Introduction

Features and Functions

The CLW-SW1RF (-SW1RF) and CLW-SW4RF (-SW4RF) are stand-alone wall box switches that can also act as wireless infiNET™ devices that report to a Crestron® control processor through an infiNET gateway such as the Crestron C2N-MNETGW.

These switches are a part of Crestron's line of lighting products using infiNET mesh network technology. infiNet technology is "Wi-Fi" friendly and provides fault tolerance and increased effective signal strength as network devices are added.

Up to 30 infiNET devices (including C2N-MNETRPT infiNET Repeaters) can communicate with one C2N-MNETGW Gateway. If more devices are needed, more C2N-MNETGW gateways may be added to a Cresnet® network.

The infiNET switches operate on the 2.4 GHz "ISM band" (2400 MHz to 2483.6 MHz) at 10 mW. The output power of these devices allow RF signals to travel approximately 150 feet indoors and 250 feet outdoors (subject to site-specific conditions) without the use of repeaters or other infiNET devices. The range is dependent on construction of the building, obstructions, and RF interference from other devices. The location of the switch is an important factor in determining RF performance. Adding more infiNET devices or repeaters to the network effectively increases the range, strength, and reliability of the network.

The -SW1RF and -SW4RF feature a three-position mode selection switch. For more information, refer to the latest version of the infiNET Switches Operations Guide (Doc. 6397) which is available from the Crestron website (www.crestron.com/manuals). In the absence of control system communications, the switch can still be used to control the attached load.

The CLW-SWS1RF (-SWS1RF) and CLW-SWS4RF (-SWS4RF) are similar to the -SW1RF and -SW4RF (respectively) with the added capability of working with a slave unit (CLW-SLVS1RF) in a multi-switch / single circuit application.

The CLW-SLVS1RF (-SLVS1RF) is a slave unit that when used in conjunction with the -SWS1RF or the -SWS4RF acts as an additional switch control point in a multi-switch / single circuit application. It does not connect to a Cresnet system and cannot be used without a -SWS1RF or -SWS4RF. The -SLVS1RF does not have a mode selection switch. It will emulate the RUN mode of the -SWS1RF (even if connected to a -SWS4RF) unless the mode selection switch of the master is set to "OFF". For more information, refer to the latest version of the infiNET Switches Operations Guide (Doc. 6397) which is available from the Crestron website.

These switches are available in a variety of colors and textures. The table below shows the availability.

Available Colors/Textures

COLOR/ TEXTURE	MODEL NUMBER SUFFIX	MATCHING LUTRON FACEPLATE
White	W	Not Applicable
Smooth White	W-S	CW-1-WH
Almond	A	CW-1-LA
Smooth Almond	A-S	CW-1-LA
Black	B	Not Applicable
Smooth Black	B-S	CW-1-BL

Specifications

Following are specifications for the -SW1RF, -SW4RF, -SWS1RF, -SWS4RF, and -SLVS1RF.

CLW-SW1RF/-SW4RF, CLW-SWS1RF/-SWS4RF, & CLW-SLVS1RF Specifications

SPECIFICATION	DETAILS
Power Requirements	Line Power, 120 VAC, 60 Hz
Operating Frequency	2400 MHz to 2483.6 MHz (802.15.4 compliant)
RF Output Power	10 mW
Operating Ranges[1]	
Typical Distance Indoors (without repeater)	150 ft
Typical Distance Outdoors	250 ft (subject to site-specific conditions)
Default MNET ID	SW1RF/SW4RF: 01/01 SWS1RF/SWS4RF: 01/01
Switch Type	Single-Pole, Single-Throw
Load Type	Incandescent, Tungsten-Halogen, Fluorescent / High Intensity Discharge (HID), Electronic Low Voltage, Magnetic Low Voltage, Neon / Cold Cathode, Ceiling Fan
2-Series Control System Update File[2,3]	Version 3.154 or later
Load Ratings[4]	
Incandescent / Tungsten-Halogen	-SW1RF/-SW4RF: 1000W -SWS1RF/-SWS4RF: 1000W -SLVS1RF: N/A
Magnetic Low Voltage[5]	-SW1RF/-SW4RF: 1000VA/750W -SWS1RF/-SWS4RF: 1000VA/750W -SLVS1RF: N/A

