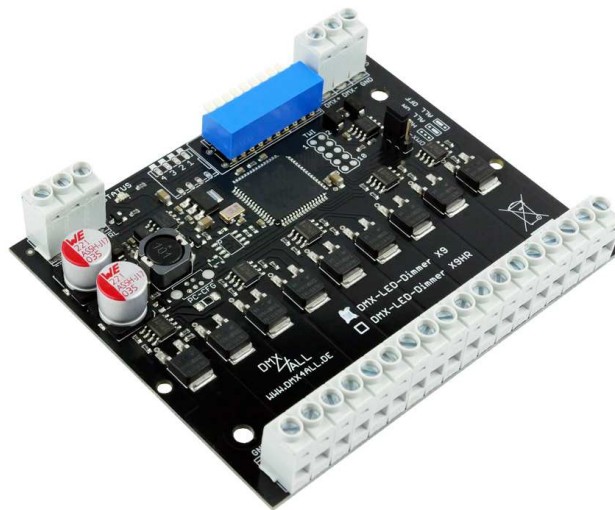


DMX-LED-DIMMER X9

**9x PWM each 10A
Controlled cathode**

User Manual





For your own safety, please read this user manual and warnings carefully before installation.

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Description

The **DMX-LED-Dimmer X9** is especially designed for controlling RGB LED-Stripes with common anode (PLUS) or for using single coloured LED-Stripes.

9 Outputs

The device has 9 High-Power PWM-Outputs which are independently controllable with DMX. All outputs are designed in the same way, so that single-color, RGB or RGBW LEDs can be connected.

High Power Outputs

Each output can operate loads up to 10A

This results in a maximum load of 120W (12V) / 240W (24V).

0% bis 100% dimmbar

The connected LEDs are dimmed from 0% up to 100% via PWM.

For voltages from 12V up to 24V

The DMX LED dimmer X9 works with supply voltages from 12V up to 24V.

The LED voltage can vary per output so a DMX-LED-Dimmer X9 can control different LED systems.

RDM support

The DMX-LED-Dimmer X9 allows configuration by RDM via DMX.

LED-State Display

The DMX state is indicated via the LED status.

Stand-Alone Function

Alternatively, to DMX control, internal color gradients can be called up via the address switches without external DMX control.

