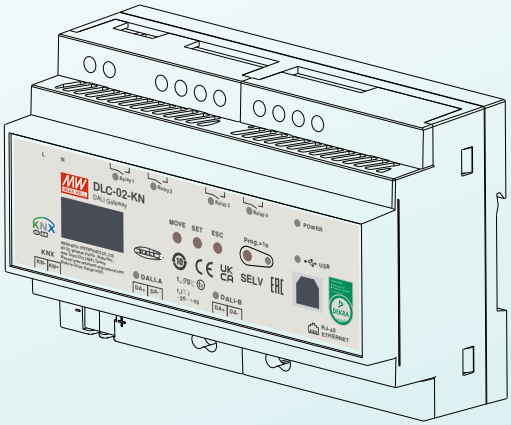
DLC-02-KN

Installation manual

KNX DALI Gateway



DLC-02-KN is a KNX to DALI gateway, used to connect a digital DALI lighting system to the KNX installation. Room-based lighting control is conveniently incorporated into the higher-level KNX system building management system. The device transforms switch and dim commands from the connected KNX system into DALI telegrams and status information from the DALI bus into KNX telegrams.

Contents

2021.10 Ver 0

1.Safety Guidelines

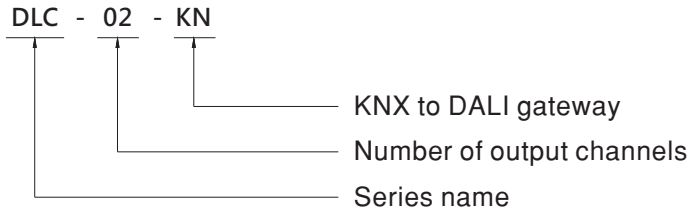
- Risk of fatal injury from electrical current, all work carried out on the unit may only be performed by skilled electricians. Observe the regulations valid in the country of use, as well as the valid KNX guidelines.
- Risk of electrical shock and energy hazard, all failure should be examined by a qualified technician. Please do not remove the case form the unit by yourself.
- Please do not install the unit in places with high moisture, high ambient temperature or under direct sunlight.

2.Overview

2.1 Overview Device

The manual refers to the following devices:

- DLC-02-KN: INPUT: 100 – 305Vac
- Model Encoding



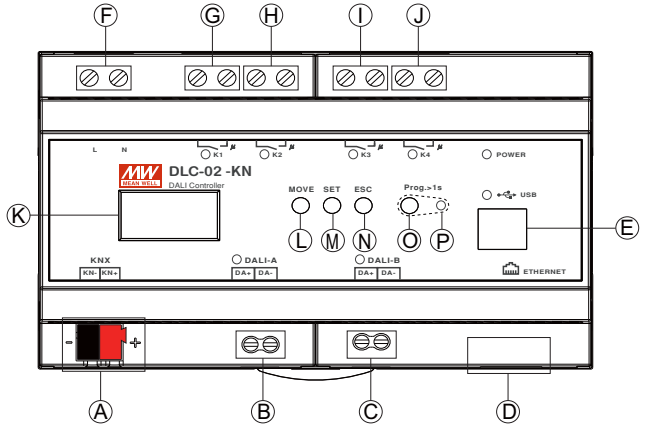
2.2 Information at the ETS-Software

Selection at the product database:
Manufacturer: MEANWELL Enterprise Co. Ltd.
Product family: Lighting
Product type: Gateway
Product name: DLC-02-KN
Order number: DLC-02-KN

2.3 Features

- Two independent DALI Bus channels with built-in DALI power supply (up to 250mA per bus)
- Connect up to 2 X 64 DALI ECGs
- Max 16 scenes and group setting per channel
- LCD display, LED indicators and button for local operation
- Built-in with 250V/5A X 4 relay
- Easy installation and configuration via LCD interface and Web browser
- Multiple control effect based on the time event and input devices
- Support for DALI-2 devices with Part 202/207/208

2.4 Displays and operating elements

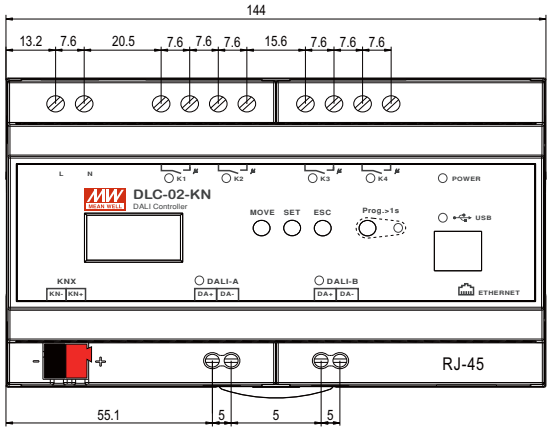


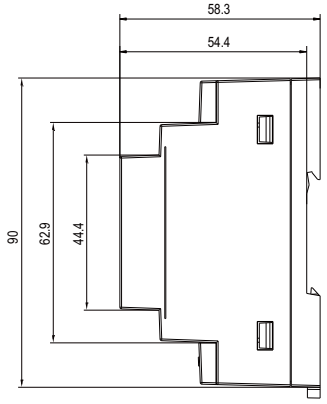
Ⓐ : KNX bus terminal
Ⓑ : DALI terminal A
Ⓒ : DALI terminal B
Ⓓ : Ethernet connection (RJ-45 socket)
Ⓔ : USB connection
Ⓕ : Mains connection
Ⓖ : Connections for the relay output K1
Ⓗ : Connections for the relay output K2
Ⓘ : Connections for the relay output K3
Ⓙ : Connections for the relay output K4
Ⓚ : Display
Ⓛ : Move button for the display
Ⓜ : Set button for the display
Ⓝ : Exit button for the display
Ⓞ : Programming button
Ⓟ : Programming LED

2.5 Status LEDs

LED Indicator	Status
POWER	● Normal working ○ NOT connected to AC
K1, K2, K3, K4	● Relay ON (short) ○ Relay OFF (open)
DALI-A, DALI-B	● Bus voltage normal ○ NO bus voltage provided
USB	● USB connected ○ NO USB detected
Programming LED	● Programming mode ○ NOT in programming mode

2.6 Mechanical specification





3.Installation

3.1 Concept of Commissioning

1

Wiring of the DALI segments (or devices to the relays)

Connect the gateway to KNX bus

ALL devices with mains connected

2

Load ETS database and install DAC app

ETS-DCA DALI commissioning and group assignment

Configure ETS parameters and objects

ETS Download of the application

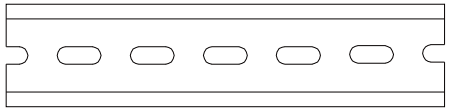
After the wiring of the DALI segments according to instructions in the following sections, software start-up can begin. To do this, the product database is loaded and the corresponding ETS App installed in the ETS5, see 3.5 ETS App (DCA).

3.2 Mounting

Mount as shown in figure only, with DALI terminals down or else sufficient cooling will not be possible.

Admissible DIN-rail:TS35/7.5 or TS35/15

For rail fastening:



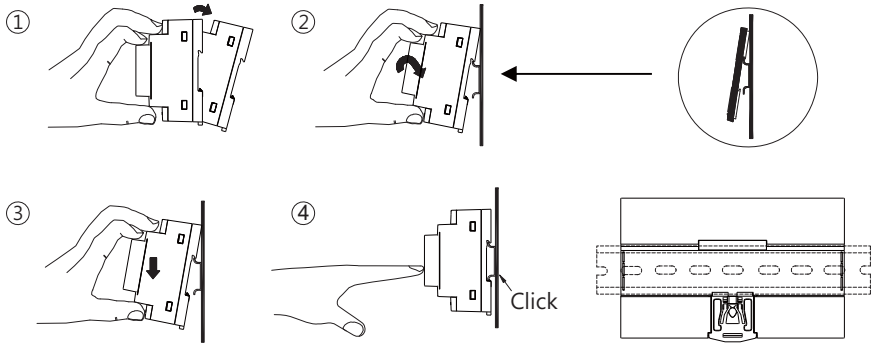
(a) Tilt the unit slightly rearwards.

(b) Fit the unit over top hat rail.

(c) Slide it downward until it hits the stop.

(d) Press against the bottom for locking.

(e) Shake the unit slightly to check the locking action.



3.3 Electrical Configuration

DALI end

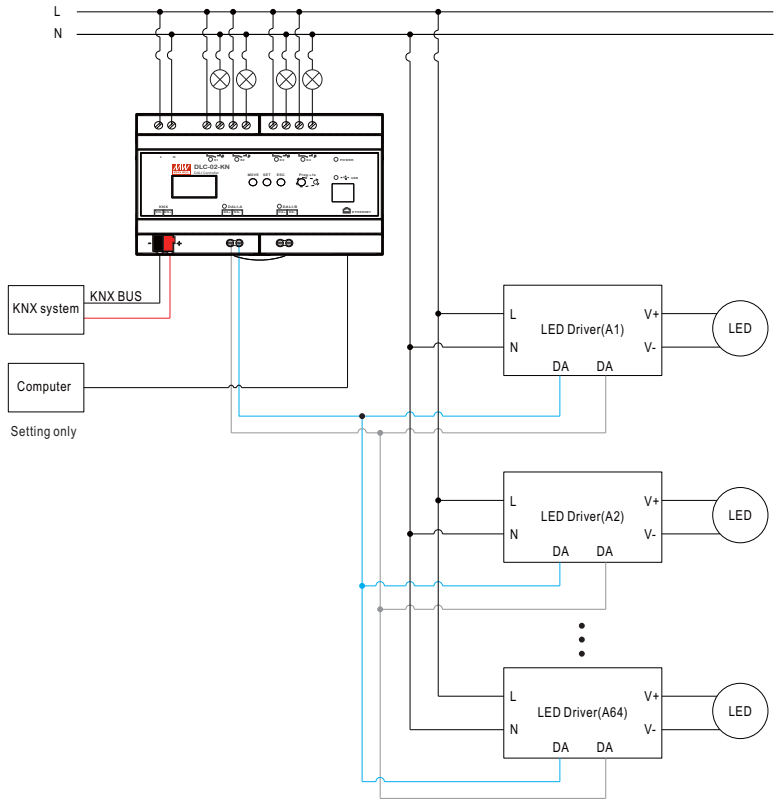
- The maximum number of ECGs connected is 64 per bus.
- The maximum length is 300m (with a cable cross-section of 1.5 mm²)

KNX end

- The maximum number of bus devices connected is 256.
- The maximum length of a line segment is 350 m, measured along the line between the power supply and the furthest bus device.
- The maximum distance between two bus devices cannot exceed 700 m.
- The maximum length of a bus line is 1000 m, keeping into account all segments

Web browser end (optional)

- The maximum length is 100m.



3.4 Wiring

- Use wires with an adequate cross-section.
- Use suitable mounting tools to do the wiring.

Type	AC and relay terminals L,N,K1,K2,K3,K4	DALI terminals (DALI-A, DALI-B)	KNX bus terminal (KNX)
Solid wire	0.5 ~ 4.0mm	0.5 ~ 1.45mm	0.6~0.8Φ
Stranded wire	0.5 ~ 2.5mm²	0.5 ~ 1.5mm²	------
American wire gauge	12 ~ 26AWG	16 ~ 26AWG	20 ~ 22AWG
Wire stripping length	7 ~ 8mm (0.276" ~ 0.315")	7 ~ 8mm (0.276" ~ 0.315")	5mm (0.196")
Screwdriver	3mm Slotted	3mm Slotted	------
Recommended tightening torque	5 kgf-cm (4.4 lb-in)	5 kgf-cm (4.4 lb-in)	------

3.5 ETS App (DCA)

The application for the gateway is based on the standard surface for the configuration of communication objects and parameters as well as a special surface for configuring the DALI bus system. This special surface is designed as a DCA (Device Control App) for the ETS5.

