

PHOTOCELLS

CAT. NOS. PCIND, PCOUT, PCATR, PCSKY INSTALLATION INSTRUCTIONS



PK-A3023-10-00-0A

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.
- **SAVE THESE INSTRUCTIONS.**

WARNINGS AND CAUTIONS:

- Read and understand all instructions. Follow all warnings and instructions marked on the product.
- Installer must be a qualified and experienced service technician.
- Verify the product ratings to confirm that this product will satisfy your requirements and application prior to installation.

OVERVIEW

Leviton Photocells monitor ambient light levels and provide a DC analog signal to various microprocessors and energy management systems for the purpose of lighting control. There are 4 different styles with 4 different possible ranges for a total of 16 basic varieties.

Styles Include: Indoor, Outdoor, Atrium and Skylight

Ranges Include: 0-5V, 1-5V, 0-10V & 1-10V

All 16 varieties require a Class 2 Low Voltage Power Supply providing 12-24VDC input power to operate properly.

The four different styles of Leviton Photocells have different mounting and installation requirements which are covered in the installation section.

INSTALLATION

Indoor Photocell – PCIND (Ceiling)

Mount the Indoor photocell in a 1/2" hole in the false ceiling tile using the adhesive backing. For most general applications the photocell should be mounted between 6-8 feet of the window area, central to the area illuminated by the electrical lighting that will be controlled. In all cases the photocell must be mounted so that it looks at reflected light only and not at any direct light. (See Figure 1A)

Indoor Photocell - PCIND (Reflecting Wall)

Mount the Indoor photocell at a reflecting wall. When sconces are in place in the light well, make sure not to mount photocell in direct level as the sconces. Place photocell 18" from the bottom corner of the ceiling. Remember, the Fresnel lens will see light with a field of view that is 1.15 times the distance to the wall. No direct lighting should be within the field of view. (See Figure 1C)

Outdoor Photocell - PCOUT

Mount the Outdoor photocell in a standard threaded 1/2" conduit or 1/2" knockout. Locate the photocell on the roof or somewhere that is exposed to full daylight and is not shadowed or directly exposed to any night-time illumination. Photocell must be mounted horizontally, facing North, with the hooded portion on top. (See Figure 1E)

Atrium Photocell - PCATR

Mount the Atrium Photocell in a standard threaded 1/2" conduit or 1/2" knockout. Locate the photocell at the opposite side of the window mounting the photocell against the wall or ideally in the middle of the atrium expanse, facing towards the Atrium glass. (See Figure 1B)

Skylight Photocell - PCSKY

Mount the Skylight photocell in a standard threaded 1/2" conduit or 1/2" knockout. Locate the assembly near the center of the skylight well (at least 12" from the side) that is exposed to full daylight and is not shadowed. For the best results, use uni-strut with a 1/4" angle support, making sure the top of the light photocell is level with top of skylight curb. Photocell must be mounted vertically with the domed portion facing up. (See Figure 1D)

CONNECTION

Leviton Photocells are a three-wire device that can provide DC analog voltage inputs to a variety of controllers and microprocessors. In most cases, a 12-24 VDC power source must be supplied to the RED and BLACK wires on the photocell. The photocell will draw 24mW of power. The DC signal voltage is returned to the controller through the YELLOW wire. Wiring the photocell to the controller should be done with 18-22 AWG stranded wire. (See Figure 2)

- Do not route the low voltage wire with or near AC power wiring.
- For long wire runs or where there is excessive electrical noise, shielded cable or cable in conduit is required.
- Cable lengths should not exceed 500 ft.
- Butt splices are recommended but wire nuts are acceptable.
- Wiring should be performed with all relevant power switched off.

RED: Input Voltage (+12-24VDC)

BLACK: Input Return/Output common (+12-24VDC)

YELLOW: Output Signal to Controller (0-5, 1-5, 0-10, 1-10VDC)

CALIBRATION

Leviton Photocells have a variable gain that can be adjusted by turning the trim pot screw that is accessible through the small hole in the side of the photocell housing. **However, making field adjustments are strongly discouraged as most field technicians do not have the equipment to do the job with any degree of precision.** Leviton Photocells are factory calibrated to values that are time tested for their applications. If the factory calibration has been altered, a recalibration fee will be charged to return the photocell to factory settings. If a field adjustment must be made, the following information should prove useful.

