

**DIM10-100-00**  
Load Ratings: 3A @ 100-277VAC (+/- 10%)  
**Installation Guide**



**WARNING AND CAUTIONS:**

- TO AVOID FIRE, SHOCK, OR DEATH; TURN OFF POWER AT CIRCUIT BREAKER OR FUSE AND TEST THAT POWER IS OFF BEFORE WIRING!
- DIM10-100-00 controllers must be installed in accordance with national, state, and local electrical codes and requirements
- All work must be performed by qualified personnel

**WARNINGS AND CAUTIONS:**

- Disconnect power at circuit breaker or fuse when servicing, installing or removing fixture or changing lamps.
- Risk of Electric Shock - More than one disconnect switch may be required to de-energize the equipment before servicing. Use this device with copper or copper clad wire only.

**INSTALLATION GUIDE**

**DESCRIPTION**

The DIM10-100-00 controls LED lighting in buildings using the SNAP wireless mesh network. It uses an internal relay to provide True On/Off capability and 0-10V analog dimming control. Synapse lighting controllers can be controlled with the Synapse SimplySNAP lighting solution.

**FEATURES**

- True ON/OFF switching via relay, up to 3A load
- 0-10V dimming, up to 10mA source/sink
- Pushbutton terminal blocks for easy installation

**RATINGS**

**Voltage Input:** 100-277 VAC (+/-10%), 50/60 Hz  
**Voltage Output (Max):** 305V  
**Power Consumption (No Load):** 0.3W @ 277VAC;  
0.5W @ 120VAC

**SPECIFICATIONS**

Relay Max Switched Circuit: Zero Cross, 3A  
Dim Control Max Load: 10 mA Source/Sink  
Radio Frequency: 2.4 GHz (IEEE 802.15.4)  
RF Transmission Output Power: +20dBm  
Operating Temperature: -20 to +60 C  
Operating Humidity: 10 to 90%, non-condensing  
Dimensions: 7.1”L x 1.8”W X 1”H (181 X 46 X 26 mm)  
Enclosure Type: Galvanneal steel  
Configuration/Programming: Stored in non-volatile memory

**CAUTION**

- Metal conduit connector must be grounded
- The switched output (LOAD) is energized by default at power up

**NEEDED MATERIALS**

**Wiring Connectors:** All existing wiring connectors must be replaced with new UL listed wiring connectors. All wiring connectors must be correctly sized for the application and the number and the size of the electrical conductors.

