Crestron **CLW-DIMSWEX-E** Dimmer/Switch Combo Installation Guide

CAMEO®

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Further Inquiries
If you cannot locate specific information or have questions after reviewing this guide, please take advantage of Crestron's award winning customer service team by calling Crestron at 1-888-CRESTRON [1-888-273-7876]. For assistance in your region, please refer to the Crestron Web site (www.crestron.com) for a listing of Crestron worldwide offices.

You can also log onto the online help section of the Crestron Web site (www.crestron.com/onlinehelp) to ask questions about Crestron products. First-time users will need to 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-DIMSWEX-E units, 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.

WARNINGS, CAUTIONS & NOTES

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.
- If you are unsure about any part of these instructions, consult a qualified electrician.
- Sensors must be mounted on a vibration free surface.

PREPARING AND CONNECTING WIRES
Strip the ends of the wires approximately 1/2 inch (13 mm). Use care to avoid nicking the conductors. Twist together the ends of the wires that share a connection and tin the twisted connection. Apply solder only to the ends of the twisted wires. Avoid tinning too far up the wires or the end becomes brittle. The label on the rear of the dimmer contains a gauge for wire stripping

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Specifications subject to change without notice.

Regulatory Compliance

This product is Listed to applicable UL Standards and requirements by Underwriters Laboratories Inc.

c UL us

FCC ID: Contains EROCWD6790

Compliance Statement (Part 15.19)

This device complies with Part 15 of the FCC Rules. 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.

Warning (Part 15.21)

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

RF Exposure (OET Bulletin 65)

To comply with FCC's RF exposure limits for general population / uncontrolled exposure, this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

DESCRIPTION

The CLW-DIMSWEX-E is a 500W/VA in-wall dimmer/switch combo 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-DIMSWEX-E easily replaces any standard in-wall dimmer or light switch. Although functional as a standalone dimmer or light switch, the CLW-DIMSWEX-E delivers enhanced automation and control capability when connected to any Crestron automation control system (or any other 2-Series control system) via the infiNET EX network.

Specifications

Specifications for the CLW-DIMSWEX-E are listed in the following table.

CLW-DIMSWEX-E Specifications

SPECIFICATION	DETAILS
Power Requirements	120 VAC, 60 Hz
Load Types Dimmer Switch	 Incandescent, Tungsten-Halogen, Magnetic Low Voltage Incandescent, Tungsten-Halogen, Motor
Load Ratings[1] Dimmer Switch	 Min Load: 25 W, Max 500 W/VA (Refer to derating chart in Multigang Installations on this page.) Incandescent/Tungsten-Halogen, Magnetic Low Voltage, Dimmable CFL[2] 1A
Operating Temperature and Humidity	32°F to 104°F (0°C to 40°C) 10 to 90% Relative Humidity (Non-Condensing)
Dimensions and Weight Height Width Depth Weight	 4 1/8 in (105 mm) 1 3/4 in (45 mm) 1 3/4 in (45 mm) 5 oz (128 g)
Operating Frequency	2400 MHz to 2483.6 MHz (802.15.4 compliant)
Operating Ranges[3] Device to Device Device to Gateway	 100 ft indoors; 175 ft outdoors (subject to site conditions) 150 ft indoors; 250 ft outdoors (subject to site conditions)
Default RF ID	01
2-Series Control System Update File[4]	v4.001.1012 or later

1. VA ratings are for input power to the transformer. If you do not know the input power requirement of the transformer, use the bulb's wattage rating to determine proper rating.
2. The following CFL lamps have been UL tested for compatibility with this product: Earthtronics ET24DSIM, Neptun Light Inc. 24524-ADIM-500K, Feit Electric BPESL23T/DM, Earthtronics ET20SFP38DIM, Ecosmart 10123, General Electric Co. FLE15/2/DV/R30.
3. 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.
4. The latest software versions can be obtained from the Crestron Web site. Refer to the NOTE following these footnotes.

