

# DMX4ALL ArtNet Relais Analog Interface 4 User Manual

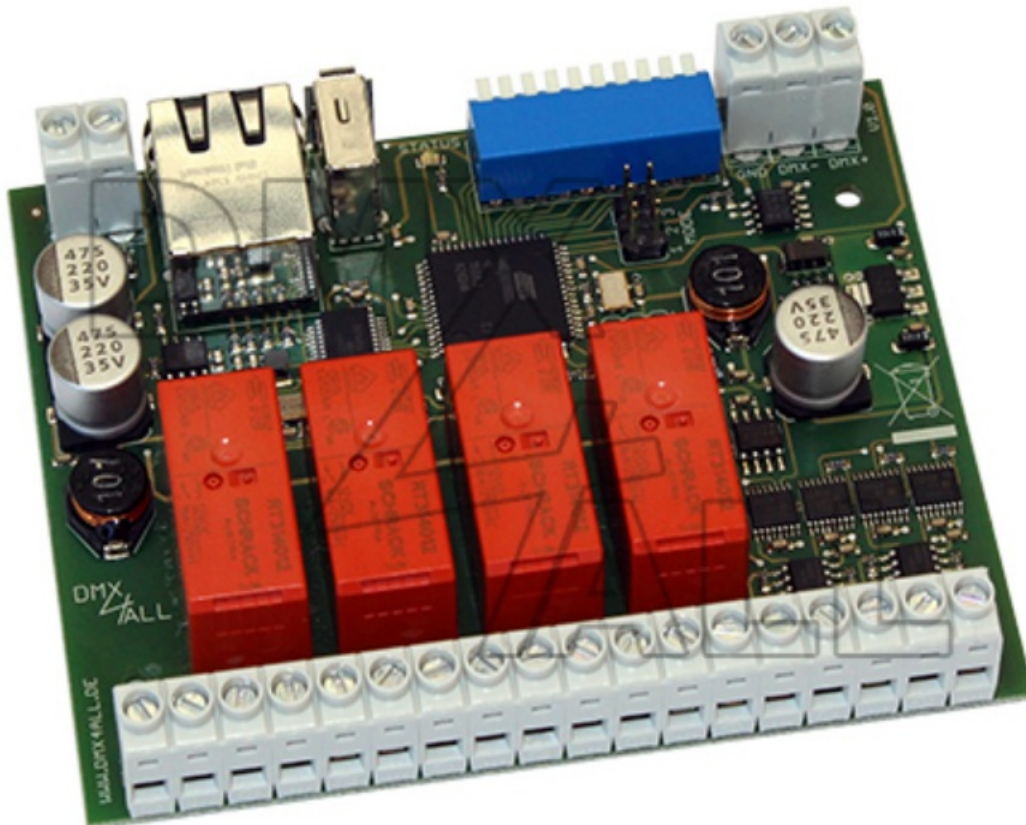
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# DMX 4 ALL

**DMX4ALL ArtNet Relais Analog Interface**



## Product Information

The ArtNet Relais/Analog Interface 4 is a versatile device designed for controlling tasks. It features 4 switch contacts for direct and alternating voltage, 4 potential-free switching outputs with up to 8A switching capacity, and 4 analog outputs that can be used to control systems with analog inputs. The analog outputs have a range of 0-10V or 1-10V and each output has a maximum output driver of 10mA. The interface operates with supply voltages from 12V up to 24V DC and can be controlled via DMX, Art-Net, or RDM. It also supports RDM configuration and has an adjustable DMX FAIL function in case of signal loss. The device can be easily configured using a web browser and has a firmware update function for future feature enhancements. It also has a USB connector for power supply to external devices such as a WiFi-bridge. The device can be controlled using the free Android App DMX Remote and has LED status display for DMX reception. It supports top hat rail mounting using the DIN rail housing 1050 as an accessory.

