ZENOPIX smart solutions

Your Solution Partner in Lighting Control

ELEA

ONLINE ART-NET DMX CONTROLLER

USER MANUAL

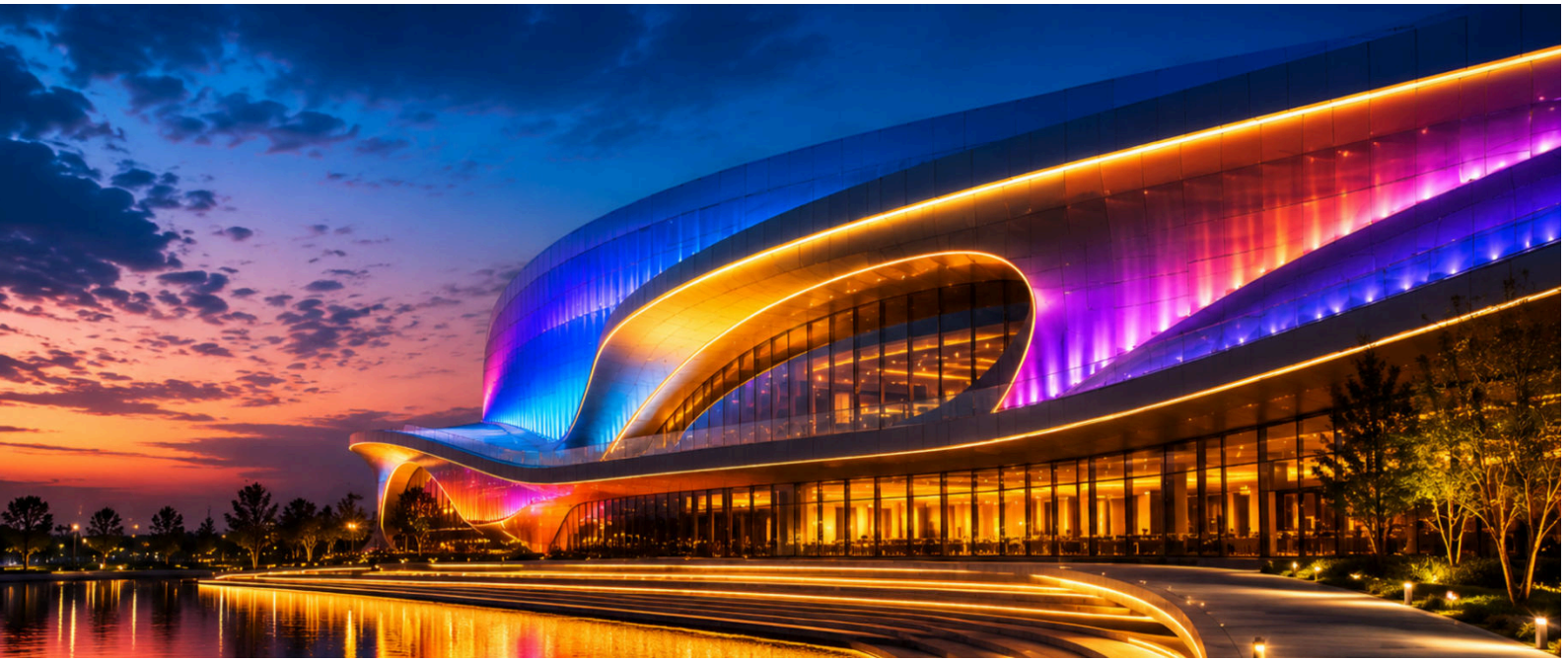






Version 3 / October 2026

zenopix.com



Thank you for choosing Zenopix Elea.

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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Safe Use

Use the device only in dry environments (indoors). The device is rated 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 be using 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 interface. Repair service is the sole responsibility of the manufacturer. If the interface appears to be defective, please contact your dealer. After the warranty period has expired, you may contact your supplier or the manufacturer to have the unit repaired, where possible, for a separate service fee. This device must be used by professionals. The device is not designed to be operated by non-professionals or children.

Warranty Information

Zenopix Elea comes with a two-year standard manufacturer's warranty, with an optional three-year extension for up to five years of total coverage. Detailed information is available in the product warranty certificate or on our website.

Package Contents

1x Zenopix Elea

1x Power Adapter (12/24 VDC 1 A, for XLR versions only)

1x Cat6 cable

1x Technical Document, Introduction Guide

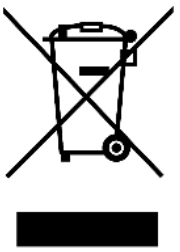
1x Warranty Certificate

9x Terminal Blocks

1x Device Test Report

NOTE: After opening the package, check the package contents and the condition of the interface! If anything is missing or damaged, contact your supplier. Do not use the device if it appears damaged!

Information on Human and Environmental Health



Provided that the information in the User Manual is fully observed, this device poses no risk to human health or the environment. The device must not be disposed of with household waste; it must be handed over to an electrical and electronic equipment recycling center. It must be recycled or disposed of without harming nature or human health.

Introduction

Zenopix Elea is a network-based control device that converts Art-Net data received over Ethernet into DMX signals and sends them through eight outputs. Thanks to its support for the standard Art-Net protocol, it can integrate directly not only with **Zenopix NEO** software but also with third-party lighting control programs such as Madrix, Resolume Arena and Jinx.

The built-in web interface of Zenopix Elea allows you to manage network parameters, port-based universe mappings and online firmware updates without any additional configuration software. To simplify on-site installation, DMX pixel addressing can be performed through the interface; channel counter and manual color tests can also be run without the need for an external Art-Net stream. If network communication is lost, the device's "Failsafe" feature comes into effect.

- **Zenopix Elea** is an **Art-Net DMX** control device with eight DMX output ports/universes.
- Receives Art-Net packets from the Ethernet network, converts them into DMX signals and sends them to the DMX outputs.
- Each universe supports up to 1024 channels, **allowing it to control a large number of** pixels. For a higher frame rate, we recommend the 512 channels specified by the DMX512 standard.
- Advanced design and powerful processing capabilities deliver high FPS without freezing.
- Provides synchronization across multiple devices with Zenopix Solus.
- **Embedded Web Server:** Fast configuration of IP, universe and IC settings via any standard web browser.
- **Software Independent:** Plug-and-play compatibility with all Art-Net software and consoles (**Zenopix NEO**, Madrix, Resolume, etc.).
- **DIN Rail-Mount Enclosure:** Fast and secure mounting in electrical panels.

- **Real-time Status LEDs:** Built-in indicators for real-time monitoring of network connection and data traffic.

Safety Instructions

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

⚠️	This device operates on low voltage (12-24 V DC). Do not use lower or higher voltages.
⚠️	External USB Power Supplies: Using unapproved units may pose a risk. Please do not use the USB port on the device to supply power to external devices.
⚠️	Any external power supply connected to the device must be fused appropriately for 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 fully taken at the installation site.

Technical Specifications

Input Voltage Range	12-24 V DC (Adapter or Terminal Block)
Power Consumption	<10 W (during normal operation)
Network Protocol	Art-Net4
Number of DMX512 Universes	8 DMX universe outputs
Number of DMX Channels	Maximum 1024 Channels, Recommended 512 Channels
DMX512 Output Ports	3-pin terminal block (5.08 mm pitch) or female 3-pin NEUTRIK XLR connector
Maximum FPS	40 FPS at 512 channels, 20 FPS at 1024 channels
Ethernet	1x RJ45, 10/100 Mbit/s
USB	1x USB 2.0 Type-B port (for firmware updates)
Firmware Update	Via USB or over the internet
Status LED	2 pcs
Enclosure	6082 Aluminum / ABS Plastic
Dimensions (Body only)	Cabinet-mount enclosure: 483 × 83.5 × 44 mm (L × W × H) Plastic enclosure: 157.74 × 103.12 × 57.03 mm (L × W × H)
Dimensions (With connectors)	Elea XLR: 483 mm × 83.50 mm × 44 mm Elea TB / Terminal Block: 483 mm × 92.93 mm × 44 mm
Weight	ABS enclosure: 254 g Aluminum enclosure TB: 1102 g Aluminum enclosure with XLR connectors: 1110 g

Operating Temperature and Humidity	0 to 60 °C, 0–70% RH, non-condensing
Storage Temperature and Humidity	-10 to 60 °C, 0–70% RH, non-condensing
Protection	IP20
Certifications	CE, RoHS

Specifications may vary depending on the enclosure type. Please contact your sales representative for detailed information.

Zenopix Elea is available with 3-pin XLR or terminal block connectors for its DMX512 outputs. You can make the connections and play your animations with the help of a networked computer or Zenopix SOLUS.

Status LED Codes

Red LED: Lights up continuously if the device's Ethernet connection is lost.

Green LED: Blinks for 2 seconds in response to an Art-Net poll (Art-Poll) signal to indicate that Art-Net data is being received correctly.

There are 2 additional LEDs on the Ethernet port. The green LED lights up continuously to indicate a valid connection. The yellow LED indicates data flow. If the yellow LED blinks faster than normal, new data is flowing.

Resetting to Factory Defaults

- If another device is using the same default IP address, temporarily disconnect the Ethernet cable to prevent an IP conflict.
- Press the reset button on the front panel of the device using a suitable thin-tipped tool.
- Press and hold the reset button for at least 5 seconds.
- When the Status LED (Red LED) starts blinking rapidly, the reset has been triggered; the device restarts automatically.
- After the device restarts, connect the Ethernet cable and change the computer's IP settings if necessary.