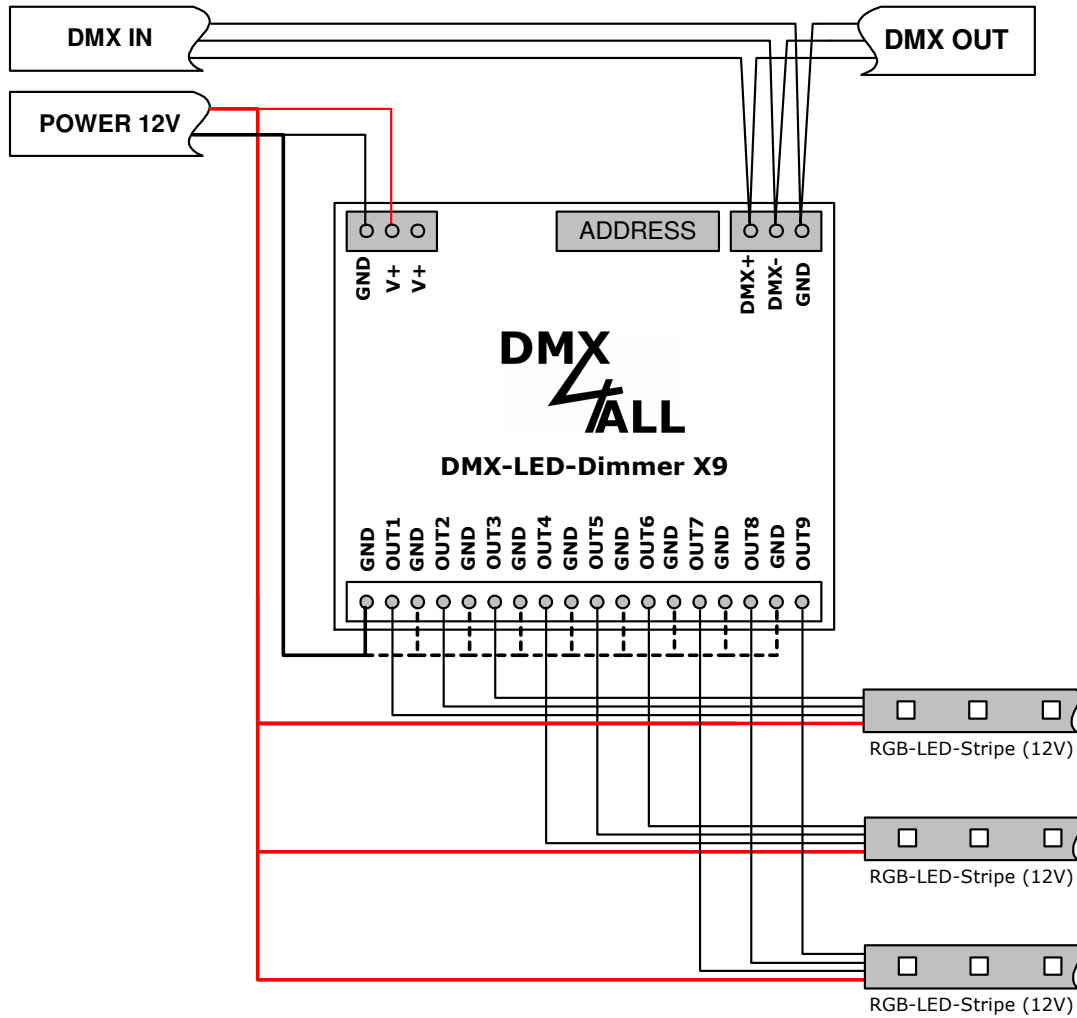
Top-hat rail housing available

The top-hat rail housing 1050 is available as accessory for the DMX-LED-Dimmer X9. Together with the top-hat rail housing 1050, the interface is optimally suited for control cabinet installation.

