

DMXMERGER MANUAL



Revision History

Revision	Date	Author(s)	Description
1	15.06.2026	ME	Initial version

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Chapter 1

Safety Precautions

This chapter contains important safety information for the installation, operation, and maintenance of the DmxMerger. Read these precautions carefully before using the device to ensure safe operation and to prevent damage to equipment or injury to personnel.

Before installing the DmxMerger, read this manual completely and ensure that all installation personnel are familiar with the product and applicable safety requirements. Verify that the installation environment is suitable for the device and within the specified operating conditions. Disconnect power before making any wiring connections. Do not install or operate the product if it appears damaged. Ensure adequate ventilation around the unit and prevent exposure to moisture, excessive heat, or mechanical stress.

1.1 Indoor Use Only

The DmxMerger is intended for indoor use only. Do not install or operate the device in environments exposed to rain, moisture, condensation, excessive dust, or direct sunlight. Operating the product outside its specified environmental conditions may result in malfunction, damage, or reduced product lifetime.

1.2 Power Supply Requirements

Only power the DmxMerger using the approved power sources specified in this manual: a DC power supply within the specified input voltage range. Applying voltages outside the specified limits may damage the device and void the warranty.

1.3 No User-Serviceable Parts



The DmxMerger contains no user-serviceable parts. Do not attempt to open, disassemble, or repair the device. Opening the enclosure may expose sensitive electronic components and may void the warranty. Repairs must only be carried out by qualified service personnel or the manufacturer.

1.4 Product Modifications



Do not modify the DmxMerger or its accessories. Unauthorized modifications may impair product performance, compromise safety, invalidate regulatory compliance certifications, and void the warranty.

1.5 Disconnect Power Before Servicing



Always disconnect all power sources and any external DC supply, before installing, wiring, relocating, or servicing the device. Failure to disconnect power may result in equipment damage or unintended operation.

Chapter 2

Introduction

Thank you for choosing the DmxMerger.

The DmxMerger is a compact DMX-512 merger designed to combine multiple DMX sources into a single DMX output stream. It provides a simple and reliable solution for applications where several controllers, software systems, architectural controls, or backup consoles need to operate on the same DMX universe.



Figure 2.1: DmxMerger

The DmxMerger features six optically isolated DMX inputs and one optically isolated DMX output. The six inputs are assigned as HTP, LTP, or Priority inputs, allowing the device to accommodate a wide range of lighting control scenarios.

Typical applications include:

- Merging a lighting console with a media server.
- Combining architectural and entertainment lighting control systems.
- Providing a backup controller for critical lighting installations.
- Integrating emergency or supervisory control systems.
- Creating manual override stations for permanent installations.

This manual explains the installation, wiring, operation, and merging behavior of the DmxMerger.

Please read this manual carefully before installing or operating the device.

2.1 Compliance

This device complies with the following standards and regulations:

- CE
- UKCA
- FCC

See the appendix for the associated certificates.

2.2 Features

The feature set of the DmxMerger includes:

- DMX-512 (ANSI E1.11) optically isolated ports
- DIN Rail form-factor
- HTP, LTP and Priority merging functions
- Supply voltage: 9–24 VDC, 500 mA maximum
- Operating temperature –20 °C to +50 °C (–4 °F to 122 °F)
- Operating temperature –20 °C to +50 °C (–4 °F to 122 °F)
- Operating relative humidity 10% to 80% non-condensing

2.3 What's in the box?

The DmxMerger packaging contains the following items (see figure 2.2):

