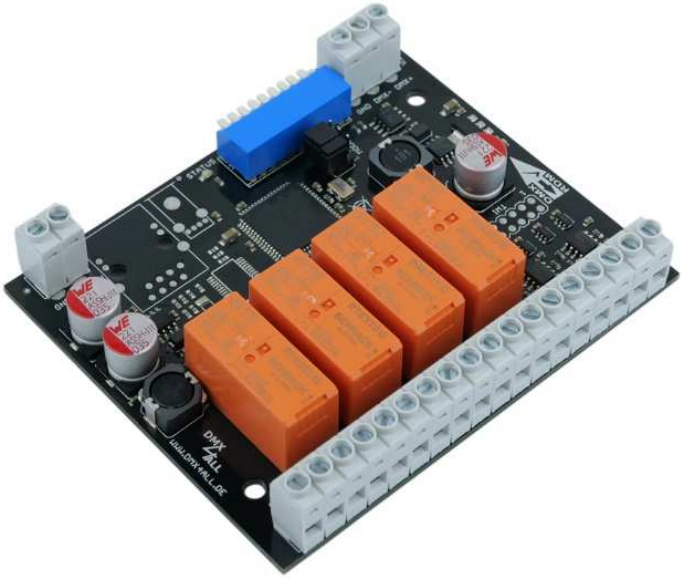
DMX Relais/Analog 4

User Manual



Contents

Important Notes

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

A firmware update is recommended after receipt the product. This is the only way to ensure that the device has the latest version. You can find the latest firmware on the homepage.

Description

The **DMX-Relais/Analog 4** 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 voltages from 12V up to 24V
The DMX-Relais/Analog Interface 4 runs with supply voltages from 12V up to 24V DC.

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.

LED-Status-Display
The LED status display shows DMX receipt.

RDM support
The DMX-Relais/Analog Interface 4 allows configuration by RDM via DMX.

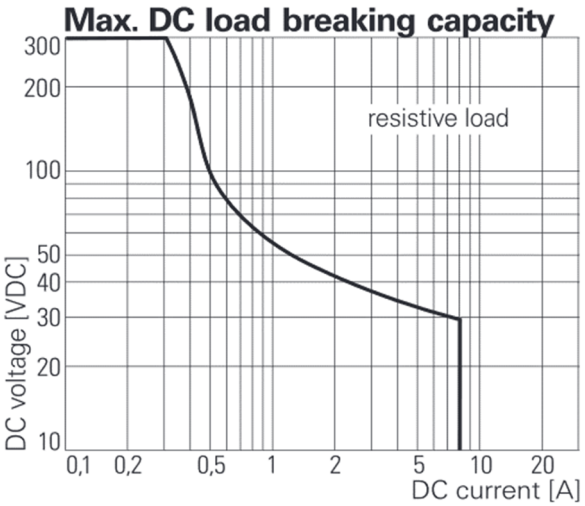
Top hat rail housing available
The top-hat rail housing 1050 is available as accessory for the DMX-Relais/Analog 4.

Data sheet

Power supply:	12-24V DC
Power consumption:	200mA@12V; 140mA@24V (without connected load at the analog output)
Protocol:	DMX512 RDM
Input:	4 up to 12 DMX channels
Output:	4x switch contacts (Closer / NO) 165A@20ms peak switch-on current AC: each max. 8A / 250V~ DC: According to the max. DC load graph 4x analog output 0-10V / 1-10V (max. 10mA)
DMX-FAIL:	Hold / 0-100%
Connections:	Screw terminals
Dimensions:	99mm x 82mm

