ZENOPIX smart solutions

Your Solution Partner in Lighting Control

1X8/2x4 DMX SIGNAL REPEATER

USER MANUAL



Version 3 / October 2026

zenopix.com



Thank you for choosing the Zenopix 1x8/2x4 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 1X8/2x4 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 1x8/2x4 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 1x8/2x4 DMX Signal Repeater

1× Bag of Terminal Blocks

1× Technical Documentation and User Manual

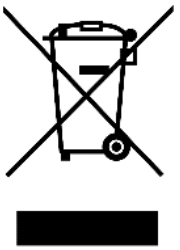
1× Warranty Certificate

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 1x8/2x4 DMX Signal Repeater is a professional signal booster that uses opto-isolation to protect the signal and data from electrical noise and potential faults. With 220VAC or 12-48VDC power input options to suit a range of installation conditions, the device restores weakened signals to their original form and transmits them reliably over long distances. The device does more than just duplicate data: with independent driver stages on each output channel, it prevents signal reflections, saves energy with low power consumption and maximizes system performance in large projects such as stadium, bridge or facade lighting.

Offering 8 DMX outputs in a single device to prevent cable clutter, the product integrates easily into electrical panels with its compact plastic enclosure and rail mounting. Pluggable screw terminal blocks enable fast, error-free wiring, while the status LEDs on the device allow real-time monitoring of data flow. Compatible with all DMX decoder series, the Zenopix 8-Output Repeater creates a safe and stable central distribution point for your system.

Safety Instructions

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

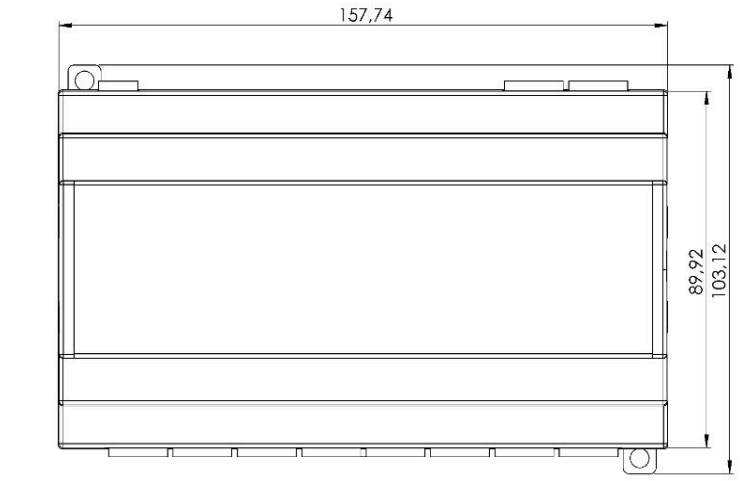
⚠️	This device is available in different voltage variants. Make the electrical connections according to your variant. For more details, carefully read the Power Connection section of the user manual.
⚠️	Any external power supply to be connected to the device must be fused according to its output power 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.

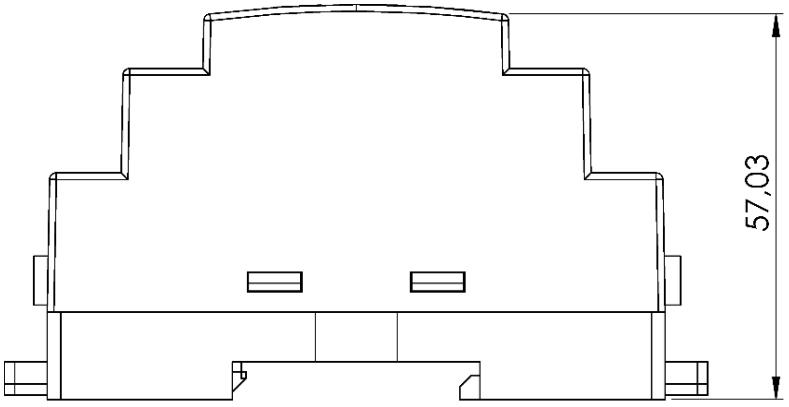
Recommendation: For DC variants in panel/rail applications, the following power supplies are recommended: Mean Well HDR-15-24, DRC-24V015W1RZ or Omron S8VK-G01524.

