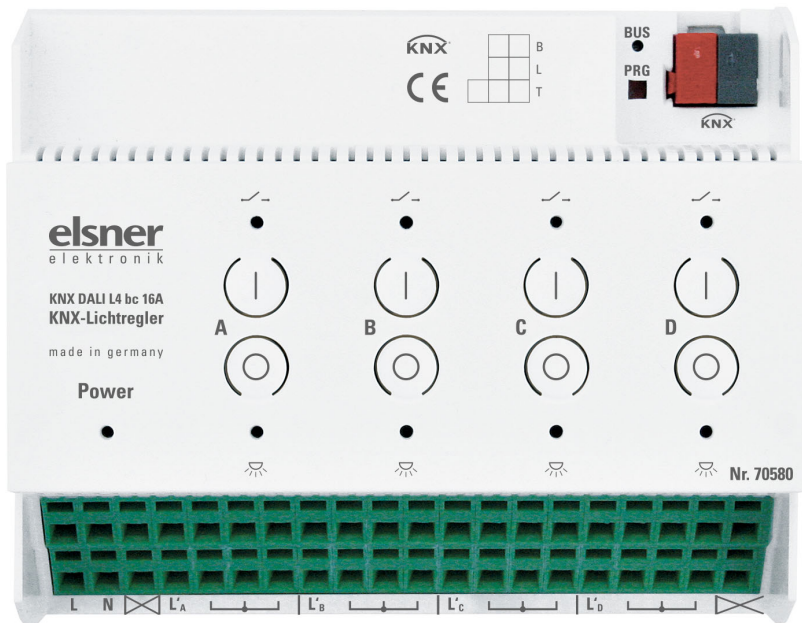




KNX DALI L4 bc 16 A

Actuator for DALI Light Control

Item number 70580



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Installation, inspection, commissioning and troubleshooting of the device must only be carried out by a competent electrician.

This manual is amended periodically and will be brought into line with new software releases. The change status (software version and date) can be found in the contents footer. If you have a device with a later software version, please check **www.elsner-elektronik.de** in the menu area "Service" to find out whether a more up-to-date version of the manual is available.

Clarification of signs used in this manual



Safety advice.



Safety advice for working on electrical connections, components, etc.

DANGER!

... indicates an immediately hazardous situation which will lead to death or severe injuries if it is not avoided.

WARNING!

... indicates a potentially hazardous situation which may lead to death or severe injuries if it is not avoided.

CAUTION!

... indicates a potentially hazardous situation which may lead to trivial or minor injuries if it is not avoided.



ATTENTION! ... indicates a situation which may lead to damage to property if it is not avoided.

ETS

In the ETS tables, the parameter default settings are marked by underlining.

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

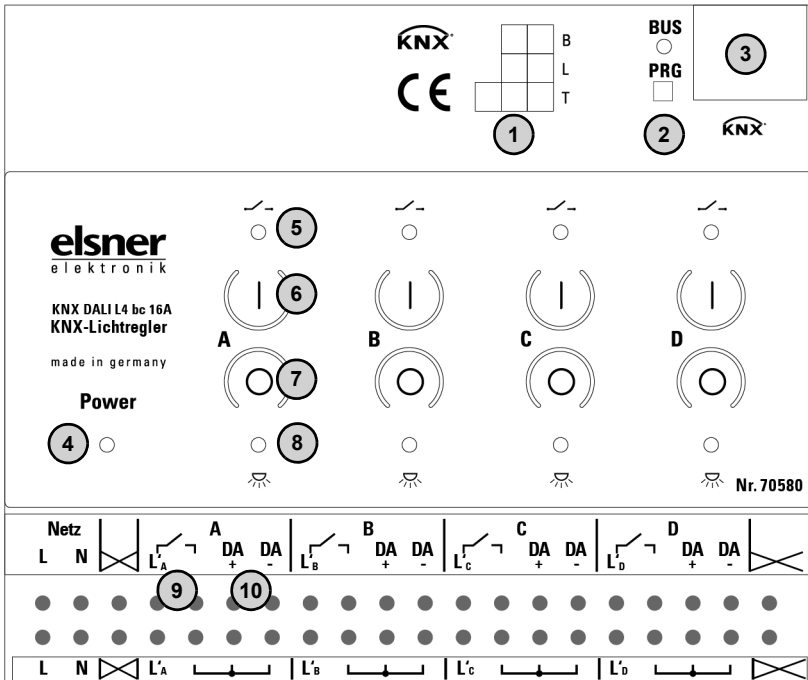


Fig. 1

- 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.

