DMX-Analog 0-10V
8 Channel

User Manual

DMX4ALL®

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

Contents

Description

The **DMX-Analog 0-10V 8-Kanal** is excellent suitable to control electronic devices with analog 0-10V control input.

8 Analog outputs
8 analog outputs with 0-10V output voltage each are available.
When used with a 1-10V input, a voltage lower than 1V is usually considered the minimum value. Therefore 0-10V as well as 1-10V devices can be controlled.

8Bit resolution
Each output has a resolution of 8Bit. Therefore 256 output steps are available.

10mA output current
An output driver at each output allows loads up to 10mA.

For voltages from 12V up to 24V
The DMX-Analog 0-10V 8-Channel runs with a supply voltage from 12V up to 24V direct voltage.

Invertible output signal
With address switch 10 the output signal can be inverted.

DMX FAIL-Function
An adjustable DMX FAIL function offers the option to hold the current state (HOLD) or to change to a predefined value in case of DMX signal failure.

RDM support
The DMX-Analog 0-10V 8-Channel allows the configuration via RDM or DMX.

Free RDM software
For setting the parameters via RDM, our free RDM Configurator software is available for download on our website www.dmx4all.de.

Lockable device settings
The RDM parameters Lock Pin and Lock State allow or prohibit changing saved RDM parameters to prevent unauthorized changes.

SubDevice-Mode
In SubDevice mode, each output is assigned its own DMX address, operating mode and DMX FAIL behavior via RDM.

LED status display
The LED status display shows the DMX reception.

Suitable for top hat rail mounting
Suitable for the DMX-Analog 0-10V 8-Channel the DIN rail housing 700 is available as accessory.

Technical Data

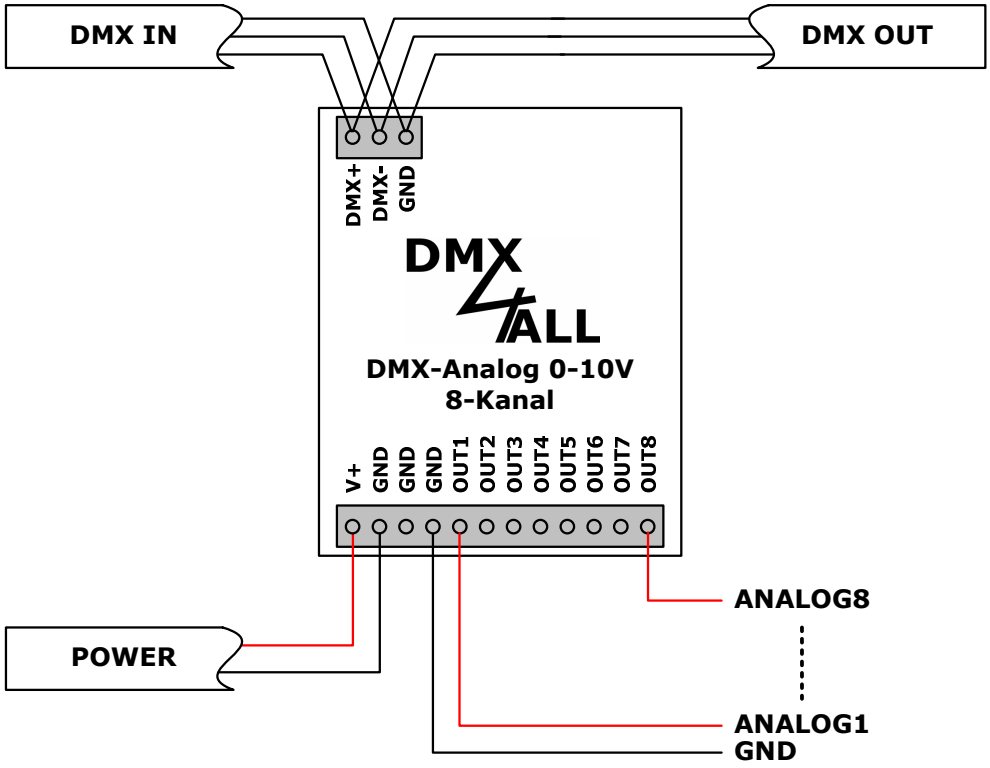
Power supply:	12-24V DC
Current consumption:	50mA@12V; 40mA@24V (without connected load)
Protocol:	DMX512 RDM
DMX channels:	8 channels
DMX-FAIL:	Hold / 0-100%
Output:	8 outputs with driver each max. 10mA
Resolution:	256 steps (8-Bit), linear
Connection:	screw terminals
Dimensions:	64mm x 82mm

Content

1x DMX-Analog 0-10V 8-Channel

1x Quick manual german and english

Connection


DMX IN
DMX OUT
DMX+
DMX-
GND
DMX-Analog 0-10V
8-Kanal
V+
GND
GND
GND
OUT1
OUT2
OUT3
OUT4
OUT5
OUT6
OUT7
OUT8
ANALOG8
POWER
ANALOG1
GND

LED-Display

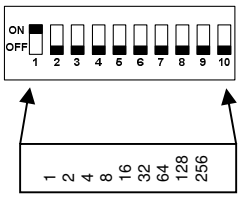
The LED is a multifunctional display. In the normal operation mode, the LED lights non-stop. In this case the device is working.