## Product Usage Instructions

To use the ArtNet Relais/Analog Interface 4, follow the steps below:

1. Read the user manual and warnings carefully before installation for your own safety.
2. Connect the power supply to the device using a 12-24V DC source.
3. If using DMX control, connect the DMX input signal to the device.
4. If using an external device such as a WiFi-bridge, connect it to the USB connector on the device for power supply.
5. Configure the device using a web browser by accessing its user-friendly configuration interface.
6. Choose the desired control method: DMX, Art-Net, or RDM.
7. Adjust the DMX FAIL function according to your preference in case of signal loss.
8. Utilize the analog outputs to control systems with analog inputs by connecting them accordingly.
9. Monitor the LED status display to ensure proper DMX reception.
10. If desired, update the firmware of the device using the firmware update function accessible from the browser.

11. For top hat rail mounting, use the DIN rail housing 1050 as an accessory.
12. Refer to the product data sheet for specific technical details and specifications.

By following these instructions, you will be able to effectively use the ArtNet Relais/Analog Interface 4 for your controlling tasks.

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

## **Description**

The ArtNet Relais/Analog Interface is designed for several controlling tasks.

### **4 switch contacts for direct and alternating voltage**

4 potential-free switching outputs (normally open / NO) with up to 8A switching capacity for switching DC or AC voltage.

### **4 analog outputs**

Four analog outputs with 0-10V vs 1-10V can be used to control systems with analog inputs.

### **Analog outputs with 10mA**

Each analog output has an output driver with max 10mA available.

### **For power supply from 12V up to 24V**

The ArtNet Relais/Analog Interface runs with supply voltages from 12V up to 24V DC.

### **DMX, Art-Net or RDM**

Optionally the ArtNet Relais/Analog Interface can be controlled via DMX, Art-Net (DMX over Ethernet) or RDM (Remote Device Control).

### **RDM support**

The ArtNet Relais/Analog Interface allows the configuration via RDM or DMX.

### **DMX-FAIL Function**

An adjustable DMX FAIL function offers the option to get in case of DMX signal loss the current state (HOLD) or assuming a preset value.

### **Easy configuration**

A user-friendly configuration via a web browser allows a fast and uncomplicated setting of all parameters.

### **Power supply for WLAN-Bridge**

In addition the ArtNet Relais/Analog Interface has a USB connector providing a power supply with 5V/500mA for external devices e.x. a WiFi-bridge. As WLAN-bridge we suggest: TP-Link TL-WR702N or TP-Link TL-WR802N

### **Control via App**

Control of this device is possible by using the free Android-App "DMX Remote".

### **Firmware-Update-Function**

In order to take advantage of future features, the ArtNet Relais/Analog Interface has a firmware update function. This can be launched from the browser so that no access to the device is necessary!

### **DMX4ALL-Command interface**

The ArtNet Relais/Analog Interface has another TCP communication interface. This interface uses the DMX4ALL-Commands via TCP packets.

### LED status display

The LED status display shows the DMX reception.

### Top hat rail mounting available

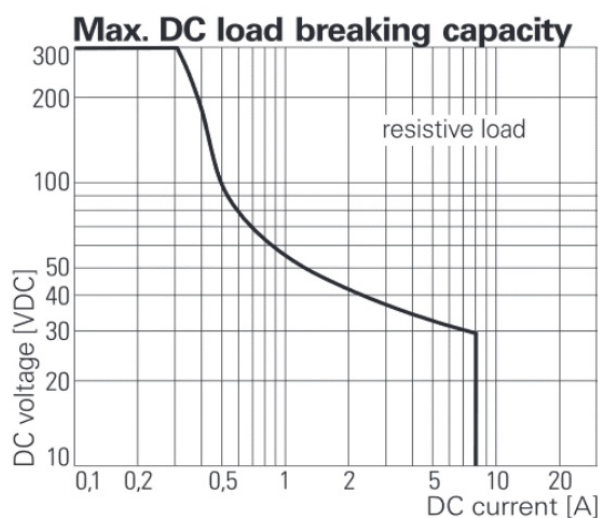
The DIN rail housing 1050 is available as accessory for the ArtNet Relais / Analog Interface.