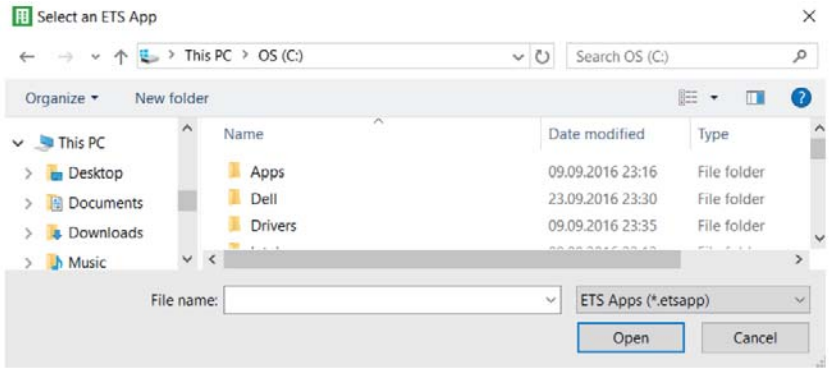
All required program data are automatically created when the App is imported.

Therefore click on Button "App " in the footer of ETS5 and then the "plus " sign in order to add an ETS App to your ETS5 system:

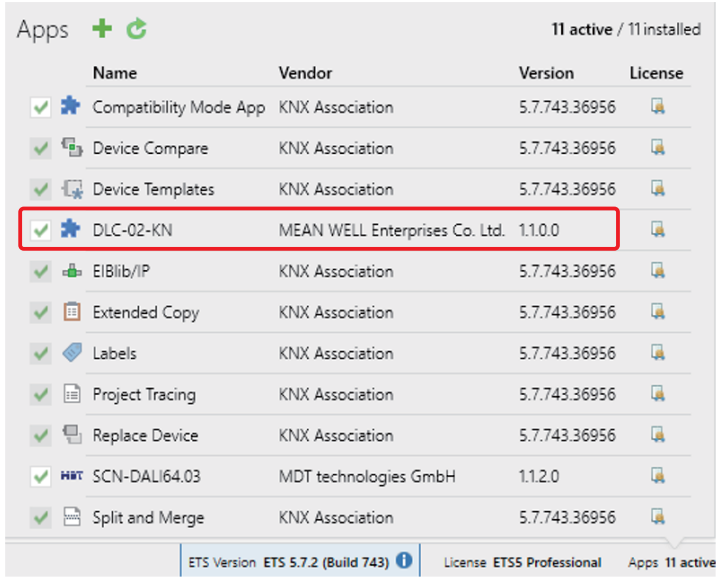
NOTE: To install the DCA app, ETS license is needed

A file box will become visible to select the ETS App for the gateway. This etsapp file can be downloaded from the official Mean Well website or link below:

https://building.meanwell.com/Upload/PDF/KNX_Application%20Database.pdf



The App is displayed in the list of all ETS5 Apps:



When the product is selected an additional DCA tab is shown.

3.6 Parameter Configuration

The parameters and the corresponding group addresses can then be configured as with any other KNX product. The DALI specific configuration is performed in the DCA tab.

The actual DALI commissioning is only possible online, that means a connection to the device is necessary. In this step, all connected ECGs are searched and found and can then be assigned to a certain group.

After this assignment has been carried out, this special DALI configuration must be loaded into the device. The "Download" button is available in the DCA tab, see 4. DALI Commissioning.

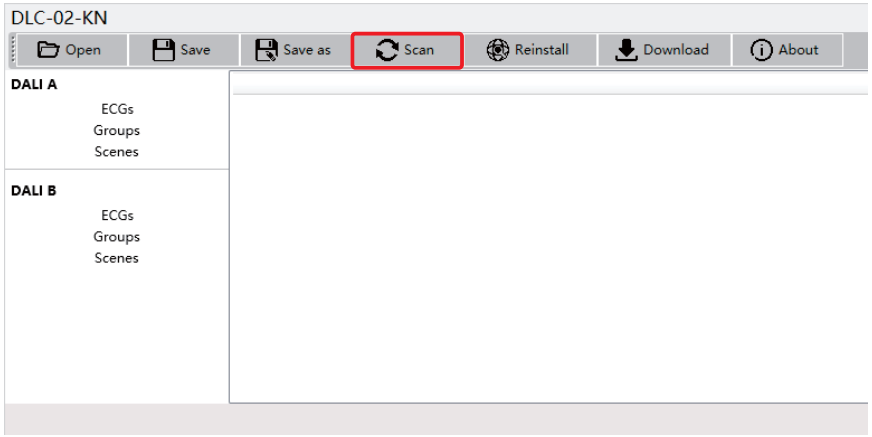
In the last step, the parameters and the links to the group addresses should be loaded into the device using normal ETS download. The device is now ready for operation.

4.DALI Commissioning

Following the physical installation and wiring of the DALI ECGs and lights and the electronic commissioning, the connected ECGs need to be learnt-in.

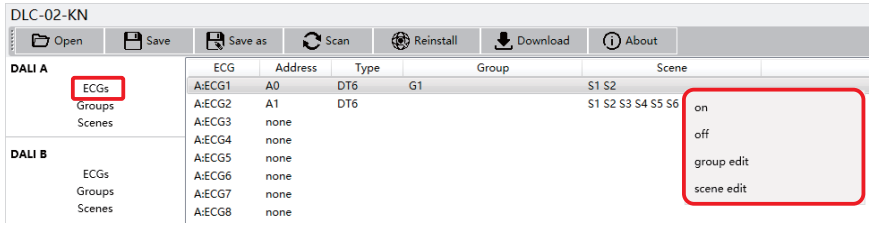
To do so, please open the commissioning page in the DCA:

① Use the "Scan" button to start searching devices and addressing. During the process, all ECGs are automatically recognized and each ECG is assigned a short address from 0 - 63. Depending on the size of the connected DALI segments, the process can take up to few minutes.



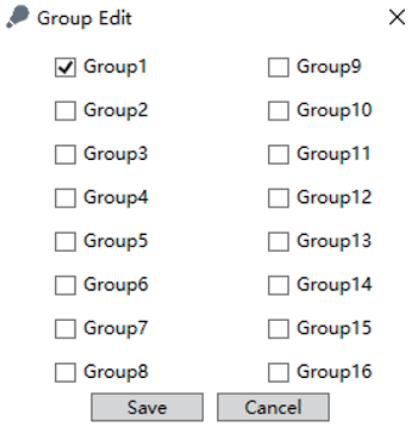
NOTE: During the first time installation, "Scan" and "Reinstall" make no difference in searching devices and addressing. After an installation, the "Scan" button carries out a search for previously addressed and unaddressed devices. Addressing for previously addressed devices will remain unchanged. The next available address is then assigned to devices which have been recently added, whereas "Reinstall" deletes all addresses and group memberships in the devices and then readdress.

② To identify the devices switch the corresponding lamp on and off. If you select an ECG and press the right mouse button, a context menu appears from which you can select the required function.

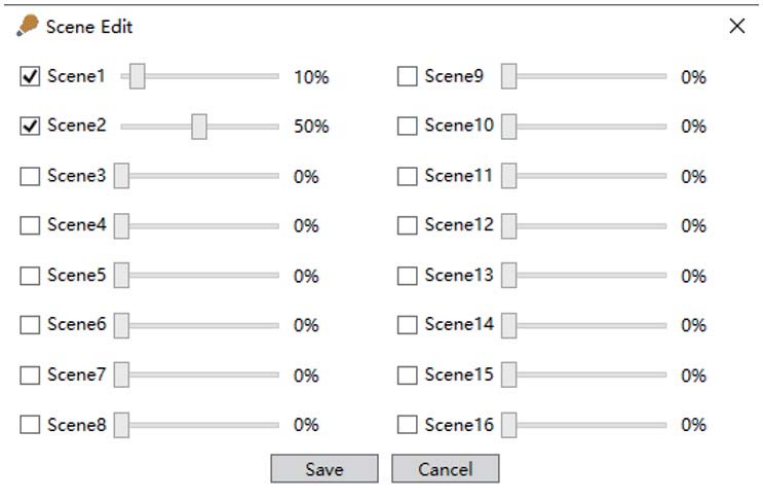


Group assigning and scene editing also can be done in the context menu.

Hit1: Only one group can be assigned for an ECG. After assigned to a group, only group commands can control the ECG.

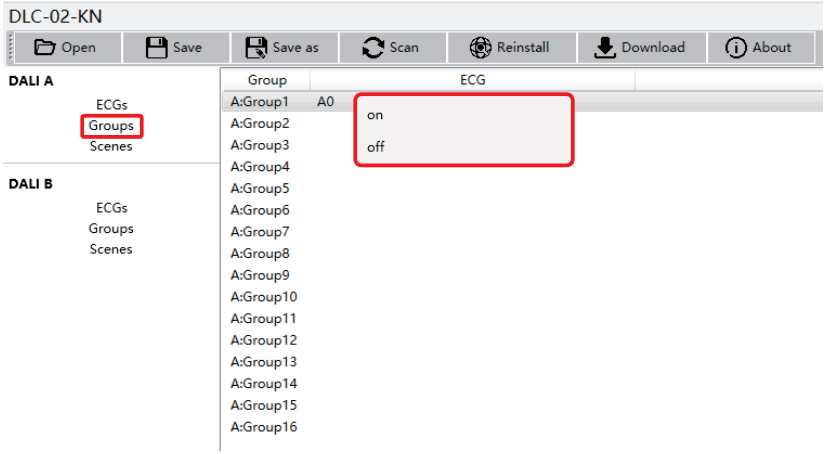


Hit2: There are 16 scenes available to be used. Check a scene to activate it.

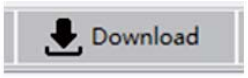


Hit3: Further DALI parameters, such as Power ON level, System Failure level, Maximum/Minimum level, Fade Rate, Fade Time can be set via the ETS or the display and the web browser.

③ The context menu is also available at group level. During the identification process it might be useful to switch certain groups or all connected lamps on or off. You can also send broadcast commands via the context menu, in order to, for example, switch all lights on or off.



④ Please remember that at this point all operations that have been performed are only displayed in the work space. They are not immediately loaded onto the DALI gateway. To start the process of downloading the settings onto the gateway and the ECGs, you must press the "Download" button.



Once the download is complete, all previously planned ECGs are programmed in the system with the DALI configuration.

Attention: Please be aware that the download on the "commissioning page" only programs the DALI configuration data onto the gateway and ECGs. The actual ETS application with parameter settings and group addresses still has to be downloaded onto the device. This is done, as usual, via the normal download process in the ETS.

5.Communication Objects

Communication objects available for communication of the device via the KNX are shown in the table below. The objects are, in parts, displayed or hidden, depending on how the parameters are set.

5.1 Summary and Usage

Num	Object Function	Length	DPT	Flag	Function	Description
1	[Dali A] Broadcast Switch	1 bit	Switch (DPT 1.001)	CW	On/Off	DALI Bus A - broadcast switch. This object is used to switch all connected lights simultaneously on or off.
2	[Dali A] Broadcast Absolute Dimming	1 byte	Percentage (DPT 5.001)	CW	Absolute Dimming	DALI Bus A - broadcast absolute dimming. This object is used to simultaneously set all connected lights to a certain value.
3	[Dali A] Scene Control	1 byte	Scene control (DPT 18.001)	CW	Scene No.	DALI Bus A - scene controlling. This object can be used for calling scenes.
4	[Dali A] Activate Panic mode	1bit	Start/Stop (DPT 1.010)	CW	Activate/Stop	DALI Bus A - Panic mode. Activates or deactivates the panic mode via the bus. Note: This object is only valid when the parameter "Panic mode" is checked.

