

SMARTgateway 2

DALI / DMX / 0-10 V / INPUT

Article No: 114003-DR

The Nuvolight SMARTgateway 2 has several inputs and outputs for connecting to the Nuvolight control system. It is integrated into the existing network via the network interface.

The device has a DMX universe with two outputs and eight potential-free contact inputs. In addition, a DALI bus can be operated, which is also supplied with power via the SMARTgateway.

It is operated via three navigation buttons and four illuminated colored control buttons (action buttons). These have variable functions such as bus control or executing scenes.

The central display shows all important information and helps with operation.



Technical data

Dimensions (W x H x D)	87 x 107 x 77 mm (Width: 5TE)
Supply voltage	19 - 24 VDC
Power consumption	130 mA + 250 mA (DALI) + 150 mA (DMX)
Fastening	DIN rail mounting
Operating temperatur	-25° C ... +60° C
Humidity	0% ... 85% rF not condensing
Weight	150 g
Color	white
Inputs	8 x potential-free closing contacts
Outputs	1 x DALI, 2 x DMX (shared universe), 2 x 0-10 V (from version 2.1)
Network connection	100 Mbit/s ethernet port, WLAN IEEE 802.11b/g/n
Display	LCD 240x240 pixels (illuminated in color)
Operation	3 x Navigation (Button), 4 x Action Button (Button illuminated RGB), 1 x Reset (Button)
Connection	Screw terminals 1,5 mm ² flex
Protection class	IP20

Installation

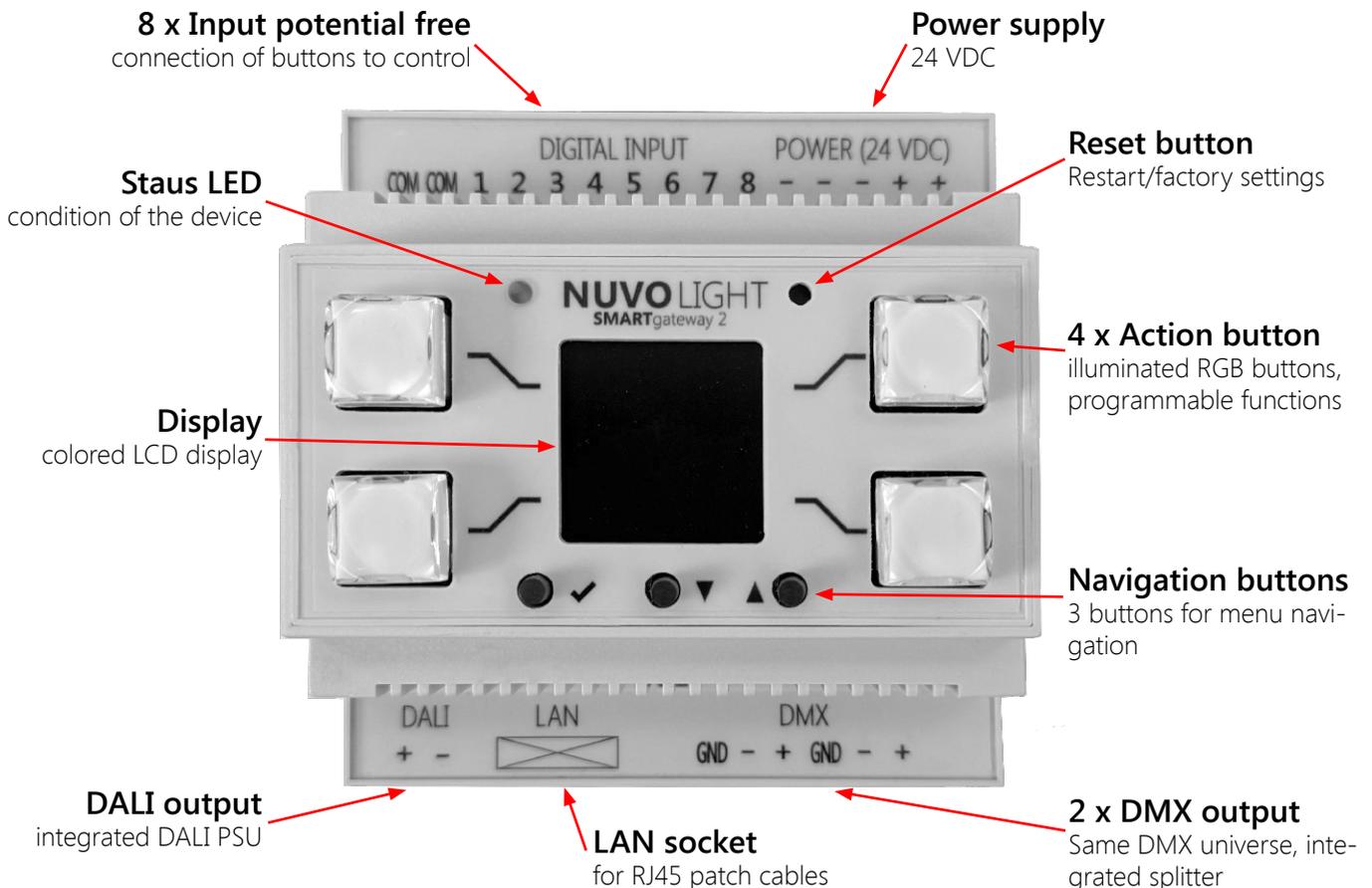
1. Place SMARTgateway on the DIN rail
2. Connect the required inputs and outputs:
 - DALI bus - SMARTgateway also functions as a bus power supply
 - DMX Bus - A shared universe on two separate outputs
 - Inputs - closing contacts on digital 1-8 & reference to COM (see connection examples on page 14)
3. Connect network cable (RJ45)
4. Connect power supply (24 VDC)
5. Activate power supply

