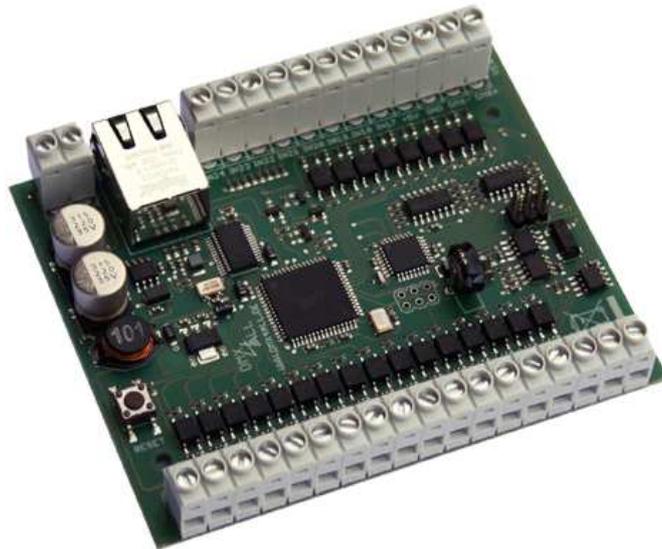


ArtNet-DMX Mux24

User manual



**ART
NET**
ETHERNET

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DMX®
4
ALL



For your own safety, please read this user manual and warnings carefully before installation.

Inhaltsverzeichnis

Description.....	3
Data sheet	4
Connection	5
LED-Display.....	6
Configuration	6
Set the IP with the IP-Configurator	6
Device Configuration	8
Main	8
Digital Inputs (IN1-IN16).....	10
Analog / Digital Inputs (IN17-IN24)	15
Send Wake On Lan (WoL).....	19
Timer	20
DMX-Output.....	21
Factory Reset	22
Firmware-Update	23
Equipment	24
CE-Conformity	25
Disposal.....	25
Warning	25
Risk Notes	26

Description

The **ArtNet-DMX Mux24** has 16 digital inputs and 8 additional inputs which are switchable for analog or digital. The output occurs via ArtNet and DMX.

16 Long Distance Inputs

16 digital inputs are available to connect buttons or switches. The inputs are designed as Long Distance Inputs, so the switching elements can also be mounted at a greater distance.

8 switchable analog/digital inputs

Furthermore, 8 inputs can be used analog or digital.

Within the DIGITAL mode these inputs are designed as Long Distance Inputs.

Within the ANALOG mode the inputs are able to convert analog signals by 0-10V or 0-5V into DMX-Values.

Individually configurable

Each input is individually configurable. Both, the function (mode) as well as the controlled DMX channels are adjustable for each input.

4 configurable Timer

4 separately configurable timer allow time-controlled on/off switching of DMX channels.

Wake On LAN

Send Wake On Lan (WoL) via button input or timer to start the device remotely.

Easy Configuration

A user-friendly configuration via a web browser allows quick and easy setting of all parameters. No special software is required, a normal web browser is enough.

So, the configuration is possible at any time from a PC, smartphone or tablet.

For easy adjustment of the IP we provide the IP-Configurator as PC-Tool or Android-App for free. This allows to leave the network settings unchanged and to configure the IP easily.

Firmware-Update-Function

To use future function, the ArtNet-DMX Mux24 provides a Firmware-Update-Function. It can be started via the web browser so no access to the device is necessary!

