**LINE VOLTAGE DIMMING ROOM CONTROLLERS**

**CALIFORNIA TITLE 20 COMPLIANT**

Cat. Nos. OxC20-MDW/OxC20-MDIW/OxC04-IDW/OxC04-IDW/120-277VAC, 50/60 Hz, 1/3 hp / Current Consumption: 60-30 mA

**Operating Temperature:** 32° to 104°F (0° to 40°C) / Operating Humidity: 10 to 90%, non-condensing

**Compatible with 0-10V controlled 120-277VAC loads.**

### 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!**
- 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.
- Room controllers must be mounted on a vibration free surface.
- Do not terminate using data type wire, such as Cat 5/SE.
- Do not mount room controllers closer than 15 feet to each other.
- All units must be mounted at least 6 feet away from air vents, air handlers, and reflective surfaces (windows/mirrors).
- Do not touch the surface of the lens. Clean outer surface with a damp cloth only.

### INSTALLATION GUIDE

#### TOOLS NEEDED

- Slotted/Phillips Screwdriver
- Small Slotted Screwdriver
- Wire stripper
- Cutters

#### PARTS INCLUDED LIST

- Room controller (1)
- 4’ x 4’ Mounting Plate (1)
- #6-32 x 1-1/2” Screw (2)
- Mid-Range Lens [red frame] (1)
- Extended Range Lens [black frame] (1) [assembled]
- High voltage terminal covers (1)
- Angled Light Pipe (1)
- Flat Light Pipe (1) [assembled]
- 360˚ Perforated Mask (1)
- Low Voltage Connector (1)
- Half Mask (1)
- Tubing Barrier (1)

#### INSTALLING YOUR ROOM CONTROLLER

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

2. **PREPARING AND CONNECTING WIRES:**
   - Connect wires per appropriate WIRING DIAGRAM as follows:
   - Make sure that the ends of the wires from the electrical box are straight.
   - Remove insulation from each wire in electrical box as shown.
   - Wire per Specifications:

#### Wiring Diagram 1 (1-Zone units)

![Wiring Diagram 1](image1)

#### Wiring Diagram 2 (2-Zone units)

![Wiring Diagram 2](image2)

#### NOTES:

- Both loads of the 2-Zone units MUST be fed from the same phase.
- When installing Class 2 wiring use the provided tubing for insulation inside the junction box.

#### TO MOUNT INSIDE 4” OCTAGON 2.125” DEEP CEILING ELECTRICAL BOX:

1. Dress line voltage wires to provide enough clearance in electrical box when device is installed.
2. Partially thread two #6-32 screws (not included) into the mounting holes of the electrical box.
3. Pull out the two coasters that align with the two screws.
4. Align room controller so that it fits between the mounting holes of the electrical box and insert over mounting screws.
5. Push in the two coasters that align with the two screws.
6. Tighten mounting screws firmly.

#### INSTALLING YOUR ROOM CONTROLLER:

1. Insert wires into proper terminals. Use a screwdriver to turn terminal screws clockwise and secure wires. **NOTE:** Wires need to be inserted from the top through the wire holes provided on the room controller and clamped down using the easier to the terminals. 

2. **INSTALLING YOUR ROOM CONTROLLER:**
   - **WARNING:** 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.
   - Use this device with copper or copper clad wire only.
   - Room controllers must be mounted on a vibration free surface.
   - Do not terminate using data type wire, such as Cat 5/SE.
   - Do not mount room controllers closer than 15 feet to each other.
   - All units must be mounted at least 6 feet away from air vents, air handlers, and reflective surfaces (windows/mirrors).
   - Do not touch the surface of the lens. Clean outer surface with a damp cloth only.

### DESCRIPTION

The next generation of lighting control technology is here with the new Provolt™ Room Controller with Bluetooth® Technology. This innovative device works with the Leviton Provolt™ app that can be easily downloaded to smartphones or tablets and paired to the Leviton Provolt™ Room Controller using Bluetooth technology. Provolt™ Room Controller devices give users point-to-point local control to automate lighting, bridging the gap between standard room controllers and whole-building automation systems.