- DmxMerger
- Info card

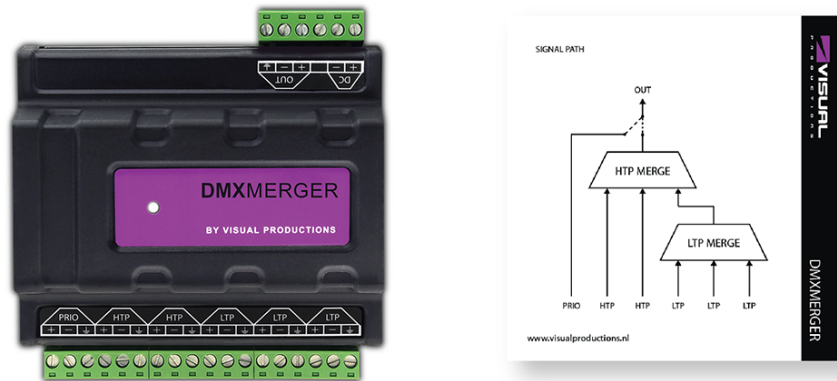


Figure 2.2: DmxMerger box contents

2.4 Unpacking

Carefully unpack the DmxMerger and inspect the contents for any signs of damage that may have occurred during transportation. Verify that all supplied accessories and documentation are present. If any damage is found, do not install or operate the device and contact your supplier immediately. Retain the original packaging materials whenever possible, as they provide the safest means for transporting or storing the product in the future.

2.5 Intended Disposal

At the end of its service life, this product must not be disposed of with household waste. The DmxMerger contains electronic components that should be collected and recycled in accordance with local regulations for Waste Electrical and Electronic Equipment (WEEE). Please dispose of the product through an authorized recycling facility or return it to an appropriate electronic waste collection point. Proper disposal helps conserve natural resources and prevents potential negative effects on the environment.

2.6 Further help

If you have further questions after reading this manual, please consult the online forum: <https://forum.visualproductions.nl>

Chapter 3

Installation

This chapter discusses how to physically set up the DmxMerger.

3.1 DIN Rail

The DmxMerger is designed for DIN rail mounting. The device occupies 6 DIN rail width units (108 mm).

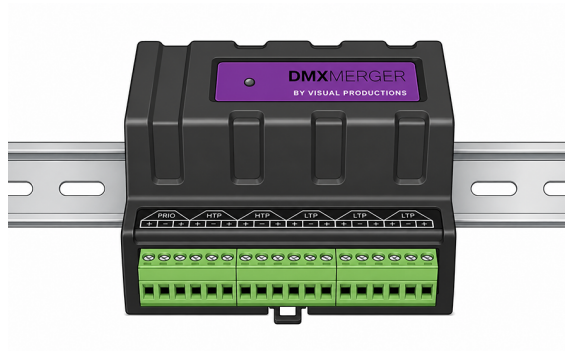


Figure 3.1: DIN Rail mounting

3.2 DC Power

The DmxMerger can be powered via a DC power supply: Minimum 9 V, maximum 24 V DC. The input is protected for inverted polarity. The power supply is sold separately.

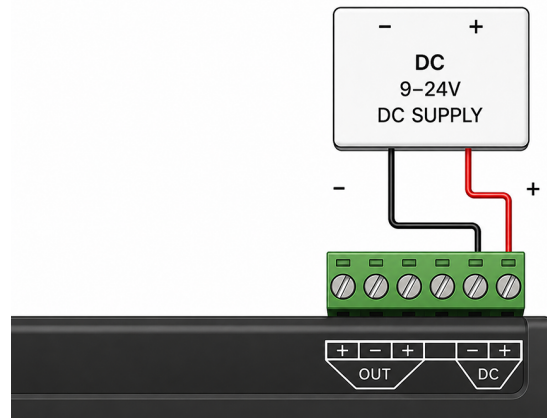


Figure 3.2: DC power

3.3 Status LED

The DmxMerger is equipped with a single status LED located on the front panel. This LED provides visual feedback about the device's operating state and DMX activity.

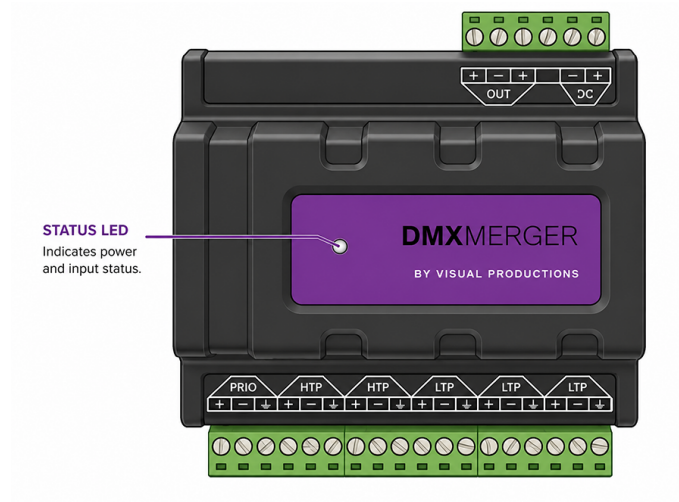


Figure 3.3: Status LED

- **Solid On** – The DmxMerger is powered.
- **Flashing** – Valid DMX data is being received and processed by the DmxMerger.

