

DALI CON 1-10 V LI



**Converter for installation in
luminaires (LI)
(DALI to 1...10V / 0...10V)
Fitting instructions**

The DALI CON 1–10V LI converter can be used in the following operating modes, depending on the application:

- **DALI mode:** The converter connects DALI systems and 1...10V / 0...10V systems.
- **1-button mode (Touch DIM®):** The converter serves as an independent control unit.

With the control output and load contact of the converter, electronic ballasts, electronic transformers and dimmers can be dimmed, switched and controlled.

The converter is enclosed in a metal casing and is designed for installation in luminaires.

Function

DALI mode

In DALI mode, the converter is digitally accessed, addressed and supplied with voltage by a control unit (e.g. Room Controller DALI RC BASIC SO) via the DALI interface in the same way as a DALI ECG. The DALI signals received by the control unit are converted to 1...10V / 0...10V signals.

The control voltage at the output can be switched between the following characteristics:

- Logarithmic 1...10 V (for electronic ballasts, electronic transformers)
- Linear 0...10 V (for power dimmers)

In combination with a control unit, the following functions can be performed, for example: switching on/off, brightness adjustment, brightness control, motion detection, scene call-up, grouping, etc.

All 1...10V / 0...10V devices connected to the converter are accessible as a unified group via the converter address. The detection of lamp faults and the „physical selection“ (deactivation and reactivation of the lamps during startup) are **not** supported in the 1...10V / 0...10V system.

1-button mode

In 1-button mode, the converter operates separately from DALI as an independent control unit. The following functions can be performed via a pushbutton connected to the converter:

- Switching on/off
- Brightness change

Behaviour after a power failure

After a power failure and on return to power, the converter behaves as follows:

DALI mode

- The behaviour is determined by the control unit.

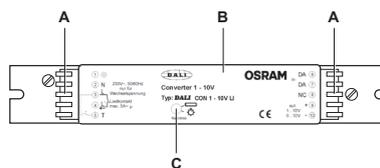
1-button mode

- Switching state prior to power failure was „OFF“ → Switching state remains „OFF“.
- Switching state prior to power failure was „ON“ → Load contact is closed, output voltage goes to 10 V (= max. brightness).

Design

The converter is made up of the following components:

- Connection terminals (A)
- Housing (B)
- Characteristic switch for control voltage (C)



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The converter must only be installed and put into operation by a qualified electrician. The applicable safety and accident prevention regulations and the wiring requirements governing cable routes, insulation, fusing and minimum cross-sections must be observed.



WARNING!

- Exposed, live cables.
- Danger of electric shock!
- Only work on the converter when it is de-energised.

CAUTION!

- Destruction of the converter and other devices through incorrect mounting!
- Do not wire DALI mode and 1-button mode at the same time. Adhere to the connection diagram.
- Supply the converter via an AC power supply only.
- Do not exceed the maximum load capacity and the maximum overall cable length.
- Load contact (L) is only suitable for switching smaller systems on and off. In larger systems, add an external relay or contactor.
- Do not open the device or operate it without a housing.

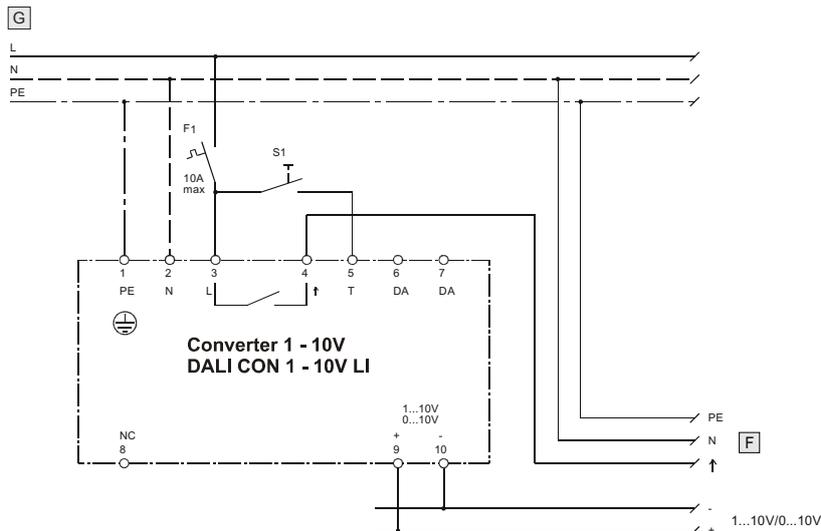
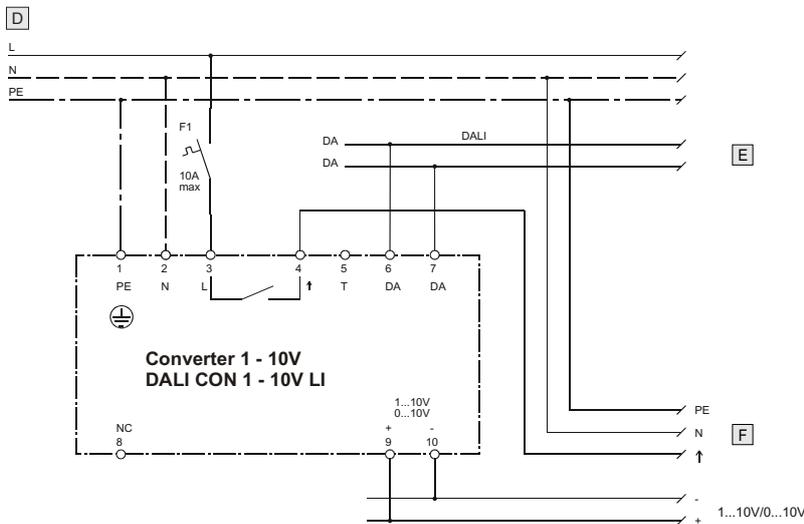
Connection diagram

