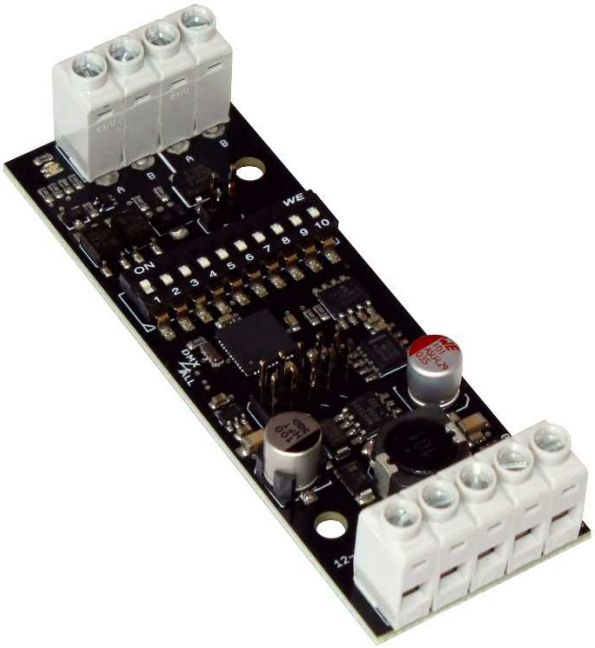
# DMX-IEC62386 Gateway

User Manual



# Content

# Important Notes

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

A Firmware Update is recommended after receiving the item. This is the only way to ensure that the device has the latest version. The latest firmware is available on the homepage.

# Description

The DMX-IEC62386 gateway is a bidirectional protocol converter combining two devices in one with its compact design. Depending on the individual application, the DMX-IEC62386 gateway, using a 2-way communication, is able to convert both, the DMX signal into IEC62386 control commands and IEC62386 control commands into DMX values.

Especially, the reduced size and the “on-board” BUS power supply makes the DMX-IEC62386 gateway a space-saving and price-optimized all-rounder. There is no need for an external power supply, as the module has an own slot for the specially developed BUS power supply.

Overall, the DMX-IEC62386 gateway is a bidirectional protocol converter with an integrated BUS power supply thanks to its clever design, combined with many useful functions that are parameterized exclusively in a decentralized manner via remote device management.

**Several communicational directions**
The DMX-IEC62386 Gateway can be run as IEC62386-Output device (DMX as input) or DMX-Output device (IEC62386 as input).

**Attachable BUS-Power Supply**
An optional available BUS power supply can be easily plugged on. So, an external power supply is not always necessary, resulting in a very compact and space-saving overall solution.

**RDM Support[1]**
The DMX-IEC62386 Gateway allows a RDM configuration via DMX.

**Supports single-devices and /or device-groups or Broadcast[1]**
The protocol converter can send DMX-Signals to IEC62386-Bus-Control-Commands via broadcast or send focused to single devices or groups.

**Settable DMX-Addresses[1]**
For each device or group an own DMX-Starting address can be assigned.

**Individual DMX-FAIL Action[1]**
In the case of an DMX-Signal fail for each device or each group an individual behavior can be determined.

**Configurable Working Mode[1]**
The working mode defines how to call the connected device or group. The options ARC-Power / %-Power / Color Temperature / RGB / RGB+W / RGB+WA / RGB+WAF are available.

**OFF as ARC LEVEL or OFF COMMAND[1]**
With a dim value of 0% (OFF) the behavior between send an OFF-Command and send an ARC-Level is adjustable.

**BUS-Command Refresh[1]**
An automatic Refresh of the BUS-Command can be activated and is also executed if no DMX signal is present. The execution interval can be change between 10s and 600s.

**Lockable Device Settings[1]**
The RDM parameters Lock Pin and Lock State allow or prohibit changing saved RDM parameters to prevent unauthorized changes.

**64 Devices in DMX-Values[2]**
For all 64 IEC62386-Devices the brightness value is outputted at one DMX-Channel.

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

**RGB-LED-Display**
A RGB-LED shows the current device status clearly.

**Firmware-Update-Function**
To us future functions the DMX-IEC62386 Gateway offers the Firmware-Update-Function via RDM.

