HZ-KPEX

Quick Start

Horizon™ In-Wall Keypad with infiNET EX® Wireless Communication, 120 VAC

The Crestron® HZ-KPEX Horizon™ in-wall keypad features the following:

- infiNET EX® Wireless Communication to Crestron Gateway (CEN-GWEXER)
- Field replaceable, engravable button caps available in various sizes (not supplied)
- Provides multiway functionality

The HZ-KPEX controls Crestron devices such as lighting, shading, and A/V equipment from a single location. The device offers the following rating:

- Line Power: 120 VAC, 50/60 HZ, 30 mA (requires neutral wire)
- DC Power: 60 VDC, 30 mA (requires SolaHD® SDP™ 1-48-100T power supply, not included)

WARNING: Do not use the REM terminal when the HZ-KPEX is powered by 60 VDC.

NOTE: When wiring the device for 60 VDC operation, ensure that the polarity is correct. Connect + (positive) to the NEU terminal and - (common) to the HOT terminal.

In the Box

1 HZ-KPEX, Horizon™ In-Wall Keypad with infiNET EX® Wireless Communication, 120 VAC

Additional Items

2 Screw, 6-32 x 1 in., Truss Head, Combo (2054883)
1 Spacer, Multi-Gang Alignment (2049924)
1 Nut, Wire, Red (2053634)

NOTE: Faceplates are not included. Refer to the HZ-FP-G series faceplates for more information.

Important Notes

WARNING: To avoid fire, shock, or death, turn off the power at the circuit breaker or fuse and test that the power is off before wiring!

NOTE: When using the HZ-KPEX as a multiway controller, all 3- or 4-way switches in a multi-way circuit must be replaced by HZ-AUX units or HZ-KPEX units with a single HZ-DIMEX, HZ-DIMUEX, or HZ-SWEX unit installed at the load side of the multi-way chain.

NOTES: Observe the following points.

- Codes: This product should be installed and used in accordance with appropriate electrical codes and regulations.
- Installation: This product should be installed by a qualified electrician.
- Wiring: Use copper wire only. For supply connections, use wires rated for at least 75° C (167° F).
- Temperature: For use where temperatures are between 32° to 86° F (0° to 30° C).
- Electrical Boxes: Devices mount in standard electrical boxes. For easy installation, use 3-1/2 in. (89 mm) deep electrical boxes. Several devices can be installed in one electrical box (multigang). For a smooth appearance, one-piece multigang faceplates (not supplied) must be installed. When installing into a multigang box, do not fully tighten the devices to the box until the faceplate has been aligned.
- Switches: Mechanical 3- or 4-way switches do not work with HZ-KPEX keypads.

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Installation

CAUTION: Do not mix high- and low-voltage devices in the same electrical box without an approved barrier.

The Horizon keypad is designed for installation into a standard, single-gang electrical box. For larger applications, combine up to four keypads in a multi-gang electrical box.

Install the HZ-KPEX:

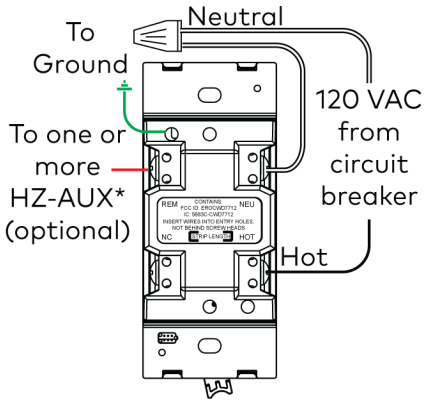
1. Turn power off at the circuit breaker.

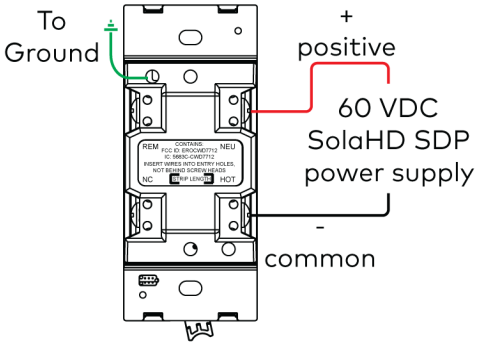
   WARNING: If the HZ-KPEX is used in a multiway configuration, power may need to be turned off at multiple breakers.