Technical data

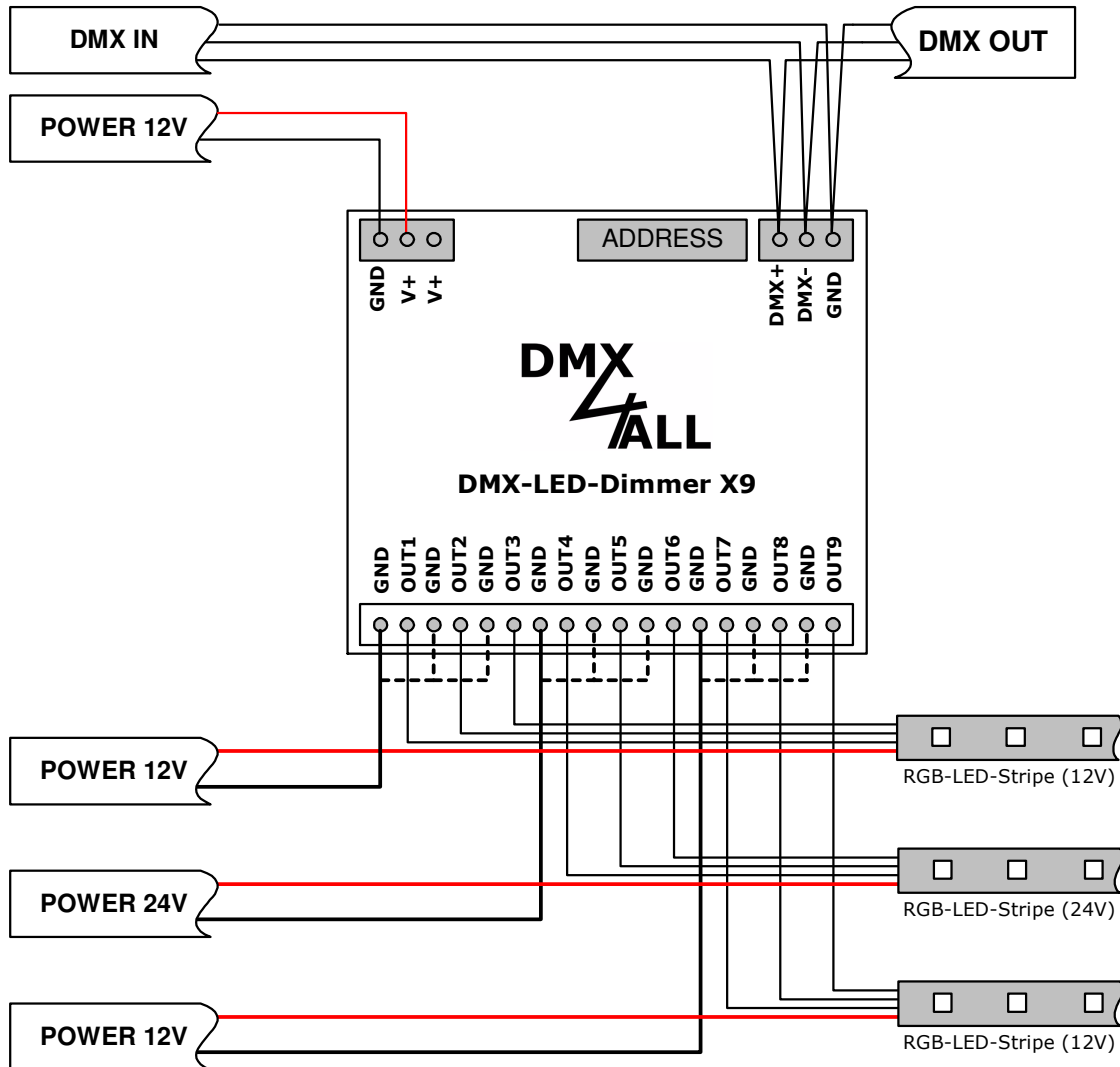
Power supply:	7-24V DC 80mA@12V / 100mA@24V (without connected LED load)
LED voltage:	7-24V DC (no AC voltage !)
Protocol:	DMX512 RDM
Input:	9 DMX channels
DMX-Fail:	Hold / 0% - 100%
Output:	9 PWM-signals 8-bit resolution each common power supply
Output current:	max. 10A each output in sum 90A with all connected GND connections
Output power:	9x 120W (12V) / 9x 240W (24V)
PWM Frequency:	244Hz
Energy-Save output:	Control output for turn off the power supplies
StandAlone-Function:	9 internal StandAlone programs
Board Dimensions:	99mm x 82mm

