



Installation and Operation Instructions DLCPCC Photocell Controller

General

1. Please read these instructions carefully to prevent any possible injury or equipment damage.
2. Installer must be a qualified and experienced service technician.
3. Verify the product ratings to confirm that this product will satisfy your requirements and application.

Introduction

The DLCPCC automatically switches an electrical lighting load in response to changes in natural daylight. The low voltage system consists of a control board and a remotely mounted photo conductive sensor. The controller comes in a plastic enclosure suitable for surface mounting. Refer to Figure 1 for a wiring diagram.

Installation

Mount the DLCPCC inside of a control panel or anywhere that protects it from the environment. Wiring or mounting holes can be drilled in the enclosure, but remove the board first. Check that any mounting screws do not contact the back of the board. The enclosure can also be secured with adhesive foam tape.

Connection

WARNING: Turn off supply voltage before connecting to terminals.

The DLCPCC operates an electrically held contactor relay or PLC-Multipoint powercube switcher. The DLCPCC can switch a maximum load of 3 amps inductive or 5 amps resistive. The DLCPCC is a Class 2 low voltage device operating at 24 VAC or 24 VDC and should be separated from high voltage components.

1. Connect 24 VAC or 24 VDC supply voltage to terminals 4 and 5 as shown on the enclosure cover and in Figure 1.
2. Connect the PC sensor cable to terminals 1 and 2. There is no polarity. The sensor is already installed in its final location.
3. Connect any PC sensor cable shield to terminal 3 and then connect terminal 3 to an earth ground.
4. Connect contactor relay between terminals 6 and 7 for Normally Open or between terminals 7 and 8 for Normally Closed.

Calibration

This section describes how to set the HIGH and LOW setpoints for when the lights will turn off and on. This region between these setpoints is called the dead band zone. Figure 2 shows a pictorial of how the DLCPCC functions within this zone. It is recommended that a PC Simulator is used during the calibration. If you have one, refer to the simulator instruction manual, p/n 57411T. Record the High and Low setpoint voltages for future reference.

1. Switch Sensor Delay OFF, located on the left side of the DLCPCC.
2. If your DLCPCC has an optional 1/2 hour timer board, switch the timer delay OUT (hence, off).
3. To adjust the low (LIGHTS ON) setpoint knob, manually switch the lights being controlled to OFF. Obtain the desired natural light level required for the lights to turn on. Wait for dusk or nighttime or close any blinds to simulate a darkened condition.
4. With a phillips screwdriver rotate the LOW (on) setpoint knob COUNTER-CLOCKWISE until the LED below it just barely lights. The lights will now turn ON if the natural light level falls below this minimum light level. When the DLCPCC turns on the lights, the LED near terminal 8 will turn on to indicate a 'lights on' condition.
5. To adjust the high (LIGHTS OFF) setpoint knob, manually switch the lights being controlled to ON, and open any blinds. Obtain the desired natural light level required for the lights to turn off. Usually, this occurs at mid-morning.
6. FOR INDOOR PC1A SENSOR ONLY: (for all other sensor go to step 7) Place a temporary jumper wire between Terminals 6 & 7.
7. Start with the high setpoint knob fully clockwise. With a phillips screwdriver rotate the HIGH (off) setpoint knob COUNTER-CLOCKWISE until the LED above it just barely lights. The lights will now turn OFF if the natural light level rises above this maximum light level.

NOTE: For outdoor sensing both setpoint knobs can be adjusted to the same light level so that the DLCPCC will switch the lights on and off at a particular natural light level. However, a dead band zone, as described above, can be added if there is influence from other light sources.

8. Remove jumper wire installed in step 6. If the lights turn on and off at a rapid pace, rotate the HIGH setpoint knob a fraction more counterclockwise.
9. Leave the Delay switch OFF and any 1/2 hour timer board switch OUT until testing is complete.

Operation

1. Short the sensor wire terminals 1 and 2 together. The relay will de-energize or open, and all the LEDs on the DLCPCCC will be off.
2. Remove the short between terminals 1 and 2. Remove one of the sensor wires from either terminal 1 or 2. The relay will energize or close, and all the LEDs on the DLCPCCC will be on.

