NorthStar™

OUTDOOR FIXTURE CONTROL MODULE
0-10V CONTROL, 2 ANALOG INPUTS

Cat. Nos. OCF01-1RT, OCF01-10T
Rating: 5A @ 120-277 VAC, 50/60 Hz
Operating Temperature: -40 to +55 C / **Operating Humidity:** 10 to 90%, non-condensing

LEVITON®

DI-000-OCF01-05A

WARNINGS AND CAUTIONS:

- **TO AVOID FIRE, SHOCK, OR DEATH: TURN OFF POWER** at circuit breaker or fuse and test that power is off before wiring!
- **RISK OF ELECTRIC SHOCK:** more than one disconnect switch may be required to de-energize equipment before servicing.
- 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.
- Use this device **with copper or copper clad wire only.**

WARNINGS AND CAUTIONS:

- **Mounting:** It is critical to the performance of this device that the antenna be oriented vertically. It must point straight up or down for proper operation.
- **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.
- Metal conduit connector must be grounded.
- Switched output is energized by default at power up.

INSTALLATION GUIDE

DESCRIPTION

The Leviton® Fixture Control Module controls LED lighting in commercial and industrial buildings using the SNAP® wireless mesh network. It provides On/Off capability via an internal relay and 0-10V analog dimming control using a standard dimming protocol. Interface to a wired sensor and sensor power supply are also provided. Leviton lighting controllers are controlled through a browser based interface available via the Leviton lighting solution.

PROVISIONING

It is best to identify and provision nodes during installation. To aid this process, download the "Leviton NorthStar" app from the Google Play™ Store onto an Android™ device. If an Android™ device isn't available, document location of the fixture control modules on the site plans using the supplied stickers included with the device. This will be used during the commissioning phase. Refer to the system user manual for information on provisioning the FCM.

FEATURES

- On/Off switching via relay, up to 5A load
- 0-10V dimming, up to 20mA source/sink
- Utility grade power monitoring
- Sensor input for standard wired sensors
- Sensor power supply, 24V @ 50mA
- Push button terminal blocks for easy installation

CERTIFICATIONS

- **Contains FCC ID:** U9O-SM220
- **Contains IC:** 7084A-SM220
- **UL Listed** (E346690)

SPECIFICATIONS

- **Voltage Input:** 120-277 VAC, 50/60 Hz
- **Voltage Output (Max)**: 305V
- **Power Use (No Load):** 1.1W @ 277VAC; 5W @ 120VAC
- **Output:** See Product Label
- **Relay Max Switched Circuit:** Zero Cross, 5A
- **Dim Control Max Load:** 20 mA Source/Sink
- **Radio Frequency:** 2.4 GHz (IEEE 802.15.4)
- **RF Transmission Output Power:** +20dBM
- **Dimensions:** 8.2 in. L x 2.3 in. W X 1.3 in. H (209 mm X 59 mm X 33 mm)
- **Enclosure Type:** Galvanneal steel, powder-coated white
- **Config Programming:** Stored in non-volatile memory.
- **Max Range:** 1 Mile LoSt, Obstruction Free; in cases where communication is problematic, an additional node (with or without connect load) can be added to act as a repeater.

INSTALLATION

WARNING: TO AVOID FIRE, SHOCK, OR DEATH: TURN OFF POWER at circuit breaker or fuse and test that power is off before wiring!

WARNING: RISK OF ELECTRIC SHOCK - more than one disconnect switch may be required to de-energize equipment before servicing.

MOUNTING

It is critical to the performance of this device that the antenna be oriented vertically. It must point straight up or down for proper operation. When installing the Fixture Control Module (FCM) in an enclosure, antenna position must be considered in order to provide optimum wireless signal strength. For best transmission, all antenna should be oriented in the same direction.

NOTE: See the Fixture Control Module mounting template (provided with unit) for assistance.
NOTE: Mount in an LED Fixture or Troffer.

Option A. For standard installation: place the FCM in desired location and secure it using (4) #8 screws. Prior to permanently mounting the FCM, make sure the antenna points directly upward or downward and is free of any metal objects within 12 in. of the antenna (***Figure 1***).

Option B. For installation in a light pole: hang the FCM with an appropriate cable hook, by using the cable hook hole at either end of the device (***Figure 2***).

WIRING

1. **WARNING: TO AVOID FIRE, SHOCK, OR DEATH: TURN OFF POWER** at circuit breaker or fuse and test that power is off before wiring!
   WARNING: RISK OF ELECTRIC SHOCK - more than one disconnect switch may be required to de-energize equipment before servicing.
   WARNING: 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.
   NOTE: Steps 2-6 are for Class 1 Load Control. Terminals accept up to #12 AWG wires.
2. Connect the **ground wire** (bare copper or green) from the line voltage power input to the **EARTH GND** input on the FCM.
3. Connect the **black wire** (hot) from the line voltage power input to the **LINE** input on the FCM.
4. Connect the **white wire** (neutral) from the line voltage power input to the **NEUTRAL** input on the FCM.
5. Connect the **white wire** (neutral) of the LED fixture to the **neutral** from the line voltage power input.