## Data sheet

- **Power supply:** 12-24V DC
- **Power consumption:**
  - 200mA@12V;
  - 140mA@24V (without connected load at the analog output)
- **Ethernet:** RJ45
- **Protocol:**
  - DMX512 ArtNet™ (downwards compatible)
  - DMX4ALL Commands RDM
- **DMX channels:** 4 up to 12 channels
- **Output:**
  - 4x switch contacts (closer / NO)
  - Each max. 8A / 250V~ (165A@20ms inrush current) or up to 8A DC (è note max. DC load!)
  - 4x analog output 0-10V / 1-10V (max. 10mA)
- **DMX-FAIL:** Hold / 0-100%
- **Connections:** screw terminals
- **USB-Connection:** 5V/500mA For power supply of external devices (e.g. WLAN-Bridge)
- **Dimension:** 99mm x 82mm

### Max. DC load

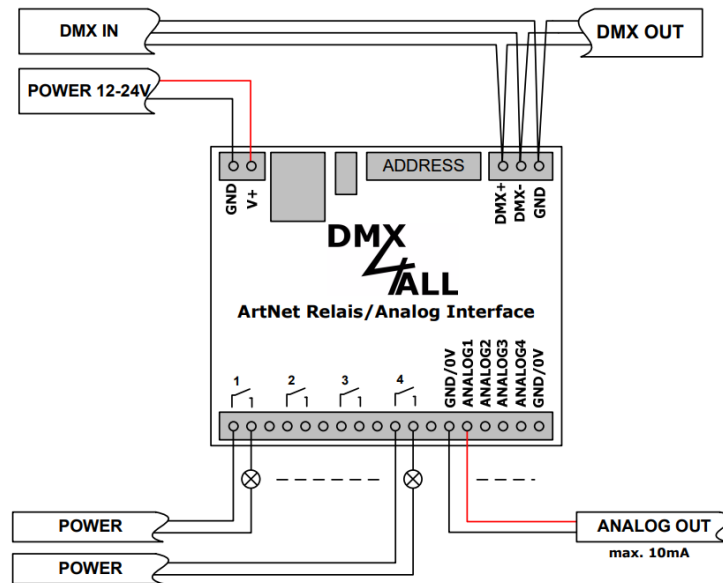
The maximum current the switch contacts of the ArtNet Relais/Analog Interface can switch is shown in the following graph depending on the switching voltage:



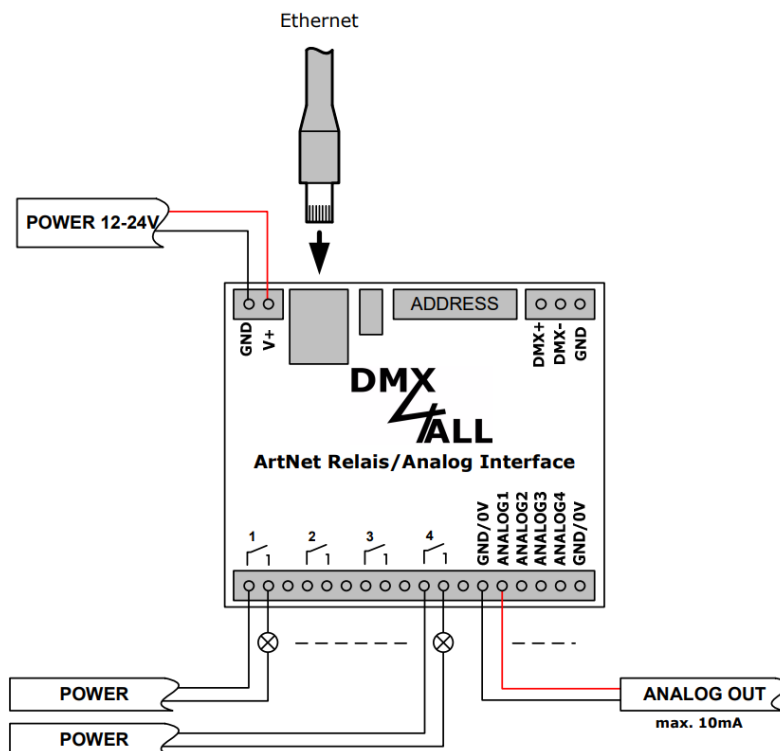
(Quelle: Data sheet RTS3T012)

