# Wireless 0-10VDC Dimmer

# **GreenConnect™**

Cat. No. ZB700-D0Z, Ratings: 120-277VAC, 50/60Hz. Cat. No. ZB700-30Z, Ratings: 347VAC, 50/60Hz.

## **WARNINGS:**

- TO AVOID FIRE, SHOCK, OR DEATH; TURN OFF POWER AT CIRCUIT BREAKER OR FUSE AND TEST THAT POWER IS OFF BEFORE WIRING!
- 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 an electrician.

#### **CAUTIONS:**

- Use this device with copper or copper-clad wire only.
- For indoor applications only.
- To avoid damage to the product, DO NOT use disinfecting products, including foggers, sprays or other types of atomized cleaning agents. DO NOT spray liquid onto the product. To clean use a damp cloth with mild soap.
- SAVE THESE INSTRUCTIONS.

DI-000-ZB700-02B-W **ENGLISH** 

## **INSTALLATION INSTRUCTIONS**

# **Before Installation**

- Ensure location is within network range
- Requires single gang device back box
- · Supports multi-gang installations.
- Requires Decora® faceplate, sold separately.
  Devices use 0-10VDC low voltage control wires which may be installed as Class 1 or Class 2.

IMPORTANT NOTE: If installed as Class 2, all devices in the circuit must be Class 2 rated and this switch must be wired per instructions below.

## Class 2 Installation:

As required under NEC code NFPA 70, paragraph 725.136 (d) and under Canadian Electrical Code, section 16-202, the Class 2 0-10V (pink and violet) control wires must be mechanically separated from Class 1 wiring (line, neutral and ground power lines) when located within the same electrical box. This accomplished by installing a mechanical barrier such as silicone tubing or other non-conducting sleeves the length of 0-10V control wires.

When product is used with 120VAC power source and the 0-10V control wires are connected to CL3, CL3R, or CL3P rated control cables (or permitted substitute), then silicone tubing or other non-conducting sleeve is required over the control wires for the entire wire length from the device to the location where the wires exit the box. Tubing *is not* required on the CL3, CL3R or CL3P between the wire connector and extending out of the electrical box

When used with 277VAC power source and the 0-10V control wires are connected to CL3, CL3R or CL3P rated control cables (or permitted substitute), then silicone tubing or other non-conducting sleeve is required over the control wires for the entire wire length from the device to the location where the wires exit the box. Tubing *is also* required on the CL3, CL3R or CL3P between the wire connector and extending out of the al box

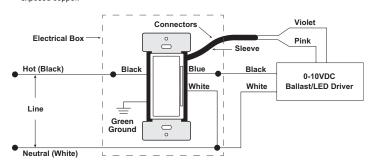
#### NOTE:

- Silicone tubing should be NRTL (UL/CSA/ETL) recognized or equivalent to provide mechanical separation equal to .25 in. in air
- Connectors joining 0-10V control wires should be approved LISTED CONNECTORS.
   Wire connectors and wire tubing should be provided by the installation contractor.

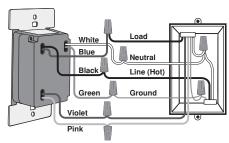
#### Installation

WARNING: TO AVOID FIRE, SHOCK, OR DEATH; TURN OFF POWER at circuit breaker or fuse and

1. Remove 0.75 in. of insulation from the line and load wires. Remove the precut insulation from load controller wires and connect according to the wiring diagram. Ensure wires are firmly connected with no exposed copper



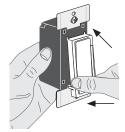
Class 1 installation shown (for Class 2, refer to notes)



- 2. Gently place the wires and your device into the wall box and attach with screws provided
- ore power and test ON/OFF operation. LED locator light should be ON when load is OFF.
- 4. If desired, change switch color
- 5. Install Decora faceplate

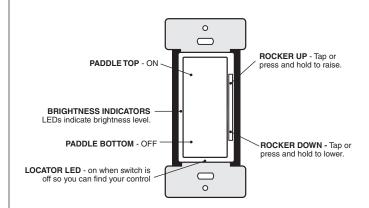


To release, push sides,



Line up and press in to attach.

