

Crestron CLW-DELVEX-230-E/P
Wireless In-Wall Dimmer
Installation Guide



Further Inquiries
To locate specific information or resolve questions after reviewing this guide, contact Crestron's True Blue Support at 1-888-CRESTRON [1-888-273-7876] or refer to the listing of Crestron worldwide offices on the Crestron Web site (www.crestron.com/offices) for assistance within a particular geographic region.

To post a question about Crestron products, log onto the online help section of the Crestron Web site (www.crestron.com/onlinehelp). First-time users must establish a user account to fully benefit from all available features.

Future Updates
As Crestron improves functions, adds new features and extends the capabilities of the CLW-DELVEX-230-E and CLW-DELVEX-230-P, additional information may be made available as manual updates. These updates are solely electronic and serve as intermediary supplements prior to the release of a complete technical documentation revision.

Check the Crestron Web site periodically for manual update availability and its relevance. Updates are identified as an "Addendum" in the Download column.

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

NOTES: Observe the following points.

- To be installed and/or used in accordance with appropriate electrical codes and regulations.
- This product should be installed by a qualified electrician.

PREPARING AND CONNECTING WIRES
Strip the ends of the wires approximately 6 mm (1/4 in). Use care to avoid nicking the conductors.

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Installation Guide - DOC. 7400A
(2035982)
02.13
Specifications subject to change without notice.

Regulatory Compliance
As of the date of manufacture, the CLW-DELVEX-230-E and CLW-DELVEX-230-P have been tested and found to comply with specifications for CE marking and standards per EMC and Radiocommunications Compliance Labelling.



DESCRIPTION

The CLW-DELVEX-230-E/P is a 500 W in-wall dimmer and programmable keypad designed to operate as part of a complete Crestron® automation system communicating via the infiNET EX® wireless control network. Without the need for additional control wiring, the CLW-DELVEX-230-E/P easily replaces any standard in-wall dimmer or light switch. Although functional as a standalone dimmer, the CLW-DELVEX-230-E/P delivers enhanced automation and control capability when connected to any Crestron automation control system (or any other Crestron control system) via the infiNET EX network.

Specifications
Specifications for the CLW-DELVEX-230-E/P are listed in the following table.

CLW-DELVEX-230-E/P Specifications

SPECIFICATION	DETAILS
Power Requirements	230 Vac
Load Types	Incandescent, Electronic Low Voltage, Dimmable 2-Wire Fluorescent
Load Ratings	
Minimum Load	10 W
Maximum Load	500 W (Refer to the derating chart in the "Multigang Installations" section on this page.)
Maximum Number of Remote CLW-SLVU-230-P Devices ¹	9
Environmental	
Temperature	0° C to 40° C (32° F to 104° F)
Humidity	10 to 90% Relative Humidity (Non-Condensing)
Dimensions	
Height	105 mm (4 1/8 in)
Width	45 mm (1 3/4 in)
Depth	47 mm (1 13/16 in)
Weight	128 g (5 oz)
Operating Frequency	2400 to 2483.6 MHz (802.15.4 compliant)
Operating Ranges ²	
Device to Gateway	45 m (150 ft) indoors; 76 m (250 ft) outdoors
Device to Device	30 m (100 ft) indoors; 53 m (175 ft) outdoors
Default RF ID	01

- CLW-DELVEX-230-P only.
- The range is dependent on its placement and the building in which it is used. The construction of the building, obstructions, and RF interference from other devices are factors determining the effective range of the unit.

Important Notes

Read before installation.

- Codes: Install in accordance with all local and national electrical codes.

CAUTION: TO REDUCE THE RISK OF OVERHEATING AND POSSIBLE DAMAGE TO OTHER EQUIPMENT, DO NOT INSTALL TO CONTROL A RECEPTACLE, A MOTOR-OPERATED APPLIANCE OR TRANSFORMER-SUPPLIED APPLIANCE.

ATTENTION: GRADATEURS COMMANDANT UN BALLAST-AFIN DE RÉDUIRE LE RISQUE DE SURCHAUFFE ET LA POSSIBILITÉ D'ENDOMMAGEMENT À D'AUTRES MATÉRIELS, NE PAS INSTALLER POUR COMMANDER UNE PRISE, UN APPAREIL OPÉRÉ DE MOTEUR OU UN APPAREIL ALIMENTÉ PAR UN TRANSFORMATEUR.