## Connection

- Operation with DMX:



- Operation with ArtNet:



## LED Display Codes

The integrated LED is a Multi-functional-display. In the normal DMX-mode the LED flashes non-stop. In this case the device is working. If the LED is permanently dark, there is no DMX512-signal at the entry. Also the LED signalled the operation status.










In this case the LED lights up in short pitches and then turns into off modus. The Number of flashing signals is equal to the number of the error status

Error Status	Error	Description
1	No DMX	There is no DMX-signal at the entry
2	Address error	Please check the adjusted starting address

### DMX-Addressing

The DMX-starting address is adjustable via switch 1 to 9. Thereby switch 1 has the valency  $2^0$  (=1), switch 2 the valency  $2^1$  (=2) and so on until switch 9 has the valency  $2^8$  (=256).

The sum of the values of the switches showing ON correspond to the starting address.

Address	Switch	Address	Switch
1		...	...
2		508	
3		509	
4		510	
5		511	

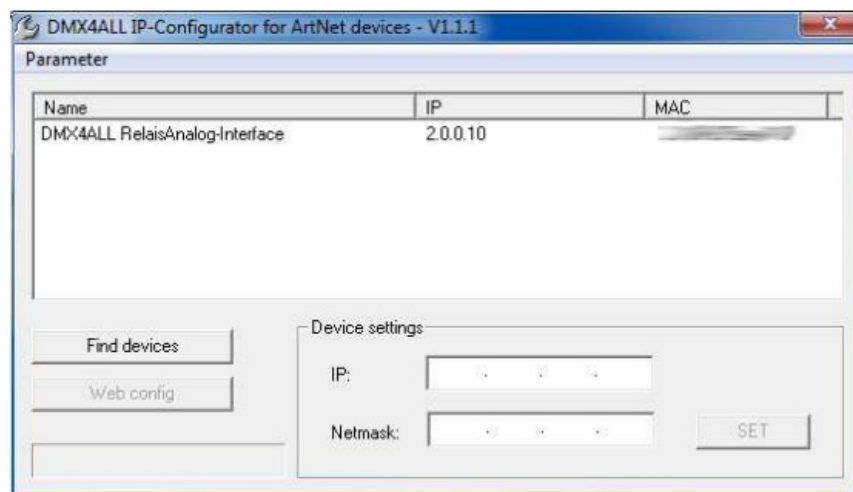


If switches 1-9 are OFF, the DMX start address set via the web interface is used!

### Set the IP with IP-Configurator

The IP-Configurator allows the setting of the IP-Address and net mask also, if the network settings of the PC are not in the IP-Range of the ArtNet Relais/Analog Interface.

- Install the program IP-Configurator
- Connect the ArtNet Relais/Analog Interface to network and turn on the device.
- Start the program IP-Configurator




- The ArtNet Relais/Analog Interface is shown in the list
- Select the entry (click)
- Enter the new IP and net mask
- Click SET

### Set the IP with web browser

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

status 2.0.0.10 . Set the network card of your PC to this IP-Range to call the IP-Address 2.0.0.10 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

Call, via the address task at the web browser, the IP of the ArtNet Relais/Analog Interface (Delivery state: 2.0.0.10) to get the following configuration site:





**ArtNet-RelaisAnalog Interface**  
Version 1.00

The ArtNet-RelaisAnalog Interface is a Relais and Analog gateway controlled by ArtNet.