Connection with one power supply



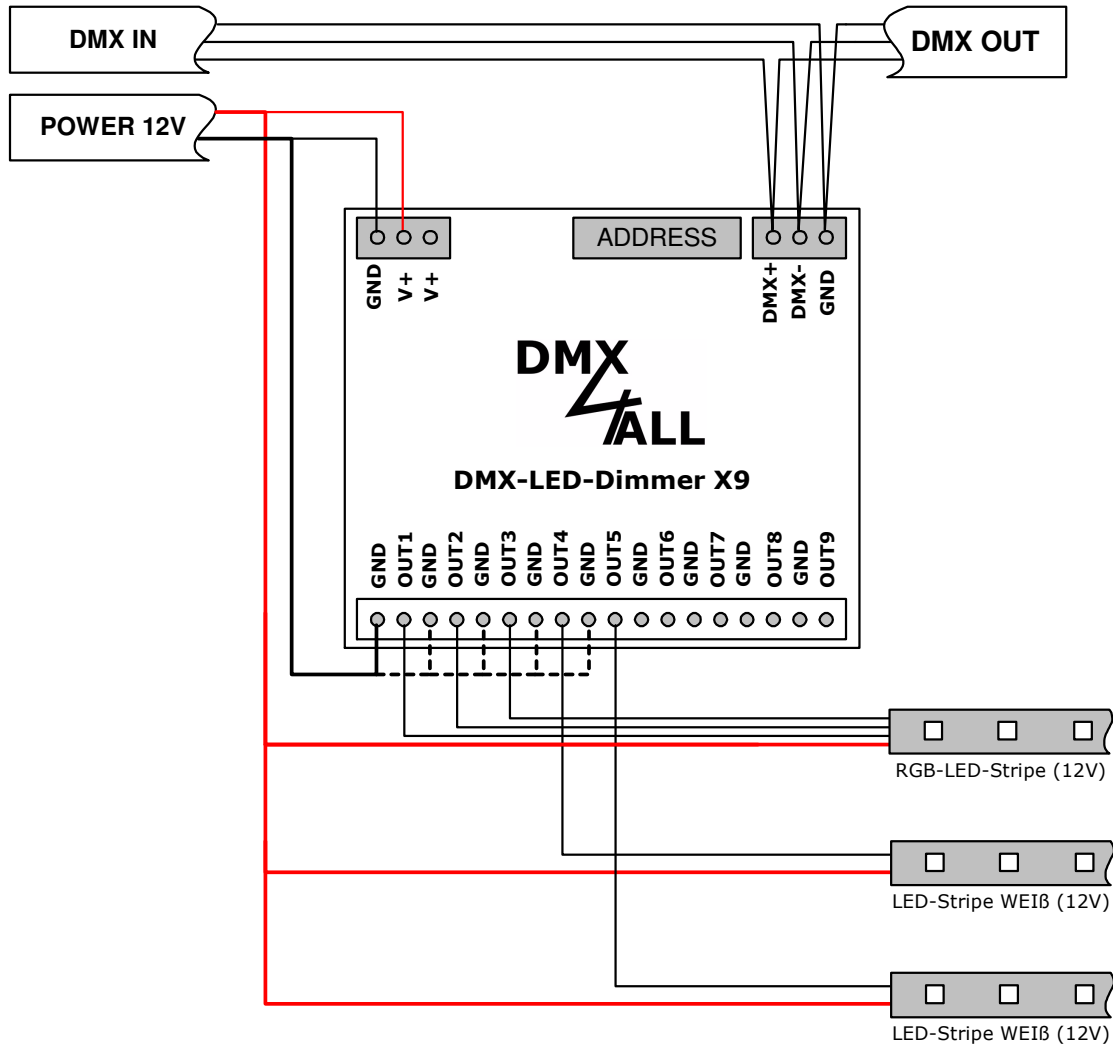
 Must be connected directly
 by power supply. Depends
 on the current for the LED-
 Stripes.

Connection with several power supplies



 Must be connected directly
 by the power supply.
 Depends on the current for
 the LED-Stripes.

Connection with single color and multi color stripes



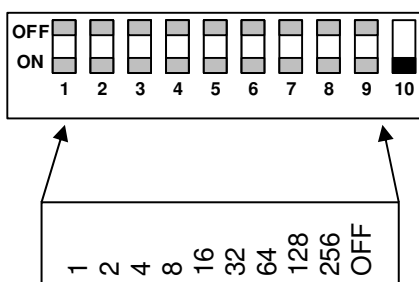
 Must be connected directly
 by the power supply.
 Depends on the current for
 the LED-Stripes.

DMX-Addressing

The DMX-start-address is adjustable about the counters 1 until 9.

Thereby switch 1 has the valency 2^0 (=1), switch 2 the valency 2^1 (=2) and so on until switch 9 has the valency 2^8 (=256). The sum of the values of the counters standing on ON corresponds to the start address.