Please note: *The factory default IP address is* ***192.168.1.250,*** *the subnet mask is* ***255.255.0.0****, and the gateway is* ***192.168.0.1****. If the procedure fails, repeat the steps.*

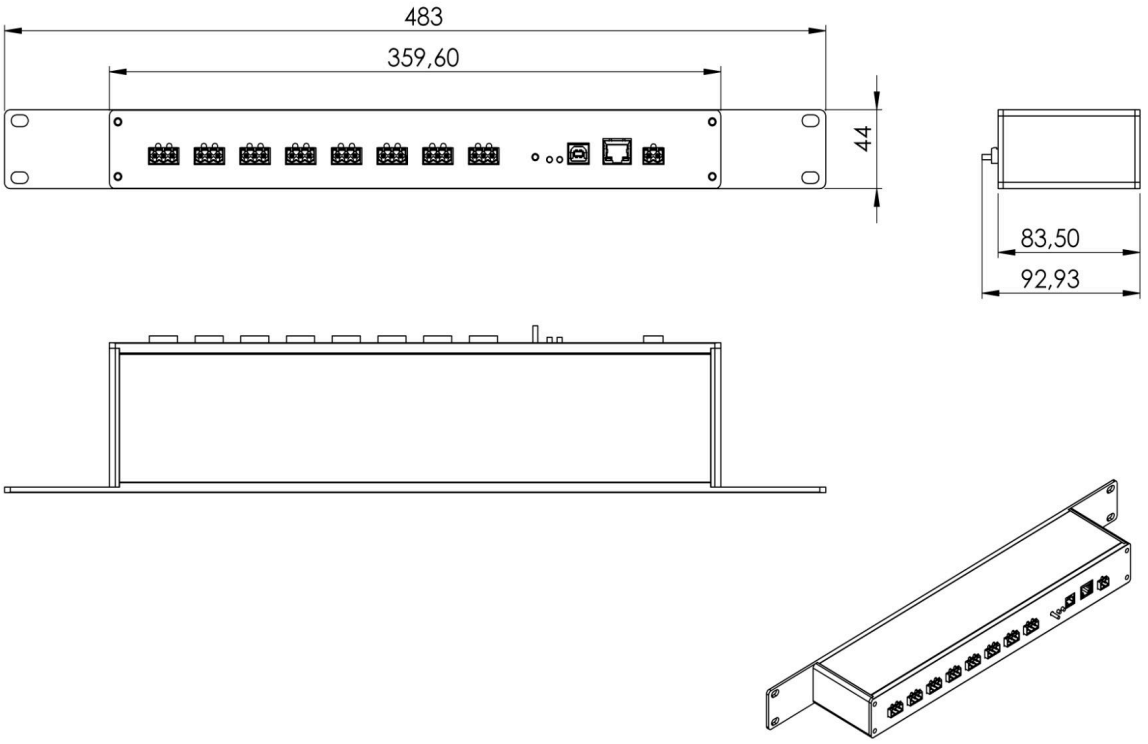
IP Address and Device Information

- Device serial number
- Device model
- Default IP address

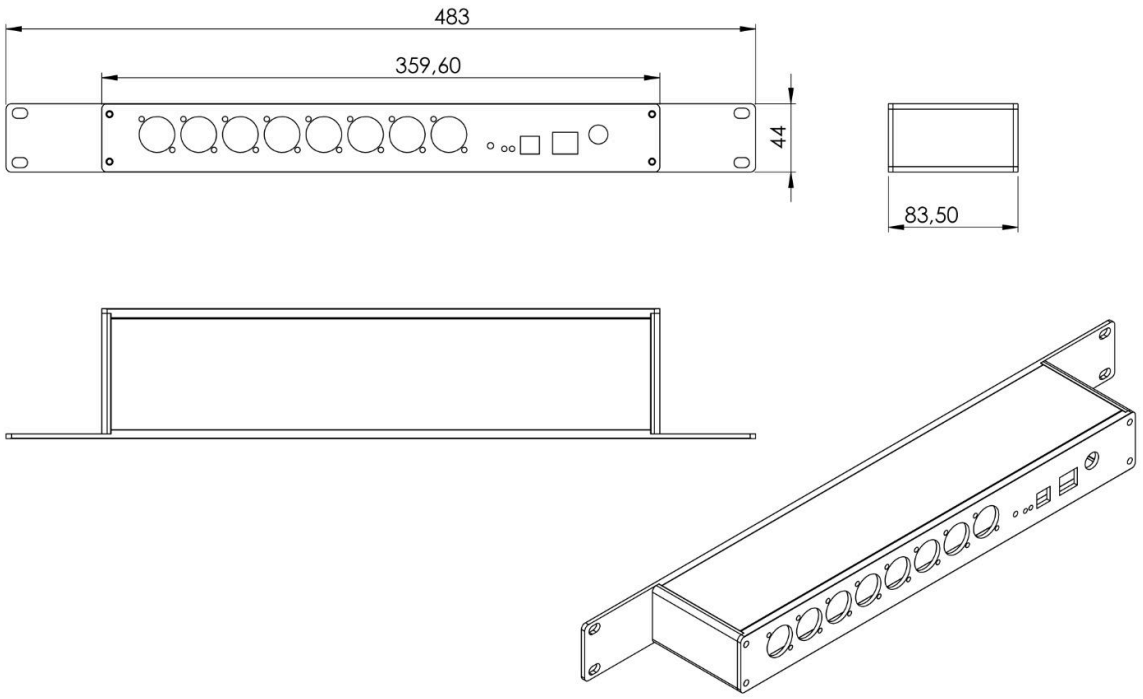
You can find the information above on the device.

Device Technical Drawing

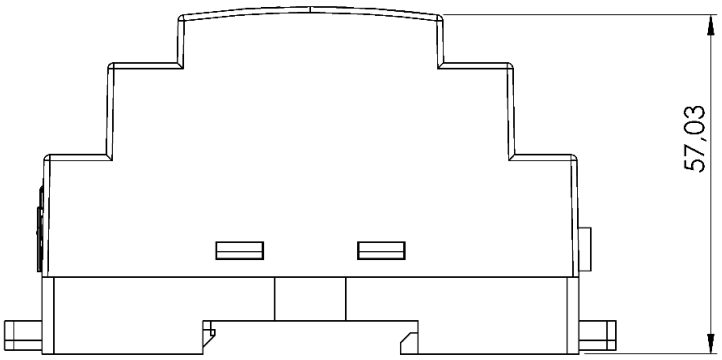
Elea PTB (Pluggable Terminal Block)

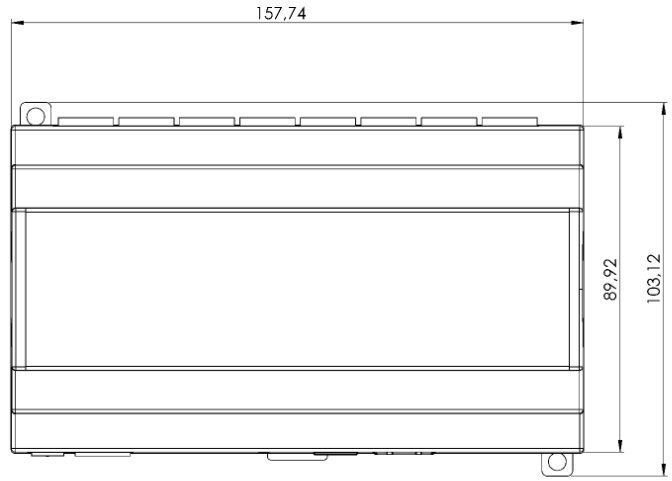


Elea XLR



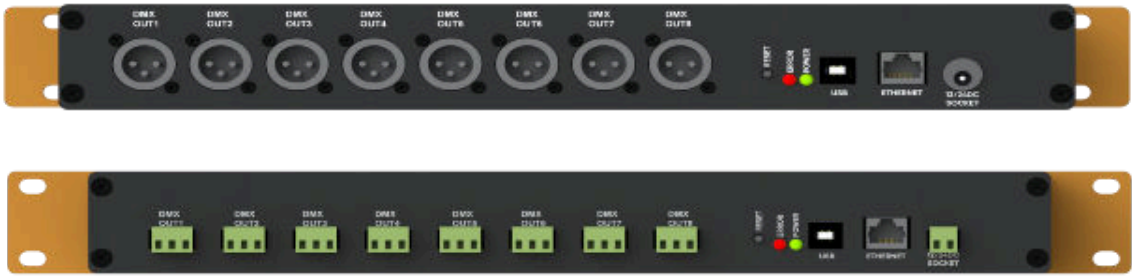
Elea DIN RM (Rail and Wall Mount)





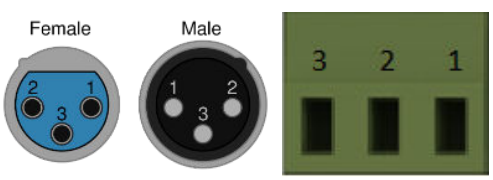
Device and Pin Connections

Elea Cabinet Type (XLR and Pluggable Terminal Block Type)