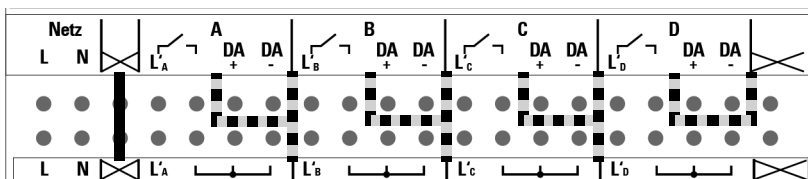


Fig. 2 Insulation properties of the clamp groups

■ Insulation 6 kV (increased insulation)

■■■ Insulation 4 kV (single insulation)

Note: all 4 DALI buses have the same potential

2.2.2. Connection example

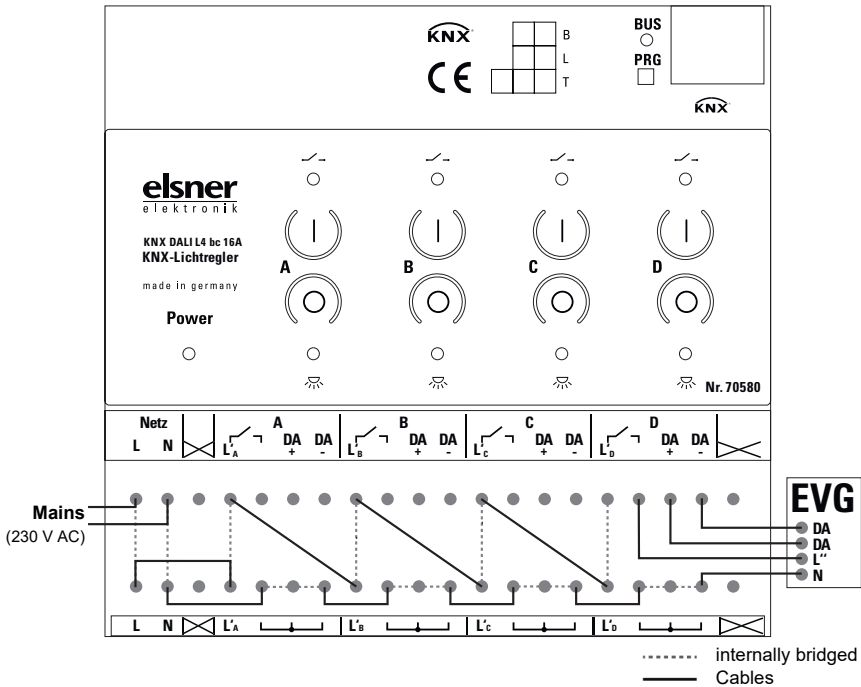


Fig. 3:

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)

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.

4. Transmission protocol

4.1. List of all communication objects

Abbreviations Flags:

R Read

W Write

C Communication

T Transmit

U Update

No	Text	Function	Flags	DPT type	Size
0	Software version	readable	R-C-	[217.1] DPT_Version	2 Bytes
1	DALI A bus fault	Output	--CT	[1.2] DPT_Bool	1 Bit
2	DALI B bus fault	Output	--CT	[1.2] DPT_Bool	1 Bit
3	DALI C bus fault	Output	--CT	[1.2] DPT_Bool	1 Bit
4	DALI D bus fault	Output	--CT	[1.2] DPT_Bool	1 Bit
10	DALI A on/off	Input	-WC-	[1.1] DPT_Switch	1 Bit
11	DALI A status on/off	Output	--CT	[1.1] DPT_Switch	1 Bit
12	DALI A switch-on value %	Input/ Output	RWCT	[5.1] DPT_Scaling	1 Byte
13	DALI A dimming	Input	-WC-	[3.7] DPT_Control_Dim ming	4 Bit
14	DALI A brightness setpoint %	Input	-WC-	[5.1] DPT_Scaling	1 Byte
15	DALI A brightness status %	Output	--CT	[5.1] DPT_Scaling	1 Byte
16	DALI A night mode	Input	-WC-	[1.3] DPT_Enable	1 Bit
17	DALI A night mode status	Output	--CT	[1.3] DPT_Enable	1 Bit
18	DALI A night mode brightness setpoint %	Input	-WC-	[5.1] DPT_Scaling	1 Byte
19	DALI A night mode brightness setpoint % status	Output	--CT	[5.1] DPT_Scaling	1 Byte
20	DALI A staircase mode	Input	-WC-	[1.3] DPT_Enable	1 Bit
21	DALI A staircase light status	Output	--CT	[1.3] DPT_Enable	1 Bit

