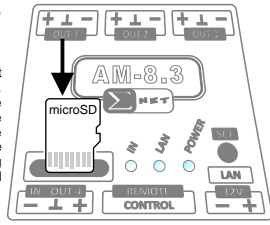


NOTE !!! Installation and removal of the card should be performed with the device power off.

Quick installation test

The device has a quick test mode for all outputs with different output port configurations. The quick test can be invoked by pressing the SET buttons. When the button is pressed, all ports will be switched to DMX mode and the color change sequence will be started in R-G-B-pause order. Pressing the SET button again will switch all ports to control digital LED modules with the first type of layout. Subsequent pressing of the SET button, will change the layout type for digital LEDs. This function can be very useful during installation, when the entire system is not yet configured, and there is a need to test the assembled installation.



The quick test does not change the previously stored configuration of the device, and exits the test mode as soon as the Art-Net signal is received or the program is called.

Manufacturer's warranty

The manufacturer provides a 2-year warranty for the device and post-warranty service. The warranty covers all manufacturing and material defects.

The manufacturer undertakes to comply with the warranty agreement only if the following conditions are met:

- the device is used as intended,
- all repairs, changes, calibrations and extensions of the device are performed by the manufacturer or authorized service,
- DMX installation meets the conditions of the standards in force in this regard,
- power supply of the device is in accordance with the parameters specified in the manual,
- the device is installed by qualified personnel and operated in accordance with the recommendations presented in this manual.



The manufacturer assumes no responsibility for possible consequences resulting from improper installation, improper

use of the device, failure to comply with the operating instructions, and carrying out repairs outside the service points indicated by the manufacturer.

There are no adjustment elements and parts in the device that the user is allowed to replace by himself.

Safety of use

The module was constructed using modern technologies, in accordance with the latest trends in world electronics. Particular emphasis was placed on ensuring optimal safety of use and reliability of the device. The housing of the device was made of high-quality plastic.



Operating conditions

The device is designed to work in the following conditions:

- ambient temperature from +1°C to +40°C,
- relative humidity from 30% to 75%.



Storage conditions

When storing the device, observe the following rules:

- the device should be stored indoors, where the atmosphere is free of vapors and corrosive agents,
- ambient temperature is within the limits of -30°C to +60°C,
- air humidity is within the limits: 25% to 90% (no condensation)



Installation and use

During the installation of the controller and during its use, follow the listed recommendations:

installation of the controller may be carried out by a person with appropriate authorizations, make the connection of the device with disconnected power supply voltage, do not overload the outputs of the device - this may lead to their damage, the controller may be used only in systems with efficient earthing installation, do not place the controller near sources of heat or harmful radiation, or in the range of a large electromagnetic field, it is advisable to use optical insulation on DMX lines, use of the device in conditions of high humidity may lead to its damage, clean the housing only with a soft, damp cloth with disconnected power supply.

Power supply

To power the controller, use a stabilized 12V-24V DC adapter. The power of the adapter must be between 5W and 20W.

The adapter is not included in the set.



Disposal and recycling

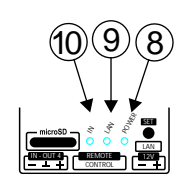
The symbol of the crossed-out garbage can on the product or its packaging means that the product must not be disposed of in regular waste containers. At the end of its useful life, the product should be returned to special waste segregation centers operated by municipal authorities or to vendors providing such services. By ensuring proper disposal, you help protect the environment.



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Specifications

- Number of 10BaseT/100BaseTX Ethernet ports: 1
- Number of DMX outputs: 4
- Number of DMX channels: 512 - 2048
- Number of DMX inputs: 1
- Number of digital RGB LED pixels supported: 680-2720
- Number of digital RGBW LED pixels supported: 512-2048
- Number of binary inputs: 5
- Art-Net real-time signal recording: YES
- Built-in web server: YES
- Changing settings via web page: YES
- Changing programs via: DMX, website, GET methods: YES
- Supporting several mobile devices simultaneously: YES
- Programming intensity adjustment: YES
- Number of programs: 63
- Support for microSD cards up to 32GB: YES
- Memory of settings after power loss: YES
- Easy integration with systems: BMS, KNX, FIBARO, etc.: YES
- Removable connectors for easy installation: YES
- Protection against reverse polarity of the power supply: YES
- DMX port overvoltage protection: YES
- DMX line optical insulation: YES
- Power supply: 12-24V DC
- Power consumption: 5W
- Permissible ambient temperature: 1°C - 40°C
- Measurements (LxWxH): 52.5 x 65 x 111