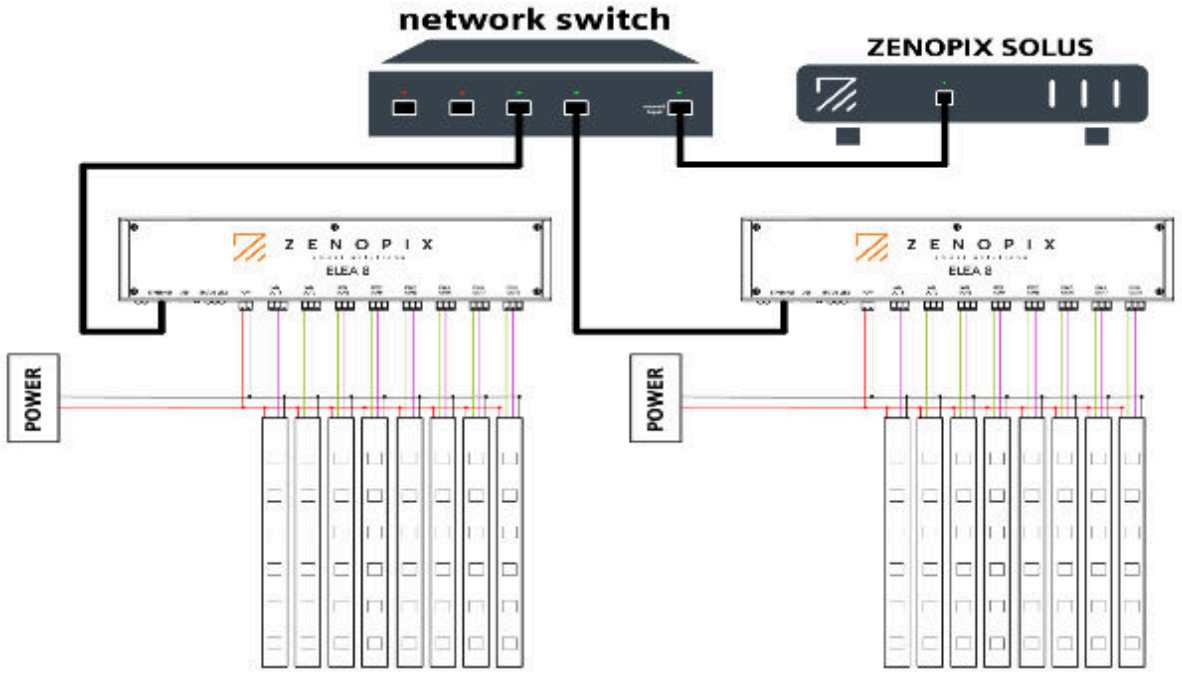
Elea with DIN Rail-Mount Enclosure



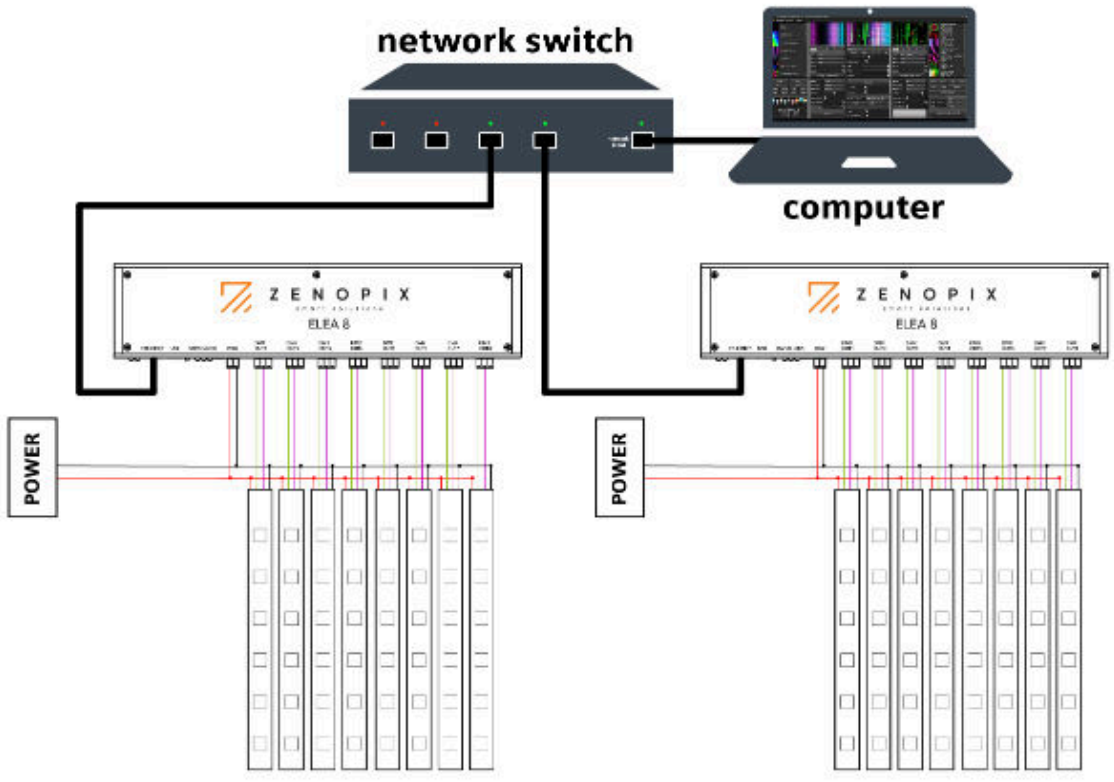


1-) Ground 2-) Data - 3-) Data +

XLR and Terminal Block Outputs



Full Network Connection (with Zenopix Solus)



Full Network Connection with Computer

Zenopix Elea

Power:

The device can operate on 12-24 V DC. The device features reverse polarity protection. The power input connector of the device may vary according to customer request. Depending on your device version:

In the XLR connector version, you can use the device with the adapter supplied in the box. For the XLR version, power input is provided via a standard 2.1 mm barrel jack.

On terminal block versions, connect the power supply to the 5.08 mm, 2-pin terminal block.

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

DMX Connection

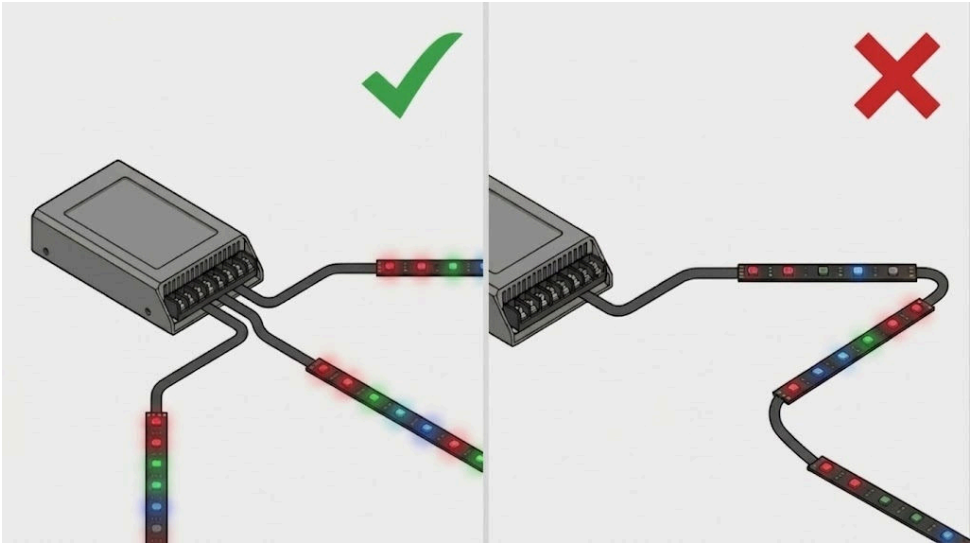
When making DMX connections, connect the devices in a daisy-chain configuration (the DMX output of one device connected to the DMX input of the next). Never use a star topology on the DMX line. Where a star layout is unavoidable, use a distribution repeater (2x4, 1x2, 1x8 options). Connect terminals with matching labels*¹. It is recommended to use cables manufactured specifically for RS485*². Do not route RDM/DMX signal lines near power lines carrying high voltage or high current (e.g. asynchronous motor supply cables). For a reliable signal, connect a 120-ohm resistor to the DMX output of the last device. Extending your DMX cables beyond 100 meters without a repeater is not recommended.

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

***²Recommendation:** Belden cable recommendations for DMX cable are given below. Check that any alternative cable you purchase has an impedance of 120 ohms and is twisted pair. If the cable will be used outdoors, choose cables with high UV resistance.

Application	**Cable Type / Feature**	**Recommended Standard (Belden)**	**General / Local Code Equivalent**
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

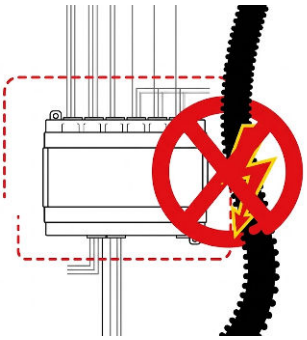
Warnings about LEDs:



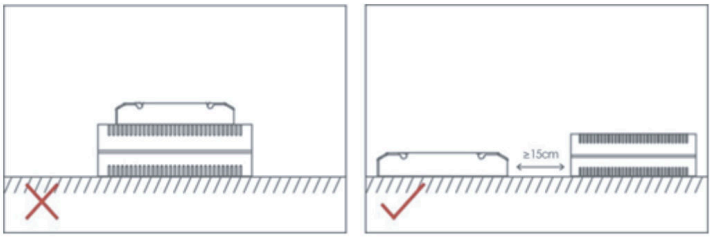
In high-current applications (>5 A), it is recommended to power your LED segments directly from the power supply and distribute power using a star topology. When doing so, the data must still be carried in a daisy-chain arrangement. For long LED runs, power may need to be re-injected at the intervals specified by the manufacturer. Refer to the user manual of your LEDs for this.

