Manual



ARL-01 ARTNET 8CH RELAY

V1.2

Thank you for purchasing our device.

We make every effort to ensure the best quality of our products and to meet your expectations.

If you have any remarks or comments, please share them with us.

We will be grateful for any suggestions that will help us make products that are even better and devices that satisfy your needs.



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1. General description

MODUS ARL-01 ARTNET 8CH RELAY is a module of 8 relays controlled with ArtNet protocol. It is powered with safe voltage from 12 to 24 VDC. It has an external power input, or it can be supplied with Passive PoE. It is perfect for activating stage devices, as well as for fixed installation. Each of the 8 relays can be controlled individually and can be assigned to any channel within one universe and subuniverse, which offers great possibilities for configuration and adjusting the module to the installation. Its flat casing with DIN 35 mm rail allows to mount the controller in a standard control cabinet for convenient mounting and ease of keeping your installation in order. The implemented system of standard RJ45 connectors for Ethernet and disconnectable screw connectors for power and relay inputs makes installation and future operation easier. The device features reverse polarity protection in input voltage, as well as surge protector. They protect not only the relay module, but also the controlled device against damages. The module works in LAN network and is controlled with the popular ArtNet protocol. It is controlled with a dedicated MODUS DevManager firmware, so the whole configuration process can be done remotely through Ethernet network. It is a perfect solution in situations where the device is difficult to access. The module has potential-free relay outputs, which guarantees galvanic isolation of the module from the activated device – providing safe and reliable installation. The module can activate devices with maximum current consumption of 1A and voltage of 125V.

It is possible to configure the following for each output separately:
- NO/NC contact type (open/closed)
- assign each relay output to any channel within one universe and subuniverse
- value level which triggers activation
- remote output test (possibility to activate and deactivate an output during configuration stage)

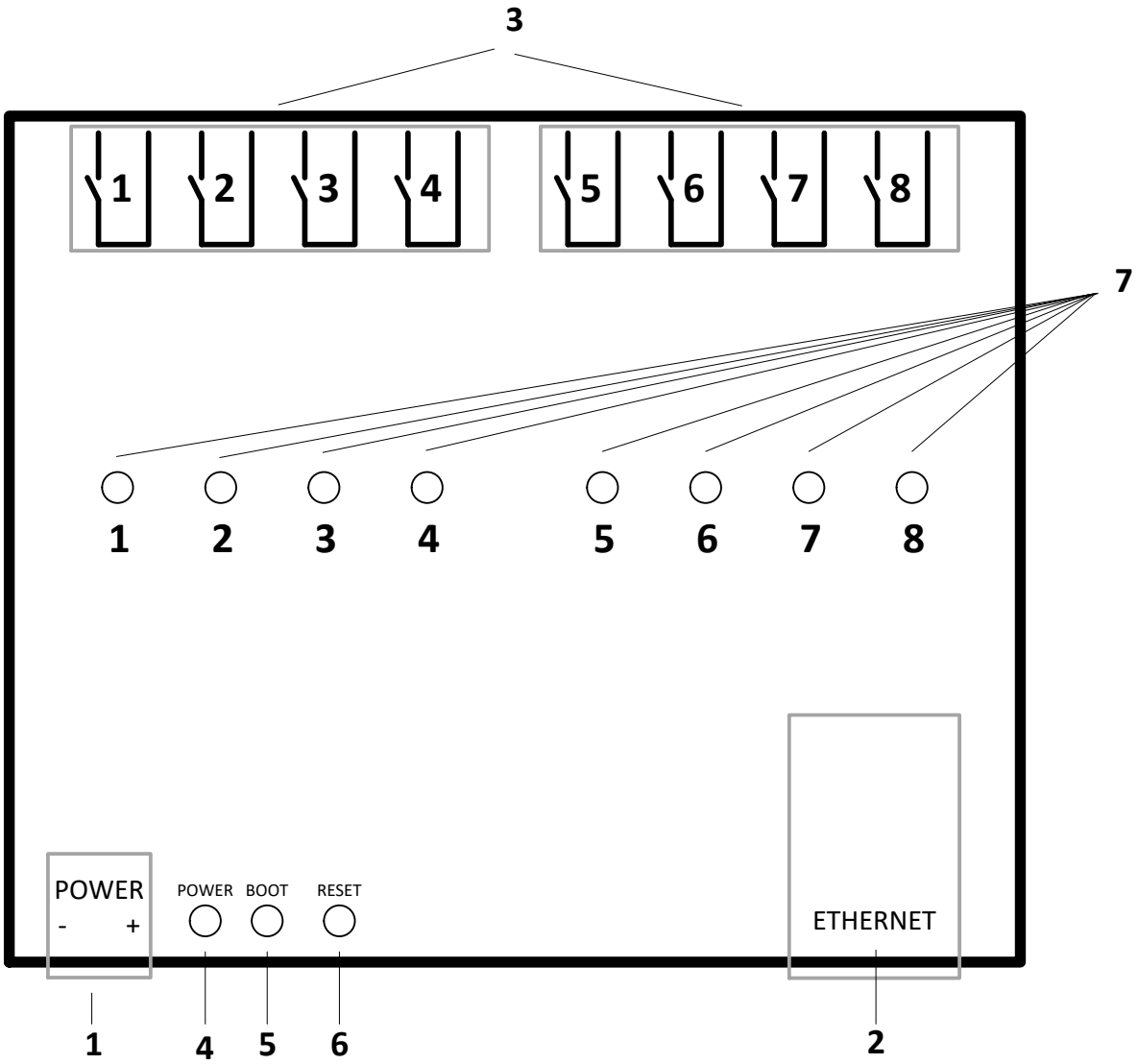
- set default output state
- set user description for each output