(Continued on following page)

CLW-SW1RF/-SW4RF, CLW-SWS1RF/-SWS4RF, & CLW-SLVS1RF Specifications (continued)

SPECIFICATION	DETAILS
Load Ratings (continued)	
Neon / Cold Cathode[5]	-SW1RF/-SW4RF: 1000VA/750W -SWS1RF/-SWS4RF: 1000VA/750W -SLVS1RF: N/A
Electronic Low Voltage	-SW1RF/-SW4RF: 1000W -SWS1RF/-SWS4RF: 1000W -SLVS1RF: N/A
Ceiling Fan	-SW1RF/-SW4RF: 3A -SWS1RF/-SWS4RF: 3A -SLVS1RF: N/A
Minimum Load	40W / 0.5A
Operating Temperature and Humidity	32°F to 104°F (0°C to 40°C) 10 to 90% Relative Humidity (Non-Condensing)
Dimensions and Weight	-SW1RF/-SW4RF and -SWS1RF/-SWS4RF: Height: 4.13 in (10.48 cm) Width: 2.38 in (6.03 cm) Depth: 1.88 in (4.77 cm) Weight: 4.4 oz (0.61 kg) -SLVS1RF: Height: 4.13 in (10.48 cm) Width: 1.75 in (4.45 cm) Depth: 1.88 in (4.77 cm) Weight: 3.6 oz (0.50 kg)

1. 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.
2. The latest software versions can be obtained from the Crestron website. Refer to the NOTE following these footnotes.
3. Crestron 2-Series control systems include the AV2 and PRO2. Consult the latest Crestron Product Catalog for a complete list of 2-Series control systems.
4. Refer to Derating Charts for Multigang Installations on pages 4 and 5.
5. 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.

NOTE: Crestron software and any files on the website 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).

Physical Description

The -SW1RF and -SWS1RF contain one rocker button, a light emitting diode (LED) with software-adjustable brightness, and a three-position slider-switch, shown below and on the following page.

The -SW4RF and -SWS4RF contain four pushbuttons, a light emitting diode (LED) with software-adjustable brightness, and a three-position slider-switch, shown below and on the following page.

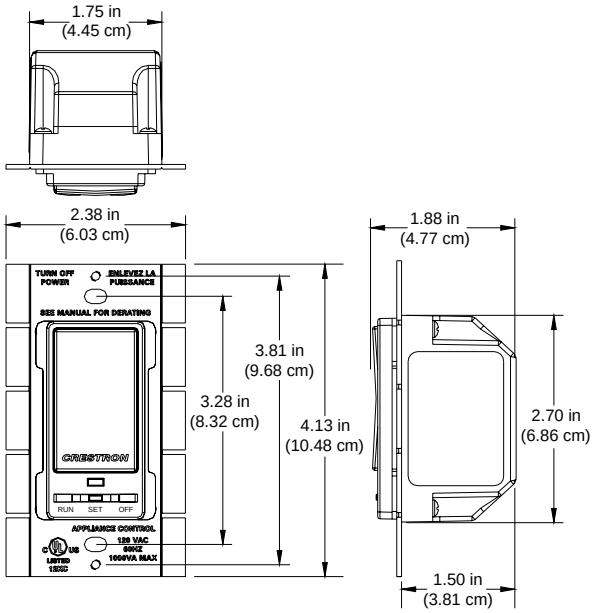
The -SLVS1RF is similar to the -SW1RF and -SWS1RF but does not have the slider-switch. The brightness of the LED on the -SLVS1RF is not programmable.

Line voltage connections are made at the rear of the switch.