For flexible LED strips, we recommend feeding power from both ends to prevent voltage drop from causing dimming or changes in color temperature at the strip ends when displaying white.

Installation and Precautions



Isolation of the signal lines is critical for stable operation of Zenopix Elea. Routing high-current/high-voltage cables near the device body or terminal connections can cause fluctuations in the output signals or permanent damage to the hardware. Keep the device isolated from high-current and high-voltage cables.



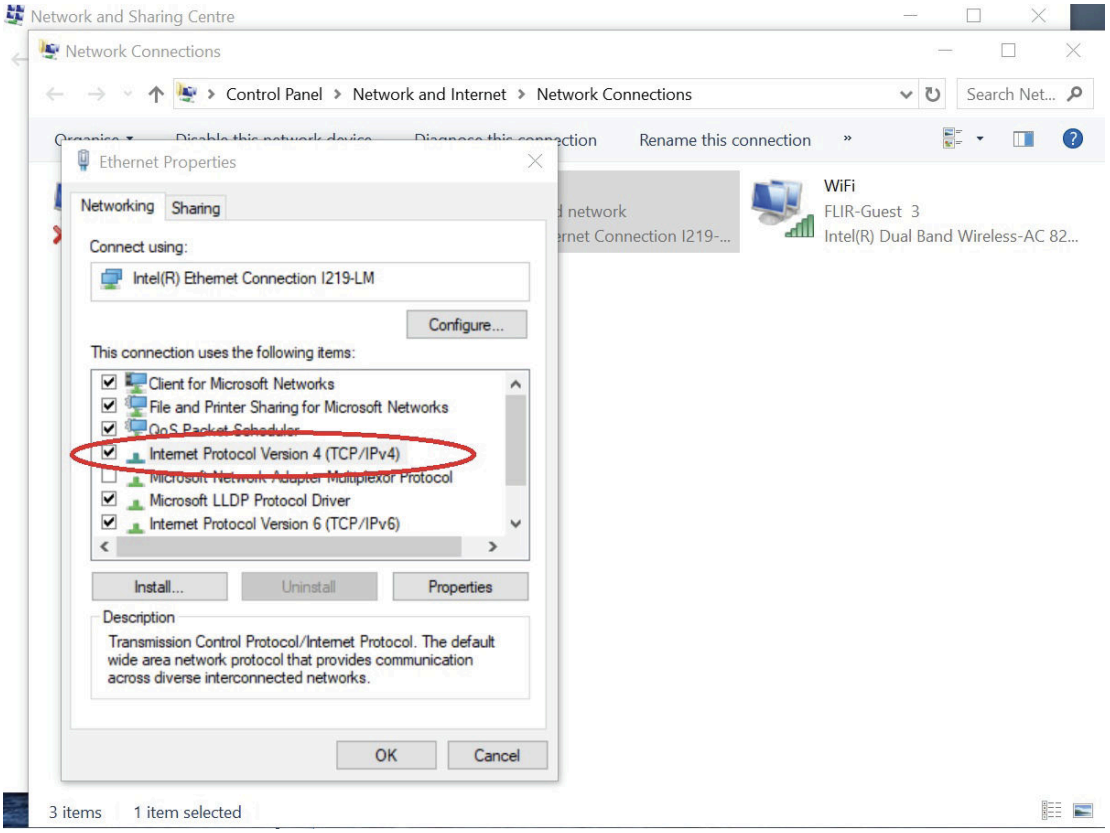
Please do not place the products on top of LED drivers. To ensure proper heat dissipation and to avoid shortening the service life of the devices, leave **at least 15 cm of clearance** between the product and the driver.

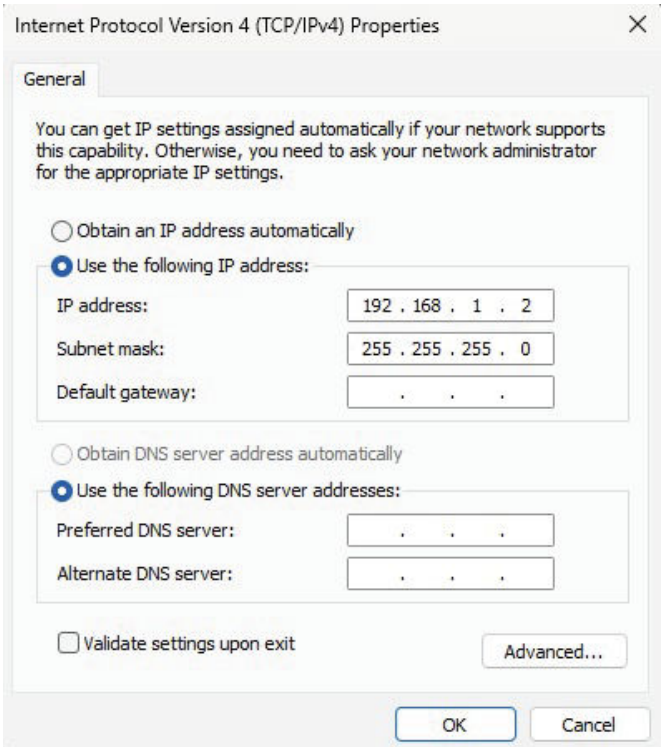
Network Configuration

You can connect to Zenopix Elea from a computer using an Ethernet cable and access the device's IP address, name, port configuration, test functions and version information. The device's default IP address is **192.168.1.250**.

To access the device interface and operate the product with a computer, the device and your computer must be on the same network. To do this, follow the steps below.

- Make the necessary connections to your Zenopix Elea and connect it to your computer via Ethernet.
- Configure your computer's IP settings.





Once your computer's IP configuration is complete, the Elea interface can be accessed. When you enter the default IP address **192.168.1.250** in your browser, the Elea interface opens.

Configuration via Web Browser

When you connect Zenopix Elea to an Ethernet network, you can manage network, universe, test, addressing, system and firmware update functions through the built-in web interface. The computer and Elea must be on the same network.

Follow the steps below to configure the device:

- Connect Zenopix Elea and your computer to the same network.
- Assign the correct network settings to the PC.

  Example computer settings: IP address 192.168.1.10 / Subnet mask 255.255.0.0

- Open your web browser and enter the IP address of Zenopix Elea.

Device factory network settings: ***IP 192.168.1.250*** */ Mask* ***255.255.0.0*** */ Gateway* ***192.168.0.1***

Web Interface and Firmware Functions

Menu names are given exactly as they appear in the device interface. In normal use, ARTNET MODE must be selected; return to this mode once service tests are complete.

General Network Settings and Output Ports

- **IP Address:** The address of the device on the network. Each of the four numbers in the address must be between 0 and 255.
- **Subnet Mask:** Defines the local subnet. The factory default is 255.255.0.0.
- **Gateway:** Used to access networks outside the local network and the update server.
- **SET NETWORK:** Writes the network settings to non-volatile memory and restarts the device with the new IP.
- **Device Name:** Defines a short name of up to 16 characters to identify the device on the network.
- **Failsafe Mode:** Selects the behavior to apply if no Art-Net data is received for 10 seconds.
- **Release DMX Line:** No blackout or last-look refresh is applied after the interruption. No data is transmitted.
- **Hold Blackout:** Sets all outputs to 0 and maintains the blackout state.
- **Hold Last Look:** Keeps the last received Art-Net frame on the outputs.
- **Output Port Configuration:** The Global Universe value is set for each output. The interface calculates the Net, Sub and Uni fields automatically; SAVE OUTPUTS saves the port mappings.