NOTE: Crestron software and any files on the Web site are for authorized Crestron dealers and Crestron Authorized Independent Programmers (CAIP) only. New users may be required to register to obtain access to certain areas of the site (including the FTP site).

Important Notes

Read before installation.

- **The CLW-DIMSWEX-E requires a neutral connection to operate.**
- 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, A FLUORESCENT LIGHTING FIXTURE 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 D'ÉCLAIRAGE FLUORESCENT, UN APPAREIL OPÉRÉ DE MOTEUR OU UN APPAREIL ALIMENTÉ PAR UN TRANSFORMATEUR.

- Wiring: Use copper wire only. For supply connections, use wires rated for at least 75°C.
- Lamp Type: For use with permanently installed incandescent, magnetic low voltage, tungsten-halogen, or dimmable CFL only.
- Temperature: For use where temperatures are between 32° to 104°F (0° to 40°C).
- Electrical Boxes: Devices mount in standard electrical boxes. For easy installation, Crestron recommends using 3 1/2" 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 will not work with the CLW-DIMSWEX-E series of dimmers.
- Spacing: If mounting one device above another, leave at least 4 1/2" vertical space between them.
- Low Voltage Applications: Use with core and coil (magnetic) low voltage transformers only. Do not use any solid-state electronic 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 or fuse transformer primary windings to prevent transformer failure due to overcurrent.

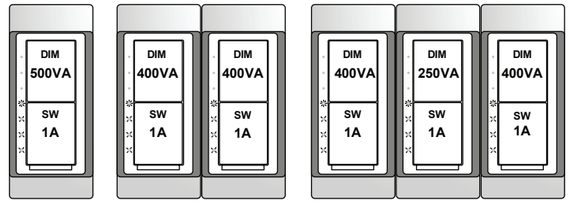
Multigang Installations

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-DIMSWEX-E Dimmers*



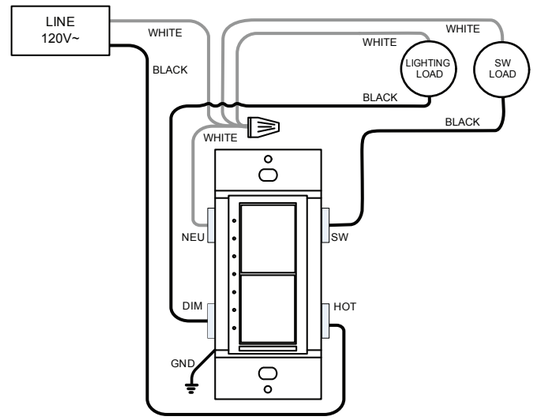
* VA ratings are for input power to the transformer. If you do not know the input power requirement of the transformer, use the bulb's wattage rating to ***determine proper rating.***

INSTALLATION

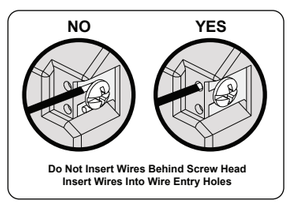
WARNING: Turn off power at the circuit breaker. Installing with power on can result in serious personal injury and damage to the device.

WARNING: New installations should be checked for short circuits prior to installing a CLW-DIMSWEX-E 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.

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



NOTE: Refer to the following diagram when making connections to the device.



3. Push all power wires back into the electrical box and fasten the device to the electrical box with the provided screws.
4. Attach decorative faceplate.
5. Ensure all buttons actuate without sticking.

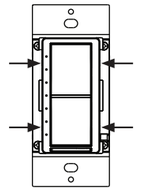
NOTE: To operate the device in switch mode, follow the instructions in "Switching Between Dim and Switch Mode" on the following page before restoring power.)

6. Restore power at the circuit breaker.

Changing Button Assemblies

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

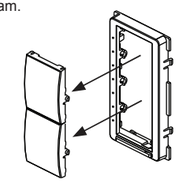
1. As shown in the following diagram, remove the button assembly by squeezing the sides of the bezel near the bezel snaps.