Technical Specifications

Feature	RPT.DMX-D18.DC-CBX-PTB	RPT.DMX-D18.AC-CBX-PTB
Input Voltage Range (Rated)	12–48 V DC	90-245 V AC
Input Voltage Range (Absolute)	9-50 V DC	85-264 V AC
Maximum Input Current	≤ 1 A	≤0.2 A
Power Consumption	<12 W Under Normal Operating Conditions	<12W Under Normal Operating Conditions
Power Input Connector	2-Pin Pluggable Screw Terminal (+, - / 7.62 mm pitch)	2-Pin Pluggable Screw Terminal (L, N / 7.62 mm pitch)
DMX Input / Output	2 × DMX Inputs, 8 × DMX Outputs (1×8 or 2×4 mode)	2 × DMX Inputs, 8 × DMX Outputs (1×8 or 2×4 mode)
Isolation Type	Power (for signal input and output) and Data Isolation	Power (for signal input and output) and Data Isolation
Communication Interface	Simplex RS485 (DMX)	Simplex RS485 (DMX)
Maximum Data Rate	1 Mbps	1 Mbps
Enclosure	Plastic Enclosure	Plastic Enclosure
Dimensions	157.74 × 103.12 × 57.03 mm (L × W × H)	157.74 × 103.2 × 57.03 mm (L × W × H)
Weight	256 g	256 g
Operating Temperature	-20 °C – +60 °C / 20% RH	-20 °C – +60 °C / 20% RH
Operating Humidity	20–95% RH, non-condensing	20–95% RH, non-condensing
Protection	IP-20	IP-20
Mounting Type	35 mm DIN Rail or Surface Mounting with Screws	35 mm DIN Rail or Surface Mounting with Screws

Device Dimensions





Device LEDs

There are 5 LEDs on the device:

- IN1/IN2: These LEDs indicate signal reception at DMX inputs 1 and 2, respectively. In 1×8 mode, since the two inputs work together, the IN1 and IN2 LEDs light together regardless of which input the signal comes from.
- The PWR LED is red and shows the power status of the device. It stays on continuously when the device is powered.
- OUT1 / OUT2: Indicate that data is being sent to output group 1 (1–4) and output group 2 (5–8) respectively. In 2×4 mode, OUT1 works in sync only with IN1, and OUT2 works in sync only with IN2; in 1×8 mode, both output LEDs light in sync with the active input.

Device and Pin Connections

The 1x8 repeater is available in two variants with different input voltages: one with a 12-48 V DC input and the other with an AC 110-220V input. Making the connection according to your variant is critical. Power the device correctly according to its product code. Supplying power suitable for the product variant is the user's responsibility.

Power Connection (12-48 V DC)

Connect the 12-48 V DC supply to the device's power input connector (7.62 mm pin pitch). Connect with the correct polarity. The device has reverse-polarity protection, but it does not operate with reversed polarity.

Power Connection (110-220 V AC)

Connect the 110-220V AC supply to the device's 2-pin power input connector (7.62 mm pin pitch).

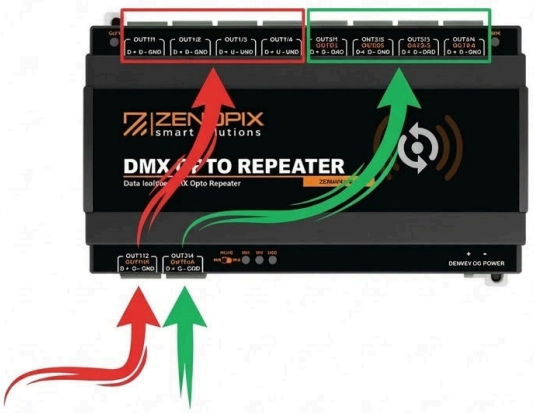
> ⚠️ WARNING: RISK OF ELECTRIC SHOCK AND DANGER TO LIFE
>
> This device operates on 110-220V AC mains voltage, which can cause serious injury or fatal electric shock. To eliminate the risk of electric shock, never open the device enclosure or tamper with the internal components in any way. Before cleaning, maintenance or transport, always unplug the device's power cable and completely disconnect the power. Since there are no user-serviceable parts inside the device, refer all faults and maintenance to authorized service personnel only.

DMX Connection

The DMX connection is made in exactly the same way on both device versions. To switch the device between 2x4 and 1x8 modes, use the switch next to the DMX input. The switch is kept small to prevent accidental changes; you can easily change the mode with a suitable tool such as tweezers.