The device provides one ArtNet Node with 512 channels and a DMX startaddress.

You can give the node an own IP address, shortname and longname to differ the node in the network. Please use in one network the IP address 2.x.x.x or 10.x.x.x

The setup allows you to set the ArtNet parameters for SubNet, Net and Port(Universe). Please set Net always to 0 if you don't use ArtNet3!

A DMX-Startaddress sets the first channel inside the universe of 512 channels which is used for the OUT1. The following channels are used for the next outputs OUT2-OUT0.

The Stand-Alone-Function drives the LED outputs without a network connection. The selected program is started on power up the device and is stopped when receiving data from the ArtNet.

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**MAIN SETUP**

**ArtNet Node**

IP Address:   
Netmask:   
Short Name:   
Long Name:

**ArtNet Settings**

Net:  Only ArtNet3  
SubNet:   
Port/Universe:

**DMX Startaddress**


Address:

**Output settings**

Relais 1:   
 Power on value  
Relais 2:   
 Power on value  
Relais 3:   
 Power on value  
Relais 4:   
 Power on value  
Analog 1:   
Analog 2:   
Analog 3:   
Analog 4:


**Factory Defaults**

Enter 7319 to set the ArtNet-Dimmer to factory defaults.

 Each ArtNet-Node needs an own IP-Address, so the assignment in the network is clear. Use in accordance to the ArtNet-Specification the IP-Address 2.x.x.x or 10.x.x.x .

The Net mask is according to the ArtNet-Specification 255.0.0.0 . For a better distinction any name can be used for the ArtNet-Node.

- The **Short-name** is limited to 18 signs and the **Long-name** is limited to 64 signs. Under the ArtNet-Settings you can carry out the settings for the **Subnet**, **Net** and Port/Universe.
- The **DMX-Start Address** shows the Channels within the according DMX-Universe from whence the outputs should be appealed.
- Thereby the DMX-Starting address complies to relay 1 and the following addresses comply to relay 2-4 followed by the analog outputs 1-4. If a DMX-Starting address is adjusted via the switches this address is regarding prior.

-  Note, that the channel assignment can differ with placed MODE-Jumper ! Within the output settings for each relay and for each analog output individual **names** can be entered.
- Furthermore, after turning on (**Power on value**) the conditions for the relays can be defined. Turning on the relays can occur delayed.

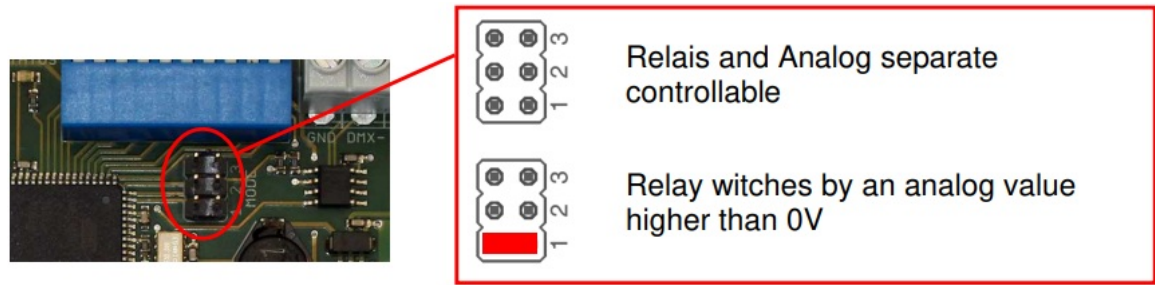


- The **Factory Settings** will be restored by entering the number 7319.
- **SAVE** stored the configurations respectively restored the Factory Settings

### Switching relays with an analog value higher 0V

This Mode uses no separated for the relays DMX-Channels. The relay switches as soon as the analog value is higher than 0V respectively the DMX-value for the analog output is higher than 0