2. Wire the device as shown in the following diagrams. In multigang installations, daisy-chain Hot and Neutral wires with other Horizon devices to eliminate excess wiring.

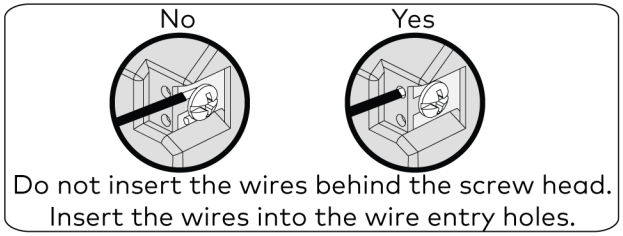
   Avoid overcrowding the electrical box and remove unnecessary wiring when possible.

   NOTE: To wire one or more HZ-AUX or HZ-KPEX, refer to Wiring Diagrams.





WARNING: Do not use the REM terminal when the HZ-KPEX is powered by 60 VDC.



3. Fold the wires into the electrical box. Avoid pinched wires.
4. Secure the HZ-KPEX to the electrical box using the included mounting screws on the device. To allow for adjustments, do not fully tighten the screws at this time. Ensure that any text on the device is in the proper orientation and facing up.

   CAUTION: Do not overtighten the screws when attaching the keypad to the electrical box. Damage to the unit and undesired functionality may occur.

   NOTE: For multigang installations, insert an alignment spacer between adjacent devices to maintain proper alignment and spacing.

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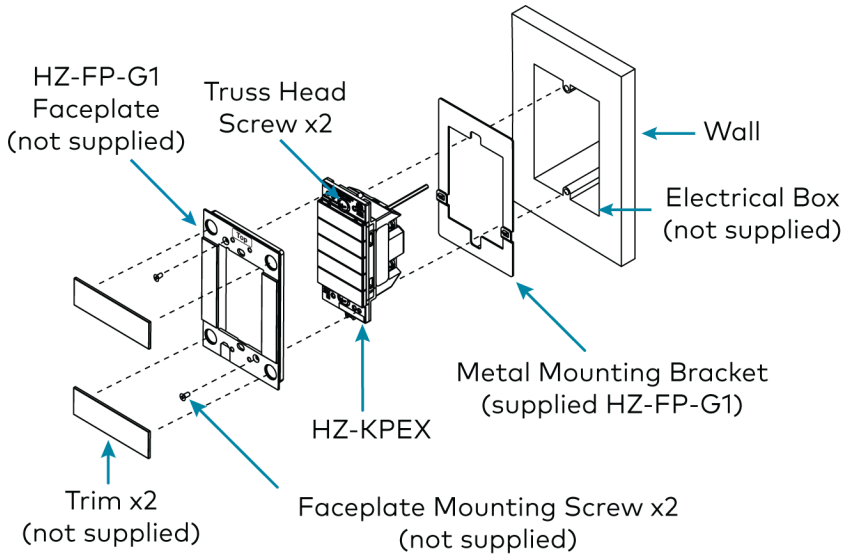
5. Place the metal mounting bracket (supplied with HZ-FP-G) over the back of the HZ-KPEX. The two parts of the metal mounting bracket clip together which allows the wiring to remain in place.

   NOTES:

   - When installing the HZ-FP-G (sold separately) over an old work electrical box, do not use the metal mounting bracket.
   - If the HZ-FP-G and mounting bracket are not available at the time of installation, install the HZ-KPEX without the HZ-FP-G and mounting bracket. When the HZ-FP-G is available refer to the Quick Start guide for installation.

6. Attach the HZ-FP-G series faceplate using the faceplate mounting screws. Ensure that the "Top" label is properly oriented.
7. Ensure that the HZ-KPEX is properly aligned within the HZ-FP-G and then fully tighten the integrated mounting screws to secure the device to the electrical box.
8. Attached the magnetic top and bottom trim pieces to the HZ-FP-G.
9. Ensure that all buttons actuate without sticking.
10. Restore power at the circuit breaker.

