Lunatone
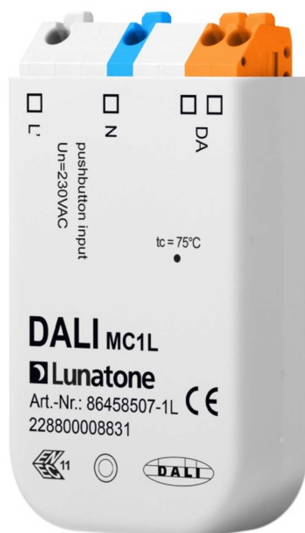
DALI MC1L

Datasheet

Multi Control Module

Programmable DALI control module
with switching input for mains
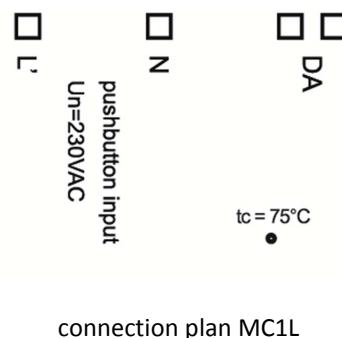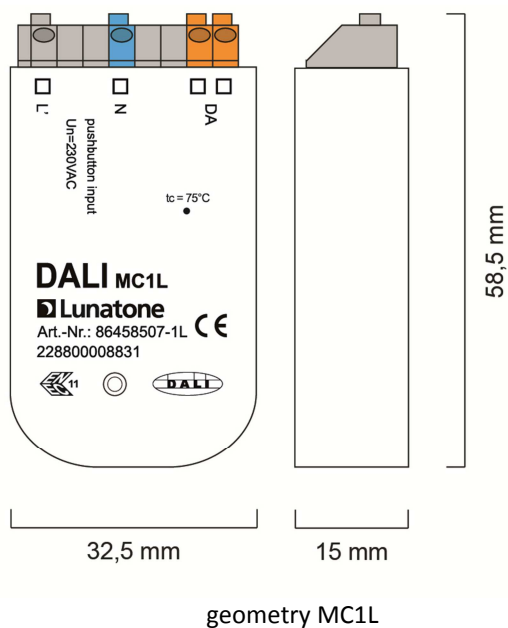voltage

Art. Nr. 86458507-1L
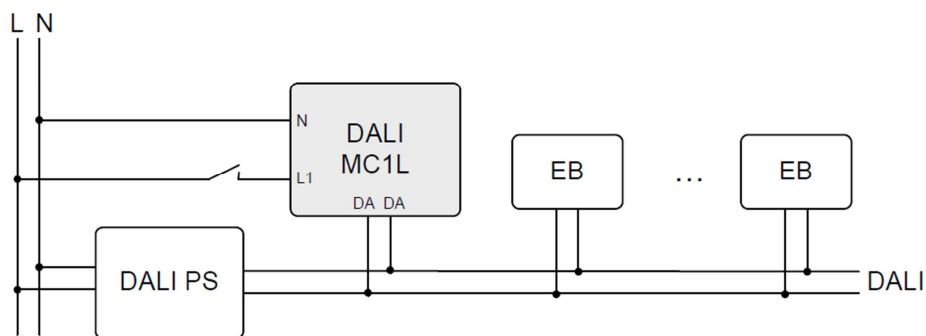
DALI MC1L Multi Control Module

Overview

- DALI control module with switching input for mains voltage

- galvanic isolation between switching input and DALI-line

- the module can act as application controller or as digital input instance sending event messages only

- the function of the switching input can be configured with the help of the DALI Cockpit and a DALI USB interface

- when used as application controller destination address, switching mode and DALI-command can be assigned to the input

- individual addresses (0-63), group addresses (0-15) or broadcast can be set as destination address

- various switching modes (short, long press; toggle; etc.) are supported

- the following commands are available: up, down, off, recall min/max, goto scene 0-15, direct arc power in % as well as macros.

