

DMX-LED-Dimmer 4

User Manual



DMX [®]
4
ALL

Description

The **DMX-LED-Dimmer 4** is designed to control RGB, RGBW or SINGLE COLOR LED-Stripes with 12V, 24V or 48V.

It has 4 PWM-Outputs, which are controllable independently via DMX.

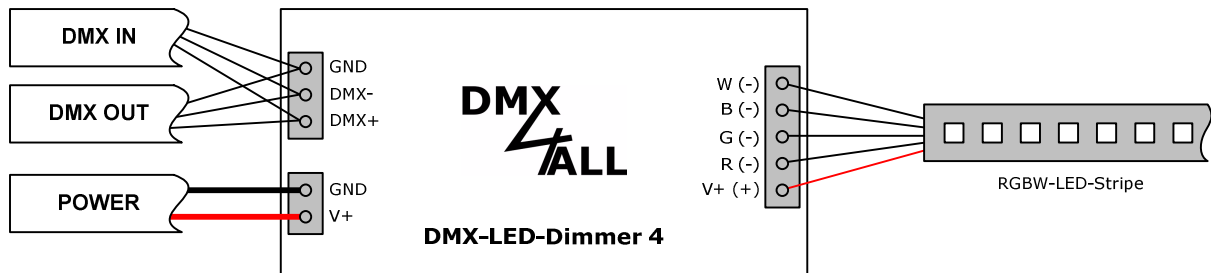
Alternatively internal color gradients can be called up without any external control.

Data sheet

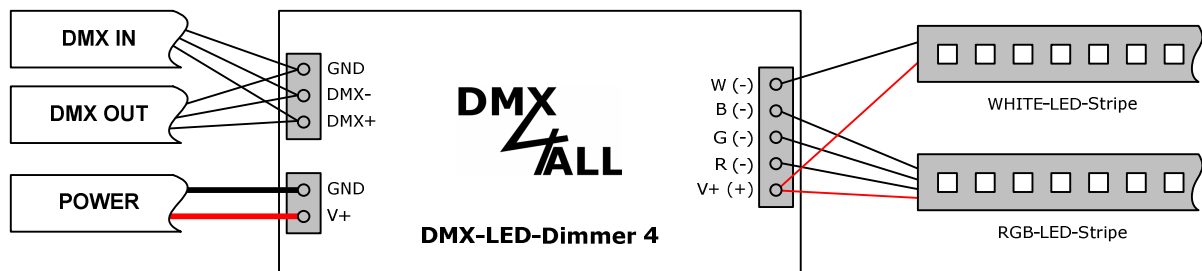
Power supply:	12-48V DC / 50mA without load
LED-Power supply:	12-48V DC according to the supply voltage (no AC voltage !)
DMX-IN:	4 Channels + optional Master-Dimmer-Channel
DMX-Fail:	Hold / Off / On
Output:	4 PWM-Signal with 16 Bit resolution common power supply voltage
Output current:	max. 10A per output at 12V or 24V max. 5A per output at 48V max. 10A in sum through all outputs
Output power:	120W (12V) / 240W (24V) / 240W (48V)
PWM-Frequency:	244 Hz / 4kHz
Master-Dimmer:	None / Masterdimmer / System-Masterdimmer
StandAlone-Function:	9 internal StandAlone-Programs
Dimensions:	80mm x 50,5mm

Connection

With RGBW LED-Stripe:



With separate RGB and WHITE LED-Stripe:

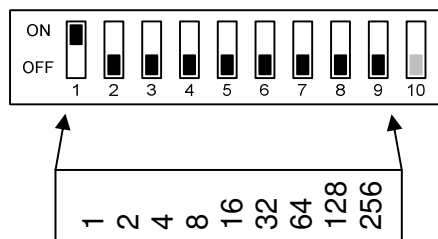


Addressing

The DMX-Start address is adjustable via switches 1 up to 9.

Switch 1 has the valence 2^0 (=1), switch 2 the valence 2^1 (=2) etc. until switch 9 has the valence 2^8 (=256). In total switches showing ON correlate with the starting address.

Switch 10 is reserved for the StandAlone-Function and must show OFF during the DMX-Operation.



LED-Display

The integrated LED is a multifunctional-display.

During the normal DMX-Operation the LED flashes permanent. In this case the device is working.