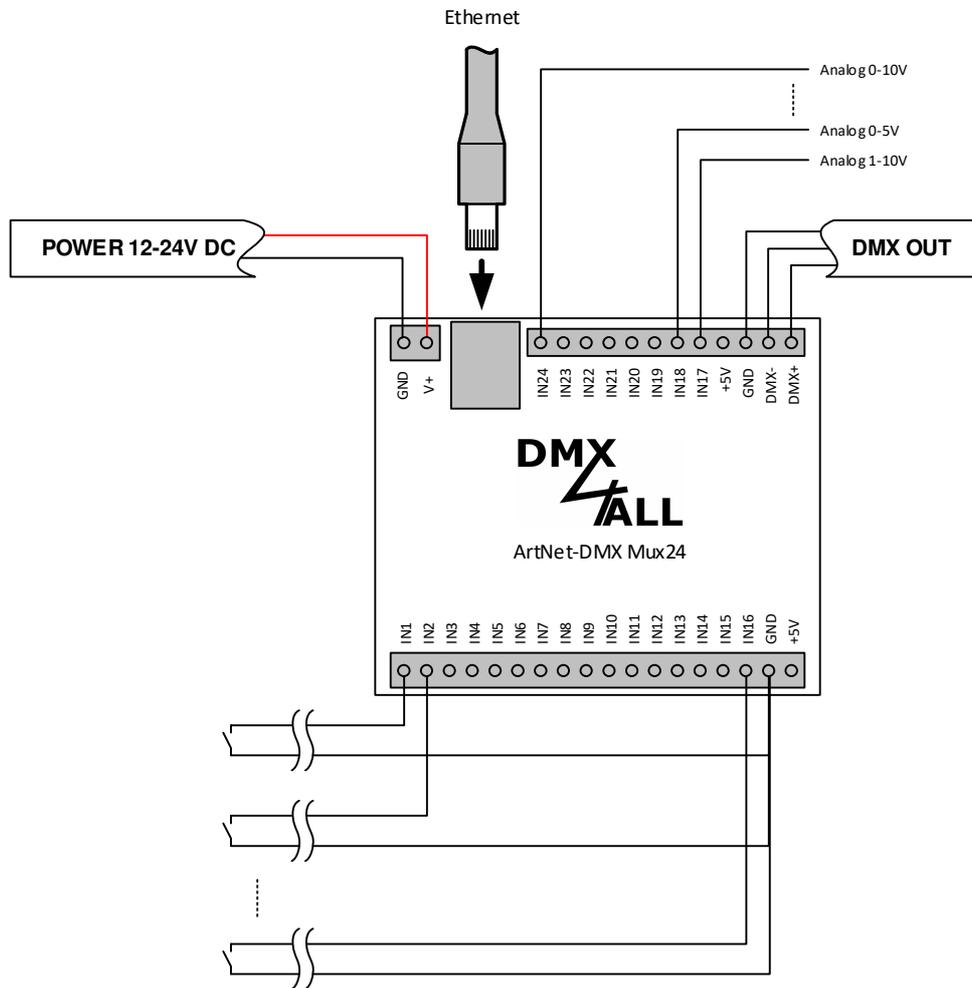
Top-hat rail housing available

Suitable for the ArtNet-DMX Mux24 the DIN rail housing 1050 is available as accessory.

Data sheet

Power supply:	7-24V DC 0,4A@12V / 0,2A@24V
Ethernet:	RJ45
DMX-OUT:	512 DMX channels
Inputs:	16x Long Distance Digital Input 8x Analog Input or Long Distance Digital Input
Modi per input:	Switch Button Toggle-Button Dimmer Up Dimmer Down Dimmer Up/Down Button On + Dimmer Up Button Off +Dimmer Down Button On/Off + Dimmer Up / Down Analog 0-10V Analog 0-5V Analog 1-10V
Timer:	4x Adjustable Timer
Dimension:	99mm x 82mm

Connection



LED-Display

LED green

The green LED flashes, if there is no Ethernet connection available and lights permanent, if an Ethernet connection is available.

LED yellow

The yellow LED lights up as soon as data are received.

Configuration

The **ArtNet-DMX Mux24** configuration occurs via a web-interface which can be called up via any web browser.

Set the IP with the IP-Configurator

The **IP-Configurator** allows setting the IP-Address and the net mask also if the PCs network setting is not in the IP-Range of the ArtNet-DMX Mux24.

- Install the software IP-Configurator
- Connect the ArtNet-DMX Mux24 with the net mask and turn it on
- Start the software IP-Configurator



- The ArtNet-DMX Mux24 is shown in the list
- Click on the entry
- Enter the new IP and net mask
- Click SET

Set the IP with web browser

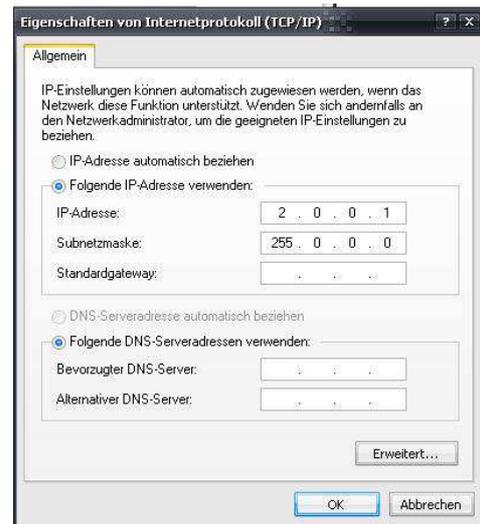
The assigned **IP-Address** within the delivery status is **2.0.0.5** which will be used for the web-interface as well as for the ArtNet.