- DALI DT8 support for adjustable white luminaires with the help of special macros

- memory function

- adjustable „power-up"-function

- multi-master capability, several modules can be installed on the same DALI-line

- suitable for installation in protection class II devices or back box installation

Specification, Characteristics

type	DALI MC1L
article number	86458507-1L

electrical data:	
supply	via DALI-line
typ. current consumption DALI	2,6 mA
output	DALI
input	1 switching input (mains voltage), Vthreshold=180V Rin=150kΩ (withstands 6kV surge pulses)
isolation switching input / DALI	double isolation max. rated withstanding isolation voltage (1min): Viso=5000Vrms max. rated transient isolation voltage: Viotm=8000V max. repetitive peak isolation voltage: Viorm=1050V isolation resistance @Vio=500VDC and Ta=25°C: $10^{12}\Omega$

technical data:	
function	programmable
ambient temperature	-20°C to +75°C
protection class	IP20
connecting wire cross section	0.5 to 1.5 mm^2
mounting / intended use	installation in back box or protection class II devices
dimensions	58mm x 32mm x 15mm

geometry MC1L

connection plan MC1L

typical application

Factory Default

BF7: Switch
Destination: Broadcast
3x GOTO SCENE 1 (if L1 is switched on)
3x GOTO SCENE 0 (if L1 is switched off)
PowerUp Behaviour: GOTO SCENE 0 (no delay)

Button Press	Duration	
definiton	min	max
short	40 ms	500 ms
long	>500 ms	

Installation

The DALI-MC1L is connected to and supplied directly by the DALI signal line (typical current consumption: 2,6 mA). The connection to the DALI-line is polarity free and protected against overvoltage of up to 270Vac.

The switching input L1 is designed for operating with mains voltage. The input L1 is electrically isolated to the DALI-line.

We recommend a fuse or circuit breaker of 10A max. to be placed in the electrical circuit (mains voltage).

Suitable for installation in protection class 2 devices.

Addressing and Configuration, Factory Settings

With the help of a DALI-USB interface and the DALI-Cockpit software the DALI MC1L can be addressed and the desired functionality can be configured.

During the addressing process the DALI MC1L is automatically detected and listed in the DALI Cockpit.

The DALI-Cockpit software tool can be downloaded from the Lunatone website. DALI-Cockpit and DALI-USB Interface are required for configuration only and can be removed for standard operation.

With the DALI Cockpit software the input of the DALI MC1L can be configured, i.e. the reaction to an input action can be defined.

The available parameters allow very flexible and individual solutions.

Target destinations can be defined (max. 4 destination addresses). Therefore single addresses, groups, or broadcast can be used.

The "buttonfunction" handles the switching modalities (e.g. button press, short press + long press, switch etc.).

A complete list of all buttonfunctions is listed in the table below:

Adjustable Functionality

nr	function	action	description
0	-	No action	
1	Push Button	short/long: 1 * command X	Briefly pressing or holding down the push button will send command X once
2	Push Button	short: 1 * command X long: 1 * command X then 1 * command Y	Briefly pressing or holding down the push-button will send command X one time Holding down the push button will send command X once and then command Y once
3	Push Button	short: 1 * command X long: 1 * command X then repeatedly command Y	Briefly pressing or holding down the push-button will send command X one time Holding down the push button will send command X once and then command Y repeatedly
4	Push Button Toggle	short: toggle between command X and Y	Briefly pressing the push button will alternate between sending commands X and Y
5	Push Button Toggle	short: toggle between command X and Y lighting status based	Briefly pressing the push button will alternate between sending commands X and Y lighting based: If the light was previously switched off -> command X If the light was previously switched on -> command Y
6	Push Button Dimming Key	short: toggle between command X and Y, lighting status based long: dimming, lighting status based	Briefly pressing the push button will alternate between sending commands X and Y lighting based: If the light was previously switched off -> command X If the light was previously switched on -> command Y Holding down the dimmer switch dims or brightens the lighting.
7	Switch	CmdX if On, Cmd Y if Off	If switch position is changed CmdX if switched to On, CmdY if switched to Off
8	Crossover Switch	Cmd X or Cmd Y, lighting status based	If switch position is changed CmdX or CmdY is sent dependent on light status
9	Staircase Function	short/long: command X, after run-on time command Y	If the pushbutton is pressed, command X is sent and the run-on time starts. Once the run-on time elapsed, command Y is sent.