Num	Object Function	Length	DPT	Flag	Function	Description
5	[Dali A] Active Night Mode	1 bit	Start/Stop (DPT 1.010)	CW	Activate/Stop	DALI Bus A - Night mode. Activates or deactivates the night mode via the bus. Note: This object is only valid when the parameter “Night mode” is checked.
6	[Dali A] Active Test Mode	1 bit	Start/Stop (DPT 1.010)	CW	Activate/Stop	DALI Bus A - Test mode. Activates or deactivates the test mode via the bus. Note: This object is only valid when the parameter “ECG Types” chose Self Contained Battery Lamp.
7	[Dali A] Dali Power Failure	1 bit	Alarm (DPT 1.005)	CRT	0 = No Error; 1 = Error	Reports the presence of DALI bus voltage abnormal in the connected DALI segment.
8	[Dali A] Dali Short Failure	1 bit	Alarm (DPT 1.005)	CRT	0 = No Error; 1 = Error	Reports the presence of a DALI short-circuit in the connected DALI segment.

Num	Object Function	Length	DPT	Flag	Function	Description
9	[Dali A] ECG Presence	1 bit	Alarm (DPT 1.005)	CRT	0 = No Error; 1 = Error	Reports the presence of a ECG disconnect in the connected DALI segment.
10	[Dali A] ECG Diagnostics	1 bytes	Diagnostics value (DPT 238.600)	CRT	ECG Diagnostics	This object is used to send the error status of lamp or ECG errors in the DALI segment when the system is started or when a change has taken place. Bit 0 - 5 refer to the number of the ECG, range from 0 - 63. Bit 6 represents a lamp error, Bit 7 an ECG error, 0 = no error; 1 = error.
11	[Dali A] On/Off (Status Group 1 – Gruop16)	4 bytes	Bit-combined info on/off (DPT 27.001)	CRT	Status	Sends the on/off status for groups 1 - 16. Bit 0 -15 refer to Group 1 to Group 16. For example: Grp.16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 Bit 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 Group 3 on: 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0

Num	Object Function	Length	DPT	Flag	Function	Description
12	[Dali A] On/Off (Status ECG1-ECG 16)	4 bytes	Bit-combined info on/off (DPT 27.001)	CRT	Status	Sends the on/off status for ECG 1 - 16. Bit 0 -15 refer to ECG 1 to ECG 16. For example: ECG 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 Bit 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 ECG 3 on: 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0
13	[Dali A] On/Off (Status ECG17-ECG 32)	4 bytes	Bit-combined info on/off (DPT 27.001)	CRT	Status	Sends the on/off status for ECG 17 - 32. Bit 0 -15 refer to ECG 17 to ECG 32.
14	[Dali A] On/Off (Status ECG33-ECG 48)	4 bytes	Bit-combined info on/off (DPT 27.001)	CRT	Status	Sends the on/off status for ECG 33 - 48. Bit 0 -15 refer to ECG 33 to ECG 48.
15	[Dali A] On/Off (Status ECG49-ECG 64)	4 bytes	Bit-combined info on/off (DPT 27.001)	CRT	Status	Sends the on/off status for ECG 46 – 64. Bit 0 -15 refer to ECG 49 to ECG 64.
16	[Dali B] Broadcast Switch	1 bit	Switch (DPT1.001)	CW	On/Off	DALI Bus B broadcast switch. This object is used to switch all connected lights simultaneously on or off.

Num	Object Function	Length	DPT	Flag	Function	Description
17	[Dali B] Broadcast Absolute Dimming	1 byte	Percentage (DPT5.001)	CW	Absolute Dimming	DALI Bus B broadcast absolute dimming. This object is used to simultaneously set all connected lights to a certain value.
18	[Dali B] Scene Control	1 byte	Scene control (DPT18.001)	CW	Scene No	DALI Bus A - scene controlling.
19	[Dali B] Activate Panic Mode	1 bit	Start/Stop (DPT1.010)	CW	Activate/Stop	DALI Bus B - Panic mode. Activates or deactivates the panic mode via the bus. Note: This object is only valid when the parameter “Panic mode” is checked.
20	Dali B] Activate Night Mode	1 bit	Start/Stop (DPT1.010)	CW	Activate/Stop	DALI Bus B - Night mode. Activates or deactivates the night mode via the bus. Note: This object is only valid when the parameter “Night mode” is checked.

Num	Object Function	Length	DPT	Flag	Function	Description
21	[Dali B] Activate Test Mode	1 bit	Start/Stop (DPT1.010)	CW	Activate/Stop	DALI Bus B - Test mode. Activates or deactivates the test mode via the bus. Note: This object is only valid when the parameter “ECG Types” chose Self Contained Battery Lamp.
22	[Dali B] Dali Power Failure	1 bit	Alarm (DPT1.005)	CRT	0 = No Error; 1 = Error	Reports the presence of DALI bus voltage abnormal in the connected DALI segment.
23	[Dali B] Dali Short Circuit	1 bit	Alarm (DPT1.005)	CRT	0 = No Error; 1 = Error	Reports the presence of a DALI short-circuit in the connected DALI segment.
24	[Dali B] ECG Presence	1 bit	Alarm (DPT1.005)	CRT	0 = No Error; 1 = Error	Reports the presence of an ECG disconnect in the connected DALI segment.

Num	Object Function	Length	DPT	Flag	Function	Description
25	[Dali B] ECG Diagnostics	1 bytes	Diagnostics value (DPT 238.600)	CRT	ECG Diagnostics	This object is used to send the error status of lamp or ECG errors in the DALI segment when the system is started or when a change has taken place. Bit 0 - 5 refer to the number of the ECG, range from 0 - 63. Bit 6 represents a lamp error, Bit 7 an ECG error, 0 = no error; 1 = error.
26	[Dali B] On/Off (Status Group 1 – Gruop16)	4 bytes	Bit-combined info on/off (DPT 27.001)	CRT	Status	Sends the on/off status for groups 1 - 16. Bit 0 -15 refer to Group 1 to Group 16. For example: Grp.16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 Bit 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 Group 3 on: 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0
27	[Dali B] On/Off (Status ECG1-ECG 16)	4 bytes	Bit-combined info on/off (DPT 27.001)	CRT	Status	Sends the on/off status for ECG 1 - 16. Bit 0 -15 refer to ECG 1 to ECG 16. For example: Grp.16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 Bit 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 Group 3 on: 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0

Num	Object Function	Length	DPT	Flag	Function	Description
28	[Dali B] On/Off (Status ECG17-ECG 32)	4 bytes	Bit-combined info on/off (DPT 27.001)	CRT	Status	Sends the on/off status for ECG 17 - 32. Bit 0 -15 refer to ECG 17 to ECG 32.
29	[Dali B] On/Off (Status ECG33-ECG 48)	4 bytes	Bit-combined info on/off (DPT 27.001)	CRT	Status	Sends the on/off status for ECG 33 - 48. Bit 0 -15 refer to ECG 33 to ECG 48.
30	[Dali B] On/Off (Status ECG49-ECG 64)	4 bytes	Bit-combined info on/off (DPT 27.001)	CRT	Status	Sends the on/off status for ECG 46 – 64. Bit 0 -15 refer to ECG 49 to ECG 64.
31	[Central Function] Operation	1 bit	State (DPT1.011)	CRT	Operation	This object is use to send status of the device to the system at regular intervals when active.
32	Central Function] All Relays On/Off	1 bit	Switch (DPT1.001)	CW	0 = Off; 1 = On	This object is use to switch all relays on/off Note: This object is only valid when the parameter “All Relays On/Off” is checked.
33	[Central Function] All Relays On/Off(Status)	1 bit	Switch (DPT1.001)	CRT	0 = Off; 1 = On	Sends the on/off status for the relays 1: all of the relays are off 0: one of the relays is on.

Num	Object Function	Length	DPT	Flag	Function	Description
34	[Central Function] RTC	3 bytes	Time of day (DPT10.001)	CR	Time	This object is used to set the time. The time must be provided by a central timer and updated at least twice a day.
35	[Central Function] RTC	3 bytes	Time of day (DPT10.001)	CR	Data	This object is used to set the date. The date must be provided by a central timer and updated at least twice a day.
36	[A:ECG 1] On/Off	1 bit	Switch (DPT1.001)	CW	0 = Off; 1 = On	Use this object to switch the ECG on or off.
37	[A:ECG 1] Relative Dimming	4 bit	dimming control (DPT3.007)	CW	4-Bit Dimming Control	This object is used for the relative dimming of the ECG.
38	A:ECG 1] Absolute Dimming	1 byte	percentage (DPT 5.001)	CW	1-Byte Dimming Control	This object is used for the absolute dimming of the ECG.

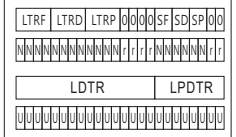
Num	Object Function	Length	DPT	Flag	Function	Description
39	[A:ECG 1] On/Off (Status)	1 bit	Switch (DPT1.001)	CRT	0 = Off; 1 = On	Sends the on/off status of the ECG. 1.The parameter: Send On/Off Status is no send, passive stage object → update status but no send telegram. 2.The parameter: Send On/Off Status is at change → send telegram in every on/off change. 3.The parameter: Send On/Off Status is always at input of telegram → send telegram in every on/off command. 4.Send Status cyclic is at a certain time value → send telegram at regular intervals.

Num	Object Function	Length	DPT	Flag	Function	Description
40	[A:ECG 1] Dimming Value (Status)	1 byte	percentage (DPT5.001)	CRT	0 - 100%	Sends the dimming value of the ECG. 1.The parameter: Send dimming value status is no send, passive stage object → update value status but no send telegram. 2.The parameter: Send dimming value status is at change → send telegram in every dimming value change. 3.The parameter: Send dimming value status is always at input of telegram → send telegram in every dimming command. 4.Send Status cyclic is at a certain time value → send telegram at regular intervals.

Num	Object Function	Length	DPT	Flag	Function	Description
41	[A:ECG 1] Lock	1 bit	Enable (DPT1.003)	CW	0 = Unlock; 1 = Lock	This object is used to lock/unlock the ECG.
42	[A:ECG 1] Auto Off	1 bit	Enable (DPT1.003)	CW	0 = Disable; 1= Enable	This object is used to enable/disable the Auto Off function of the ECG.
43	[A:ECG 1] Operation Hours Rese	1 bit	Reset (DPT1.015)	CW	1 = Reset	Resets the operating hours counter of the ECG.
44	[A:ECG 1] Operation Hours Value (in seconds)	4 bytes	Time lag(s) (DPT13.100)	CRT	4-Bytes Value in Second	The operating hours of the ECG in seconds are sent via this object. The internal counter can be set to 0 (Reset) or another value via this object.
	[A:ECG 1] Operation Hours Value (in seconds)	2 bytes	Time lag(h) (DPT7.007)		2-Bytes Value in Hours	The operating hours of the ECG in hours are sent via this object. The internal counter can be set to 0 (Reset) or another value via this object.
45	[A:ECG 1] Operation Hours Exeeded	1 bit	Alarm (DPT1.005)	CRT	0 = No Exeeded; 1 = Exeeded	This object is used to report that the operation hours' counter exceeds the set threshold.

Num	Object Function	Length	DPT	Flag	Function	Description
46	[A:ECG 1] Failure (Status)	1 bit	Alarm (DPT1.005)	CRT	0 = No Error; 1 =Error	Reports the presence of an ECG disconnect.
47	[A:ECG 1] Converter Test Control	1 byte	Converter test control (DPT20.611)	CW	Control Test Command	This object is used to controls a test of a DALI converter Furthermore, it allows to stop running test and to reset test flags. These object follows the following coding: Bit 0: Reserved. Bit 1: Start function test. Bit 2: Start duration test. Bit 3: Start partial duration test. Bit 4: Stop test. Bit 5: Reset function test done flag. Bit 6: Reset duration test done flag . Bit 7 – 255: Reserved.

Num	Object Function	Length	DPT	Flag	Function	Description
48	[A:ECG 1] Converter Status	2 bytes	Dali converter status (DPT244.600)	CRT	Status of A Converter	Converter Mode. This object is used to send the status of a converter with the following coding: Bit 0: Unknown. Bit 1: Normal mode active. Bit 2: Inhibit mode active: for 15 minutes the converter will not switch the emergency lighting on when a power failure occurring. Bit 3: Hardwired inhibit mode active: digital input that the converter can have to activate the inhibit mode. Bit 4: Rest mode active: forced off emergency lighting during emergency mode. Bit 5: Emergency mode active. Bit 6: Extended emergency mode active. Bit 7: FT in progress. Bit 8: DT in progress. Bit 9: PDT in progress. Bit 10 - 15: Reserved.