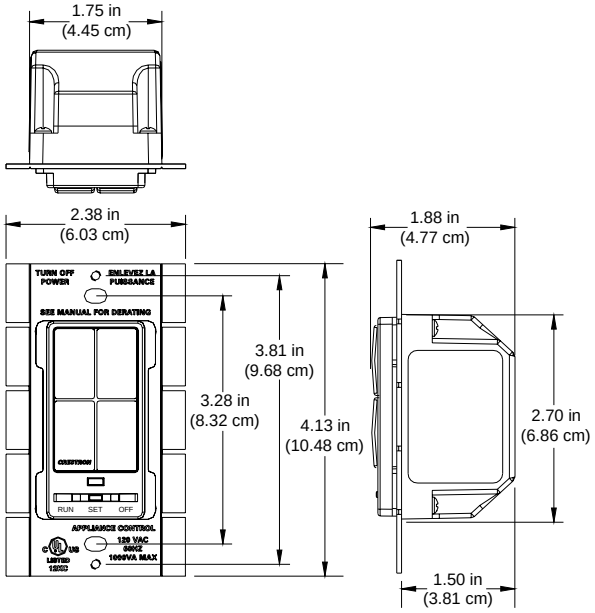
CLW-SW1RF/SWS1RF (L) and CLW-SLVS1RF (R) shown in white

CLW-SW4RF/-SWS4RF shown in white

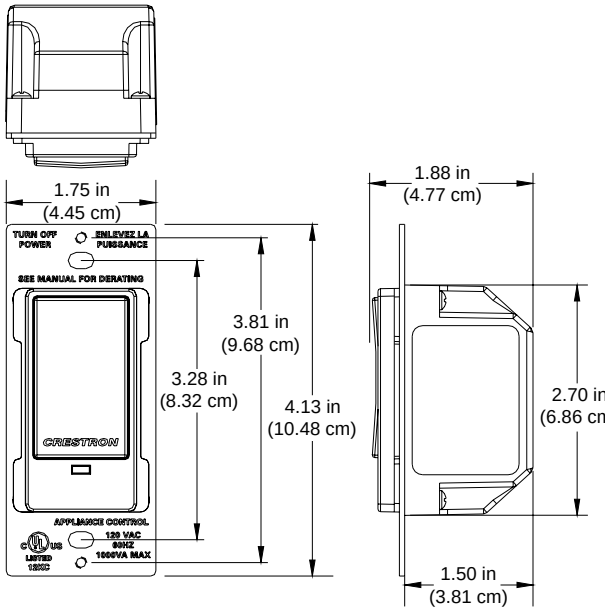
Physical view of CLW-SW1RF/SWS1RF (clockwise from top; Top, Side, and Front)



Physical view of CLW-SW4RF/-SWS4RF (clockwise from top; Top, Side, and Front)



Physical view of CLW-SLVS1RF (clockwise from top; Top, Side, and Front)



These devices mount in a standard wallbox and are covered using a decorative faceplate (not included).

Industry Compliance

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

c UL us E239013

FCC ID: EROCWD1011

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.

Industry Canada Statement
The term "IC" before the certification/registration number only signifies that the Industry Canada technical specifications were met.
IC: 5683A-CWD1011

Important Notes

Read before installation.

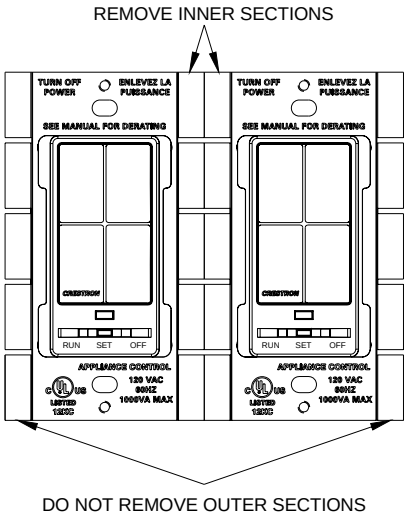
- Codes: Install in accordance with all local and national electrical codes.
- **CAUTION**: TO REDUCE THE RISK OF OVERHEATING AND POSSIBLE DAMAGE TO OTHER EQUIPMENT, DO NOT INSTALL TO CONTROL A RECEPTACLE.
- Wiring: Use copper wire only. For supply connection, use wires rated for at least 75°C.
- Load Type: The -SW1RF, -SW4RF, -SWS1RF, -SWS4RF, and -SLVS1RF are designed for use with permanently installed incandescent, fluorescent (non-dimmable), low voltage, neon/cold cathode, HID, ceiling fan, or tungsten halogen lighting.
- Temperature: The -SW1RF, -SW4RF, -SWS1RF, -SWS4RF, and -SLVS1RF are designed to be used where temperatures are between 32° to 104°F (0° to 40°C).
- Wallboxes: Devices mount in standard wallboxes. For easy installation, Crestron recommends using 3 ½" deep wallboxes. Several devices can be installed in one wall box (multigang). This requires the removal of side sections (refer to diagram in next column) and the derating of the switching device. For a smooth appearance, one-piece multigang faceplates (not supplied) can be installed.
- Other Switch Devices: Mechanical 3- or 4-way switches will not work with the -SW1RF, -SW4RF, -SWS1RF, -SWS4RF, and -SLVS1RF.
- Spacing: If mounting one device above another, leave at least 4 ½" vertical space between them.

