DMX4ALL DMX Relais Analog Interface 1 User Manual

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DMX Relais/Analog Interface 1

User Manual

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

Contents

Description

The DMX Relais/Analog Interface 1 is designed for several kinds of controlling tasks.

Potential free switch output One potential free switch output (normally open / NO) with up to 8A switching capacity is available.

Switching contact for direct and alternating voltage The switching contact is suitable for switching both direct voltage and alternating voltage.

Analog control output One control output with 0-10V or 1-10V are available for control devices with analog input.

For voltages from 12V up to 24V The DMX Relais/Analog Interface 1 runs with supply voltages from 12 up to 24V direct voltage.

DMX FAIL-Function An adjustable DMX FAIL-Function offers the option to hold the current state (HOLD) or to adopt a predefined value if the DMX signal fails.

RDM support The DMX Relais/Analog Interface 1 the configuration via RDM or DMX.

Several operating modes The DMX Relais/Analog Interface 1 offers several operating modes which can be set via jumper or RDM:
– Relay + Analog 8Bit 0-10V
– Relay + Analog 8Bit 1-10V
– Relay + Analog 10Bit 0-10V
– Relay + Analog 10Bit 1-10V
– Relay & Analog 8Bit 0-10V
– Relay & Analog 8Bit 1-10V
– Relay & Analog 10Bit 0-10
– Relay & Analog 10Bit 1-10V

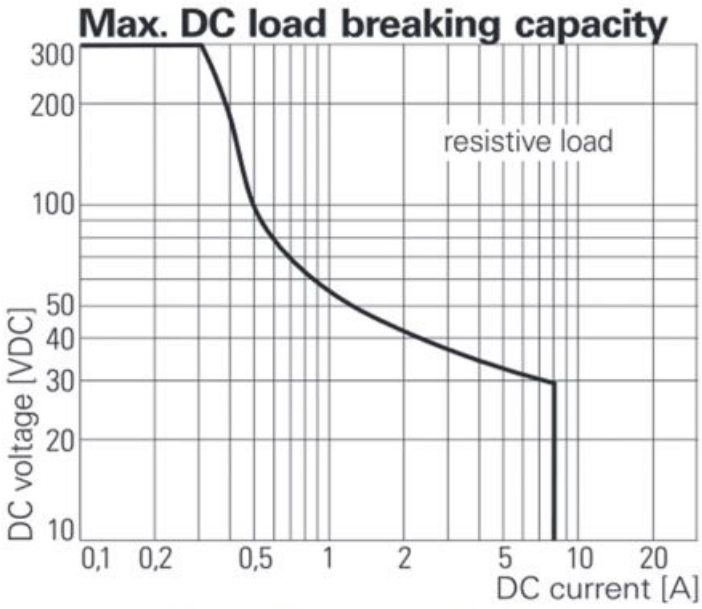
Top hat rail mounting available Suitable for the DMX Relais/Analog Interface 1 the DIN rail housing 350 is available as accessory.

Data sheet

Power supply: 12-24V DC
100mA@12V / 70mA@24V
Protocol: DMX512 RDM
DMX-Channels: 1 or 2 channels
Output: 1 switch contact (normally open / NO)
165A@20ms peak switch-on current
AC: each max. 8A / 250V~
DC: According to the max. DC load graph
1 analog signal 0-10V or 1-10V
Operation modes: Relay + Analog 8Bit 0-10V
Relay + Analog 8Bit 1-10V
Relay + Analog 10Bit 0-10V
Relay + Analog 10Bit 1-10V
Relay & Analog 8Bit 0-10V
Relay & Analog 8Bit 1-10V
Relay & Analog 10Bit 0-10V
Relay & Analog 10Bit 1-10V
DMX-FAIL: Hold / 0-100%
Connections: Screw terminals
Dimensions: 29,2mm x 82mm