Wiring instructions

DALI-Bus: Two wires 0,8 mm² for up to 100 m, 1,5 mm² for up to 300 m
Reversepolarity protected bus

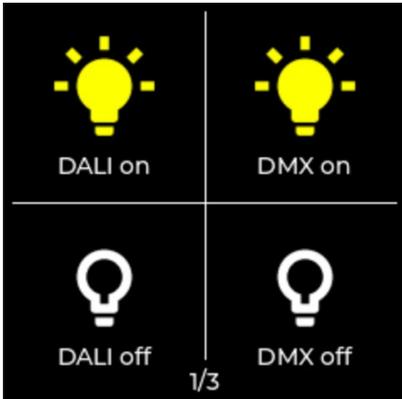
DMX-Bus: Two wires with shielding (e.g. CAT7 or similar)
Wire cross section 0,6 mm² to 0,8 mm²
Termination with 120 Ohm resistor
Cable from DMX luminaire to DMX luminaire (daisy chain)

Connections and controls



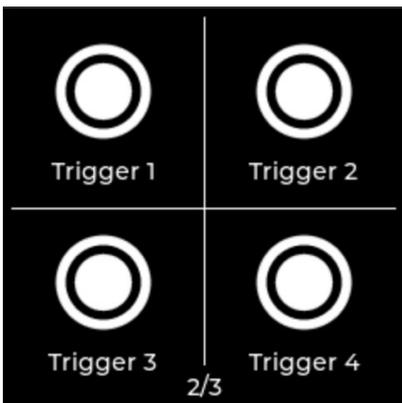
Operation

After connecting the power supply to the SMARTgateway (see previous page), the device is ready for use. The *display* shows actions that can be executed using the four corresponding *action buttons* on the side. The two *navigation buttons* (up and down) can be used to scroll through several pages with its different actions:



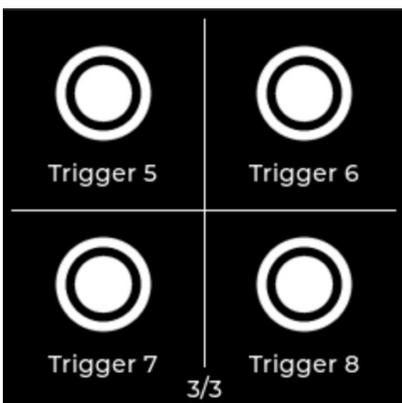
The first page shows functions to switch the DMX and DALI outputs on or off:

- **DALI on:** All connected lights are set to 100% via DALI broadcast
- **DALI off:** All connected lights are set to 0% via DALI broadcast
- **DMX on:** All 512 channels are set to value 255 (=100%)
- **DMX off:** All 512 channels are set to value 0 (=0%)



Pages 2 and 3 show functions to trigger the digital inputs:

- **Trigger 1:** A brief closing and opening of input 1 is simulated
- **Trigger 2:** A brief closing and opening of input 2 is simulated
- **Trigger 3:** A brief closing and opening of input 3 is simulated
- **Trigger 4:** A brief closing and opening of input 4 is simulated
- **Trigger 5:** A brief closing and opening of input 5 is simulated
- **Trigger 6:** A brief closing and opening of input 6 is simulated
- **Trigger 7:** A brief closing and opening of input 7 is simulated
- **Trigger 8:** A brief closing and opening of input 8 is simulated



If there are scenes stored for inputs 1 - 8, they will be executed (see page 8: *SEQUENCES*)

By pressing the *enter button* (the first of the three navigation buttons) a small information window appears on the display. This includes the serial number and the firmware used. The information window disappears automatically after a short time.

The *reset button* can only be accessed with a thin, long object (e.g. a thin screwdriver). A short press will restart the SMARTgateway and any unsaved changes will be lost.

Configuration of the SMARTgateway via browser

The SMARTgateway provides a web interface for configuration and control. You can achieve this through the following steps:

1. Supply power to the SMARTgateway. The SMARTgateway now provides its own WLAN with its serial number in the name for a configurable period of time
2. Connect your computer, tablet or mobile phone to this WiFi:

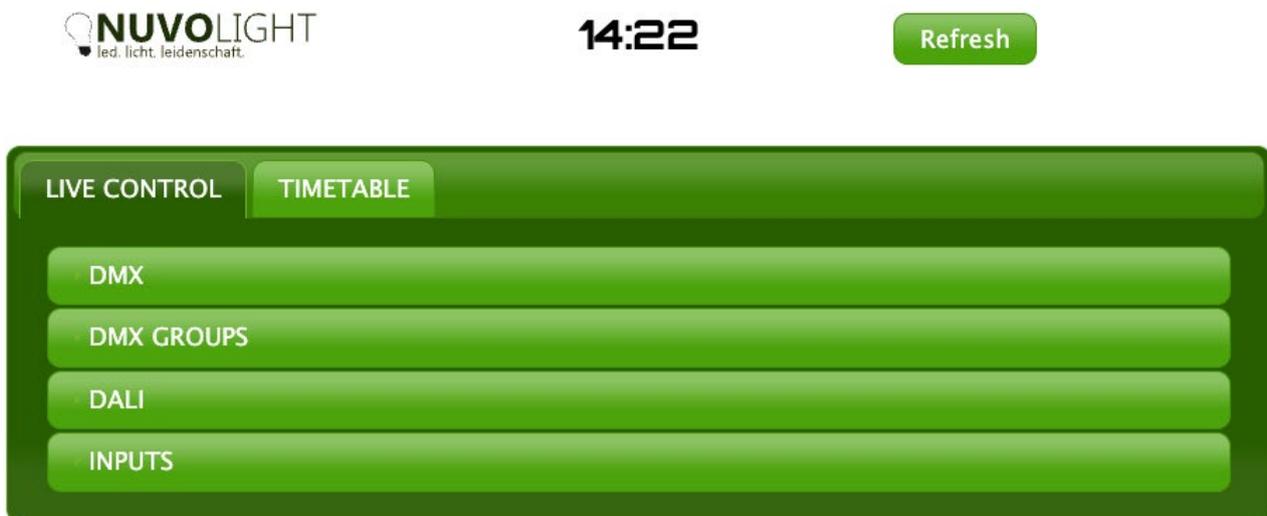
Network name: SMARTgw_1234567890AB

Password: nuvolight123

3. After a successful connection, type the following address into your browser:

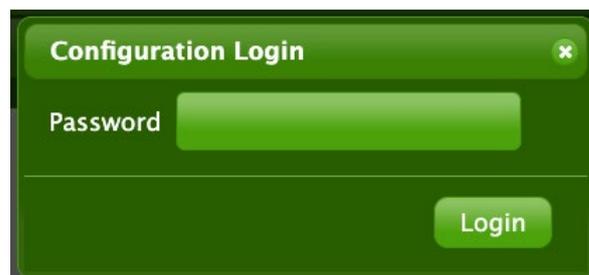
http://192.168.4.1

The following website is displayed:



Advanced mode

To unlock the advanced mode, you must click on the logo at the top left several times. A password entry then appears:



Enter **nuvolight** here and all the functions of the SMARTgateway are available to you.

Tabs menu

All areas of the SMARTgateway are described below:

1. *LIVE CONTROL*
2. *CONFIG*
3. *SEQUENCES*
4. *TIMETABLE*

1. LIVE CONTROL

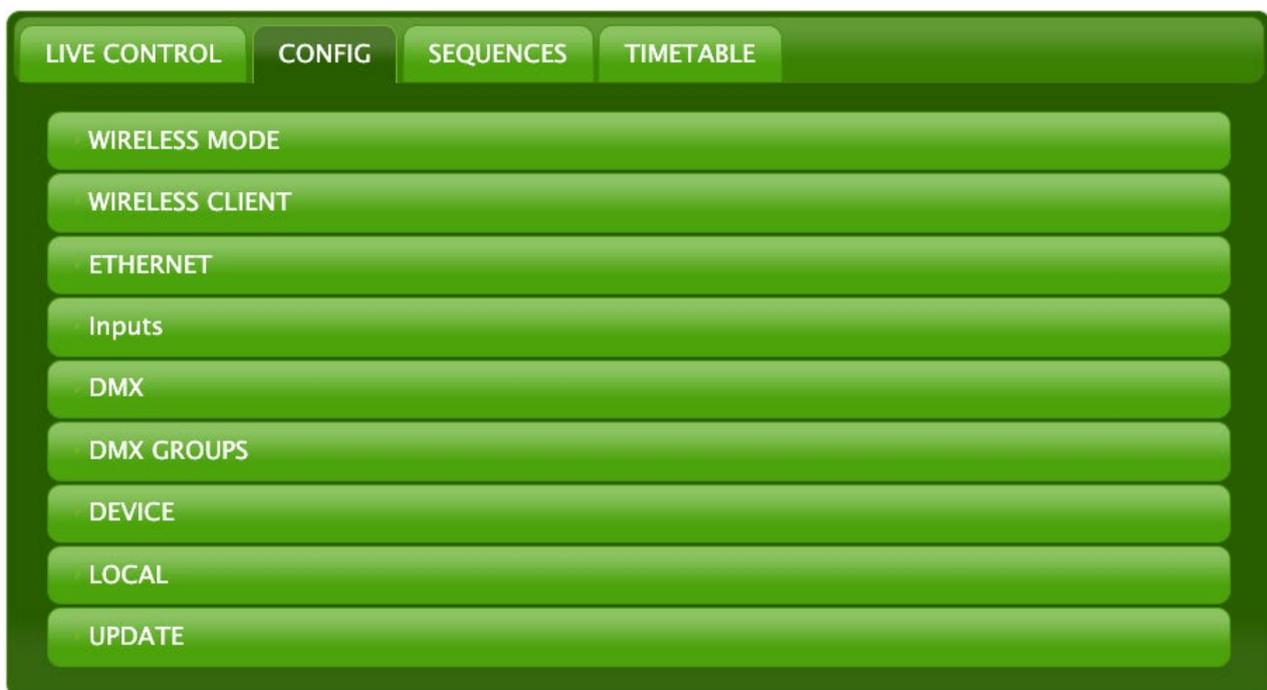
The following submenus are available for live control of the outputs and inputs:

Submenu	Setting	Function
DMX	1-512 DMX channels Brightness values from 0-255	Current values of the DMX channels Slider to adjust the values of each DMX channel All channels can also be set to 0% or 100% at a time
DALI	Broadcast, DALI groups & fixtures Brightness values from 0-255	Current values of the DALI channels and groups Slider to adjust the brightness values of the connected DALI devices
INPUTS	Display	Shows the potential-free inputs: black circle: input open white circle: input closed
Save As Boot Value	Button	Saves the current values of the outputs as the default setting when switching on the SMARTgateway

2. CONFIG

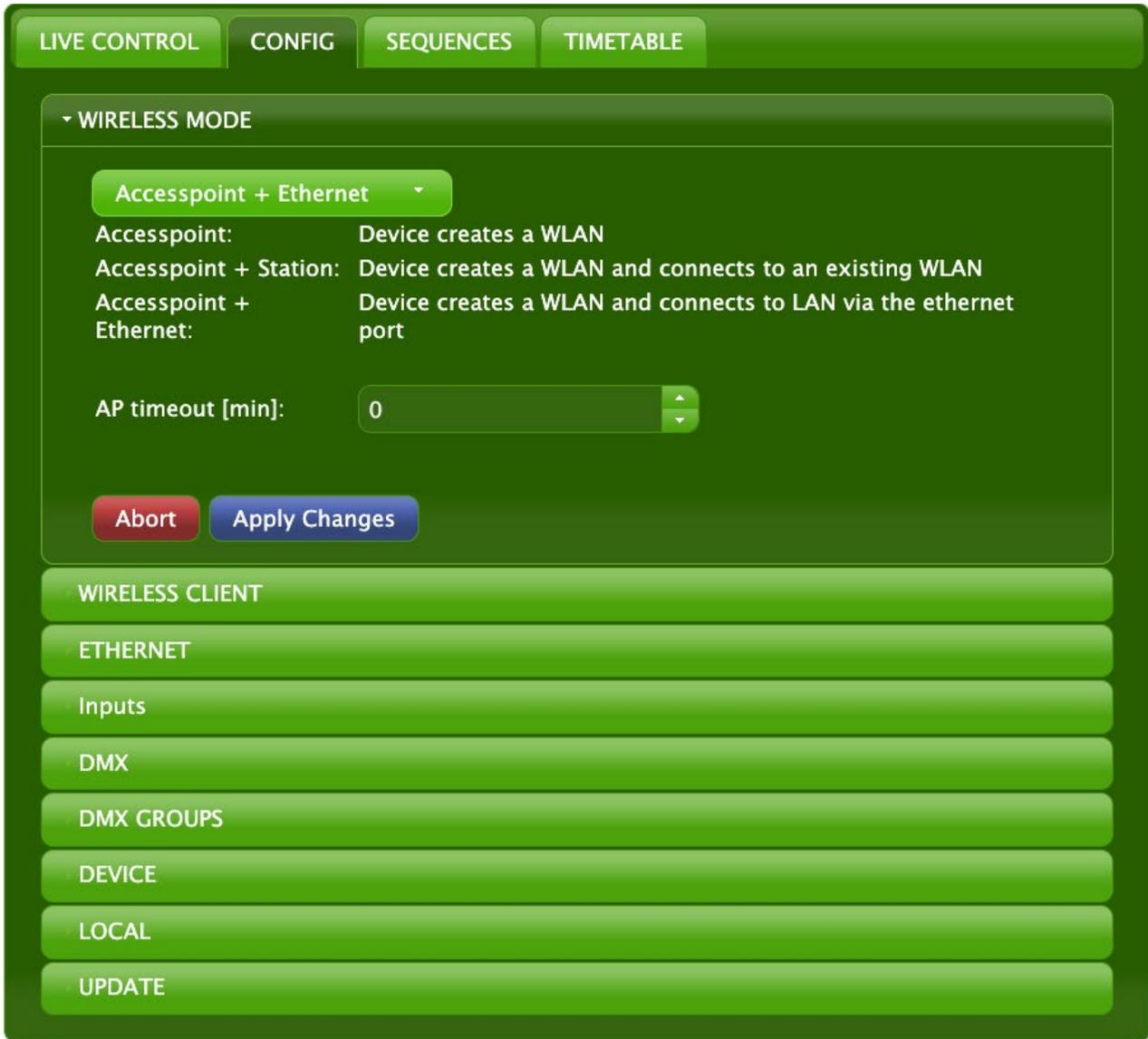
In the *CONFIG* tab, basic SMARTgateway settings can be made such as network settings, DMX settings, firmware updates or saving the scenes as a text file.

The table on the following page provides a detailed overview of the individual functions.