Furthermore the LED shows the event. In this case the LED lights in short pitches and then turns into the off mode for a longer period. The number of flashing impulses corresponds with the error status:

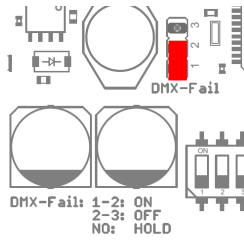
Error-Status	Error	Description
1	No DMX	There is no DMX-Signal at the dimmer
2	Address error	Check if a valid DMX starting address is adjusted via switches 1-9
3	DMX-Signal error	An invalid DMX-Entry signal is detected. Invert the signal lines at pin 2 and 3 or use a twisted pair wire.

Behavior at DMX-Fail

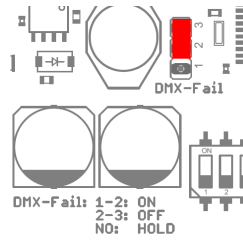
If a DMX fail (DMX-Fail) occurs the DMX-LED-Dimmer 4 is able to hold the LED-Outputs on the last value or can shut off or turn on all LED-Outputs.

The behavior in case of a DMX-Fail is adjustable via jumper:

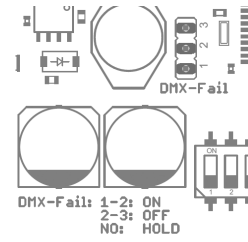
ALL ON:



ALL OFF:

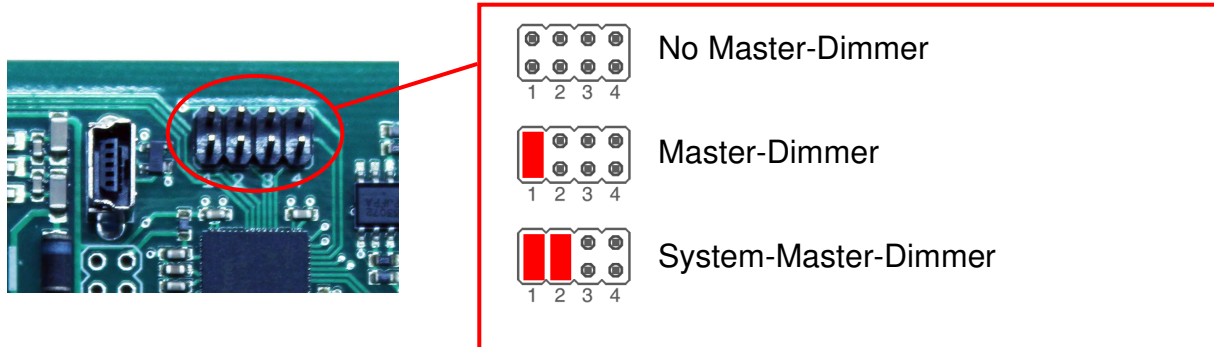


HOLD:



DMX-Master-Dimmer

The **DMX-LED-Dimmer 4** has several Master-Dimmer. These can be activated via jumper 1 and 2 as following:



Master dimmer

That DMX-Channel which is set with the start address is used for the master dimmer for all 4 outputs. The DMX-Address assignment is as follows:

Start address

Master
OUT 1 (R)
OUT 2 (G)
OUT 3 (B)
OUT 4 (W)

Start address

Master
OUT 1 (R)
OUT 1 (fine)
OUT 2 (G)
OUT 2 (fine)
OUT 3 (B)
OUT 3 (fine)
OUT 4 (W)
OUT 4 (fine)

System-Masterdimmer

The Master-Dimmers value is according to DMX-Channel 1, which is used as Master-Dimmer for all 4 outputs. The DMX-Start address shows the DMX-Channel on which the DMX-Values start. The assignment is as follows:

Channel 1 Start address

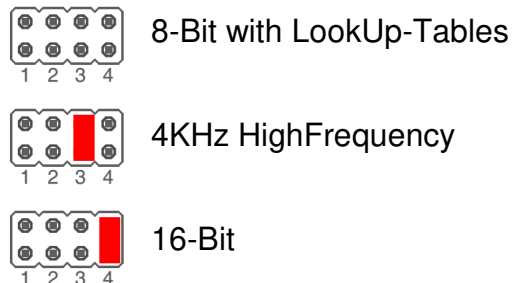
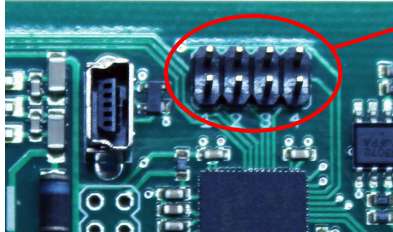
Master
OUT 1 (R)
OUT 2 (G)
OUT 3 (B)
OUT 4 (W)

Channel 1 Start address

Master
OUT 1 (R)
OUT 1 (fine)
OUT 2 (G)
OUT 2 (fine)
OUT 3 (B)
OUT 3 (fine)
OUT 4 (W)
OUT 4 (fine)

Set operation modes

The **DMX-LED-Dimmer 4** has several operation modes adjustable via jumper 3 and 4:



8-Bit with LookUp-Tables

Each output is controlled with one DMX-Channel (8-Bit).
Thereby the configured LookUp-Tables are considered.