2. Basic safety conditions

MODUS ARL-01 ARTNET 8CH RELAY is a device powered with safe 12-24VDC voltage from dedicated power supplies, however, during installation and usage, it is essential to observe the following rules:

1. The module should be installed by a person having relevant qualifications, according to the information in the manual.
2. The device can be connected only to stabilized voltage with loadability matching the technical parameters.
3. It is essential to observe and not to exceed the maximum current and voltage values of the activated device. Maximum current 1A, maximum voltage 125V.
4. The module is intended for indoor use. In case of outdoor use, the module should be protected against weather conditions.
5. All wires should be protected against mechanical and thermal damage.
6. All maintenance works can be performed only after depowering the device.
7. A device with visible damages should not be connected to a power supply.
8. It is crucial to protect the device against any contact with water and other fluids.
9. Avoid sudden shakes and especially falls.
10. Do not turn the device on in places where humidity exceeds 90%.
11. Do not operate the device in places where the temperature is lower than +2°C or higher than +40°C.

3. General view of the device

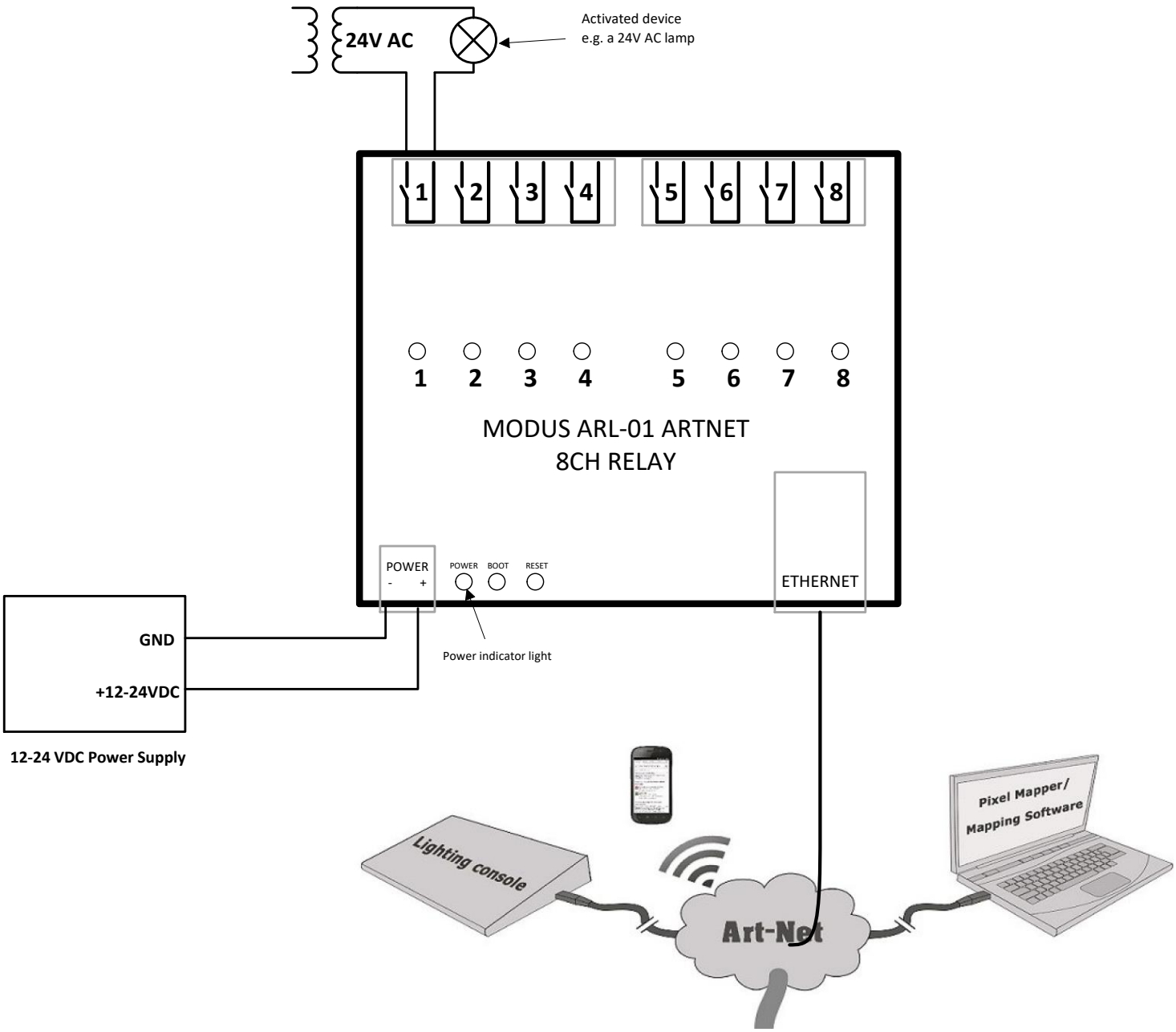


1. **Power connector** (GND, +12-24VDC)
2. **RJ45 Ethernet connectors –** LAN network
3. **Relay output connectors**
4. **Power indicator light**
5. **Boot indicator light** – device in startup mode
6. **Reset button** – restores default settings of the device
7. **Relay indicator lights** – indicate states of the relays

4. Electrical connections

The device can be powered in two ways, from an external power supply connected to the power connector, or from a switch with “Passive PoE” function, through a twisted-pair computer cable.

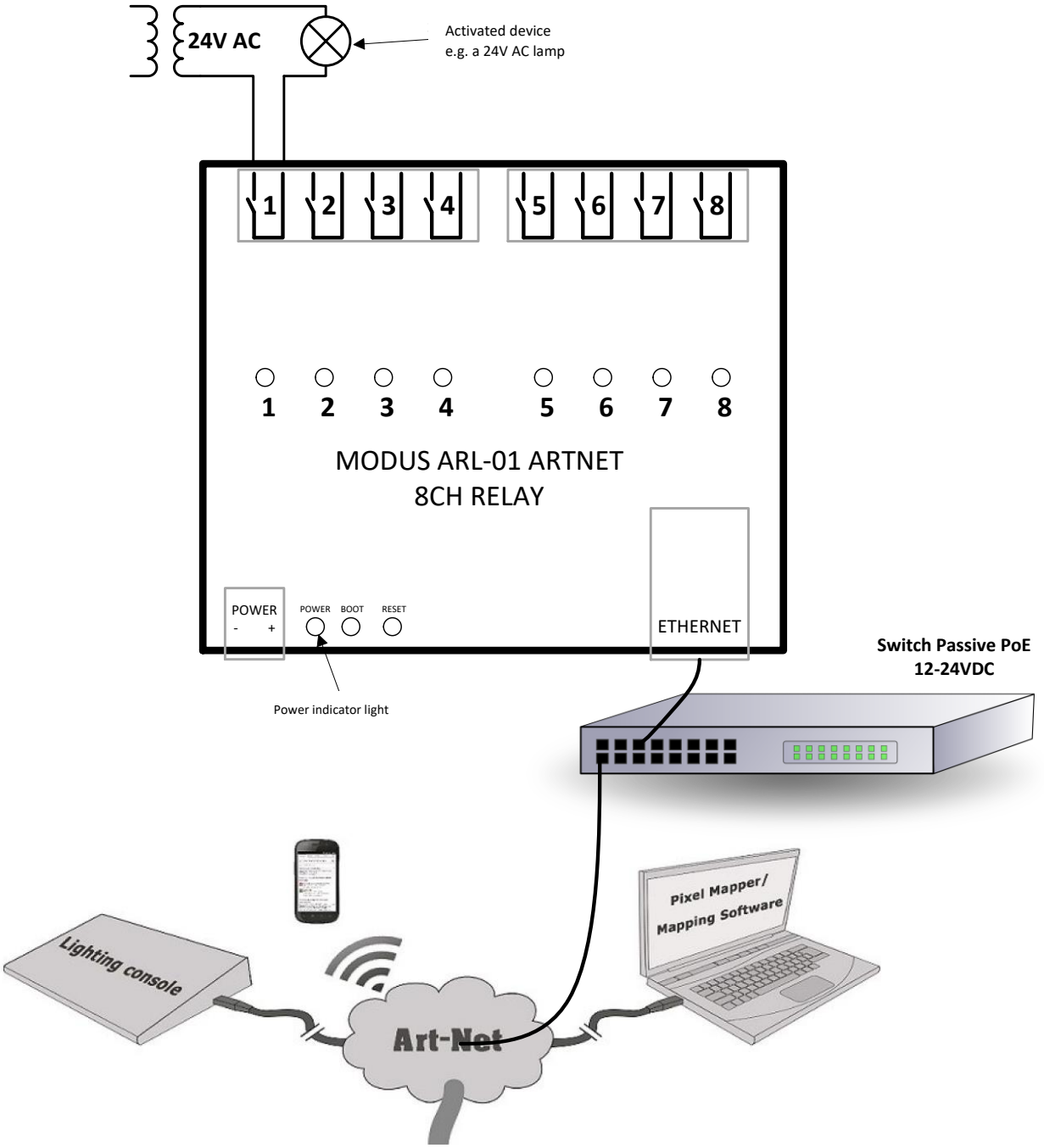
4.1 External power supply:



The activated devices, Ethernet network and power supply should be connected to the relay module as shown on the diagram.

The relay module should be powered only with the dedicated power supply offered by the manufacturer.

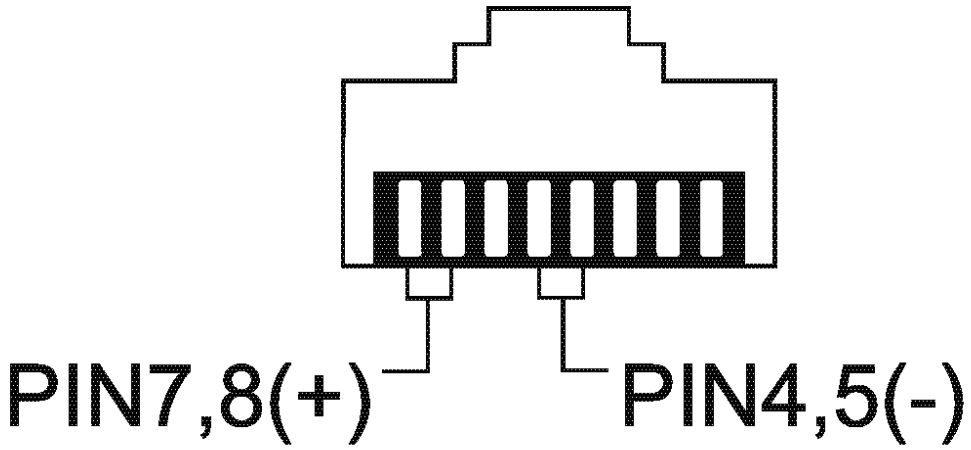
4.2. Passive PoE:



The activated devices and Ethernet network with Passive PoE should be connected to the relay module as shown on the diagram.

NOTE!!

Pay special attention to appropriate polarization and voltage of Passive PoE, according to the diagram below. The module can be supplied with voltage from 12 to 24VDC.



The maximum length of Ethernet cable when using Passive PoE is 25m, connecting a longer cable to the module can have a negative influence on its operation.