Pinout description

1. SET button
2. Power connector
3. Ethernet connector 10BaseT/100BaseTX
4. DMX-512 output ports
5. DMX-512 input or output port
6. MicroSD card slot
7. REMOTE CONTROL slot
8. POWER LED
9. LAN LED
10. DMX-IN LED

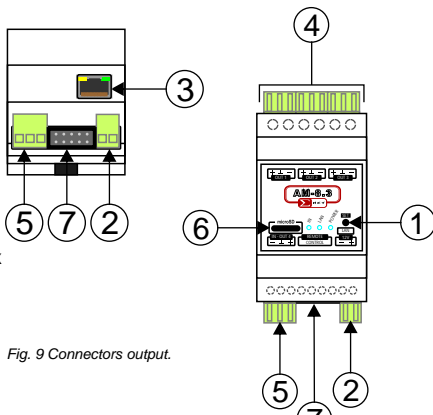


Fig. 9 Connectors output.

The manufacturer aims to continuously improve the quality of its products, which may result in changes in their technical specifications and software.

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E-NODE AM-8.3

**Art-Net NODE - RECORDER
E-NODE AM-8.3
ver.2.0**



The device is an Art-Net 4 standard compliant signal converter to 4 DMX outputs. For each output port, you can connect up to 32 DMX devices or 680 digital RGB LED modules.

Each output port can be set as a DMX port or E-NODE AM-8.3 allows you to record this signal on a memory card. Configuration of the device is possible through any device with a web browser (computer, tablet, phone). The device has a quick installation test function for different output port configurations, without the need to run a computer with specialized software. An extensive synchronization function allows for the correct display of effects and adjusts itself to a given Art-Net controller. The unit has one built-in DMX input port, and the signal from its input, can be converted to an Art-Net signal or can be used to trigger recorded effects with another DMX controller. All DMX lines have surge protection, and in addition, lines 1-3 have optical insulation. The device has a set of GET methods that allow integration with BMS, KNX and various other smart building systems via LAN.

a port for direct control of digital LEDs. In addition to converting the signal from any Art-Net lighting console, the E-NODE AM-8.3 allows you to record this signal on a memory card. Configuration of the device is possible through any device with a web browser (computer, tablet, phone). The device has a quick installation test function for different output port configurations, without the need to run a computer with specialized software. An extensive synchronization function allows for the correct display of effects and adjusts itself to a given Art-Net controller. The unit has one built-in DMX input port, and the signal from its input, can be converted to an Art-Net signal or can be used to trigger recorded effects with another DMX controller. All DMX lines have surge protection, and in addition, lines 1-3 have optical insulation. The device has a set of GET methods that allow integration with BMS, KNX and various other smart building systems via LAN.

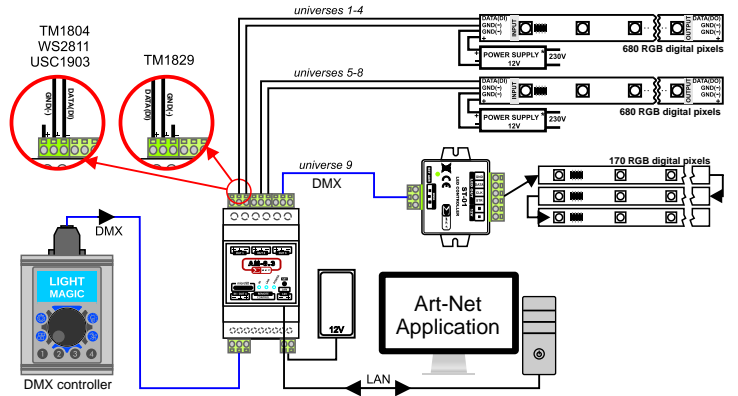


Fig. 1 Connection diagram of the device Art-Net -DMX converter.

Operating modes

The device has two modes of operation: the NODE mode and the PLAYER mode.

