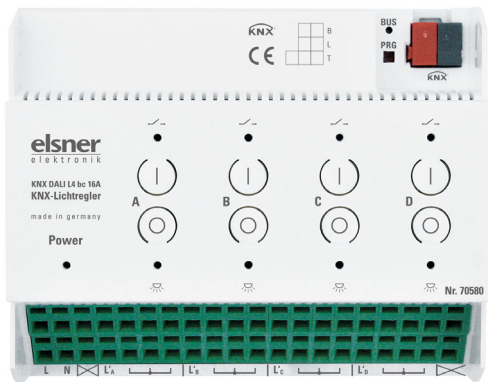


KNX DALI L4 bc 16 A

Actuator for DALI Light Control

Technical specifications and installation instructions

Item number 70580



1. Description

The **Actuator KNX DALI L4 bc 16 A** is an interface between KNX bus system and DALI lighting system (Digital Addressable Lighting Interface). The interface has four channels for DALI lighting control, each of which can control up to 64 DALI devices (electronic ballasts). Control is via broadcast message, i.e. all participants on a channel are switched/dimmed simultaneously. Each channel can be set separately.

Each channel has a switched relay contact through which the DALI devices can be switched completely de-energised (no standby). The **KNX DALI L4 bc 16 A** supplies the DALI bus voltage, no external DALI bus voltage supply is required.

With the **KNX DALI L4 bc 16 A**, the colour and colour temperature (Tunable White) can be set for DALI EVGs with device type 8. Both colour settings can be controlled by scenes, relative or absolute dimming.

In addition to normal operation, the **KNX DALI L4 bc 16 A** has a night mode and a staircase lighting function with prewarning function (and both in combination).

Buttons on the device allow direct manual switching and dimming of the connected DALI EVGs even without bus voltage. The LEDs indicate whether the relay is open or closed (upper LEDs) and whether the lamp is on or off after a DALI command (lower LEDs). The DALI EVGs can be controlled by the ETS with the buttons for commissioning on site without KNX power supply and without prior configuration.

Functions:

- **Interface** between KNX bus system and DALI lighting system
- **4 channels**, each of which can control up to 64 DALI participants. Each channel can be set separately and has one switching output (230 V AC) and two DALI bus terminals
- **Broadcast** operation: all DALI participants of a channel are controlled with a common signal, whereby individual addressing is not possible
- Switch panel with **8 buttons** and status LEDs
- Minimum switch-on delay from relay to relay: When several channels are switched on simultaneously, this ensures that the switch-on current of the EVGs is distributed over time (and thus limited)
- Colour temperature control (Tunable White), RGB/RGBW colour control, HSV colour control
- Scene recalls
- Status feedback
- Timer function

Configuration is made using the KNX software ETS. The **product file** can be downloaded from the Elsner Elektronik website on www.elsner-elektronik.de in the "Service" menu.

1.1. Scope of delivery

- Actuator

1.2. Technical data

Casing	Plastic
Colour	White
Assembly	Series installation on mounting rail
IP rating	IP 20
Dimensions	approx. 107 x 88 x 60 (W x H x D, mm), 6 modules
Weight	approx. 270 g
Ambient temperature	Operation -20...+50°C, storage -55...+90°C
Ambient humidity	max. 95% RH, avoid condensation
Operating voltage	230V AC, 50 Hz
Power consumption	Standby: below 1.5 W all 4 relays closed and all 4 DALI buses consume 128 mA each: max. 15 W
Power	on bus: 10 mA
Outputs	4x switching output 230 V AC, 16 A, 165 A/20 ms, 490 A/1.5 ms (electronic ballast) 4x DALI for max. 64 participants (18 V typical, max. 128 mA each)
Data output	KNX +/- Bus plug-in terminal
BCU type	own microcontroller

PEI type	0
Group addresses	max. 254
Assignments	max. 254
Communication objects	165

The product is compliant with the provisions of EU Directives.

2. Installation and commissioning

2.1. Installation notes



Installation, testing, operational start-up and troubleshooting should only be performed by an electrician.



DANGER! **Risk to life from live voltage (mains voltage)!**

There are unprotected live components within the device.