Num	Object Function	Length	DPT	Flag	Function	Description
49	[A:ECG 1] Converter Test Result	6 bytes	Dali converter test result (DPT244.600)	CRT	Result of a Test	 This object is used to send the result of the last converter test with the following coding: **LTRF, LTRD, LTRP:** Last Test Result Functional / Duration / Partial duration: Indicates the test result of each type: Bit 0: Unknown. Bit 1: Passed in time. Bit 2: Passed max delay exceeded. Bit 3: Failed, test executed in time. Bit 4: Failed, max delay exceeded. Bit 5: Test manually stopped. Bit 6 - 15: Reserved.

Num	Object Function	Length	DPT	Flag	Function	Description
						SF, SD, SP: Start method of last Functional / Duration / Partial test. Indicates the method by which the last test started. Updated when a test is finish. Bit 0: Unknown. Bit 1: Started automatically. Bit 2: Started by Gateway. Bit 3: Reserved. **LDTR**: Last Duration Test Result. Contains the battery discharge time as the result of the last successful duration test indicated in minutes. **LPDTR:** Last Partial Duration Test Result. Provides the remaining battery charge level after the last partial duration test. 0: Deep discharge point. Bit 1 - 253: Battery level. Bit 254: Fully charged. Bit 255: Unknown.

Objects of ECG 2 to ECG 64 in DALI Bus A segment, please refer to descriptions of those objects in ECG1

Num	Object Function	Length	DPT	Flag	Function	Description
932	[A:Group1] On/Off	1 bit	Switch (DPT1.001)	CW	0 = Off; 1 = On	This object is used to switch the group on or off.
933	[A:Group1] Relative Dimming	4 bit	4 bit Dimming control (DPT 3.007)	CW	4-Bit Dimming Control	This object is used for the relative dimming of the group.
934	[A:Group1] Absolute Dimming	1 byte	Percentage (DPT5.001)	CW	1-Byte Dimming Control	This object is used for the absolute dimming of the group.
935	[A:Group1] On/Off(Status)	1 bit	Switch (DPT1.001)	CRT	0 = Off; 1 = On	This object is used to send the switch status of the group. 1.The parameter: Send On/Off Status is no send, passive stage object → update status but no send telegram. 2.The parameter: Send On/Off Status is at change → send telegram in every on/off change. 3.The parameter: Send On/Off Status is always at input of telegram → send telegram in every on/off command. 4.Send Status cyclic is at a certain time value → send telegram at regular intervals.

Num	Object Function	Length	DPT	Flag	Function	Description
936	[A:Group1] Dimming Value (Status)	1 byte	Percentage (DPT5.001)	CRT	0 - 100%	Sends the dimming value of the group. 1.The parameter: Send dimming value status is no send, passive stage object update value status but no send telegram. 2.The parameter: Send dimming value status is at change send telegram in every dimming value change. 3.The parameter: Send dimming value status is always at input of telegram send telegram in every dimming command. 4.Send Status cyclic is at a certain time value send telegram at regular intervals.

Num	Object Function	Length	DPT	Flag	Function	Description
937	[A:Group1] Lock	1 bit	Enable (DPT1.003)	CW	0 = Unlock; 1 = Lock	This object is used to lock/unlock the group.
					0 =Lock; 1 = Unlock	This object only appears when the parameter “Lock object polarity” chose “0 = lock; 1 = unlock”.
938	[A:Group1] Auto Off	1 bit	Enable (DPT1.003)	CW	0 = Disable; 1 = Enable	This object is used to enable/disable the Auto Off function of the group.
					0 = Enable; 1 = Disable	This object only appears when the parameter “Auto-off disable/enable object” chose “0 = enable;1 = disable”.
939	[A:Group1] Operation Hours Reset	1 bit	Reset (DPT1.015)	CW	1 = Reset	Resets the operating hours counter of the group.
940	[A:Group1] Operation Hours Value	4 bytes	Time lag(s) (DPT13.100)	CRT	4-Bytes Value in Second	The operating hours of the group in seconds are sent via this object. The internal counter can be set to 0 (Reset) or another value via this object.
		2 bytes	Time (h) (DPT7.007)		2-Bytes Value in Hours	The operating hours of the group in hours are sent via this object. The internal counter can be set to 0 (Reset) or another value via this object.

Num	Object Function	Length	DPT	Flag	Function	Description
941	[A:Group1] Operation Hours Exeeded	1 bit	Alarm (DPT1.005)	CRT	0 = No Exeeded; 1 = Exeeded	This object is used to report that the operation hours' counter exceeds the set threshold.
942	[A:Group1] Failure (Status)	1 bit	Alarm (DPT1.005)	CRT	0 = No Error; 1 = Error	Reports the presence of a group disconnect.
Objects of group 2 to group 16 in DALI Bus A segment, please refer to descriptions of those objects in group 1						
Objects of groups and ECGs in DALI Bus B segment, please refer to descriptions of those objects in DALI Bus A						
2180	[Relay 1] On/Off	1 bit	Switch (DPT1.001)	CW	0 = Off; 1 = On	This object is used to switch the relay on or off.
2181	[Relay 1] Lock	1 bit	Enable (DPT1.003)	CW	0 = Unlock; 1 = Lock	This object is used to lock/unlock the relay.
2182	[Relay 1] On/Off (Status)	1 bit	Switch (DPT1.001)	CRT	1 = On; 0 = Off	This object is used to send the status of the relay.
2183	[Relay 1] On/Off (Inverted Status)	1 bit	Switch (DPT1.001)	CRT	1 = On; 0 = Off	This object is used to send the inverted status of the relay. Note: This object is only valid when the parameter “Additional inverted state” is checked.

Num	Object Function	Length	DPT	Flag	Function	Description
2184	[Relay 1] Forced Control	2 bit	Switch control (DPT2.001)	CW	2-Bit Forced Control	Forced control function: 00 and 01: Deactivates Forced control. 10: Sets to Forced control active with relay Off (open). 11: Sets to Forced control active with relay On (short).
2184	[Relay 1] Priority	1 bit	switch (DPT 1.001)	CW	1-Bit Priority ON	Activates or deactivates forced On function. Relay On (short) when activated.
					1-Bit Priority OFF	Activates or deactivates forced Off function. Relay Off (open) when activated.
Objects of Relay 2 to Relay 4, please refer to descriptions of those objects in relay 1						
2200	[Timer 1] Switch	1 bit	switch (DPT1.001)	CRT	0 = Off; 1 = On	This object is used to send on/off signals of the timer when it is triggered. This object only available when the object Addition object is set at switch.

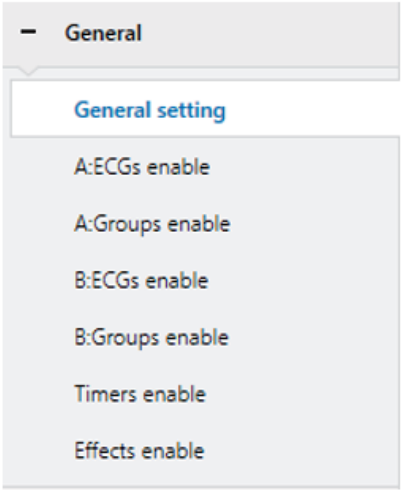
Num	Object Function	Length	DPT	Flag	Function	Description
2201	[Timer 1] Percentage	1 byte	percentage (DPT5.001)	CRT	0 - 100%	This object is used to send dimming value signals of the timer when it is triggered. This object only available when the object Addition object is set at percentage.
Objects of Timer 2 to Timer 8, please refer to descriptions of those objects in Timer 1						
2216	[Effect 1] Start/Stop	1 bit	start/stop (DPT1.010)	CW	0 = Stop; 1 = Start	Activate or deactivates the Effect. Note: This object is only valid when the parameter “Effect function” is checked.
Objects of Effect 2 to Effect 16, please refer to descriptions of object Effect 1						

6.ETS Parameters

The ETS parameters of the device are distributed across different parameter pages. To simplify the overview, only the parameter pages of the device selected in the function tree are displayed.

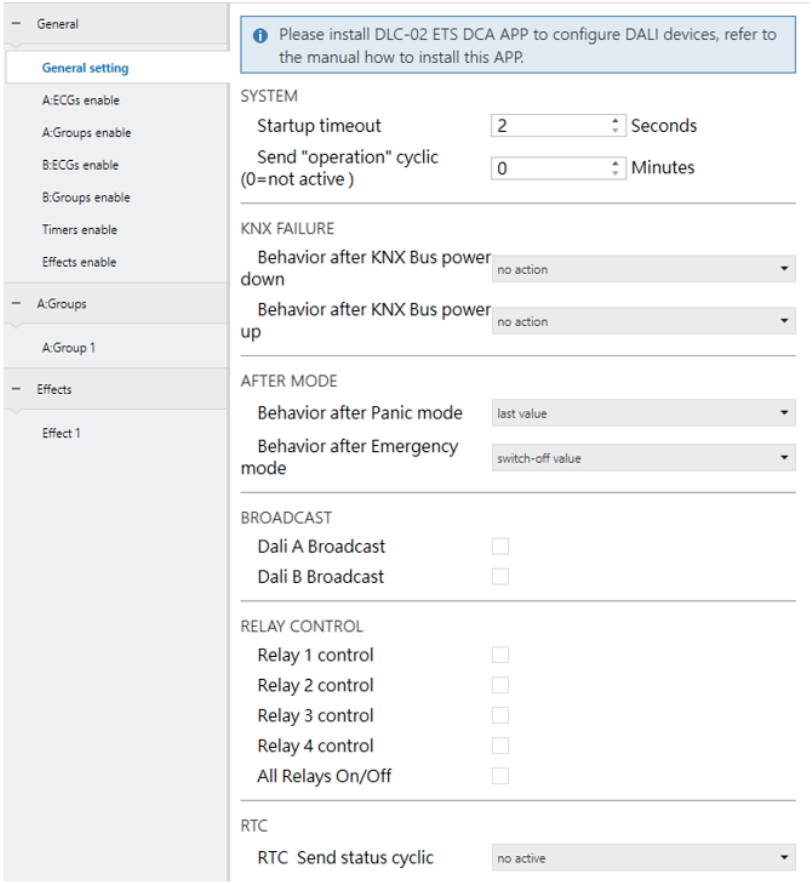
6.1 General

Seven parameter pages are available under the heading “General ”, General setting, A:ECGs enable, A:Groups enable, B:ECGs enable, B:Groups enable, Timer enable and Effects enable. The parameters are described below.

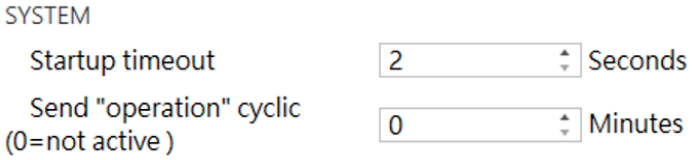


6.1.1 General setting

There are SYSTEM, KNX FAILURE, AFTER MODE, BROADCAST, RELAY CONTROL and RCT in the page



6.1.1.1 General setting - SYSTEM



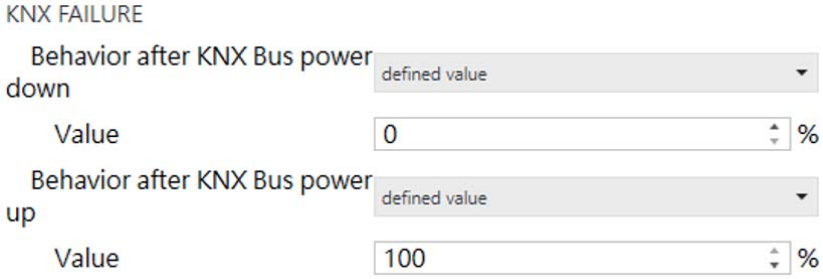
The chart shows the dynamic range for this parameter:

ETS-text	Dynamic range **[default value]**	Comment
Startup timeout	2 – 60s **[2s]**	All functions run after startup timeout finished. NOTE: The timeout starts counting when power-on initialization is done. So it always takes longer than you expected.
Send "operation" cyclic (0= not active)	0 – 65535mins **[0mins]**	Sends status signals from the object Operation at intervals you desire.