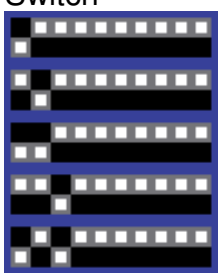
Furthermore, the LED signals the status. In this case, the LED lights up in short pitches and then turn into off modus. The number of flashing signals is equal to the error status:

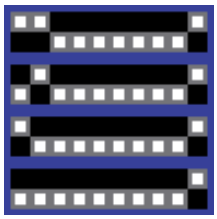
Error Status	Error	Description
1	No DMX	There is no DMX-signal
2	Address error	Please check the set DMX-Address
4	Factory Reset	Factory Reset is executed

Addressing

The starting address is adjustable via a DIP-Switch. Switch 1 has the valency 2^0 (=1), switch 2 has the valency 2^1 (=2) and so on… finally switch 9 has the valency 2^8 (=256). The sum of the switches showing ON, represent the starting address.



Address	Switch
1	
2	
3	
4	
5	

Address	Switch
...	...
508	
509	
510	
511	

To invert the output-signal please use switch 10.

DMX-FAIL Function

Via a jumper you can adjust the outputs behavior in case of DMX signal failure.

No jumper closed:	RDM settings are used
Jumper J1 closed:	Outputs are unchanged (HOLD)
Jumper J2 closed:	Outputs are turned on (ON – 100%)
Jumper J3 closed:	Outputs are shut down (OFF – 0%)

 With the RDM parameter DMX_FAIL_MODE the level can be set.

RDM

RDM is the short form for **R**emote **D**evice **M**anagement.

As soon as the device is within the system, device-dependent settings can occur remotely via RDM command due to the uniquely assigned UID. A direct access to the device is not necessary.

If the DMX start address is set via RDM, all address switches at the device must be set to OFF ! A DMX start address set by the address switches is always prior !

This device supports the following RDM commands:

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
DISPLAY_LEVEL		✓	✓	E1.20
DMX_FAIL_MODE		✓	✓	E1.37
LOCK_STATE		✓	✓	E1.37
LOCK_STATE_DESCRIPTION			✓	E1.37
LOCK_PIN		✓		E1.37

Parameter ID	Discovery Command	SET Command	GET Command	ANSI/ PID
SERIAL_NUMBER[1)]			✓	PID: 0xD400
SUBDEVICE_ENABLE1)		✓	✓	PID: 0xFF0F

1) Manufacturer depending RDM control commands (MSC - Manufacturer Specific Type)

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)

SUBDEVICE_ENABLE
PID: 0xFF0F

Enable or disable the sub devices of the device.

GET Send: PDL=0
Receive: PDL=1 (1 Byte SUBDEVICE_ENABLE_STATE)

SET Send: PDL=1 (1 Byte SUBDEVICE_ENABLE_STATE)
Receive: PDL=0

SUBDEVICE_ENABLE_STATE	Funktion
0	SUB DEVICES DISABLED
1	SUB DEVICES ENABLED

Lock device settings

The RDM parameters *Lock Pin* and *Lock State* allow or prohibit changing saved RDM parameters.

Lock Pin

The four-digit pin code number for the lock function can be set using the Lock Pin parameter.

After entering the correct currently used PIN (Old PIN) in the RDM software (e.g. RDM Configurator), the new, desired PIN can be entered in the New PIN field and saved by setting the parameter.

When delivered, the lock pin is always 0000.

Lock State

The device settings can be locked or unlocked using the Lock State parameter.

The following lock states can be selected:

Wert	Name	Beschreibung
0	Unlocked	Parameters are editable
1	RDM Locked	Parameters cannot be edited via RDM

When delivered, the device is always *Unlocked*.

The Lock Pin (PIN Code) is required to change the Lock State parameter.

The RDM parameters Identify Device, Reset Device and Display Level can always be executed, regardless of the lock state.

SubDevice-Mode

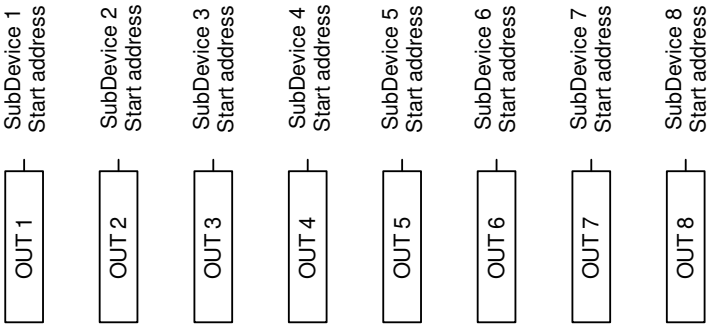
In standard mode, the DMX-Analog 0-10V 8-Channel has a DMX start address from which the DMX channels are used one after the other.