Via MODE-Jumper 1 this mode is activatable:



In this case the DMX-Channel assignment is as following:

DMX-Channel assignment by 8 Bit:

Start address

Analog+Relais 1
Analog+Relais 2
Analog+Relais 3
Analog+Relais 4

DMX-Channel assignment by 10 Bit:

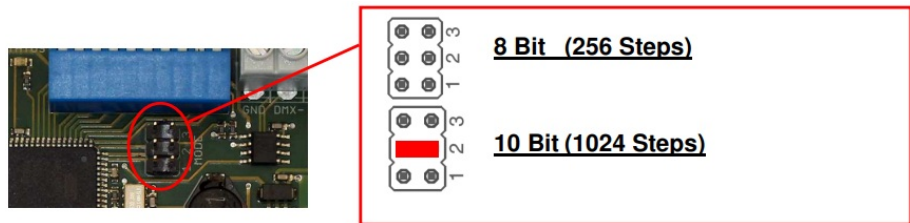
Start address

Analog+Relais 1 H
Analog+Relais 1 L
Analog+Relais 2 H
Analog+Relais 2 L
Analog+Relais 3 H
Analog+Relais 3 L
Analog+Relais 4 H
Analog+Relais 4 L

### Set resolution of analog outputs

The analog output resolution will be adjusted via the MODE-Jumper 2.

The analog outputs are operable with a resolution of 8 Bit (256 steps) or 10 Bit (1024 steps).



Depending on the resolutions setting the analog output there is needed per output one or two DMX-channels, as shown in the following picture.

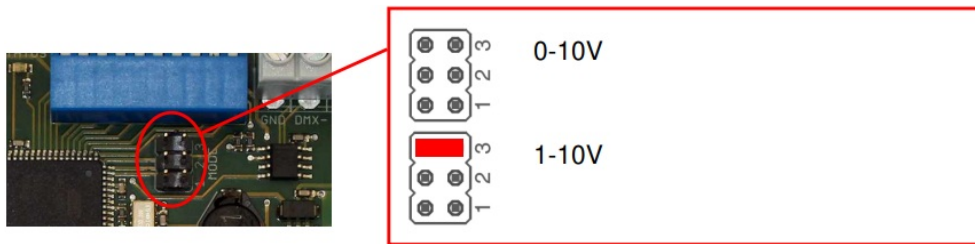
DMX channel configuration with 8 Bit: DMX channel configuration with 10 Bit:

DMX channel configuration with 8 Bit: DMX channel configuration with 10 Bit:

Start address	Start address
Relais 1	Relais 1
Relais 2	Relais 2
Relais 3	Relais 3
Relais 4	Relais 4
Analog 1	Analog 1 HIGH
Analog 2	Analog 1 LOW
Analog 3	Analog 2 HIGH
Analog 4	Analog 2 LOW
	Analog 3 HIGH
	Analog 3 LOW
	Analog 4 HIGH
	Analog 4 LOW

## Set the output voltage 0-10V / 1-10V

The analog outputs output voltage is adjustable via the MODE-Jumper 3:



## DMX-FAIL Function

The ArtNet Relais/Analog Interface has a DMX-FAIL Function which stores the last value in the case of a DMX-signal (HOLD) loss or uses a value set with RDM before. The HOLD function can be activated via RDM or switch 10.

- Switch 10 ON DMX-HOLD active
- Switch 10 OFF DMX-HOLD not active

If HOLD is switched on (switch 10 = ON), the last received DMX values are kept in case of a DMX signal failure. If HOLD is switched off (switch 10 = OFF), the DMX values are replaced with a value set by RDM in case of DMX signal failure. In delivery state this value is 0, so the relays switch off.



In case of a power failure the held DMX values are rejected!



A value set by RDM is deleted when HOLD is selected. After switching off the HOLD function the default value 0 is used!

## DMX4ALL-Command support

The ArtNet Relais/Analog Interface has another communication interface which receives data via TCP-packages at Port 10001.