No	Text	Function	Flags	DPT type	Size
22	DALI A colour temperature dimming	Input	-WC-	[3.7] DPT_Control_Dim ming	4 Bit
23	DALI A colour temperature setpoint %	Input	-WC-	[5.1] DPT_Scaling	1 Byte
24	DALI A colour temperature setpoint Kelvin	Input	-WC-	[7.600] DPT_Absolute_ Colour_Temper ature	2 Bytes
25	DALI A colour temperature status Kelvin	Output	--CT	[7.600] DPT_Absolute_ Colour_Temper ature	2 Bytes
26	DALI A red setpoint %	Input	-WC-	[5.1] DPT_Scaling	1 Byte
27	DALI A green setpoint %	Input	-WC-	[5.1] DPT_Scaling	1 Byte
28	DALI A blue setpoint %	Input	-WC-	[5.1] DPT_Scaling	1 Byte
29	DALI A white setpoint %	Input	-WC-	[5.1] DPT_Scaling	1 Byte
30	DALI A red setpoint dimming	Input	-WC-	[3.7] DPT_Control_Di ming	4 Bit
31	DALI A green setpoint dimming	Input	-WC-	[3.7] DPT_Control_Di ming	4 Bit
32	DALI A blue setpoint dimming	Input	-WC-	[3.7] DPT_Control_Di ming	4 Bit
33	DALI A white setpoint dimming	Input	-WC-	[3.7] DPT_Control_Di ming	4 Bit
34	DALI A red status %	Output	--CT	[5.1] DPT_Scaling	1 Byte
35	DALI A green status %	Output	--CT	[5.1] DPT_Scaling	1 Byte
36	DALI A blue status %	Output	--CT	[5.1] DPT_Scaling	1 Byte
37	DALI A white status %	Output	--CT	[5.1] DPT_Scaling	1 Byte
38	DALI A RGB setpoint %	Input	-WC-	[232.600] DPT_Colour_RG B	3 Bytes

No	Text	Function	Flags	DPT type	Size
39	DALI A RGB status %	Output	--CT	[232.600] DPT_Colour_RGB	3 Bytes
40	DALI A RGBW setpoint %	Input	-WC-	[251.600] DPT_Colour_RGBW	6 Bytes
41	DALI A RGBW status %	Output	--CT	[251.600] DPT_Colour_RGBW	6 Bytes
42	DALI A RGB colour tone setpoint °	Input	-WC-	[5.3] DPT_Angle	1 Byte
43	DALI A RGB colour saturation setpoint %	Input	-WC-	[5.1] DPT_Scaling	1 Byte
44	DALI A RGB colour tone setpoint dimming	Input	-WC-	[3.7] DPT_Control_Dimming	4 Bit
45	DALI A RGB colour saturation setpoint dimming	Input	-WC-	[3.7] DPT_Control_Dimming	4 Bit
46	DALI A RGB colour tone status °	Output	--CT	[5.3] DPT_Angle	1 Byte
47	DALI A RGB colour saturation status %	Output	--CT	[5.1] DPT_Scaling	1 Byte
48	DALI A scenario	Input	-WC-	[18.1] DPT_SceneControl	1 Byte
49	DALI A front control block	Input	-WC-	[1.3] DPT_Enable	1 Bit
50	DALI B on/off	Input	-WC-	[1.1] DPT_Switch	1 Bit
51	DALI B brightness setpoint %	Output	--CT	[1.1] DPT_Switch	1 Bit
52	DALI B switch-on value %	Input/ Output	RWCT	[5.1] DPT_Scaling	1 Byte
53	DALI B night mode brightness setpoint %	Input	-WC-	[3.7] DPT_Control_Dimming	4 Bit
54	DALI B brightness status %	Input	-WC-	[5.1] DPT_Scaling	1 Byte
55	DALI B status on/off	Output	--CT	[5.1] DPT_Scaling	1 Byte
56	DALI B dimming	Input	-WC-	[1.3] DPT_Enable	1 Bit
57	DALI B night mode status	Output	--CT	[1.3] DPT_Enable	1 Bit