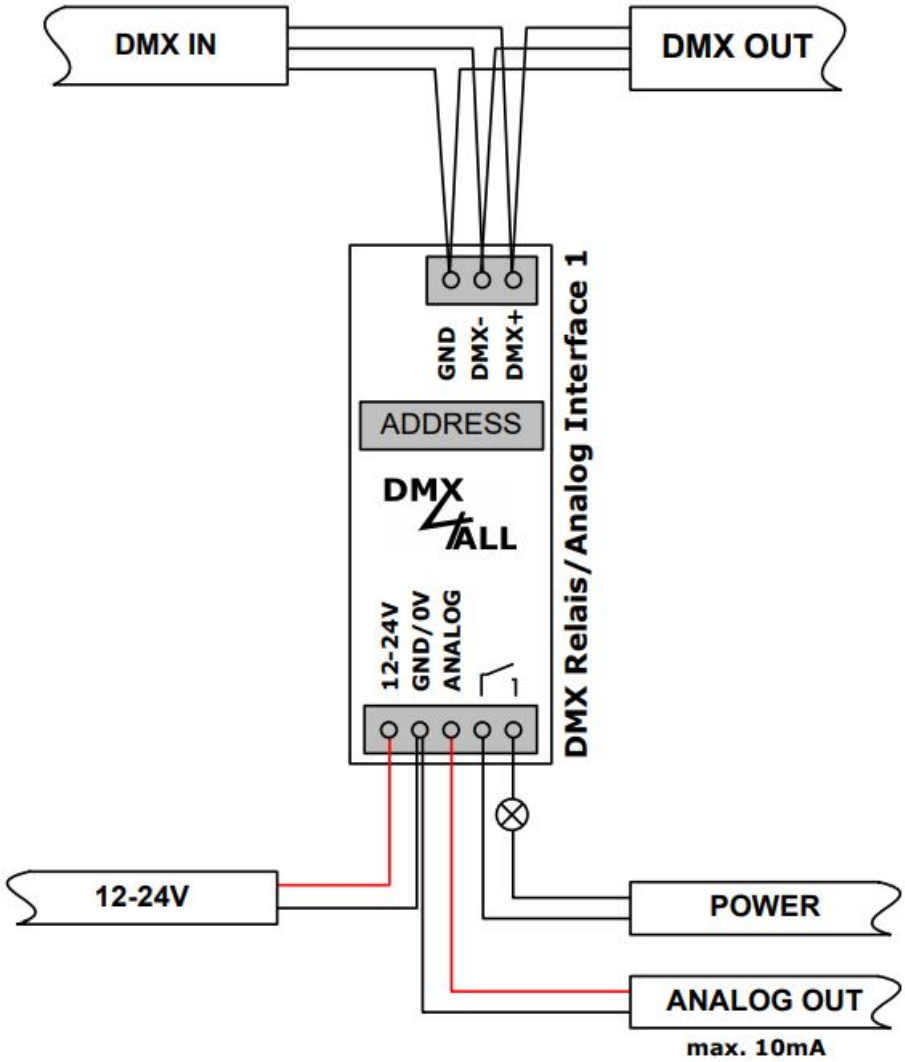
Max. DC load

The maximum current the switch contacts of the DMX RELAIS 8 INRUSH can switch is shown in the following graph depending on the switching voltage:



(Source: Data sheet RTS3T012)

Connection



Switch contact
AC: each max. 8A / 250V~
DC: According to the max. DC load graph
(165A@20ms peak switch-on current)

LED-Display-Codes

The integrated green LED is a multi functional display.

During the normal operation the LED lights permanently. In this case the device is working.

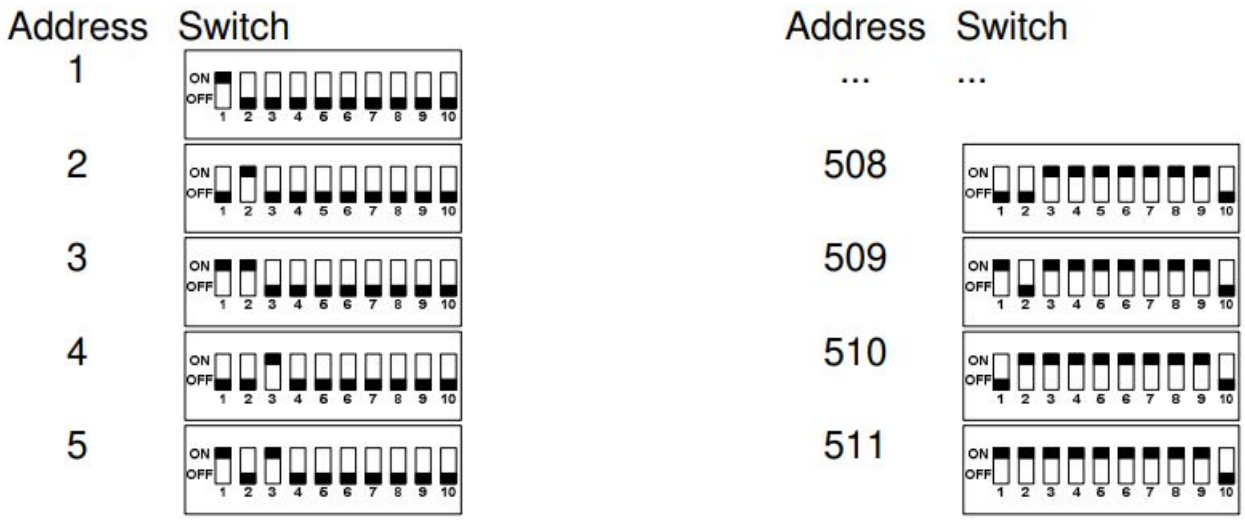
Furthermore, the LED shows the current status. In this case the LED lights up in short pitches and then is missing for longer time.