The Maximum range of a Leviton photocell should be at least 50% higher than the highest set point of interest in the lighting control zone that is controlled by the photocell.

- To increase the output signal voltage at a given light level, rotate the trim pot screw clockwise.
- To decrease the output signal voltage at a given light level, rotate the trim pot screw counter-clockwise.

The signal response of Leviton photocells is very linear. If an accurate reading of the foot-candle level that the photocell is exposed to is available, the maximum range can be set using some basic math.

PHOTOCELL	STYLE	FIXED CORRESPONDING FOOT-CANDLE MIN.	ADJUSTABLE CORRESPONDING FOOT-CANDLE RANGES	FACTORY SET MAX.
PCIND	Indoor	0 Foot-candles	50-750 Foot-candles	100 Foot-candles
PCOUT	Outdoor	0 Foot-candles	50-750 Foot-candles	250 Foot-candles
PCATR	Atrium	0 Foot-candles	200-2,000 Foot-candles	1,000 Foot-candles
PCSKY	Skylight	0 Foot-candles	1,000-7,500 Foot-candles	2,000 Foot-candles

Example: If the photocell is exposed to 150FC, and 300FC Maximum is desired, adjust the trim pot until the signal voltage is 5VDC for a 0-10V photocell.

When calibration is complete, be sure to replace the plastic screw and washer to seal the hole from dust and water. If there does not seem to be enough information here to adjust the photocell's gain, you should rely on the factory setting or call technical support for additional help.

NOTE: Field adjustment of the photocell's gain is not recommended.

OPERATION

Leviton Photocells are functioning when the EMS system analog status changes as the photocell detects light. Once calibrated, the photocell will need no further attention. Except for the calibration hole there are no switches or other user controls on the photocell.

MAINTENANCE

Every 2 months wipe the lens clean with a non-scratching clean cloth and ensure that no foreign debris remains. Check the housing for damage such as cracks, burns or other deformations. Check that no moisture has penetrated the photocell, as this will likely render it inoperable.