**Mounting:** Secure with four #8 screws. See the DIM10-100-00 mounting template for assistance.

**Mounting Options:** Mount in an LED Fixture or a Troffer. See figure 1 below for proper antenna orientation.

**INSTALLATION INSTRUCTIONS**

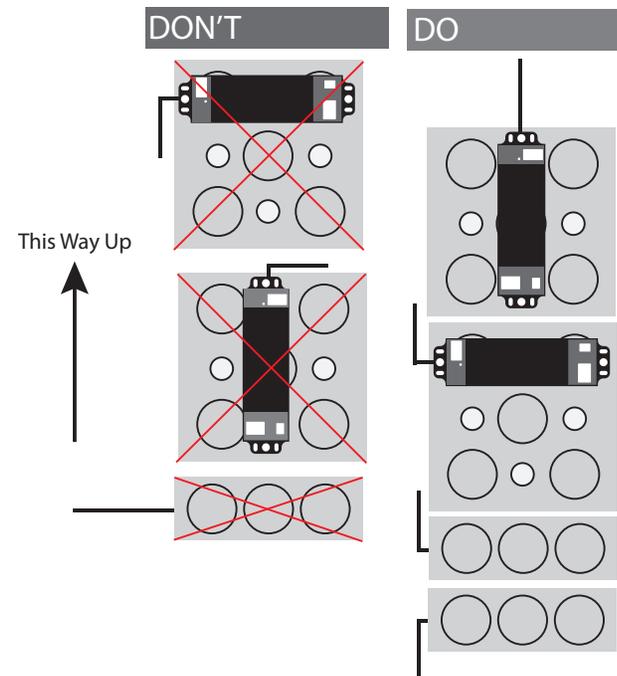
1. WARNING: TO AVOID FIRE, SHOCK, OR DEATH: TURN OFF POWER AT CIRCUIT BREAKER OR FUSE AND VERIFY THAT POWER IS OFF BEFORE WIRING!
  2. Place DIM10-100-00 in desired location and secure it using #8 screws or other appropriate methods. Prior to permanently mounting the DIM10-100-00, make sure the antenna points directly upward or downward and is free of any metal objects within 12 in. of the antenna. (Figure 1)
- Note:** When installing the DIM10-100-00 into an enclosure, consideration of antenna position and interference is required in order to provide the most optimum wireless signal strength.
3. Disconnect the hot wire (**black**) from the LED fixture and connect it to the **LINE** input on the DIM10-100-00.
  4. Connect the **black** wire of the LED fixture to the **LOAD** output on the DIM10-100-00.
  5. Connect the **white** wire (neutral) of the LED fixture to the **NEUTRAL** input on the DIM10-100-00.

6. Connect the **white** wire (neutral) from the LED fixture to the electrical service white wire/neutral.

**Note: Steps 7-10 are for Class 1/2 Dimming Control**

7. Connect the DIM- wire on the LED fixture to the **DIM-** input on the DIM10-100-00.
8. Connect the DIM+ wire on the LED fixture to the **DIM+** input on the DIM10-100-00.
9. Switch power on to the fixture. The light should turn on.

**Note:** When switched on, lamps should turn on to full brightness; approximately 10 VDC signal on the DIM+ wire using the DIM- wire as reference.



**FIGURE 1 - ANTENNA ORIENTATION**

10. Refer to the SimplySNAP User's Manual for information on provisioning the DIM10-100-00.

### Dimming

Below are some recommendations for successful dimming using the DIM10-100-00. The dimming control wires are referenced as Dim+ and Dim-. The dimming signals have a Maximum voltage of 10V DC.

- Use multi-strand 18 Gauge Wire for noise immunity and current capability
- Do not ground the dimming wire. This is a return signal and is critical for dimming.
- Route dimming wires away from AC lines if possible.
- Use connections with properly sized connectors.
- Eliminate excess wire between fixtures. Line length will cause voltage drop.
- Number of fixtures that can be daisy-chained is dependent upon the following factors: dimming current, current requirements for LED driver, length of wire, quality of connection, and gauge of wire
- Verify dimming capability via a "test bed" with the number of actual fixtures, wire length, connectors, and wire gauge

### USING THE AC CAGE CLAMP

For the AC Cage Clamps, use a small flat head screwdriver to push the release button (Figure 3) before inserting the wire.

### USING THE DC CAGE CLAMPS

For the DC Cage Clamps, use a small flat head screwdriver to push the release button (Figure 3) before inserting the wire.

