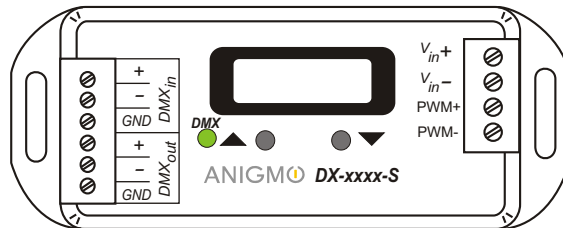


DMX-512 SINGLE CHANNEL LED DIMMERS DX SERIES



Description

DX series universal LED dimmers have dimming performance identical to the DMS series dimmers, with added DMX support. They can be controlled by any DMX-512 compatible controller using a single DMX channel.

DX series universal LED dimmers are designed for smooth, flicker-free dimming of all constant voltage LED modules, including MR16 bulbs as well as 12V/24V Incandescent/Halogen bulbs

DX series dimmers are ideal LED dimmers for any application that calls for low-voltage DC lighting for the home as well as commercial and industrial applications, where dimming is controlled by a DMX protocol.

DX series dimmers include several protection features against common wiring/lamp malfunctions that can protect the installation and be powered by a DC power supply or batteries. This makes them ideal for marine environments such as ships, boats, yachts, sailboats, and boat homes.

Unlike many low-cost products on the market, the DMX control signals are fully isolated from the power and output voltages, increasing the reliability of the DMX signal connection.

Features

- Controlled by DMX signal (single channel)
- Easy-to-read display and buttons, for simple DMX channel selection
- Proprietary Adaptive Pulse Modification (APM) PWM delivers flicker-free lighting and extended dimming range
- 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
- Isolated DMX inputs for greater connection reliability
- Compact housing
- Minimum brightness adjusted with a potentiometer
- High efficiency, low power consumption
- Safe and reliable screw terminals

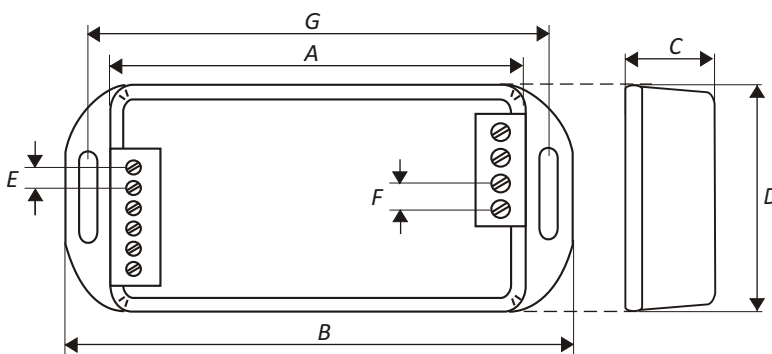
Applications

- Lighting controlled by DMX protocol, such as:
 - Low voltage decorative or industrial lighting, Nautical lighting, RV / caravan lighting
- Applications when high reliability and safety of installation is needed
- Dimming of MR16, MR11, G4, and other LED lamps with the integrated current controller
- Dimming of incandescent low-voltage bulbs
- Dimming of any 12/24V DC constant voltage LED module such as:
 - Flexible and Rigid Strips, Rope Light, Rigid Light Bars, Under-cabinet Lights, Spot lights, etc.

Specifications

TECHNICAL DATA	DX-500-S	DX-850-S	DX-1200-S	DX-548-S
Supply input voltage range nom:	12 - 24 V DC	12 - 24 V DC	12 - 24 V DC	48 V DC
Supply input voltage (min - max):	6 - 30 V DC	6 - 30 V DC	6 - 30 V DC	30 - 48 V DC
Supply Input current:	5A	8.5A	12A	5A
Output current max:	5A	8.5A	12A	5A
Output load max:	60W@12VDC / 120W@24VDC	100W@12VDC / 200W@24VDC	144W@12VDC / 288W@24VDC	240W@48VDC
Control:	DMX-512 signal (single channel)			
Dimming mode:	Adaptive Pulse Modification PWM			
Operating frequency:	390 Hz			
Dimming range:	0-100%			
Dimming resolution:	65 000 steps			
Temperature range:	0 °C to +50 °C			
No-Load proof:	Yes			
Short circuit protection:	Yes, automatic shutoff, reversible			
Overload protection:	Yes, automatic shutoff, reversible			
Overheating protection:	Yes, reversible			
Input and output connections:	Screw terminal for wire 2 mm ² (AWG 14) max.			
DMX signal connection	Screw terminal for wire 0.75 mm ² (AWG 18) max.			
Housing dimensions (W x D x H):	40mm x 96mm x 20mm (1.5" x 3.75" x 0.75")			

Dimensions



A (top housing length)	80 mm (3.15")
B (overall length)	96 mm (3.75")
C (height)	20 mm (0.75")
D (width)	40 mm (1.5")
E (power connector pitch)	5 mm (0.2")
F (DMX connector pitch)	3.8 mm (0.14")
G (mounting hole pitch)	88 mm (3.5")

Installation

Connect the DMX control signal, power supply, and load wires (see connection diagrams below).