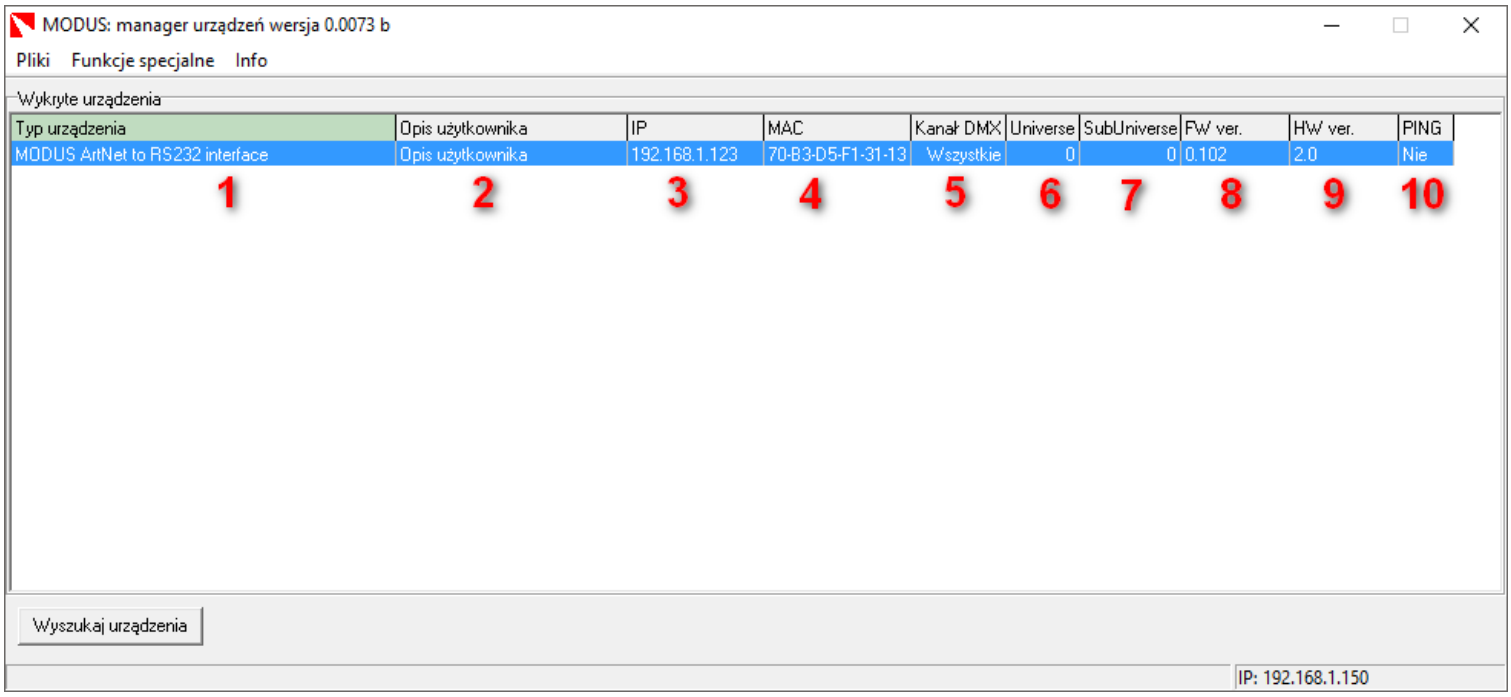
5. Configuring the device – MODUS DevManager firmware

Once the relay module has been connected according to the diagrams in chapter 4, you should run DevManager firmware. The device used for configuration must be connected to the same network and have an IP address from the same address pool.

The default IP address, PIN and PUK can be found on a sticker on the device.

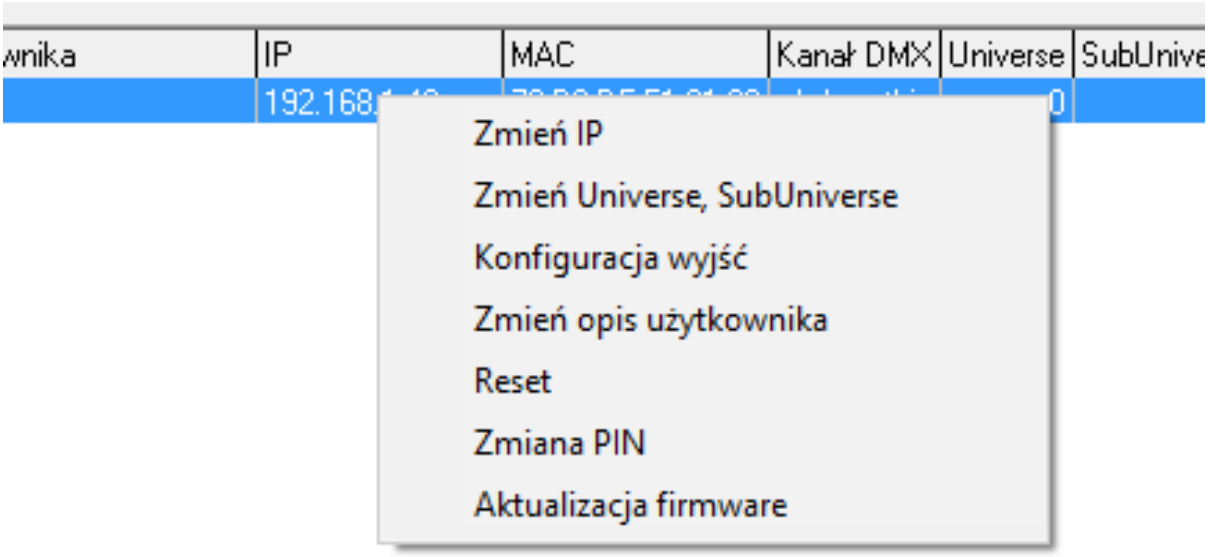
5.1. DevManager – basic configuration

Once started, DevManager firmware will search and list all MODUS devices connected to the network.