**Top hat rail housing available**
Suitable for the DMX-IEC62386 the DIN rail housing 350 or DIN rail housing 350 flat is available as accessory. Together with the top-hat rail housing 350 or 350 flat, the interface is optimally suited for control cabinet installation.

[1] within Working Mode DMX ➔ IEC62386
[2] within Working Mode IEC62386 ➔ DMX

# Data Sheet

| | |
|---|---|
| **Power supply:** | 12-48V DC<br>(50mA@12V / 30mA@24V / 15mA@48V) |
| **Protocol:** | DMX512 / RDM<br>IEC62386 |
| **Communication direction:** | DMX ➔ IEC62386<br>IEC62386 ➔ DMX |
| **Quantity Devices/Groups:** | Up to a total of 64 devices/groups as SubDevice or Broadcast |
| **Parameter per SubDevice:** | DMX-Start address<br>Personality (Device 1-64 or Group 1-16)<br>DMX-Fail-Mode (Hold / 0-100%)<br>Working Mode |
| **Working Mode:** | Brightness level (%)<br>Brightness White CCT (DT8)<br>Tunable level (arc power)<br>RGB (RGBWAF DT8)<br>RGB+W (RGBWAF DT8)<br>RGB+WA (RGBWAF DT8)<br>RGB+WAF (RGBWAF DT8) |
| **DMX-FAIL:** | Hold / 0-100% |
| **LED-Display:** | RGB-LED |
| **Internal BUS power supply:** | attachable, available as accessory |
| **Connection:** | Screw terminals |
| **Dimension:** | 29,2mm x 82mm |

# Content

1x DMX-IEC62386 Gateway

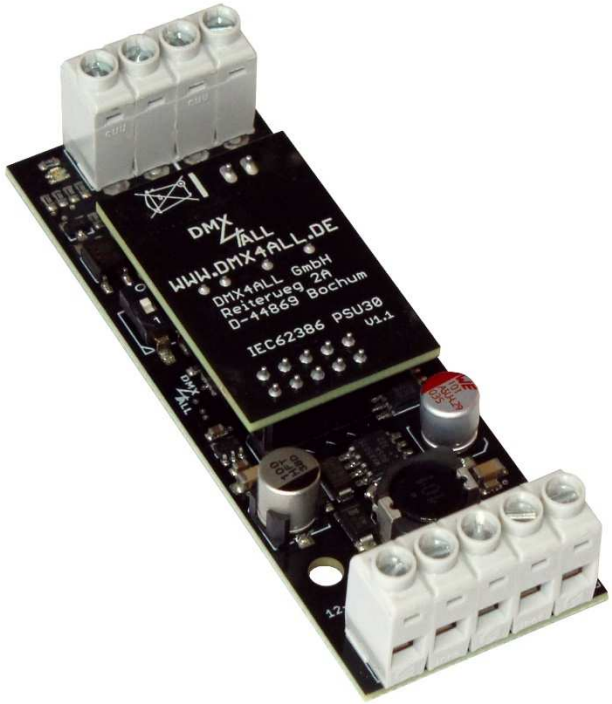
1x Quick guide german / english

# Internal BUS Power Supply

An attachable BUS-Power supply is available for the **DMX-IEC62386 Gateway.**

The BUS-Power supply PSU30 allows to supply up to 30 BUS participants.


Especially, the reduced size and the “on-board” BUS-Power supply make the DMX-IEC62386 gateway a space-saving and price-optimized all-rounder. An external power supply is not necessary, as the module has an own slot for the specially developed BUS power supply.



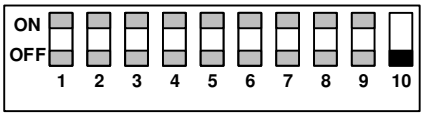

When the BUS-Power supply is connected, the switches on the DMX-IEC62386 gateway can no longer be accessed. Please define switch settings must be made **before** connecting the BUS power supply!

# Communication directions

The DMX-IEC62386 Gateway can be run as IEC62386-Output device (DMX for input) or DMX-Output device (IEC62386 for input).