In 1x8 mode, do not connect DMX signals to both inputs at the same time. If you use 2 inputs, always operate the device in 2x4 mode.

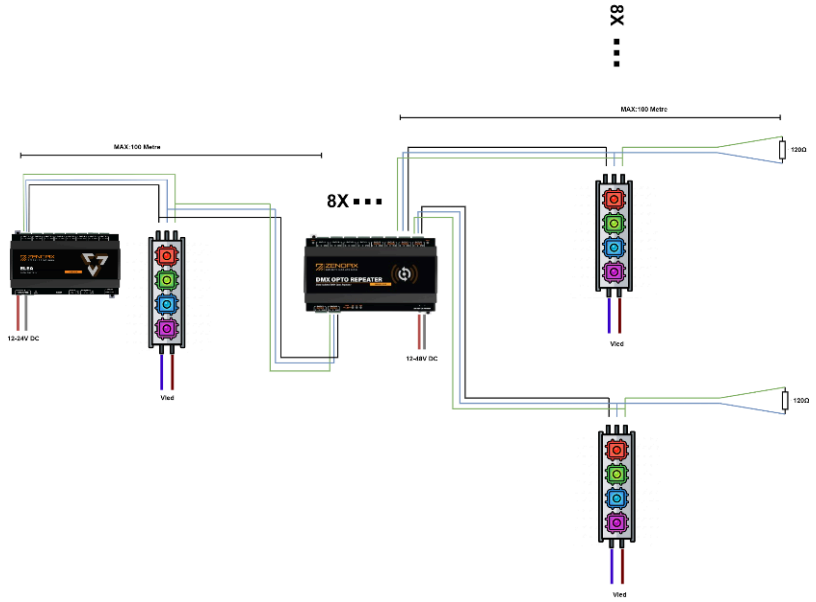
The diagram below shows which input controls which group of four outputs in 2x4 mode.



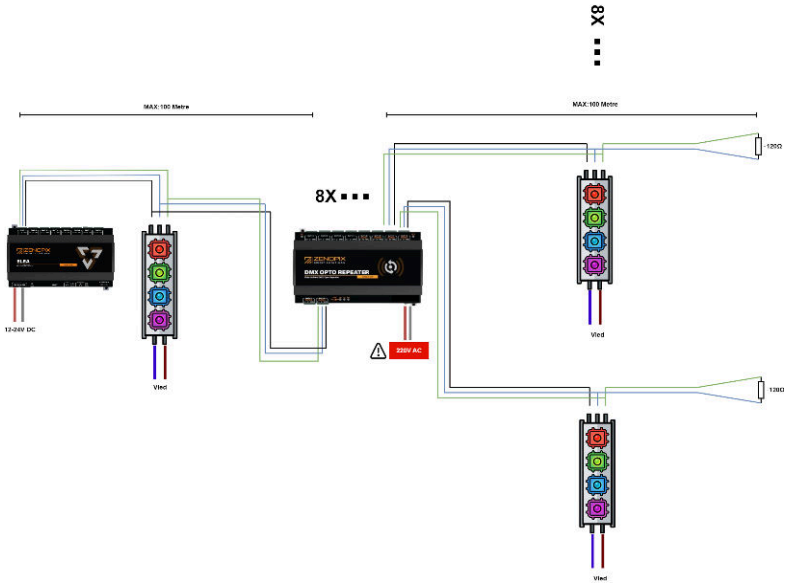
In 1x8 mode, you can use either of the device's two inputs. In this mode, do not connect data to both inputs at the same time.



For RPT.DMX-D18.DC-CBX-PTB



For RPT.DMX-D18.AC-CBX-PTB



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).

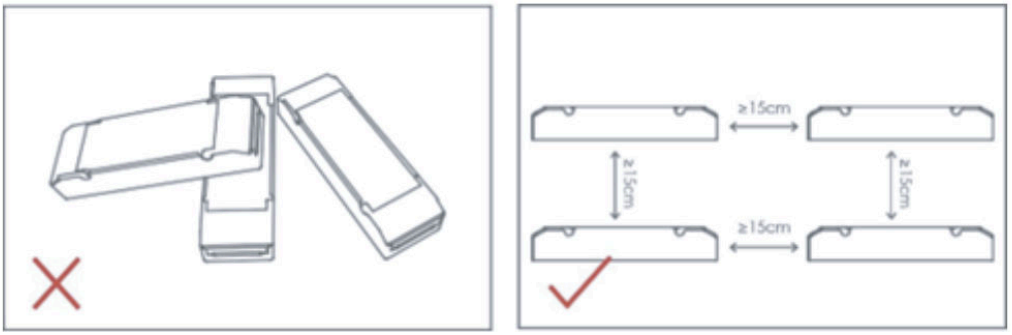
Connect terminals with matching labels *[1]. It is recommended to use cables specifically manufactured for RS485 *[2]. Do not route RDM/DMX signal lines near power lines carrying high voltage or high current (for example, asynchronous motor supply cables). For reliable signal transmission, connect a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