No	Text	Function	Flags	DPT type	Size
58	DALI B night mode	Input	-WC-	[5.1] DPT_Scaling	1 Byte
59	DALI B night mode brightness setpoint % status	Output	--CT	[5.1] DPT_Scaling	1 Byte
60	DALI B staircase mode	Input	-WC-	[1.3] DPT_Enable	1 Bit
61	DALI B staircase light status	Output	--CT	[1.3] DPT_Enable	1 Bit
62	DALI B colour temperature setpoint Kelvin	Input	-WC-	[3.7] DPT_Control_Dimming	4 Bit
63	DALI B colour temperature status Kelvin	Input	-WC-	[5.1] DPT_Scaling	1 Byte
64	DALI B colour temperature setpoint %	Input	-WC-	[7.600] DPT_Absolute_Colour_Temperature	2 Bytes
65	DALI B colour temperature dimming	Output	--CT	[7.600] DPT_Absolute_Colour_Temperature	2 Bytes
66	DALI B blue setpoint dimming	Input	-WC-	[5.1] DPT_Scaling	1 Byte
67	DALI B white setpoint %	Input	-WC-	[5.1] DPT_Scaling	1 Byte
68	DALI B white setpoint dimming	Input	-WC-	[5.1] DPT_Scaling	1 Byte
69	DALI B RGB colour tone status °	Input	-WC-	[5.1] DPT_Scaling	1 Byte
70	DALI B blue setpoint %	Input	-WC-	[3.7] DPT_Control_Dimming	4 Bit
71	DALI B red setpoint dimming	Input	-WC-	[3.7] DPT_Control_Dimming	4 Bit
72	DALI B green setpoint dimming	Input	-WC-	[3.7] DPT_Control_Dimming	4 Bit
73	DALI B RGB colour saturation setpoint dimming	Input	-WC-	[3.7] DPT_Control_Dimming	4 Bit
74	DALI B red status %	Output	--CT	[5.1] DPT_Scaling	1 Byte

No	Text	Function	Flags	DPT type	Size
75	DALI B green status %	Output	--CT	[5.1] DPT_Scaling	1 Byte
76	DALI B blue status %	Output	--CT	[5.1] DPT_Scaling	1 Byte
77	DALI B RGB colour saturation status %	Output	--CT	[5.1] DPT_Scaling	1 Byte
78	DALI B red setpoint %	Input	-WC-	[232.600] DPT_Colour_RGB	3 Bytes
79	DALI B green setpoint %	Output	--CT	[232.600] DPT_Colour_RGB	3 Bytes
80	DALI B RGB colour saturation setpoint %	Input	-WC-	[251.600] DPT_Colour_RGB	6 Bytes
81	DALI B RGB colour tone setpoint dimming	Output	--CT	[251.600] DPT_Colour_RGB	6 Bytes
82	DALI B white status %	Input	-WC-	[5.3] DPT_Angle	1 Byte
83	DALI B RGB setpoint %	Input	-WC-	[5.1] DPT_Scaling	1 Byte
84	DALI B RGB status %	Input	-WC-	[3.7] DPT_Control_Di	4 Bit
85	DALI B RGBW setpoint %	Input	-WC-	[3.7] DPT_Control_Di	4 Bit
86	DALI B RGBW status %	Output	--CT	[5.3] DPT_Angle	1 Byte
87	DALI B RGB colour tone setpoint °	Output	--CT	[5.1] DPT_Scaling	1 Byte
88	DALI B scenario	Input	-WC-	[18.1] DPT_SceneCont	1 Byte
89	DALI B front control block	Input	-WC-	[1.3] DPT_Enable	1 Bit
90	DALI C on/off	Input	-WC-	[1.1] DPT_Switch	1 Bit
91	DALI C brightness setpoint %	Output	--CT	[1.1] DPT_Switch	1 Bit
92	DALI C switch-on value %	Input/ Output	RWCT	[5.1] DPT_Scaling	1 Byte
93	DALI C night mode brightness setpoint %	Input	-WC-	[3.7] DPT_Control_Di	4 Bit