HZ-KPEX Single Gang Installation



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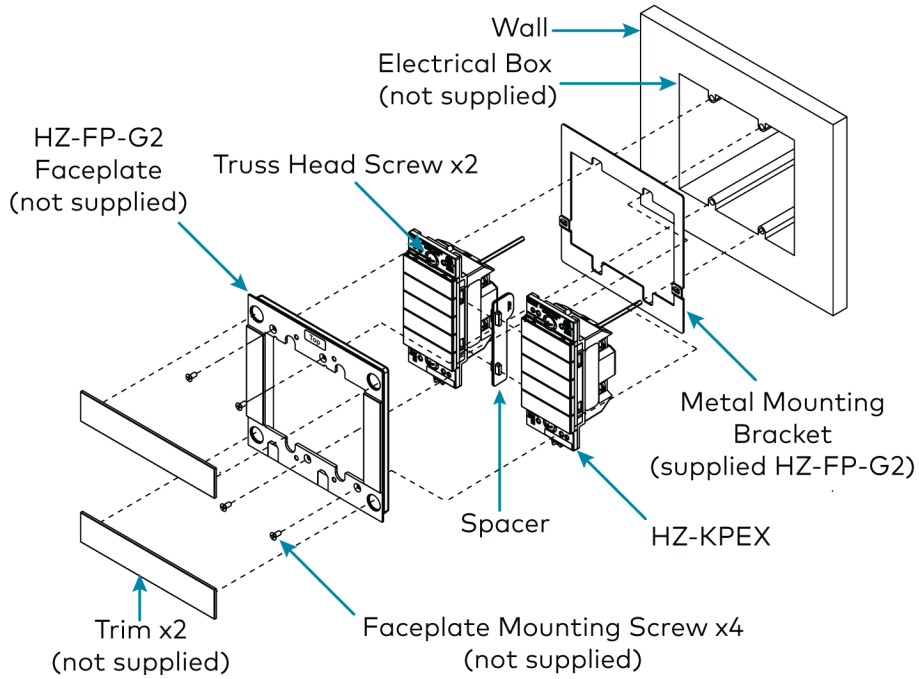
HZ-KPEX Multigang Installation



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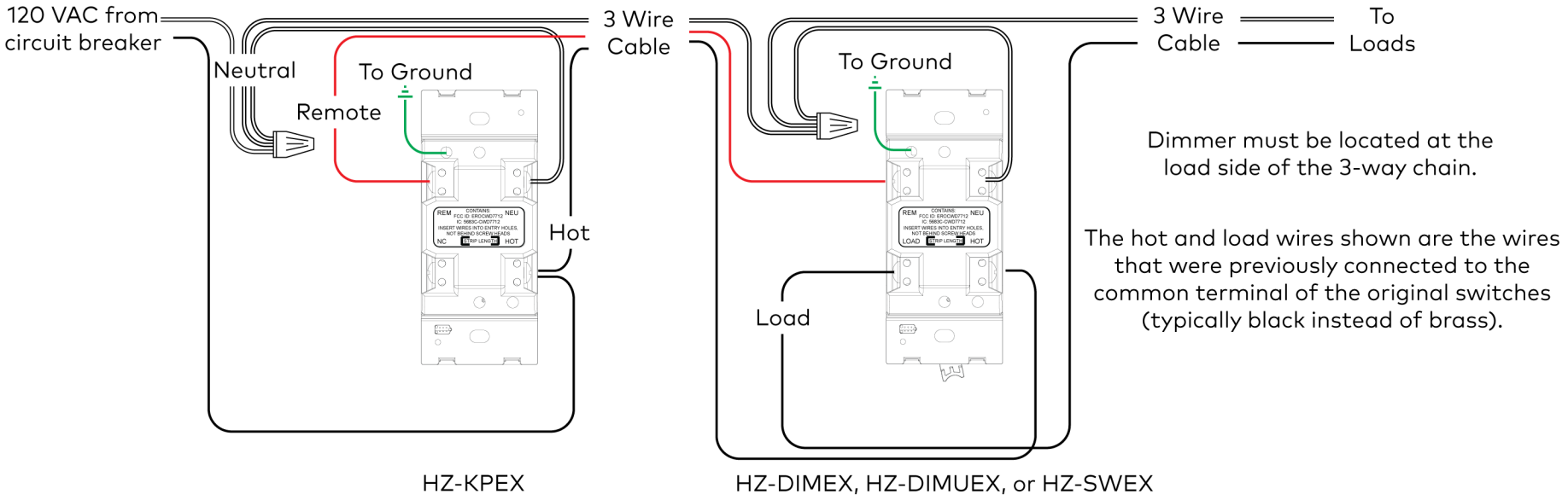
Wiring Diagrams

Two Points of Dimming or Switching Control (3-Way)



Dimmer must be located at the load side of the 3-way chain.