The number of the flashing lights is equal to the event number:

Status-Number	Error	Description
1	No DMX	There is no DMX-Signal deteced
2	Addressing error	Please check the adjusted DMX address
4	Settings stored	The settings are stored

DMX-Addressing

The start address is adjustable about switch 1-9. Thereby, switch 1 has the valency 20 (=1), switch 2 the valency 21 (=2) and so on, up to switch 9 with the valency 28 (=256).
The sum of the switches showing ON is equal to the start address.



Operation mode settings

The DMX Relais/Analog Interface 1 has several operation modes (MODE), which can be set per RDM or described as follows:

- Turn on the device
- Set switch 9 and 10 on OFF
- Set switch 10 on ON
- Adjust the operation mode via switch 1-8
- Set switch 9 on ON
- Set switch 10 on OFF
- The LED lights up 4x to confirm the takeover
- Adjust the DMX-address via switches 1-9

Switch 1 OFF: Relay + Analog
Relay and analog output are controlled with separate DMX channels
Relay switches at DMX-VALUE > 127
Switch 1 ON: Relay & Analog
Relay and analog output are controlled with common DMX channels
Relay switches at DMX-VALUE > 0
Switch 2 OFF: Analog output 8Bit (256 Steps)
Switch 2 ON: Analog output 10Bit (1024 Steps)
Switch 3 OFF: Analog output 0-10V
Switch 3 ON: Analog output 1-10V
Switch 8 OFF: DMX-HOLD not active
Switch 8 ON: DMX-HOLD active

Operation modes

Relay + Analog 8Bit 0-10V (Personality 1)

Relay and analog output are controlled each with one DMX channel.
The analog output has an 8 Bit resolution and an output voltage of 0-10V.

DMX Channel	DMX Value	Function
1	0-127	Relay OFF
	128-255	Relay ON
2	0-255	Analog output 0-10V

Relay + Analog 8Bit 1-10V (Personality 2)

Relay and analog output are controlled each with one DMX channel.
The analog output has an 8 Bit resolution and an output voltage of 1-10V.

DMX Channel	DMX Value	Function
1	0-127	Relay OFF
	128-255	Relay ON
2	0-255	Analog output 1-10V

Relay + Analog 10Bit 0-10V (Personality 3)

Relay and analog output are controlled each with one DMX channel.
The analog output has a 10 Bit resolution and an output voltage of 0-10V.

DMX Channel	DMX Value	Function
1	0-127	Relay OFF
	128-255	Relay ON
2	0-255	Analog output 0-10V HIGH
3	0-255	Analog output 0-10V LOW

Relay + Analog 10Bit 1-10V (Personality 4)

Relay and analog output are controlled each with one DMX channel.
The analog output has a 10 Bit resolution and an output voltage of 1-10V.

DMX Channel	DMX Value	Function
1	0-127	Relay OFF
	128-255	Relay ON
2	0-255	Analog output 1-10V HIGH
3	0-255	Analog output 1-10V LOW

Relay & Analog 8Bit 0-10V (Personality 5)

Relay and analog output are controlled with the same DMX channel.
The analog output has an 8 Bit resolution and an output voltage of 0-10V.

DMX Channel	DMX Value	Function
1	0	Relay OFF / Analog output 0V
	1-255	Relay ON / Analog output 0-10V

Relay & Analog 8Bit 1-10V (Personality 6)

Relay and analog output are controlled with the same DMX channel.
The analog output has an 8 Bit resolution and an output voltage of 1-10V.

DMX Channel	DMX Value	Function
1	0	Relay OFF / Analog output 1V
	1-255	Relay ON / Analog output 1-10V

Relay & Analog 10Bit 0-10V (Personality 7)

Relay and analog output are controlled with the same DMX channel.
The analog output has a 10 Bit resolution and an output voltage of 0-10V.