- Wiring: Use copper wire only. For supply connections, use wire rated for at least 75° C.
- Lamp Type: For use with permanently installed incandescent, electronic low voltage or dimmable 2-wire fluorescent only.
- Electrical Boxes: Devices mount in standard electrical boxes. For easy installation, Crestron recommends using 89 mm (3 1/2 in) deep electrical boxes. Several devices can be installed in one electrical box (multigang). This requires derating of the dimming device. For a smooth appearance, one-piece multigang faceplates (not supplied) can be installed.
- Mechanical 3- or 4-way switches do not work with CLW-DELVEX-230-E/P dimmers.
- Spacing: If mounting one device above another, leave at least 115 mm (4 1/2 in) vertical space between them.
- Low Voltage Applications: Use with electronic low voltage transformers only. Do not use any magnetic low voltage transformers. Operation of a low voltage circuit with all lamps inoperative or removed may result in current flow in excess of normal levels. To avoid transformer overheating and premature transformer failure, Crestron recommends the following:
 - > Do not operate low voltage circuits without operative lamps in place.
 - > Replace burned-out lamps as quickly as possible.
 - > Use transformers that incorporate thermal protection to prevent transformer failure due to overcurrent.

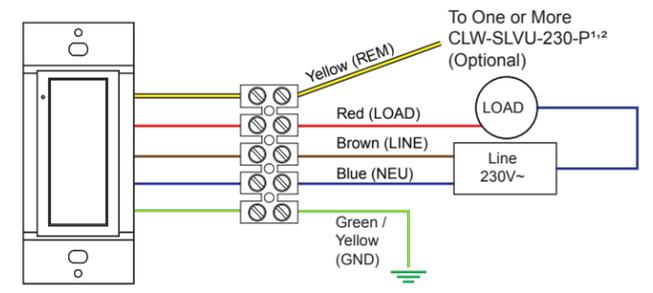
INSTALLATION

WARNING: Turn off power at the circuit breaker. Installing with power on can result in serious personal injury and damage to the device.

CAUTION: New installations should be checked for short circuits prior to installing a CLW-DELVEX-230-E/P dimmer. With power off, close the circuit and restore power. If the lights do not work or a breaker trips, check and correct the wiring or fixture (if necessary). Install the dimmer only when the short is no longer present. The warranty is void if the dimmer is installed and operated with a shorted load.

The following describes the installation of a CLW-DELVEX-230-E/P dimmer.

- Turn power off at the circuit breaker.
- Wire the device as shown in the following diagram.



Connection	Wire Gauge	Wire Color
LINE	1.5 mm ² (16 AWG)	Brown
NEU	1.5 mm ² (16 AWG)	Blue
LOAD	1.5 mm ² (16 AWG)	Red
GND	1.5 mm ² (16 AWG)	Green/Yellow
REM	1.5 mm ² (16 AWG)	Yellow

- Push all power wires back into the electrical box and fasten the device to the electrical box with the provided screws.
- Attach decorative faceplate.
- Ensure all buttons, including the program button, actuate without sticking.
- Restore power at the circuit breaker.

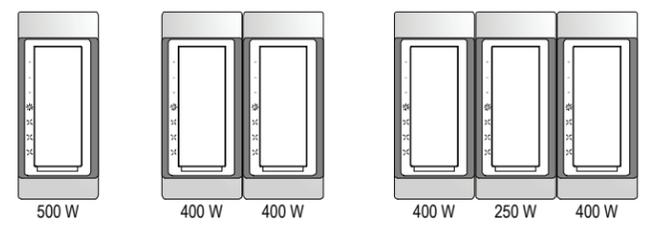
Multigang Installations

In multigang installations, several devices are grouped horizontally in one electrical box. For a smooth appearance, one-piece multigang faceplates (not supplied) can be installed.

NOTE: When installing into a multigang box, do not fully tighten devices to box until faceplate has been aligned.

The load capacity for each device in the electrical box must be derated. Refer to the following diagrams for derating information.