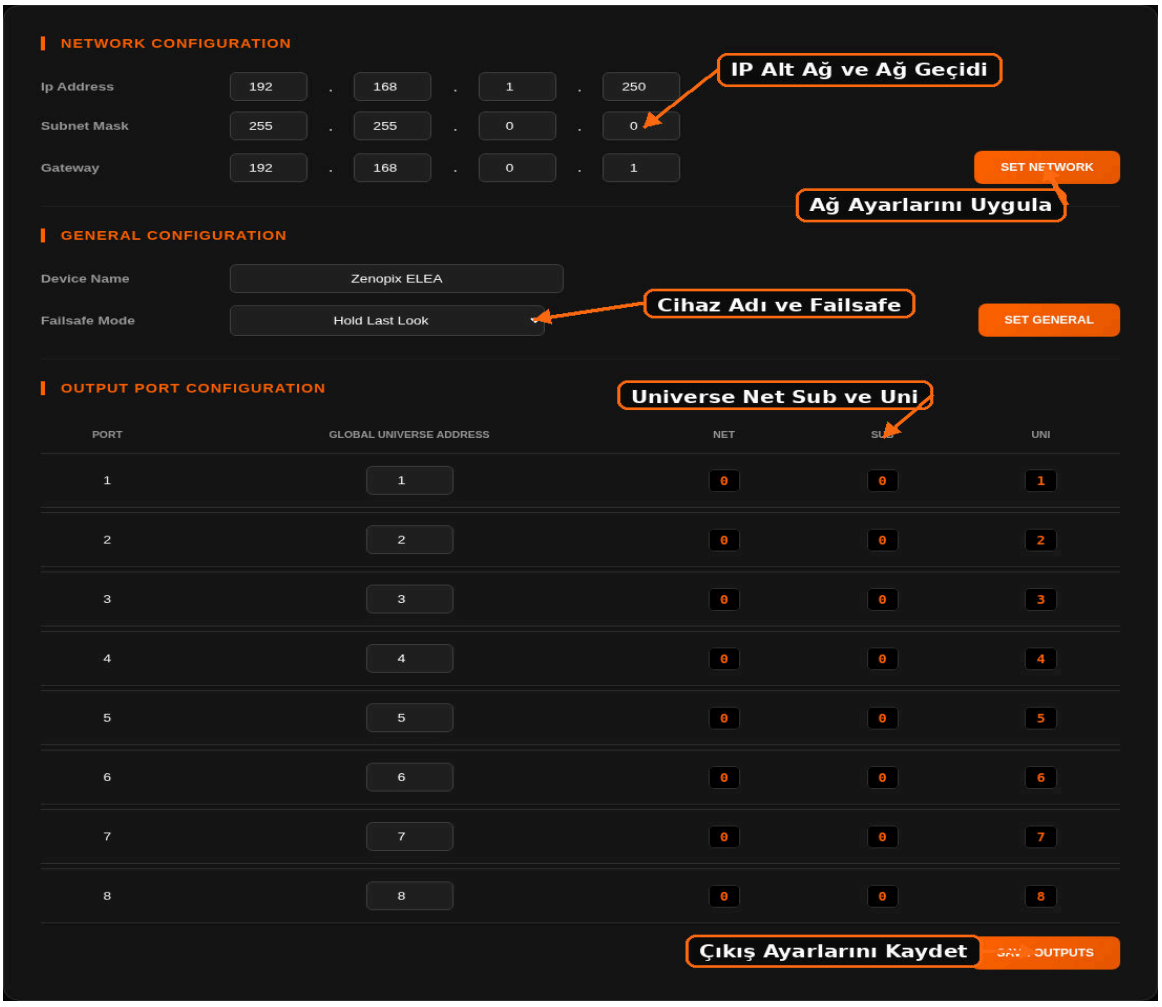


Figure: General network settings and output universe configuration

ARTNET DMX Control Mode

- **ARTNET MODE:** The normal operating mode. Art-Net data arriving for the selected universes is passed to the DMX outputs.

- **LED CONTROL MODE:** Enables the manual color, channel counter and addressing tools. While a test command is applied, external Art-Net data is not processed.

During a test, the red warning bar at the top indicates that external Art-Net data is being ignored.

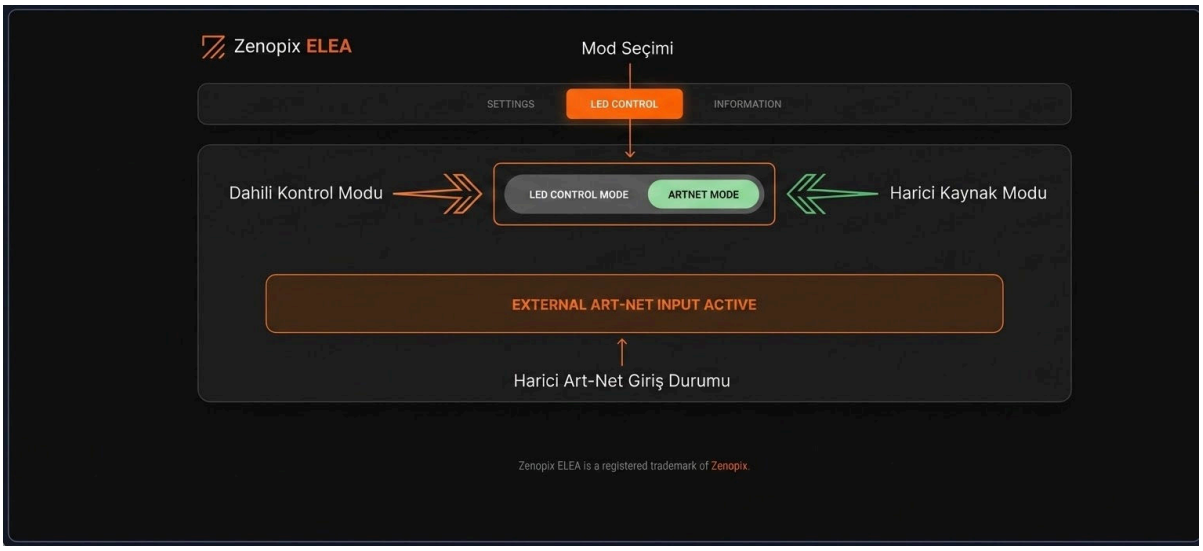


Figure: Selecting ARTNET MODE and LED CONTROL MODE

Manual Color and Output Test

1. Turn on the Port 1–Port 8 switches for the ports to be tested.

2. In the Test Channel Count field, enter the number of channels to test (1–1024). The factory default is 512.

3. Select the number of color channels using the 1-CH through 5-CH options.

4. Select the color assignment for each channel and set its value between 0 and 255.

5. To have the device start in test mode with these settings after a power cycle, press SAVE COLOR.

SAVE COLOR saves the color, ports, channel count and test length to non-volatile memory. To exit the saved test mode, ARTNET MODE must be selected.

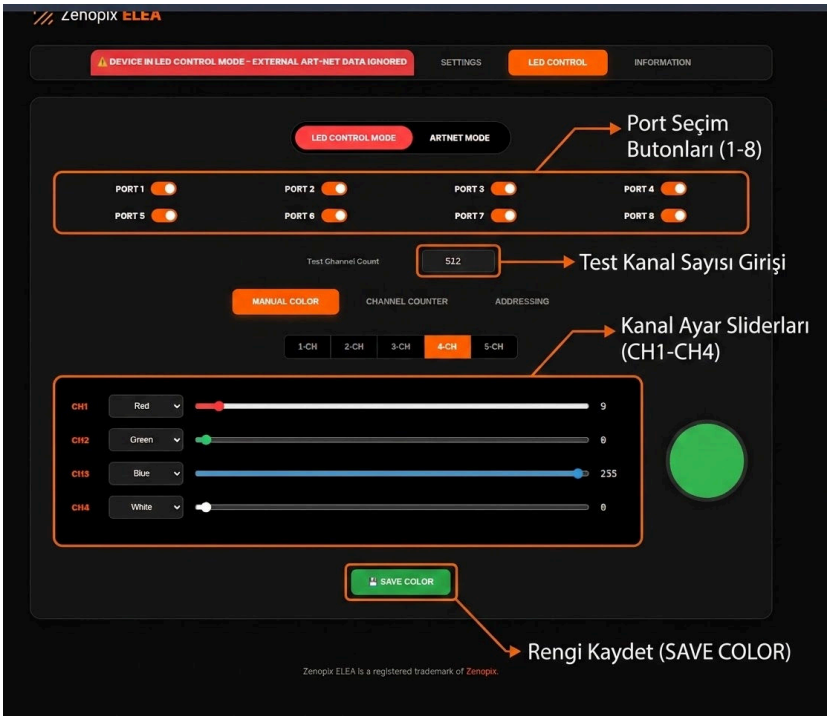


Figure: Manual color test fields

Channel Counter

The channel counter steps through the channels between the start and end addresses on the selected outputs, activating only one channel at a time (setting it to 255). This allows you to verify pixel order, channel mapping and line continuity.

- **Start Addr and End Addr:** Define the scan range. Values must be between 1 and 1024.
- **Speed:** Sets the time between steps from 20 to 2000 ms.
- **PREV and NEXT:** Move to the previous or next channel. At either end of the range, the counter wraps to the opposite end.
- **PLAY and PAUSE:** Start and pause automatic stepping, respectively.
- **STOP:** Stops stepping and returns the counter to the start address.