Set your computers network card to this IP range to access the IP address via the web browser.



The PCs network settings must be the **IP-Address 2.0.0.1** and the **subnet mask must be 255.0.0.0**.

Please take further details from the ArtNet-Specifications.



Device Configuration

Please call up the IP of the ArtNet-DMX Mux24 within the web browser and address bar (delivery status: 2.0.0.5) and to get the following configuration side:

Main

Device Parameter



Each device needs an own **IP-Address** that the assignment occurs clearly within the network. Please use in accordance to the ArtNet-Specification the IP-Address 2.x.x.x or 10.x.x.x with the **net mask** 255.0.0.0 .

Any other IP address can also be used, such as 192.168.1.10 .
In this case the netmask must be adjusted to 255.255.255.0 !

For a better distinction any name for the ArtNet-DMX Mux24 is possible.

The **short-name** is limited to 18 signs and the **long-name** to 64 signs.

Input 17-24 Mode

The function of inputs 17-24 is set.

ArtNet Output Parameter

The ArtNet output parameters specify the values for the Art-Net™ output.

Net / SubNet / Universe (Port) are the Art-Net™ parameter defining the aim.

The **Transmit Mode** specifies how to output data via Art-Net™.

Broadcast sends the Art-Net™ data to all devices.

Unicast sends the Art-Net™ data to the destinations IP device.

Under **Destination IP** the IP address is entered to which the data is to be sent via Art-Net™ (unicast).

Send only on change suppresses the regularly repeated output of values via ArtNet.

ArtNet Input Parameter

The ArtNet input parameter specifies the values for the Art-Net™ reception.

Net / SubNet / Universe (Port) are the Art-Net™ parameter defining the source.

DMX Output Mode

The function of the DMX output is set.

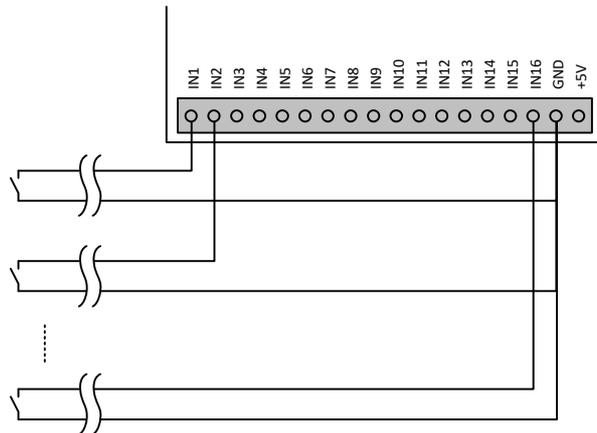
No Output	No DMX output
Direct from Digital / Analog Inputs	DMX output of the generated values for the digital and analog inputs
Direct from Art-Net™ Input	DMX output of the received Art-Net™ data
Merge HTP	DMX output of the highest value of the received Art-Net™ data and the generated values for the digital and analog inputs
Merge REPLACE	DMX output of the received Art-Net™ data with the replaced values of the digital and analog inputs.

SAVE saves the configuration.

Digital Inputs (IN1-IN16)

The digital inputs are designed as LONG DISTANCE inputs which allow using longer supply pipes to the switching elements.

The input wiring occurs with a switch or a button, connect to GND, as shown in the following outline:



For the LONG DISTANCE inputs, we recommend cable lengths not exceeding 25m. Depending on the environment and cable type, longer distances may be possible.

The cable cross section should not be smaller than 0.5mm².

Configuration of the Inputs

The inputs are configured via the web interface. Therefore, the both sites for configuration **Input 1-8** and **Input 9-16** are available.

For the *Input* the **Mode** is selected separately.

The input field **Parameter** specifies which function is to execute, e.g. which DMX channel is to set to which DMX value. On the following pages the functions are described.



The processing of the input states takes place one after the other, from input 1 to input 24. If a DMX channel is used with several inputs, it must be ensured by the selection of the mode and the parameter specification that the DMX value is not overwritten.

The following modes can be selected for each digital input:

Switch

The mode Switch sets the DMX channel(s) to the specified value as long as the input is controlled (operated).