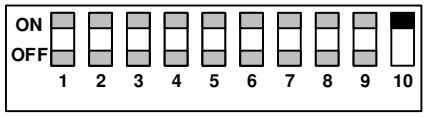
The communicational direction is selectable via switch 10:

DMX ➔ IEC62386




Switch 10 = OFF

IEC62386 ➔ DMX




Switch 10 = ON

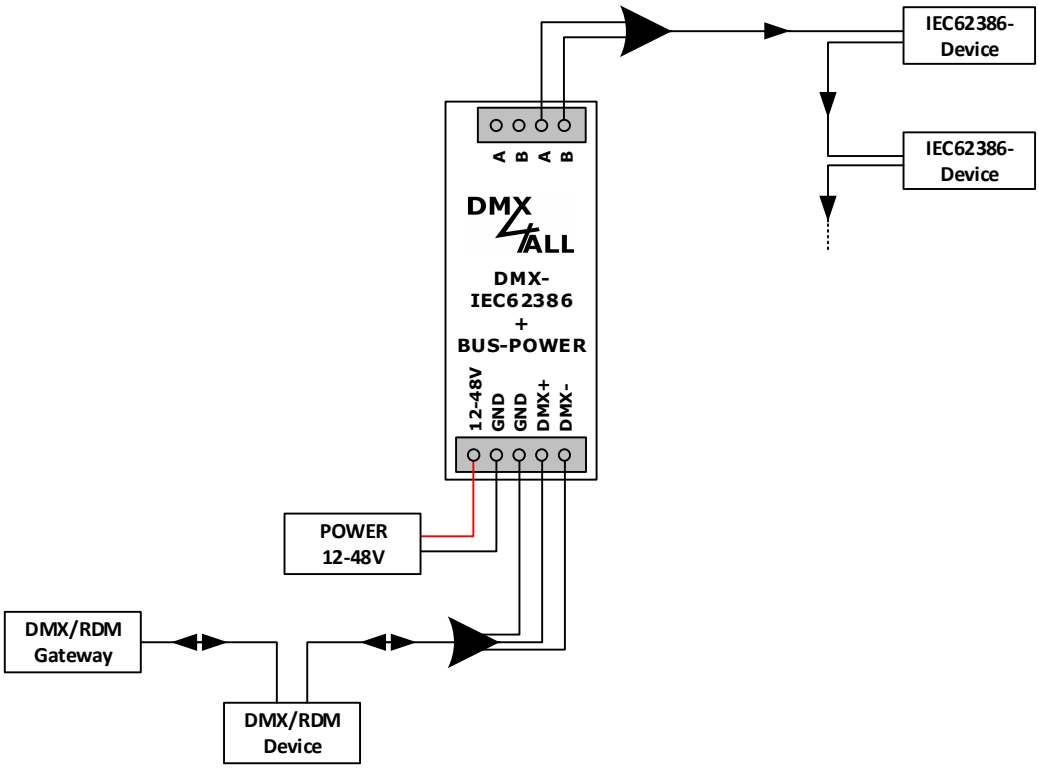
## *DMX ➔ IEC62386*

Within the communicational direction DMX to IEC62386 the DMX connection must be configured as input and the IEC62386 connection as output.

