ZENOPIX
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*Your Solution Partner in Lighting Control*

# 1X1 DMX SIGNAL REPEATER

## USER MANUAL




**Version 3 / October 2026**

zenopix.com



Thank you for choosing the Zenopix 1x1 DMX Signal Repeater. Please read this booklet and the product user manual before using the product. The user manual is available on our website. If you experience any technical problem, you can contact our company using the information below and receive technical support.

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*The 1X1 DMX Signal Repeater is a registered product of Zenopix® Elektronik Limited Company.*

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## Safe Use

Use the device only in dry environments (indoors). The IP rating of the device is IP20. Do not use the device in humid environments and avoid contact with water or other liquids. Switch off the power if you will not use the device for a long time. The use of galvanic isolation is always recommended. Do not remove any part from the unit or connect it to an ungrounded circuit. Do not connect the unit to LEDs that are switched on. Connect the unit only to LEDs and controllers that are initially switched off. There are no user-serviceable parts inside or outside the device. Repair service is the sole responsibility of the manufacturer. If the device appears to be defective, please contact your dealer. After the warranty period has expired, you can contact your supplier or the manufacturer about having the unit repaired, if possible, for a service fee. This device must be used by professionals. The device is not designed to be operated by non-professionals or children.

## Warranty Information

The Zenopix 1x1 DMX Signal Repeater is covered by a standard 2-year manufacturer's warranty. Detailed information is available in the product warranty certificate or on our website.

## Box Contents

1× Zenopix 1x1 DMX Signal Repeater

1× Bag of Terminal Blocks

1× Technical Documentation and User Manual

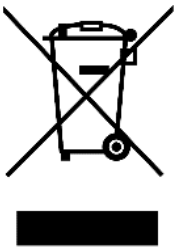
1× Warranty Certificate

1× Device Test Report

**NOTE:** After opening the package, check its contents and inspect the device for damage! If anything is missing or damaged, contact your supplier. Do not use the device if it appears damaged!

## Information on Human and Environmental Health

If all instructions in the user manual are followed, this device poses no risk to human health or the environment. The device must not be disposed of with household waste; it must be delivered to an electrical and electronic equipment recycling center. It must be recycled or disposed of without harming nature or human health.



## Introduction

The Zenopix 1x1 DMX Signal Repeater is a professional **signal booster** developed specifically for DMX protocols. The repeater plays a vital role in large-area lighting projects and is designed to prevent data loss.

The Zenopix 1x1 DMX Signal Repeater regenerates DMX signals that weaken during transmission and reliably carries them over much longer distances. Fully compliant with standard DMX protocols, the device extends signal range while maintaining data accuracy, improving overall performance in professional lighting networks.

## Safety Instructions

To prevent misuse of the device, damage or personal injury, please follow the instructions below:

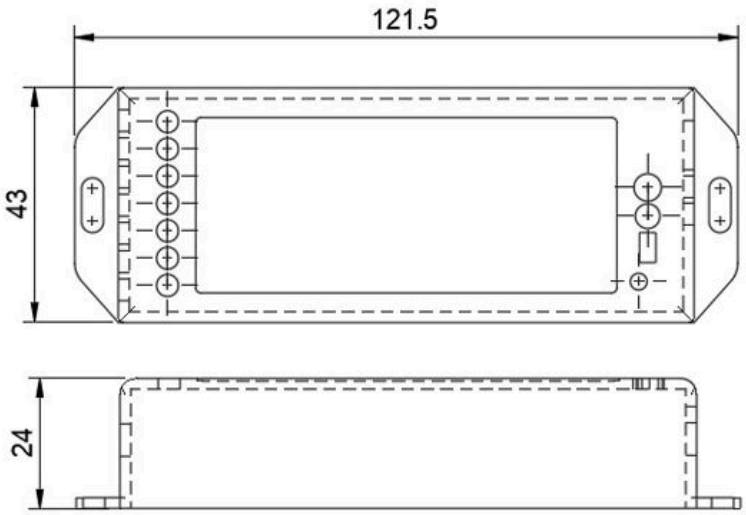
| | |
|---|---|
| ⚠ | This device operates at low voltage (DC 12-48V). Do not use lower or higher voltages. |
| ⚠ | Any external power supply to be connected to the device must be fused according to its output power and/or protected against short circuits. |
| ⚠ | It is the user's responsibility to protect the device against lightning, electric shock and high-voltage surges. Make sure that all necessary electrical surge protection measures have been taken at the installation site. |