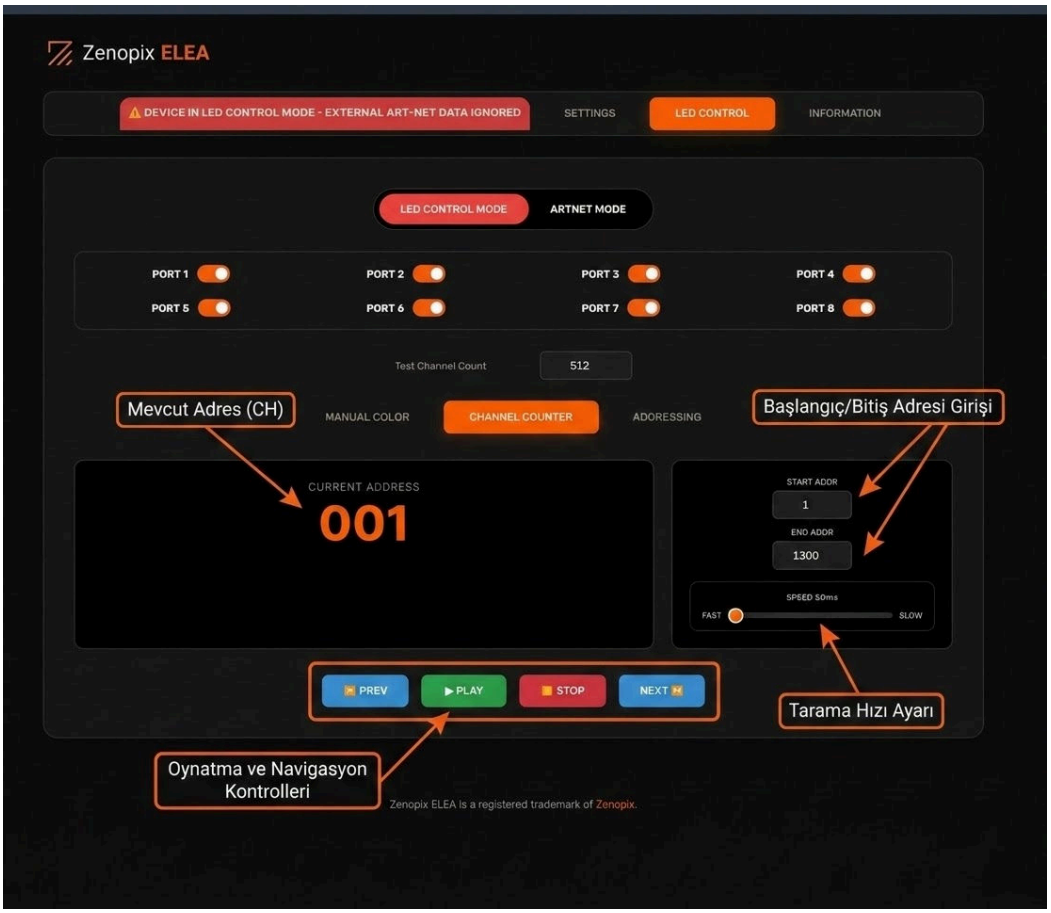


Figure: Channel counter and navigation controls

DMX Pixel (IC) Addressing

The ADDRESSING tool sends an addressing sequence from the selected ports to addressable DMX LED drivers. An incorrect IC type or channel count may cause unexpected addressing results. Check the IC type and channel count against the fixture manufacturer's datasheet.

1. Enable only the output ports to be addressed.
2. Enter the start and end addresses in the Start Address and End Address fields.
3. Select the 1-CH–5-CH value matching the fixture's pixel structure.
4. Select the driver IC from the IC Type list.

5. In the Pixel Group Size field, enter the number of pixels that will share the same address.

6. Press the START ADDRESSING button and do not switch off the device until the process is complete.

IC types supported for addressing: TM512, UCS512C, SM16512, SM18522, GS8511, GS8512, GS8513, GS8515, GS8516, GS8516B, GS8521, GS8523, GS8524, GS8525 and GS8526.

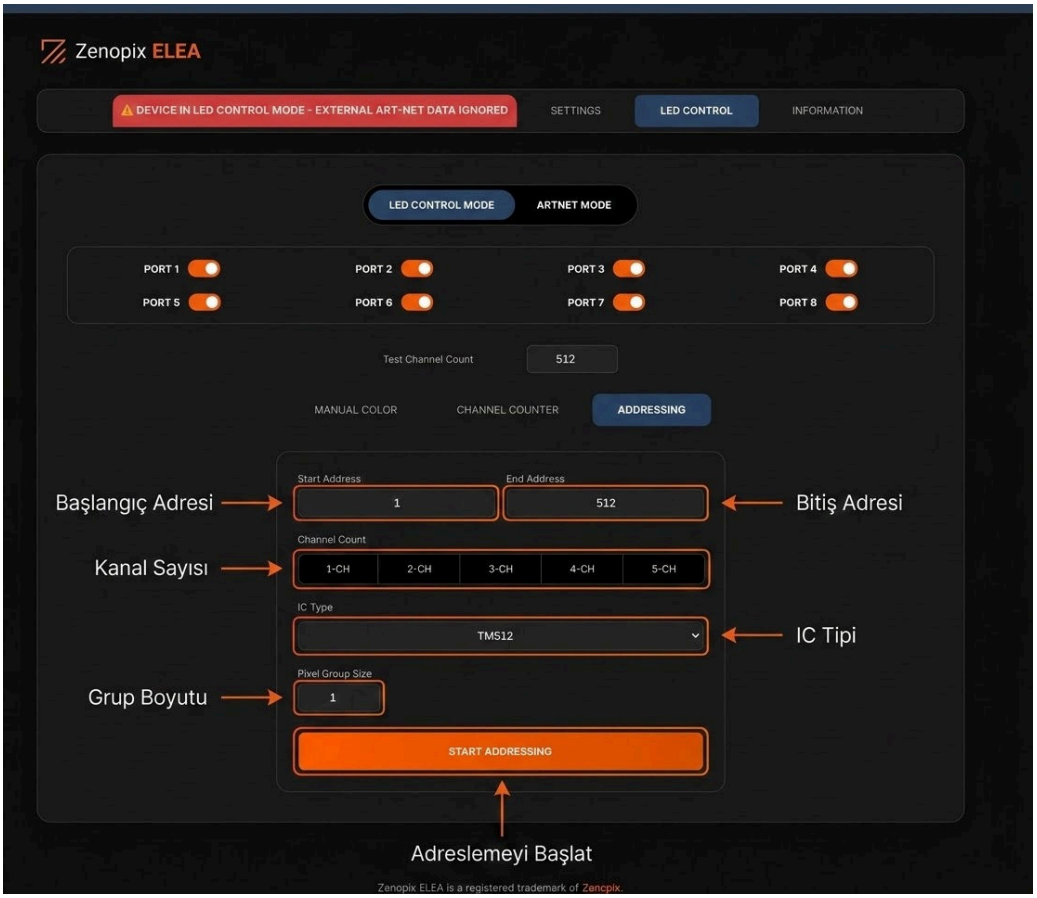


Figure: Pixel and IC addressing fields

System Information and Management

- **System Information:** Shows the serial number, model, MAC address, firmware version and release date.

- **FACTORY RESET:** Restores user settings to factory defaults and restarts the device.

- **SYSTEM REBOOT:** Performs a software restart of the device without erasing settings.

- **System Updates:** Connects to the update server and starts the installation when a suitable package is found.

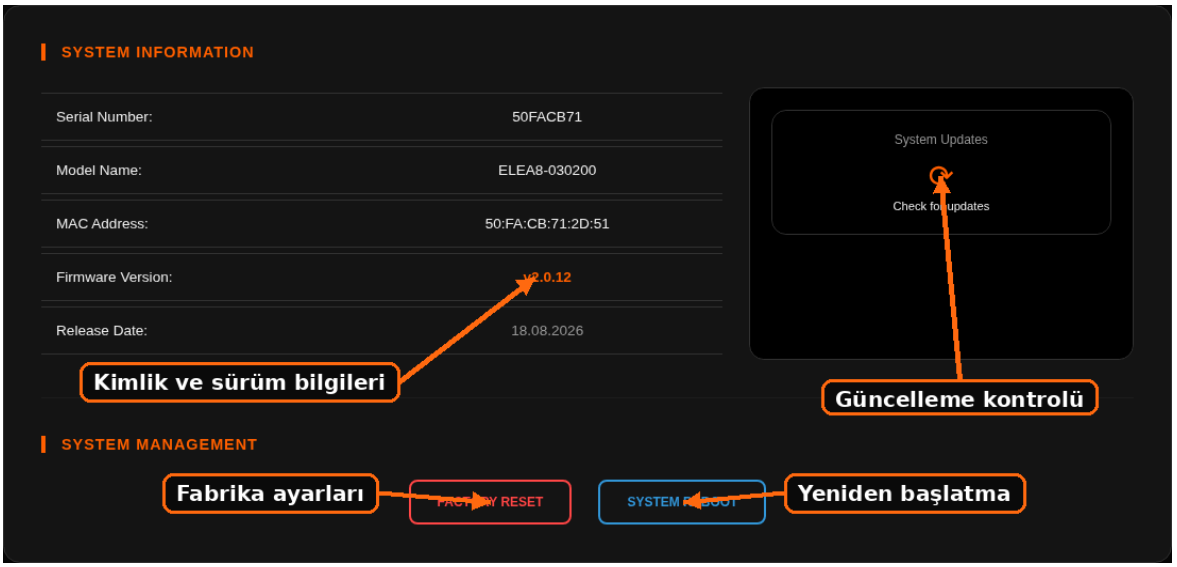


Figure: System information, update and management fields

Online Firmware Update

- **Connection:** Ethernet, IP, subnet, gateway and internet access must be working.

- **Power:** Must not be interrupted during download, verification and finalization.

- **Timing:** Do not update during a critical scene or show; the device will restart.