Counter 10 is exclusively for the StandAlone-Function and has to show the DMX-mode OFF.



LED-Display-Codes

The integrated LED is a Multi-functional-display.

In the normal DMX-mode the LED lights up nonstop. In this case the device is working.

Also the LED signalled the operation status.

In this case the LED lights up in short pitches and then and then turns into off modus. The Number of flashing signals is equal to the Number of the error status:

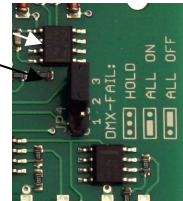
Error Status	Error	Description
1	No DMX	There is no DMX-Signal coming into the dimmer
2	Address error	Check if a valid DMX starting address is adjusted at the DIP-switch.
4	Factory Reset	Factory Reset is complete


DMX-Fail option


The DMX-LED-Dimmer X9 can hold the last value, switch on or switch off the LED outputs on DMX fail.

This DMX-Fail option is selectable with the Jumper.

ALL ON:	All outputs switched OFF (100%)
ALL OFF:	All outputs switched ON (0%)
HOLD:	Last value is HOLD Or RDM settings are used



 After switching the power off the hold values will be not restored.
 In this case the values will be 0 (OFF) after switching the power on again.

 The level can also be set via the RDM parameter DMX_FAIL_MODE. For RDM operation the jumper must not be set.

Cable length

The DMX-LED-Dimmer X9 should be used with short cable lengths.

Due to the less supply voltage in LED-installations the cable cross section should be large at most to keep a voltage drop low as possible.

The cable cross section should be even larger as the distance increases and the load increases.

The following cable length should be not exceeded:

From power supply to the DMX-LED-Dimmer X9 → 1m

From DMX-LED-Dimmer X9 to the LEDs → 10m

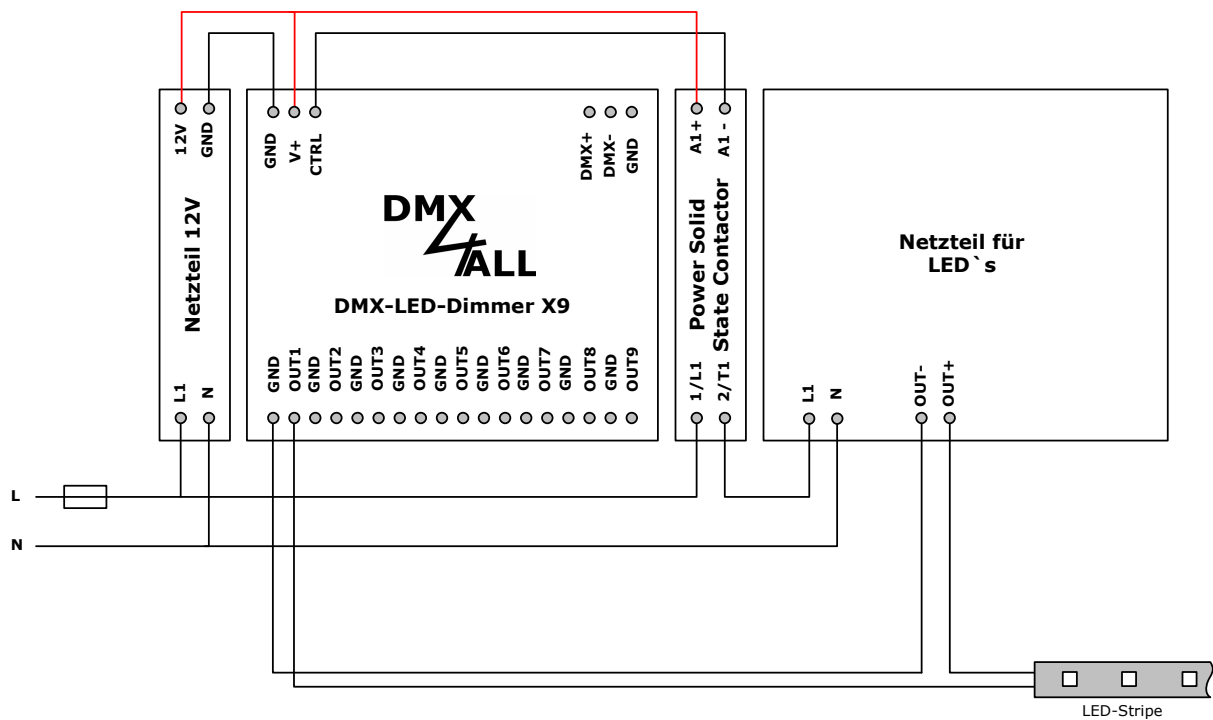
CTRL-Output (Energy-Save)