FIGURE 1 - ANTENNA ORIENTATION

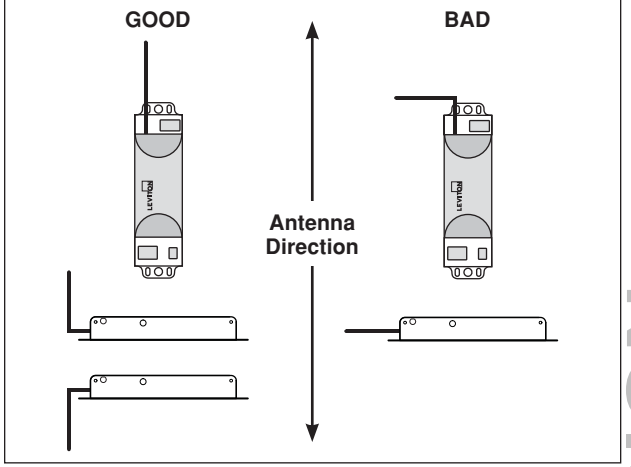
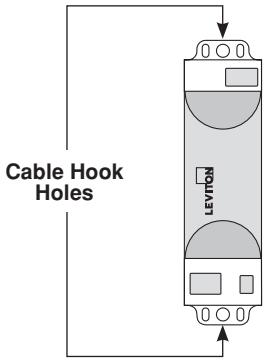


FIGURE 2 - CABLE HOOK LOCATION



WEB VERSION

WIRING CONTINUED,

6. Connect the **black wire** (hot) of the LED fixture to the **LOAD** output on the FCM.

   NOTE: Step 7 is for Class 1/2 Dimming Control. Terminals accept 18-20 AWG wires.

7. If 0-10V control is used connect the **DIM-** of the LED fixture to the **COMMON** input of the FCM. Connect the **DIM+** of the LED fixture to the **0-10V** input of the FCM.

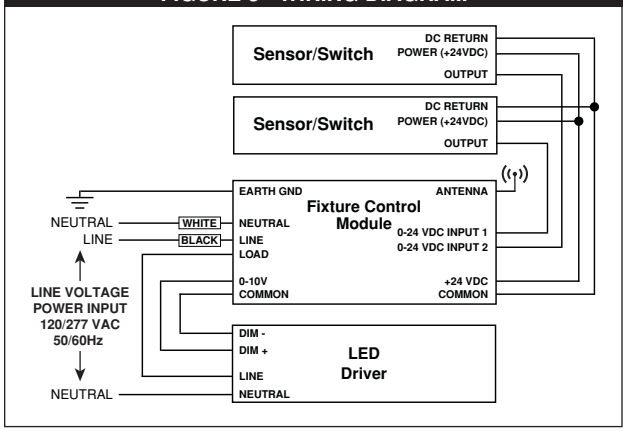
   NOTE: Steps 8-10 are for Class 2 Sensor/Switch Input. Terminals accept 18-20 AWG wires.

8. Connect the **DC Return** wire of the Sensor/Switch to the **COMMON** on the FCM.
9. Connect the **Output** wire on the Sensor/Switch to a **24 VDC INPUT** on the FCM.
10. Connect the **Power** wire on the Sensor/Switch to the **+24 VDC** on the FCM.
11. Switch fixture power to on. 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.

12. Refer to the **System User Manual** available at **www.leviton.com** for information on provisioning the FCM.

FIGURE 3 - WIRING DIAGRAM



DIMMING

Below are some recommendations for successful dimming using the Fixture Control Module. 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.
- When possible, route dimming wires away from AC lines.
- 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 depends on the following factors: dimming current, current requirements for 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.

REGULATORY INFORMATION

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.

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): Leviton Manufacturing., Inc. declares that the product name “OCF01” 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 Leviton Manufacturing., 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 Leviton Manufacturing., Inc., may void the user’s authority to operate this equipment.

FOR CANADA ONLY: For warranty information and/or product returns, residents of Canada should contact Leviton in writing at **Leviton Manufacturing of Canada Ltd 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 AND EXCLUSIONS

Leviton warrants to the original consumer purchaser and not for the benefit of anyone else that this product at the time of its sale by Leviton is free of defects in materials and workmanship under normal and proper use for five years from the purchase date. Leviton’s only obligation is to correct such defects by repair or replacement, at its option. **For details visit www.leviton.com or call 1-800-824-3005.** This warranty excludes and there is disclaimed liability for labor for removal of this product or reinstallation. This warranty is void if this product is installed improperly or in an improper environment, overloaded, misused, opened, abused, or altered in any manner, or is not used under normal operating conditions or not in accordance with any labels or instructions. **There are no other or implied warranties of any kind, including merchantability and fitness for a particular purpose**, but if any implied warranty is required by the applicable jurisdiction, the duration of any such implied warranty, including merchantability and fitness for a particular purpose, is limited to five years. **Leviton is not liable for incidental, indirect, special, or consequential damages, including without limitation, damage to, or loss of use of, any equipment, lost sales or profits or delay or failure to perform this warranty obligation**. The remedies provided herein are the exclusive remedies under this warranty, whether based on contract, tort or otherwise.