4KHz HighFrequency

The DMX-LED-Dimmer 4 uses in this operation mode a 4kHz PWM- Output frequency.
This mode is for usage in accordance with video recording useful, e.g. in TV-Studios.

16-Bit

Each output is controlled with two DMX-Channel (2x8Bit = 16-Bit).
The second DMX-Channel is for fine-tuning.

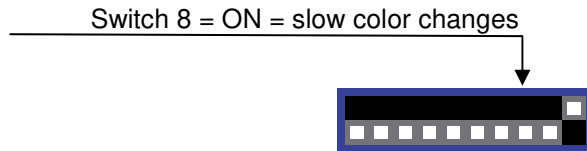


The several operation modes can't be combined !

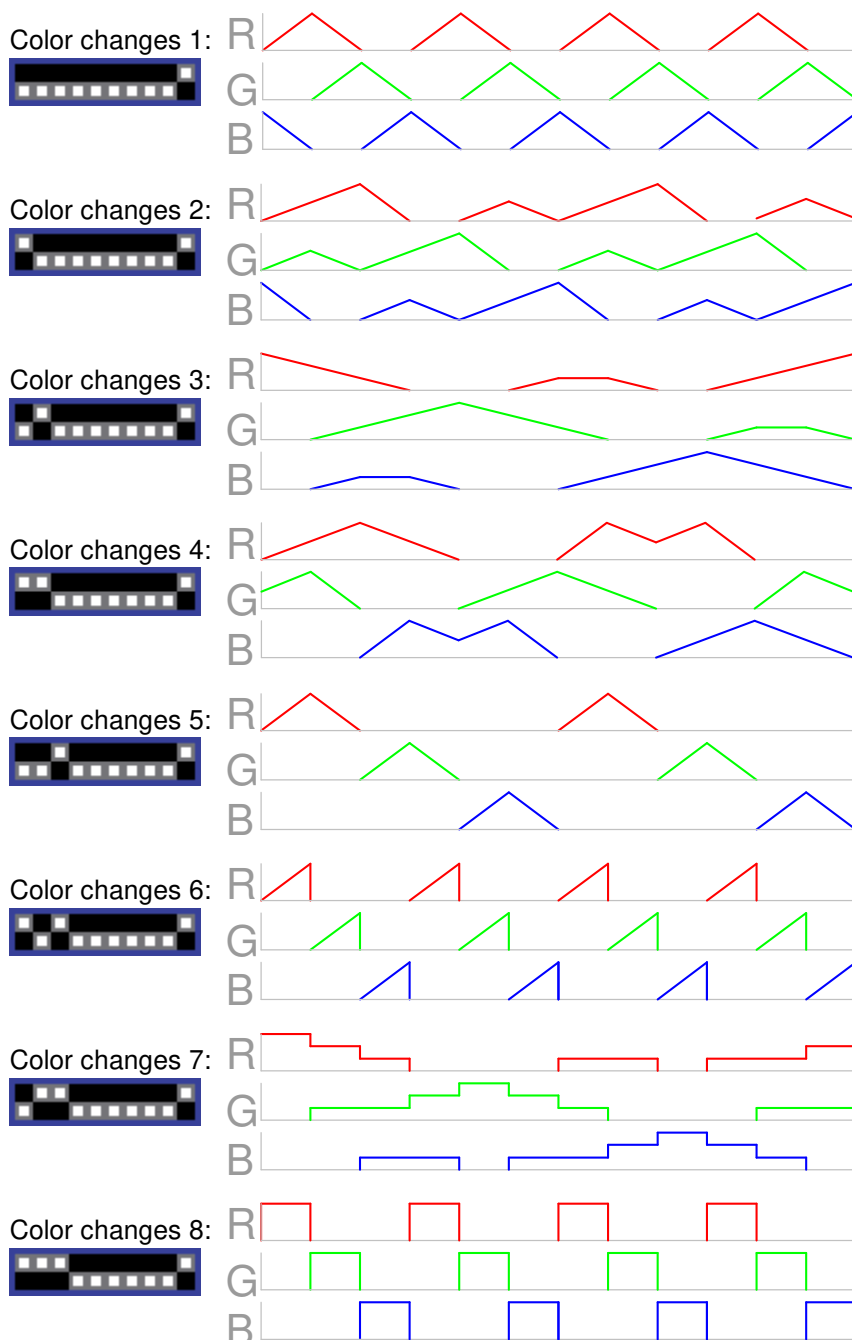
The Masterdimmer-Option can be set independently of the selected operating mode.