If the input is not activated (not operated), the value 0 (0% / OFF) is set.

Button

The mode Button sets the DMX channel(s) to the specified value when the input is controlled (actuated).

Toggle-Button

The mode Toggle-Button toggles the DMX channel(s) between the specified value and 0 (0% / OFF) for each control (operation).

Dimmer UP

The mode Dimmer UP dims up the DMX channel(s) as long as the input is controlled (operated). The dimming process finishes when the value 255 (100%) is reached.

Dimmer DOWN

The mode Dimmer DOWN dims down the DMX channel(s) as long as the input is controlled (operated). The dimming process finishes when the value 0 (0%) is reached.

Dimmer UP/DOWN

The mode Dimmer UP/DOWN dims the DMX channel(s) up or down as long as the input is controlled (operated). The dimming process finishes when the value 255 (100%) is reached during dimming up / the value 0 (0%) during dimming down. The dimming direction is changed when the input is not activated (released).

Button ON + Dimmer UP

The mode Button ON + Dimmer UP dims up the DMX channel(s) as long as the input is controlled (operated) for a longer time. The dimming process is finished when the value 255 (100%) is reached.

A short activation (operation) switches the DMX value on.

Button OFF + Dimmer DOWN

The mode Button OFF + Dimmer DOWN dims down the DMX channel(s) as long as the input is controlled (operated) for a longer time. The dimming process is finished when the value 0 (0%) is reached.

A short activation (operation) switches the DMX value off.

Button ON/OFF + Dimmer UP/DOWN

The mode Button ON/OFF + Dimmer UP/DOWN dims the DMX channel(s) up or down as long as the input is controlled (operated) for a longer time. The dimming process is finished when the value, 255 (100%) with dimming up / the value 0 (0%) with dimming down, is reached. The dimming direction is changed when the input is not controlled (released).

A short activation (operation) switches the DMX value on / off.

Use digital inputs as binary inputs

For the digital inputs there are the possibilities to build one output value away several inputs.

In this case the input must be configured as *Switch*.

The specification for the channels needs than an +=*VALUE*.
So, for the specified channels the value will be added.

A possible configuration for an 8Bit-binary input is as follows:

Inputs:	IN1 up to IN8
Outputs:	DMX channel 1
Configuration:	INPUT1: Mode: Switch Parameter: 1+=1
	INPUT2: Mode: Switch Parameter: 1+=2
	INPUT3: Mode: Switch Parameter: 1+=4
	INPUT4: Mode: Switch Parameter: 1+=8
	INPUT5: Mode: Switch Parameter: 1+=16
	INPUT6: Mode: Switch Parameter: 1+=32
	INPUT7: Mode: Switch Parameter: 1+=64
	INPUT8: Mode: Switch Parameter: 1+=128

Analog / Digital Inputs (IN17-IN24)

The analog/digital inputs are adaptable for using as LONG DISTANCE digital inputs or analog inputs.

The inputs will be configured via the web-interface.

The selection, if the inputs should be used analog or digital, occurs in on the site MAIN. On the configuration site **Input 17-24** the function of the single channels will be determined.

The screenshot displays the 'Input 17-24 Settings' page in the ArtNet-DMX Mux24 web interface. The page has a dark blue header with the DMX4ALL logo and the title 'ArtNet-DMX Mux24'. Below the header is a navigation bar with buttons for 'Main', 'IN 1-8', 'IN 9-16', 'IN 17-24' (which is highlighted), 'Timer', and 'Service'. The main content area is divided into two columns. The left column, titled 'Input 17-24 Settings', contains a list of input configurations for inputs 17 through 24. Each input has a 'Mode' dropdown menu set to 'Analog 0-10V' and a 'Parameter' text input field. The right column, titled 'User Information', contains text explaining that inputs 17-24 can be used in different modes and that the mode and channels can be set independently. It also provides instructions on how to use a comma-separated channel list to select channels for a given input, with an example: 'E.g. "1,4,7" to control channel 1 and 4 and 7 with the input.' At the bottom of the page, there is a 'Save' button and a checkbox labeled 'Analog Input Options' with the text 'Use Noise Filter on Analog Inputs'.