No	Text	Function	Flags	DPT type	Size
94	DALI C brightness status %	Input	-WC-	[5.1] DPT_Scaling	1 Byte
95	DALI C status on/off	Output	--CT	[5.1] DPT_Scaling	1 Byte
96	DALI C dimming	Input	-WC-	[1.3] DPT_Enable	1 Bit
97	DALI C night mode status	Output	--CT	[1.3] DPT_Enable	1 Bit
98	DALI C night mode	Input	-WC-	[5.1] DPT_Scaling	1 Byte
99	DALI C night mode brightness setpoint % status	Output	--CT	[5.1] DPT_Scaling	1 Byte
100	DALI C staircase mode	Input	-WC-	[1.3] DPT_Enable	1 Bit
101	DALI C staircase light status	Output	--CT	[1.3] DPT_Enable	1 Bit
102	DALI C colour temperature setpoint Kelvin	Input	-WC-	[3.7] DPT_Control_Dim ming	4 Bit
103	DALI C colour temperature status Kelvin	Input	-WC-	[5.1] DPT_Scaling	1 Byte
104	DALI C colour temperature setpoint %	Input	-WC-	[7.600] DPT_Absolute_ Colour_Temper ature	2 Bytes
105	DALI B colour temperature dimming	Output	--CT	[7.600] DPT_Absolute_ Colour_Temper ature	2 Bytes
106	DALI C blue setpoint dimming	Input	-WC-	[5.1] DPT_Scaling	1 Byte
107	DALI C white setpoint %	Input	-WC-	[5.1] DPT_Scaling	1 Byte
108	DALI C white setpoint dimming	Input	-WC-	[5.1] DPT_Scaling	1 Byte
109	DALI C RGB colour tone status °	Input	-WC-	[5.1] DPT_Scaling	1 Byte
110	DALI C blue setpoint %	Input	-WC-	[3.7] DPT_Control_Di ming	4 Bit
111	DALI C red setpoint dimming	Input	-WC-	[3.7] DPT_Control_Di ming	4 Bit

No	Text	Function	Flags	DPT type	Size
112	DALI C green setpoint dimming	Input	-WC-	[3.7] DPT_Control_Dimming	4 Bit
113	DALI C RGB colour saturation setpoint dimming	Input	-WC-	[3.7] DPT_Control_Dimming	4 Bit
114	DALI C red status %	Output	--CT	[5.1] DPT_Scaling	1 Byte
115	DALI C green status %	Output	--CT	[5.1] DPT_Scaling	1 Byte
116	DALI C blue status %	Output	--CT	[5.1] DPT_Scaling	1 Byte
117	DALI C RGB colour saturation status %	Output	--CT	[5.1] DPT_Scaling	1 Byte
118	DALI C red setpoint %	Input	-WC-	[232.600] DPT_Colour_RGB	3 Bytes
119	DALI C green setpoint %	Output	--CT	[232.600] DPT_Colour_RGB	3 Bytes
120	DALI C RGB colour saturation setpoint %	Input	-WC-	[251.600] DPT_Colour_RGBW	6 Bytes
121	DALI C RGB colour tone setpoint dimming	Output	--CT	[251.600] DPT_Colour_RGBW	6 Bytes
122	DALI C white status %	Input	-WC-	[5.3] DPT_Angle	1 Byte
123	DALI C RGB setpoint %	Input	-WC-	[5.1] DPT_Scaling	1 Byte
124	DALI C RGB status %	Input	-WC-	[3.7] DPT_Control_Dimming	4 Bit
125	DALI C RGBW setpoint %	Input	-WC-	[3.7] DPT_Control_Dimming	4 Bit
126	DALI C RGBW status %	Output	--CT	[5.3] DPT_Angle	1 Byte
127	DALI C RGB colour tone setpoint °	Output	--CT	[5.1] DPT_Scaling	1 Byte
128	DALI C scenario	Input	-WC-	[18.1] DPT_SceneControl	1 Byte
129	DALI C front control block	Input	-WC-	[1.3] DPT_Enable	1 Bit

No	Text	Function	Flags	DPT type	Size
130	DALI D on/off	Input	-WC-	[1.1] DPT_Switch	1 Bit
131	DALI D brightness setpoint %	Output	--CT	[1.1] DPT_Switch	1 Bit
132	DALI D switch-on value %	Input/ Output	RWCT	[5.1] DPT_Scaling	1 Byte
133	DALI D night mode brightness setpoint %	Input	-WC-	[3.7] DPT_Control_Dim ming	4 Bit
134	DALI D brightness status %	Input	-WC-	[5.1] DPT_Scaling	1 Byte
135	DALI D status on/off	Output	--CT	[5.1] DPT_Scaling	1 Byte
136	DALI D dimming	Input	-WC-	[1.3] DPT_Enable	1 Bit
137	DALI D night mode status	Output	--CT	[1.3] DPT_Enable	1 Bit
138	DALI D night mode	Input	-WC-	[5.1] DPT_Scaling	1 Byte
139	DALI D night mode brightness setpoint % status	Output	--CT	[5.1] DPT_Scaling	1 Byte
140	DALI D staircase mode	Input	-WC-	[1.3] DPT_Enable	1 Bit
141	DALI D staircase light status	Output	--CT	[1.3] DPT_Enable	1 Bit
142	DALI D colour temperature setpoint Kelvin	Input	-WC-	[3.7] DPT_Control_Di ming	4 Bit
143	DALI D colour temperature status Kelvin	Input	-WC-	[5.1] DPT_Scaling	1 Byte
144	DALI D colour temperature setpoint %	Input	-WC-	[7.600] DPT_Absolute_ Colour_Temper ature	2 Bytes
145	DALI D colour temperature dimming	Output	--CT	[7.600] DPT_Absolute_ Colour_Temper ature	2 Bytes
146	DALI D blue setpoint dimming	Input	-WC-	[5.1] DPT_Scaling	1 Byte
147	DALI D white setpoint %	Input	-WC-	[5.1] DPT_Scaling	1 Byte
148	DALI D white setpoint dimming	Input	-WC-	[5.1] DPT_Scaling	1 Byte