3.4 DMX Ports

All DMX ports on the DmxMerger are optically isolated, providing protection against ground loops and electrical interference between connected devices.

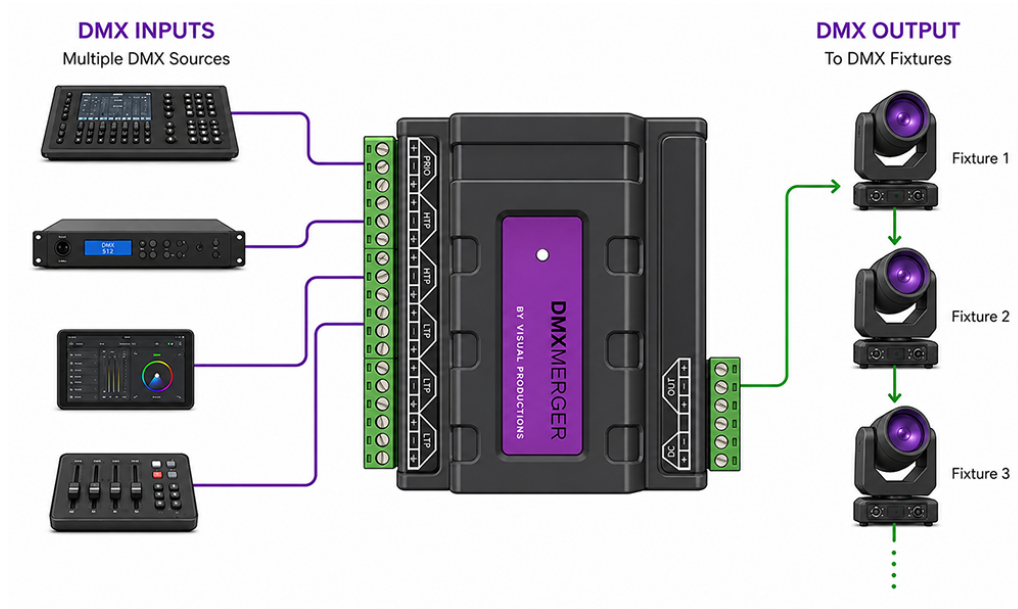


Figure 3.4: DMX port

When wiring DMX devices, observe the following recommendations:

- Connect up to 32 DMX devices to the output.
- Use a DMX terminator (120Ω) on the last fixture in the chain.
- Do not connect the shield (ground) to the fixture chassis. Connect to signal ground only.

Chapter 4

Merging

The DmxMerger combines up to six DMX inputs into a single DMX output. Each input is one of three merge types:

- **HTP** (Highest Takes Precedence)
- **LTP** (Latest Takes Precedence)
- **PRIO** (Priority)

The signal path used by the DmxMerger is shown in Figure 4.1. The LTP inputs are merged first. The resulting signal is then combined with the HTP inputs. Finally, the Priority input can override the merged output whenever valid DMX data is present.

