

# ILC LightSync 0-10V Dimmer Testing and Connections

The LightSync 0-10V Dimming Module and LL-RC Room Controller components are Class 2 devices. Applying Class 1 wiring rules is not recommended and may result in creating an induced voltage or capacitive coupling onto the 0-10VDC dimming control conductors. This induced line voltage or noise may cause damage to the ILC system control or the driver/ballast in the lighting fixture, it may also reduce the dimming control range and accuracy of the system.

**Caution:** An Electrical shock hazard can be present on the low voltage wiring leads due to miss-wire, faults or installations using Class 1 wiring methods. Leakage current or voltage can cause a shock hazard or electrocution.

Current levels as low as 10mA (0.01 Amps) can produce painful to severe shock, and current levels above 200mA (0.2 amps) could cause severe burns and unconsciousness.

Before connecting the 0-10V DC control wire from the LED driver or ballast to the LightSync 0-10V terminals, the electrical installer must verify voltage and current using a test meter.

*Do not* connect the 0-10V wiring from a powered light fixture without testing.

## **Step 1: Testing the 0-10VDC wiring.**

Voltage between Purple (+) and Gray (-) Class 2 control wires

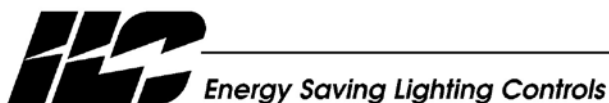
**10 volts DC**     9-15VDC acceptable range

AC voltage should not be present on the 0-10VDC Class 2 (+/-) wire. If an AC voltage is found, this would suggest an improperly wired driver/ballast in one or more fixtures causing excessive leakage voltage or Induced voltage.

\*Testing voltage between either of the control conductors (+/-) to ground will typically provide a reading of the leakage voltage to ground from the driver/ballast.

Leakage current from Driver or Ballast (+/-) conductor to Ground can be **0.5 mA** allowed by UL. When multiple drivers/ballasts are connected in a circuit, the per driver current is added together and can easily exceed safety levels.

Normal load DC current from + to – conductor is typically 0.5mA per driver/ballast. Sink load capacity of ILC dimmer control module is 100mA maximum per output channel at 10VDC.



INTELLIGENT LIGHTING CONTROLS, INC.

5229 Edina Industrial Boulevard  
Minneapolis, Minnesota 55439  
Phone 952 829 1900  
FAX 952 829 1901  
www.ilc-usa.com

## **Step 2: Test the dimming operation of the lighting fixtures**

With the (+/-) controls wires separated, the fixtures should operate at 100% output.

Directly connecting the + to – (shorting the 10VDC) should drive the lights to the driver’s minimum output level.

If the Lights do not change level, then you may have an open connection. Verify wiring terminations, if the fixtures appear to be dim all the time, it is most likely one or more drivers are wired backwards or a malfunctioning driver is causing a permanent short in the control wiring.

## **Step 3: Connecting to ILC**

With the fixtures and dimming controller un-powered, connect the 0-10V wiring.

Power-up the ILC controller and the lights after making the connections.



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