ZENOPIX
smart solutions

Your Solution Partner in Lighting Control

1X2 DMX SIGNAL REPEATER

USER MANUAL



Version 3 / October 2026

zenopix.com



Thank you for choosing the Zenopix 1x2 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.

Company Information and Contact Address

ZENOPIX LIMITED COMPANY

Ankara Office

Elmar Tower Konutkent Mah. 3028. Cad. No:8C/120 Çankaya / Ankara / Türkiye I +90 312 911 26 46

R&D and Production

Fevziçakmak Mah. Medcezir Cad. Büsan OSB KTMA Blok No:123 Karatay / Konya / Türkiye I +90 332 503 67 77

Konya Teknokent Office

Akademi Mah. Gürbulut Sok. S.Ü. Teknoloji Geliştirme Bölgesi Konya Teknokent No: 67 Selçuklu / Konya / Türkiye I +90 332 503 67 77

E-mail: info@zenopix.com

Website: https://www.zenopix.com

The 1X2 DMX Signal Repeater is a registered product of Zenopix® Elektronik Limited Company.

Copyright Information and Disclaimer

All rights relating to Zenopix® and its products are reserved. All information is subject to change at any time without prior notice. Reproduction, adaptation or translation of any written, visual or audio material used under the Zenopix brand is prohibited without prior written permission. Except for the cases specified in the product warranty certificate and user manual, all damage resulting from improper use is the responsibility of the customer. Zenopix® Elektronik Limited Company shall in no way be liable for any direct or indirect damages arising from the interruption of business activities, loss of profit resulting therefrom, or failure to perform a task.

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 1x2 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 1x2 DMX Signal Repeater

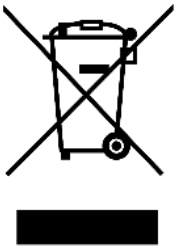
1× Bag of Terminal Blocks

1× Device Test Report

1× Warranty Certificate

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 1x2 DMX Signal Repeater is a high-performance signal **repeater designed to boost and isolate DMX data communication.** By boosting incoming DMX signals, it preserves signal integrity, reduces the risk of communication errors and ensures reliable data transmission over long cable distances.

Offering both power and data isolation, the repeater protects connected devices from electrical interference, voltage differences and signal degradation. Its robust design makes it an ideal solution for professional lighting installations, large-scale DMX networks and complex control systems that require stable, safe and long-distance signal distribution. As a 1x2 device, it can also be used where the signal needs to be split in two.

Safety Instructions

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

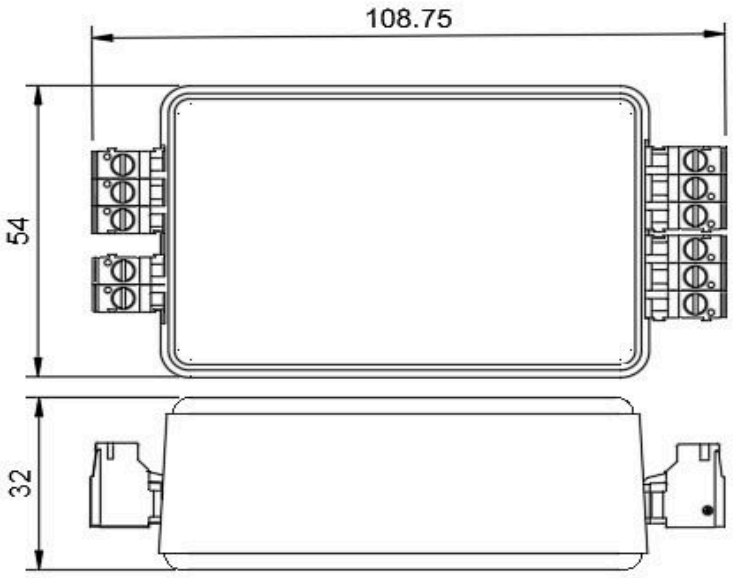
⚠	This device operates at low voltage (12-48 V DC). Do not use lower or higher voltages.
⚠	Any external power supply to be connected to the device must be fused according to its output power and/or protected against short circuits.
⚠	It is the user's responsibility to protect the device against lightning, 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, we recommend the following power supplies: Mean Well HDR-15-24, DRC-24V015W1RZ or Omron S8VK-G01524**.**