The following chart shows the objects that belong to general setting:

Number	Name	Length	Usage
31	[Central Function] Operation	1 bit	This object is use to send status of the device to the system at regular intervals when active.

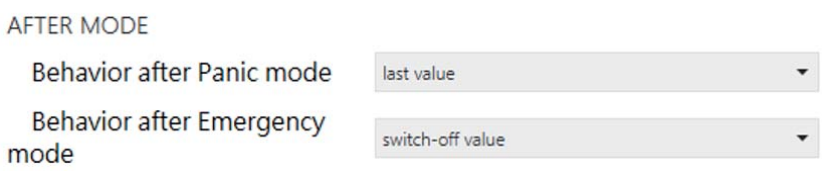
6.1.1.2 General setting - KNX FAILURE



The chart shows the dynamic range for this parameter:

ETS-text	Dynamic range **[default value]**	Comment
Behavior after KNX Bus power down value	● broadcast off ● broadcast on ● **no action** ● defined value	Uses this parameter to set the behaviors of the connected ECGs/lamps in DALI Bus A and B when KNX bus voltage falls down. Actions are all off, all on, no action or all set to a certain value.
Value	0 – 100% **[0%]**	Use this parameter to set a desired value [This option only exists when "defined value" in "Behavior after KNX Bus power down value" is chosen]
Behavior after KNX Bus power up	● switch-off value ● switch-on value ● **no action** ● defined value ● last value	Uses this parameter to set the behaviors of the connected ECGs/lamps in DALI Bus A and B when KNX bus is on/ return. Actions are all off, all on, no action, all set to a certain value or all stay at last value.
Value	0 – 100% **[0%]**	Use this parameter to set a desired value [This option only exists when "defined value" in "Behavior after KNX Bus power up" is chosen]

6.1.1.3 General setting - AFTER MODE



The chart shows the dynamic range for this parameter:

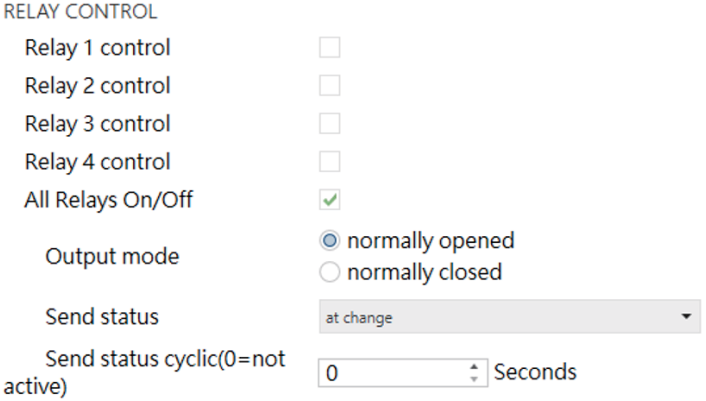
ETS-text	Dynamic range **[default value]**	Comment
Behavior after Panic mode	● switch-off value ● switch-on value ● **last value**	Uses this parameter to set the behaviors of the ECGs/lamps after the panic mode has finished. If you choose "last value", the value prior to the panic mode is saved and the lamp returns to this value afterwards.
Behavior after Emergency mode	● **switch-off value** ● switch-on value ● last value	Uses this parameter to set the behaviors of the ECGs/lamps after the emergency mode has finished. If you choose "last value", the value prior to the panic mode is saved and the lamp returns to this value afterwards.

6.1.1.4 General setting - BROADCAST

The chart shows the dynamic range for this parameter:

ETS-text	Dynamic range **[default value]**	Comment
Dali n Broadcast n=A or B	● **Unchecked** ● Checked	Use this parameter to enable the broadcast function.
Dimming curve	● **log** ● linear	Sets the dimming curve for broadcast dimming. NOTE: This parameter only sends diming telegrams according to your setting and will not transfer the values to match the dimming curve of the ECGs/lamps. Please select the same curve as the ECGs/lamps to get the best dimming performance. [This option only exists when "Dali n Broadcast " is checked].

6.1.1.5 General setting - RELAY CONTROL



The chart shows the dynamic range for this parameter:

ETS-text	Dynamic range **[default value]**	Comment
Relay n control n = [1, 4]	● **Unchecked** ● Checked	Use this parameter to enable the function. For detailed information, please refer to 4.1.1.5.1.
All Relays On/Off	● **Unchecked** ● Checked	Use this parameter to enable the function.
Output mode ★	● **normally opened** ● normally closed	Defines the default behavior of the relays.
Send status ★	● no send, passive status object ● **at change** ● always at input of telegram	Sends status signals from the object All Relays On/Off with the option you selected.
Send status cyclic (0= not active) ★	0 – 65535s **[0s]**	Sends status signals from the object All Relays On/Off at intervals you desire.

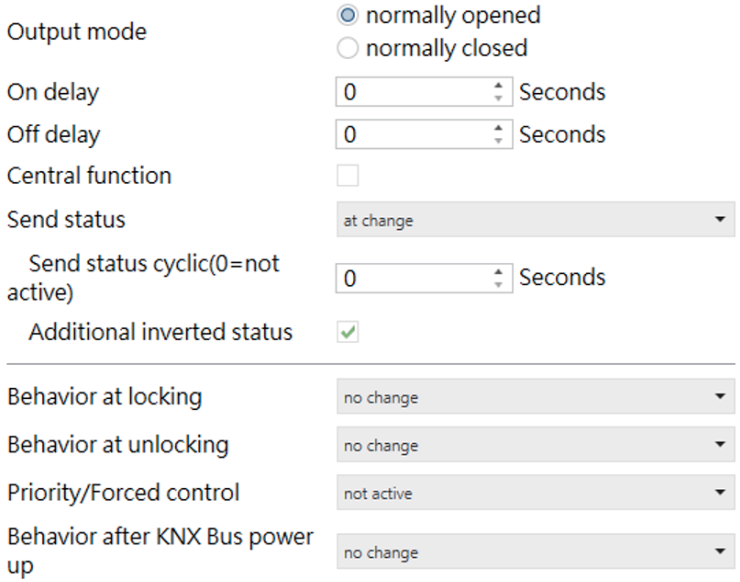
★: Only appears when "Checked" in "All Relays On/Off" is chosen

The following chart shows the objects that belong to general setting:

Number	Name	Length	Usage
32	[Central Function] All Relays On/Off	1 bit	This object is use to switch all relays on/off. Note: This object is only valid when the parameter "All Relays On/Off" is checked.
33	[Central Function] All Relays On/Off (Status)	1 bit	Sends the on/off status for the relays. 1: all of the relays are off. 0: one of the relays is on.

6.1.1.5.1 General setting - RELAY CONTROL – Relay

Once a relay is activated, a new page of Relays will appear. At this subpage, the further parameterization can be done. The following illustration shows the setting options at the submenu for a relay.



The chart shows the dynamic range for this parameter:

ETS-text	Dynamic range **[default value]**	Comment
Output mode	● **normally opened** ● normally closed	Defines the default behavior of the relay.
On delay	0 – 65535s **[0s]**	Adjustment of the time at which the switch-on process shall be delayed.
Off delay	0 – 65535s **[0s]**	Adjustment of the time at which the switch-off process shall be delayed.
Central function	● Unchecked ● **Checked**	Whether it is controllable via the object [Central Function] All Relays On/Off.
Send status	● no send, passive status object ● **at change** ● always at input of telegram	Sends status signals from the object All Relays On/Off with the option you selected.
Send status cyclic (0= not active)	0 – 65535s **[0s]**	Sends status signals from the object All Relays On/Off at intervals you desire.
Additional inverted status	● **Unchecked** ● Checked	If actives, inverter signals received from the object On/Off(Inverted Status), that is 1→0; 0→1.
Behavior at locking	● off ● on ● **no change**	Sets the action to be performed when a lock order is received.
Behavior at unlocking	● off ● on ● **no change** ●previous status	Sets the action to be performed when an unlock order is received.

ETS-text	Dynamic range **[default value]**	Comment
Priority/ Force control	● **no change** ● 2Bit forced control ● 1Bit priority ON ● 1Bit priority OFF	Activates or deactivates the function.
Behavior after KNX Bus power up	● off ● on ● **no change**	Uses this parameter to set the behaviors of the relay when KNX bus is on/ return.

The following chart shows the objects that belong to general setting:

Number	Name	Length	Usage
2180	[Relay 1] On/Off	1 bit	This object is used to switch the relay on or off.
2181	[Relay 1] Lock	1 bit	This object is used to lock/unlock the relay.
2182	[Relay 1]On/Off (Status)	1 bit	This object is used to send the status of the relay.
2183	[Relay 1] On/Off (Inverted Status)	1 bit	This object is used to send the inverted status of the relay. Note: This object is only valid when the parameter "Additional inverted state" is checked.
2184	[Relay 1] Forced Control	2 bit	Forced control function: 00 and 01: Deactivates Forced control 10: Sets to Forced control active with relay Off (open) 11: Sets to Forced control active with relay On (short)

6.1.1.6 General setting - RTC

RTC

RTC Send status cyclic no active

The chart shows the dynamic range for this parameter:

ETS-text	Dynamic range **[default value]**	Comment
RTC Send status cyclic	not active, 10s, 20s, ...50s, 60s **[not active]**	Sends status signals from the objects "RTC Time" and "RTC date" at intervals you desire.

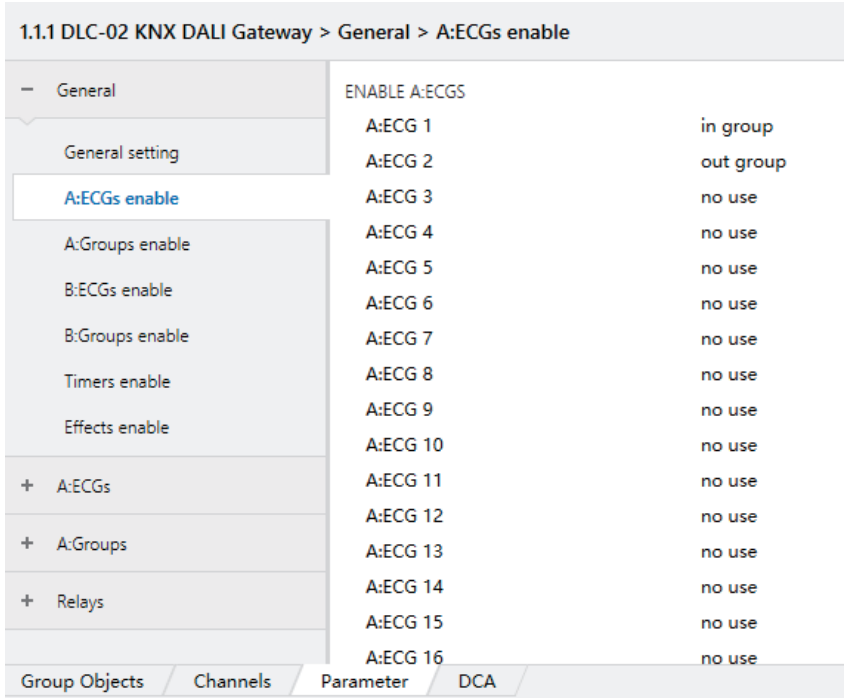
The following chart shows the objects that belong to general setting:

Number	Name	Length	Usage
34	[Central Function] RTC	3 bytes	This object is used to set the time. The time must be provided by a central timer and updated at least twice a day.
35	[Central Function] RTC	3 bytes	This object is used to set the date. The date must be provided by a central timer and updated at least twice a day.