1. On the INFORMATION page, press the System Updates icon.

2. Watch for the Connecting to server, Requesting info or Waiting for response message.

3. If a new version is found, verify the version number and press the START UPDATE button.

4. Keep the page open and maintain network connectivity and power until Downloading reaches 100%.

5. After the Transfer Complete Finalizing update DO NOT power off message, wait for the device to restart.

6. When you reconnect, check the Firmware Version field.

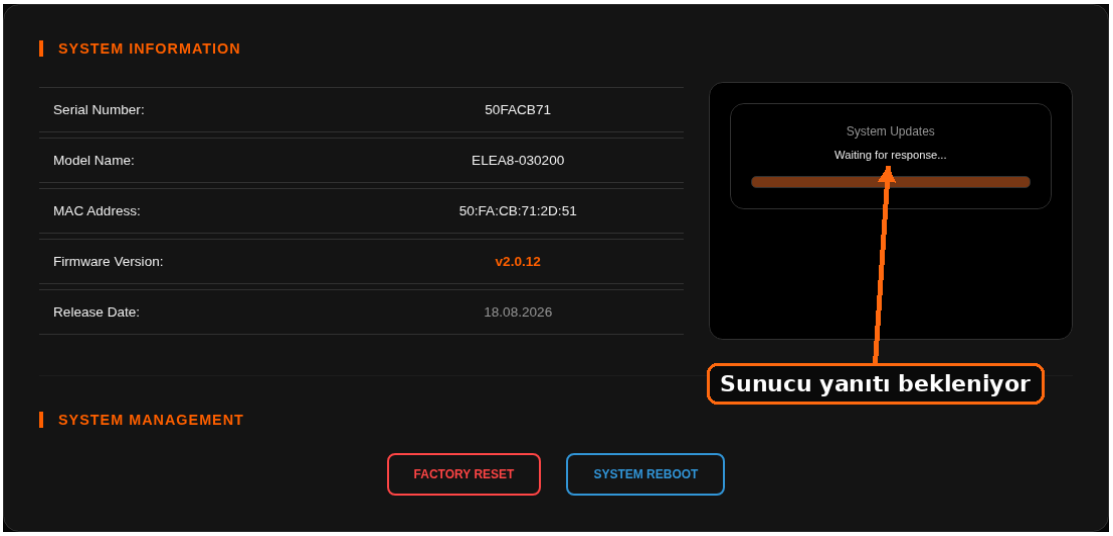


Figure: Waiting for a response from the update server

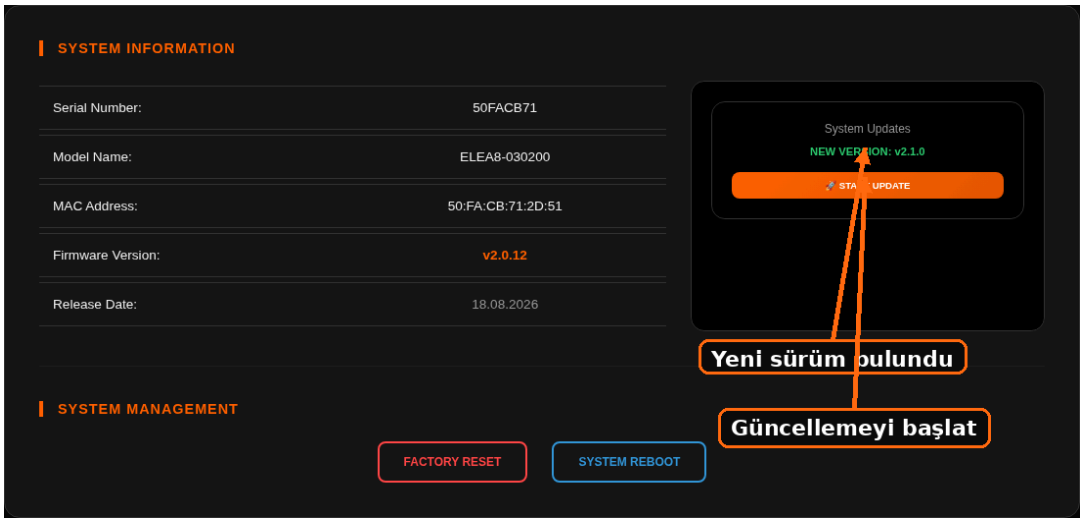


Figure: New version and the START UPDATE button

Update Progress and Finalization

During the download, the page displays a progress bar and a percentage. Once the download reaches 100%, the device finalizes the firmware package. Never cut power to the device while the red warning is displayed.

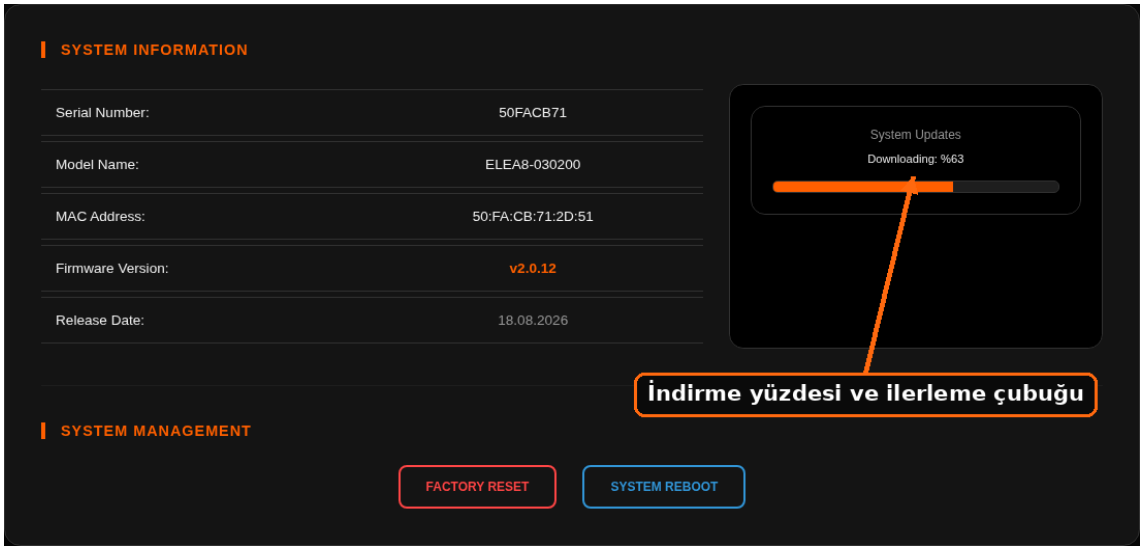


Figure: Firmware download progress

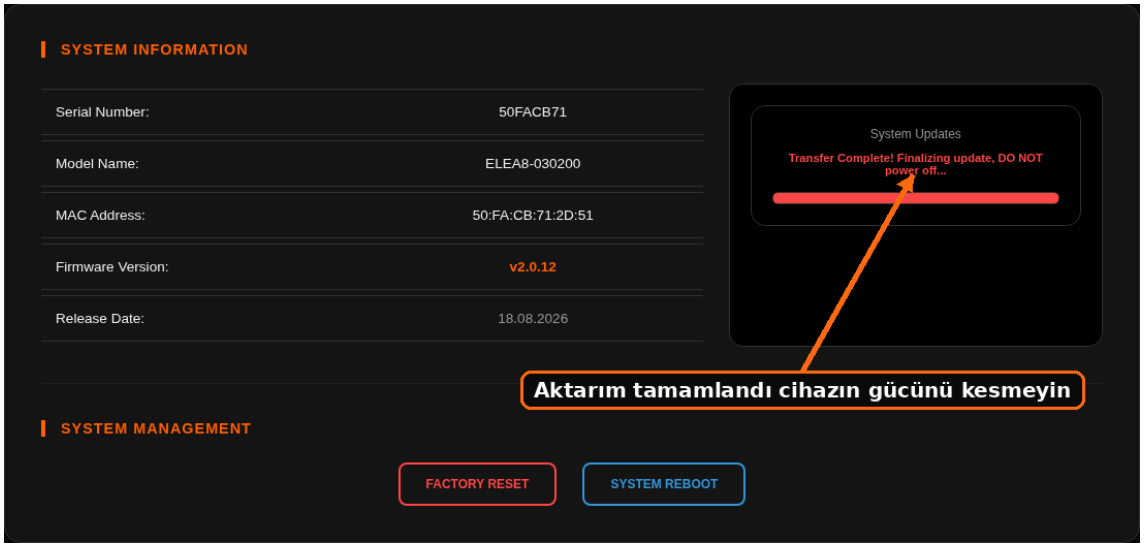


Figure: Transfer finalization and power warning

Controlling Elea with Zenopix NEO

Zenopix NEO is desktop software that lets you send Art-Net output to your devices. It is tailored to all online and offline devices developed by Zenopix, especially Elea.

NEO has a maximum limit of 1024 channels for Elea devices (FPS decreases as the channel count increases; 512 channels are recommended). This allows you to use Elea for complex, multi-channel projects.

To create a project customized for Elea in NEO, simply select Patch->New Patch from the main menu and select Elea in the project settings on the screen that opens.

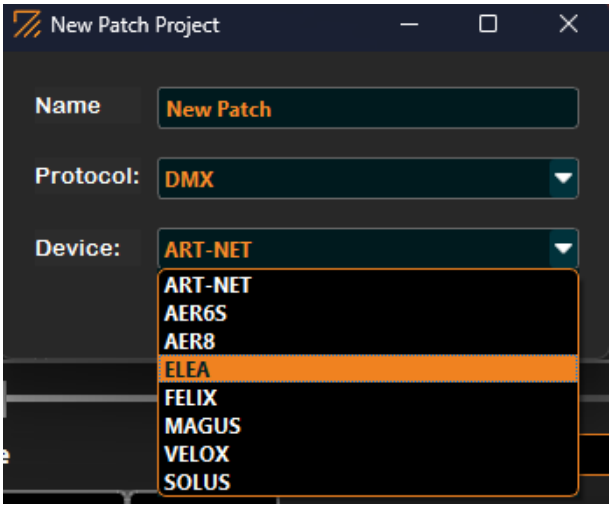


Figure: Adding Elea to Zenopix NEO

Then, on your Patch screen, configure your Zenoverses according to the Elea device you have configured. The parameters you need here are:

- IP address of the target Elea device
- Start and end universe numbers of the target Elea device

With this information, click the “Add Zenoverse” option on the patch screen, select the target group on the screen that appears and complete the configuration for your device.