FIGURE 1A-1E: LEVITON PHOTOCELL MOUNTING LOCATION

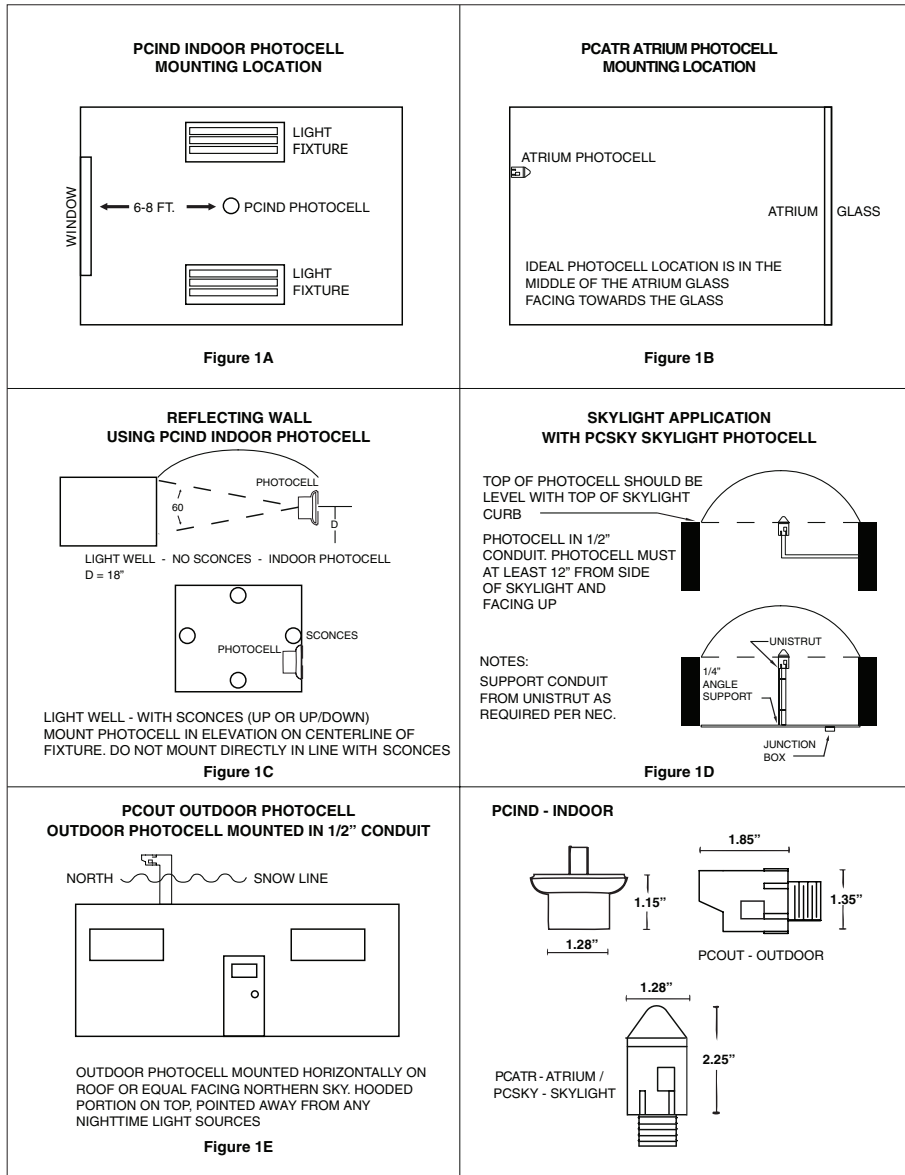


FIGURE 2: CONNECTION DIAGRAM

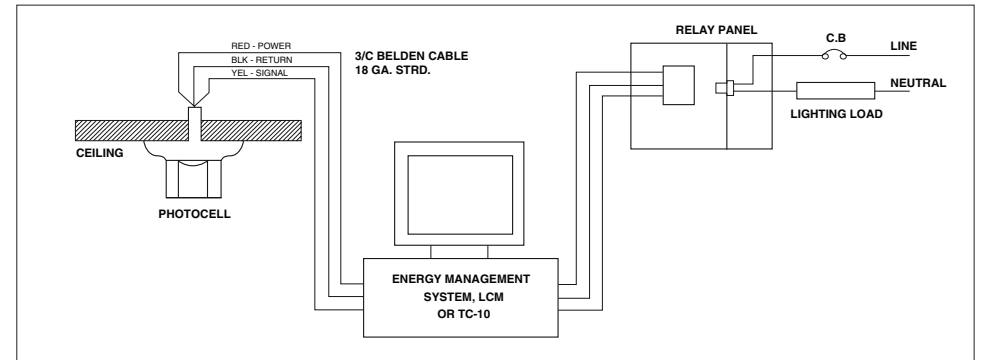
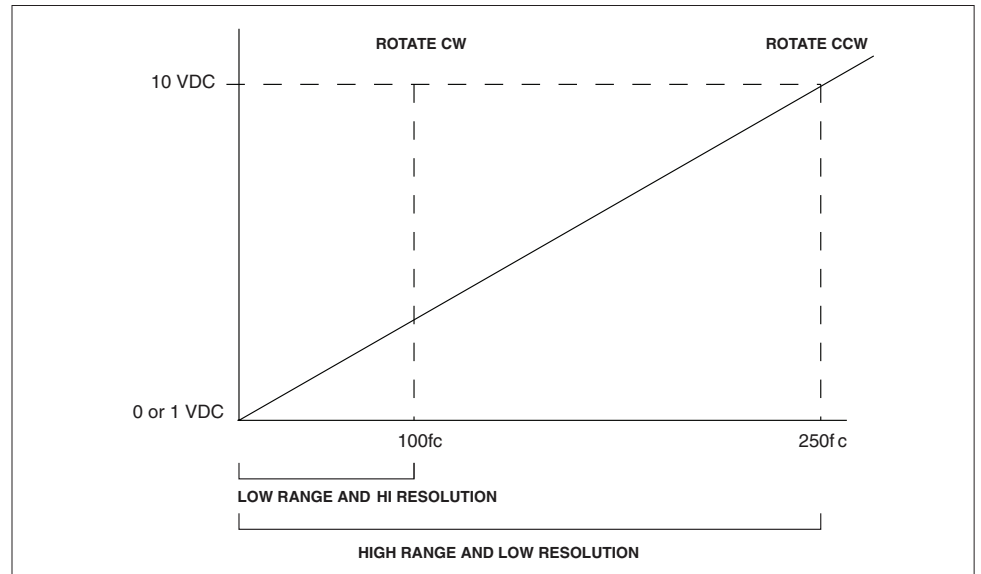


FIGURE 3: SENSITIVITY ADJUSTMENT



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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.