ANIGMO TOUCHLESS SWITCHES. *WHEN THE DESIGN NEEDS TO BE ABSOLUTELY PERFECT*

STUDIO-800
FLICKER-FREE LED DIMMER



Description

STUDIO-800 universal LED dimmer is designed for smooth, flicker-free dimming of all constant voltage LED modules, including MR16 bulbs as well as 12V/24V Incandescent/Halogen bulbs

Using PWM (pulse width modulation) to dim the lights can introduce a high-frequency flicker in the dimmed light. This is usually not perceivable by the human eye but can be picked up by a camera. High-frequency flicker can introduce "dark bands" in still photos. Depending on the frequency of the PWM dimmer and the capture frequency of the video camera, these disturbances can be observed as dark bands, moving across the screen or even whole screen flickers in the video.

Some PWM dimmers on the market try to solve the flicker issue by further increasing the switching frequency, pushing it out of the range of camera detection. While this works in reducing flicker, it can introduce high-frequency EMI (Electro-Magnetic Interference) that can interfere with sensitive audio or video equipment.
STUDIO-800 dimmer uses a unique linear method of dimming, that completely eliminates any light flicker, independent of the light type (LED, COB, Mr16, etc) while eliminating any EMI emissions.

This dimmer is particularly suited for illumination of video/photo sets, where light flicker is an issue. It is also suited for installations with lots of reflections (such as showrooms, displays, etc) as multiple reflections can make flicker more apparent to the human eye.

Features

- *Proprietary linear dimming mode enables flicker-free for both video and still cameras*
- *Smoothly dims any LED, including hard to dim MR16 and G4 lamps across the full (0-100%) dimming range*
- *Excellent dimmer for 12V/24V Incandescent/Halogen bulbs as well*
- *Superior safety features including Overheating, No-load, Overload and Short circuit protection with auto restart*
- *Can be controlled with a variety of input devices including regular wall switches*
- *Simple synchronization of multiple units for controlling larger loads*
- *Non-volatile memory for dimmer output setting*
- *High-side dimming makes it suitable for common ground connections*

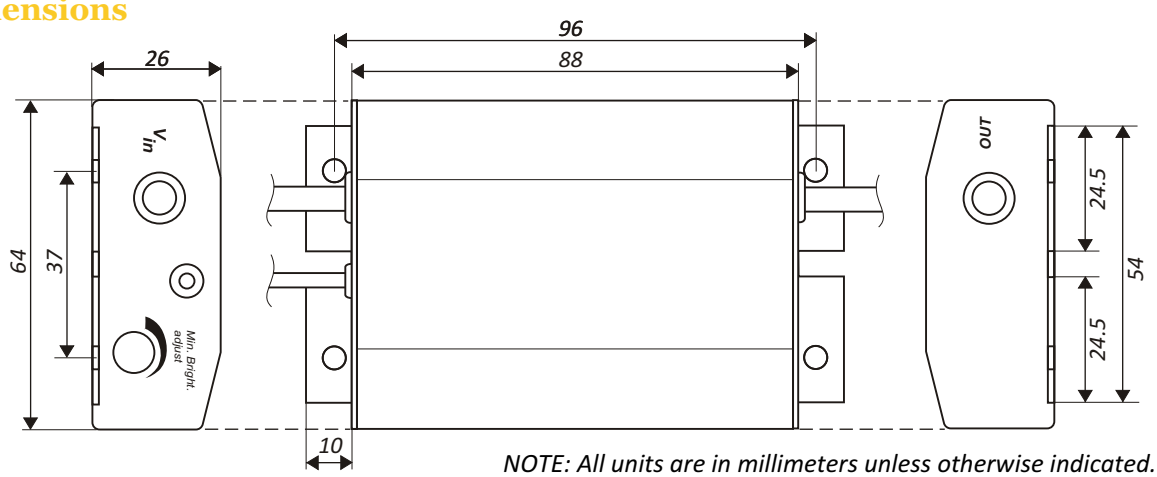
Applications

- *video/photo sets and other applications where camera flicker could be an issue (showrooms, displays)*
- *Applications when high reliability and safety of installation is needed*
- *Dimming of MR16, MR11, G4 and other LED lamps with integrated current controller*
- *Installations where the negative wire is absent (negative is connected to chassis)*
- *Dimming of any 12/24V DC constant voltage LED module such as:*
  Flexible and Rigid Strips, Rope Light, Rigid Light Bars, Under-cabinet Lights etc.