Features

Submenu	Setting	Function
WIRELESS MODE	Modus	<p>Accesspoint: The SMARTgateway offers its own WLAN so that you can connect to it securely via a browser interface</p> <p>Accesspoint + Station: The SMARTgateway offers its own WLAN and connects to another existing WLAN so that it can be controlled wirelessly</p> <p>Accesspoint + Ethernet: The SMARTgateway offers its own WLAN and connects to another existing LAN so that it can be controlled via it (default)</p>
	AP Timeout	The time after switching on the device after which the SMARTgateway's own WLAN is switched off. If the value is set to 0, the WLAN remains on permanently
WIRELESS CLIENT	SSID, Password	Network name and password of the WLAN to which the SMARTgateway should connect
	Hostname	The name under which the SMARTgateway registers in the network
ETHERNET	DHCP	<p>On: The SMARTgateway expects to be assigned an IP address on the network (default)</p> <p>Off: The SMARTgateway uses the IP address, subnet mask, gateway and DNS IP address settings below</p>
	Hostname	The name under which the SMARTgateway registers in the network
DMX	DHCP	<p>On: The SMARTgateway expects to be assigned an IP address on the network (default)</p> <p>Off: The SMARTgateway uses the IP address, subnet mask, gateway and DNS IP address settings below</p>
	Art-Net Enable	<p>On: The SMARTgateway can be controlled via Art-Net, live control is not possible</p> <p>Off: The SMARTgateway cannot be controlled via Art-Net, live control is possible (default)</p>
	Art-Net Universe	Art-Net universe to which the SMARTgateway reacts
DMX GROUPS	DMX channels and groups	Setting which DMX channels should belong to which groups
DEVICE	UI Encoder	<p>Display Version: SMARTgateways with display use this modes (default)</p> <p>Encoder Version: If the front interface is swapped for the one with rotary encoder and buttons, this mode must be set</p> <p>Only to be set by a trained service technician!</p>
	Latitude	Geographic latitude of the current location
LOCAL	Longitude	Geographic longitude of the current location
	UTC difference	Specifying the difference to coordinated universal time in hours (e.g. "+1")
	Current Firmware	The current firmware version of the SMARTgateway
UPDATE	Current Display Firmware	The current firmware version of the display of the SMARTgateway
	Serial	The serial number of the SMARTgateway
	Uptime	The time that has elapsed since the SMARTgateway was started
	Firmware Upload	Enables a firmware update via network. The firmware file (format: .bin) is uploaded to the SMARTgateway from the computer or laptop and installed automatically. The SMARTgateway then restarts and the new version is visible under "Current Firmware"
	Display Firmware Upload	Enables a display firmware update via network. The display firmware file (format: .bin) is uploaded to the SMARTgateway from the computer or laptop and installed automatically. The SMARTgateway then restarts and the new version is visible under "Current Display Firmware"
	Sequence Backup Upload	Here, a backup of the sequence file (format: .txt) from the computer or laptop can be uploaded to the SMARTgateway and then the SMARTgateway restarts



After each change to an option, the **Abort** and **Apply Changes** buttons appear. When you click **Abort**, all unsaved changes will be undone. When you select **Apply Changes**, the SMARTgateway reinitializes itself and applies the changes.

3. SEQUENCES

Up to eight different lighting moods can be programmed under the *SEQUENCES* tab.

Each *SEQUENCE 1-8* is assigned to the corresponding closing contact *Digital 1-8*, so that closing the contact executes the corresponding sequence. Alternatively, the eight sequences can also be controlled via network command, more about this on page 11.

An example sequence is shown on pages 9 and 10.

The screenshot shows the 'SEQUENCES' tab in a control interface. At the top, there are tabs for 'LIVE CONTROL', 'CONFIG', 'SEQUENCES', and 'TIMETABLE'. Below the tabs, it shows 'Used Memory: 2%'. The main area is for 'SEQUENCE 1', with options for 'Sequence' (selected), 'Chaser', 'On/Off', 'Toggle', and 'Locking'. It displays 'Fadetime [ms]: 1000' and 'Holdtime [ms]: 1000'. A 'Show Scene' button is visible next to a scene number '0'. A 'New Scene' button is at the bottom right of the sequence editor. Below the editor are buttons for 'SEQUENCE 2' through 'SEQUENCE 8'. At the very bottom are 'Save permanent' and 'Save to File' buttons. Red arrows point from text labels on the right to these specific UI elements.

- Used Memory**: Displays the memory occupied by sequence data
- Sequence type selection**: Sequence type selection (radio buttons)
- Show Scene**: The saved DMX & DALI values are output at the outputs of the SMARTgateway
- New Scene**: Adds an empty scene to the sequence
- Save permanent**: Saves the sequence data on the SMARTgateway so that it is still there after a reboot
- Save to File**: Download the sequence data as a text file

Scenes in sequences

A sequence consists of one or more scenes. DMX, 0-10 V and DALI values are saved in a scene.

The sequence and behavior can be defined using the sequence type:

- **Sequence**: the sequence stops after the last scene
- **Chaser**: after the last scene, the first scene is executed again
- **On/Off**: when the button is contacted, the first and last scenes are always executed alternately
- **Toggle**: when the contact is closed, the first scene is executed; when it is opened, the last scene is executed
- **Locking**: when the contact is closed, all other inputs are blocked