Derating Information for CLW-DELVEX-230-E/P Dimmers

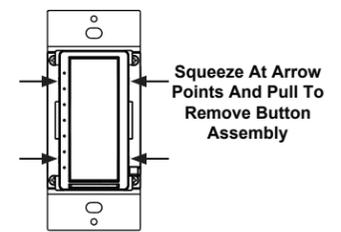


- CLW-DELVEX-230-P only.
- For details, refer to the latest version of the Crestron CLW-SLVU-230-P Installation Guide (Doc. 7341), which is available from the Crestron Web site (www.crestron.com/manuals).

Changing Button Assemblies

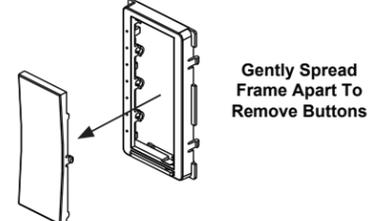
The button assembly can be removed and replaced with other button assemblies. To change the button assembly:

- As shown in the following diagram, remove the button assembly by squeezing the sides of the bezel near the bezel snaps.

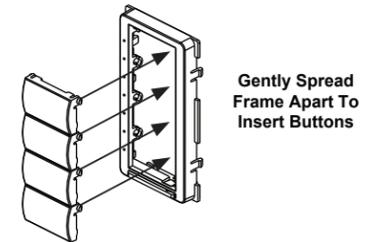


NOTE: When the button assembly is removed, power to the unit and load is removed automatically.

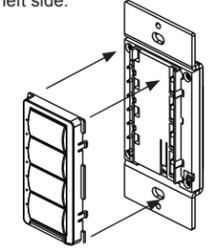
- Remove button(s) from the front of the button assembly as shown in the following diagram.



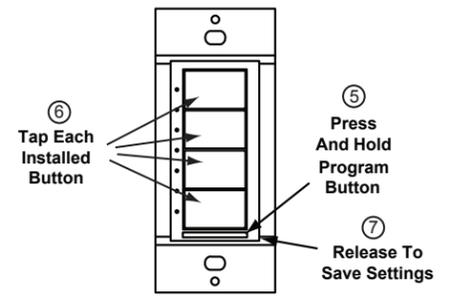
- Insert new buttons through the front of the bezel and snap into place as shown in the following diagram. Ensure that the LED strip is on the left side.



- Attach button assembly to the device as shown in the following diagram. Ensure that LED strip is on the left side.



- Once power has been restored, press and hold the right side of the air-gap switch (program button) as shown in the following diagram. After 5 seconds some LEDs start flashing. Continue to hold the button and proceed to step 6.



- While holding the program button, tap all of the buttons in the new layout. The LED next to the tapped button lights.

NOTE: If the rocker switch is installed, press the top and bottom of the rocker.

- After all of the buttons have been tapped, release the program button to save the settings.

NOTE: Changing the button configuration alters the device's behavior. Refer to "Default Button Functions" on the following page for details.

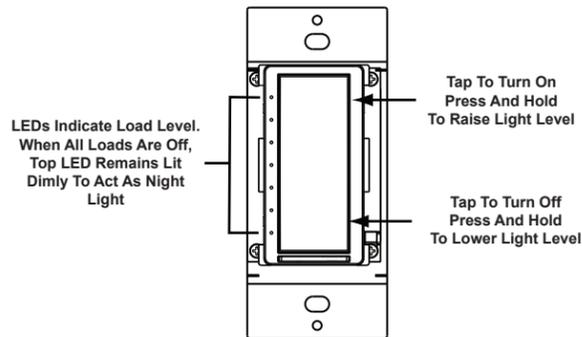
OPERATION

Basic Operation

NOTE: The device may be warm to the touch during operation. This is normal.

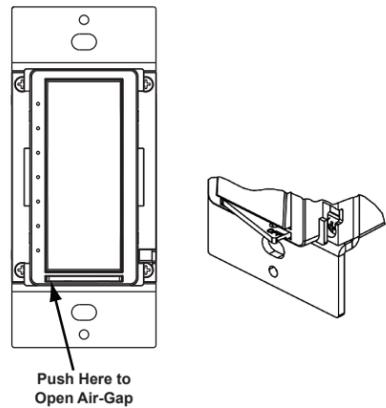
The CLW-DELVEX-230-E/P is shipped with a rocker switch already installed. In this configuration, the unit functions as shown below.

NOTE: Operation described in this guide assumes the CLW-DELVEX-230-E/P is operating in *Local* mode (without the use of a control system). The device can also operate in *Remote* mode, where button behavior is dictated entirely by the control system program.