The hot and load wires shown are the wires that were previously connected to the common terminal of the original switches (typically black instead of brass).

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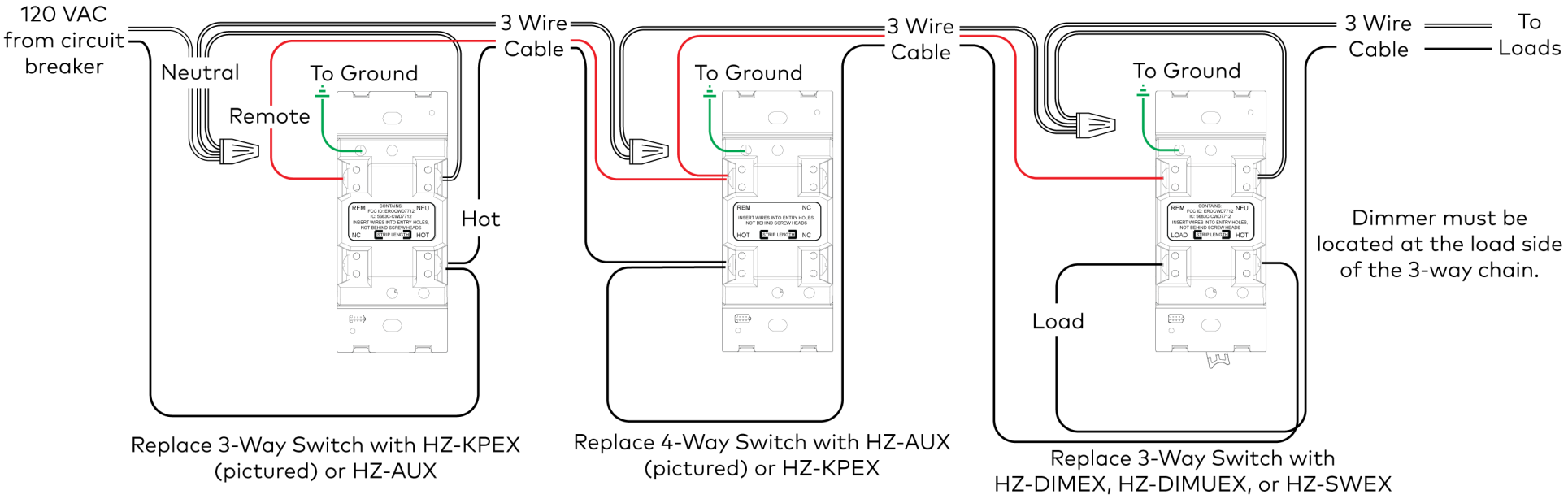
Three or More Points of Dimming or Switching Control (4-Way)



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Operation

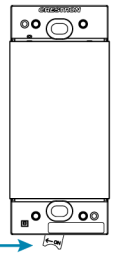
NOTE: Before using the HZ-KPEX, ensure the device is using the latest firmware. Check for the latest firmware for the HZ-KPEX at www.crestron.com/firmware. Firmware is loaded onto the device using either Crestron Toolbox™ software or Crestron Home™ software.

Disconnect the Power

Power to the keypad buttons, LEDs, and the connected load(s) can be disconnected by using the air-gap switch, which is located at the bottom of the device. Slide the air-gap switch to the right to disconnect the power to the device buttons, LEDs, and to the connected load(s), and slide the switch to the left to restore power.

NOTE:

- When the air-gap switch is in the right position, power is still supplied to the HOT terminal of the device.
- The switch must be in the left position for the device to operate.