Multigang Installations

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

1. When combining controls in a wallbox, remove inner side sections prior to wiring (refer to the following figure).

Inner Sections of Multiganged Switches (CLW-SW4RF Shown)



The load capacity must also be derated. The following charts provide derating information for various applications.

Derating Information for Incandescent, Tungsten Halogen, and Electronic Low Voltage Applications

Part Number	No Side Removed	One Side Removed	Two Sides Removed
-SW1RF/ -SW4RF	1000W	700W	550W
-SWS1RF/ -SWS4RF	1000W	700W	550W
-SLVS1RF	No Derating Necessary		

Derating Information for Magnetic Low Voltage and Neon/Cold Cathode Applications*

Part Number	No Side Removed	One Side Removed	Two Sides Removed
-SW1RF/ -SW4RF	1000VA/ 750W	700VA/ 500W	550VA/ 400W
-SWS1RF/ -SWS4RF	1000VA/ 750W	700VA/ 500W	550VA/ 400W
-SLVS1RF	No Derating Necessary		

* 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.

Derating Information for Fluorescent/HID Applications

Part Number	No Side Removed	One Side Removed	Two Sides Removed
-SW1RF/ -SW4RF	8A	5.5A	4.5A
-SWS1RF/ -SWS4RF	8A	5.5A	4.5A
-SLVS1RF	No Derating Necessary		

Derating Information for Ceiling Fans

Part Number	No Side Removed	One Side Removed	Two Sides Removed
-SW1RF/ -SW4RF	3A	3A	3A
-SWS1RF/ -SWS4RF	3A	3A	3A
-SLVS1RF	No Derating Necessary		

2. To remove a side section, bend the side section back and forth with a pair of pliers until the section breaks off from the mounting plate. Use a file or sandpaper to remove any excess metal.

Installation

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

NOTE: The -SW1RF, -SW4RF, -SWS1RF, and -SWS4RF require a neutral wire for operation. If no neutral is present, the device will not work. If no neutral is present, contact a licensed electrician for installation.

NOTE: The -SWS1RF and -SWS4RF must be installed in the same wallbox that contains the connections to the load.

NOTE: New installations should be checked for short circuits prior to installing the -SW1RF, -SW4RF, -SWS1RF, -SWS4RF, or -SLVS1RF. With power off, close the circuit and restore power. If the load does not work or a breaker trips, check and correct the wiring or fixture (if necessary). Install the -SW1RF, -SW4RF, -SWS1RF, -SWS4RF, or -SLVS1RF only when the short is no longer present. **The warranty is void if the -SW1RF, -SW4RF, -SWS1RF, -SWS4RF, or -SLVS1RF is installed and operated with a shorted load**.

When installing a -SWXRF or a -SWSXRF without a slave, follow the instructions in "Wiring a -SW(S)XRF (No Slaves)" below. If wiring a -SWSXRF with a -SLVS1RF, refer to "Wiring a -SWSXRF with One or More -SLVS1RFs" in the next column.

Wiring a -SW(S)XRF (No Slaves)

The following describes the installation of a stand-alone -SW1RF, -SW4RF, -SWS1RF or -SWS4RF.