No	Text	Function	Flags	DPT type	Size
149	DALI D RGB colour tone status °	Input	-WC-	[5.1] DPT_Scaling	1 Byte
150	DALI D blue setpoint %	Input	-WC-	[3.7] DPT_Control_Dim ming	4 Bit
151	DALI D red setpoint dimming	Input	-WC-	[3.7] DPT_Control_Di mming	4 Bit
152	DALI D green setpoint dimming	Input	-WC-	[3.7] DPT_Control_Di mming	4 Bit
153	DALI D RGB colour saturation setpoint dimming	Input	-WC-	[3.7] DPT_Control_Di mming	4 Bit
154	DALI D red status %	Output	--CT	[5.1] DPT_Scaling	1 Byte
155	DALI D green status %	Output	--CT	[5.1] DPT_Scaling	1 Byte
156	DALI D blue status %	Output	--CT	[5.1] DPT_Scaling	1 Byte
157	DALI D RGB colour saturation status %	Output	--CT	[5.1] DPT_Scaling	1 Byte
158	DALI D red setpoint %	Input	-WC-	[232.600] DPT_Colour_RG B	3 Bytes
159	DALI D green setpoint %	Output	--CT	[232.600] DPT_Colour_RG B	3 Bytes
160	DALI D RGB colour saturation setpoint %	Input	-WC-	[251.600] DPT_Colour_RG BW	6 Bytes
161	DALI D RGB colour tone setpoint dimming	Output	--CT	[251.600] DPT_Colour_RG BW	6 Bytes
162	DALI D white status %	Input	-WC-	[5.3] DPT_Angle	1 Byte
163	DALI D RGB setpoint %	Input	-WC-	[5.1] DPT_Scaling	1 Byte
164	DALI D RGB status %	Input	-WC-	[3.7] DPT_Control_Di mming	4 Bit
165	DALI D RGBW setpoint %	Input	-WC-	[3.7] DPT_Control_Di mming	4 Bit
166	DALI D RGBW status %	Output	--CT	[5.3] DPT_Angle	1 Byte

No	Text	Function	Flags	DPT type	Size
167	DALI D RGB colour tone setpoint °	Output	--CT	[5.1] DPT_Scaling	1 Byte
168	DALI D scenario	Input	-WC-	[18.1] DPT_SceneControl	1 Byte
169	DALI D front control block	Input	-WC-	[1.3] DPT_Enable	1 Bit

5. Setting the parameters

The parameter defaults are underlined.

5.1. Behaviour on power failure/ restoration of power

Behaviour following a failure of the bus power supply:

The device does not transmit anything (the operation of the connected DALI EVGs is still possible with the buttons on the device).

Behaviour on bus restoration of power and following programming or reset:

The device sends all KNX objects according to their send behaviour set in the parameters with the delays established in the "General settings" parameter block.

5.2. General settings

First set the general parameters for the bus communication (message rate, transmission delays). In addition, you can specify the minimum switch-on delay from relay to relay.

Maximum message rate	1... <u>20 messages per second</u>
Transmission delay of the objects after reset and restoration of power	<u>5 s</u> ... 30 s
min. switch-on delay from relay to relay	<u>0</u> ... 255 x 10ms steps

Activate the DALI bus. The menus for the further setting are then loaded.

Use DALI Bus A	<u>No</u> • Yes
Use DALI Bus B	<u>No</u> • Yes
Use DALI Bus C	<u>No</u> • Yes
Use DALI Bus D	<u>No</u> • Yes

5.3. DALI Bus A / B / C / D

5.3.1. General

The **label for objects** is placed at the front of all objects of the corresponding DALI bus and makes their assignment in the ETS identifiable.

Object labelling	DALI A / B / C / D [free text max. 20 characters]
------------------	---

Delay DALI bus voltage

Set how long the device waits after switching on the DALI bus voltage until it starts sending DALI commands and whether the DALI EVGs are to be completely de-energised with the relay of the channel.

