Lunatone

DALI-2 Sequencer

Datasheet
Control Device

DALI-control unit for automatic
retrieval of sequences

Art. Nr. 89453371 (back box)
Art.Nr. 89453371-HS (DIN rail)

DALI-2 Sequencer Control Device

Overview

- DALI control unit for automatic retrieval of sequences
- memory for up to 4 sequences
- types for back box and DIN rail mounting
- back box version provides 4 potential free inputs to start the sequences.
- din rail type provides 4 switching inputs for mains voltage to start the sequences, and 4 LEDs to indicate active sequences
- Sequences (0-3) are started by recalling the corresponding scene or push the corresponding button
- A sequence can combine various command-sequences and scene-recalls

- One command-sequence can consist of up to 49 DALI-commands
- the Sequence can be looped or called once.
- the DALI-2 Sequencer can be started via broadcast, group or address commands
- configuration via DALI-Cockpit software.
- multi-master capable: several modules can be installed in one DALI circuit
- the module is supplied by the DALI-line.

Specification, Characteristics

type	DALI-2 Sequencer	
article number	89453371	89453371-HS

DALI interface, power supply: DA, DA

output type	DALI, DALI-2, Multimaster, power supply
terminal markings	DA, DA
voltage range	9,5V … 22,5Vdc according to IEC62386
typical current consumption DALI (16,5V)	1.7 mA
max. current consumption DALI (22,5V)	2 mA
DALI addresses	none
DALI-2 addresses	1

Inputs

Input type	Potential free switching input	switching input for mains voltage
number of inputs	4	4
marking input terminals	T1, T2, T3, T4, COM	LT1, LT2, LT3, LT4, N
input voltage range	Sole Connection with COM	230Vac
tolerance of input voltage	Sole Connection with COM	+10%/-15%
frequency of a.c. voltage	Sole Connection with COM	50Hz … 60Hz

control impulse length min.	40ms	40ms
input resistance	Sole Connection with COM	660kΩ
max. voltage between inputs	Sole Connection with COM	230V ac
galvanic isolation	no	Yes (switching inputs / DALI)
wire length max.	50cm (or more, depending on interference of environment)	10m (up to 50m in an interference-free environment i.e. no parallel power lines)

insulation data

impulse voltage category	II
pollution degree	2
rated insulation voltage	250V
insulation DALI / mains	reinforced isolation
insulation test voltage DALI / mains	3000Vac

environmental conditions

| storing and transportation temperature	-20°C … +75°C
operational ambient temperature	-20°C … +75°C
rel. humidity, not condensing	15% … 90%

general data

function	configurable	
mounting	back box installation installation in protection class II devices	DIN rail mounting
dimensions (L x W x H)	40mm x 28mm x 14mm details, page 4	98mm x 18mm x 56mm details, page 4
rated maximum temperature tc	75°C	
expected lifetime	50.000h	
protection class	SKII (when used/installed as intended)	
protection degree housing	IP40	
protection degree terminals	IP20	

terminals

connection type	spring terminal connectors	screw terminal
wire size: solid core	0,5 … 1,5 mm^2 (AWG20 … AWG16)	0,5 … 2,5 mm^2 (AWG20 … AWG14)
wire size: fine wired	0,5 … 1,5 mm^2 (AWG20 …AWG16)	0,5 … 2,5 mm^2 (AWG20 …AWG14)
wire size: using wire end ferrule	0,25 … 1 mm^2	0,25 … 1,5 mm^2
stripping length	8,5 … 9,5 mm / 0,33 … 0,37 inch	7 mm / 0,27 inch
tightening torque	-	0,5Nm