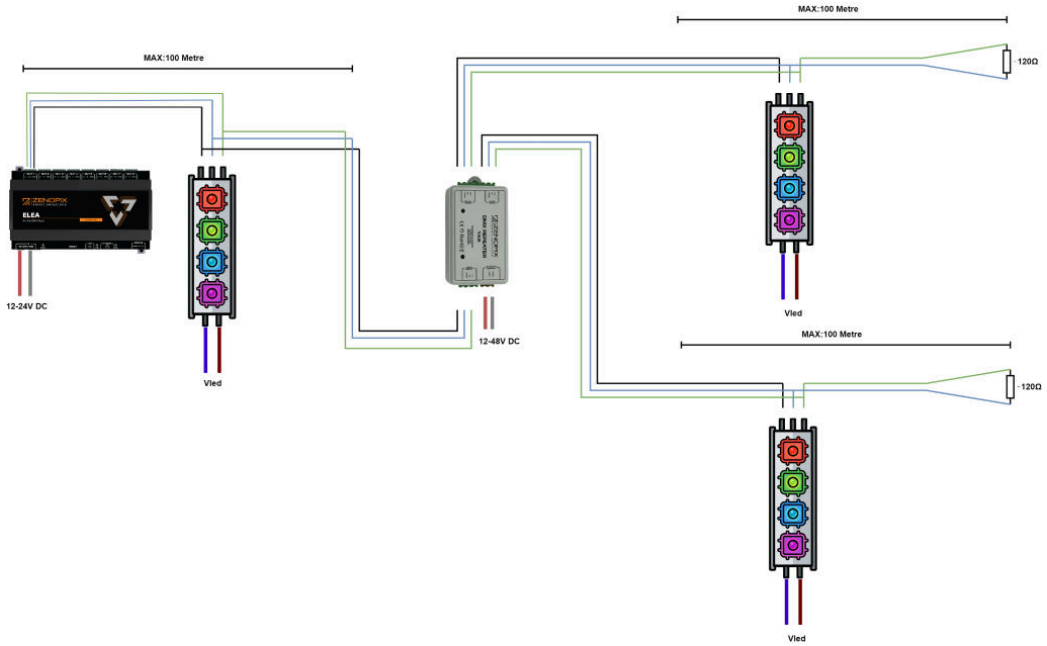
Technical Specifications

Feature	Value
Input Voltage Range	12–48 V DC (2-Pin Pluggable Screw Terminal)
Power Consumption	< 5 W Under Normal Operating Conditions
DMX Input / Output	1 × DMX Input / 2 × DMX Outputs
Input / Output Connection Type	Pluggable screw terminal blocks: 2-pin for power, 3-pin for data input (1×) and outputs (2×)
Isolation Type	Galvanic Isolation (Power and Data — Isolated Input/Output, 2 Independent Outputs)
Communication Interface	Simplex RS485 (DMX)
Maximum Data Rate	1 Mbps
Enclosure	Plastic Enclosure
Dimensions	108.75 × 54 × 32 mm (L × W × H, including connectors)
Weight	80 g
Operating Temperature and Humidity	-20°C ~ +60°C, 20% – 70% RH (Non-Condensing)
Protection	IP20

Device Dimensions



Device and Pin Connections



Power Connection

The device can operate at 12-48 V DC. Although the device has reverse polarity protection, avoid reverse polarity when connecting power.

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).

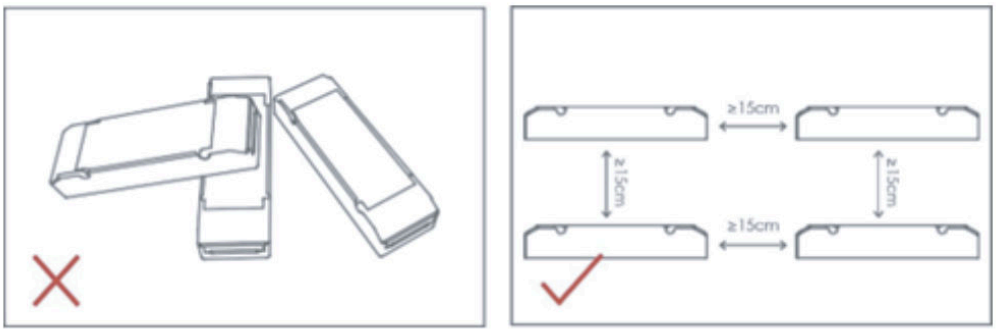
Connect terminals with matching labels *¹. It is recommended to use cables specifically manufactured for RS485 *². Do not route RDM/DMX signal lines near power lines carrying high voltage or high current (for example, asynchronous motor supply cables). For reliable signal transmission, connect a 120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