### CERTIFICATIONS

**Model #:** DIM10-100-00

**UL File No:** E346690

Contains **FCC ID:** U9O-SM220 and **IC:** 7084A-SM220

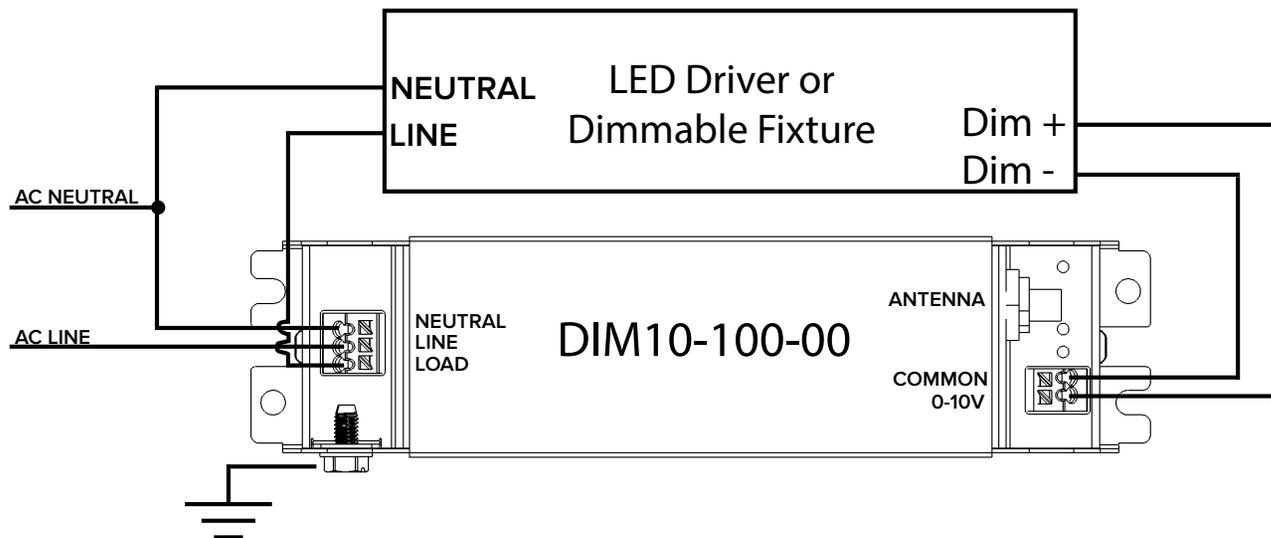


FIGURE 4 - WIRING DIAGRAM

Use small bladed screwdriver to press release button before inserting wire in the corresponding circular hole

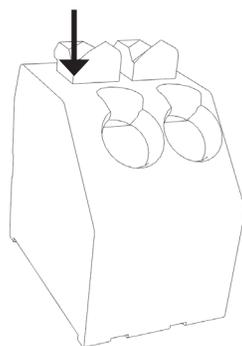


Figure 3 - Use a small bladed screwdriver to press the clamp release before inserting the wire.

## Regulatory Information and Certifications

**RF Exposure Statement:** This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

**Industry Canada (IC) certifications:** This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le present appareil numerique n'emet pas de bruits radioelectriques depassant les limites applicable aux appareils numeriques de la class B prescrites dans le Reglement sur le brouillage radioelectrique edicte par le ministere des Communications du Canada.

### **FCC certifications and regulatory information (USA only)**

**FCC Part 15 Class B:** This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) These devices may not cause harmful interference, and (2) These devices must accept any interference received, including interference that may cause harmful operation.

**RADIO FREQUENCY INTERFERENCE (RFI) (FCC 15.105):** 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 to radio 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 determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: (1) Re-orient or relocate the receiving antenna; (2) Increase the separation between the equipment and the receiver; (3) Connect the equipment into an outlet on a circuit different from that to which the receiver is connected; (4) Consult the dealer or an experienced radio/TV technician for help.

**Declaration of Conformity (FCC 96-208 & 95-19):** Synapse Wireless, Inc. declares that the product name "DIM10-100-00" to which this declaration relates, meet the requirements specified by the Federal Communications Commission as detailed in the following specifications:

- Part 15, Subpart B, for Class B equipment
- FCC 96-208 as it applies to Class B personal computers and peripherals
- This product has been tested at an External Test Laboratory certified per FCC rules and has been found to meet the FCC, Part 15, Emission Limits. Documentation is on file and available from Synapse Wireless, Inc.

If the FCC ID for the module inside this product enclosure is not visible when installed inside another device, then the outside of the device into which this product is installed must also display a

label referring to the enclosed module FCC ID. Modifications (FCC 15.21): Changes or modifications to this equipment not expressly approved by Synapse Wireless, Inc., may void the user's authority to operate this equipment.