1. Turn power off at the circuit breaker.
2. Wire the switch as shown in Figure 1 on page 9.

NOTE: The RED (Load) and BLACK (Hot) wires are #14 AWG. The BLUE (Slave) and WHITE (Neutral) wires are #18 AWG. The GREEN (Ground) wire is #16 AWG.

NOTE: Since the -SWS1RF or -SWS4RF is installed without a -SLVS1RF, the BLUE lead (Slave) should be capped.

Other Wiring
For another scenario that may be encountered during installation, refer to Figure 2 on page 9.

3. Push all power wires back into the wallbox and fasten the device to the wallbox with the provided screws.
4. Attach decorative faceplate.
5. Restore power at the circuit breaker.

Wiring a -SWSXRF with One or More -SLVS1RFs

NOTE: The -SWS1RF and -SWS4RF must be installed in the same wallbox that contains the connections to the load.

The following describes installation of a -SWSXRF master with a -SLVS1RF slave.

1. Turn power off at the circuit breaker.
2. Wire the switches as shown in Figure 3 on page 9.

NOTE: Do not connect the BLUE (Slave) wire to the Black (Hot) or RED (Load) wires.

NOTE: The RED (Load) and BLACK (Hot) wires are #14 AWG. The BLUE (Slave) and WHITE (Neutral) wires are #18 AWG. The GREEN (Ground) wire is #16 AWG.

NOTE: If a -SWS1RF or -SWS4RF is installed without a -SLVS1RF, the BLUE lead (Slave) should be capped.

NOTE: The WHITE (Neutral) connection on the -SLVS1RF is optional and is only required

for operation of the LED. If the neutral is not available, the white lead should be capped off.

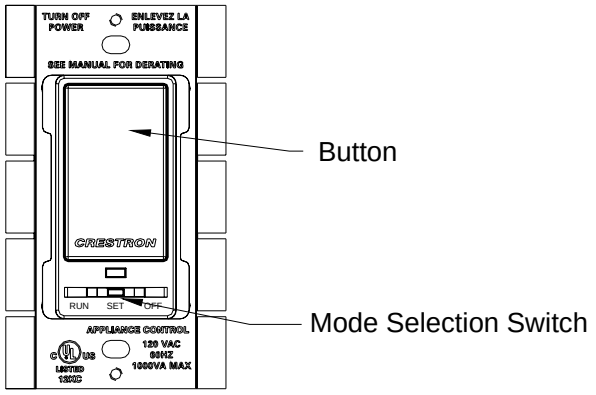
3. Push all power wires back into the wallbox and fasten the devices to their respective wallboxes with the provided screws.
4. Attach decorative faceplates.
5. Restore power at the circuit breaker.

Testing

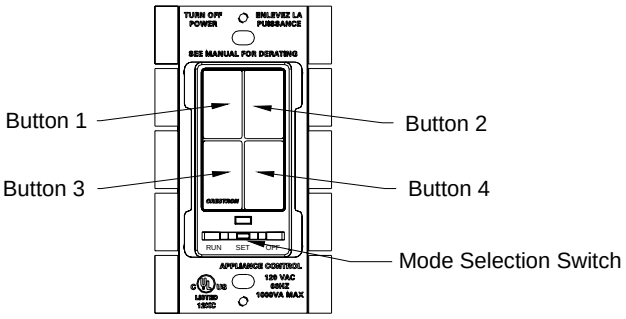
NOTE: The device may be warm to the touch during operation. This is normal.

Test the installation by setting the switch's mode selection switch (shown in the following diagrams) to the "RUN" position and perform either of the following steps (depending on the switch model).

Parts of CLW-SW1RF, -SWS1RF



Parts of CLW-SW4RF, -SWS4RF



Testing a -SW1RF and -SWS1RF

With the mode selection switch in the "RUN" position, tap the top of the button to turn on the load. Tap the bottom of the button to turn off the load.

For detailed operating instructions, refer to the latest revision of the infiNET Switches Operations Guide (Doc. 6397) which is available from the Crestron website.