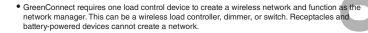
6. Enroll Device and configure your system.



|                                     | SPECIFICATIONS   |                               |  |
|-------------------------------------|--|-------------------------------|--|
| Catalog Nos.                        | ZB700-D0Z  | ZB700-30Z                     |  |
| Input Voltage/Frequency             | 120-277VAC, 50/60Hz.   | 347VAC, 50/60Hz.              |  |
| Input Current                       |  |                               |  |
| 120V                                | Standby: 0.2W<br>Max: 0.5W+Load Current                                      | Not rated for use             |  |
| 277V                                | Standby: 0.3W<br>Max: 0.6W+Load Current                                      | Not rated for use             |  |
| 347V                                | Not rated for use  | 0.5W + Load Current           |  |
| Load Ratings                        |  |                               |  |
| LED, CFL, Electronic Ballast @ 120V | 8A   | Not rated for use             |  |
| LED, CFL, Electronic Ballast @ 277V | 5A   | Not rated for use             |  |
| LED, CFL, Electronic Ballast @ 347V | Not rated for use  | 4A, 1388VA                    |  |
| Magnetic Ballast @ 120V             | 10A  | Not rated for use             |  |
| Magnetic Ballast @ 277V             | 10A  | Not rated for use             |  |
| Magnetic Ballast @ 347V             | Not rated for use  | 3.45A, 1200VA                 |  |
| Resistive, Tungsten @ 120V          | 6.67A  | Not rated for use             |  |
| Resistive, Tungsten @ 277V          | 6.67A  | Not rated for use             |  |
| Resistive, Tungsten @ 347V          | Not rated for use  | 6.67A                         |  |
| Motor @ 120V                        | 1/4Hp (FLA 5.8A)   | Not rated for use             |  |
| Motor @ 277V                        | 1/3Hp (FLA 3.0A)   | Not rated for use             |  |
| Motor @ 347V                        | Not rated for use  | 1/4Hp                         |  |
| UL Impulse Voltage                  | 4000V 6000V  |                               |  |
| UL Pollution Degree                 | 2  |                               |  |
| Operating Temperature               | 32°F - 104°F (0°C - 40°C)  |                               |  |
| Storage Temperature                 | -40°F - 185°F (-40°C to 85°C)  | -40°F - 185°F (-40°C to 85°C) |  |
| IP Rating                           | IP10   |                               |  |
| Network Connections                 | IEEE 802.15.4, 2.4Ghz, wireless, mesh network up to 75' range between device |                               |  |

# **System Programming**

1. Required Devices



A maximum combination of 16 load controllers, wall stations, or sensors can be enrolled into

GreenConnect devices are also compatible with GreenMAX DRC Wireless for systems that require more than 16 devices.

2. Creating a GreenConnect network with your dimmer or switch

- a. Press and hold the top paddle. After about four seconds, the LED will blink back the device gnostic. Continue to hold for seven seconds until the LED blinks amber once, then releas LED will start blinking amber rapidly, meaning you are at the main menu.
- b. To create a new network, tap the top paddle twice. The LED will blink red while the device resets as the network manager. The LED will blink green slowly once the GreenConnect network is created. The load will toggle OFF and ON twice as a visual indicator that the network was opened and ready for devices to join.
- C. Every 60 seconds while the network is open the LED of the network manager blink red once for each device enrolled in the network. This helps you keep track of how many devices the network manager has in the network.
- To close the network, tap the top paddle once. All devices in the network will toggle their and ON twice to confirm the network was closed.
- e. The network will automatically close after 10 minutes of inactivity.
- f. To open the network again, return to the main menu on the network manager and tap once. All connected devices will toggle their loads OFF and ON twice when the network opens.

- 3. Connecting your switch or dimmer to a GreenConnect or GreenMAX DRC Wireless network.
  - a. Ensure only the network you want to join is open. If more than one network within range is open, your device may join the wrong network.
  - b. Go to the main menu by pressing and holding the top paddle for seven seconds until the LED blinks amber once, then release. The LED will then begin blinking amber rapidly.
  - C. Tap the top paddle once. The LED will blink green slowly while your device searches for a network to join. When it connects, the load will toggle OFF and ON twice with all connected devices in the network.
  - d. To join a GreenMAX DRC network, use the GreenMAX DRC App to scan the QR code and follow the instructions included with the GreenMAX DRC room controller.
  - e. If after 60 seconds a network is not found, the LED will stop blinking and the device will exit the menu.
- 4. Resetting your dimmer switch

To remove your device from a network, or to restore it to default settings, press and hold the top paddle for 12 seconds until the LED blinks amber twice, then release. The LED will blink red while device leaves the network and resets to factory defaults. If the device was a network manager, the reset will break the network and any enrolled devices will no longer be connected.