Call internal color changes

The internal color changes can be called by change switch 10 on ON.
The DMX-LED-Dimmer 4 provides a slow mode for slow color changes. This mode can be activated by change switch 8 on ON.



Now, you can select the color change programs via switches 1, 2 and 3.
The following color changes are selectable:



Configuration the LookUp-Table

The **DMX-LED-Dimmer 4** has one LookUp-Table per output.

The received DMX-Channel has values from 0 up to 255. However the DMX-LED-Dimmer 4 output driver provides 65536 steps (16 Bit) which will be assigned to the DMX-Values via the LookUp-Table.

So it's possible to effect in the lower brightness range little brightness changes with small steps. However in the upper brightness range it's possible to program bigger steps.

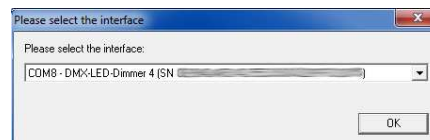
A Standard USB-Mini-B Connection cable is necessary to transfer the Look-Up Table to the **DMX-LED-Dimmer 4** as well as a USB-Connection to the PC.

Via the DMX-Configurator the LookUp-Tables can be defined. The DMX-Configurator is available for free as download.

- Connect the DMX-LED-Dimmer 4 with a standard USB-Mini-B connection cable to PC. As shown in the picture on the right site, plug the cable on the USB-Connection of the DMX-LED-Dimmer 4.

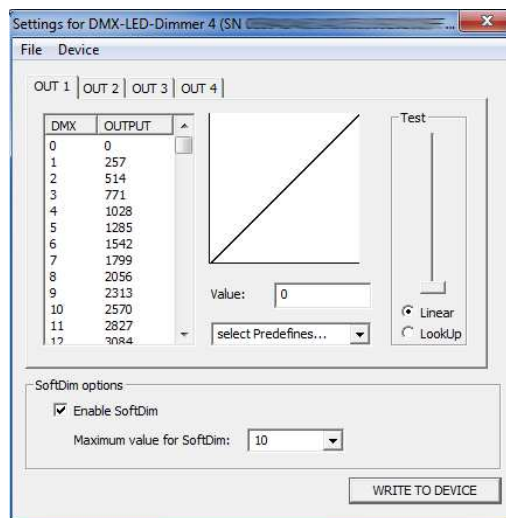


- Install the USB-Driver if it is not available.
- Start the DMX-Configurator Software (V2.3.9 or higher is needed)
- Generate a connection to DMX-LED-Dimmer 4



If no LookUp-Table is configured (delivery status) the output control occurs in-line.

- Open Hardware-Settings (menu *Hardware*→*Hardware Settings*)



For each output (OUT1-OUT4) a table with DMX-Values in the range of 0-255 and the according output values (OUTPUT) is available. A graphic presentation illustrates the output line.

- Configure the output line
- Check the output line by selecting the *LookUp Test* and move the slider. The connected LED behaves according to the output line.
- Select **WRITE TO DEVICE** to transfer the table to the DMX-LED-Dimmer 4.

Execute Firmware-Update

The **DMX-LED-Dimmer 4** has an update-function which enables transferring prospective firmware-versions.

Proceed as follows:

- Turn off the device (separate power supply and USB!)

- Plug jumper as shown



- Generate connection with USB-Connection to PC
- Start Update-Software **DMX4ALL USB-Updater**
- Select DMX-LED-Dimmer 4 from list
- Click *Firmware-Update*
- Select and confirm Firmware-File (.bin)
- Please wait until the update has finished



It is not allowed that a program accesses to the USB-Connection. Close DMX-Configurator and USB-Updater before connecting the USB-Cable to DMX-LED-Dimmer 4. Do not start the USB-Updater before the DMX-LED-Dimmer 4 is within Update-Mode.