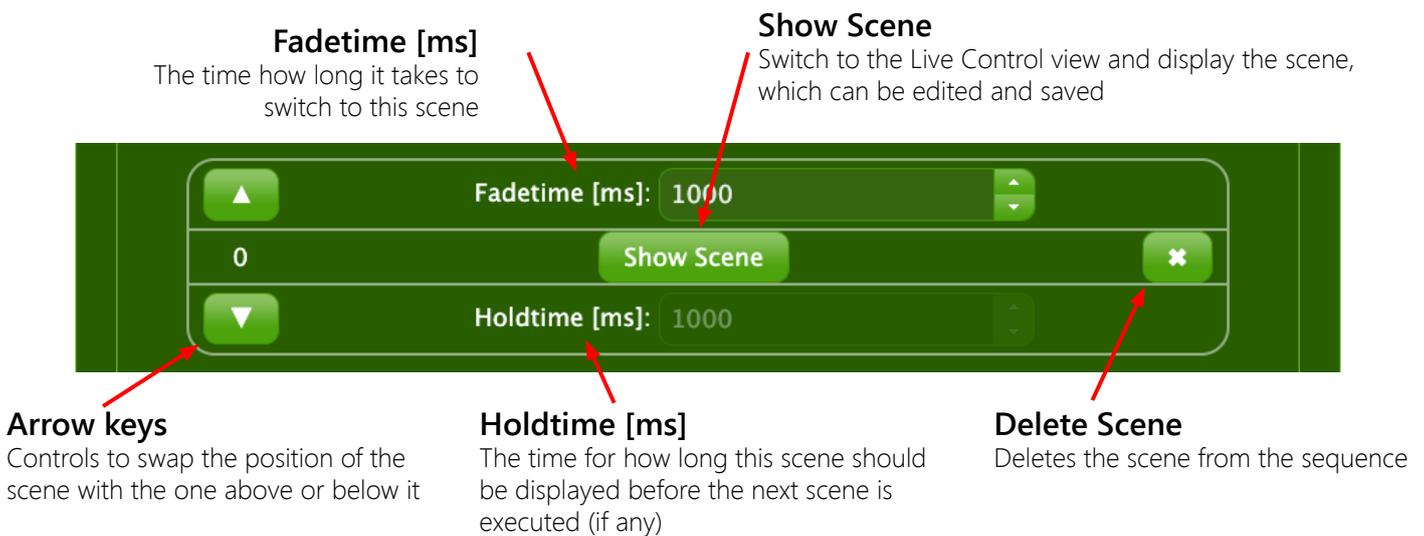
An empty scene can be added using the *New Scene* button in the *SEQUENCES* tab.

A scene with the displayed live values can be added via *Add to Sequence* in the *LIVE CONTROL* tab.

All necessary settings can be made on the scene's user interface:

- Fadetime
- Holdtime
- Position in the sequence
- Show Scene
- Delete
- Execute once (only available with sequence type *CHASER*)

An overview of the scene user interface:



Example - Static lighting scene

In this example, a lighting scene is to be created and executed by closing the *Digital 1* contact. To do this, proceed as follows:

1. Switch to the *SEQUENCES* tab
2. Select the desired sequence *SEQUENCE 1*
3. Select the *New Scene* button and wait a moment until the new scene has been added to the sequence
4. Select the sequence type *Sequence*
5. Then click on the *Show Scene* button, it will automatically switch to the *LIVE CONTROL* tab
6. Here you can now set the desired values using the DMX and DALI sliders
7. The scene must be saved using the *Save Scene* button
8. The potential-free contact on *Digital 1* now executes *SEQUENCE 1*

1. SEQUENCES

Used Memory: 2%

2. SEQUENCE 1

4. Sequence Chaser On/Off Toggle Locking

Fadetime [ms]: 1000

0 5. Show Scene

Holdtime [ms]: 1000

3. New Scene

14:22

7. Abort Save Scene

LIVE CONTROL CONFIG SEQUENCES TIMETABLE

DMX

DMX On DMX Off

DMX Channel: 1 - 32

6. 1 2 3 4 5 6 7

0 0 0 0 0 0 0

Execute sequences via network command

Instead of closing the digital inputs of the gateway, lighting scenes can also be executed directly via UDP network packet*.

The procedure is explained below using the example of the projection network of a cinema installation.

Connect the SMARTgateway to the film server's control network using a LAN cable and supply it with power via the power supply (24 V).

Connect your tablet, mobile phone or laptop to the gateway's WiFi access point and open the gateway's configuration web interface using a browser (see page 4).

Switch to the **CONFIG** tab in the gateway's web interface. In the **Ethernet** sub-item, set **DHCP** to **On** if there is a DHCP server in the network and to **Off** if it is a static network. Nehmen Sie im zweiten Fall die gewünschten Einstellungen von IP, Gateway, Submask und DNS vor. Speichern sie diese und das Gateway startet daraufhin automatisch neu.

Send the network commands to execute the sequences to the following destination:

IP:	IP address of the SMARTgateway
Port:	42732
Protokoll:	UDP
Nachricht:	<Number of the sequence>

The UDP message ("text" format) only contains the sequence number. For example, the network command to start sequence 1 is simply text **1**.

With the sequence type **SEQUENCE**, the sequence starts and runs through once.

With the sequence type **CHASER**, the sequence starts or stops per command sent.

With the sequence type **Toggle**, the scene changes per command sent.

With the sequence type **ON/OFF**, the status must also be passed with a prime so that the correct scene is executed. Example sequence 3:

3|on or 3|off

Notice: For Dolby/Doremi film servers, the SMARTgateway must be created in the device manager as a RAW device for UDP messages. Sequences can now be started using a network command from a macro on the film server.