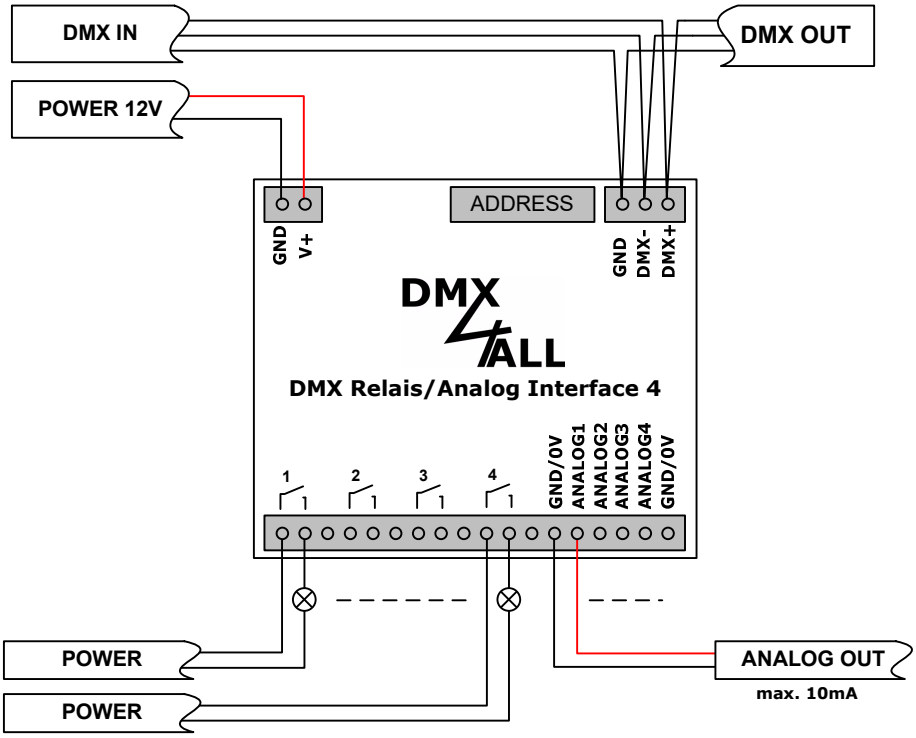
Max. DC load

The maximum current the switch contacts of the **DMX-Relais/Analog 4** 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 LED is a Multi-functional-display.

In the normal DMX-mode the LED flashes non-stop. In this case the device is working. Is the LED 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.

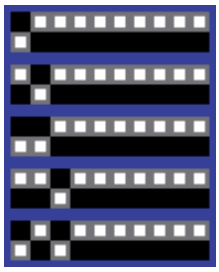
Error Status	Error	Description
1	No DMX	There is no DMX-signal at the entry
2	Address error	Please check the adjusted starting address

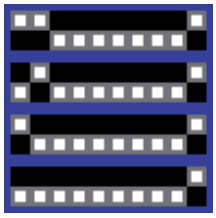
Addressing

The DMX-starting address is adjustable via switch 1to 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
1	
2	
3	
4	
5	

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

Relay switching threshold

The relays of the DMX Relay/Analog 4 are controlled via 4 individual DMX channels (separately from the analog outputs) or together with the analog outputs.

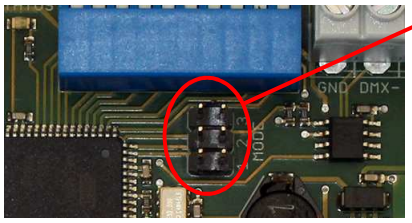
If the relays are controlled via separate DMX channels, they switch at a DMX value of 128 or greater.

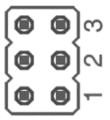
If the relays are controlled together with the analog outputs, they switch at a DMX value of 1 or greater.

Relays switch together with the analog outputs

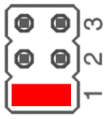
This mode does not use separate DMX channels for the relays. The relay switches as soon as the analog output is controlled with a DMX value greater than 0.

To activate this mode please set the MODE-Jumper 1:





Relay and Analog separate adjustable



Relay switches together with the analog output

In this case the DMX-channel assignment as follows:

DMX-channel configuration with 8 Bit:

Start address

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

DMX-channel configuration with10 Bit:

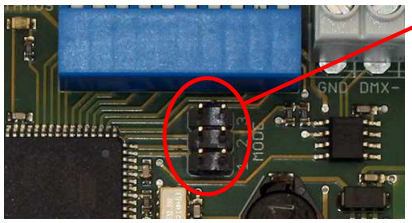
Start address

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

Resolve the adjusted analog outputs

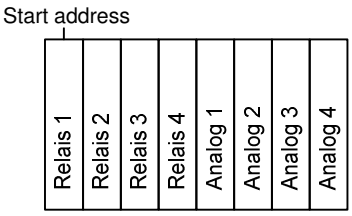
The analog output resolution will be adjusted via the MODE-Jumper 2.

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

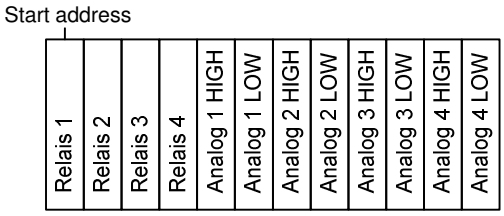


Depending on the resolutions setting the analog output there is needed per output one or two DMX-channels, as shown in the following picture.