Squeeze At Arrow Points and Pull to Remove Button Assembly

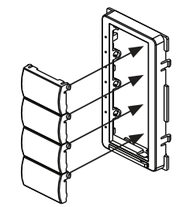
NOTE: When the button assembly is removed, power to the unit and load will be removed automatically.

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



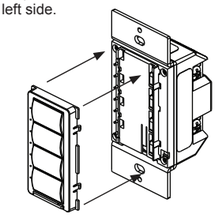
Gently Spread Frame Apart to Remove Buttons

3. 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.

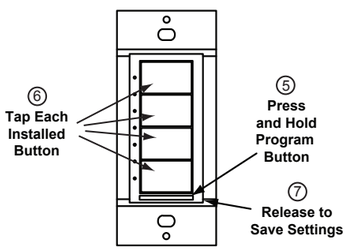


Gently Spread Frame Apart to Insert Buttons

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



5. 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 five seconds some LEDs will start flashing. Continue to hold the button and proceed to step 6.



6. While holding the button, tap each of the installed buttons in the new layout. The LED next to the tapped button will light.

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

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

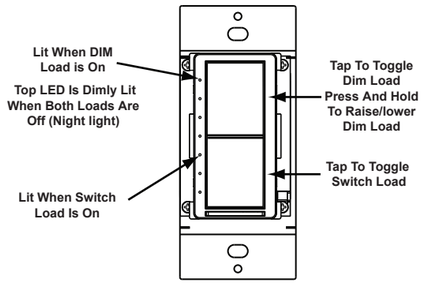
NOTE: Changing the button configuration will alter the device's behavior. Refer to "Default Button Functions" on the following page for details.

OPERATION[1]

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

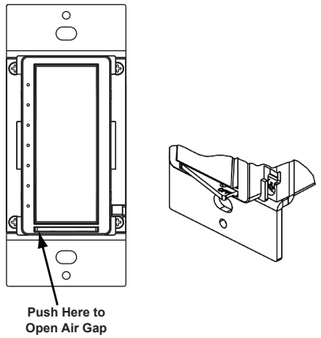
Basic Operation

The CLW-DIMSWEX-E is shipped with two half-switches already installed. In this configuration, the unit will function as shown below.



Disconnecting Power

Power to dimmer and load can be disconnected by pushing on the air-gap lever 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

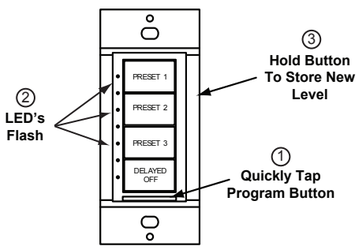
The CLW-DIMSWEX-E can recall and store up to two[2] presets depending on the installed button configuration.

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 lever as shown below. Buttons that are capable of storing a preset will flash their LED.
3. Press and hold the desired preset button until the LED blinks (approximately two seconds). Release the button to store the new level.

   If a button is not pressed, the device will exit the *Programming* mode after approximately five seconds.

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



[1] Operation described in this guide assumes the CLW-DIMSWEX-E 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.

[2] A third preset can be accessed via the control system.

Switching Between Dim and Switch Modes

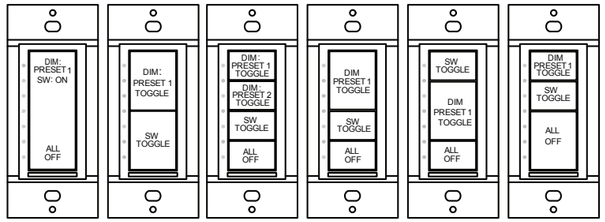
The dim channel of the CLW-DIMSWEX-E is capable of operating in switch mode. This is useful if the load is non-dimmable, or if you prefer to not dim for some other reason. To toggle between dim and switch modes:

1. Open the air-gap switch as described in “Disconnecting Power.”
2. While power is off, press and hold the topmost and bottommost button caps (regardless of button configuration) simultaneously while reengaging the air-gap switch to reapply power.
3. After five seconds the topmost LED will blink three times to indicate dim mode, or five times to indicate switch mode.
4. To commit the new setting, release the buttons within the next five seconds.