*) Recommended freeware tool for testing: <https://packetsender.com>

4. TIMETABLE

Sequences can be executed automatically in time under the *TIMETABLE* tab.

A new time for executing sequences 1-8 can be selected using the *Add* button. The setting is saved with the *Save* button.

The screenshot shows the **TIMETABLE** configuration screen. At the top, there are tabs for **LIVE CONTROL**, **CONFIG**, **SEQUENCES**, and **TIMETABLE**. The main area contains settings for a sequence entry:

- Timetable Type:** Radio buttons for **Sunrise**, **Sunset**, and **Time**. A **Delete** button (marked with an 'x') is next to the **Time** option.
- Time:** A digital clock display showing **00:00** with up/down arrows.
- Offset:** A numeric input field showing **0**.
- Repeating:** A row of checkboxes for days of the week: **Mo**, **Di**, **Mi**, **Do**, **Fr**, **Sa**, **So**.
- Sequence:** A dropdown menu currently showing **Sequence 1**.
- Buttons:** **Add** and **Save** buttons are located at the bottom.

Annotations with red arrows point from text labels to these specific elements:

- Sequence:** Select sequence 1-8 (points to the dropdown menu).
- Add:** Adds new automation (points to the Add button).
- Save:** Saves the changes (points to the Save button).
- Timetable Type:** (points to the Sunrise/Sunset/Time radio buttons).
- Delete:** Deletes the current entry (points to the 'x' button).
- Offset:** Time delay in execution (points to the Offset input field).
- Time:** Setting the exact time to execute the sequence (points to the Time digital display).
- Repeating:** Selection of days of the week to repeat the automation (points to the day checkboxes).

An entry in the time control defines the exact time to execute a sequence that was previously programmed (See page 8: *SEQUENCES*).

Über den Timetabletyp stehen folgende Optionen zur Auswahl:

- **Sunrise:** Execution happens automatically at sunrise
- **Sunset:** Execution happens automatically at sunset
- **Time:** Execution happens automatically at the set time

The longitude and latitude as well as the time zone can be set in the *CONFIG > Local* menu. These settings are necessary to correctly calculate the sunrise and sunset times.

Connection to Nuvolight control server SMARThub

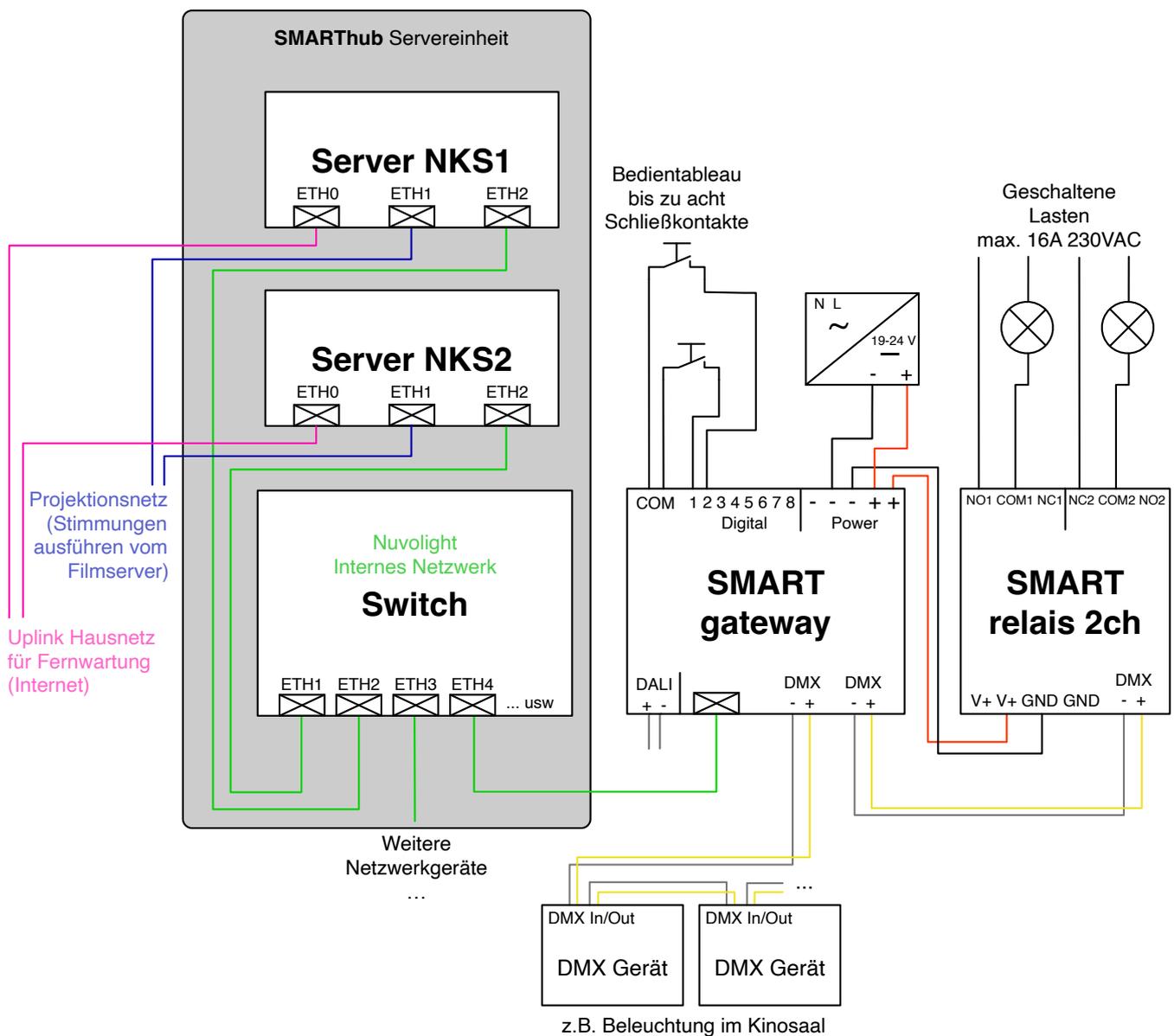
The Nuvolight SMARTgateway is a powerful control device with a focus on lighting control.