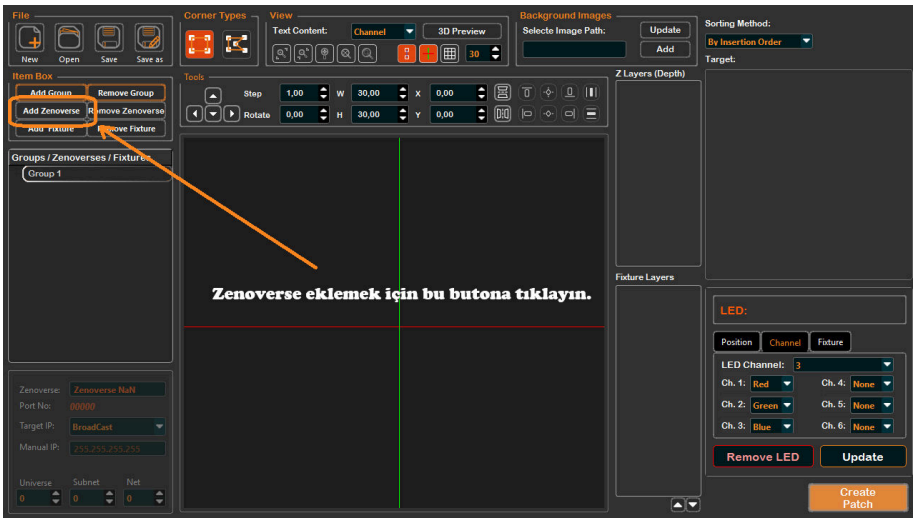


Figure: Adding multiple universes (ports) in Zenopix NEO

"Single Addition" is the default option, but with the "Multiple Addition" option you can add all ports at once. You only need to know the start and end universe numbers.

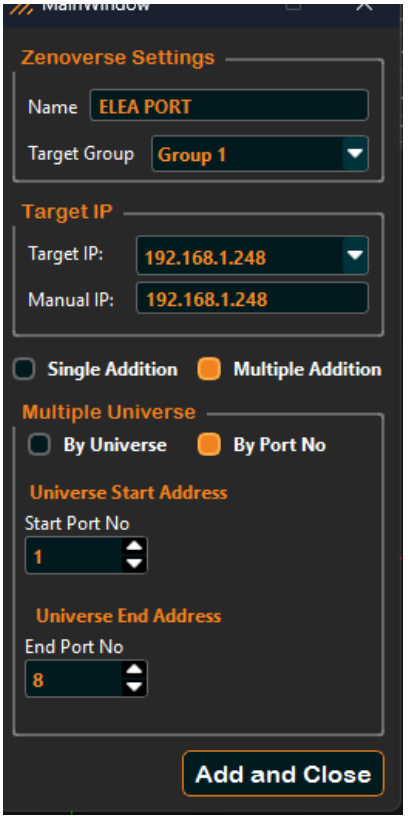


Figure: Adding multiple universes (ports) and assigning the IP address in Zenopix NEO

After the configuration, when you add the Zenoverses you should see the port outputs on the Patch screen. Here you can change all parameters of the ports individually if you wish.



Figure: Universe (port) management in Zenopix NEO

This completes the Elea configuration in NEO. You can now start designing your project.

Once the project design is complete, open the “Art Net” panel on the main screen to start output.



Figure: Activating Art-Net output in Zenopix NEO

In the output panel that appears, select the computer's network adapter (Ethernet, Wi-Fi, etc.) that connects it to the same network as Elea, and enable output. Your device will then connect to your computer and provide real-time output control.

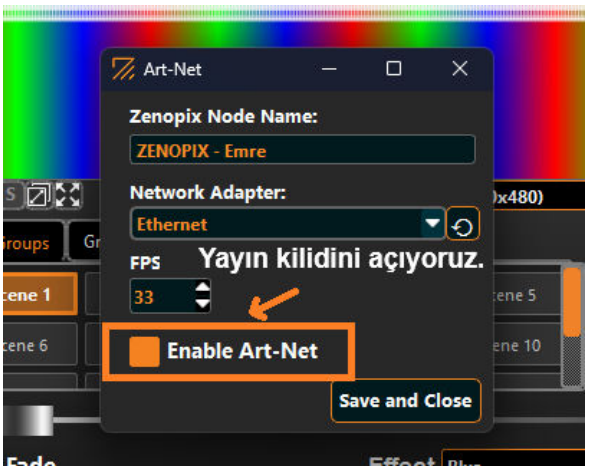


Figure: Selecting the network adapter and activating Art-Net output in Zenopix NEO

Connecting with Third-Party Media Players

Zenopix Elea makes it easy to display the visuals and animations you want. Zenopix Elea works seamlessly with all third-party media player software on the market. Connect it to your computer via Ethernet to send visuals from programs such as **MADRIX, RESOLUME ARENA, and JINX** directly to your LEDs.

Warnings

1. The products must be installed by qualified professionals.

2. Zenopix products are not waterproof (except for special models). Please keep them away from sun and rain. When installed outdoors, please make sure they are mounted in a waterproof enclosure. Good heat dissipation will extend the service life of the products. Please ensure good ventilation.

3. Check that the operating voltage is within the specified range for the products.

4. The cable gauge used must be sufficient to supply the lighting fixtures you connect, and the cable connections must be secure.

5. Before switching on the products, please make sure 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 supplier.

6. This manual is subject to change without prior notice. Product functions may vary depending on version and variant. If you have any questions, please do not hesitate to contact us.

Technical Support

If you have further questions about using Zenopix Elea or about technical issues, use the following resources for troubleshooting:

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

Frequently Asked Questions (FAQ)

What do the blinking LEDs on the front of the device mean?

-Please see the "Status LED Codes" section of the manual.

Can I use more than one Zenopix Elea at the same time?

-Yes, you can. In projects with multiple Elea devices, just make sure your network bandwidth is sufficient.

Does Elea support RDM?

-No. If you need RDM support, see Zenopix Magus on our website.

Can I use Elea with DMX decoders?

-Yes, you can use Zenopix Elea with DMX decoders.

Can I use Elea with SPI LEDs (WS2812, TM1914, etc.)?

-No, Zenopix Elea does not support the SPI protocol. For this, you can check out our Zenopix Velox product, or you can use Elea with DMX LEDs (TM512, etc.).

I cannot access the web interface (Web GUI). How can I reset the device to factory settings (Factory Reset)?

-Please see the "Resetting to Factory Defaults" section of the manual.

Is it possible to get more than 512 channels of output from Zenopix Elea?

-Technically, Zenopix Elea can be configured for up to 1024 channels (only with the Zenopix Neo and Zenopix Solus applications). However, in scenarios exceeding 512 channels, potential data loss on the signal lines and reduced transmission rate (FPS) may occur; we therefore recommend limiting the channel count to 512 to maintain the stability of your project.

I am experiencing flicker, freezing or latency on my LED fixtures. What could be the cause?

-No 120-ohm terminating resistor (terminator) at the end of the DMX line.

-The number of controlled channels exceeding the optimum limit of 512, causing an FPS drop.

-Non-standard cabling or exceeding the maximum signal transmission distance.

-Data packets being delayed due to heavy network traffic.

The distance between Elea and my LEDs is very long (>100 meters). What should I do to prevent signal degradation?

-To extend the signal cable or prevent signal degradation, you can check out the Zenopix Repeater products.

Can I use Elea on its own (offline)?

-When used on its own, Elea can only be used for single-color applications. For Art-Net control, Elea requires Art-Net data over Ethernet. In applications without a computer, it can be used together with Zenopix Solus. If you want a single device to handle control, see Zenopix AER.

Troubleshooting

- **Web interface does not open:** Check that the computer is on the same subnet, and check the device IP and the Ethernet LEDs.
- **No Art-Net output:** Verify the ARTNET MODE selection, the universe mappings and the universe of the incoming packets.
- **Art-Net not working after a test:** LED CONTROL MODE may still be active; switch back to ARTNET MODE.
- **Failsafe engages late:** The firmware detects a signal loss 10 seconds after receiving the last Art-Net packet.
- **Channel counter does not advance:** Check the PLAY state, the address range, the Speed value and the selected ports.
- **Addressing failed:** Verify the IC Type, channel count, group size, port selection and address range.
- **Version Check Failed:** Check the gateway, DNS and internet access, then try again.
- **Cannot Connect to Server:** Check the firewall and the internet connection.
- **Server Not Responding:** Check the network connection and try again later.
- **Update Error:** Verify the connection without switching off the device and restart the update.

If the device does not start after the update or the version information does not change, follow the technical service procedure before power cycling it again.

Order Code

PRODUCT CODE	ELEA	8	CT	TB
Capacity				
8 Universes Output		8		
Enclosure Type				
Cabinet Type			CT	
DIN Rail Mount			RM	
Connection				
Pluggable Terminal Block				TB
XLR Connector*				XLR

**** The XLR connector option is available only for Cabinet Type***

Your lighting solution partner

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

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