Lunatone

DALI Expander 3

Datasheet

DALI-System Extension

Device for DALI-line expansion with integrated bus power supply for 3 DALI sub-circuits

Art. Nr. 89453847-3

DALI Expander 3 DALI System Extension

Overview

- Device for DALI-line expansion

- Control of several DALI-devices via 3 DALI-addresses

- 3 DALI outputs (DALI A,B,C) with integrated DALI power supply (50mA each) for powering control gear and control devices

- For the superordinate DALI circuit the DALI expander acts like 3 separate DALI control gear – 3 DALI addresses, one for each subnet (A, B, C)

- Forwarding commands received at the input (DALI IN) to the corresponding output (DALI A, B, C) broadcast

- Alternative control options of the DALI-output circuits via Switch&Dim-inputs (Broadcast).

- Group commands are passed from one to the other output circuits (cross function)

- Galvanic isolation between DALI-input and DALI-outputs

- Independent control gear for remote ceiling an integration in luminaires

Specification, Characteristics

type	DALI Expander3
article number	89453847-3

input: L, N

input type	supply, mains-voltage
marking terminals	L, N
input voltage range	100Vac … 240Vac
max. input supply current	40mA (@120Vac), 20mA (@240Vac)
input supply frequency	50Hz / 60Hz
max. power consumption	5,3W
startup time	250ms

input: DA, DA

input type	DALI control input
marking terminals	DA, DA
input voltage range	9,5V … 22,5V
max. current consumption DALI	2mA

input: L'A, L'B, L'C, N

input type	SwitchDim - control input
marking terminals	L'A, L'B, L'C, N
input voltage range	230Vac

input supply frequency	50Hz/60Hz
control impulse length min.	40ms
control impulse length long press	500ms

output: DA+, DA-A, DA-B, DA-C

output type	3x DALI supply
marking terminals	DA+, DA-A, DA-B, DA-C
input voltage range	12Vdc … 20,5Vdc
guaranteed DALI supply current	3x50mA
open circuit proof	yes
short circuit proof	yes

insulation data:

impulse voltage category	II
pollution degree	2
rated insulation voltage	250V
insulation DALI-output (DA+,DA-A,B,C) / supply (L,N) DALI-input / DALI output (DA+,DA-A,B,C) DALI-input / supply (L,N)	reinforced isolation
insulation test voltage DALI-output/mains	3000Vac

environmental conditions:

storing and transportation temperature	-20°C … +75°C
operational ambient temperature	-20°C … +60°C
rel. humidity, none condensing	15% … 90%

general data:

| dimensions (l x w x h)	120mm x 41mm x 22mm
mounting	remote ceiling integration in class II devices
rated max. temperature tc	70°C
expected life time @tc	50.000 h
protection class	II in intended use
protection degree housing	IP40
protection degree terminals	IP20

terminals:

connection type	spring terminal connector
wire size solid core	0,5 … 1,5 mm^2 (AWG20 … AWG16)
wire size fine wired	0,5 … 1,5 mm^2 (AWG20 … AWG16)
wire size using wire end ferrule	0,25 … 1 mm^2
stripping length	8,5 … 9,5mm / 0,33 … 0,37inch
release of wire	push button

standards:

DALI	EN 62386-101
EMC	EN 61547 EN 50015 / IEC CISPR15
safety	EN 61347-2-11 EN 61347-1
markings	cURus, CE
UL file number	E501360
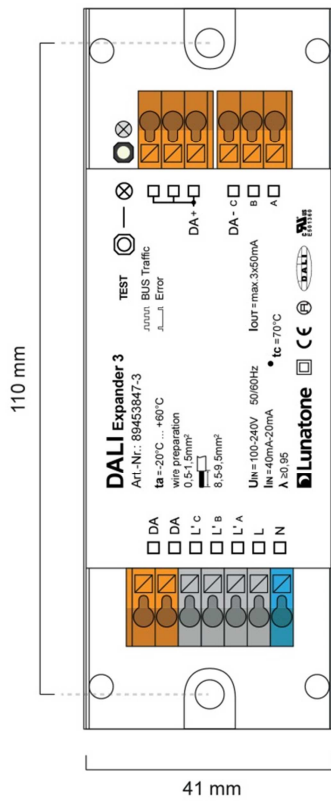
dimensions
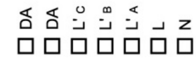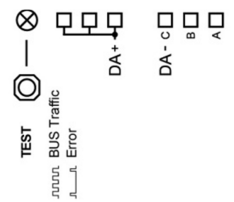
connection plan