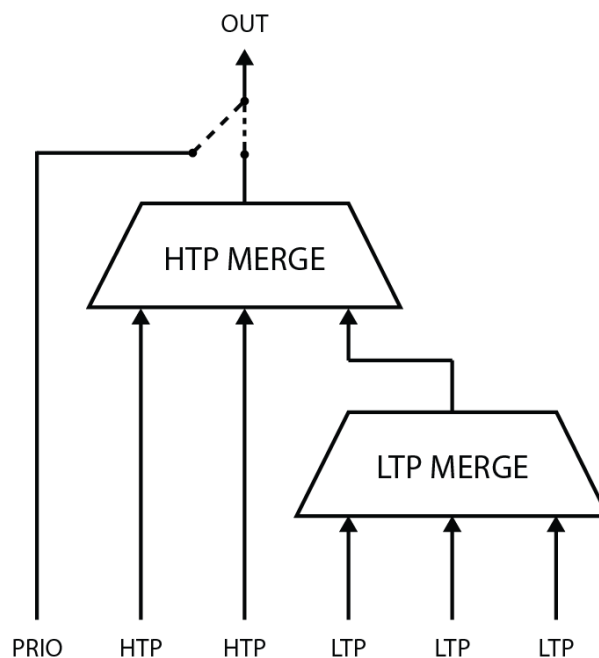


Figure 4.1: Signal path

4.1 HTP

HTP merging is typically used for intensity channels such as dimmers and LED brightness values.

For each DMX channel, the DmxMerger compares all HTP sources and forwards the highest value to the output.

$$\text{Output} = \max(\text{Input}_1, \text{Input}_2, \dots, \text{Input}_n)$$

Source A	Source B	Output
100	180	180
255	120	255
0	50	50

Table 4.1: HTP merge example

This allows multiple controllers to contribute to the same lighting system without unintentionally reducing another controller's intensity values.

4.2 LTP

In the DmxMerger, LTP (Latest Takes Precedence) operates on a **per-universe basis**, not on individual DMX channels. Whenever any DMX value changes on an LTP input, that entire input becomes the active LTP source for the universe. The complete DMX universe from that source is then forwarded to the LTP merge output.

For example:

Event	Active LTP Source
Controller A is transmitting DMX	Controller A
Controller B changes any DMX value	Controller B
Controller A changes any DMX value	Controller A

Table 4.2: LTP merge example

The most recently updated LTP source remains in control of the entire DMX universe until another LTP source transmits a change. Any change on an LTP input is sufficient to transfer ownership of the entire DMX universe to that input.

This behavior makes LTP ideal for manual overrides, backup controllers, and temporary control stations where complete control of the universe should be transferred to the most recently active source.

4.3 Priority

Priority inputs are intended for emergency, maintenance, or supervisory control systems.

When valid DMX data is present on a PRIO input, that input immediately overrides the merged HTP/LTP output.

Output = Priority Input

When the Priority signal disappears, the DmxMerger automatically returns to the normal HTP/LTP merged output.

Typical applications include:

- House-light control
- Emergency lighting systems
- Architectural overrides
- Maintenance control panels

4.4 Combined Operation

The DmxMerger performs merging in the following order:

1. Merge all LTP inputs.
2. Merge the LTP result together with all HTP inputs using HTP rules.
3. If a Priority source is active, override the merged result.

This architecture provides predictable behavior while allowing multiple lighting controllers, backup systems and supervisory systems to coexist on the same DMX universe.

Appendices

Appendix A

Certifications

This appendix contains the declarations of conformity and regulatory certifications applicable to the DmxMerger.



EU Declaration of Conformity

We, **Visual Productions BV**, as the manufacturer, hereby declare under our sole responsibility that the following device:

Product Name: DmxMerger
Product Type: Lighting Controller

complies with the requirements of the following directives and standards:

Applicable Directives:

- 2014/30/EU – Electromagnetic Compatibility (EMC)
- 2011/65/EU (as amended by 2015/863) – Restriction of Hazardous Substances (RoHS)

Applied Harmonised Standards:

- EN 61000-6-1:2019 – Electromagnetic compatibility (EMC) – Part 6-1: Generic standards – Immunity for residential, commercial, and light-industrial environments
- EN 63000:2018 – Technical documentation for the assessment of electrical and electronic products concerning the restriction of hazardous substances

This declaration is issued under the sole responsibility of the manufacturer, confirming that the object of the declaration complies with the relevant Union harmonisation legislation.

Authorised Representative:

Full name and identification of the person responsible for product quality and compliance with standards on behalf of the manufacturer:

Date: March 28, 2025
Place: Haarlem, The Netherlands



Ing. Maarten Engels
Managing Director
Visual Productions BV

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