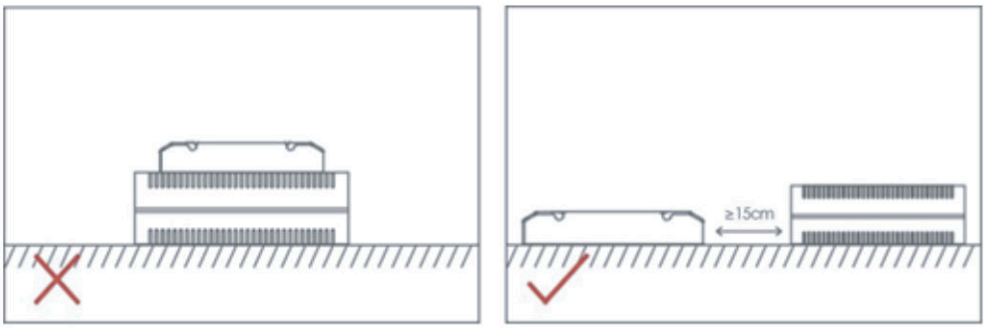
[2] See the table below for recommended Belden cables for DMX. Make sure any alternative cable you purchase is a twisted-pair cable with an impedance of 120 Ω. If the cable will be used outdoors, choose cables with high UV resistance.

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

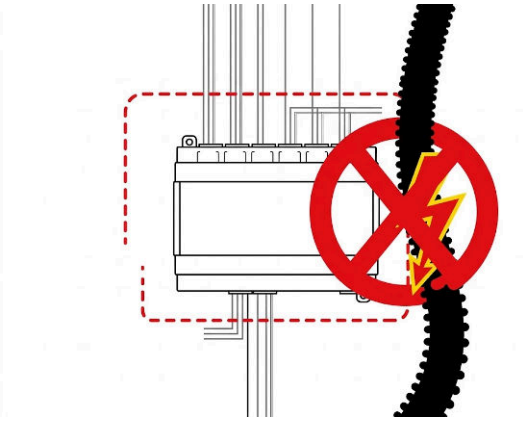
Installation and Precautions



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.



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 the signal characteristics, the number of repeaters in series on one line (receiving their signal through another repeater) should not exceed 3. Up to 32 repeaters can be connected in parallel (daisy-chained on a single line).

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.

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

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

Can I use 1024 DMX channels at the product inputs/outputs?

Yes, you can. The product only passively repeats the signal.

Can I get different data from three or more DMX outputs?

No, in 1x8 mode all 8 outputs deliver exactly the same data. In 2x4 mode, each input of the product passes exactly the same data to its 4 outputs.

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 input signal for each output group, so all outputs within a group carry the same signal reliably. To play a different animation on each output, give different addresses to the fixtures on each output of the product. (For example, addresses 1-128 for output 1 and 129-256 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.

Do the device inputs have a built-in 120Ω termination resistor?

No. To allow multiple repeaters on the same line, the device does not have a built-in 120Ω termination resistor. If the device is installed at the end of the line, an external 120Ω termination resistor must be connected to the line.

What should I do with DMX input 2 when using 1x8 mode?

In 1x8 mode, one of the DMX inputs can be left unconnected.

Why do the two animations I feed into the device get mixed?

If the device is operating in 1x8 mode, different animations fed into the 2 inputs will overlap as a single signal. To resolve this, use the device's mode switch to select 2x4 mode.

Why are 4 of the device's outputs not working?

The device may be operating in 2x4 mode with no signal coming from one input. Switch the device to 1x8 mode or check your DMX inputs.

Order Code

PRODUCT CODE	DMXRPT	18	AC	EB	PT
Capacity					
1 Input 8 Outputs		18			
2 Inputs 2x4 Outputs		24			
Power Supply					
AC			AC		
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