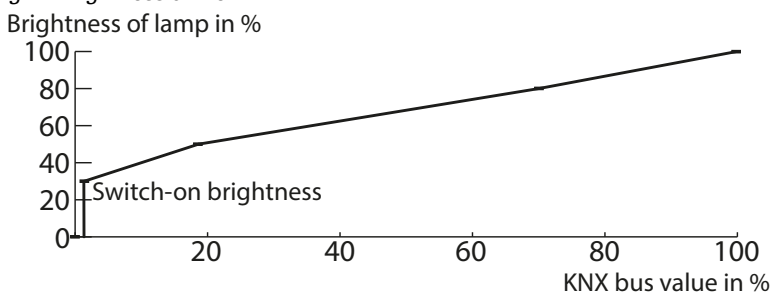
Delay DALI bus voltage On until	
Start DALI bus communication	1 ... 31; 5 x 0.1 sec.
Switch EVG power supply with relay	No • Yes
Switch off EVG voltage when lamp at 0% (when switching with relay)	directly • after 5 sec. • ... • after 18 hours
EVG activation at EVG restoration of power (when switching without relay)	0 ... 100%
Activation at DALI power failure (when switching without relay)	0 ... 100%

Activation curve

Adjust the brightness curve (see Fig. 4).

KNX bus value	100 %
corresponds to the lamp	0 ... 100%
KNX bus value	0...100; 70%
corresponds to the lamp	0...100; 80%
KNX bus value	0...100; 20%
corresponds to the lamp	0...100; 50%
KNX bus value	1 %
corresponds to the lamp	0...100; 30%

Fig. 4: Brightness curve



5.3.2. Brightness control

Activation with switch object

Set the switch-on and switch-off behaviour.

Switch on with (Switch-on value changeable per object)	0...100; <u>80%</u>
Switch-on behaviour	<u>from 0 to 100% in 1 ... 240 seconds</u>
Switch-off behaviour	<u>from 0 to 100% in 1 ... 240 seconds</u>
Behaviour of the on/off status object	<u>Readable</u> • Send if changed
Transmit status cyclically (if status is sent)	<u>Never</u> • every 5 seconds • ... • every 4 hours

Activation with dim object

Set the dimming time and whether you want to allow switch-on and switch-off.

Time 0 to 100%	1 ... 31; <u>5 sec.</u>
Allow switch-on	<u>No</u> • Yes
Allow switch-off	<u>No</u> • Yes

Activation with % object

Set how long it takes to reach the set brightness and whether you want to allow switch-on and switch-off.

New values are realised	<u>in 1 ... 240 seconds</u>
Allow switch-on	<u>No</u> • Yes
Allow switch-off	<u>No</u> • Yes
Behaviour of % status object	<u>Readable</u> • Send if changed
Transmit status cyclically (if status is sent)	<u>Never</u> • every 5 seconds • ... • every 4 hours

Operating mode

Set the operating mode.

Operating mode	<ul style="list-style-type: none"> • <u>Normal mode</u> • Night mode • Staircase light • Night mode with staircase light
----------------	--

Night mode

Switch on and off behaviour corresponding to the activation with switch object

The by-object received	
Night mode setpoint should be at	<ul style="list-style-type: none"> • <u>Power failure not</u> • Power failure • Power failure and ETS download
should be maintained	
Night mode start value	0...100; <u>10%</u>
Behaviour of the status objects	<u>Readable</u> • Send if changed
Transmit status cyclically (if status is sent)	<u>Never</u> • every 5 seconds • ... • every 4 hours

Staircase light

Switch on and off behaviour corresponding to the activation with switch object

With staircase light timer switching, the time base and time factor are used to set how long the light remains on (e.g. 1 min. × 2 corresponds to 2 minutes). It is also determined whether the time span is extended when a switch-on message is received again ("retriggerable", e.g. by pressing the switch again) and whether the staircase light can be switched off from the bus by a switch-off message.

Staircase light time basis	1 second • <u>1 minute</u> • 1 hour
Staircase light time factor	1 ... 255; <u>2</u>
Staircase light time can be retriggered	No • <u>Yes</u>
Staircase light can be switched off with switching object	No • <u>Yes</u>
Switch-off warning	do not use • with 2 ... 240 seconds prewarning time; <u>with 10 sec. prewarning time</u>
Switch-off prewarning setpoint	0...100; <u>20%</u>
Behaviour of the status objects	<u>Readable</u> • Send if changed
Transmit status cyclically (if status is sent)	<u>Never</u> • every 5 seconds • ... • every 4 hours

Night mode with staircase light

See "Night mode" on page 22.