Specifications

TECHNICAL DATA	STUDIO-800
Supply input voltage range nom:	12 - 24 V DC
Supply input voltage (min - max):	8 - 30 V DC
Supply Input current:	8A
Output current max:	8A
Output load max:	96W@12VDC (at 25°C, *derate 1.5W per ambient degree above 25°C)*
	192W@24VDC (at 25°C, *derate 1.5W per ambient degree above 25°C)*
Control voltage:	1-10 V DC (0V - OFF)
Control current max:	0.1mA
Control:	0-10 V controls, Pot 100K Ohm, Dry Contact, Open collector
Dimming mode:	Linear, input voltage independant
Temperature range:	0 °C to +50 °C
No-Load proof:	Yes
Short circuit protection:	Yes, current limiting, reversible
Overload protection:	Yes, automatic shutoff, reversible
Overheating protection:	Yes, reversible
Input and output connections:	Stripped wire (AWG 14 for power wires, AWG 21 for signal wires)
Housing dimensions (W x D x H):	64mm x 88mm x 26mm (2.5" x 3.45" x 1")

Dimensions

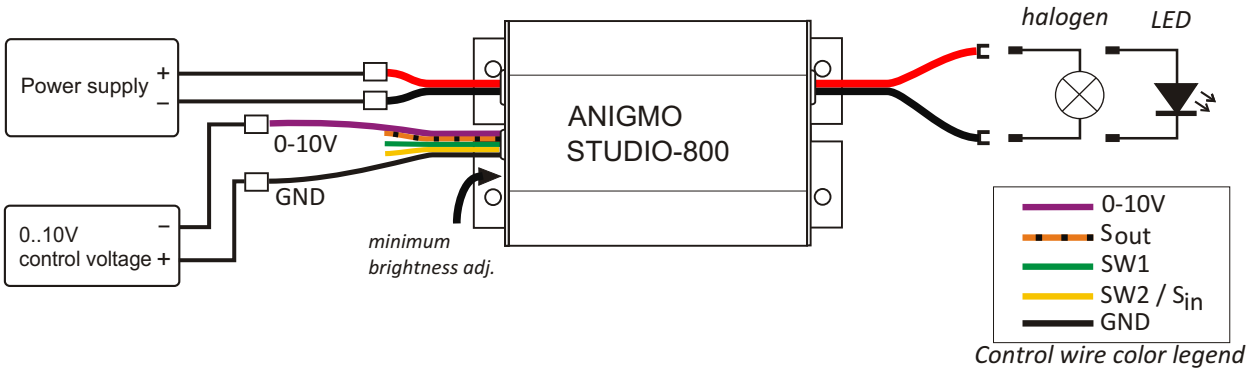


NOTE: All units are in millimeters unless otherwise indicated.

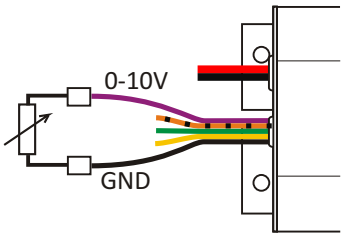
Installation

Connect the unit according to the control signal used (see connection diagrams below).
A unit can be mounted using screws, double-sided tape, or cable ties.
Sufficient heat dissipation of the device needs to be ensured. The device should not be covered or mounted in small, unventilated spaces if it is expected to operate at full power for longer periods. If multiple STUDIO-800 units are placed in the same enclosure, sufficient cooling needs to be provided or maximum output power should be reduced.
The maximum power rating is specified at 25°C. If the ambient temperature is expected to be higher, the maximum load power rating should be derated 1.5W per degree above 25°C.
Power supply and load wires should have a sufficient diameter to minimize a voltage drop across the wires.

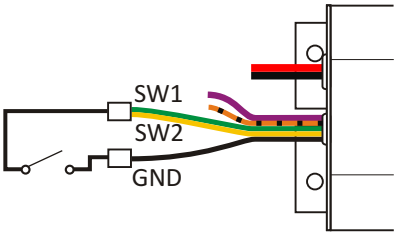
Installation diagrams



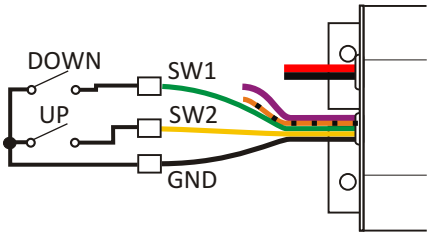
Wiring diagram for 0-10V control



potentiometer control



single switch control



UP/DOWN switch control

INSTALLATION CONSIDERATIONS:

Power should be turned off during installation.
All connections should be secure, connector screws should be tightened.
After connecting the wires, turn the power on. Set the dimmer to the lowest setting. Using minimum brightness control trimmer, set the desired minimum brightness. Sufficient heat dissipation of the device needs to be ensured. If the device is operating at or close to full power, it can get warm to the touch.

INPUT SIGNAL CONSIDERATIONS:

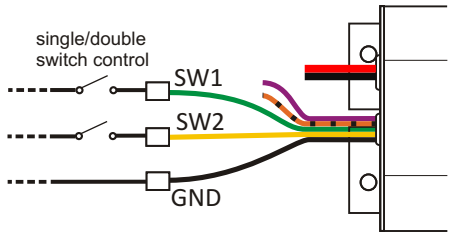
If using 0-10V control, make sure that the negative wire of the 0-10V control is not shared (take the same path) with power negative. The 0-10V negative should be connected as close as possible to the dimmer.
Wires (especially negative wires) should be connected in such a way to avoid large ground loops.
If ground loops can't be eliminated, an SDU signal conditioning unit should be used (see SDU signal conditioning unit for connection diagrams).
The source of the 0-10V control signal should be stable.