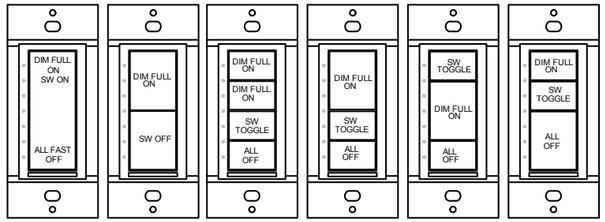
Default Button Functions

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

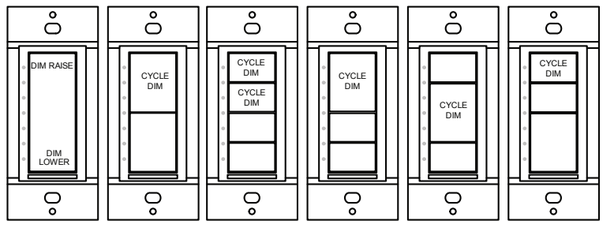
Button TAP



Button DOUBLE TAP (Tap Twice Within 0.5 Seconds)



Button HOLD (Hold More Than 0.5 Seconds)



WIRELESS COMMUNICATIONS

Joining An infiNET EX Network

Before a CLW-DIMSWEX-E can be used in a lighting system, it must first join an infiNET EX network by being *acquired* by an infiNET EX gateway (e.g., CEN-RFGW-EX).

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

To acquire a CLW-DIMSWEX-E to a CEN-RFGW-EX, perform the following:

1. Put the CEN-RFGW-EX into *Acquire* mode, from the unit itself or from Crestron Toolbox™, as described in the latest revision of the CEN-RFGW-EX Installation and Operations Guide (Doc. 6706), which is available from the Crestron Web site.

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

2. Place the CLW-DIMSWEX-E into the *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 blink once (this can take up to 10 seconds).
   b. Release the button to start the acquire process. The top LED will blink.
      - The device is acquired when the top LED stops blinking.
      - If the acquire process fails, the top LED will flash rapidly until a button is pressed.
3. Once all devices have been acquired, take the CEN-RFGW-EX out of the *Acquire* mode. Refer to the latest revision of the CEN-RFGW-EX Installation and Operations Guide (Doc. 6706), which is available from the Crestron Web site.

Leaving An infiNET EX Network

To leave a network, simply place the CLW-DIMSWEX-E into *Acquire* mode (step 2 above) when there is no gateway in *Acquire* mode.

Verifying Communication Status

To check the communication status of the CLW-DIMSWEX-P, perform the tap-tap-tap-hold (step 2 above), but release the button after approximately two seconds. At this point, the top LED will indicate communication status as described below.

LED DISPLAY (Top LED)	COMMUNICATION STATUS
Turns On When Button Released	Device communicating with control system.
Blinks Three Times	Device communicating with gateway, but gateway not communicating with control system.
Blinks Twice	Device not communicating with gateway.
Blinks Once	Device acquired but not communicating with network.
Stays Off	Device not joined to network.

TROUBLESHOOTING

The table after this paragraph 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
Dimmer does not function.	Dimmer is not receiving line power.	Verify that dimmer is properly connected to power line and that circuit breaker is closed.
	air-gap switch is open.	Verify that load is operational and that air-gap switch is closed.
	Device is in *Remote* mode.	Check the SIMPL program to determine/change the operating mode.
	DIM and Hot reversed.	Swap DIM and Hot connections.
	SW and Hot reversed.	Swap SW and Hot connections.
	No neutral connection exists.	Connect neutral.
Dimmer does not dim.	Device is in switch mode.	Remove power from the device. Reapply power and press and hold the top and bottom buttons for five seconds. If the LED blinks three times, device is in dim mode; if it blinks five times, it is in switch mode.

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; touchscreen 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.