

Converting 0-10V with ProPlex

What is 0-10V Dimming?

0-10V is an analog lighting control protocol whereby a control voltage between 0-10V DC produces varying intensity levels in a lighting fixture. It is a popular control method in a variety of architectural lighting environments.

There are two 0-10V standards that are not compatible with each other:

- **Current Source** was originally used for controlling theatrical lighting, standardized by ANSI E1.3
- **Current Sink** is a method of 0-10V control used mainly in controlling ballasts, and more recently, LED Drivers. This method is standardized by IEC Standard 60929 Annex E

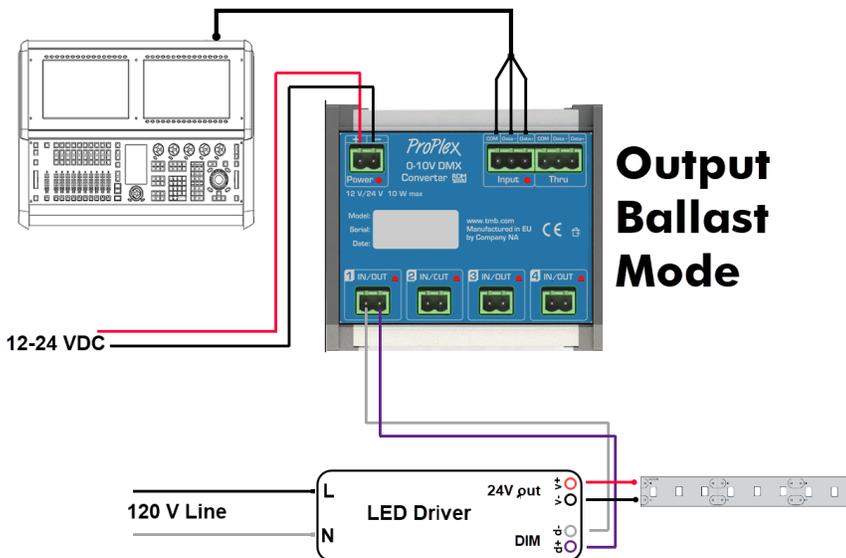
The fundamental difference between the two protocols is where the control voltage is coming from.

Current Source requires the controller to generate or “source” the low Voltage signal. The controlled device should scale its output so that at 10V, the controlled light should be at 100% of its potential output, and at 0V it should be at 0% output (i.e. off).

Current sinking means the device under control (ballast, driver or dimmer) supplies the Voltage, which “sinks” through the controller. In other words, the controller reduces the returned Volts to the light. If the controller returns the full 10V, the light will be at its brightest level. The light will be at minimum level if no Volts are returned.

Integrating 0-10V and DMX with ProPlex 0-10V DMX Converter

ProPlex 0-10V DMX Converter is designed to take control signals from 0-10V systems and convert them into 4 DMX channel outputs or Vice Versa. This is a perfect solution for existing system architecture that needs the additional protocol added while reducing the material costs when specifying both 0-10V and DMX controlled lighting together.



Operational Modes

- **Output Theatre (source 0-10V)**
DMX converted to 0-10V current source
- **Output Ballast (sink)**
DMX converted to 0-10V current sink
- **Input Theatre (hi-Z input)**
0-10V current source converted to DMX
- **Input Ballast (source current 1 mA/10V)**
0-10V current sink converted to DMX

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