## 5. System features

- · System settings are saved in the network manager
- · GreenConnect is a single zone system.
- All lighting loads respond together as a single lighting zone.
- All sensors form a single occupancy zone.
- Daylight values are aggregated across all sensors in a single daylight zone.
- The default settings are:
  - i. Occupancy Mode: Auto-ON/Auto-OFF
  - ii. Auto-ON level: 50%
  - iii. Sensitivity: High
  - iv. Occupancy time-out: 15 minutes
  - v. Partial Off: Disabled
  - vi. Photocell: Disabled

### 6. Changing the system features

- a. Go to the main menu on the network manager by pressing and holding the top paddle for seven seconds until the LED blinks amber once, then release. The LED will begin blinking amber rapidly.
- b. Tap the number of times that corresponds to the feature menu you want to access. The LED will blink the feature menu number in green, pause, then blink the menu setting number currently saved in amber. For example, to access feature menu #3 (Occupancy Auto-ON level) from the main menu, tap three times. The LED will blink green three times, then blink amber five times for the default setting #5. This blink back pattern will repeat every 60 seconds.
- C. Once within the feature menu, tap the number of times that corresponds with the new setting you want to select. For example, to change the default Auto-ON value from setting #5 to setting #1, tap once. The LED will blink the number of times corresponding with the selected option in amber. Watch the new blink back patten to ensure the setting is what you selected. If it isn't, just enter your selection again.
- d. Return to the main menu by pressing and holding the top paddle for seven seconds until the LED blinks amber once, then release. The LED will then begin blinking amber rapidly.
- e. To exit the main menu, press and hold again for seven seconds until the LED stops blinking amb

### 7. Feature Menus

| Feature #3: Occupancy Auto-ON level |                              |  |
|-------------------------------------|------------------------------|--|
| Setting #                           | Value                        |  |
| 1                                   | 100%                         |  |
| 2                                   | 50%                          |  |
| 3                                   | 25%                          |  |
| 4                                   | Manual-ON (vacancy)          |  |
| 5                                   | Restore last level (default) |  |

| Feature #4: Occupancy Sensitivity |                |  |
|-----------------------------------|----------------|--|
| Setting #                         | Value          |  |
| 1                                 | Medium         |  |
| 2                                 | Low            |  |
| 3                                 | High (default) |  |

| Feature #5: Primary Time-out |  |  |  |
|------------------------------|--|--|--|
| Setting #                    | Value  |  |  |
| 1                            | Test mode (30<br>seconds for five minutes<br>then reverts to<br>prior setting) |  |  |
| 2                            | 60 minutes   |  |  |
| 3                            | 30 minutes   |  |  |
| 4                            | 15 minutes (default)   |  |  |
| 5                            | 5 minutes  |  |  |
| 6                            | Disabled   |  |  |

| Feature #6: Partial-OFF Level |                    |  |  |
|-------------------------------|--------------------|--|--|
| Setting #                     | Value              |  |  |
| 1                             | Disabled (default) |  |  |
| 2                             | 50%                |  |  |
| 3                             | 25%                |  |  |

| Feature #7: Secondary Time-out |                      |  |
|--------------------------------|----------------------|--|
| Setting #                      | Value                |  |
| 1                              | 5 minutes            |  |
| 2                              | 15 minutes (default) |  |
| 3                              | 30 minutes           |  |
| 4                              | 60 minutes           |  |

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|---------------------------------|--------------------|--|--|
| Setting #                       | Value              |  |  |
| 1                               | Disabled (default) |  |  |
| 2                               | 25 footcandles     |  |  |
| 3                               | 35 footcandles     |  |  |
| 4 45 footcandles                |                    |  |  |
| Feature #9: Secondary Level     |                    |  |  |

