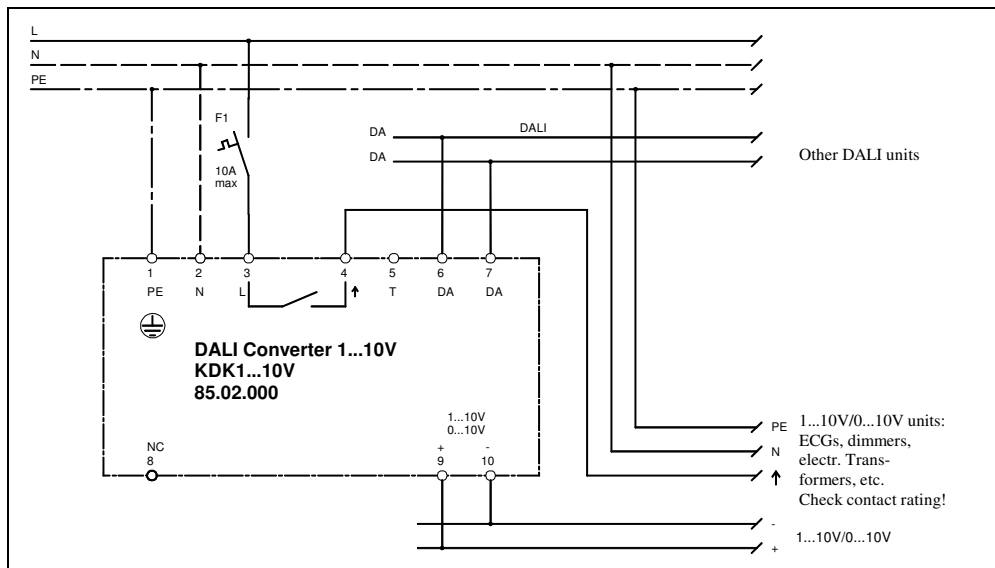
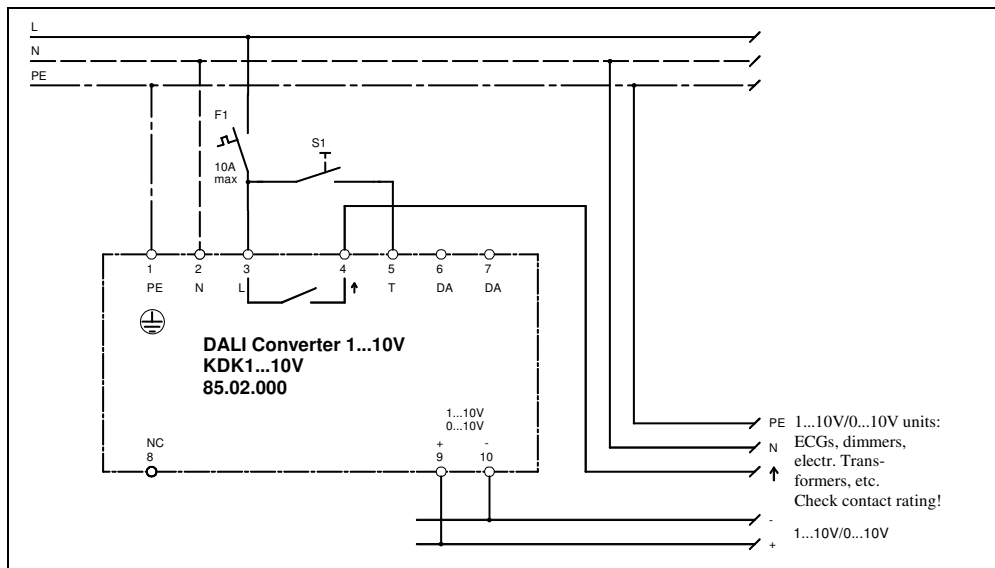


Wiring diagram: DALI Converter 1...10V in DALI mode

(Converter: DALI to 1...10V/0...10V)



Wiring diagram: DALI Converter 1...10V in 1-button mode (Converter: 1-button switching/dimming function)



Subject to change without notice. Errors and omission excepted.

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Operating instructions for DALI Converter 1...10V

(installation in luminaires)

Applications and functions

DALI Converter KDK1...10V is a multifunctional unit. On the one hand it is a converter (see DALI mode) which is accessed digitally via the DALI interface in the same way as a DALI ECG, and on the other hand it is a lighting controller in its own right (see 1-button mode). With its control output (combined interface 1-10V/0-10V) and load contact, ECGs and electronic transformers can be dimmed and switched via 1-10V and dimmers via 0-10V.