**Recommendation:** For panel/rail applications, the following power supplies are recommended: Mean Well HDR-15-24, DRC-24V015W1RZ or Omron S8VK-G01524**.**

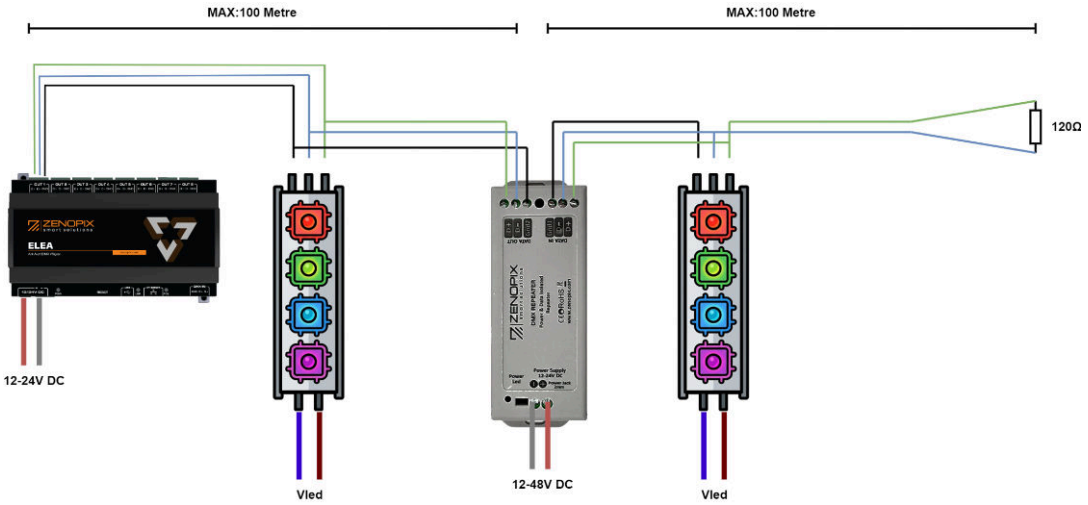
## Technical Specifications

| **Feature** | Value |
|---|---|
| **Input Voltage Range** | 12–48 V DC Terminal Block Connector |
| **Power Consumption** | < 5 W Under Normal Operating Conditions |
| **DMX Input / Output** | 1 × DMX Input / 1 × DMX Output |
| **Input / Output Connection Type** | 3-Pin Screw Terminal for Data Input and Output |
| **Isolation Type** | Galvanic Isolation — Power and Data (1500 VDC) |
| **Communication Interface** | Simplex RS485 (DMX) |
| **Data Rate** | 250 kbps (DMX512) / Max. 1 Mbps (RS485) |
| **Enclosure** | Plastic Enclosure |
| **Dimensions** | 121.5 × 43 × 24 mm (L × W × H, including mounting ears) |
| **Weight** | 68 g |
| **Operating Temperature** | -20°C ~ +60 °C , 20% RH (Condensing) |
| **Operating Humidity** | -25°C ~ +75°C, 70% RH (Non-Condensing) |
| **Protection** | IP20 |

## Device Dimensions




## Device and Pin Connections




## Power Connection

The device can operate at 12-48V DC. Although the device has reverse polarity protection, avoid reverse polarity when connecting power. When the device is powered correctly, the **Power LED** indicator on the enclosure stays on continuously.

## DMX Connection

You can think of the repeater as the start of the DMX line. When connecting the other devices, connect them in a daisy-chain structure (so that the DMX output of one device is connected to the DMX input of the next device). Never use a Star topology on the DMX line. Where a star structure is unavoidable, use a splitter repeater (2x4, 1x2, 1x8 options).