DMX Channel	DMX Value	Function		
1	0-255	Analog output 0-10V HIGH	DMX channel 1 and 2 = 0 DMX channel 1 or 2 > 0	⇨ Relay OFF ⇨ Relay ON
2	0-255	Analog output 0-10V LOW		

Relay & Analog 10Bit 1-10V (Personality 8)

Relay and analog output are controlled with the same DMX channel.
The analog output has a 10 Bit resolution and an output voltage of 1-10V.

DMX Channel	DMX Value	Function		
1	0-255	Analog output 1-10V HIGH	DMX channel 1 and 2 = 0 DMX channel 1 or 2 > 0	⇨ Relay OFF ⇨ Relay ON
2	0-255	Analog output 1-10V LOW		

DMX-FAIL Funktion

The DMX Relais / Analog Interface 1 has a DMX-FAIL Function which stores the last value in the case of a DMX signal loss (HOLD) or left the relay unchanged with a predefined value in its conditions.
The DMX-HOLD function can be activated via RDM or by switch 10 during the operation mode settings.

Switch 8 ON → DMX-HOLD active
Switch 8 OFF → DMX-HOLD not active

If HOLD is switched on, the last received DMX values are remained in case of a DMX signal failure.
If HOLD is switched off, the DMX values are replaced with a value set by RDM in case of a DMX signal failure. In the delivery state this value is 0, so that the relays switch off.

⚠ In case of a power failure the DMX values held with HOLD are discarded!
⚠ A value set by RDM is deleted when HOLD is selected. After switching off the HOLD function, the default value 0 is used.

RDM

(from hardware V1.2)

RDM is the short form for Remote Device Management.

As soon as the device is within the system, device-dependent settings 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 DMX Relais/Analog Interface 1 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
DMX_FAIL_MODE		✓	✓	E1.37
SERIAL_NUMBER[1)]			✓	PID: 0xD400
IDENTIFY_MODE[1)]		✓	✓	PID: 0xD402

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)

Factory Reset

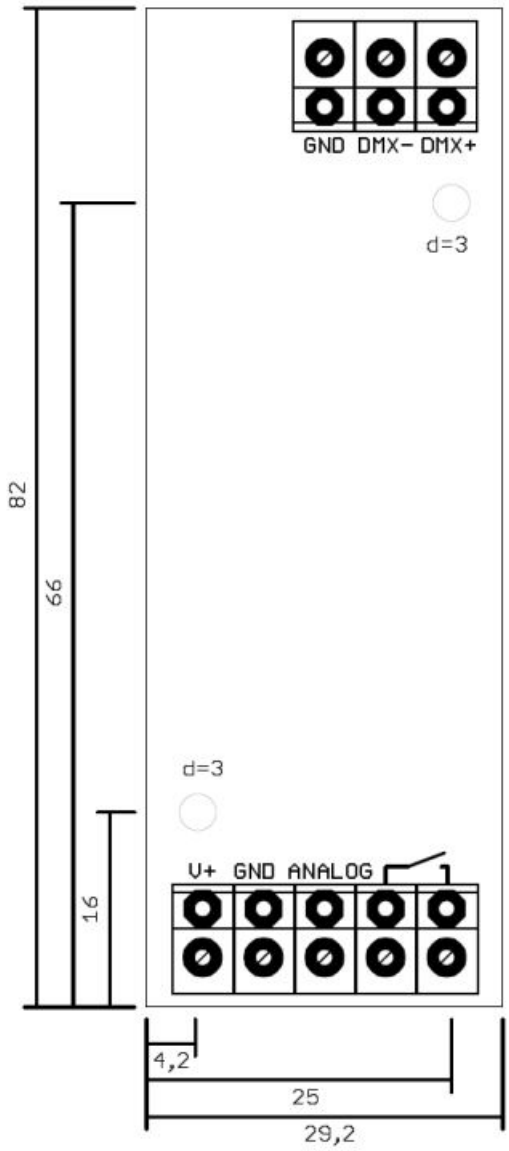
⚠ Before running the Factory Reset, read all steps carefully.

To reset the DMX Relais/Analog Interface 1 to delivery state, proceed as follows:

– Turn off device (turn off power supply !)
– Set DIP 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.

Dimensions



Accessory

Top-hat rail mounting 350

Power supply 12V

CE-Conformity

CE 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 no observance 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.

DMX4ALL®

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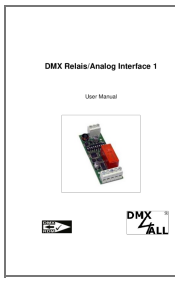
Last changes: 30.06.2022

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.

Documents / Resources



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