The characteristic for the control voltage at the output can be set to logarithmic 1-10V (for ECGs and electronic transformers) or to linear 0-10V (for power dimmers) depending on the application. KDK1...10V is enclosed in a metal casing for installation in luminaires. A unit with the identical function is also available in an insulated casing in snap-on design for standard distributor installation (DK1...10V NV).

It is therefore possible to connect DALI with existing 1-10V/0-10V systems, combine the two systems or even set up separate lighting control systems

lin. corresponds to: **linear** characteristic 0-10V **log.** corresponds to: **logarithmic** characteristic 1-10V

DALI mode (operation as converter)

The converter communicates via the DALI interface with the controller (e.g. Altenburger DALI Controller BASIC NV). It receives DALI commands from there and also the interface supply voltage. DALI signals are converted to 1-10V/0-10V signals, including on/off switching via the load contact. The DALI lines (DA/DA) are connected to the controller for this purpose. The additional switch input (T) is **not** connected. The converter is accessed and addressed by the controller in the same way as a DALI ECG. All the 1-10V/0-10V units connected to the converter are considered as a uniform group under the address assigned to the converter. Detection of lamp faults and "physical selection" (deactivation and reactivation of the lamps during system startup) are **not** supported in the 1-10V/0-10V system.

Functions in DALI mode in connection with DALI Controller BASIC NV:

on/off, brighter/darker, scene call-up, grouping, constant light, presence detection, etc.

Behaviour on return of mains voltage: Without the controller the load contact is closed and output voltage goes to 10 V (100%). With the controller the behaviour is determined by the controller.

1-button mode (operation as controller)

In this mode the converter operates as an independent lighting controller with a 1-button switching/dimming function independently of DALI. It is operated by a switch (make contact/230Vac) which switches from input T to phase L. To access this mode a **long press** is needed (enabling the 1-button mode). The DALI interface on the unit is **not** connected. The converter remains in this mode until it is reset to DALI mode on receipt of a DALI command via the DALI interface.

Mode I: Short press: Switch On/Off, long press: Switch On-brighter/brighter/darker. The switch on light level is equal to the last level before switch off (automatic memory function).

Mode II: Short press: Switch On/Off, long press: Switch On-brighter/brighter/darker. The switch on light level is stored by a double click (= 2 x short press) in switched on state. The storage is signalled by flashing of the lighting.

Change to mode I: Switch off the light by a short press and make a double click to the push button afterwards. The converter switches on with 100% light and is now in mode I.

Change to mode II: Make a double click when the light is switched on. The light flashes and the current light level is stored as switch on level. The converter changes to mode II respectively stays in mode II.

Behaviour on return of mains voltage in 1-button mode: Switching state and dimming level are restored automatically.

DALI interface

Interface in accordance with the DALI standard. Current input <2mA DC. Electrical isolation via opto-coupler from mains and output: basic insulation (**no safety extra-low voltage**).

The converter does not have an integrated power supply for the DALI interface. Power supply for the DALI interface is integrated in Altenburger DALI Controller BASIC NV.

Output (combined interface) 1-10V/0-10V

Interface for controlling 1-10V units (max. -100 mA current sink e.g. for ECGs, electronic transformers, etc.) and/or 0-10V units (max. +5 mA active e.g. for power dimmers, etc.). Electrical isolation from the mains and DALI: basic insulation (**no safety extra-low voltage**).

Characteristic switch

Switching option for the characteristic for the control voltage at the output. Linear from 0 – 10V, usually for power dimmers. Logarithmic from 1 – 10V, usually for ECGs and electronic transformers.

Load contact

Internal relay (make contact) **not** floating. The load contact is connected internally with L. Suitable for direct on/off switching of small systems. Check the contact load rating. Add an external relay or contactor for larger systems. On/off switching as **function switching**.

Switch input

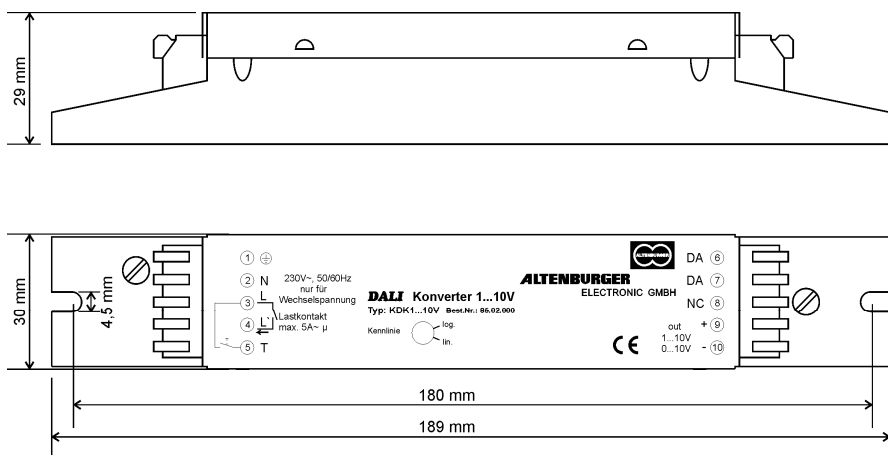
Switch input for operating in 1-button mode. Switching takes place to L (make contact/230Vac). Internal opto-coupler to N (mains potential).