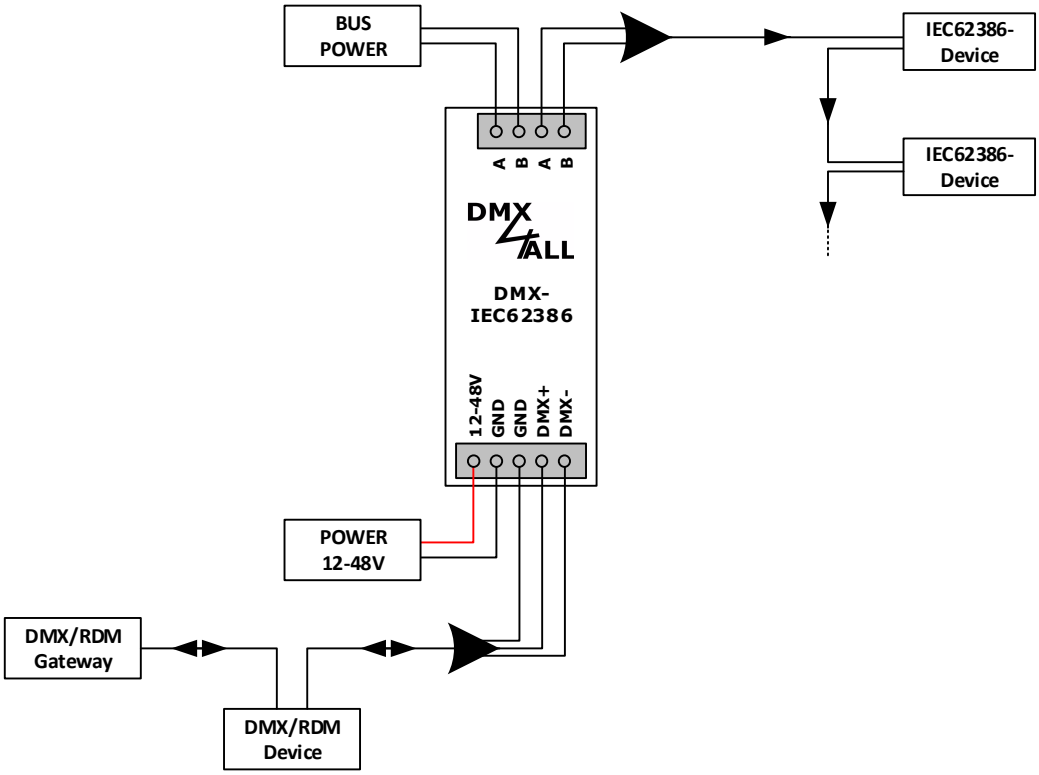
An applied DMX signal controls devices connected to the IEC62386 bus.

⚠ The BUS participants must be addressed with a suitable addressing tool! The DMX-IEC62386 gateway doesn't address the connected bus participants.

## *Connection with plugged on BUS-Power Supply*



## *Connections with external BUS-Power Supply*



## *RGB-LED-Display*

The **DMX-IEC62386** has a RGB-LED-Display, which shows the device status.

| | |
|---|---|
| Off | Power supply not connected<br>Display-Level is 0 |
| RED is flashing | No DMX-Input signal |
| RED flashing<br>(in very short pitches) | BUS-Data are being sent |
| GREEN lighting up | The device is working |
| BLUE flashing<br>(in very short pitches) | RDM-Data are exchanged |
| PINK lighting up | Firmware-Update is being checked |
| BLUE lighting up | Firmware-Update is proceeding |
| RED - GREEN - BLUE | Identify is proceeding |