In NODE mode, the device is an Ethernet node that changes the Art-Net signal into a DMX-512 signal or a signal to control digital LEDs. In this mode, it is possible to record real-time data from the output ports directly to a memory card.

In PLAYER mode, it is possible to playback previously stored programs on the microSD card. Programs and their intensity can be changed via: DMX-IN line, website, binary inputs, GET commands, or be automatically triggered when the power is turned on, according to Auto-start settings.

IP address

The device has a factory-set address in the range 2.x.x.x, which is different for each Art-Net device. Knowledge of this address is necessary to launch website with the device's configuration panel. This address can be read in the Art-Net console, after running the device search procedure. You can also use the free DMX-Workshop test program by downloading it from <http://www.artisticlicence.com/>

The IP address can be changed through the website or through the device's reset procedure. The reset procedure allows you to set an auto-address in the range 2.x.x.x or select a fixed IP address: 192.168.2.222. For more on the device reset procedure, see Device reset.

Device reset

By resetting the device with the SET button, we can change the IP address without changing the other settings or restore the factory settings.

Art-Net compatible IP address

To set the IP address to an Art-Net compatible protocol (address in the range of 2.x.x.x), hold down the SET button until the POWER LED goes off.

IP address: 192.168.2.222

To set the IP address to: 192.168.2.222, hold down the SET button until the POWER LED goes off, and then - after a few seconds - it lights up again.

Factory settings

To restore factory settings, hold down the SET button for 15 seconds. When the button is released, the factory settings will be restored to the device. The IP address will be set according to the Art-Net protocol in the range of 2.x.x.x.

Stored programs on the memory card are not erased during reset procedure.

Art-Net DMX converter

The device can work with any controller, converting Art-Net signal to DMX signal or to signal controlling digital LEDs. For proper operation, it is required to configure the E-NODE AM-8.3 device and set the appropriate IP address in the

Art-Net controller network card. The device can work as an Art-Net DMX converter, only in NODE mode. Port 4 can work as DMX input or output, depending on the configuration of the device. Each of the 4 output ports, can be independently set as a DMX output or as an output to control digital LEDs.

Configuration of the device via the website (Figures 2 and 3)

All settings of the E-NODE AM-8.3 can be changed via the device's built-in web page. By default, the device operates in ART-NET/AUTO IP mode with automatic IP address assignment. The IP address can be read from the Art-Net settings in Madrix software. To access the web page, enter the searched IP address in the browser bar (e.g.: 2.252.169.38) or highlight any E-node AM-8.3 line and click the HTTP button.

After the page loads, click SETUP button at the bottom of the page.

Then click the SETTINGS button. The browser window will display the device's configuration page.

1. Autostart

The autostart setting (item 1) is used to define functioning of the E-NODE AM-8.3, in case of power on or loss of signals: DMX-IN, Art-Net. The choices are:

- DMX-OFF - no DMX signal on the outputs
- BLACKOUT - all DMX channels have a value of 0
- LAST VALUE - last DMX value
- PROGRAMS - running the selected program, with the specified intensity.

2. Configuration of ports 1-4

Ports 1-4 function independently and can operate in one of two modes:

- DMX - the port sends a DMX signal.
- Digital LED - we can directly connect a digital LED strip working with the selected protocol (TM1804, WS2811, USC1903, TM1829) to the port.

When Digital LED mode is selected, additional configuration options are available:

- Cross - allows to change the order of RGB colors.
- Merge - allows you to merge pixels into groups.
- N - pixels - allows you to select the number of pixels controlled from a given port. When a chip type is selected, the value is initialized to the maximum number of pixels that can be correctly driven at a refresh rate of 30 ms (33.3 Hz). The USC 1903

chip type has a twice slower control protocol and the number of pixels defaults to 340. At slower refresh rates, the number of pixels can be increased to 640.

3. Port 4 configuration Port 4 can work as DMX input or output. In Configuration - PORT 4 check box (item 3) set the appropriate option: • OUT - DMX output • IN - DMX-IN input DMX-IN input can be used for example: to select programs in Art-Net application (e.g.: Madrix, Jinx) using another DMX controller. In the Address check box, enter the universe number on which the device will send the signal to the Art-Net controller. Checking the DMX-IN -> Art-Net option starts the signal transmission from the DMX input to the Art-Net console. If the Art-Net console does not use such an input, this option should be disabled so as not to put additional load on the LAN.