1. **Device type** - displays the model and name of the device
2. **Device description** - each device can have an individual description set by the user
3. **IP –** device's IP address
4. **MAC** – device's physical MAC address
5. **DMX channel** – number of DMX channels received by the device
6. **Universe** – Universe in which the device works
7. **SubUniverse** – SubUniverse in which the device works
8. **FW ver.** – firmware version
9. **HW ver.** – hardware version
10. **PING –** continue device operation with PING

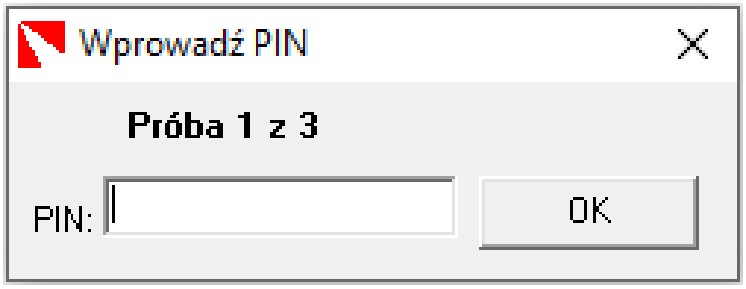
Clicking with the right mouse button on a chosen device will show a list of possible settings.



In the case of MODUS ARL-01 ARTNET 8CH RELAY module, you can change the following settings:

1. **Change IP** – change module's IP
2. **Change Universe, SubUniverse** – configure the Universe and SubUniverse in which the module will work
3. **Output configuration** – allows choosing NC/NO output type, assigning relays to channels, setting activation level, testing relays and setting description for each relay
4. **Change user description** – allows setting an individual module's description
5. **Reset** – restarts the module
6. **Change PIN** – change PIN security number
7. **Firmware update** – allows remote update of module's firmware

MODUS ARL-01 ARTNET 8CH RELAY module is protected with PIN, which is needed to change any settings of the module. An attempt to change any setting will cause DevManager to prompt for PIN.



In case of entering wrong PIN 3 times, the device will prompt for PUK. PUK and default PIN can be found on module's casing. PIN can be changed by the user.

5.2. DevManager – output configuration

Outputs can be configured in "Output configuration" menu (chapter 5.1), after entering PIN, an output configuration window will appear.



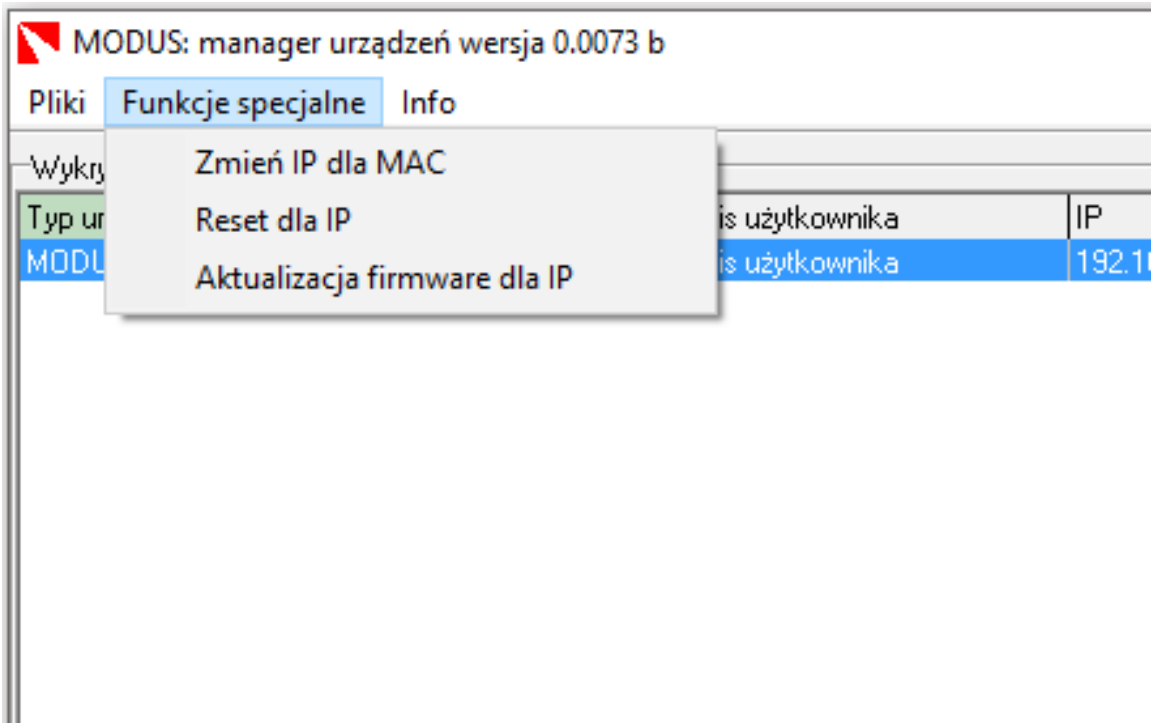
Each output can be configured individually, you can configure:

- **Channel** – assign selected channel to an output

- **On level** – channel value that activates output
- **NC** – select output type: NC – normally closed (break contact) or NO – normally open (make contact).
- **Activated by default** – outputs switch to default state when the module is energized (when the module is starting and not yet receiving ArtNet signal).
- **TEST –** possibility to control output when the output configuration window is open
- **Description** – user's description for each output

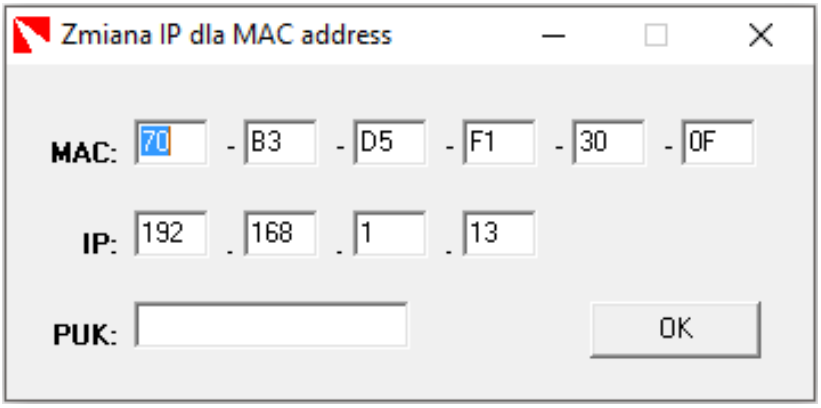
5.3. DevManager – special functions

DevManager firmware also has some special functions, they are useful in case of wrong device configuration.



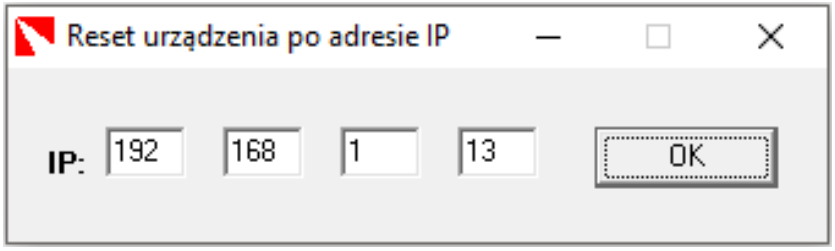
Special functions available in DevManager firmware:

1. **Change IP for MAC** – enables to change IP of any device, when knowing only its MAC address. This function is useful in case of wrong device configuration (e.g. repeating IP addresses in a network).



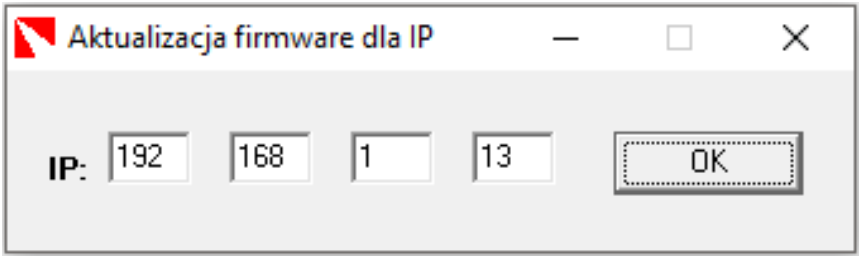
You should enter a unique MAC address of the device, a new IP address and PUK of the device.

2. **Reset for IP** – allows to remotely reset (restart) a device, when knowing its IP address.



After entering the IP address of the device to be restarted, the firmware will prompt for PIN of the device.

3. **Firmware update for IP** – loads the latest available firmware on the device with a given IP address.