- VDE regulations and national regulations are to be followed.
- Ensure that all lines to be assembled are free of voltage and take precautions against accidental switching on.
- Do not use the device if it is damaged.
- Take the device or system out of service and secure it against unintentional use, if it can be assumed, that risk-free operation is no longer guaranteed.

The device is only to be used for its intended purpose. Any improper modification or failure to follow the operating instructions voids any and all warranty and guarantee claims.

After unpacking the device, check it immediately for possible mechanical damage. If it has been damaged in transport, inform the supplier immediately.

The device may only be used as a fixed-site installation; that means only when assembled and after conclusion of all installation and operational start-up tasks and only in the surroundings designated for it.

Elsner Elektronik is not liable for any changes in norms and standards which may occur after publication of these operating instructions.

2.2. Device connection and design

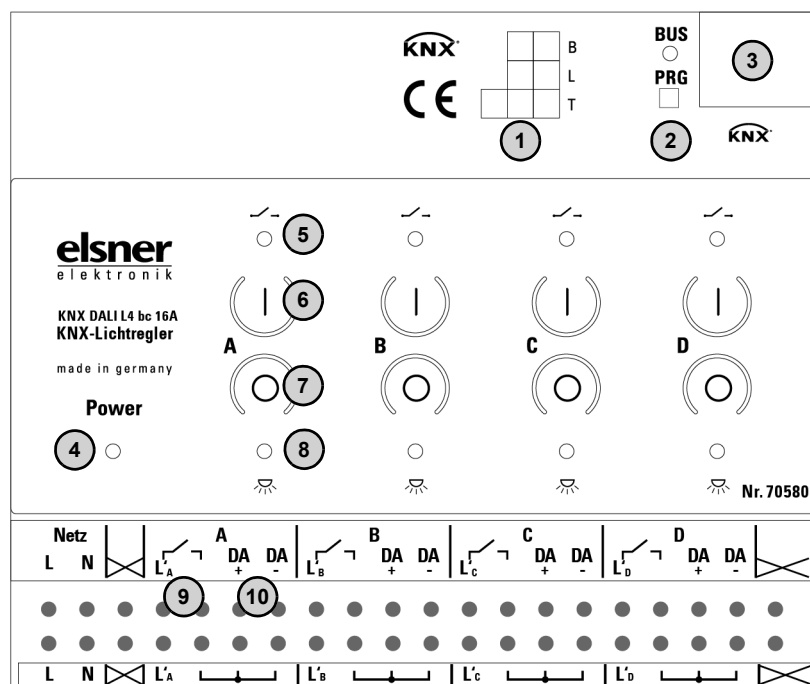


Fig. 1

- 1 Label field
- 2 Programmable LED (BUS) and programmable buttons (PRG)
- 3 Bus terminal socket (KNX +/-)
- 4 Network LED (power)
- Channel A (corresponding to B, C, D):
- 5 LED "relay" Channel A:
LED on: Relay closed
LED off: Relay open
- 6 "Switch on/brighter" button Channel A
- 7 "Switch off/darker" button Channel A
- 8 LED "lamp" Channel A:
LED on: Switched on (DALI)
LED off: Switched off (DALI)
- 9 Connections switching output Channel A
- 10 Connections DALI Bus A

The **Actuator KNX DALI L4 bc 16 A** is installed on a DIN rail (in-line installation on top-hat rail). The connection to the KNX data bus is made via a KNX connection terminal and is insulated according to the requirements of SELV circuits. In addition, the device is connected to the mains voltage, which is also used to switch the DALI devices.

The **KNX DALI L4 bc 16 A** supplies the DALI bus voltage via the DALI bus terminals (DA) at the same potential.



When installing and laying the cables for the KNX connection, the regulations and standards governing SELV current circuits must be observed!

The physical address is assigned by the ETS. There is a button with a control LED for this on the actuator.

2.2.1. Insulation properties of the clamp groups

The **Actuator KNX DALI L4 bc 16 A** is assigned to Overvoltage category III and Pollution degree 2 or 3 according to EN60664-1. According to this classification, between 250 V power cables and FELV 4 kV surge voltage resistance and between 250 V power cables and FELV 6 kV surge voltage resistance must be provided. This provision must be observed during the installation.

With single insulation, there may be a voltage of 400 V AC at pollution degree 2 and a voltage of 250 V AC at pollution degree 3 between two channels.