Electrical isolation from the output and DALI: basic insulation (**no safety extra-low voltage**).

Safety and installation instructions

- Power to the units must be switched off before any work is undertaken.
- The units should be installed and tested only by a qualified electrician.
- Wire the terminals as shown in the wiring diagram. Follow the wiring diagrams and any instructions printed on the units.
- The relevant safety and accident prevention regulations must be observed.
- The relevant installation instructions must be observed.
- The unit must not be opened or operated without its casing.

Dimensional drawing:



Technical data

Designation	: DALI Converter 1...10V		
Type	: KDK1...10V		
Order-no.	: 85.02.000		
Mains voltage	: 230Vac 50/60 Hz, DC not permitted		
Power input	: approx. 1 W		
Fuse protection	: External max. 10 A, (load contact is connected internally to L)		
Operating temperature	: 0°C to 50°C		
Protection class	: I (protective earth)		
Type of protection	: IP20		
Pollution severity	: 2 (dry not conductive)		
Load contact L` (μ)	: Relay contact internal (make contact), connected internally with L Function switching (on/off), no reliable isolation (μ contact gap)		
Load capacity	: max. 10 A~ ohmic load max. 5A~ ECG load ⇒ 30 x ECG 1-lamp 18W, 20 x ECG 2-lamp 18W 30 x ECG 1-lamp 36W, 20 x ECG 2-lamp 36W 20 x ECG 1-lamp 58W, 10 x ECG 2-lamp 58W		
Number of connectable ECGs for a 15 m long 1.5mm ² cable from the distributor to the unit and a further 20 m to the middle of the load circuit (impedance approx. 800 mΩ). If the cable cross-section is larger or if the cable is shorter the permissible load is reduced (e.g. by 20% for an impedance of 400 mΩ).			
Output out (control voltage)	: 1-10V max. -100mA DC, current sink (approx. 100 ECGs or electronic transformers – see manufacturers' data–) 0-10V max. +3mA DC (power dimmers –see manufacturers' data–)		
Characteristic switch	: Switching the characteristic at the output between: linear 0-10V and logarithmic 1-10V		
DALI interface	: to DALI specification, current input <2mA DC, interface non-polarised		
*Switch input T	: Switch (make contact) for mains voltage (230Vac)		
Terminals	Plug-in terminals:	single-wire	0.3 - 1.5 mm ²
		fine-wire	0.3 – 1.0 mm ²
Mains	: L, N, PE	Terminal no.	(3, 2, 1)
Load contact	: → L` (μ)	Terminal no.	(4) internal to L
DALI interface	: DA, DA	Terminal no.	(6, 7) non-polarised
*Switch input	: T	Terminal no.	(5)
Output out	: 0-10V 1-10V DC +, -	Terminal no.	(9, 10) polarised
Terminal 8	: NC	Terminal no. (8)	must not be used.
Maximum cable lengths for DALI cables	: 100m : 300 m at 1.5 mm ² (distance from controller to converter)		

Cable cross-section in mm ²	2x0.5	2x0.75	2x1.0	2x1.5
Cable length (distance)	100	150	200	300

- The DALI and mains cables must be routed separately from the sensor and control cables (not in one cable) -

Cable routes	: The relevant wiring requirements governing cable routes, insulation, fusing and minimum cross-sections must be observed.
Design	: Metal casing for installation in luminaires with screw fastening, hole spacing 180 mm
Dimensions	: WxHxD=189 x 30 x 29 mm, see dimensional drawing
Weight	: approx. 190g
Labelling	: CE
Accessories	: Units with 1-10V/0-10V interfaces: ECGs, power dimmers, electronic transformers, etc. Controller with appropriate peripherals required for DALI mode (e.g. DALI Controller BASIC NV) Standard switch (make contact for mains voltage 230 Vac) required for 1-button mode
Terminal assignment	: See wiring diagrams and information printed on unit

*Note:

The switch input is independent of "DALI" for operating the unit in 1-button mode (on/off, brighter/darker). The unit then operates as an independent controller with a 1-button switching/dimming function. Switching takes place from T to L via a switch (make contact for mains voltage/mains potential). Internally this input is decoupled via an opto-coupler (basic insulation). In this mode the DALI interface must **not** be connected.

Usage of DALI and 1-button operation at the same time is not allowed! The converter may be damaged or destroyed if wired incorrect!