It offers the following connection options:

- Control of DMX devices (e.g. colored lights or event technology)
- Control of DALI devices (e.g. lights with white light color)
- Connection of buttons or other automation devices with closing contacts (GPO)
- Connection, for example, to cinema projection technology via LAN network interface

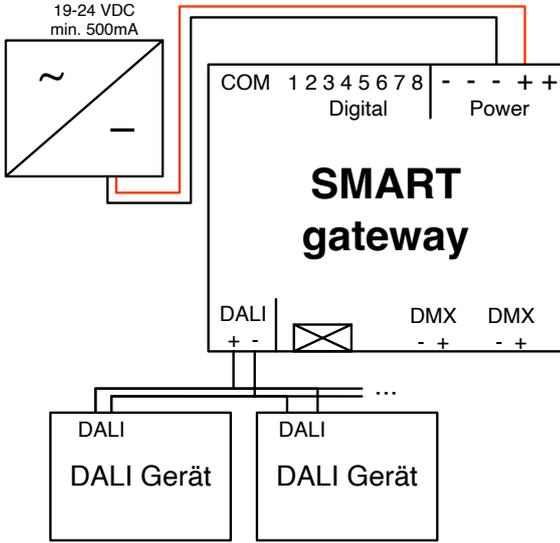
In extension with e.g. Nuvolight SMARTreceiver 2ch Relais:

- Switching electrical loads with integrated power relays (e.g. curtain control)

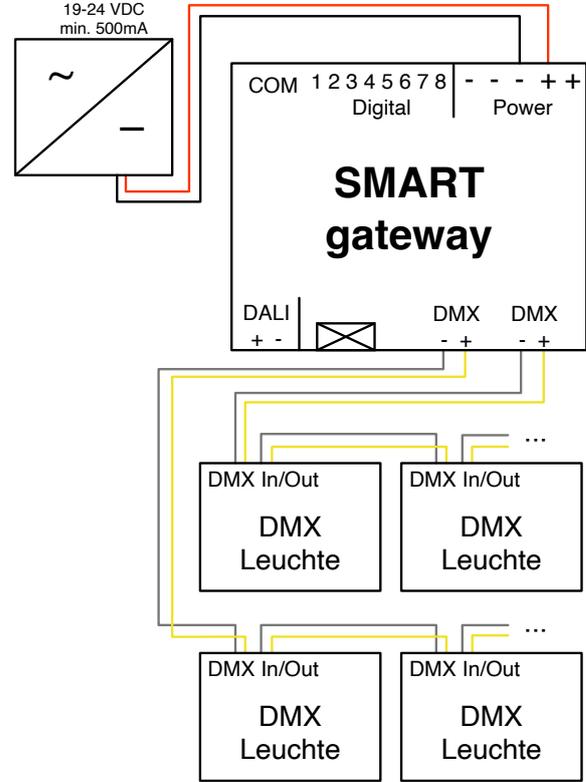


Connection diagram for connecting to the Nuvolight control server

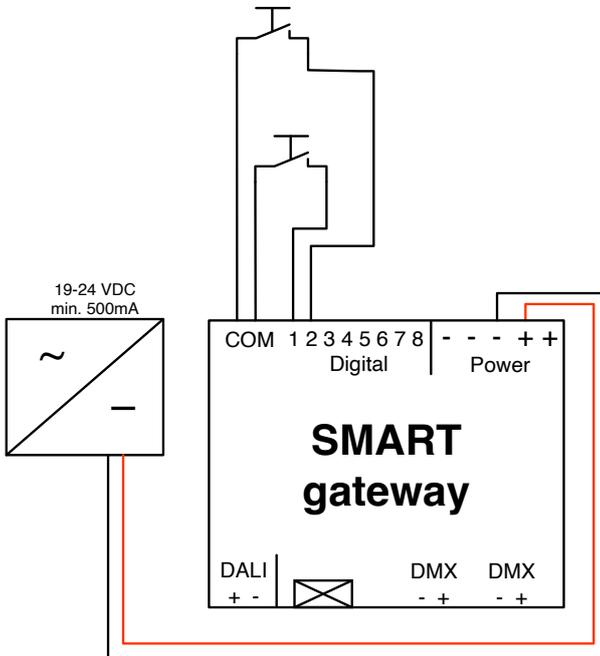
Connection examples



Example DALI



Example DMX



Example Input

Important:

Only connect **potential-free** contacts!
Applying voltage to the inputs of the device
will cause irreparable damage!