D DALI mode

- Connect DALI lines (DA/DA) with the control unit.
- Do not connect the pushbutton.

E Additional DALI devices

F 1...10V / 0...10V devices (electronic ballasts, power dimmers, electronic transformers, etc.)



G 1-button mode

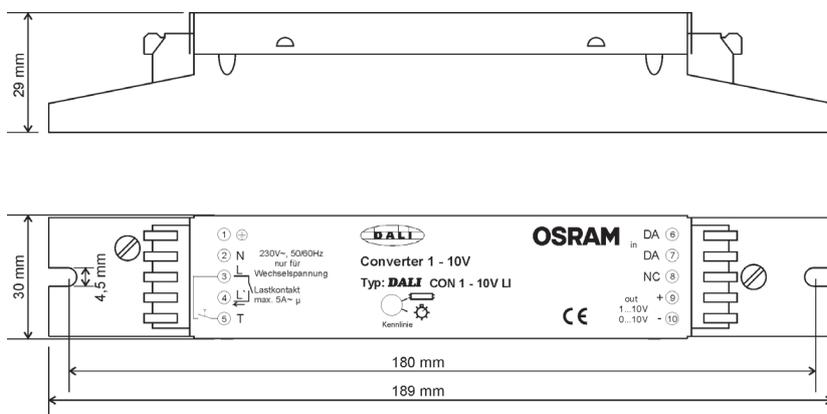
- Connect the pushbutton to the pushbutton input (T) and phase (L).
- Do not connect DALI terminals.

Connecting the converter

Terminal	Function
1/2/3 (PE/N/L)	Power supply
4 (L')	Relay contact (make contact), function switching (on/off). <ul style="list-style-type: none"> • Internally connected with L • Not potential-free • No reliable isolation (μ contact gap)
5 (T)	Pushbutton input (make contact) for mains voltage 230 V~. Internal optocoupler to N (mains potential).
6/7 (DA)	DALI interface as per DALI specification <ul style="list-style-type: none"> • Current consumption < 2 mA DC • Non-polar
8	NC (may not be used)
9/10	Output for 1...10V / 0...10V devices, poled

Technical data

Operating voltage	230 V / 50-60 Hz (no DC operation)
Fuse	External max. 10 A
Power consumption	Approx. 1 W
Line connection	Plug-in terminals: <ul style="list-style-type: none"> • Single-wire: 0.3 – 1.5 mm² • Fine-wire: 0.3 – 1.0 mm²
Control connection	Basic insulation as per IEC 664, no protective extra-low voltage
Control output load capacity	<ul style="list-style-type: none"> • 1...10V: max. -100 mA DC (approx. 100 electronic ballasts or electric transformers, see manufacturer data) • 0...10V: max. +5 mA DC active (power dimmers, see manufacturer data)
Load contact load capacity	<p>10 A resistive load.</p> <p>Max. number of electronic ballasts for a line cross-section of 1.5 mm² and line length of 15 m (distributor to device) + 20 m (to the middle of the load circuit, impedance approx. 800 mΩ):</p> <p>30x ECG 1-lamp 18 W 20x ECG 2-lamp 18 W</p> <p>30x ECG 1-lamp 36 W 20x ECG 2-lamp 36 W</p> <p>20x ECG 1-lamp 58 W 10x ECG 2-lamp 58 W</p> <p>For larger line cross sections or shorter lines, the permissible load is reduced (e.g. by 20 % for an impedance of 400 mΩ).</p>
Galvanic isolation	<ul style="list-style-type: none"> • DALI interface: Via optocoupler to mains and output. Basic insulation (no protective extra-low voltage). • Control output: To mains and DALI. Basic insulation (no protective extra-low voltage). • Pushbutton input: To output and DALI. Basic insulation (no protective extra-low voltage).
Operating temperature	0 °C ... +50 °C
Protection class	I (protective earth)
Protection type	IP 20



Dimensioned drawing