standards

DALI	IEC62386-101:2014, IEC62386-103:2014
EMV	EN 61547 EN 50015 / IEC CISPR15
safety	EN 61347-2-11 EN 61347-1
Markings	DALI-2, CE, UKCA
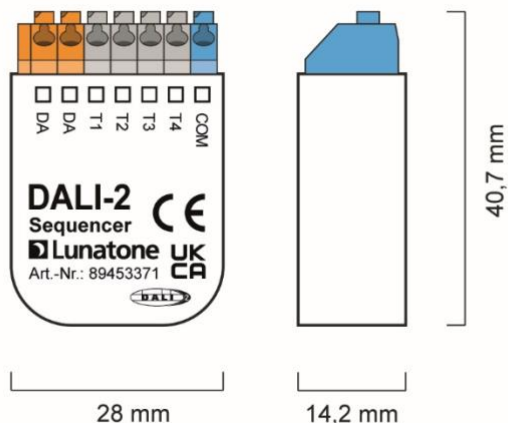
geometry installation box
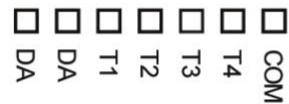
connection plan installation box
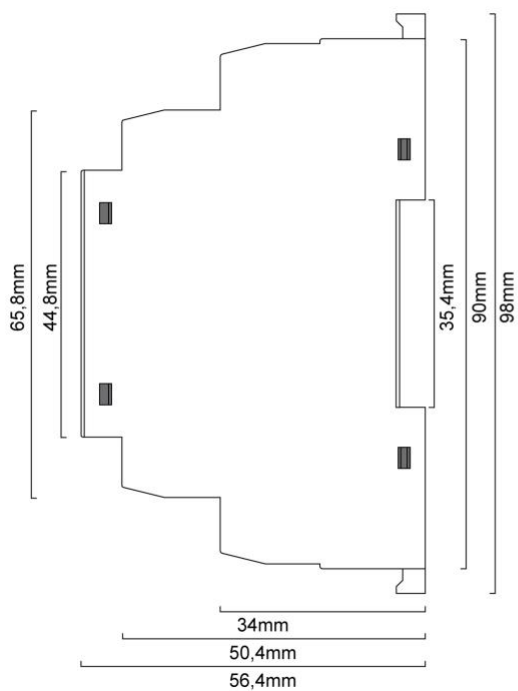
geometry DIN rail

connection plan DIN rail

Factory Default Settings

A basic configuration is already implemented on delivery (factory default setting). If necessary, this can be changed and adapted.

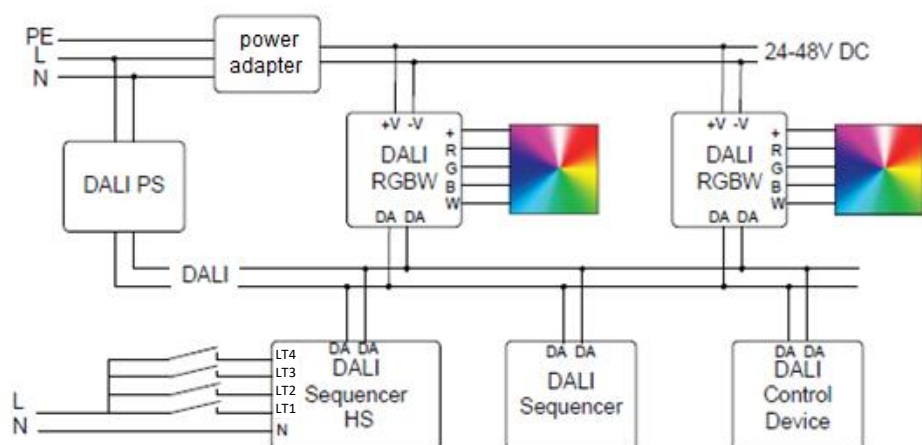|	Sequence A	Sequence B	Sequence C	Sequence D
application controller	active			
effective range	Broadcast (start and stop)			
behaviour at power up	none			
start with scene command	Scene 0	Scene 1	Scene 2	Scene 3
sequence mode	M3 Dynamic Scene	M3 Dynamic Scene	M3 Dynamic Scene	M3 Dynamic Scene
dynamic scenes	Scenes 0-15	Scenes 0-15	Scenes 0-15	Scenes 0-15
delay between each scene	1 second	2 seconds	4 seconds	8 seconds
fade time	1 second	2 seconds	4 seconds	8 seconds

Typical application

Fig. 1.: Typical application - ambient lightning with sequencer varying colour

Installation

- The DALI-2 Sequencer can be installed in a flush-mounted installation box

- The DALI-2 Sequencer-HS is suitable for DIN rail mounting; protection against electric shock has to be ensured by an appropriate enclosure. The 4 LEDs on the housing indicate active sequences.