OUTPUT CONSIDERATIONS:

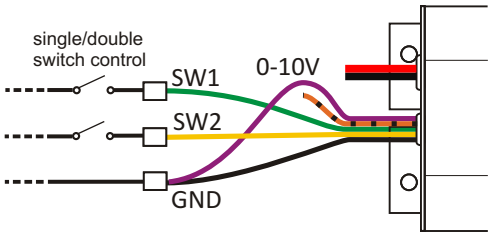
Use output wires of appropriate diameter.

Power-on output state selection

When the dimmer is powered on or when it looses power for a short time it sets its output to the power-on state. This state depends on the control used. If controlled by 0-10V voltage or 100k potentiometer the power-on state is set by voltage/ resistance on its 0-10V input. If the dimmer is controlled by a momentary switches the power-on states can be selected by following connections:

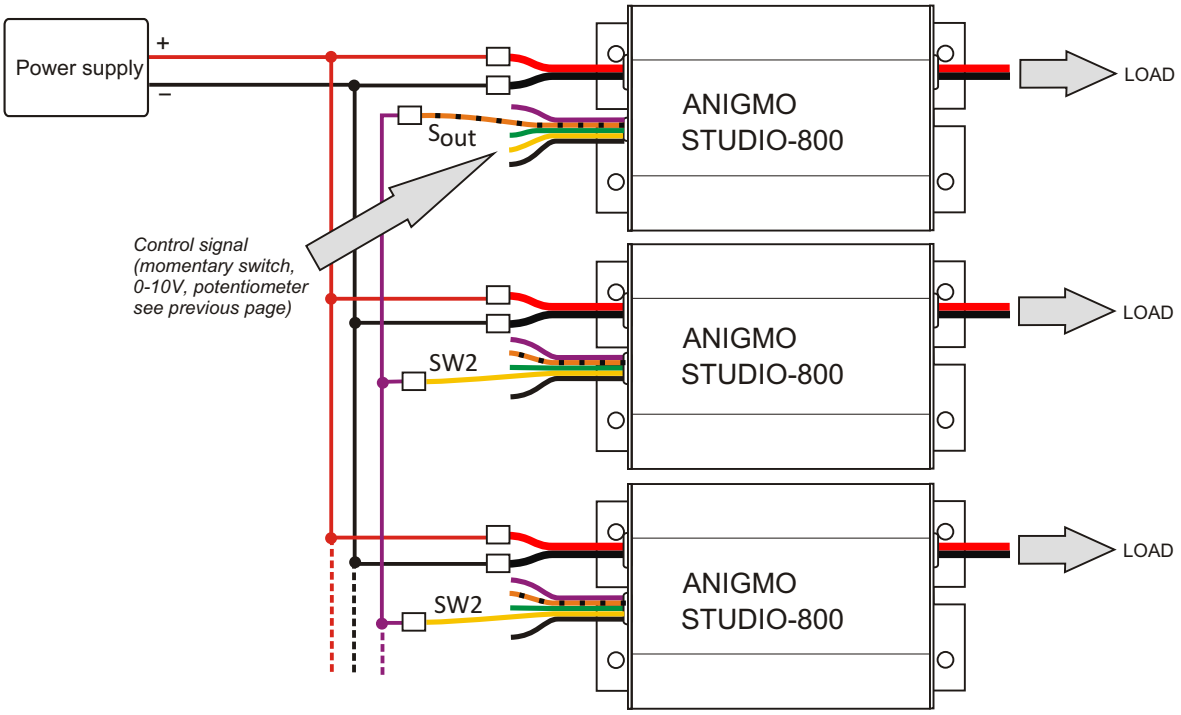


Dimmer goes to the "last set state" stored in the non-volatile memory at power on/power loss.



Dimmer remains "off" at power on / power loss (0-10V input is tied to the ground)

Synchronizing multiple units



Several STUDIO-800 dimmers can be synchronized to:

- ***control larger load**. If loads, larger than a single dimmer capacity need to be controlled, several dimmers can share the load. In theory, an unlimited number of units can be synchronized, but in practice, wiring limits the connection to 5-10 units.*
- ***control multiple dimmers with single push-button control**. When a push-button is connected to multiple dimmer unit inputs, dimmers can become unsynchronized due to small timing differences between units, even if they receive the same switch control. When multiple units are synchronized they can be controlled by a single switch control*
- ***control multiple dimmers with a single potentiometer**. A potentiometer can control only one unit. When multiple units are synchronized they can be controlled by a single potentiometer.*

NOTE: Above connection diagram shows a single power supply powering all dimmers. Each dimmer can use its own power supply, but the ground (negative wire) of all power supplies must be connected together
IMPORTANT: Outputs of separate dimmers should not be connected in parallel. Each should control its own set of lamps.