The DLCPCCC has passed this portion of the test. Switch the Sensor Delay switch back to ON and the Timer Switch back to IN (if so equipped). Observe the controlled lights to check if they turn on and off as desired. If not, adjust as follows:

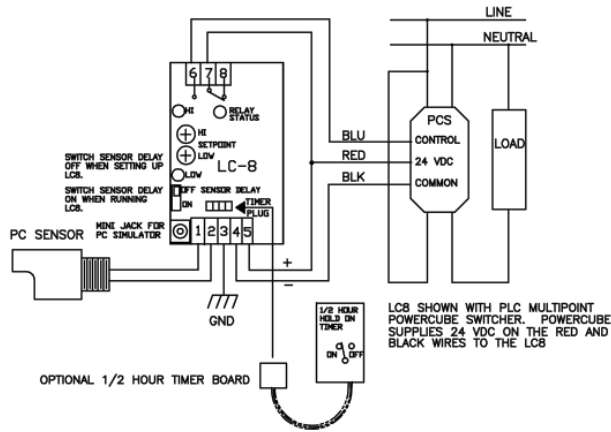
1. To switch the lights on or off at a HIGHER LIGHT LEVEL rotate the High or Low Setpoint Knob COUNTERCLOCKWISE.
2. To switch the lights on or off at a LOWER LIGHT LEVEL rotate the High or Low Setpoint Knob in CLOCKWISE.

The unit is now set and requires no further adjustments.

Maintenance

Every 6 months inspect the wiring for broken or frayed connections. Occasionally, wipe clean the plastic enclosure.

Figure 1: DLC-PCC Wiring Connection Diagram



DLC Sensor Mounting Locations

Figure A: Indoor DLC Mounting Location

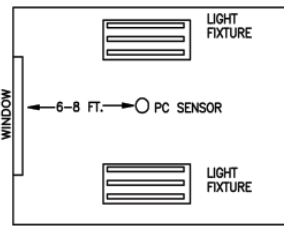


Figure B: Atrium DLC Mounting Location

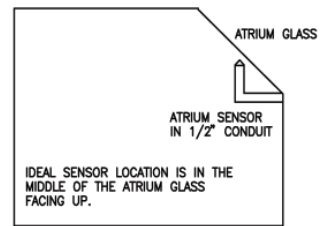


Figure C: Skylight DLC Mounting Location Using Outside Sensor

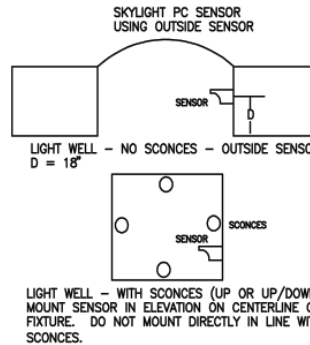


Figure D: Skylight DLC Mounting Location with No Light Well with Sensor

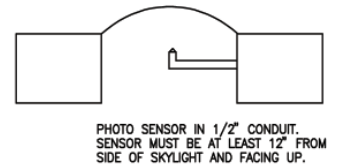


Figure 2: Pictorial of DLC-PCC Dead Band Operation

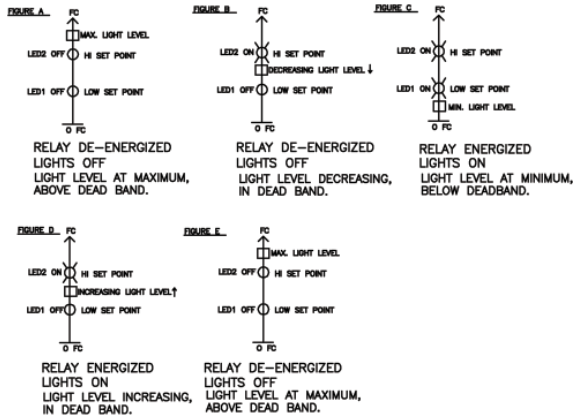
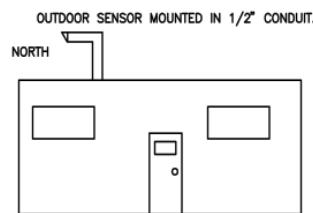


Figure C: Outside Rooftop Sensor



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