- The device is directly connected and supplied by the DALI bus. A DALI bus power supply (e.g. DALI PS) is required.

- The connection to the DALI terminals can be made regardless of polarity. The bus input is protected against overvoltage (mains voltage).

- The wiring should be carried out as a permanent installation in a dry and clean environment.

- Installation may only be carried out in a voltage-free state of the system and by qualified specialists.

- National regulations for setting up electrical systems must be followed.

- The DALI wiring can be realised with standard low-voltage installation material. No special cables are required.

- Only 1 wire may be connected to each terminal. When using double wire end ferrules, the connection capacity of the terminal must be considered.

- The switching inputs on the DIN rail version are intended for use with mains voltage, they are galvanically separated from the DALI-line.

☞ **Attention:** The DALI-signal is not classified as SELV circuit (Safety Extra Low Voltage). Therefore, the installation regulations for low voltage apply.

☞ The voltage drop on the DALI line must not exceed 2V at maximum length (300m) and maximum bus load (250mA).

Addressing and Configuration

- After installation, the device can already be used with the default factory settings. A description of the factory default settings can be found on page 5.

- Addressing and changes to the factory settings, such as setting the effective range and functions, are possible with the Software tool DALI Cockpit (Windows PC).

- When using the DALI Cockpit Software, the PC must be connected to the DALI bus via a suitable interface module (DALI-2 USB; DALI USB, DALI-2 WLAN, DALI-2 Display, DALI-2 IoT, DALI 4Net, DALI SCI RS232). The DALI-2 MC4L is automatically recognised by the DALI Cockpit during the addressing process and listed in the device overview. Effective range and desired functions can then be assigned to each input.

- The addressing is done according to the DALI-2 specification and the device receives a corresponding address.

- For Localisation a buzzer is integrated in the device version for back box installation, and LEDs in the device version for DIN rail installation. To activate the buzzer / LEDs and localize the device select "localize" in the Cockpit at the top left.
  Alternatively, the allocation can also be done via the serial number of the device. (by comparison of the label on the device and the device information in the DALI cockpit)

Function and Configuration

The DALI-2 Sequencer can send DALI command sequences once or looped on the DALI-bus. The sequences can be configured with the DALI Cockpit Software. Up to 4 sequences (sequence A - sequence D) can be stored in the device.

The DALI-2 sequencer can either be started by pressing a button connected to a respective device input, or by sending the following scene commands (delivery default) on the DALI bus:

Sequence	Command	Input Back box / DIN rail
A	GOTO SCENE 0	T1 / LT1
B	GOTO SCENE 1	T2 / LT2
C	GOTO SCENE 2	T3 / LT3
D	GOTO SCENE 3	T4 / LT4

The scene commands with which each respective sequence can be started can be changed on the tab "Settings" und "**Scene Selection**" (see Fig. 2 below).

On delivery, the DALI-2 sequencer is configured to listen to scene commands sent Broadcast on the DALI bus. This control address can be changed in the DALI Cockpit, on tab "Settings", section "**Control Addresses**" (see Fig. 2). Up to four control addresses can be set to either: Broadcast, a DALI group or a DALI address.

It can also be set whether commands to these addresses start the sequences, stop the sequences, or both, see Fig. 2.

A running sequence is stopped using one of the following DALI commands:
OFF, RECALL MAX, RECALL MIN, all GO TO SCENE that are not selected to start a sequence, or any DAP (direct arc power - light level) command.