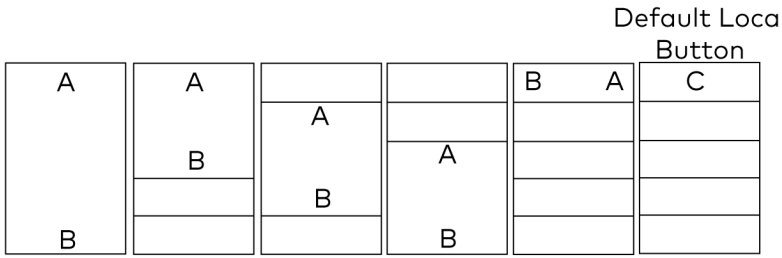


Slide the air-gap switch to the right to shut off power to the unit and the load.

Default Button Functionality

The figure below illustrates the press and hold actuation sequences for each local button option as selected in programming. There is only one local button available per device. The HZ-KPEX can be used as a multiway controller. When using the device as a multiway controller, the local button that controls the master load controller must be selected.

Button behavior can be altered by the control system program. If the local button is disabled in the control system program and communication to the control system is lost, the device will default to the shown behavior. When enabled, the local button can still act as a remote trigger. However, LED feedback for the local button will be dictated only by the On/Off state of the master load controller. When the HZ-KPEX is not used as a multiway controller, the local button should be disabled in programming.



	HZ-DIMEX or HZ-DIMUEX			HZ-SWEX
	Single Press	Double Press	Hold	Single Press
A	On	Fast On	Raise	On
B	Off	Fast Off	Lower	Off
C	Toggle	N/A	Raise/Lower	Toggle

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LED Behavior

The LED on the local button of the HZ-KPEX (if enabled) displays the state of the remotely controlled device's load. The LED behavior described here only pertains to the local button. All other LEDs are controlled in programming. The LED used for local feedback cannot be controlled remotely.

Each LED can be in one of the following states:

- On: The load is powered.
- Off: The load is not powered.

NOTE: LED functionality for both local and remote behavior can be modified when programming the device.

Wireless Communications

The device connects to the Crestron network via the infiNET EX communications protocol. Use the following procedures to join or leave an infiNET EX network and to verify communications between the device and the control system.

NOTE: The HZ-KPEX is not compatible with the MC3 internal gateway when using channels 25 or 26.

Joining an infiNET EX Network

Before a device can be used in a lighting system, it must first join an infiNET EX network by being acquired by an infiNET EX gateway.

NOTE: A device can be acquired by only one gateway.

1. Put the infiNET EX gateway into Acquire mode from the unit itself or from Crestron Toolbox software, as described in the gateway's manual at www.crestron.com/manuals.

   NOTE: In an environment where multiple gateways are installed, only one gateway should be in Acquire mode at any time.

2. Place the device into Acquire mode.
   a. Tap the top button three times, and then press and hold it down (tap-tap-tap-press+hold) until all of the LEDs flash red once (this can take up to 10 seconds if the device has been previously acquired to a gateway).

      NOTE: If a side-to-side rocker is in the top position, either side of the rocker can be pressed and held.

b. Release the button to start the acquire process. The top button's LED flashes red slowly to show that the device is actively scanning the infiNET EX network.
   - The top button's LED lights red for 5 seconds to show that the device has been successfully acquired to the infiNET EX network.
   - The top button's LED flashes red quickly to indicate that the device was not successfully acquired by the infiNET EX network. Tap the setup button to acknowledge failure to acquire the infiNET EX network. Before attempting the acquire process again, ensure one of the following:
     - The gateway is in Acquire mode and within range.
     - A non-battery powered infiNET EX device is in Acquire mode on the same gateway.

3. Once all devices have been acquired, take the gateway out of Acquire mode. Refer to the gateway's manual for details.

Leaving an infiNET EX Network

To leave an infiNET EX network, put the device into Acquire mode. Ensure that no gateway is in Acquire mode when removing a device from an infiNET EX network.

To place a device into Acquire mode, refer to step 2 in Joining an infiNET EX Network.

Verifying Communications Status

To check the communications status of the device, tap the top button three times and then press and hold it down (tap-tap-tap-press+hold) for up to 2 seconds. The button must be released before the LEDs flash to indicate the communications status. Refer to the following table for details.

NOTES:

- If a side-to-side rocker is in the top position, either side of the rocker can be pressed and held.
- If there is a communication error and a remote button is pressed, all of the LEDs will flash red in one of the patterns described in the table below.