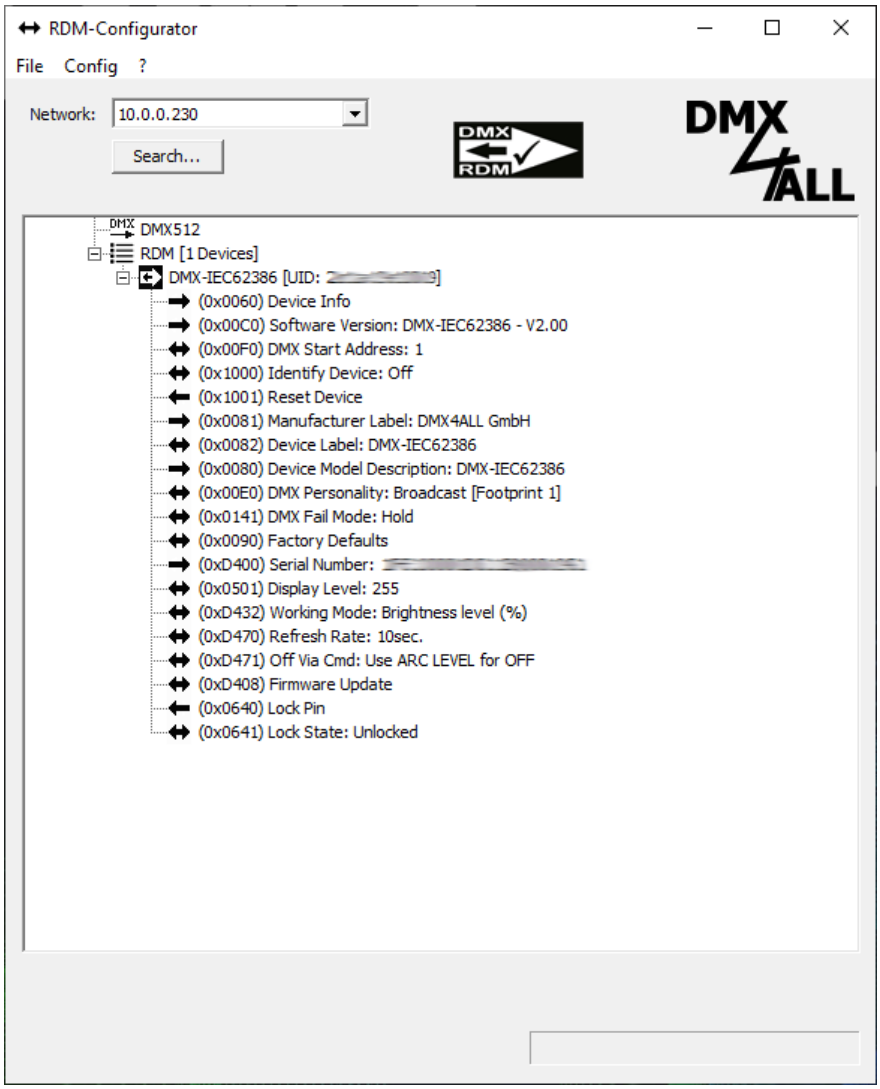
**Table 1: Device status DMX ➔ IEC62386**

## *Configuration*

The **DMX-IEC62386** Gateway must be configured via RDM within the communicational direction DMX➔IEC62386.

- Connect the DMX-IEC62386 Gateway with a RDM Gateway
- Use some RDM-Software, to set the parameter

For the configuration we recommend the free RDM-Configurator in connection with any RDM Gateway, e.g. DMX-Stage-Profi RDM.



## *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 occur remotely via RDM command due to the uniquely assigned UID. A direct access to the device is not necessary.

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 |
| 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 |
| SENSOR_DEFINITION | | | ✓ | E1.20 |
| SENSOR_VALUE | | | ✓ | E1.20 |
| LOCK_STATE | | ✓ | ✓ | E1.37 |
| LOCK_STATE_DESCRIPTION | | | ✓ | E1.37 |
| LOCK_PIN | | ✓ | | E1.37 |

**Table 2: Standard RDM Parameter**

| Parameter ID | Discovery Command | SET Command | GET Command | ANSI/ PID |
|---|---|---|---|---|
| SERIAL_NUMBER | | | ✓ | PID: 0xD400 |
| D4A_FIRMWARE_UPDATE | | ✓ | | PID: 0xD408 |
| D4A_WORKING_MODE | | ✓ | ✓ | PID: 0xD432 |
| D4A_REFRESH_RATE | | ✓ | ✓ | PID: 0xD470 |
| D4A_OFF_VIA_CMD | | ✓ | ✓ | PID: 0xD471 |

**Table 3: Depends on manufacturer RDM-Control Commands (MSC – Manufacturer Specific Type)**

Depends on manufacturer 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)

## *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 | Description |
|---|---|---|
| 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.