The DMX-IN input can also be used to select programs stored on the SD card. In the DMX Channel check box, enter the DMX channel you want the device to operate from.

4. Changing the IP number E-NODE AM-8.3 has 2 modes for assigning IP number. Automatic mode: ART-NET AUTO IP and user mode: USER IP. To work correctly with Madrix, select ART-NET AUTO IP. To manually change the IP address, select the USER IP option (item 5) and in the unlocked check boxes (item 6), enter the new IP address of the device and subnet mask, respectively. Then, complete the operation by pressing SAVE button or continue further configuration of the device.

Note!!! Before saving the new settings, remember the new IP address and enter it into the browser after the saving operation is completed. The page does not automatically switch to the new address.

5. Change Art-Net settings for output ports

The parameters can be changed in the NET, SUB-NET and UNIVERSE check boxes (item 7) or in the ADDRESS PORT check box. After this operation, search for devices in the Art-Net console again so that the changes made are updated.

6. Password

In order to protect the device settings from tampering (e.g.: attempts to delete programs, changing settings) by unauthorized individuals, activate password protection (item 8). In the password and re-password check boxes, enter the 4-digit password twice.

Once the device configuration is complete, press the SAVE button to save the changes.

Programs recording (fig. 4)

The E-Node AM-8.3, in addition to converting the Art-Net signal to DMX, also allows to record, in real time, the data stream directly to a microSD card. The device can store 63 programs. The maximum time for saving a show depends on the number of recorded ports and their refresh rate. The size of the recorded show is limited by the file system - up to 4GB.

When recording 4 DMX lines with a refresh rate of 30ms, it is possible to save about 9 hours of show for one program. The device supports cards up to 32GB in size.

If a browser is possible to be activated on the DMX console (computer), the console (computer) can be connected directly with the E-NODE AM-8.3, bypassing the network switch.

The recording panel can be accessed via a web browser. As in the previous examples, enter the device address into the browser and go to SETUP->RECORD.

To open the recording panel, press the RECORD button. In the open panel, the MEMORY FREE/TOTAL section should display the total size of the SD card and the available free space on the card. If the message is visible: NO SD CARD or 0 MB / 0 MB it means that a card has not been placed in the device or it is damaged.

To record the effects, start by selecting one program from the list, to which you want to assign particular effect (item 2) (the program numbers correspond to the numbering of the buttons on the control panel). Confirmation of program selection is the display of the number in the PROGRAM check box, corresponding to the indicated item from the list.

After selecting a program, the information in the check boxes below (item 3) will be automatically filled in. For items to which recordings have already been assigned, the STATUS check box will show OK, and in the TIME and SIZE check boxes, the duration time of the recording and the size of the created file will be given, respectively.

For items in the list that have not been assigned a recording, NO FILE or EMPTY FILE will be displayed in the STATUS box