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ArtNet-DMX Mux24

▶ Main ▶ IN 1-8 ▶ IN 9-16 ▶ **IN 17-24** ▶ Timer ▶ Service

Input 17-24 Settings

Input 17
Mode: Analog 0-10V
Parameter:

Input 18
Mode: Analog 0-10V
Parameter:

Input 19
Mode: Analog 0-10V
Parameter:

Input 20
Mode: Analog 0-10V
Parameter:

Input 21
Mode: Analog 0-10V
Parameter:

Input 22
Mode: Analog 0-10V
Parameter:

Input 23
Mode: Analog 0-10V
Parameter:

Input 24
Mode: Analog 0-10V
Parameter:

User Information

The inputs 17-24 of the ArtNet-DMX Mux24 can be used in different modes.
For each input the mode and channels can set independent from the other inputs.
Use a comma separated channel list with up to 30 chars to select the channels for the given input.
E.g. "1,4,7" to control channel 1 and 4 and 7 with the input.

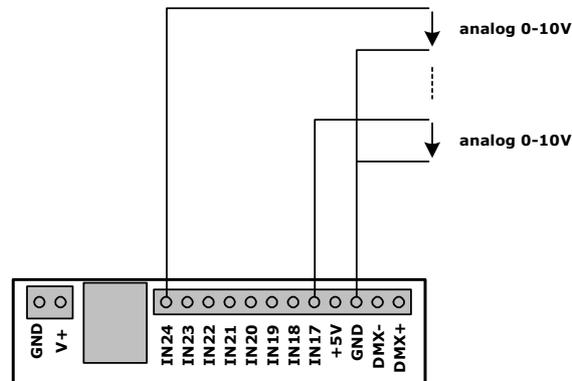
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Use Noise Filter on Analog Inputs

Save

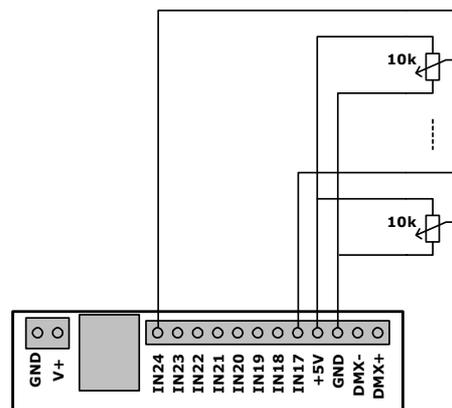
The wiring can occur in several ways

Connection with external analog signal (0-10V / 0-5V / 1-10V)



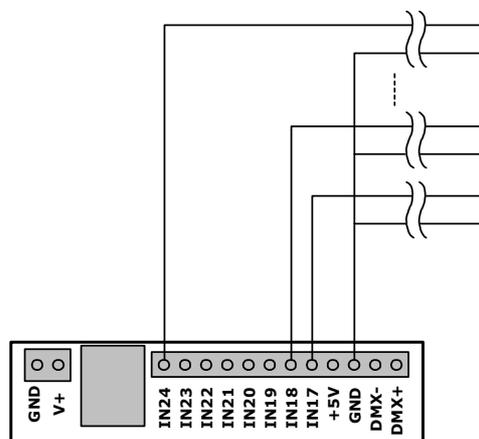
Connection with potentiometer

(Modi must be 0-5V)



Connection as digital input

The wiring as LONG DISTANCE digital input occurs with a switch or button, connect to GND as shown in the following picture:



Fit the output values of the analog inputs

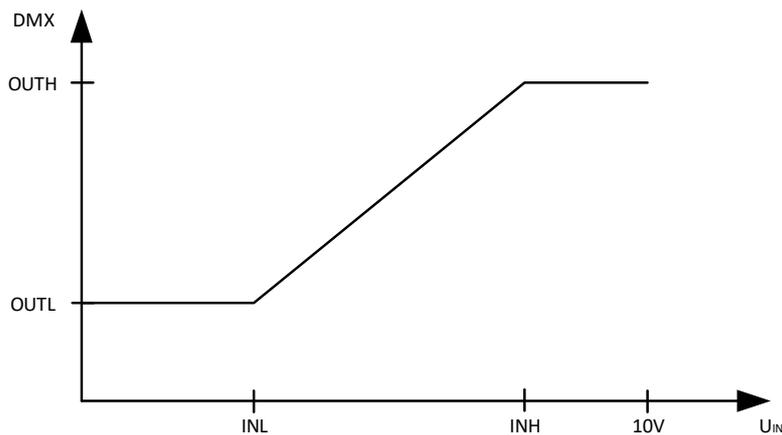
For the analog inputs it is possible to adjust the assignment of the input value to the output value.