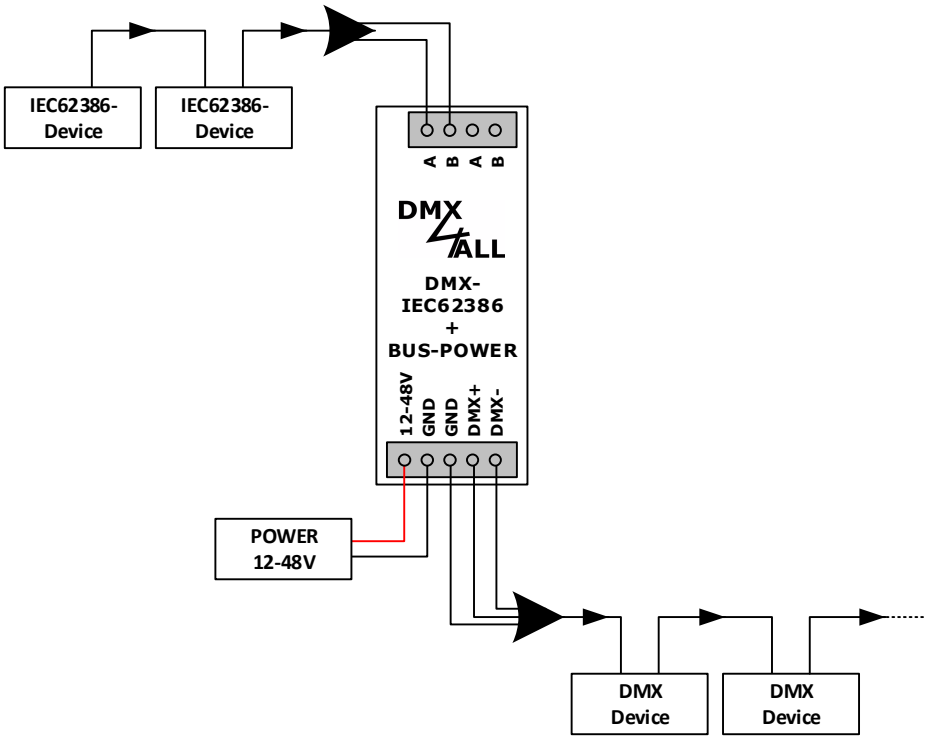
The RDM parameters Identify Device, Reset Device and Display Level can always be executed, regardless of the lock state.

## *IEC62386 ➔ DMX*

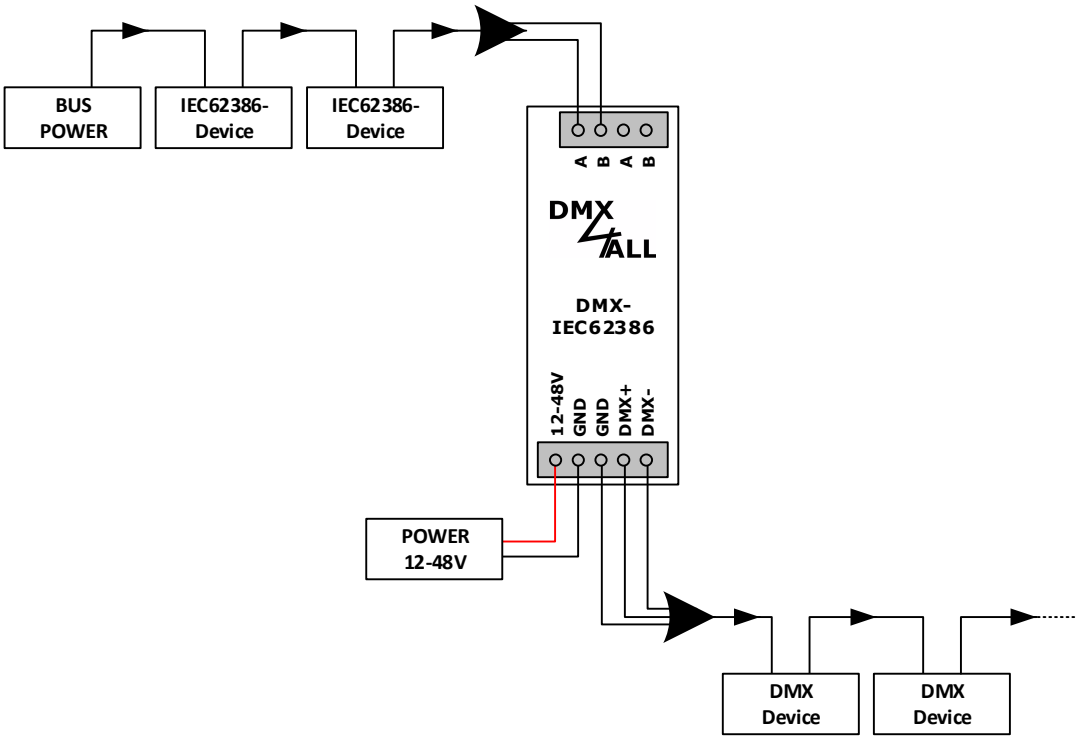
Within the communicational direction IEC62386 to DMX, the DMX connection is to be configured as output and the IEC62386-Connection must be configured as input.