At section "**Power Up**" (Fig. 2.) it is possible to choose a sequence that is started with a device power up, optionally with a start delay of up to 120 seconds.
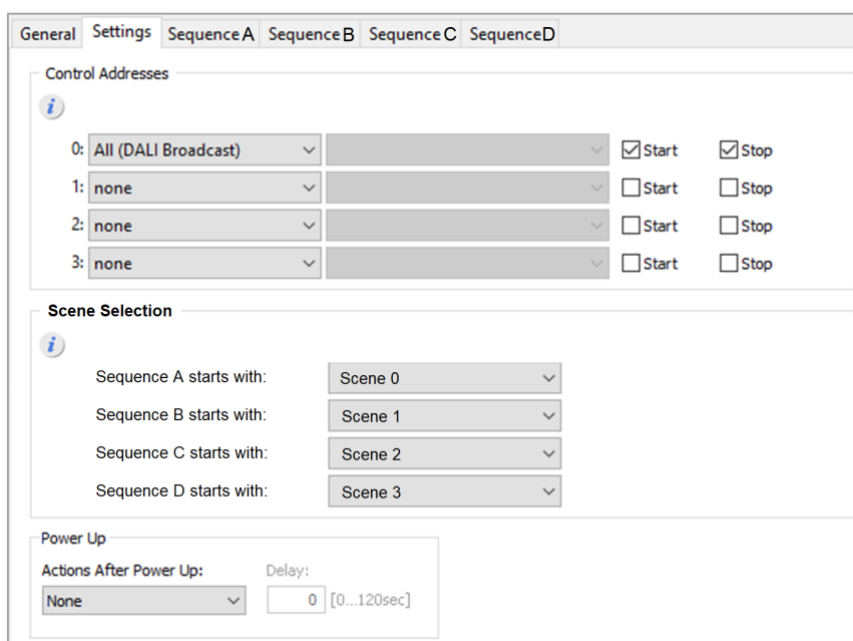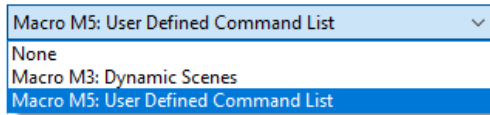

Fig. 2.: Cockpit Tab „Settings"

Sequences

The DALI Cockpit supports 2 types of generating sequences: "Dynamic Scenes" or "User defined Command Lists" can be used. The Selection can be made for each sequence via the option "Command:


When selecting "None" the according sequence will be deactivated.

Selection: "Dynamic Scenes"

When using the „Dynamic Scenes" the effective range and sequence of up to 16 scenes can be defined. The selected effective range applies to all scene recalls. For each scene recall the fade time and a start delay (0 seconds up to max. 3 hours) can be set.

Example: to all devices (broadcast) after 1 second start delay got to Scene 5. Fade time 1 second, wait 2 seconds, go to scene 4 with fade time 2 seconds, wait 3 seconds and go to Scene 1 with fade time 0.7 seconds:
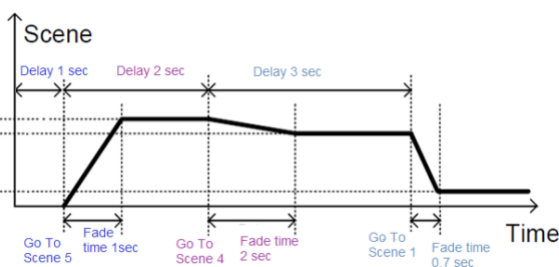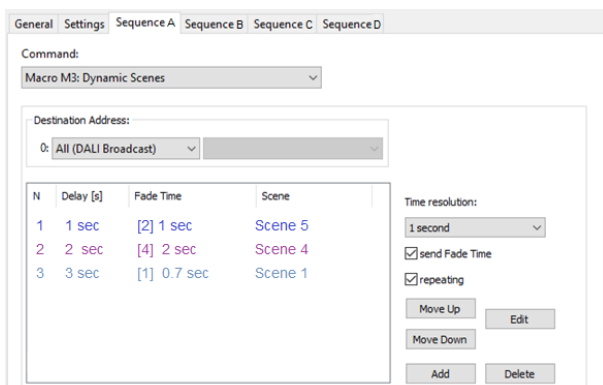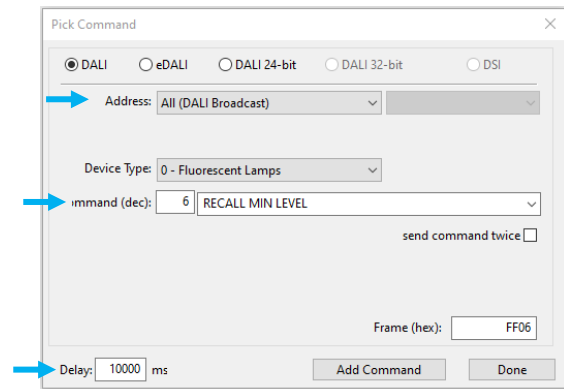