In this case, the input must be configured as analog 0-10V and the assignment must be adding in the parameter input.

To adjust the assignment, a parameter input according to the following structure is necessary:

CH=[INL-INH]:[OUTL-OUTH]

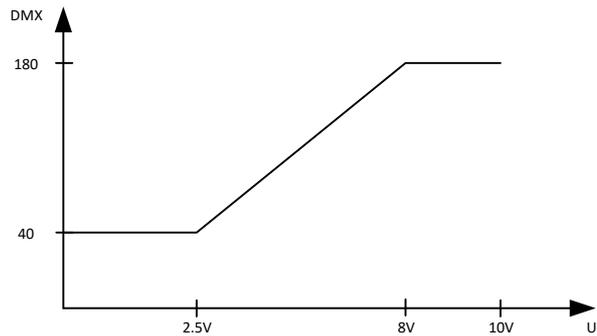
CH	⇒ DMX channel	
INL	⇒ Input voltage LOW in V	0V up to 10V in 0.1V steps
INH	⇒ Input voltage HIGH in V	0V up to 10V in 0.1V steps
OUTL	⇒ Output value LOW	0 up to 255
OUTH	⇒ Output value HIGH	0 up to 255



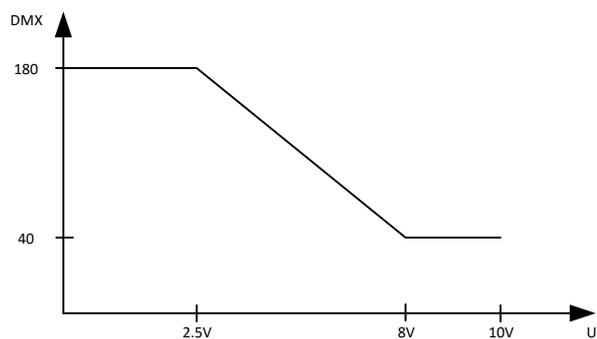
The analog input must be configured as analog 0-10V and INL must be smaller than INH !

Example:

„17=[2.5V-8V]:[40-180]“ ⇨ Output occurs on DMX channel 17;
 Up to a voltage of 2.5V the DMX value 40 will be outputted;
 Between 2.5V and 8V the output value is outputted linearly from 40 up to 180;
 From a voltage of 8V the DMX value 180 is outputted.



„54=[2.5V-8V]:[180-40]“ ⇨ Output occurs on DMX channel 54;
 Up to a voltage of 2.5V the DMX value 180 will be outputted;
 Between 2.5V and 8V the output value is outputted linearly from 180 up to 40;
 From a voltage of 8V the DMX value 40 is outputted.



Send Wake On Lan (WoL)

The ArtNet-DMX Mux24 can send a Wake On Lan (WoL) message via Ethernet when an input is activated (selected).

For this the mode *Button* must be selected and as parameter „WoL(xx-xx-xx-xx-xx-xx)“ specified.

xx-xx-xx-xx-xx-xx is to be replaced by the MAC ID of the target device.

Timer

The **ArtNet-DMX Mux24** offers 4 timer. Each of these have a time for switch-on and a time for switch-off as well as a selection for the weekdays on which the timer should be active.

The channel on which the timer should work will be specified as decimal value from 1 up to 512. If several channels should be controlled via the timer, so the single values must be entered separately with a comma.

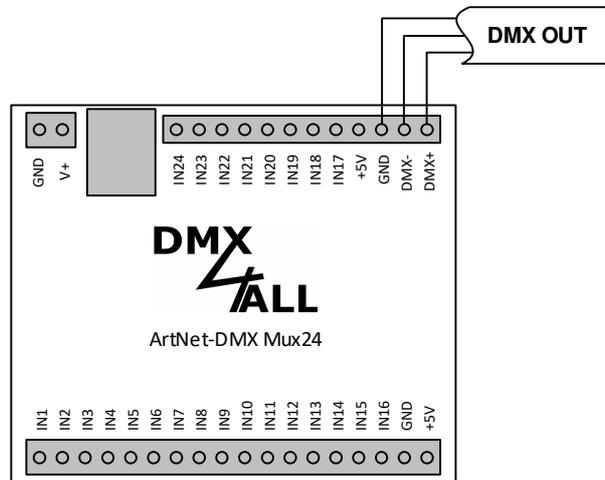
For example a single channel with „100“ or several channels with „100,110,120“.