6.2 ECGs enable

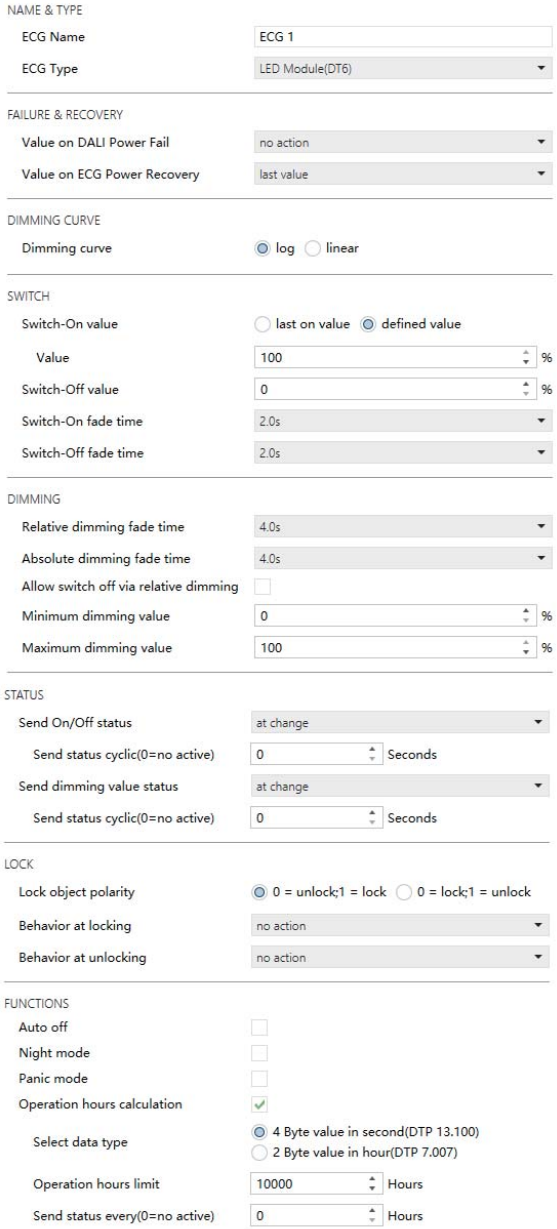
A: ECGs enable and B:ECGs enable pages are used to display ECGs status and cannot be parameterized. It is the DCA that can be used to parameterize group assignment and new ECG installation.

no use: There is no ECG found or connected.
out group: The ECG has been found and NOT assigned to a group.
in group: The ECG has been found and assigned to a group.

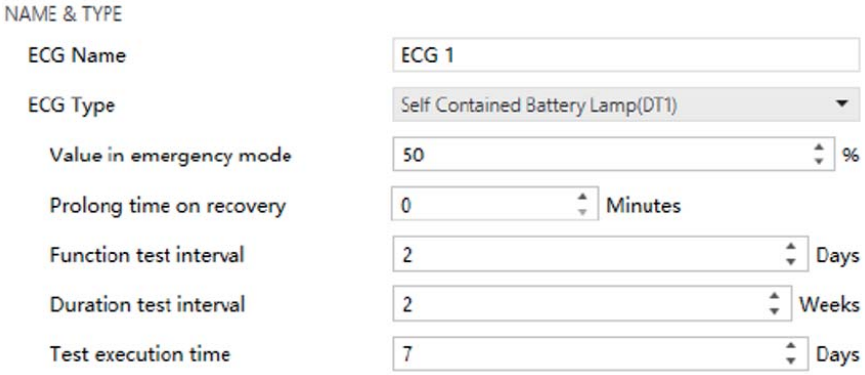


6.2.1 ECG (out group)

This page only appears when the ECG is not assigned to a group. There are NAME&TYPE, FAILURE&RECOVERY, DIMMING CURVE, SWITCH, DIMMING, STATUS, LOCK and FUNCTIONS in the page.



6.2.1.1 ECG (out group) - NAME&TYPE



The chart shows the dynamic range for this parameter:

ETS-text	Dynamic range **[default value]**	Comment
ECG Name	-----	You can enter a user-friendly name in the ECG. There are 30 bytes allowed for name setting.
ECG Type	● Fluorescent Lamp ● Self Contained Battery Lamp ● Discharge Lamp ● Low Voltage Halogen Lamp ● Incandescent Lamp ● 0..10V Converter ● **LED Module** ● Relay Module	Use this parameter to set the type of ECG used.
Value in emergency mode ★	0 – 100% **[50%]**	Sets the brightness level of the lamp in emergency mode.

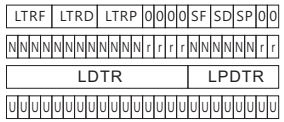
ETS-text	Dynamic range **[default value]**	Comment
Prolong time on recovery ★	0 – 20 min **[0min]**	Sets the time to remain in the extended emergency mode after main voltage recovery.
Function test interval ★	0 - 255days **[2days]**	Sets the periodic time for automatic execution of the test which checks the proper function of the converter.
Duration test interval ★	0 – 52 weeks **[2weeks]**	Sets the periodic time for automatic execution of the test which checks converter is working properly in case of power failure.
Test execution time ★	0 - 255days **[7days]**	Sets the maximum time after which the function test or duration test must be executed. If a test has not ended within this time the result will indicate max delay exceeded.

★: Only appears when "Self Contained Battery Lamp" in "ECG Type" is chosen

The following chart shows the objects that belong to general setting:

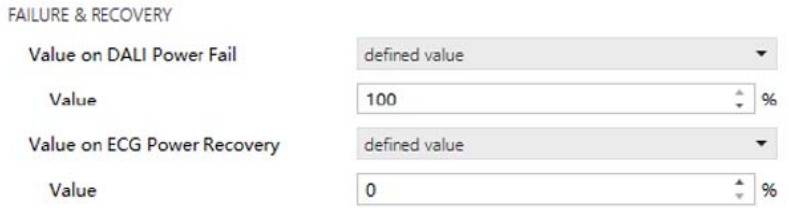
Number	Name	Length	Usage
47	[A:ECG 1] Converter Test Control	1 byte	This object is used to controls a test of a DALI converter. Furthermore, it allows to stop running test and to reset test flags. These object follows the following coding: Bit 0: Reserved. Bit 1: Start function test. Bit 2: Start duration test. Bit 3: Start partial duration test. Bit 4: Stop test. Bit 5: Reset function test done flag. Bit 6: Reset duration test done flag Bit 7 – 255: Reserved.

Number	Name	Length	Usage
48	[A:ECG 1] Converter Status	1 bit	Converter Mode. This object is used to send the status of a converter with the following coding: Bit 0: Unknown. Bit 1: Normal mode active. Bit 2: Inhibit mode active: for 15 minutes the converter will not switch the emergency lighting on when a power failure occurring. Bit 3: Hardwired inhibit mode active: digital input that the converter can have to activate the inhibit mode. Bit 4: Rest mode active: forced off emergency lighting during emergency mode. Bit 5: Emergency mode active. Bit 6: Extended emergency mode active. Bit 7: FT in progress. Bit 8: DT in progress. Bit 9: PDT in progress. Bit 10 - 15: Reserved.

Number	Name	Length	Usage
49	[A:ECG 1] Converter Test Result	6 bytes	 This object is used to send the result of the last converter test with the following coding: **LTRF, LTRD, LTRP:** Last Test Result Functional / Duration / Partial duration: Indicates the test result of each type: Bit 0: Unknown. Bit 1: Passed in time. Bit 2: Passed max delay exceeded. Bit 3: Failed, test executed in time. Bit 4: Failed, max delay exceeded. Bit 5: Test manually stopped. Bit 6 - 15: Reserved. **SF, SD, SP:** Start method of last Functional / Duration / Partial test. Indicates the method by which the last test started. Updated when a test is finish. Bit 0: Unknown. Bit 1: Started automatically.

Number	Name	Length	Usage
			Bit 2: Started by Gateway. Bit 3: Reserved. **LDTR**: Last Duration Test Result. Contains the battery discharge time as the result of the last successful duration test indicated in minutes. **LPDTR:** Last Partial Duration Test Result. Provides the remaining battery charge level after the last partial duration test. 0: Deep discharge point. Bit 1 - 253: Battery level. Bit 254: Fully charged. Bit 255: Unknown.

6.2.1.2 ECG (out group) - FAILURE&RECOVERY



The chart shows the dynamic range for this parameter:

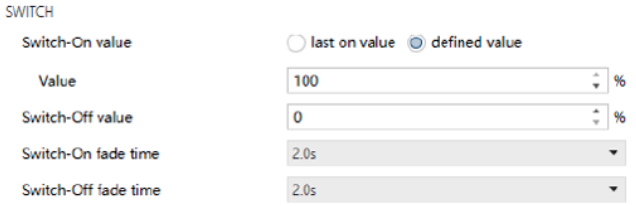
ETS-text	Dynamic range **[default value]**	Comment
Value on DALI Power Fail	● switch-off value ● switch-on value ● **no action** ● defined value	Uses this parameter to set the behaviors of the ECG when DALI bus voltage falls down. Actions are off, on, no action or set to a certain value.
Valuel	0 – 100% **[100%]**	Use this parameter to set a desired value [This option only exists when "defined value" in "Value on DALI Power Fail" is chosen].
Value on ECG Power Recovery	● switch-off value ● switch-on value ● **last value** ● defined value	Uses this parameter to set the behaviors of the ECG when power recovery. Actions are off, on, last value or set to a certain value.
Value	0 – 100% **[0%]**	Use this parameter to set a desired value [This option only exists when "defined value" in "Value on DALI Power Fail" is chosen].

6.2.1.3 ECG (out group) – DIMMING CURVE

The chart shows the dynamic range for this parameter:

ETS-text	Dynamic range **[default value]**	Comment
Dimming curve	● **log** ● linear	Sets the dimming curve for the ECG.

6.2.1.4 ECG (out group) – SWITCH



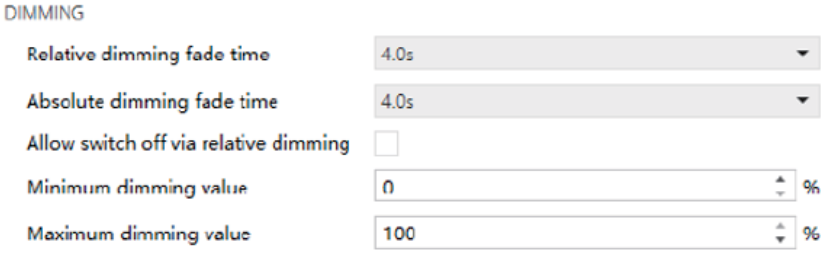
The chart shows the dynamic range for this parameter:

ETS-text	Dynamic range **[default value]**	Comment
Switch-On value	● last on value ● **defined value**	Use this parameter to set the switch-on value. If you select "last on value", the value is set to the dim value prior to the lamp being switched off.
Valuel	0 – 100% **[100%]**	Use this parameter to set a desired value [This option only exists when "defined value" in "Switch-On value" is chosen].
Switch-Off value	0-100% **[0%]**	Use this parameter to set the switch-off value.
Switch-On fade time	Immediately, 0.7s, 1.0s, ...64s, 90.5s **[2s]**	Defines the time needed to achieve the required setting after switch-on.
Switch-Off fade time	Immediately, 0.7s, 1.0s, ...64s, 90.5s **[2s]**	Defines the time needed to turn off or achieve the required setting after switch-off

The following chart shows the objects that belong to general setting:

Number	Name	Length	Usage
36	[A:ECG 1] On/Off	1 bit	Use this object to switch the ECG on or off.