Incoming IEC62386-BUS control commands are converted into DMX-Values and outputted via DMX.

## *Connection with plugged on BUS-Power Supply*



## *Connection with external BUS-Power Supply*



## *RGB-LED-Display*

The **DMX-IEC62386 Gateway** has a RGB-LED-Display, which shows the current device status.

| | |
|---|---|
| Off | Power supply not connected |
| RED flashing (in very short pitches) | BUS-Data are received |
| GREEN flashing | DMX-Data are outputted |

**Table 4: Device status IEC62386 ➔ DMX**

## *Configuration*

The **DMX-IEC62386 Gateway** can't be further configured in the IEC62386 ➔ DMX communication direction.

All 64 incoming BUS addresses are output to 64 individual DMX channels.

No BUS addressing can be performed. The incoming BUS addresses 0 to 63 are outputted to the DMX channels 1 to 64 permanently.

| BUS ADDR | | DMX CHANNEL | BUS ADDR | | DMX CHANNEL | BUS ADDR | | DMX CHANNEL | BUS ADDR | | DMX CHANNEL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | ⇨ | 1 | 16 | ⇨ | 17 | 32 | ⇨ | 33 | 48 | ⇨ | 49 |
| 1 | ⇨ | 2 | 17 | ⇨ | 18 | 33 | ⇨ | 34 | 49 | ⇨ | 50 |
| 2 | ⇨ | 3 | 18 | ⇨ | 19 | 34 | ⇨ | 35 | 50 | ⇨ | 51 |
| 3 | ⇨ | 4 | 19 | ⇨ | 20 | 35 | ⇨ | 36 | 51 | ⇨ | 52 |
| 4 | ⇨ | 5 | 20 | ⇨ | 21 | 36 | ⇨ | 37 | 52 | ⇨ | 53 |
| 5 | ⇨ | 6 | 21 | ⇨ | 22 | 37 | ⇨ | 38 | 53 | ⇨ | 54 |
| 6 | ⇨ | 7 | 22 | ⇨ | 23 | 38 | ⇨ | 39 | 54 | ⇨ | 55 |
| 7 | ⇨ | 8 | 23 | ⇨ | 24 | 39 | ⇨ | 40 | 55 | ⇨ | 56 |
| 8 | ⇨ | 9 | 24 | ⇨ | 25 | 40 | ⇨ | 41 | 56 | ⇨ | 57 |
| 9 | ⇨ | 10 | 25 | ⇨ | 26 | 41 | ⇨ | 42 | 57 | ⇨ | 58 |
| 10 | ⇨ | 11 | 26 | ⇨ | 27 | 42 | ⇨ | 43 | 58 | ⇨ | 59 |
| 11 | ⇨ | 12 | 27 | ⇨ | 28 | 43 | ⇨ | 44 | 59 | ⇨ | 60 |
| 12 | ⇨ | 13 | 28 | ⇨ | 29 | 44 | ⇨ | 45 | 60 | ⇨ | 61 |
| 13 | ⇨ | 14 | 29 | ⇨ | 30 | 45 | ⇨ | 46 | 61 | ⇨ | 62 |
| 14 | ⇨ | 15 | 30 | ⇨ | 31 | 46 | ⇨ | 47 | 62 | ⇨ | 63 |
| 15 | ⇨ | 16 | 31 | ⇨ | 32 | 47 | ⇨ | 48 | 63 | ⇨ | 64 |

The following commands are implemented in the DMX-IEC62386 Gateway:

- DIRECT ARC POWER CONTROL

In case of a power failure, the received values are not saved !