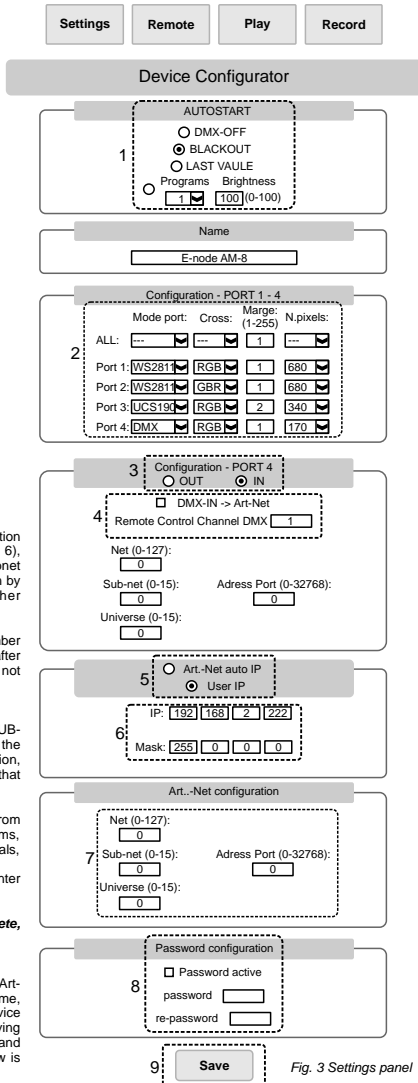


Fig. 3 Settings panel

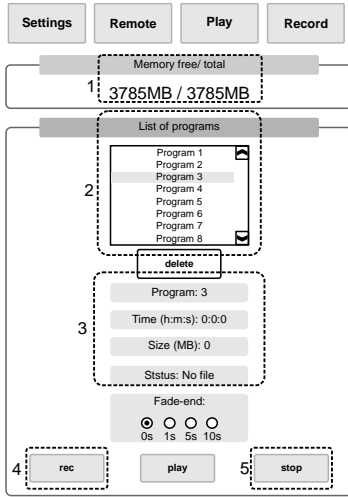


Fig. 4 Record panel

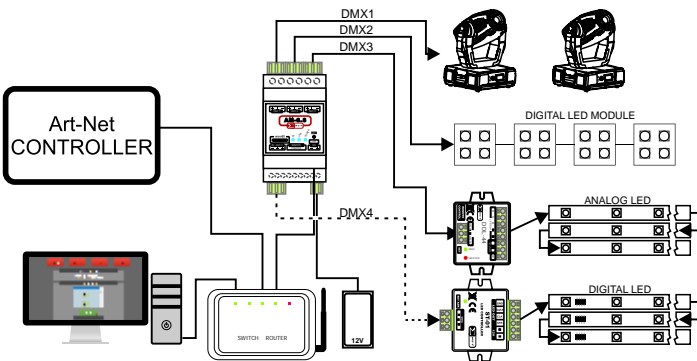


Fig. 5 Diagram of connection of devices in show recording mode.

(the EMPTY FILE message appears only if there is a file on the card, but it does not contain a recording). To start recording, start the show in the Art-Net console and press the REC button (item 4) in the browser window. RECORD will appear in the STATUS check box, and the SIZE and TIME check boxes will display increasing values of recording size and duration time. End the recording by pressing the STOP button (item 5). When the recording is finished, you can playback the recording by pressing the PLAY button. To stop playback, press the STOP button.

The last thing to do after the recording is finished is to set the looping.

In the FADE-END check box, we select one of four values: 0s, 1s, 5s or 10s. The times given are responsible for the length of interfacing of the beginning and end of the recording, in order to create a smooth transition during playback of the effect in the loop.

Deleting programs

The recording panel allows you to delete the created programs. To delete a recording, select the program you intend to delete from the list. Then press the DELETE button and confirm the message that appears.

Playback of shows

The effects stored on the SD card, can be triggered via the website, DMX input or using GET methods - via Ethernet. At the same time, only 1 of the 63 stored programs can be triggered. The Off program is the zero program. If the Art-Net signal is present, it is used to disable programs and to switch the device's mode - from PLAYER mode to NODE mode.

Changing effects using the web browser

As in the previous examples, the address of the device should be entered into the browser. Once the page is loaded, buttons with effects will be displayed on the screen. A darker shade of the button means that for this program number, the effect has been created and can be called up. If the button has a light shade, then no effect has been stored under that program number and that effect cannot be called up. At the top of the page there is a slider with which you can change the brightness of the selected effects. Changing the brightness is implemented by proportionally changing the values in all stored DMX channels. When the Player Off button is pressed, the program will be turned off and the device will switch to NODE mode.

To control the device via a tablet or smartphone, a WiFi router must be connected to the Ethernet jack and configured.

Control through mobile devices, does not require access to the Internet.

Changing effects using DMX

After connecting a DMX signal to the DMX-IN input (port 4 must be set as input), you can, using two DMX channels, change the programs and brightness of the effects stored on the SD card. The brightness change is realized by proportionally changing the values in all the stored DMX channels. The LED located next to the connector, indicates DMX transmission. When the transmission is correct, this LED flashes.

The DMX address of the device, as well as the configuration of port 4, can only be changed through the web page

in the Settings window. In the Configuration - PORT 4 check box, select IN, and in the DMX Channel check box, enter the address from which the device is to operate.

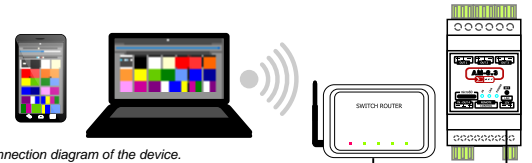


Fig. 6 Example connection diagram of the device. Changing the effects using a web browser.

