to indicate that the network bridge did not successfully join the Zūm hub.

Factory Reset

Perform a factory reset when the device is removed from the network or to remove the configuration settings. The device must also be factory reset if the device is being moved to a different system.

NOTE: New-in-box devices do not need to be factory reset before joining a system.

Factory Reset a Keypad, Dimmer, or Switch

To factory reset a keypad, dimmer, or switch, press and hold the top and bottom buttons for 5 seconds until the LED lights, and then release both buttons. Then, press and hold the bottom button for 10 seconds until the LED lights.

Factory Reset a J-Box Device

To factory reset a J-box device, press and hold the TEST and SETUP buttons for 10 seconds. Release the buttons when the LED lights. The LEDs and output turn on.

Factory Reset an Occupancy or Vacancy Sensor

To factory reset an occupancy or vacancy sensor, press and hold the button for 10 seconds until the LED lights.

Factory Reset a Daylight Sensor

To factory reset the daylight sensor, press and hold the button for 10 seconds. Release the button when the LED lights.

FAQs

What devices make up the system?

The system is made of the following device types:

- Load controllers – dimmers, switches or receptacle controls that are available as wallbox or J-box mount variations
- Keypads – button panels for recalling scenes and controlling the system, available in various button configurations and in ac-powered or battery-powered variations
- Sensors – occupancy, vacancy, and photo sensors, all battery-powered devices
- Network bridge – a plug-in module that attaches to any J-box load controller and allows communication back to a central Crestron control system

How many devices can be added?

- 16 devices (i.e., load controllers, keypads, sensors) max per system
- 1 photo sensor max per system
- 8 occupancy or vacancy sensors max
- Do not mix occupancy and vacancy sensors
- 1 Network Bridge max per system
- 8 battery keypads max

Can a system control multiple rooms?

- No. Each room within a building should be its own system.
- Yes. Each of the rooms can communicate back to the Central Crestron System using the Network Bridge to tie all the rooms together.

Why can't one system be used to control multiple rooms?

- The system is designed to operate a single room. This ensures maximum reliability and simplicity during installation.
- Multiple rooms can be tied together using network bridges in each room to report back to a central Crestron control system.

Can a keypad control more than one load controller?

- Yes. By default the keypad controls all load controllers. A keypad can be linked to control one or more specific load controllers.

Can a load controller be controlled by more than one keypad?

- Yes. A load controller can be controlled by multiple keypads.

Can an occupancy or vacancy sensor be setup to control a subset of load controllers?

- No. Occupancy and vacancy sensors control the entire system.

Can a photo sensor be set up to control a subset of load controllers?

- Yes. During the calibration process, only load controllers that have been dimmed below their Scene 1 levels are affected by the photo sensor readings.

When does the photo sensor control the light levels?

- Daylighting is enabled or disabled on a load controller by load controller basis.
- Whenever a load controller is turned on from its local button or from a keypad recalling Scene 1, it responds to the photo sensor readings, i.e., Daylighting Enabled.
- Whenever a load controller level is adjusted by raising or lowering from a local button or keypad, or a scene other than Scene 1 is recalled, the load controller stops responding to photo sensor readings, i.e., Daylighting Disabled.

What is the difference between a J-box receptacle controller and a J-box switch?

- The J-box receptacle responds only to occupancy or vacancy sensors and not to keypads.
- The J-box receptacle controller energizes its output (receptacles) when it is powered up and whenever sensors report the room as occupied.

Can a wallbox dimmer be programmed to control other load controllers?

- No. Only keypads and sensors control load controllers. Dimmers and switches are considered load controllers and cannot be programmed to act as keypads.

Can I take a device from one system and add it to another system?

- Yes. The device must be factory reset before moving to new system.

What frequency does the system operate on?

- The system automatically selects a channel within the 2.4 GHz spectrum and switches channels if it detects interference.
- The system operates on 802.15.4 channels 15, 20, 25 and 26, which avoid typical Wifi interference.

What is the communication range between devices?

- Devices utilize mesh networking technology to ensure messages propagate throughout the system with maximum reliability.
- Devices should be within 50 ft of at least one powered devices, such as a load controller or ac-powered keypad.

How secure is my system?

- All wireless communication is protected using AES-128bit encryption preventing eavesdropping or replay attacks.

Do I need a control system or Crestron software utilities to set up my system?

- No. All of the system setup can be performed by button presses on the devices themselves.
- No other infrastructure within the building is required, i.e., no Ethernet, wifi, gateways etc.
- A Network Bridge can be added to each room during initial installation or at a later date. The Network bridges tie back to a central Crestron control system wirelessly.

Can I set up the system using a mobile phone?

- Yes. If the room includes a Network Bridge, the Crestron App can be used to configure the system. The Crestron App communicates to the system via the Network Bridge using Bluetooth in the smartphone.

What is the difference between an occupancy sensor and a vacancy sensor?

- An occupancy sensor automatically turns lights on when the room is entered and off when the room is vacated.
- A vacancy sensor does not turn the lights on automatically. It turns the lights off only when the room becomes vacated.
- The vacancy sensor has a grace occupancy feature that turns the lights on if motion is detected within 30 seconds of the sensor turning lights off.

What is special about the ZUMMESH-JBOX-20A-PLUG?

- The plug load controller is rated for switching 15 A or 20 A receptacles at 120 Vac.
- The plug controller does not react to keypads but turns on and off based on room occupancy.
- The plug controller turns off 30 seconds after the room becomes vacant.
- The plug controller turns on automatically even when using vacancy sensors.
- The plug controller turns on after a power cycle.

How many scenes does the system have?

- Each load controller stores 16 scene levels for itself. The scenes are recalled by keypads or sensors.
- Wallbox dimming load controllers have an additional local preset that sets the output level when turned on from the dimmer's top button.

What scene does the occupancy sensor recall?

- Scene 1

When is daylighting enabled or disabled?

- Recalling Scene 1 from a keypad or sensor enables daylighting. Daylighting is also enabled when a wallbox dimmer is turned on from its local button.
- Daylighting is disabled when any scene other than Scene 1 is recalled or if a raise or lower command is issued.

Does daylighting turn my lights off?

- No. Daylighting dims down to 10% as a minimum level.

The product warranty can be found at www.crestron.com/warranty.

The specific patents that cover Crestron products are listed at patents.crestron.com.

Certain Crestron products contain open source software. For specific information, please visit www.crestron.com/opensource.

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