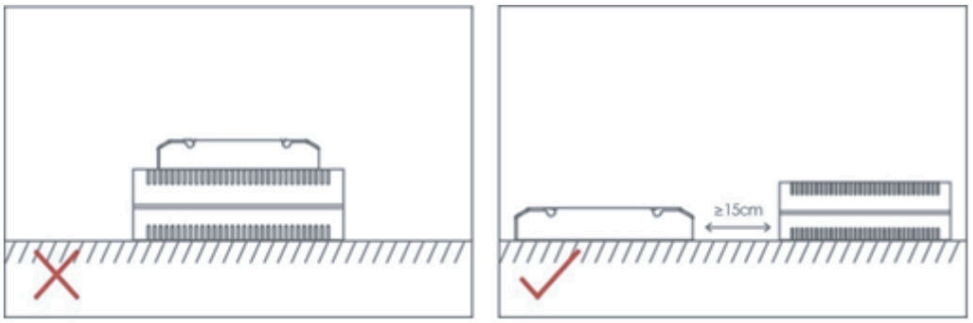
² **Recommendation: See the table below for recommended Belden cables for DMX. Make sure any alternative cable you purchase is a twisted-pair cable with an impedance of 120 Ω. If the cable will be used outdoors, choose cables with high UV resistance.*

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

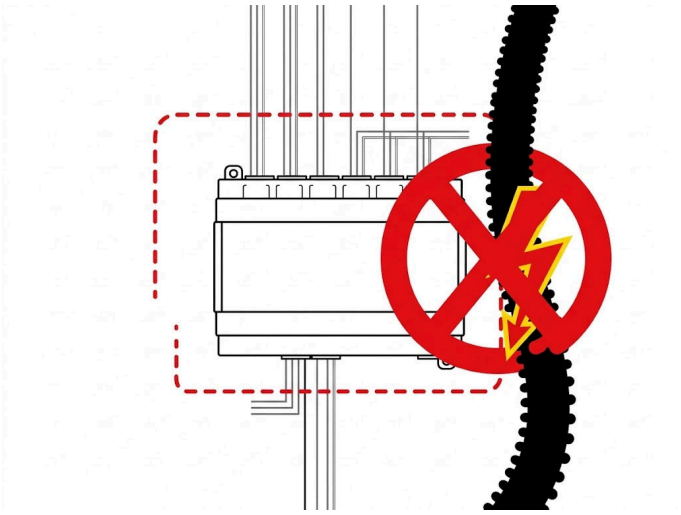
Installation and Precautions



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 cable connections must be secure.
- 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 signal quality, the number of repeaters cascaded in series should be at most **3**. The number of repeaters that can be connected by their inputs to a single DMX line (daisy chain) is at most **32**, due to the RS485 standard load limit (32 Unit Loads).

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.

Can I extend the cable distance by connecting the two DMX outputs in parallel?

No, do not connect the product outputs to each other. The product outputs must remain independent of each other.

How many DMX channels can I use on the input and on each output?

Per the standard DMX512 protocol, you can use **512 channels (1 DMX Universe)** on a single input line. The product electrically regenerates the signal without changing the incoming 512-channel DMX data and passes the same 512 channels unchanged to both output ports (OUT1 and OUT2).

Can I get different data from the two DMX outputs?

No, both outputs of the product deliver exactly the same data. To play different animations on LEDs or fixtures connected to different outputs, change their DMX addresses within the limits of the incoming data. This is not recommended for manageability reasons.

Why does the same animation play on all outputs of the product?

This product does not increase the number of channels provided by the DMX 512 standard. It only repeats and duplicates the signal. The repeater regenerates the same signal on every output for reliable signal distribution. To play a different animation on each output, give different addresses to the fixtures on each output of the product. (For example, addresses 1-256 for output 1 and 257-512 for output 2.)

Why should I use a repeater at branching points? Can't I distribute the signal by splicing the cables directly into a T or Y branch?

DMX infrastructure is designed to run on a single uninterrupted line (daisy chain). Splitting the line directly into a T or Y without hardware upsets the electrical balance (impedance mismatch) and causes signals to reflect along the line and collide with each other. These reflections can corrupt data packets, slow down communication or break it completely. To branch the line without problems, using an RS-485 repeater/splitter that isolates and regenerates the signal is a technical necessity.

Order Code

PRODUCT CODE	DMXRPT	12	DC	EB	PT
Capacity					
1 Input 2 Outputs		12			
Power Supply					
DC			DC		
Enclosure Type					
Enclosed				EB	
Connection					
Pluggable Terminal Blocks					PT

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.

Ankara Office
Elmar Tower Konutkent Mah. 3028. Cad.
No:8C/120 Çankaya / Ankara / Türkiye
+90 312 911 26 46
R&D and Production
Fevziçakmak Mah. Medcezir Cad. Büsan OSB
KTM A Blok No: 123 Karatay / Konya / Türkiye
info@zenopix.com
+90 332 503 67 77
zenopix.com