Disconnecting Power

Power to dimmer and load can be disconnected by pushing on the air-gap switch as shown in the following diagram.



NOTE: Power is automatically disconnected when the button assembly is removed. For instructions on removing the button assembly, refer to "Changing Button Assemblies" on the previous page.

Setting Preset Levels

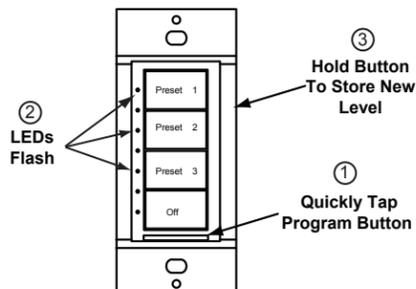
The CLW-DELVEX-230-E/P can recall and store up to three presets depending on the installed button configuration.

To set a preset level:

1. Adjust the light level to the desired level.
2. Enter *Programming* mode by quickly tapping the right side of the air-gap switch (program button) as shown below. Buttons that are capable of storing a preset flash their LED.
3. Press and hold the desired preset button until the LED blinks (approximately 2 seconds). Release the button to store the new level.

If a button is not pressed, the device exits the *Programming* mode after approximately 5 seconds.

NOTE: *Programming* mode is disabled when the load is off.

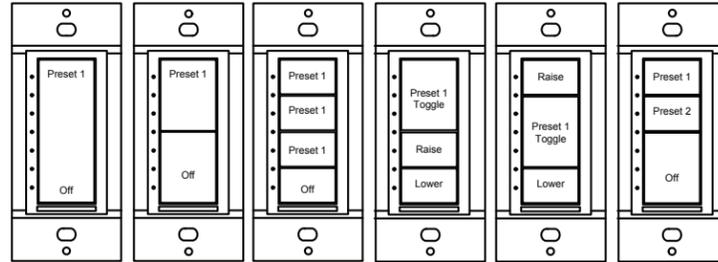


NOTE: A delayed off can be added via control system programming.

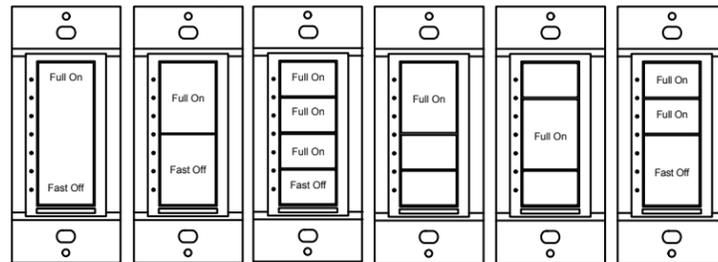
Default Button Functions

The figures below illustrate the default functions available for each physical button configuration and tap/hold actuation sequence.

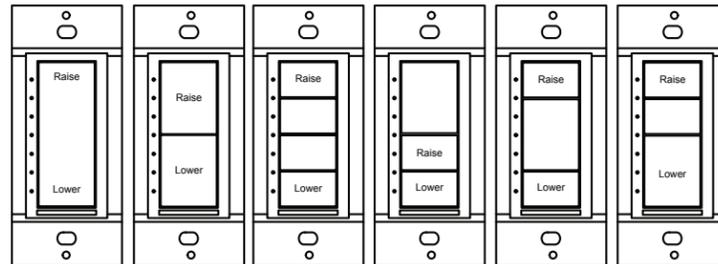
Button TAP



Button DOUBLE TAP (Tap Twice Within 0.5 Seconds)



Button HOLD (Hold More Than 0.5 Seconds)



WIRELESS COMMUNICATIONS

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

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™, as described in the latest version of its manual, which is available from the Crestron Web site.
 - 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 by doing the following:
 - a. Tap the top button three times then press and hold it down (tap-tap-tap-press+hold) until all LEDs on the device flash once (this can take up to 10 seconds).
 - b. Release the button to start the acquire process. The top LED blinks slowly to show that the device is actively scanning the infiNET EX network.
 - The device is acquired when the top LED stops blinking.
 - The top LED blinks fast to indicate that the device was not successfully acquired to the infiNET EX network. Tap the setup button to acknowledge failure to acquire to the infiNET EX network. Ensure gateway is in *Acquire* mode and within range before attempting the acquire process again.