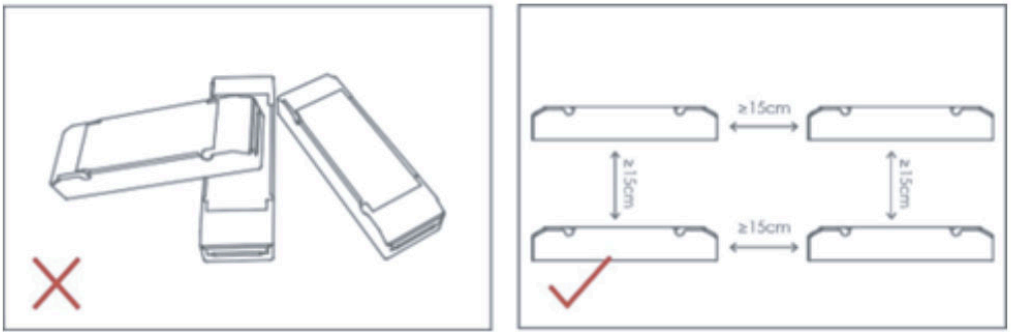
Connect terminals with matching labels ***1.** It is recommended to use cables specifically manufactured for RS485 ***2**. Do not route RDM/DMX signal lines near power lines carrying high voltage or high current (for example, asynchronous motor supply cables). For reliable signal transmission, connect a 120 Ω termination resistor to the DMX OUT port of the last device.

**1 Cable labeling may vary between manufacturers. On Zenopix products and other products that use the same convention, DMX Data + (D+ or DP) corresponds to pin A, and DMX Data- (D- or DN) corresponds to pin B. This may differ for some manufacturers. If the products do not receive a signal, you can swap the wires.*

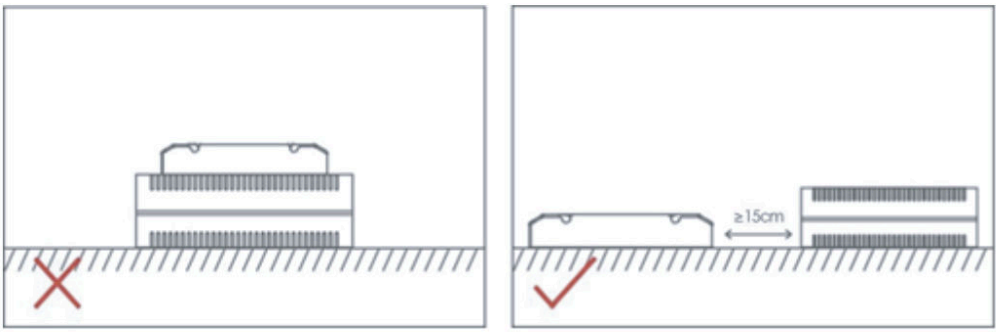
**2 See the table below for recommended Belden cables for DMX. Make sure any alternative cable you purchase is a twisted-pair cable with an impedance of 120 Ω. If the cable will be used outdoors, choose cables with high UV resistance.*

| **Area of Use** | **Cable Type / Feature** | **Recommended Belden Cable** | **Equivalent Local Cable Designation** |
|---|---|---|---|
| Indoor | Standard (PVC Jacket) | Belden 9841 | LI2Y(St)CH / LIYCY(TP) |
| Indoor | Halogen-Free (LSZH/ HFFR) | Belden 9841NH | LI2Y(St)CH |
| Outdoor | UV Resistant | Belden 3105T | LI2Y(St)C2Y |
| Outdoor | Armored (Underground Runs) | Belden 9841LS | LI2Y(St)C2Y-SWA |

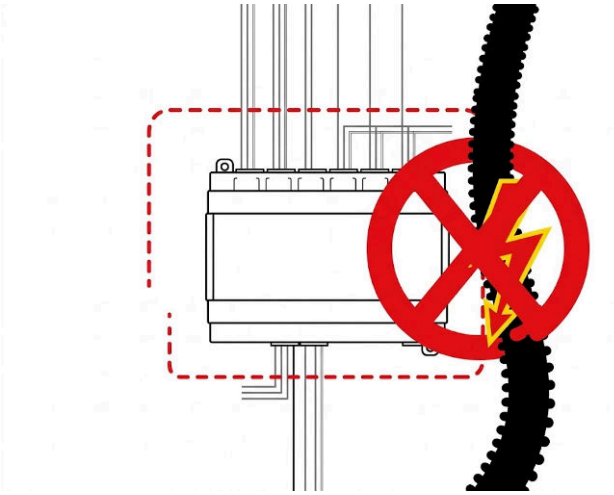
## Installation and Precautions




Please do not stack the products on top of each other. Leave **more than 15 cm** between two devices so as not to adversely affect heat dissipation or the service life of the products. The device must be fixed to a flat surface or an electrical panel mounting plate with suitable screws through the mounting ears on the enclosure.