10	Push Button	Short: 1xCmdX (after release) Long: repeats CmdY	After a short press (press+release) the CmdX is sent, in case of long button press Cmdy is sent with repetition
11	Push Button	1 * command X, then command Y repeated without long button delay	Pressing the pushbutton will send command X and then command Y repeated without long button press delay.
12	Push Button	Sends CmdX, Short Press Release: CmdY Long: repeats CmdX	Sends CmdX on button pressed, if button is released within short press duration send CmdY, else repeat CmdX

Furthermore the DALI commands that should be sent to these addresses or groups have to be defined. The available set of commands is listed below:

cmd number	cmd name	function
-	DIRECT ARC POWER	direct arc power Level in %
0	OFF	off
1	UP	dim up (using fade rate)
2	DOWN	dim down (using fade rate)
3	STEP UP	increases light level by one increment
4	STEP DOWN	decreases light level by one increment
5	RECALL MAX	recalls MAX value
6	RECALL MIN	recalls MIN value
7	STEP DOWN AND OFF	decreases light level by one increment, if value at MIN switch off
8	ON AND STEP UP	increases light level by one increment, if OFF switch on
10	GOTO LAST ACTIVE LEVEL	DALI2-Cmd for switching on to the last active level (Memory-Function)
16-31	GO TO SCENE	go to scene 0-15

Besides the recall of commands, pressing a push button can also recall a DALI macro. These macros can be used for predefined processes (for example a sequential recall of scenes, cyclic "Scene-switch") or any other sequence of user-defined DALI commands.

The available set of macros is listed below:

macro (required memory)	function
Go Home (2 Byte)	Light dims down to DAP 0 with predefined fade time, then fade time is set back to a programmable value
Sequential Scenes (3Byte)	Selectable scenes (or OFF) will be sent sequentially with each button press.
Dynamic Scenes (33 Byte)	Dynamic sequence of up to 16 selectable scenes, fadetimes and delays, stops with next button press
DALI-Reset (1 Byte)	Sends DALI-Reset (address can be deleted optionally)
user defined cmds (5 bytes per command, 19 commands max.)	A user defined macro file can be loaded to the switch
DT8 Cooler 3x (0 Byte)	Activates DT8 and sends STEP COOLER command 3x
DT8 Warmer 3x (0 Byte)	Activates DT8 and sends STEP WARMER command 3x
Switch On (4 Byte)	MEMORY FUNCTION Switches to last recent level, works only in combination with Switch Off
Switch Off (3 Byte)	MEMORY FUNCTION Stores last recent level and switches off
Dim Up (after Switch Off) (3 Byte)	MEMORY FUNCTION Allows to Dim Up from Off-State to MAXLEVEL, when having used Switch Off before

Another configurable feature is the "power-up"-function. This is a user-defined reaction on a power up. The following options are available for the DALI MC1L:

- no action
- OFF
- go to scene 0-15

To take the startup-time of DALI-ballasts into account a delay time can be configured between power up and the start of transmission of the selected command (0…7 seconds).

DALI Instruction Set

The DALI MC1L operates as control device on the DALI-line and transmits the predefined DALI-commands whenever the push-button at the input is pressed.

It is based on the standard for DALI Control Devices (IEC 62386-103) and Device Type 301 (IEC62386-301). This means that the module can be operated as application controller with the functionality described in this datasheet or as digital input instance sending event messages only.

Purchase Information

Art.Nr. 86458507-1L: DALI MC1L, 1 switching input for mains voltage, back box installation

Additional Information and Equipment

DALI-Cockpit – free configuration tool from Lunatone for DALI systems
http://lunatone.at/en/downloads/Lunatone_DALI-Cockpit.zip

Lunatone DALI products
http://www.lunatone.at/en/

Lunatone datasheets and manuals
http://lunatone.at/en/downloads/

Contact

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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.