The **DMX-LED-Dimmer X9** has an Energy-Save controlling output (CTRL) which can turn off the load-power supplies for the LEDs.

If no output will be controlled for a time period of 5 minutes respective all DMX-values for 5 minutes to the value of 0, the controlling output will be shut down.

So the dissipation for the power supply which will not be needed for a longer time can be avoided.

Installation sample:

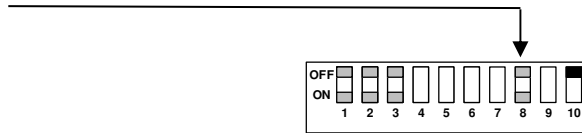


Select the internal color change

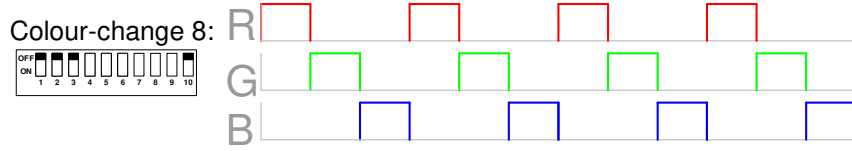
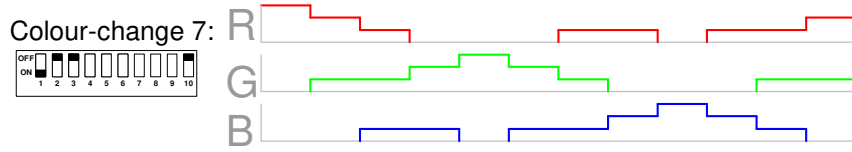
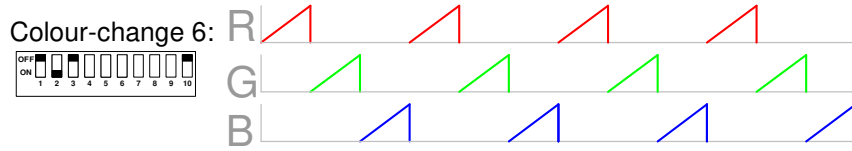
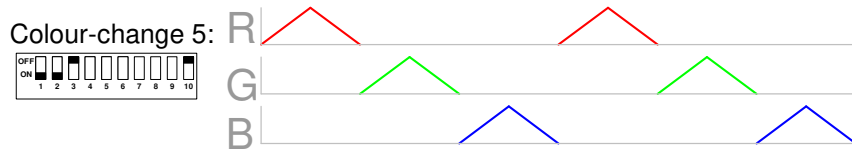
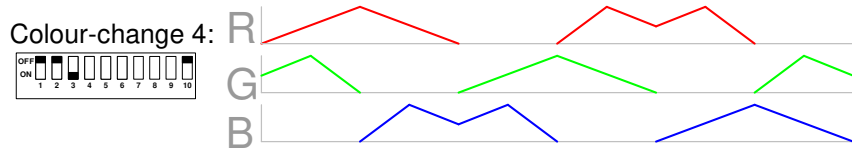
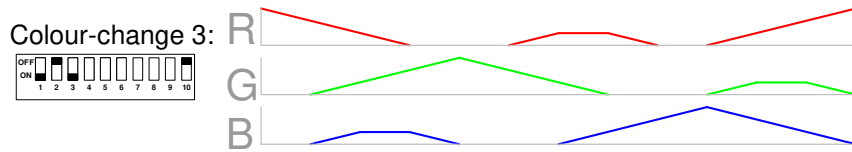
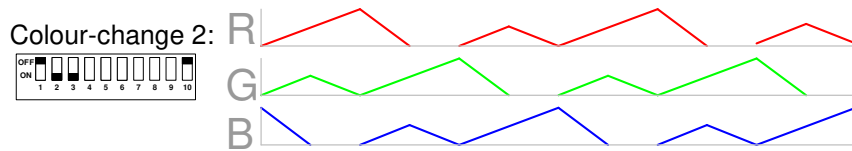
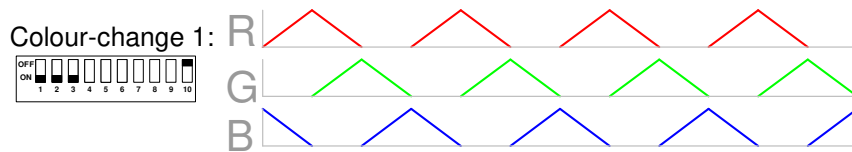
You can select the internal colour change by switching counter 10 on ON.