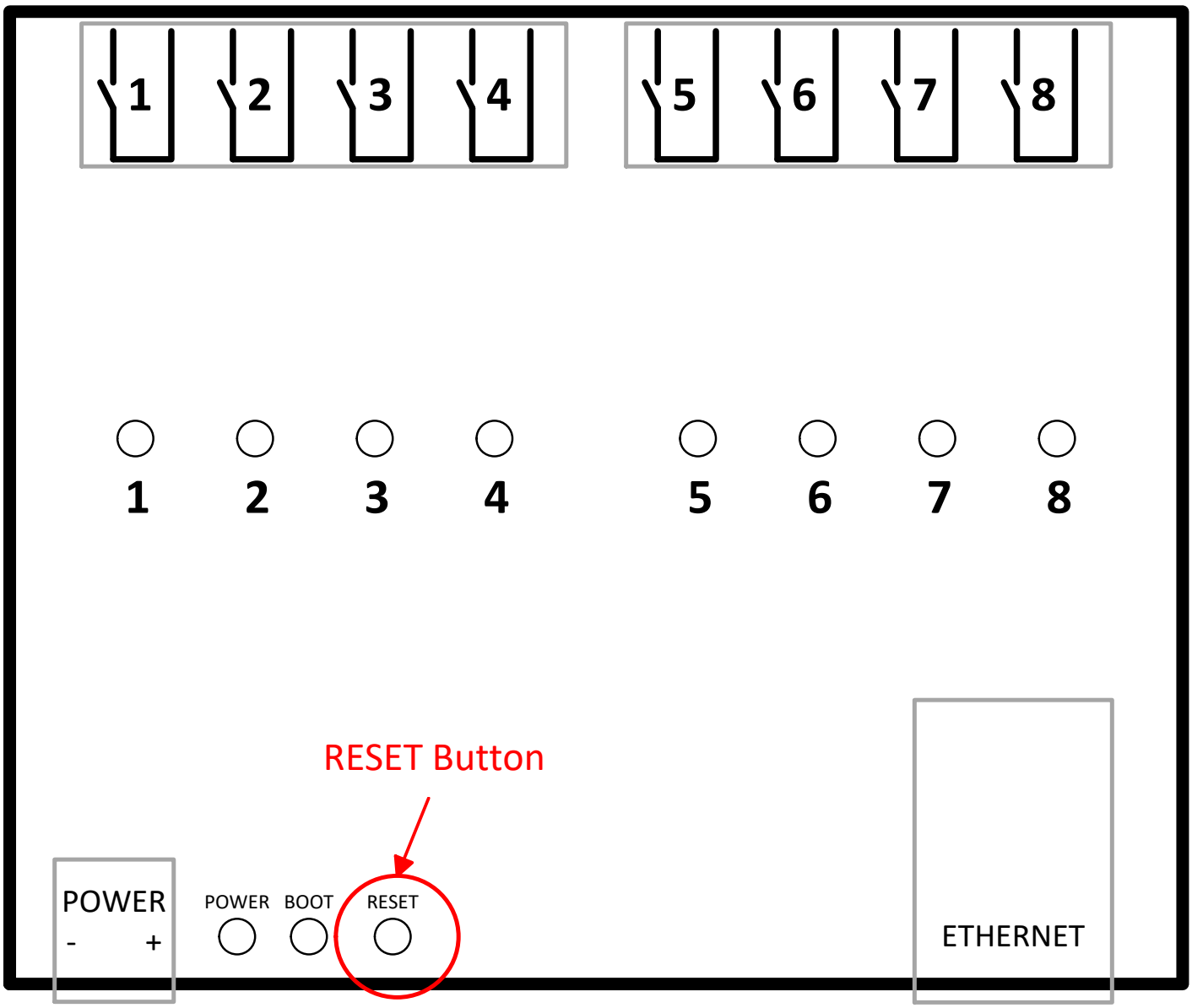


After entering the IP address of the device to be updated, the firmware will prompt for PIN of the device.

5.4. Restoring factory settings

MODUS ARL-01 ARTNET 8CH RELAY module features a function of restoring default settings. The settings are restored (IP address, PIN, Universe and SubUniverse).

You should find RESET button on the casing of the converter (marked on the below diagram).



To restore default settings you should:

1. Turn the power off.
2. Press RESET button.

3. Turn the device on, while still holding RESET button.
4. Release RESET button after 5s from turning the device on. The device will restart.
5. BOOT indicator light flashes red. After restart, the device will have the default factory settings.

6. Maintenance and repairs

The device doesn't contain any user serviceable parts. In case of malfunction, you should contact the dealer or manufacturer.

Note!!

Any attempt to repair the device yourself can cause irreversible damage to the device or pose other threats.

7. Technical parameters

- Outputs: 8x relay output
  RJ45 (Ethernet, ArtNet)
  Power input
- Power supply: 12-24V DC, 200mA
  Passive PoE or power connector
- Mounting: DIN/TH/TS 35 rail
- Dimensions: 90/31/104 mm
- Configuration with the use of DevManager firmware.

The manufacturer reserves the right to introduce modifications to the functioning and using of the device for the purpose of improving the product

8. Distribution:

Mediam Sp. z o.o. Wadowicka 12, 30-415 Kraków

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NOTES

WWW.MODUS.PL