Please do not place the products on top of LED drivers. Leave **at least 15 cm** between the product and the driver to ensure proper heat dissipation and to prevent shortening the service life of the devices.



For stable operation of the Zenopix Repeater, route signal lines away from high-current and high-voltage cables. Routing high-current/high-voltage cables near the device body or terminal connections may cause fluctuations in the output signals or permanent damage to the hardware. Keep high-current and high-voltage cables physically separated from the device.

## WARNINGS

- The products must be installed by qualified professionals.
- Zenopix products are not waterproof (except for special models). Protect the products from direct sunlight and rain. For outdoor installations, mount each product in a waterproof enclosure. Good heat dissipation will extend the service life of the products. Please ensure good ventilation.
- Make sure the operating voltage meets the product specifications.
- The wire gauge used must be able to carry the load of the connected lighting fixtures and ensure a secure cable connection.
- Before switching on the products, please make sure that all wiring is correct, as an incorrect connection may damage the lighting fixtures. If a fault occurs, please do not attempt to repair the products yourself. If you have any questions, please contact your suppliers.
- This manual is subject to change without prior notice. Product functions depend on the model. If you have any questions, please do not hesitate to contact us.

## Technical Support

If you have further questions about the use of the Zenopix Repeater or technical problems, use the following resources for troubleshooting:

- Read the Zenopix Repeater user manual
- Contact your supplier or sales representative.
- Check our website for the latest information
- For any technical problem, you can contact us directly at info@zenopix.com.

## Frequently Asked Questions (FAQ)

### Can I use multiple repeaters at the same time?

Yes, you can. To preserve the signal characteristics, the number of repeaters on one line should not exceed 3.

### Do DMX repeaters support RDM?

No, DMX repeaters work in one direction only. For RDM support, see our RDM repeater.

### What equipment is recommended for use with this device?

For DMX applications, we recommend using the repeater with Zenopix Elea, Zenopix Magus or Zenopix AER. The device can also operate with all controllers compliant with the DMX512 standard.

### I am experiencing voltage fluctuation, LED flicker, freezing or latency in the fixture connected to the product output. What could be the cause?

- No 120 Ω termination resistor at the end of the DMX line.
- Errors caused by the controller or end device.
- The power supply cannot provide sufficient current.
- Non-standard cabling or exceeding the maximum signal transmission distance at the repeater output (>100 meters).
- Delay of data packets due to heavy network traffic

**The distance between the controller and the decoders is too long (>300 meters). What should I do?**

If the signal cable cannot cover the required distance even with repeaters, add more controllers and extend the Ethernet line to place the controllers closer to the output devices. The maximum Ethernet segment length is 100 meters. With switches (max. 7 switches × 100 meters), it can be extended up to 700 meters, but for >300 meters a fiber-optic network infrastructure is more suitable.

In addition, with the Solus GPS option, you can synchronize independent zones offline without any cable connection between them. Please contact us for application details.

**How many repeaters can I use on one DMX line at most?**

Using more than 3 repeaters on one line is not recommended.

**What is the maximum number of decoders I can connect to a single DMX line?**

You can connect up to 32 decoders to one DMX line (1 unit load each).

**How many DMX channels does the device support on its input and output?**

Per the standard DMX512 protocol, you can use **512 channels (1 DMX Universe)** on a single line. The device electrically regenerates the incoming 512-channel DMX signal and forwards it to the output without assigning addresses or modifying the data.

## Order Code

| PRODUCT CODE | DMXRPT | 11 | DC | EB | ST |
|---|---|---|---|---|---|
| **Capacity** | | | | | |
| 1 Input 1 Output | | 11 | | | |
| **Power Supply** | | | | | |
| DC | | | DC | | |
| **Enclosure Type** | | | | | |
| Enclosed | | | | EB | |
| **Connection** | | | | | |
| Screw Terminal Blocks | | | | | ST |

*Your lighting solution partner*

Zenopix is an R&D, technology and manufacturing company specialized in lighting control systems, built on nearly twenty years of expertise in electronics and software.

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