The DMX-LED-Dimmer X9 makes available a SLOW-mode for slow colour changes. This is activated, by switching counter 8 on ON.

Counter 8 = ON = Slow colour-change



Now you can select the colour change programs about the counters 1, 2 and 3. The following colour changes are selectable:



RDM

(from hardware V2.3)

RDM is the short form for **R**emote **D**evice **M**anagement.

As soon as the device is within the system, device-dependent settings occur remotely via RDM command due to the uniquely assigned UID. A direct access to the device is not necessary.



If the DMX start address is set via RDM, all address switches at the DMX-LED-Dimmer X9 must be set to OFF ! A DMX start address set by the address switches is always prior !

This device supports the following RDM commands:

Parameter ID	Discovery Command	SET Command	GET Command	ANSI/PID
DISC_UNIQUE_BRANCH	✓			E1.20
DISC_MUTE	✓			E1.20
DISC_UN_MUTE	✓			E1.20
DEVICE_INFO			✓	E1.20
SUPPORTED_PARAMETERS			✓	E1.20
PARAMETER_DESCRIPTION			✓	E1.20
SOFTWARE_VERSION_LABEL			✓	E1.20
DMX_START_ADDRESS		✓	✓	E1.20
DEVICE_LABEL		✓	✓	E1.20
MANUFACTURER_LABEL			✓	E1.20
DEVICE_MODEL_DESCRIPTION			✓	E1.20
IDENTIFY_DEVICE		✓	✓	E1.20
FACTORY_DEFAULTS		✓	✓	E1.20
DMX_PERSONALITY		✓	✓	E1.20
DMX_PERSONALITY_DESCRIPTION			✓	E1.20
DMX_FAIL_MODE		✓	✓	E1.37

Parameter ID	Discovery Command	SET Command	GET Command	ANSI/ PID
SERIAL_NUMBER ¹⁾			✓	PID: 0xD400

1) Manufacturer depending RDM control commands (MSC - Manufacturer Specific Type)

Manufacturer depending RDM control commands:

SERIAL_NUMBER

PID: 0xD400

Outputs a text description (ASCII-Text) of the device serial number.

GET Send: PDL=0
 Receive: PDL=21 (21 Byte ASCII-Text)

Factory Reset



Before running the Factory Reset, read all steps carefully.