The Leviton Provolt™ app can be easily downloaded to mobile devices and is compatible with Android and iOS smartphones or tablets. The app is easy to use with simple, intuitive on-screen menu options to control a Provolt™ Room Controller.

*The OxC20-MDW & OxC20-MDIW Room Controllers are LINE-voltage multi-technology (PIR and Ultrasonic) sensors (Occupancy and Photocell) that automatically control lighting. The room controller is multiple sensors and technology working together to provide room lighting automatically and efficiently. Occupancy sensors turn the lights ON and keep them ON, while the Photocell detects natural light and dims room lighting up or down as needed for additional energy efficiency and circadian rhythm occupant comfort benefits.*

The VEC20-MDW LINE-voltage multi-technology Partial Off Room Controller monitors the space for vacancy. The lights can be turned ON manually by pressing the low-voltage/momery toggle switch or PVSW 1, 2, or 4 button switch. The sensor turns the lights OFF when vacancy is detected and the delayed-off time has expired. **NOTE:** Multiple PVSW switches can be used with a single Provolt Room Controller. Multiple 2 and 4 button switches OR multiple 1 button or low voltage momentary or toggle switches.

The combination of ultrasonic (doppler shift) motion detection which gives maximum sensitivity and infrared motion detection which gives higher false triggering immunity yields a sensor with excellent performance.

*The OxC04-IDW & OxC04-IDW Room Controllers are LINE-voltage infrared sensors that automatically control lighting. The room controller is multiple sensors working together to provide room lighting automatically and efficiently. Occupancy sensor turns the lights ON and keeps them ON, while the Photocell detects natural light and dims room lighting up or down as needed for additional energy efficiency and circadian rhythm occupant comfort benefits.*

*The VEC40-IDW LINE-voltage infrared Partial Off Room Controller monitors the space for vacancy. The lights can be turned ON manually by pressing the low-voltage/momery toggle switch or PVSW 1, 2, or 4 button switch. The sensor turns the lights OFF when vacancy is detected and the delayed-off time has expired. **NOTE:** Multiple PVSW switches can be used with a single Provolt Room Controller. Multiple 2 and 4 button switches OR multiple 1 button or low voltage momentary or toggle switches.*

*Infrared motion detection gives higher false triggering immunity that yields a sensor with excellent performance.*

*These sensors continually analyze and adjust to changing conditions and use the latest microprocessor-based technology which permits them to continually adjust and optimize their performance.*
**ROOM CONTROLLER OPERATION**

Complete explanation of the Room controllers Modes of Operation and Factory Default Settings is available in the Provolt™ app on your mobile device.

- **Delayed-Off time**: The room controller is designed to turn the lights OFF if no motion is detected after a specified time. This length of time is called the delayed-off time and is set using the Provolt™ app on your mobile device.
- **Walk-through Mode**: The walk-through feature is useful when a room is momentarily occupied. The walk-through feature works as follows: When a person enters the room, the lights will turn ON. If the person leaves the room before the default walk-through timeout of 2.5 minutes, the room controller will turn the lights OFF 2.5 minutes later. If the person stays in the room for longer than 2.5 minutes, the room controller will proceed with the standard operation.
- **Reset Device State**: To reset Auto adapting and photocell settings to factory default. To reset the device press the Reset Button for at least 5 seconds.
- **Test**: This mode is for test purposes only, and sets the room controller timeout to 4 seconds. **NOTE**: Enabling Test mode with reset Auto Adaptive data.
- **Manual ON/OFF Switch**: To override occupancy and manually turn the lights ON or OFF by pressing the low voltage momentary switch or lever. If no motion is detected, the device will switch OFF.
- **Demand Response Interface**: This input is intended for use with BMS (Building Management System), ADR (Automated Demand Response) or any contact to force the 0-10V output to reduce the light level by 15-50% as configured in the Provolt™ app.

**PHOTOCELL OPERATION**

Complete explanation of the Photocell operation and calibration is available in the Provolt™ app on your mobile device.