Feature #8: Daylighting Target

| Featur    | Feature #9: Secondary Level |  |  |
|-----------|-----------------------------|--|--|
| Setting # | Value                       |  |  |
| 1         | 0% (default)                |  |  |
| 2         | 50%                         |  |  |
| 3         | 25%                         |  |  |

| Menus and LED Feedback           |                   |           |            |   |
|----------------------------------|-------------------|-----------|------------|---|
| A                                | ction             | LED Color | Blink Rate | Status  |
| Press and hold:                  | Device Diagnostic | Red       | 3 times    | Not enrolled in a network.  |
| 4 seconds                        |                   | Green     | 3 times    | Enrolled in active network.   |
|                                  |                   |           | 2 time     | Enrollment incomplete.  |
|                                  |                   |           | 1 times    | Enrolled, no communication from the network.  |
| Press and hold:                  | Main Menu         | Amber     | 1 time     | Release after first amber blink to  |
| 5-9 seconds                      |                   |           | Rapid      | enter the main menu. The LED will begin blinking amber rapidly.                         |
| Тар                              | 1 time            | Green     | Slow       | Enter pairing mode and search for network to join. If already paired, open the network. |
|                                  | 2 times           |           | Slow       | Designate as network manager and open network   |
|                                  | 3 times           |           | 3 times    | Occupancy Auto-ON level   |
|                                  | 4 times           | ]         | 4 times    | Occupancy Sensitivity   |
|                                  | 5 times           |           | 5 times    | Primary Time-out  |
|                                  | 6 times           |           | 6 times    | Partial-OFF Level   |
|                                  | 7 times           |           | 7 times    | Secondary Time-out  |
|                                  | 8 times           | ]         | 8 times    | Daylighting Target  |
|                                  | 9 times           |           | 9 times    | Secondary Level   |
|                                  | Press and hold    | Amber     | 1 time     | Return or exit main menu  |
| Press and hold:<br>10-14 seconds | Reset             | Amber     | 2 times    | Release after the second amber blink to reset to factory default settings.              |
| Press and hold:<br>15-19 seconds | Exit              |           | 3 times    | Release after the third amber blink to take no action and exit.                         |
| Press and hold:<br>20-25 seconds | Local Control     | Green     | 1 time     | Change default operational control of dimmer or switch load.                            |

## What to do if...

- · Load does not turn ON or status LED does not light up.
  - Breaker is OFF or tripped. Confirm breaker is ON.
  - Confirm device is being supplied power.
  - Confirm load wiring is correct.
  - Ensure switched output wiring is correct.
- · Lights flicker or do not dim as expected
  - Ensure 0-10V wiring is correct.
  - Confirm load complies with minimum and maximum requirements.
  - Lamp has a bad connection.
  - Wire connectors not firmly secured.

Consult the dealer or an experienced radio/TV technician for help.

- Device cannot be enrolled.
  - Maximum number of devices have been enrolled to the network.
  - Device is out of range.

# FCC CAUTION:

Changes or modifications not expressly approved by Leviton Manufacturing Co., could void the user's authority to operate the equipment

# FCC STATEMENT:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determ turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: Increase the separation between the equipment and receiver

- · Reorient or relocate the receiving antenna.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

# IC STATEMENT:

This equipment complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

# RF EXPOSURE AND CO-LOCATION:

To comply with FCC and ISED RF exposure limits for general population/uncontrolled exposure this device should be installed and operated with a minimum distance of 7.9 inches (20 cm) between the radiator and you body. This transmitter must not be co-located or operated in conjunction with any other antenna or transmitter.

# FCC SUPPLIERS DECLARATION OF CONFORMITY:

This equipment manufactured by Leviton Manufacturing, Inc., 201 N Service Road, Melville, NY, www.leviton.com. This equipment 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.

TRADEMARK STATEMENT
Leviton, the Leviton logo, GreenMAX, and GreenConnect are trademarks of Leviton Manufacturing Co., Inc., and Leviton, the Leviton logo and GreenMAX are registered trademarks in many countries throughout the wor Use herein of other third party trademarks, service marks, trade names, brand names and/or product names are for informational purposes only, are/may be the trademarks of their respective owners; such use is not me to imply affiliation, sponsorship, or endorsement.

Patents covering this product, if any, can be found on www.leviton.com/patents.

# FOR CANADA ONLY

For warranty information and/or product returns, residents of Canada should contact Leviton in writing at Leviton Manufacturing of Canada ULC to the attention of the Quality Assurance Department, 165 Hymus Blvd, Pointe-Claire (Quebec), Canada H9R 1E9 or by telephone at 1-800-405-5320.

LIMITED 5 YEAR WARRANTY

For Leviton's limited 5 year product warranty, go to www.leviton.com. For a printed copy of the warranty, call 1-800-824-3005.

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For Technical Assistance Call: 1-800-824-3005 (USA Only) or 1-800-405-5320 (Canada Only) www.leviton.com