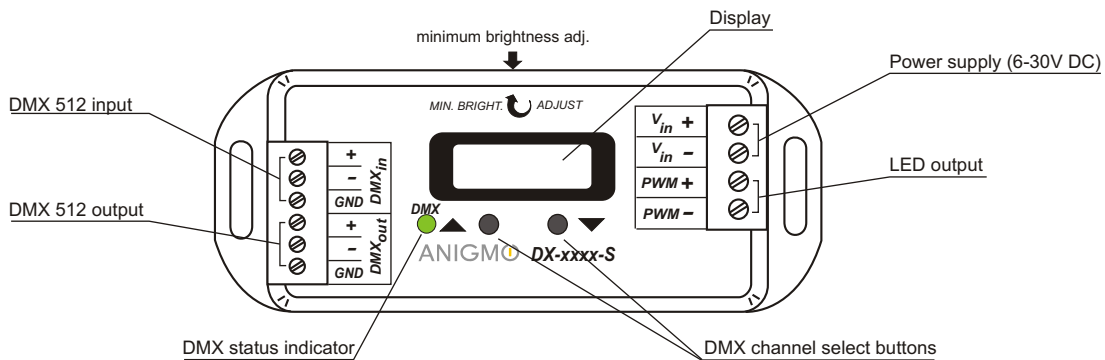
A unit can be mounted using two screws, double-sided tape, or cable ties.

Sufficient heat dissipation of the device needs to be ensured. The ambient temperature must not exceed 50°C.

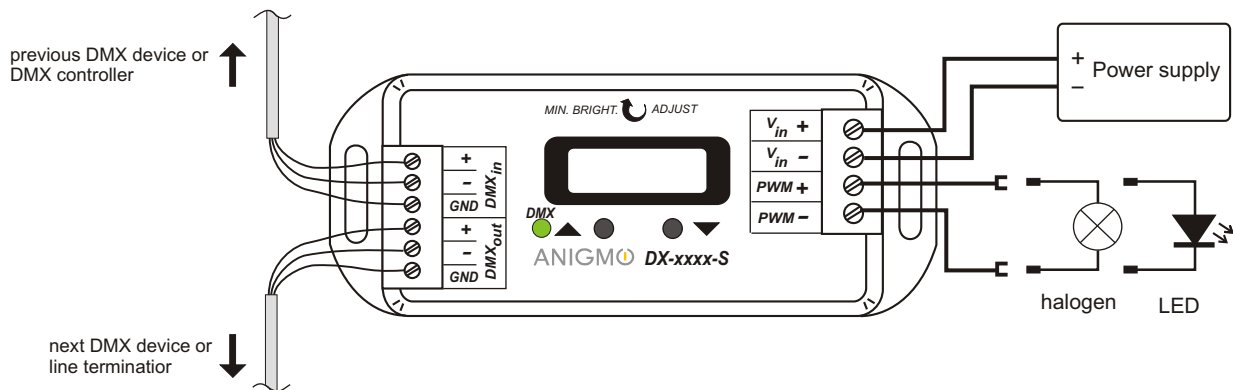
Power supply and load wires should have a sufficient diameter to minimize a voltage drop across the wires. If the voltage drop is too large, flickering of the lights and unstable operation is possible.

When long supply wires are used, it is recommended that a buffering capacitor of several 10 000µF (low ESR type) of appropriate voltage is used. The capacitor should be connected to the dimmer power supply input. Using a buffering capacitor will also filter and significantly decrease RFI emitted from supply wires.

Device description



Connection diagram



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.

OUTPUT CONSIDERATIONS:

Output wires should be as short as possible. If possible, connect the dimmer close to the load.

If mounting the dimmer close to the load is not possible, make sure that positive and negative load wires do not form a large loop area. Load wires should run as close as possible to reduce EMI.

For further reduction of EMI, positive and negative load wires can be twisted or shielded and grounded cable can be used.

Minimum brightness adjustment

Set the trimmer on the side of the dimmer to the most ACW position using an appropriate screwdriver (about $\frac{3}{4}$ of the turn). Set the dimmer output to the minimum dimming level (DMX output value 001). Slowly turn the trimmer CW until the desired minimum brightness is achieved.

NOTE: if the minimum brightness trimmer is set too low, lights will not turn on when the dimmer output is set to the minimum dimming level.

Setting the DMX channel

Connect the dimmer to the power. The display shows the currently set DMX channel. Pressing the UP and DOWN buttons the channel number can be increased or decreased. The dimmer does not need to have load or DMX control wires connected for the channel selection. The selected channel number is saved in the device's non-volatile memory.



Display showing the selected channel

If buttons are pressed for longer than 1s, the number increments/decrements automatically. By holding the button for even longer (about 3s) the speed of increment/decrement increases, allowing for easy selection of larger channel numbers.

The channel becomes active as soon as it is displayed.

NOTE: if the unit is connected to the active DMX controller while changing the channel number, the output could be unpredictable during the channel increment/decrement.

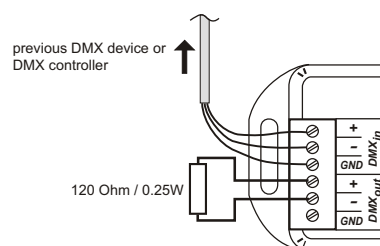
DMX status

The DMX status indicator LED is lit green when the device is actively receiving and decoding the DMX signal. It does not mean that the dimmer is receiving the data on the set channel. Some DMX controllers do not transmit full 512 sets of channels. If the device has its DMX channel set to a value that is higher than the maximum channel the DMX controller is transmitting, the DMX status indicator will be lit but no data will be received by the dimmer.

If the DMX status indicator LED is not lit, the dimmer does not recognize a valid DMX signal on the control input. This means that the DMX signal is absent or erroneous. If the DMX control wires are connected, then check the control wires, connection polarity, and connection continuity.

DMX line termination

If the dimmer is the last device in a DMX line, the DMX line must be terminated by a line termination resistor. This termination can be done by using a DMX line terminator device or by connecting a resistor to the **DMX Out** connectors of the dimmer, shown on a diagram below.



Connection of the line termination resistor