## TCP-Control

For controlling the interface directly via TCP-connection please use the set web browser IP-address and use Port 10001. The sent and received data are RAW-data packages.

Please take the potential DMX4All-Commands from the separated DMX4ALL- Command description.



## VCP-Control

For controlling via a COM-Port a TCP-VCP-program must be installed, providing a virtual Com Port (VCP). We recommend the tool *Serial to Ethernet Connection* tested by us. This tool is available as download within the

[illegible]

Parameter ID	Discovery Command	SET Command	GET Command	ANSI/ PID
DISC_UNIQUE_BRANCH	✓			E1.20
DISC_MUTE	✓			E1.20
DISC_UN_MUTE	✓			E1.20
DEVICE_INFO			✓	E1.20
SUPPORTED_PARAMETERS			✓	E1.20
PARAMETER_DESCRIPTION			✓	E1.20
SOFTWARE_VERSION_LABEL			✓	E1.20
DMX_START_ADDRESS		✓	✓	E1.20
DEVICE_LABEL		✓	✓	E1.20
MANUFACTURER_LABEL			✓	E1.20
DEVICE_MODEL_DESCRIPTION			✓	E1.20
IDENTIFY_DEVICE		✓	✓	E1.20
FACTORY_DEFAULTS		✓	✓	E1.20
DMX_PERSONALITY		✓	✓	E1.20
DMX_PERSONALITY_DESCRIPTION			✓	E1.20
DMX_FAIL_MODE		✓	✓	E1.37
SERIAL_NUMBER <sup>1)</sup>			✓	PID: 0xD400

Manufacturer depending RDM control commands:

### **SERIAL\_NUMBER**

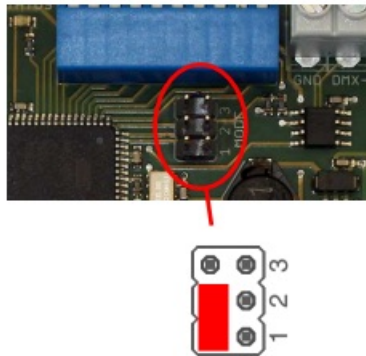
- **PID:** 0xD400
  - Outputs a text description (ASCII-Text) of the device serial number.
- **GET Send:** PDL=0
- **Receive:** PDL=21 (21 Byte ASCII-Text)

### **Factory Reset**

It is possible to reset the ArtNet Relais/Analog Interface into the delivery status.

Please proceed as follows:

- Turn off the device
- Place the MODE-Jumper J1 to J2 as shown
- Turn on the device
- The reset executes and the LEDs at the RJ45-connection light up 3x simultaneously as confirmation



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

- Open the Main Settings within the web browser
- Enter the code „7319“ in Factory Defaults
- Click *Save*

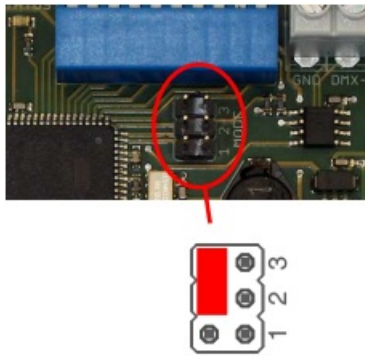
*Subsequently wait at least 10 seconds*

### **Execute Update**

The ArtNet Relais/Analog Interface has an Update-Function which allows to transfer prospective Firmware-Updates.