In SubDevice mode, each output is assigned its own DMX address, operation mode and DMX FAIL behavior.

To activate and deactivate the sub-device mode, the parameter SUBDEVICE_ENABLE must be activated via RDM.

Then the setting of the DMX address and the DMX FAIL behavior for each output is made possible via RDM.

The assignment of the DMX addresses in SubDevice mode is as follows:



The assignment of the DMX addresses to the outputs is freely possible in SubDevice mode. Several outputs can also use the same DMX address.

Factory Reset

Before running the Factory Reset, read all steps carefully.

To reset the **DMX-Analog 0-10V 8-Channel** into the delivery state, please proceed as follows:

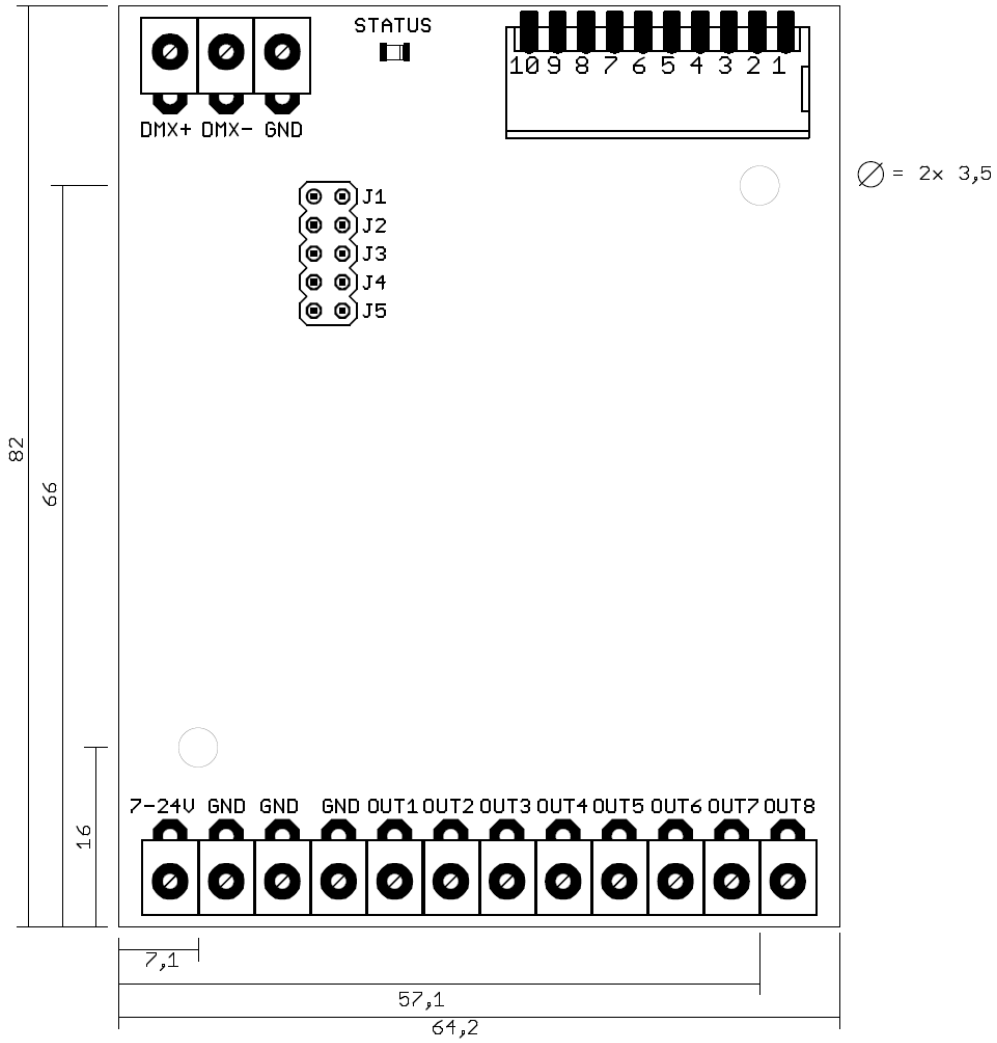
- Turn off device (turn off power supply !)
- Set address switch 1 up to 10 to ON
- Turn on the device (turn on power supply)
- The LED lights up 20x during ca. 3 seconds

  ➔ While the LED lights up set DIP switch 10 to OFF
- Now, the Factory Reset is executed

  ➔ The LED lights up with error code 4
- Turn off the device (turn off power supply !)
- Now, the device can be used

If a Factory Reset is needed again, this procedure can be repeated at any time.

Dimension



All details in mm

Accessories

Top-hat rail mounting 700

Power supply 12V

Revision History

Firmware V1.41
- Add SubDevice support

Firmware V1.40
- Add KEY_LOCK / KEY_STATE
- Add IDENTIFY_MODE

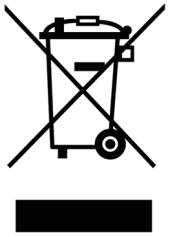
Firmware V1.31
- Some bug fixes
- Add DISPLAY_LEVEL

Firmware V1.30
- First RDM version

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 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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