Testing a -SW4RF and -SWS4RF

With the mode selection switch in the "RUN" position, tap the Button 1 to turn on the load. Tap Button 1 again to turn off the load.

For detailed operating instructions, refer to the latest revision of the infiNET Switches Operations Guide (Doc. 6397) which is available from the Crestron website.

Testing a -SLVS1RF

Tap the top of the button to turn on the load. Tap the bottom of the button to turn off the load. It will emulate the RUN mode of the -SWS1RF (even if connected to a -SWS4RF) unless the mode selection switch of the master is set to "OFF". For more information, refer to the latest version of the infiNET Switches Operations Guide (Doc. 6397) which is available from the Crestron website.

infiNET Network

Before an infiNET switch can be used in a controlled lighting system, it must first be acquired to a C2N-MNETGW gateway that is connected to a Cresnet network.

NOTE: The -SW1RF, -SW4RF, -SWS1RF, and -SWS4RF can also work as stand-alone wall box switches without being acquired by a C2N-MNETGW.

NOTE: A switch can be acquired to only one gateway.

To acquire a -SW1RF/-SW4RF/-SWS1RF/-SWS4RF to a C2N-MNETGW, perform the following:

1. Put the C2N-MNETGW in the *Acquire* mode, from the unit itself or from Crestron Toolbox™, as described in the latest revision of the C2N-MNETGW Operations Guide (Doc. 6317) which is available from the Crestron website or the Crestron Toolbox help file.

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

2. Place the -SW1RF/-SW4RF/-SWS1RF/-SWS4RF into the *Acquire* mode by doing the following:

   a. Move the mode selection switch (located under the LED) to the "OFF" position.

b. Press and hold the top or bottom of the button on the -SW1RF/-SWS1RF or any button on the -SW4RF/-SWS4RF.

c. While holding the button, slide the mode selection switch to the "RUN" position.

d. Hold the button for approximately five seconds until the LED flashes HIGH once. Immediately release the button after the LED blinks to start the switch's *Acquire* mode.

NOTE: Holding the button for a significant time after the first flash may enter other modes. If this is not desired, return the mode selection switch to the "OFF" position without releasing the button and repeat step 2.

After approximately ten seconds, the LED will start to blink slowly and the switch will attempt to acquire with a C2N-MNETGW that is in the *Acquire* mode. The device is acquired when the LED stops blinking and lights at the LOW setting. After being acquired, the device will exit the *Acquire* mode.

The switch will be acquired on the C2N-MNETGW with an MNET ID value of 01. If the switch was previously acquired on another infiNET network, the switch will be acquired on the C2N-MNETGW with its previous MNET ID.

3. Take the C2N-MNETGW out of the *Acquire* mode once all devices have been acquired. Refer to the latest revision of the C2N-MNETGW Operations Guide (Doc. 6317), which is available from the Crestron website.

For more information, refer to the latest version of the infiNET Switches Operations Guide (Doc. 6397) which is available from the Crestron website.

Problem Solving

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.

infiNET Switch Troubleshooting

TROUBLE	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
Switch does not function.	Switch is not receiving line power.	Verify that the switch is properly connected to power line and that the circuit breaker is closed.
	Load is not connected.	Verify that load is operational and that the mode selection switch is in the RUN position.

If the switch does not function after performing the above corrective actions, restore the switch's default settings by moving the mode selection switch to the "RUN" position. While holding the pushbutton (hold "UP" on the -SW1RF and -SWS1RF, or hold Button 1 on the -SW4RF or -SWS4RF), move the mode selection switch to the "SET" position and back to the "RUN" position. Release the pushbutton. The LED will flash once to confirm that the default values have been restored.

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 the Crestron corporate headquarters at 1-888-CRESTRON [1-888-273-7876].

You can also log onto the online help section of the Crestron website (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 device, 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 website periodically for manual update availability and its relevance. Updates are identified as an "Addendum" in the Download column.

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.