See "Staircase light" on page 22.

5.3.3. Colour control

Set whether and which colour control you want to use.

Colour control	<ul style="list-style-type: none"> • <u>none</u> • Colour temperature • RGB • RGBW
----------------	--

Colour temperature

Set the switch-on behaviour.

Behaviour at switch-on	fixed start value • <u>last value</u>
Switch on with (<i>with fixed start value</i>)	1000 ... 16000; <u>4000 K</u>
Start value after ETS download and reset (<i>with last value</i>)	1000 ... 16000; <u>4000 K</u>

Settings for % and dim object

Set the minimum and maximum colour temperature, use of the % object and the behaviour of the colour change.

Minimum colour temperature	1000 ... 16000; <u>2700 K</u>
Maximum colour temperature	1000 ... 16000; <u>6500 K</u>
Use of the % object	<ul style="list-style-type: none"> • <u>0% = min. / 100% = max. colour temperature</u> 100% = min. / 0% = max. colour temperature
Behaviour colour change with % object	<u>in 1 second</u> • ... • in 4 minutes
Behaviour colour change with dim object	<ul style="list-style-type: none"> • from 0 to 100% in 1 second • ... • <u>from 0 to 100% in 5 seconds</u> • ... • from 0 to 100% in 4 minutes

RGB

Set the switch-on behaviour.

Behaviour at switch-on	fixed start value • <u>last value</u>
Switch on with (<i>with fixed start value</i>)	#000000 ... #FFFFFF; <u>#7F7F7F</u>
Start value after ETS download and reset (<i>with last value</i>)	#000000 ... #FFFFFF; <u>#7F7F7F</u>

Set the object types used and the behaviour of the colour change.

Object types used	<ul style="list-style-type: none"> • RGB with a 3Byte object • RGB with separate objects • RGB with HSV
Behaviour colour change with % object	<u>in 1 second</u> • ... • in 4 minutes

Behaviour colour change with dim object	<ul style="list-style-type: none"> • from 0 to 100% in 1 second • ... • <u>from 0 to 100% in 5 seconds</u> • ... • from 0 to 100% in 4 minutes
---	---

RGBW

Set the switch-on behaviour.

Behaviour at switch-on	fixed start value • <u>last value</u>
Switch on with (<i>with fixed start value</i>)	#000000 ...#FFFFFF; #7F7F7F
Start value after ETS download and reset (<i>with last value</i>)	#000000 ...#FFFFFF; #7F7F7F
Switch on with white value after ETS download and reset	<u>0</u> ... 255

Set the object types used and the behaviour of the colour change.

Object types used	<ul style="list-style-type: none"> • <u>RGBW with a 6Byte object</u> • RGBW with separate objects • RGBW with HSV
Behaviour colour change with % object	<u>in 1 second</u> • ... • in 4 minutes
Behaviour colour change with dim object	<ul style="list-style-type: none"> • from 0 to 100% in 1 second • ... • <u>from 0 to 100% in 5 seconds</u> • ... • from 0 to 100% in 4 minutes

5.3.4. Scenes

A group address for scenes must be filed in the KNX system to control the scenes. With this group address, the input object 'Scene X' is linked to **KNX DALI L4 bc 16 A**.

A scene number is **called**, then the **scene number** is communicated to the **KNX DALI L4 bc 16 A**. The brightness and colour values stored in the **KNX DALI L4 bc 16 A** for this scene number are realized. If the **scenessaving** function is used, then the current brightness is saved for this scene number in the device.

Set whether the last stored value should be retained in the event of a power failure and how long it takes for the set brightness and colour of the scenes to be reached.

Last saved value should be	<ul style="list-style-type: none"> • <u>Power failure not</u> • Power failure • Power failure and ETS download
should be maintained	
Scenes are	<u>in 1</u> ... 240 <u>seconds</u>

Set the number of scenes to be used.

Use scene memory 1 ... 8	<u>No</u> • Yes
--------------------------	-----------------

Set the scene number, brightness and whether the scene can be saved.

Scene number	<u>1</u> ... 64
Scene can be saved	No • <u>Yes</u>
Brightness	<u>0</u> ... 100%

Depending on the colour control setting, set the colour temperature or the corresponding colour ratio.

Colour temperature	1000 ... 16000; <u>4000 K</u>
Red - proportion	<u>0</u> ... 255
Green - proportion	<u>0</u> ... 255
Blue - proportion	<u>0</u> ... 255
White - proportion	<u>0</u> ... 255



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