Selection "User Defined Command Lists"

When using "User Defined Command Lists", a sequence of any DALI command and any effective range can be defined.
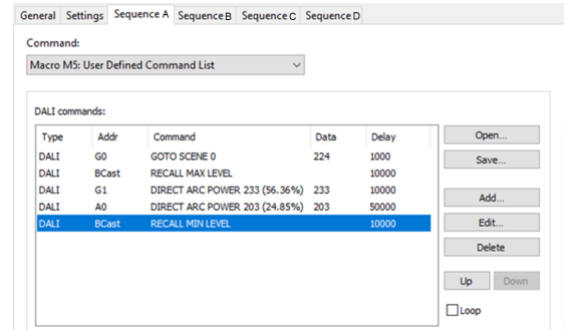
With "Add" a DALI command, the effective range for this command and a delay to the next following command can be defined and added to the list (delays are set in ms with a resolution of 100ms and a maximum delay of 25500 ms; from FW Version 5.0 onwards the delay time ranges from 0 seconds to max. 3 hours).
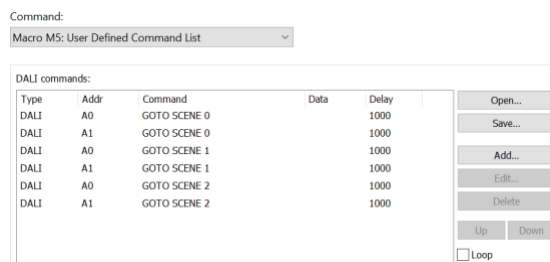

A user defined sequence can include up to 50 DALI-commands. So, in total, 4 sequences with up to 49 DALI commands each, are possible.

An existing file with the extension *.cot can be imported with "Load…". A created command list can be exported with "Save…"

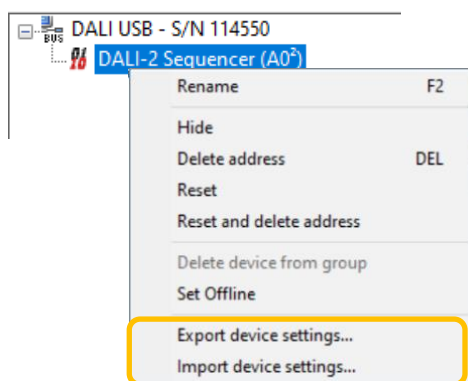*Example*: scenes 0-2 sent to A0 and A1 with 1min delay between each command:

DALI-2 Sequencer

Import and Export of Device Settings

A complete device configurations can be saved and loaded with a right click on the device in the Cockpit device-tree, selecting: Export device settings…" or „Import device settings…" respectively.

Purchase Information

Art.Nr. 89453371
DALI-2 Sequencer,
DALI-2 control unit for command sequences,
back box module

Art.Nr. 89453371-HS
DALI-2 Sequencer DIN rail,
DALI-2 control unit for command sequences,
DIN rail module

Additional Information and Equipment

DALI-Cockpit – free configuration tool from Lunatone for DALI systems
https://www.lunatone.com/en/product/dali-cockpit/

Lunatone DALI products
www.lunatone.com/en

Lunatone datasheets and manuals
https://www.lunatone.com/en/downloads-a-z/

Contact

Technical Support: support@lunatone.com

Requests: sales@lunatone.com

www.lunatone.com

Disclaimer

Subject to change. Information provided without guarantee. The datasheet refers to the current delivery.

The compatibility with other devices must be tested in advance to the installation.