Furthermore, it is possible to specify to be outputted. In this case the channel specifications need an =*VALUE*, e.g. “100=222” to set channel 100 to 222. If no value is specified, 255 (100%) is outputted, the specified value must be in the range 0 to 255.

With **Save** the settings will be stored and the current time will be adopted in the ArtNet-DMX Mux24, from the device on which the website was called.

DMX-Output

The **ArtNet-DMX Mux24** has a DMX-Output which can be used to connect DMX-able devices directly.



At the DMX-Output a DMX-Signal with 512 DMX-Channels will be outputted. With the "DMX Output Mode" (setting in the web interface) the following DMX output properties can be selected:

- **No Output:**
No DMX signal is output.
- **Direct from Digital / Analog Inputs:**
The values of the DMX channels are controlled via the inputs of the Mux24.
- **Direct from Art-Net™ Input:**
A universe arriving via ArtNet (ArtNet Input) is output.
- **Merge HTP:**
The Mux24 Digital/Analog Input and ArtNet Input are both output in combination. The higher channel value is taken into account for each of the 512 channels.
- **Merge REPLACE:**
The ArtNet input universe is output and the channels that are controlled via the inputs (digital/analog) of the Mux24 are permanently replaced in this.

The DMX repetition rate can be set with the "DMX Framerate" drop-down menu.

The configuration must be done via the web interface.

Factory Reset

The **ArtNet-DMX Mux24** can be set into the delivery status via the button.

Please proceed as follows:

- Turn off the device
- Push button and hold
- Turn on the device
- The yellow LED flashes
- Release button
- Push button again and hold
- The green and yellow LED flashes now for ca. 10 seconds alternately
- Release button meanwhile
- Now the Reset is in progress and the LEDs flashes 3x simultaneously as confirmation

Alternatively, you can restore the delivery status via the web browser:

- Open Global Settings into web-browser
- Enter the code „7319“ within the input field under Factory Defaults
- Click *Save*
- Then wait 10 seconds minimum

Firmware-Update

The **ArtNet-DMX Mux24** has an **update function** which allows transferring prospective Firmware-versions.

Please proceed as follows:

- Turn off the device
- Push button and hold
- Turn on the device
- The yellow LED flashes
- Release button
- Generate a net-work connection to the PC
- Start the Update-Software **DMX4ALL LAN-Updater**
- Select the ArtNet-DMX Mux16 from the list
- Click *Firmware-Update*
- Select Firmware-file (.bin) and confirm
- Please wait until the Update has finished



If an error occurs during the update, you can start from the beginning any time.

Alternatively, you can activate the Firmware-Update via the web-browser:

- Open the Update into the web-browser
- Enter the displayed code „1379“ into the input field and click *Send*.
- Start the Update-Software **DMX4ALL LAN-Updater**
- Select the ArtNet-DMX Mux24 from the list
- Click *Firmware-Update*
- Select Firmware-file (.bin) and confirm
- Please wait until the Update has
- Click in the web-browser to *Back to Mainpage*

Equipment

Top-hat rail housing 1050



Wall bracket for top hat rail housing



Power supply 12V



Network cable



CE-Conformity



This assembly (board) is controlled by a microprocessor and uses high frequency. In order to maintain the properties of the module with regard to CE conformity, installation into a closed metal housing in accordance with the EMC directive 2014/30/EU is necessary.

Disposal



Electronical and electronic products must not be disposed in domestic waste. Dispose the product at the end of its service life in accordance with applicable legal regulations. Information on this can be obtained from your local waste disposal company.

Warning



This device is no toy. Keep out of the reach of children. Parents are liable for consequential damages caused by nonobservance for their children.

Risk Notes



You purchased a technical product. Conformable to the best available technology the following risks should not be excluded:

Failure risk:

The device can drop out partially or completely at any time without warning. To reduce the probability of a failure a redundant system structure is necessary.

Initiation risk:

For the installation of the board, the board must be connected and adjusted to foreign components according to the device paperwork. This work can only be done by qualified personnel, which read the full device paperwork and understand it.

Operating risk:

The Change or the operation under special conditions of the installed systems/components could as well as hidden defects cause to breakdown within the running time.

Misusage risk:

Any nonstandard use could cause incalculable risks and is not allowed.

Warning:

It is not allowed to use the device in an operation, where the safety of persons depend on this device.



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