Installation

- The DALI Expander-3 is intended for remote installation in the ceiling or in an enclosure, ensure proper cable relief for installation in protection class II devices

- Wiring as fixed installation in a dry and clean environment

- Installation only by qualified person when no voltage is applied

- Attend regulations regarding electrical installations of national authorities

- connect power supply terminals L and N to mains voltage

- the polarity of the output voltage is marked on the housing (DA+, DA- (A,B,C))

- The DALI-line may be installed within the same cable or as single conductors within the same tube as mains supply

- The DALI-line must not be connected to the mains or other extra low voltage systems

- DALI-line wiring with standard low voltage installation material

- Wiring topology of the DALI-line: Line, Tree, Star

- Wiring check by pressing the test button: the led is flashing and all luminaires connected to the DALI system will be controlled by a test sequence (on, off, dimming). To quit the test mode press the test button again.

☞ **HINT**: The DALI-signal is not classified as SELV circuit. Therefore the standards for installation in low voltage system apply.
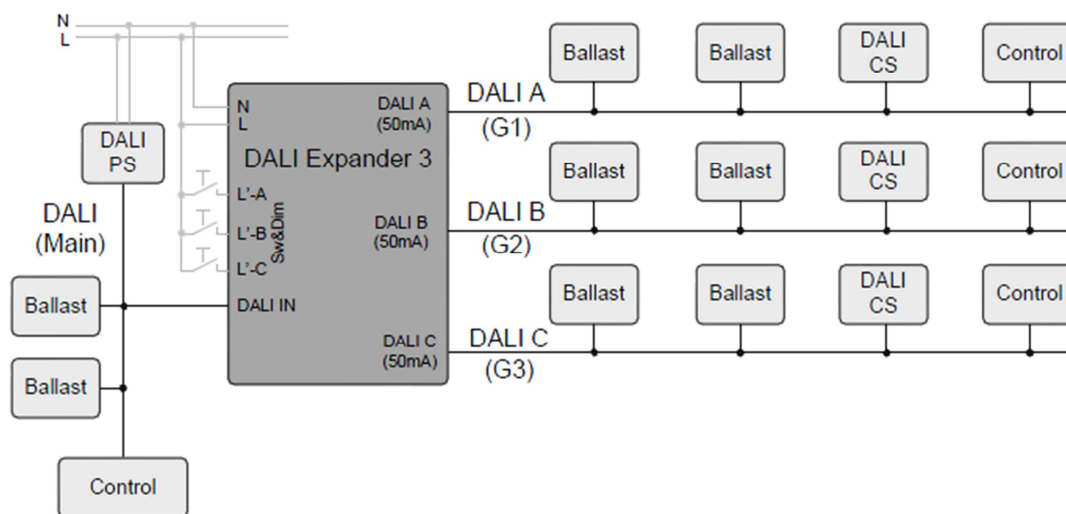
☞ The voltage drop on the DALI-line shall not exceed 2V.

- Don´t use standard DC power supplies on the DALI-line, since they do not meet the requirements for DALI communication

☞ **HINT**: an improper DALI power supply can cause damage on DALI devices!

Expansion of a DALI-circuit (Main) with up to three DALI-sub-circuits

Commissioning

- The DALI Expander-3 is ready for use

- Make sure that the guaranteed supply current (3x50mA) exceeds the current consumption of all bus devices

- The SwitchDim inputs and DALI-Broadcast commands can be used to control the device immediately

- After assigning an address with the help of the DALI-Cockpit - scene values, groups and other settings can be configured

- Status-LED:
  - flashing 5Hz, 50% on: test mode
  - flashing 2Hz, 5% on : error
  - flashing 2Hz, 90% on: activity

Function

The DALI-Expander 3 can be used for DALI-line expansion. For each of the three DALI-outputs the device provides an integrated DALI power supply (50mA).

Each of the 3 DALI subnets is represented by a DALI short address at the input and commands sent to these addresses are forwarded to the corresponding output broadcast. Hence all connected ballasts on an output-circuit can be controlled simultaneously via a single short address.

An alternative for control of the output circuits are the Switch&Dim inputs (short press: On/Off, long press: Dim), as a result the device can be used as stand-alone solution without DALI-circuit on the input.

For the transmission of DALI commands between the output lines (e.g. for controlling 2 of the output lines with one DALI CS sensor only), group commands can be used.

By factory default a group command is forwarded broadcast as listed below:

G1 -> DALI A
G2 -> DALI B
G3 -> DALI C
G4 -> DALI A + DALI B
G5 -> DALI A + DALI C
G6 -> DALI B + DALI C
G7 -> DALI A + DALI B + DALI C

With the help of the test button a test sequence for testing the sub circuits can be started and stopped.