Leaving an infiNET EX Network

To leave an infiNET EX network put the device into *Acquire* mode, as described in "Joining an infiNET EX Network" above, when no gateway is in *Acquire* mode.

Verifying Communications Status

To check the communication status of the device tap the setup button three times then press and hold it down (tap-tap-tap-press+hold) for 2 seconds. The top two LEDs turn on or blink to indicate the communication status. Refer to the following table for details.

LED DISPLAY	COMMUNICATION STATUS
Turns on (up to 5 seconds) when button is released.	Device is communicating with the control system.
Blinks three times.	Device communicating with gateway but gateway not communicating with the control system.
Blinks twice.	Device previously joined to network but not communicating with the gateway.
Blinks once.	Device not joined to the network.

TROUBLESHOOTING

The following table provides corrective action for possible trouble situations. If further assistance is required, please contact a Crestron customer service representative.

TROUBLE	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
Device does not function.	Dimmer is not receiving line power.	Verify that dimmer is properly connected to power line HOT and NEU and that circuit breaker is closed.
	Device is in <i>Remote</i> mode.	Check the program to determine / change the operating mode.
Dimmer powers up but load does not turn on.	Lamps are burned out.	Check lamp.
	Open circuit.	Check wiring.
	Short circuit exists on dimmer output and protection circuit has activated.	Check wiring.
Dimmer cycles off and on.	Thermal overload condition.	Check that total load is within limits.

NOTE: The CLW-DELVEX-230-P is only compatible with the CLW-SLVU-230-P. Do not use the CLW-SLV-P.

Return and Warranty Policies

Merchandise Returns / Repair Service

1. No merchandise may be returned for credit, exchange or service without prior authorization from Crestron. To obtain warranty service for Crestron products, contact an authorized Crestron dealer. Only authorized Crestron dealers may contact the factory and request an RMA (Return Merchandise Authorization) number. Enclose a note specifying the nature of the problem, name and phone number of contact person, RMA number and return address.
2. Products may be returned for credit, exchange or service with a Crestron Return Merchandise Authorization (RMA) number. Authorized returns must be shipped freight prepaid to Crestron, 6 Volvo Drive, Rockleigh, N.J. or its authorized subsidiaries, with RMA number clearly marked on the outside of all cartons. Shipments arriving freight collect or without an RMA number shall be subject to refusal. Crestron reserves the right in its sole and absolute discretion to charge a 15% restocking fee plus shipping costs on any products returned with an RMA.
3. Return freight charges following repair of items under warranty shall be paid by Crestron, shipping by standard ground carrier. In the event repairs are found to be non-warranty, return freight costs shall be paid by the purchaser.

Crestron Limited Warranty

Crestron Electronics, Inc. warrants its products to be free from manufacturing defects in materials and workmanship under normal use for a period of three (3) years from the date of purchase from Crestron, with the following exceptions: disk drives and any other moving or rotating mechanical parts, pan/tilt heads and power supplies are covered for a period of one (1) year; touch screen display and overlay components are covered for 90 days; batteries and incandescent lamps are not covered.

This warranty extends to products purchased directly from Crestron or an authorized Crestron dealer. Purchasers should inquire of the dealer regarding the nature and extent of the dealer's warranty, if any.

Crestron shall not be liable to honor the terms of this warranty if the product has been used in any application other than that for which it was intended or if it has been subjected to misuse, accidental damage, modification or improper installation procedures. Furthermore, this warranty does not cover any product that has had the serial number altered, defaced or removed.

This warranty shall be the sole and exclusive remedy to the original purchaser. In no event shall Crestron be liable for incidental or consequential damages of any kind (property or economic damages inclusive) arising from the sale or use of this equipment. Crestron is not liable for any claim made by a third party or made by the purchaser for a third party.

Crestron shall, at its option, repair or replace any product found defective, without charge for parts or labor. Repaired or replaced equipment and parts supplied under this warranty shall be covered only by the unexpired portion of the warranty.

Except as expressly set forth in this warranty, Crestron makes no other warranties, expressed or implied, nor authorizes any other party to offer any warranty, including any implied warranties of merchantability or fitness for a particular purpose. Any implied warranties that may be imposed by law are limited to the terms of this limited warranty. This warranty statement supersedes all previous warranties.

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

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