

0 - 10V PROTOCOL

1.1 0-10V Best Wiring Practice

Any manufacturer that makes a dimmer that sinks will work with Lumenetix modules since we source the voltage.

0-10V is a topology defined by the International Electrotechnical Commission (IEC) 60929 Annex E standard and uses a varying DC voltage between 1 and 10V to determine the lighting level. The fixture outputs a minimum light level below 1V which is defined as low-end. Between 1 and 10V, the signal corresponds to levels between the minimum and maximum output level. A signal above 10V corresponds to the maximum light level. Sometimes it is referred to as 1-10V, as that is the actual range in which the light levels will vary. Each dimmer will have their own distinct dimming profile.

Best practice is to limit the distance run for the analog control wiring from the controller to the last driver to 300'. This is based on 18 AWG wire. It is possible to extend the run to 400' by using 16 AWG wire, but that should be considered carefully as an exception to best design practice.

Whenever any part of the control circuit (the driver, dimer, or wire used) is designed for use in a Class 2 installation, it is critical that the entire control circuit be kept separate from Class 1 line voltage wiring per the requirement of National Electric Code, section 725.136. The electrical drawings must be very clear that class 1 and class 2 wiring cannot be combined. There must be separation because: a) it is possible for higher voltage wiring to induce an AC voltage in to the low voltage signal wiring; and, b) undesirable visual artifacts in the dimmed lighting can be caused when the line and low voltage wiring is run together (especially for long distances). We do not recommend installing the low voltage signal wiring in the same conduit or raceway as line voltage wiring even when all elements of the control circuit are listed for Class 1 wiring methods.

0-10V Dimmers (recommended list)*

Crestron

ETC

Fresco

Legrand

Leviton

Lutron

Nexlight

N-Light

Pass & Seymour

Vantage

Wattstopper

*Recommendations are subject to change. Consult your Lumenetix representative for the most updated list.