LED	Communications Status
Turns on for 5 seconds	The device is communicating with the control system.
Flashes three times	The device is communicating with the gateway, but the gateway is not communicating with the control system.
Flashes twice	The device was previously joined to the network but is not communicating with the gateway.
Flashes once	The device is not joined to the network.

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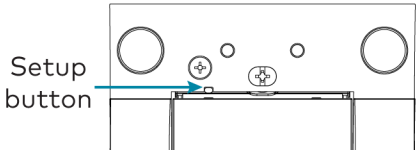
Ambient Light Sensor Calibration

An LED backlight behind each button illuminates engravings. The ambient light sensor adjusts the backlight brightness according to the light level in the room. The ambient light sensor can be affected by room conditions and should be calibrated manually (locally or through programming), or the appropriate setting can be changed in control system programming.

To locally calibrate the light sensor:

1. Ensure that all room lights are fully on.
2. Ensure the faceplate and bottom trim piece are installed correctly. Remove the top trim piece.
3. Press and hold the setup button with a small pointed object for about 2 seconds until all keypad backlights flash magenta. This can also be triggered in programming.
4. Avoid blocking the light sensor on the bottom of the HZ-KPEX. The light sensor should remain unobstructed and free of direct light. After about 5 seconds, the calibration process is complete. The keypad returns to normal operation.



Backlight Customization

Backlight color customization can be accomplished locally or through programming.

NOTE: Custom and preset color themes may be defined in the control system program. Custom programming will override local settings.

To locally change the color of the LED backlights:

1. Press the setup button with a small pointed object once. The LED backlights will light brightly for 15 seconds.
2. Press the setup button repeatedly to cycle through the backlight color options.

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Troubleshooting

The module displays error codes using the dimmer output LEDs. The LED flashes a pattern to indicate the error on that output. For example, a 2-1 error flashes the LED two times, pauses for 1 second, flashes once, pauses for 2 seconds, and then repeats for 90 seconds (except where otherwise noted). Refer to the following table for possible corrections.

Error Code	Fault Name	Fault Description
2-3	Over Temperature	The dimmer has overheated and shut down due to an excessive load. Verify that the total load matches the proper ganged rating. The dimmer resumes normal operation after cooling.
3-3	Device Error	The device is experiencing a hardware issue. Please contact Crestron Technical Support.

For general troubleshooting, please refer to the following table:

Trouble	Probable Cause(s)	Corrective Action
The keypad does not function. No LEDs turn on when a button is pressed.	The keypad is not receiving power.	Check the circuit breaker. Check the wiring to verify that the keypad is not connected to a switch leg.
	The air-gap is open.	Ensure that the air-gap is switched to the left.
	The program is incorrect.	Check that the program is driving the LED indicators.
The keypad does not function. All LEDs flash when a button is pressed.	The keypad is not acquired by a gateway.	Perform the acquire process.
The keypad does not function. All LEDs flash three times when a button is pressed.	The keypad is not communicating with the gateway.	Ensure that the gateway is powered.
		Ensure that the keypad is within range of the gateway or other infiNET EX devices
Master device does not function when buttons are pressed on master or local button is pressed on HZ-KPEX.	Problem with device installation.	Refer to the Troubleshooting section in the device's installation guide.
	Existing 3- or 4-way switch still connected.	Replace 3- or 4-way switches with an HZ-KPEX or an HZ-AUX.
		Replace the 3-way switch connected to the load with an HZ-DIMEX, HZ-DIMUEX, or HZ-SWEX.
Master device works but local button on the HZ-KPEX does not work.	Wiring issue.	Check connections on all multiway units and on master dimmer.
	Existing 3- or 4-way switch still connected.	Replace 3- or 4-way switches with an HZ-KPEX or an HZ-AUX.
		Replace the 3-way switch connected to the load with an HZ-DIMEX, HZ-DIMUEX, or HZ-SWEX.

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Visit the Product Page

Scan the QR code to visit the product page.

www.crestron.com/model/6509586

Additional Information

Original Instructions
The U.S. English version of this document is the original instructions.
All other languages are a translation of the original instructions.

infiNET EX®

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