6.2.1.5 ECG (out group) – DIMMING



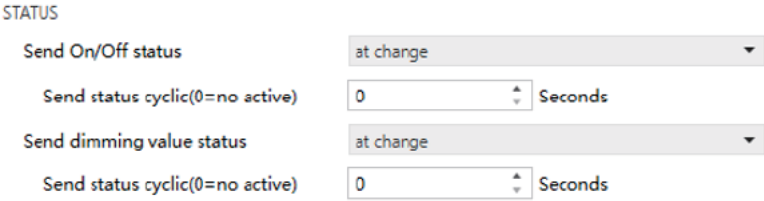
The chart shows the dynamic range for this parameter:

ETS-text	Dynamic range **[default value]**	Comment
Relative dimming fade time	Immediately, 0.7s, 1.0s, ...64s, 90.5s **[4s]**	Defines the time needed to achieve the required setting by relative dimming.
Absolute dimming fade time	Immediately, 0.7s, 1.0s, ...64s, 90.5s **[4s]**	Defines the time needed to achieve the required setting by absolute dimming.
Allow switch off via relative dimming	● **Unchecked** ● Checked	Allows switch off via relative dimming or not.
Minimum dimming value	0-100% **[0%]**	Lowest, minimum allowed light value for relative and absolute dimming.
Maximum dimming value	0-100% **[100%]**	Highest, maximum allowed light value for relative and absolute dimming.

The following chart shows the objects that belong to general setting:

Number	Name	Length	Usage
37	[A:ECG 1] Relative Dimming	4 bit	This object is used for the relative dimming of the ECG .
38	A:ECG 1] Absolute Dimming	1 byte	This object is used for the absolute dimming of the ECG.

6.2.1.6 ECG (out group) – STATUS



The chart shows the dynamic range for this parameter:

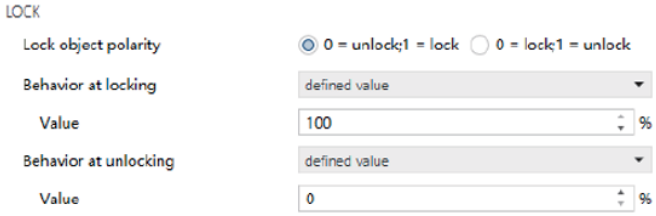
ETS-text	Dynamic range **[default value]**	Comment
Send On/Off status	● no send, passive status object ● **at change** ● always at input of telegram	Sends status signals from the object On/Off(Status) with the option you selected.
Send status cyclic (0=no active)	0 – 65535s **[0s]**	Sends status signals from the objects On/Off(Status) at intervals you desire.
Send dimming value status	● no send, passive status object ● **at change** ● always at input of telegram	Sends status signals from the object Dimming Value(Status) with the option you selected.
Send status cyclic (0=no active)	0 – 65535s **[0s]**	Sends status signals from the objects Dimming Value(Status) at intervals you desire.

The following chart shows the objects that belong to general setting:

Number	Name	Length	Usage
39	[A:ECG 1] On/Off (Status)	1 bit	Sends the on/off status of the ECG. 1.The parameter: Send On/Off Status is no send, passive stage object update status but no send telegram 2.The parameter: Send On/Off Status is at change send telegram in every on/off change 3.The parameter: Send On/Off Status is always at input of telegram send telegram in every on/off command Send Status cyclic is at a certain time value send telegram at regular intervals.
40	[A:ECG 1] Dimming Value (Status)	1 byte	Sends the dimming value of the ECG. 1.The parameter: Send dimming value status is no send, passive stage object update value status but no send telegram. 2.The parameter: Send dimming value status is at change send telegram in every dimming value change. 3.The parameter: Send dimming value status is always at input of telegram send telegram in every dimming command. Send Status cyclic is at a certain time value send telegram at regular intervals.
46	[A:ECG 1] Failure (Status)	1 bit	Reports the presence of an ECG disconnect.

6

6.2.1.7 ECG (out group) – LOCK



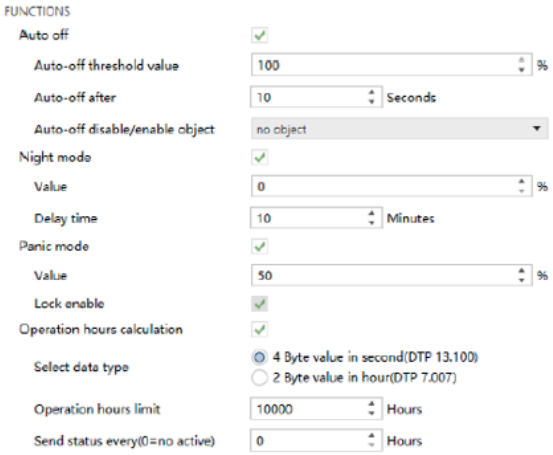
The chart shows the dynamic range for this parameter:

ETS-text	Dynamic range **[default value]**	Comment
Lock object polarity	● **0 = unlock; 1 = lock** ● 0 = lock; 1 = unlock	Sets which value will be interpreted as a lock order and which one as an unlock order.
Behavior at locking	● Switch-off value ● Switch-on value ● **no action** ● defined value	Sets the action to be performed when a lock order is received.
Value	0 – 100% **[100%]**	Use this parameter to set a desired value. [This option only exists when "defined value" in "Behavior at locking" is chosen].
Behavior at unlocking	● Switch-off value ● Switch-on value ● **no action** ● defined value ● last value	Sets the action to be performed when an unlock order is received. If you choose "last value", the ECG back to the previous value before the lock order.
Value	0 – 100% **[0%]**	Use this parameter to set a desired value. [This option only exists when "defined value" in "Behavior at unlocking" is chosen].

The following chart shows the objects that belong to general setting:

Number	Name	Length	Usage
41	[A:ECG 1] Lock	1 bit	This object is used to lock/unlock the ECG.

6.2.1.8 ECG (out group) – FUNCTIONS



● Auto off

The chart shows the dynamic range for this parameter:

ETS-text	Dynamic range **[default value]**	Comment
Auto off	● **Unchecked** ● Checked	Use this parameter to activate the mode.
Auto-off threshold value ★	1 – 100% **[100%]**	Dimming value beneath which the Auto Off will be triggered in case the ECG remains steady at that value for more than the threshold time.
Auto-off after ★	1 – 65535s **[10s]**	Time count before triggering the Auto Off mode.

ETS-text	Dynamic range **[default value]**	Comment
Auto-off disable/ enable object ★	● **no object** ● 0=disable; 1 = enable ● 0= enable; 1 = disable	Utilizes an object to enable/disable Auto-off mode externally or remains enabled. continuously

★: Only appears when "Auto off" is checked

The following chart shows the objects that belong to general setting:

Number	Name	Length	Usage
42	[A:ECG 1] Auto Off	1 bit	This object is used to enable/disable the Auto Off function of the ECG.

● Night mode

The chart shows the dynamic range for this parameter:

ETS-text	Dynamic range **[default value]**	Comment
Night mode	● **Unchecked** ● Checked	Use this parameter to activate the mode.
Value ★	0 - 100% **[0%]**	Use this parameter to set the value of the ECG in a group in "Night mode".
Delay time ★	0 – 65535mins **[10mins]**	Time count before setting to the dimming value in the group after the mode is triggered.

★: Only appears when "Night mode" is checked

● Panic mode

The chart shows the dynamic range for this parameter:

ETS-text	Dynamic range **[default value]**	Comment
Panic mode	● **Unchecked** ● Checked	Use this parameter to activate the mode.
Value ★	0 - 100% **[50%]**	Use this parameter to select the value for this operating mode.
Lock enable ★	● **Checked**	Activates Lock mode when the mode is activated.

★: Only appears when "Panic mode" is checked

● Operation hours calculation

The chart shows the dynamic range for this parameter:

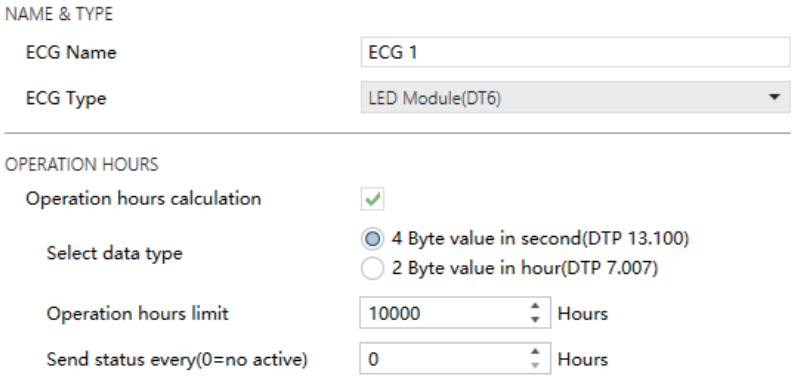
ETS-text	Dynamic range **[default value]**	Comment
Operation hours calculation	● **Unchecked** ● Checked	Determines whether an individual operating hour calculation is required for the ECG.
Select data type	● **4 Byte value in second** ● 2 Byte value in hour	Sends status signals from the object in seconds or in hours.
Operation hours limit	1 – 65535hrs **[10000hrs]**	Sets the life span (operating hours limit) of the ECG after which an individual alarm is sent.
Send status every (0=no active)	0 – 255hrs **[0hr]**	Sends status signals from the object Operation Value at intervals you desire.

The following chart shows the objects that belong to general setting:

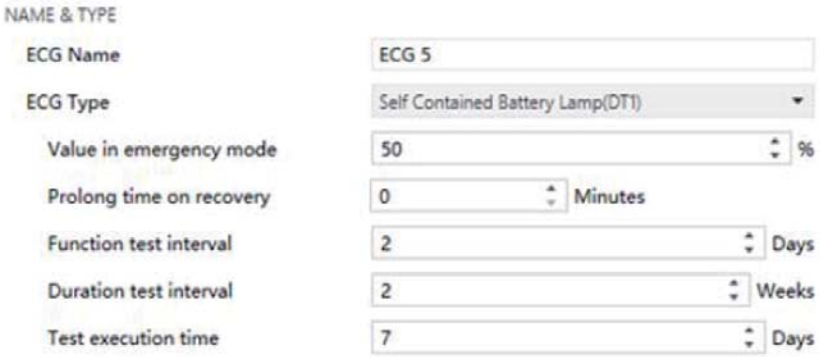
Number	Name	Length	Usage
43	[A:ECG 1] Operation Hours Reset	1 bit	Resets the operating hours counter of the ECG.
44	[A:ECG 1] Operation Hours Value (in seconds) [A:ECG 1] Operation Hours Value (in seconds)	4 bytes	The operating hours of the ECG in seconds are sent via this object. The internal counter can be set to 0 (Reset) or another value via this object.
		2 bytes	The operating hours of the ECG in hours are sent via this object. The internal counter can be set to 0 (Reset) or another value via this object.
45	[A:ECG 1] Operation Hours Exeeded	1 bit	This object is used to report that the operation hours' counter exceeds the set threshold.

6.2.2 ECG (in group)

This page only appears when the ECG is in a group. There are NAME&TYPE and OPERATION HOURS in the page.



6.2.2.1 ECG (in group) - NAME&TYPE



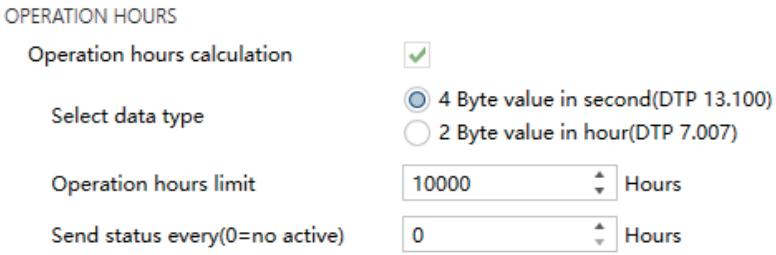
The chart shows the dynamic range for this parameter:

ETS-text	Dynamic range **[default value]**	Comment
ECG Name	-----	You can enter a user-friendly name in the ECG. There are 30 bytes allowed for name setting.
ECG Type	● Fluorescent Lamp ● Self Contained Battery Lamp ● Discharge Lamp ● Low Voltage Halogen Lamp ● Incandescent Lamp ● 0..10V Converter ● **LED Module** ● Relay Module	Use this parameter to set the type of ECG used.
Value in emergency mode ★	0 – 100% **[50%]**	Sets the brightness level of the lamp in emergency mode.
Prolong time on recovery ★	0 – 20 min **[0min]**	Sets the time to remain in the extended emergency mode after main voltage recovery.
Function test interval ★	0 - 255days **[2days]**	Sets the periodic time for automatic execution of the test which checks the proper function of the converter.