# Firmware-Update

The **DMX-IEC62386 Gateway** has an update function, which allows transferring future firmware versions. It will be processed via RDM.

If an error occurs during the update, this process can be repeated at any time.

To make the **Firmware-Update via RDM**, proceed as follows:

- Connect the device to an ArtNet-DMX/RDM Gateway
- Start the software RDM-Configurator
- Select the RDM-Parameter *Firmware-Update*
- Select *SET* parameter or double-click to parameter
- Select Firmware-File (.bin) and confirm
- Wait, until the update has finished

# Factory Reset

Before running the Factory Reset, read all steps carefully.

To reset the **DMX-IEC62386 Gateway** to delivery state, proceed as follows via RDM the FACTORY_DEFAULTS parameter.

Alternatively, please proceed as follows:

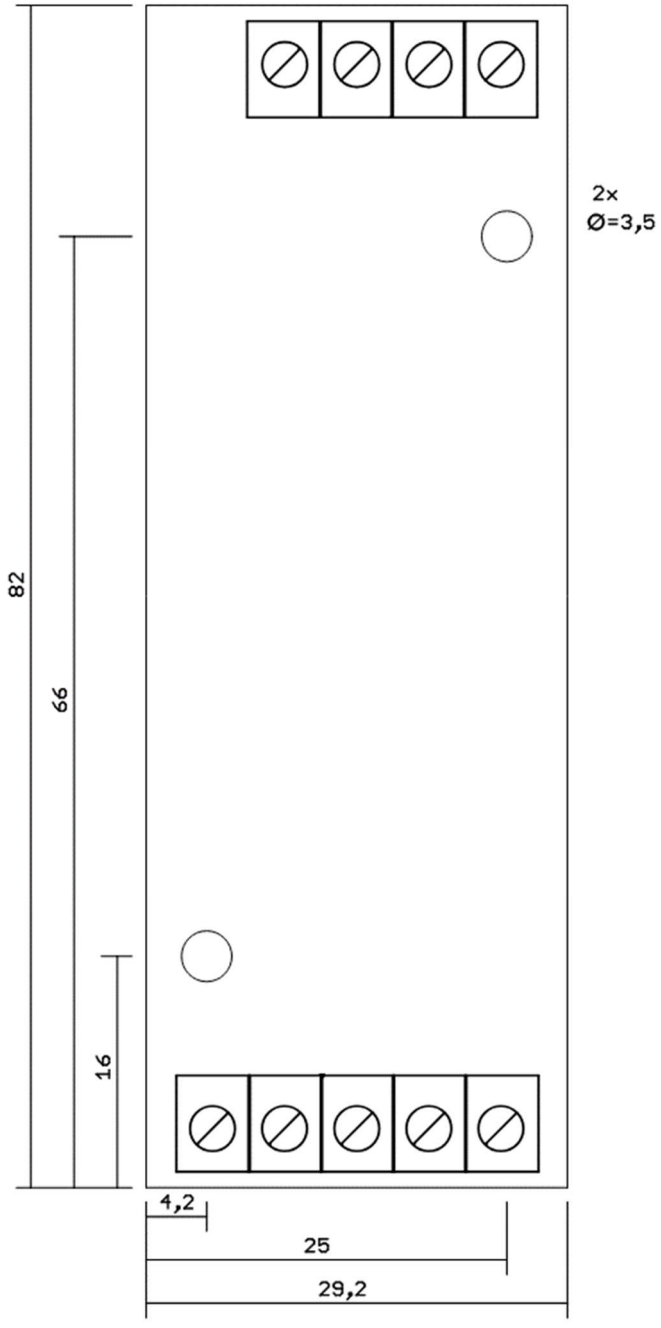
- Turn off device (disconnect power supply !)
- Set all DIP switch 1 up to 10 to ON
- Turn on device (connect power supply)
- The LED lights up 20x during ca. 3 seconds

  ➔ 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 device (disconnect 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

# Accessory

### Top hat rail housing 350

### Top hat rail housing 350flat

### Wall mount for top-hat rail enclosure

### BUS-Power Supply


### Power supply 12V

# Revision History

Firmware V1.00
- First Release

## 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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