DMX-channel configuration with 8 Bit:

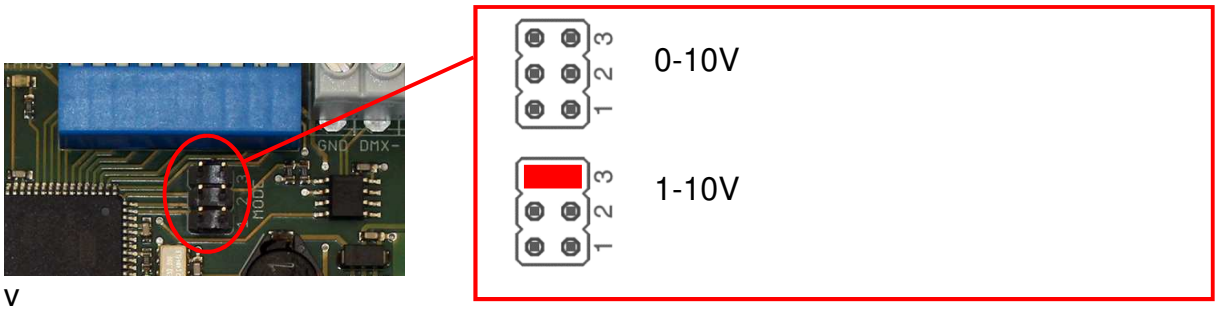


DMX-channel configuration with 10 Bit:



Setting the output voltage 0-10V / 1-10V

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



v

DMX-FAIL Function

The **DMX-Relais/Analog 4** 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!

RDM

(ab Hardware V1.2)

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 DMX Relais / Analog 4 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

Parameter ID	Discovery Command	SET Command	GET Command	ANSI/ PID
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)

IDENTIFY_MODE
PID: 0xD402

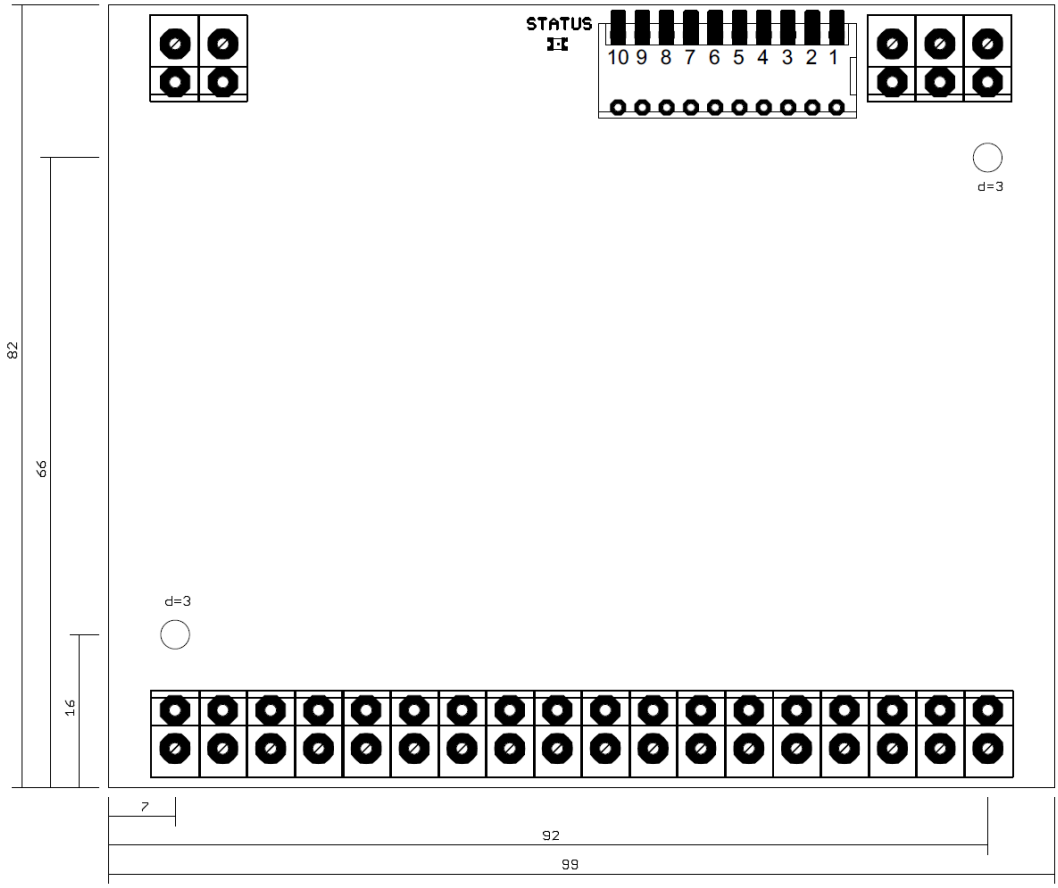
Stellt den Mode ein der mit IDENTIFY_DEVICE ausgeführt wird.

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

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

IDENTIFY_MODE_ID	Funktion
0	FULL Identify All relays switch ON / OFF simultaneously and the status LED flashes
1	LOUD Identify The relays switch ON / OFF one after the other and the status LED flashes
2	QUIET Identify The relays do not switch, only the status LED flashes

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 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 GmbH
Reiterweg 2A
D-44869 Bochum
Germany

Last changes: 13.12.2024