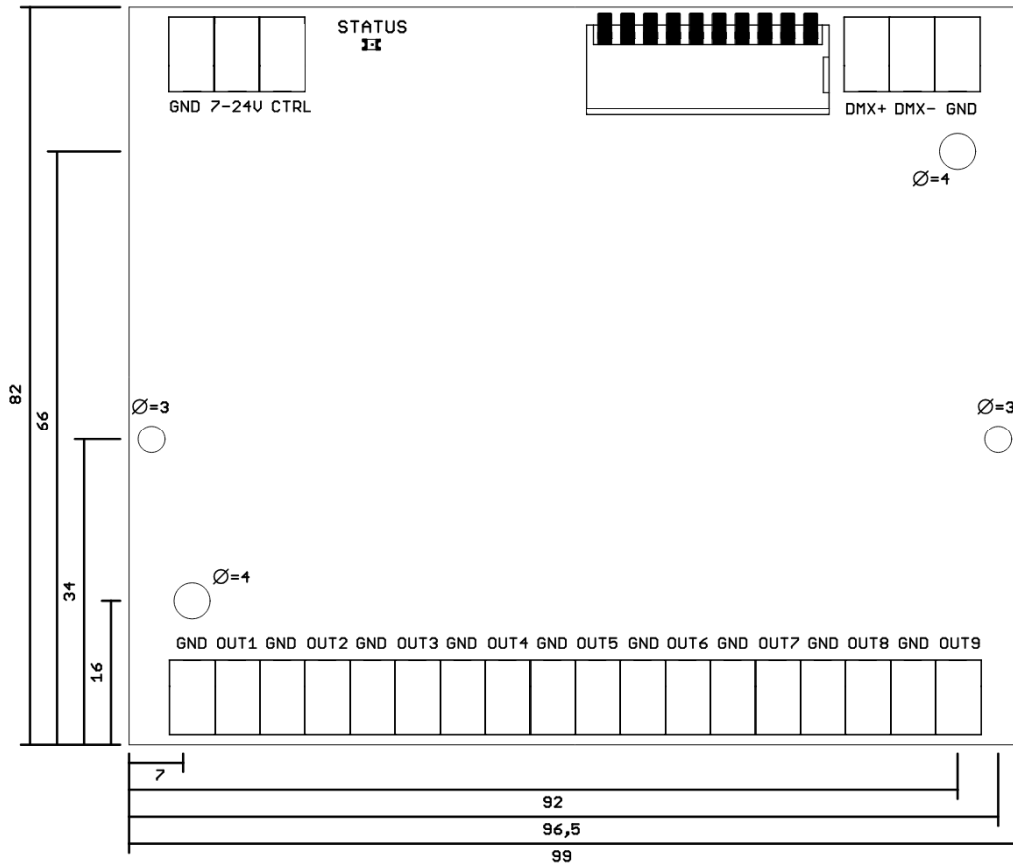
To reset the **DMX-LED-Dimmer X9** to delivery state, proceed as follows:

- Turn off device (disconnect power supply !)
- Set DIP switch 1 up to 10 to ON
- Turn on device (connect power supply)
- The LED lights up 20x during ca. 3 seconds
 - ➔ While the LED lights up set DIP switch 10 to OFF
- Now, the Factory Reset is executed
 - ➔ The LED lights up with error code 4
- Turn off device (disconnect power supply !)
- Now, the device can be used



If a Factory Reset is needed again, this procedure can be repeated at any time.

Dimensions



All details in mm

Accessories

Housing for DIN-Rail-Mounting

DIN-Rail housing 1050

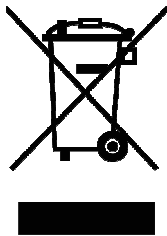


CE-Conformity



This assembly (board) 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.

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.

Warning



This device is no toy. Keep out of the reach of children. Parents are liable for consequential damages caused by nonobservance for their children.

Risk-Notes



You purchased a technical product. Conformance 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.



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