Please proceed as follows:

- Turn off the device
- Place the MODE-Jumper J2 to J3 as shown
- Turn on the device
- The yellow LED lights up
- Occur a connection between PC and network
- Start the Update-Software DMX4ALL LAN-Updater
- Select the ArtNet Relais/Analog Interface from the list
- Click *Firmware-Update*
- Select the Firmware-Data (.bin) and confirm
- Wait until the Update has finished
- Set the MODE-Jumper to the original condition

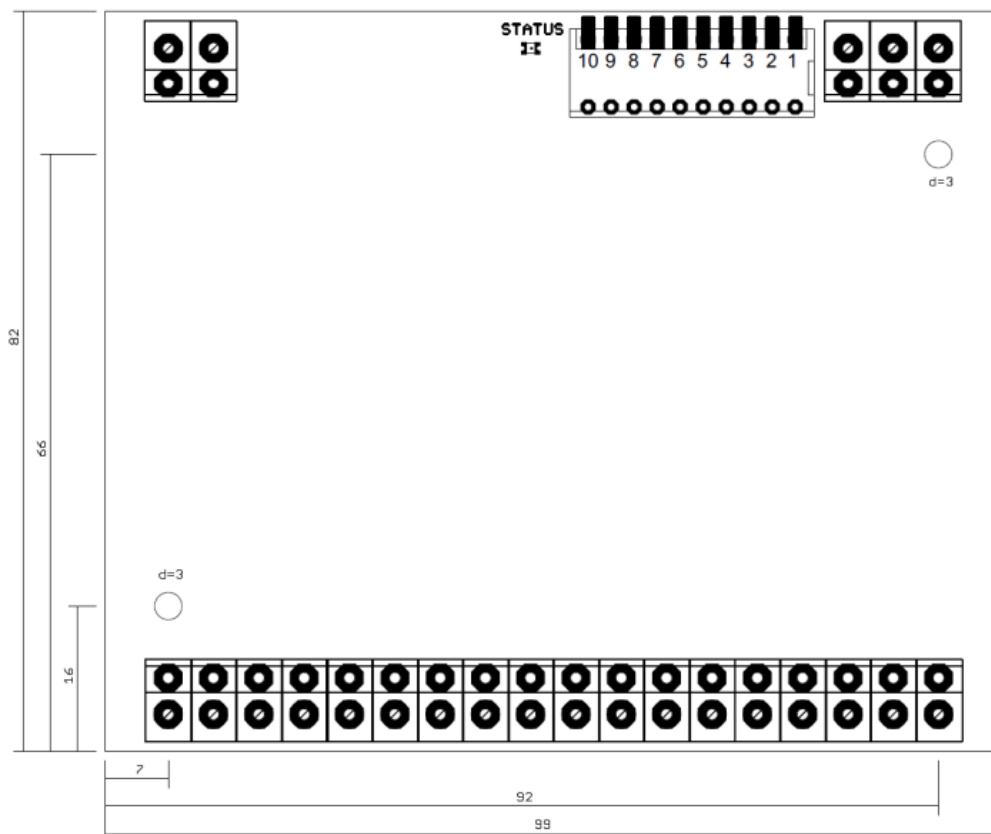


If during the Update occurs an error you can start the Update again any time.

Alternatively, the Firmware Update can be activated via web browser:

- *Open the Firmware Update* within the web browser
- Enter the shown code “1379” in the entry field and click *Send*
- Start the DMX4ALL LAN-Updater
- Select the ArtNet Relais/Analog Interface from the list
- Click *Firmware-Update*
- Select the Firmware-Data (.bin) and confirm
- Wait until the Update has finished
- Click *Back* in the web browser

## Dimensions



(all details in mm)

## Equipment

- Top-hat rail housing 1050



- Power supply 12V



## 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.


Last changes: 24.06.2022

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All information contained in this manual was arranged with largest care and after best knowledge. Nevertheless errors are to be excluded not completely. For this reason I see myself compelled to point out that I can take over neither a warranty nor the legal responsibility or any adhesion for consequences, which decrease/go back to incorrect data. This document does not contain assured characteristics. The guidance and the characteristics can be changed at any time and without previous announcement  
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## Documents / Resources

	<p><a href="#">DMX4ALL ArtNet Relais Analog Interface 4</a> [pdf] User Manual ArtNet Relais Analog Interface 4, ArtNet Relais, Analog Interface 4, Interface 4</p>
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