DMX mode is the overriding control mode. When the device is controlled via DMX console, it is not possible to change the programs, for example: via website or GET methods.

In a situation where an Art-Net console will be connected to the E-NODE AM-8.3, then using the second DMX channel, you can switch modes of the device. When the Program channel is set to: Player Off (value 0-3), then the NODE mode will be automatically invoked. Then the device will work as an Art-Net->DMX converter. When any program from 1 to 63 is called (DMX value: 4-255), it will automatically switch to PLAYER mode, and the Art-Net console signal will be ignored.

Configuration of logic inputs

The AM-8.3 controller has a Remote control connector with 5 logic inputs.

You can connect a connector, motion sensor or relay contacts to the inputs.

To access the configuration panel, press the Remote button.

Appropriate parameter settings for each input line, allow you to adjust the operation of the controller to external events. Depending on the input mode and the selected event, additional parameters appear on the screen. Below is a description of each parameter.

Input mode

For inputs, the Input mode parameter, allows you to adjust the operation of the switch or relay contacts to the required configuration

OFF - input inactive; NO - contacts normally open in the mode.

Event

• Program master allows activation of the program, which will be unchanged until the Program master event is repeated or the program is changed via the website.
• Motion detector program - allows you to activate a program that will run for a specified time. After the set time, the program that was active before this event will be restored.

Program 1 and Program 2

These parameters determine between which range of programs it will be possible to switch.

Startup mode determines the startup mode of the programs. • Toggle next - a short change of status on the input causes switching to the next program. The range of program changes is limited by the Program 1 and Program 2 parameters.

Brightness

This parameter allows you to adjust the brightness levels during program startup.

Run time

This parameter allows you to set the program execution time during the Program motion detector event.

Control with external buttons

The controller has a Remote control connector, to which external buttons can be connected. In the Remote control connector, there are 5 logic inputs. All inputs are of binary type and allow connection of, for example: switch contacts, relay or motion sensor.

Each input can be freely configured (section Input configuration), which allows to adjust the way the controller reacts to user needs.

On the controller, the Remote control port comes in the form of a connector to which you can connect a multicore ribbon with a pitch of 1.27mm AWG28 (0.32mm2) or AWG26 (0.4mm2) with a maximum length of 3 meters.

If inputs are not used, a crimped connector without tape should be inserted into the Remote control socket.

MEMORY CARD - MicroSD card installation

The E-NODE AM-8.3 is equipped with a microSD card slot, which is located on the front panel of the case. To insert the card into the device, turn the card with the contacts side down, then slide it into the slot in the housing and press it until you hear a 'click'.

Due to the limited memory buffer of the device, it is very important that the memory card has a high write speed. If the image stops during the recording of effects and the Worst [ms] write time is displayed in red, it means that the card is taking too long to write. In this case, replace the memory card with another one.

Of the available memory cards, SanDisk Extreme or Ultra memory card is recommended.

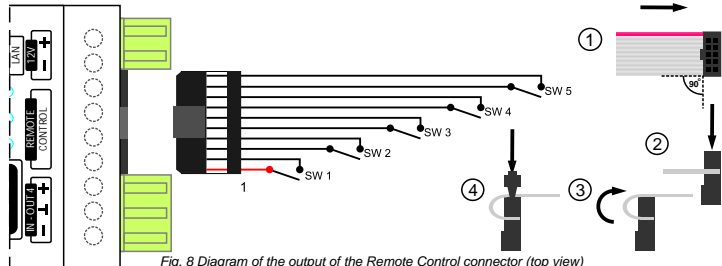


Fig. 8 Diagram of the output of the Remote Control connector (top view)

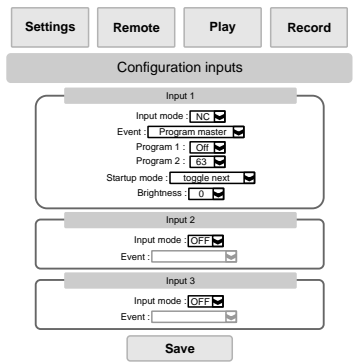


Fig. 7 Panel Configuration inputs