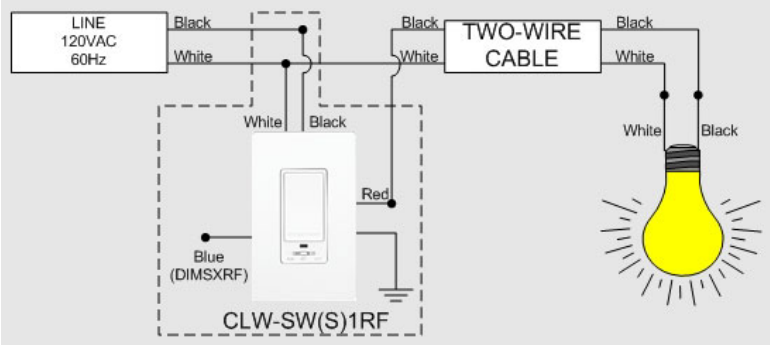
Except as expressly set forth in this warranty, CRESTRON makes no other warranties, expressed or implied, nor authorizes any other party to offer any warranty, including any implied warranties of merchantability or fitness for a particular purpose. Any implied warranties that may be imposed by law are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

Appendix: Wiring Diagrams

Following are wiring diagrams for circuits that may be found when installing infiNET switches:

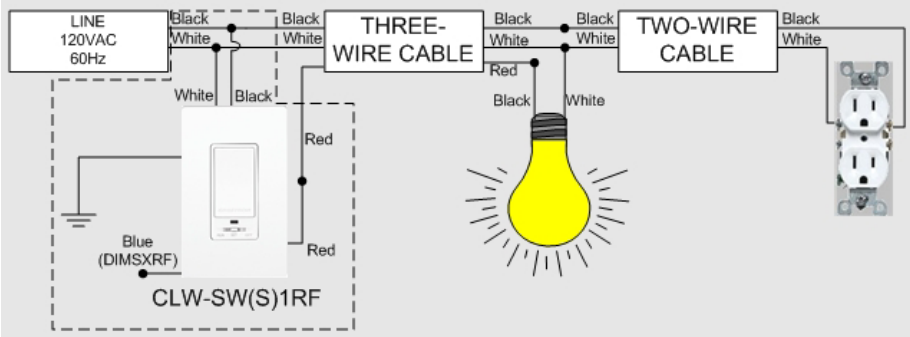
Stand-Alone Installations

Figure 1: Wiring a CLW-SW(S)XRF (CLW-SWS1RF shown)



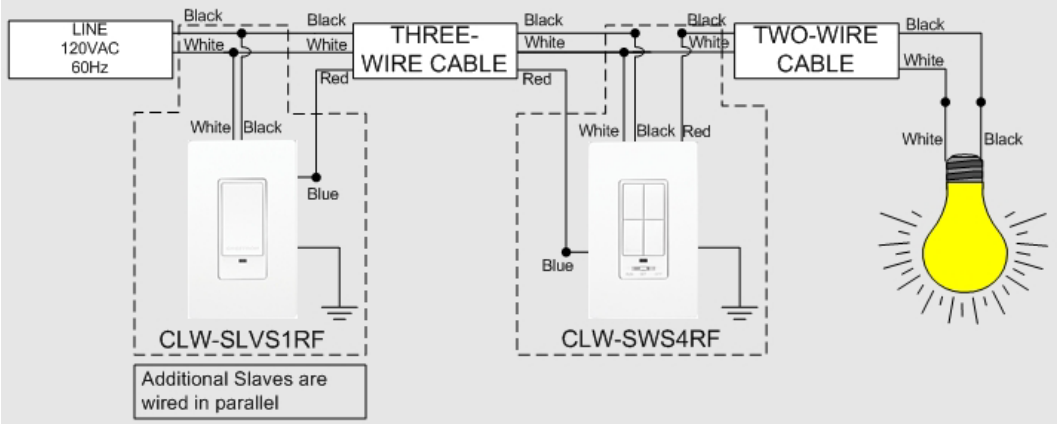
To continue a circuit past a switched light fixture to one or more duplex receptacles, connect the switch as shown in the following diagram.

Figure 2: Adding a Duplex Receptacle Past a Switched Light Fixture



Master-Slave Installation

Figure 3: Wiring a CLW-SWSXRF (CLW-SWS4RF shown) with a CLW-SLVS1RF



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