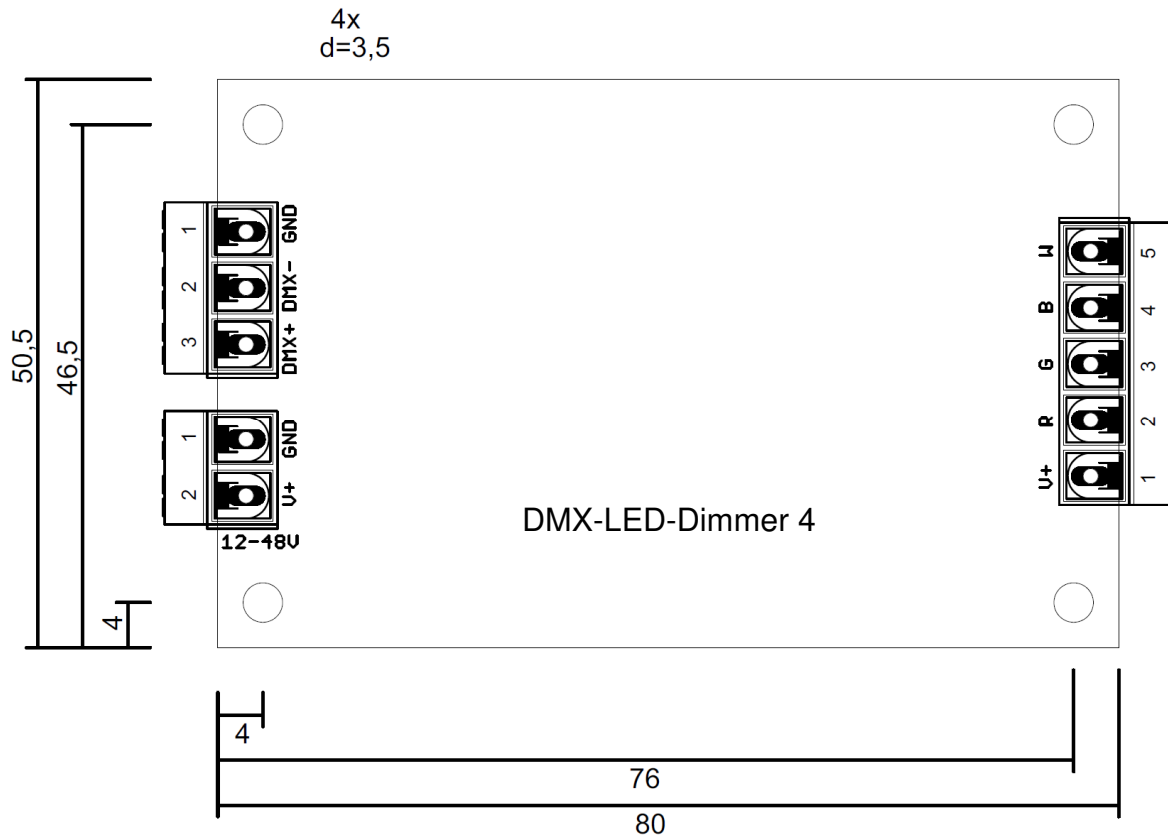
If an error occurs during the update you can begin from the start anytime.

Factory Reset

To reset the **DMX-LED-Dimmer 4** into the delivery status, please proceed as follows:

- Turn off the device (Separate power supply and USB!)
- Adjust address switches 1 up to 10 on ON
- Turn on the device (Power supply or USB)
- The Factory Reset was carried out
- Now the address switches can be used for the start address again

Dimensions



All details in mm

Accessories

RGB-LED-Stripe 5m



LED-Stripe white



Power supply



Aluminium-Housing 1455C801



USB-Cable A-Male / MiniB-Male



CE-Conformity



This assembly is controlled by a microprocessor and uses high frequency. In order to maintain the properties of the module with regard to CE conformity, installation into a closed metal housing in accordance with the EMC directive 2014/30/EU is necessary.

Risk-Notes

You purchased a technical product. Conformable to the best available technology the following risks should not be excluded:

Failure risk: The device can drop out partially or completely at any time without warning. To reduce the probability of a failure a redundant system structure is necessary.

Initiation risk: For the installation of the board, the board must be connected and adjusted to foreign components according to the device paperwork. This work can only be done by qualified personnel, which read the full device paperwork and understand it.

Operating risk: The Change or the operation under special conditions of the installed systems/components could as well as hidden defects cause to breakdown within the running time.

Misusage risk: Any nonstandard use could cause incalculable risks and is not allowed.

Warning: It is not allowed to use the device in an operation, where the safety of persons depend on this device.

Disposal



Electronical and electronic products must not be disposed in domestic waste. Dispose the product at the end of its service life in accordance with applicable legal regulations. Information on this can be obtained from your local waste disposal company.



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