⚠ Neighbouring clamp groups must not be assigned mixed voltages, as they are only single insulated against each other.

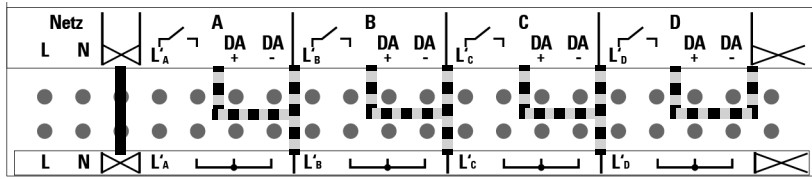


Fig. 2 Insulation properties of the clamp groups

■ Insulation 6 kV (increased insulation)
▨ Insulation 4 kV (single insulation)

Note: all 4 DALI buses have the same potential

2.2.2. Connection example

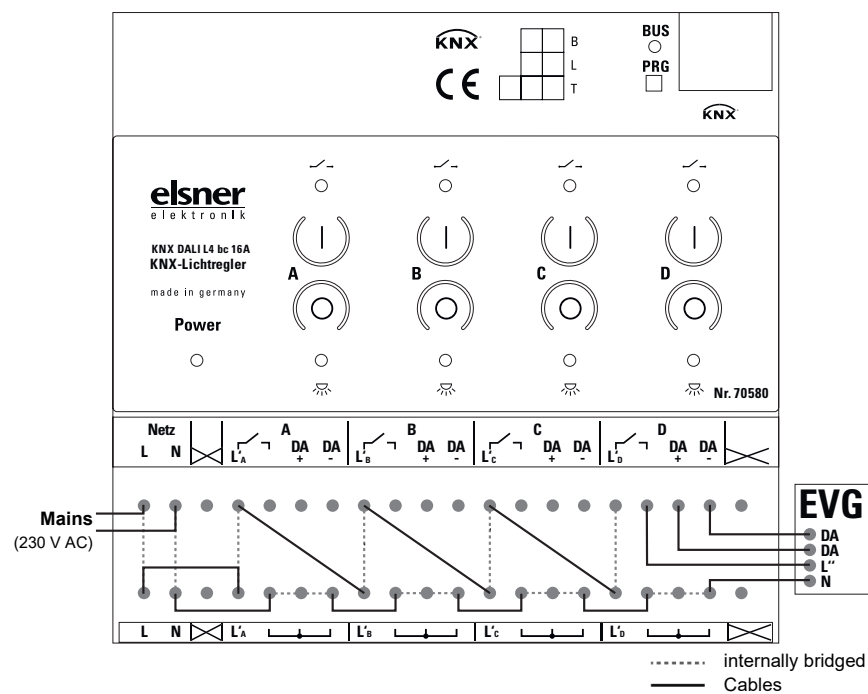


Fig. 3: Connection example for electronic enhanced voltage generators for output D (outputs A, B and C correspondingly). The connection of the switching output L'' is only required if the DALI devices on the corresponding channel are to be completely de-energised

2.3. Notes on mounting and commissioning

Device must not be exposed to water (rain). This could result in the electronic being damaged. A relative air humidity of 95% must not be exceeded. Avoid bedewing.

After the operating voltage has been applied, the device will enter an initialisation phase lasting a few seconds. During this phase no information can be received or sent via the bus.

The DALI EVGs can be controlled by the ETS with the buttons for commissioning on site without KNX power supply and without prior configuration. After the ETS download, only the channels active in the ETS still function.

2.4. Buttons and LEDs for the output channels

The buttons on the devices can be deactivated in the ETS (active when delivered).

Buttons

Button	Keystroke	DALI command
top	short (<1 s)	Activate
top	long (<1 s)	dim brighter
bottom	short (<1 s)	Switch off
bottom	long (<1 s)	dim darker

LEDs

Behaviour of the LEDs of the output channels

LED	On/Off	Meaning
top (relay)	On	Relay closed
top (relay)	Off	Relay open
bottom (light)	On	Switched on (DALI)

bottom (light)	Off	Switched off (DALI)
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3. Address the device on the bus

The equipment is delivered with the bus address 15.15.255. You can program a different address in the ETS by overwriting the address 15.15.255 or by teaching the device via the programming button.