Typical Application
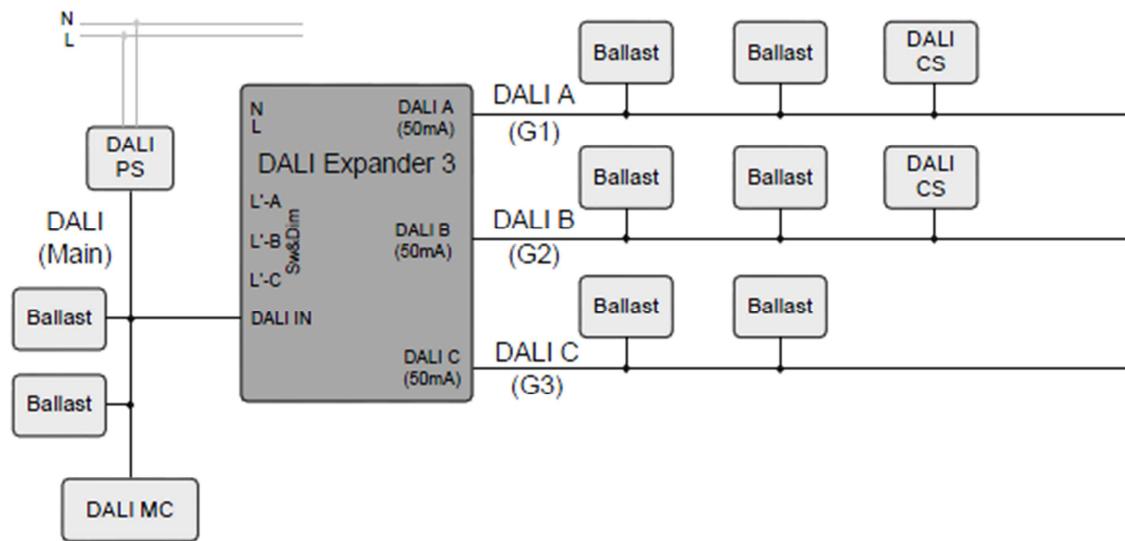
DALI input circuit available (separate DALI PS required). Control of DALI-sublines via short addresses from the DALI-Main-circuit or with the help of controls (e.g. DALI CS) in the output circuits
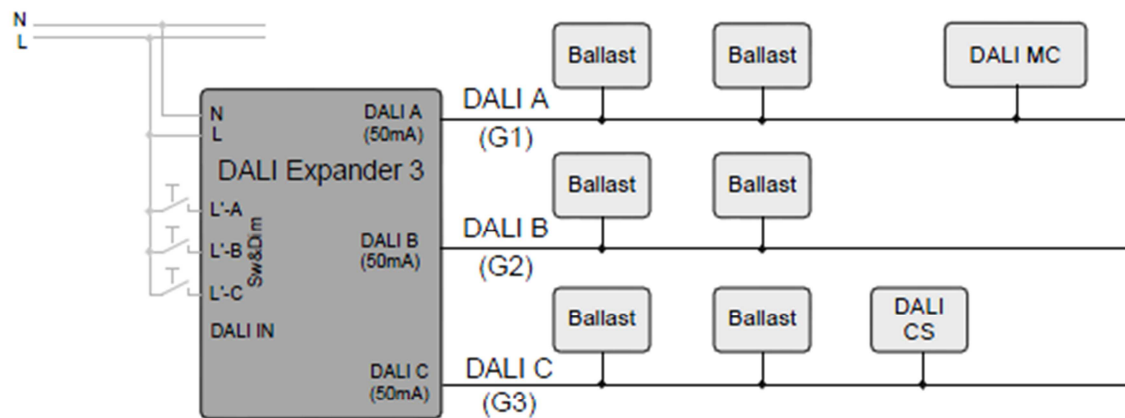
Stand Alone solution without DALI-circuit at the input. Control of the DALI output lines with Switch&Dim inputs or with controls in the output circuits (e.g. DALI MC or DALI CS) – if the DALI CS sends control commands to Group 5, per factory default line A and line C will receive this command broadcast

Purchase Order Information

ArtNr. 89453847-3: DALI Expander 3, device for DALI-line expansions with 3 subnets and integrated 50mA bus power supply for each line

Additional Information and Equipment

Lunatone datasheets, manuals and software
http://www.lunatone.com/en/downloads-a-z/

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

Contact

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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.