**DIMMING**

The photocell controls a 0-10 VDC dimmable ballast or LED Driver to achieve maximum energy savings while maintaining a minimum light level referred to as the "DDL". When no daylight is available, the photocell allows the load to operate at its full bright level. As daylight increases in the room, the photocell dims the load. When the minimum dim level is reached (and if the Dim to Off setting is enabled), the device will switch OFF the lights when the light level is above the DDL for 30 seconds. The lights will remain OFF until the light level drops below the DDL for 30 seconds. The lights will then be turned ON, with the light source set at its minimum dim level. The photocell will increase the light output until the DDL is reached. As the light levels change, the photocell will reduce or increase the dim level in order to maintain the DDL. There is an adjustable Fade Rate option in the Provolt™ app on your mobile device to make the light level transitions uncomfortable to room occupants.

**DUAL ZONE OPTION (X6CG Models ONLY)**

The dual zone option is ideal for installations, such as classrooms, with individually controlled parallel rows of lights. Daylight dimming contribution diminishes as the photocell's distance from the source (window) increases. Therefore, lights at different distances from a window should not be controlled from the same photocell output. The dual-zone models (X6CG) has a second dimming output that can control an additional zone of lighting. Zone 1’s (Load 1) light level can be adjusted using the Provolt™ app on your mobile device. Zone 1 will dim up and down proportionally to Zone 2.

**NOTE**: When installing X6CG models make sure to wire lights closer to the window to Load 1 and 0-10V wires to DIM 1 output.

**LED INDICATORS**

- **Red**: Blinks ON for 1 second upon PIR detection. Solid for 2 minutes then blinks for 3 minutes during manual photocell calibration.
- **Green**: Solid for more than 2 minutes indicates device failure. Alternating Red Blue indicates the device is in locate mode triggered by the Provolt Bluetooth App.
- **Yellow**: Blinks once every 30 seconds when Demand Response signal is active or BLE app is overriding.
- **Blue**: Solid for 24 hours during photocell auto calibration. Rapid blink when in test mode.
- **Blue (Low Power)**: Solid for BLE Communications Error.

**FIELD-OF-VIEW**

- **Ext Field of View**
  - Cx20-MDW/Vx20-MDW: - 2000 sq. ft.
  - Cx04-IDW/Vx04-IDW: - 4500-5000 sq. ft.

**CHANGING PIR LENS**

Turn lens and line up arrows, then pull lens from room controller.

**DUAL ZONE LIGHTING OUTLINE DIAGRAM**

By masking two sections, half-way traffic can be blocked.

**SETTINGS**

**CONTROLLING YOUR ROOM CONTROLLER WITH BLUETOOTH® TECHNOLOGY**

Download the Leviton Provolt™ app for your mobile device.

**Android**: Tap the Google Play Store icon on your phone or go to http://play.google.com on your computer and follow the instructions to obtain the app.

**iOS**: Tap the App Store icon on your phone or access the app through your iTunes account on your computer.

Once you have downloaded the Provolt™ app, follow the on-screen instructions to connect to the Provolt™ device(s).

**BLUETOOTH® TECHNOLOGY RANGE**

The Provolt™ app uses BLUETOOTH® Low Energy (BLE) wireless communication. BLE technology range is limited; the maximum range is approximately 33 feet. Openings and/or obstructions (walls, doors, etc.) may reduce BLE range.

**IC COMPLIANCE STATEMENT**

Per RSS-Gen, Section 8.4, this device 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.

**CLASS 2 INSTALLATION NOTE**

The 0-10 V DC dimmer control circuit can be installed as Class 1 or Class 2. If installed as Class 2, all devices in the circuit must be Class 2 rated and this switch must be wired per instructions below, which are in accordance with NEC Code NFPA 70, paragraph 725.136 (d).

For Class 2: Installation of the 0-10V control wires must be mechanically separated from Class 1, line, neutral and ground power lines. This can be accomplished by performing the following:

1. Installing a mechanical barrier, in the form of silicone tubing or other non-conductive material, that will provide mechanical separation equal to 25 mm. The barrier can be red or blue in color or any color with a difference in material or appearance from the connecting wires to create the physical separation from the point to which they extend out of the electrical box.
2. Use of approved wire connectors shall be used to join the 0-10V control wires to building control cables. The connectors must be approved for use with building control wiring.
3. When CL3, CL3R or CL3P rated control cables (or permitted substitute) are used, the control cables must be properly and securely identified.

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