ETS-text	Dynamic range **[default value]**	Comment
Duration test interval ★	0 – 52 weeks **[2weeks]**	Sets the periodic time for automatic execution of the test which checks converter is working properly in case of power failure.
Test execution time ★	0 - 255days **[7days]**	Sets the maximum time after which the function test or duration test must be executed. If a test has not ended within this time the result will indicate max delay exceeded.

★: Only appears when "Self Contained Battery Lamp" in "ECG Type" is chosen

6.2.2.2 ECG (in group) – OPERATION HOURS



The chart shows the dynamic range for this parameter:

ETS-text	Dynamic range **[default value]**	Comment
Operation hours calculation	● **Unchecked** ● Checked	Determines whether an individual operating hour calculation is required for the ECG.

ETS-text	Dynamic range **[default value]**	Comment
Select data type	● **4 Byte value in second** ● 2 Byte value in hour	Sends status signals from the object in seconds or in hours.
Operation hours limit	1 – 65535hrs **[10000hrs]**	Sets the life span (operating hours limit) of the ECG after which an individual alarm is sent.
Send status every (0=no active)	0 – 255hrs **[0hr]**	Sends status signals from the object Operation Value at intervals you desire.

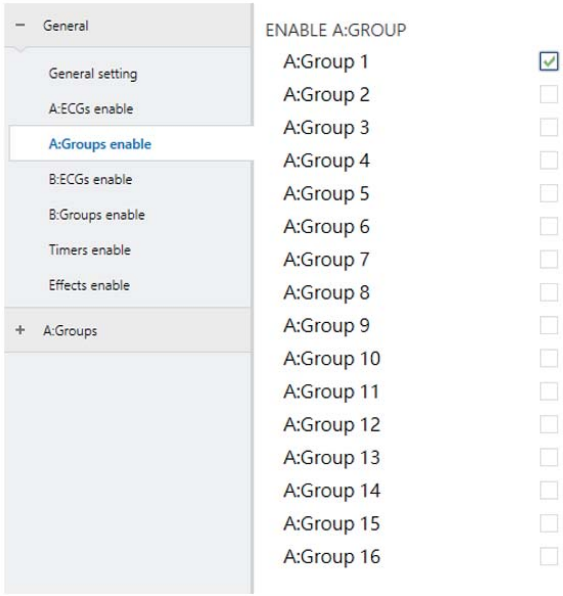
The following chart shows the objects that belong to general setting:

Number	Name	Length	Usage
43	[A:ECG 1] Operation Hours Reset	1 bit	Resets the operating hours counter of the ECG.
44	[A:ECG 1] Operation Hours Value (in seconds) [A:ECG 1] Operation Hours Value (in seconds)	4 bytes	The operating hours of the ECG in seconds are sent via this object. The internal counter can be set to 0 (Reset) or another value via this object.
		2 bytes	The operating hours of the ECG in hours are sent via this object. The internal counter can be set to 0 (Reset) or another value via this object.

Number	Name	Length	Usage
45	[A:ECG 1] Operation Hours Exeeded	1 bit	This object is used to report that the operation hours' counter exceeds the set threshold.

6.3 Groups enable

A:Groups enable and B:Groups enable pages are used to activates group functions.



The chart shows the dynamic range for this parameter:

ETS-text	Dynamic range **[default value]**	Comment
X:Group n X = A or B n = [1, 16]	● **Unchecked** ● Checked	Use this parameter to activate the function.

Once a group is activated, a new page of A:Groups or B:Groups will appear. At this subpage, the further parameterization can be done. Detailed information is described in the following sections of NAME, FAILURE&COVERY, DIMMING CURVE, SWITCH, DIMMING, STATUS, LOCK and FUNCTIONS.

6.3.1 Group – NAME

NAME

Group Name Group 1

The chart shows the dynamic range for this parameter:

ETS-text	Dynamic range **[default value]**	Comment
ECG Name	**Group n** **n=[1, 16]**	You can enter a user-friendly name in the group. There are 30 bytes allowed for name setting

6.1.2.5 Group – FAILURE&RECOVERY

FAILURE & RECOVERY

Value on DALI Power Fail: defined value

Value: 100 %

Value on ECG Power Recovery: defined value

Value: 0 %

The chart shows the dynamic range for this parameter:

ETS-text	Dynamic range **[default value]**	Comment
Value on DALI Power Fail	● Switch-off value ● Switch-on value ● **no action** ● defined value	Uses this parameter to set the behaviors of the connected ECGs/lamps in the group when DALI bus voltage falls down. Actions are all off, all on, no action or all set to a certain value.

ETS-text	Dynamic range **[default value]**	Comment
Value	0 -100% **[100%]**	Use this parameter to set a desired value. [This option only exists when "defined value" in "Value on DALI Power Fail" is chosen].
Value on ECG Power Recovery	● Switch-off value ● Switch-on value ● **no action** ● defined value	Uses this parameter to set the behaviors of the connected ECGs in the group when power recovery. Actions are all off, all on, no action or all set to a certain value.
Value	0 -100% **[0%]**	Use this parameter to set a desired value. [This option only exists when "defined value" in "Value on ECG Power Recovery" is chosen].

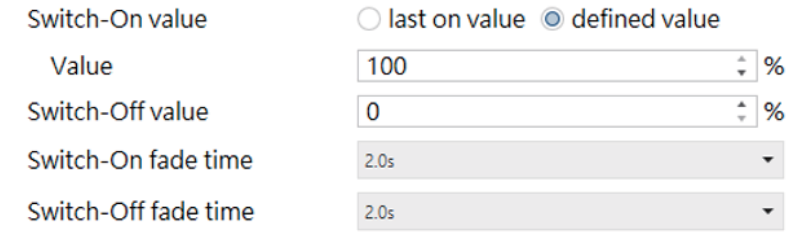
6.3.2 Group – DIMMING CURVE

DIMMING CURVE

Dimming curve ◉ log ○ linear

ETS-text	Dynamic range **[default value]**	Comment
Dimming curve	● **log** ● linear	Sets the dimming curve for the group.

6.3.3 Group – SWITCH



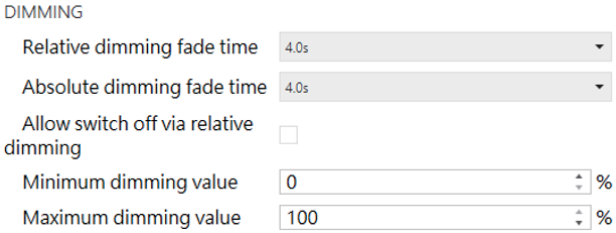
The chart shows the dynamic range for this parameter:

ETS-text	Dynamic range **[default value]**	Comment
Switch-On value	● last on value ● **defined value**	Use this parameter to set the switch-on value. If you select "last on value", the value is set to the dim value prior to the lamp being switched off.
Value	0-100% **[100%]**	Use this parameter to set a desired value. [This option only exists when "defined value" in "Switch-On value" is chosen].
Switch-Off value	0-100% **[0%]**	Use this parameter to set the switch-off value.
Switch-On fade time	Immediately, 0.7s, 1.0s, ...64s, 90.5s **[2.0s]**	Defines the time needed to achieve the required setting after switch-on.
Switch-Off fade time	Immediately, 0.7s, 1.0s, ...64s, 90.5s **[2.0s]**	Defines the time needed to turn off or achieve the required setting after switch-off.

The following chart shows the objects that belong to general setting:

Number	Name	Length	Usage
932	[A:Group1] On/Off	1 bit	This object is used to switch the group on or off.

6.3.4 Group – DIMMING



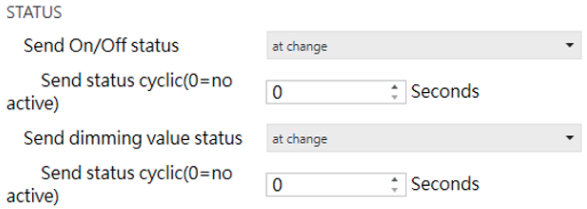
The chart shows the dynamic range for this parameter:

ETS-text	Dynamic range **[default value]**	Comment
Relative dimming fade time	Immediately, 0.7s, 1.0s, ...64s, 90.5s **[4.0s]**	Defines the time needed to achieve the required setting by relative dimming.
Absolute dimming fade time	Immediately, 0.7s, 1.0s, ...64s, 90.5s **[4.0s]**	Defines the time needed to achieve the required setting by absolute dimming.
Allow switch off via relative dimming	● **Unchecked** ● Checked	Allows switch off via relative dimming or not.
Minimum dimming value	0-100% **[0%]**	Lowest, minimum allowed light value for relative and absolute dimming.
Maximum dimming value	0-100% **[100%]**	Highest, maximum allowed light value for relative and absolute dimming.

The following chart shows the objects that belong to general setting:

Number	Name	Length	Usage
933	[A:Group1] Relative Dimming	4 bit	This object is used for the relative dimming of the group.
934	[A:Group1] Absolute Dimming	1 byte	This object is used for the absolute dimming of the group.

6.3.5 Group – STATUS



The chart shows the dynamic range for this parameter:

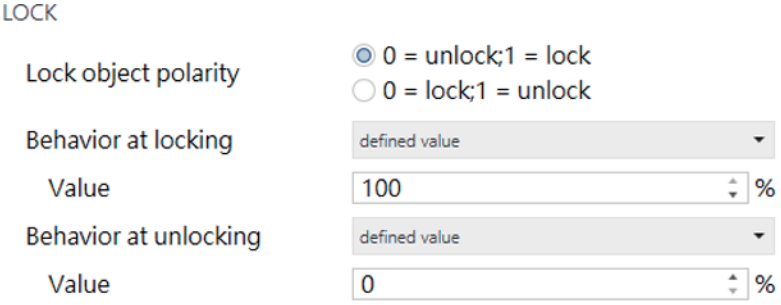
ETS-text	Dynamic range **[default value]**	Comment
Send On/Off status	● no send, passive status object ● **at change** ● always at input of telegram	Sends status signals from the object On/Off(Status) with the option you selected.
Send status cyclic (0=no active)	0 – 65535s **[0s]**	Sends status signals from the objects On/Off(Status) at intervals you desire.
Send dimming value status	● no send, passive status object ● **at change** ● always at input of telegram	Sends status signals from the object Dimming Value(Status) with the option you selected.
Send status cyclic (0=no active)	0 – 65535s **[0s]**	Sends status signals from the objects Dimming Value(Status) at intervals you desire.

The following chart shows the objects that belong to general setting:

Number	Name	Length	Usage
935	[A:Group1] On/Off(Status)	1 bit	This object is used to send the switch status of the group. 1.The parameter: Send On/Off Status is no send, passive stage object update status but no send telegram 2.The parameter: Send On/Off Status is at change send telegram in every on/off change 3.The parameter: Send On/Off Status is always at input of telegram send telegram in every on/off command Send Status cyclic is at a certain time value send telegram at regular intervals.
936	[A:Group1] Dimming Value (Status)	1 byte	Sends the dimming value of the group. 1.The parameter: Send dimming value status is no send, passive stage object update value status but no send telegram. 2.The parameter: Send dimming value status is at change send telegram in every dimming value change.

Number	Name	Length	Usage
			3.The parameter: Send dimming value status is always at input of telegram send telegram in every dimming command. 4.Send Status cyclic is at a certain time value send telegram at regular intervals.

6.3.6 Group – LOCK



The chart shows the dynamic range for this parameter:

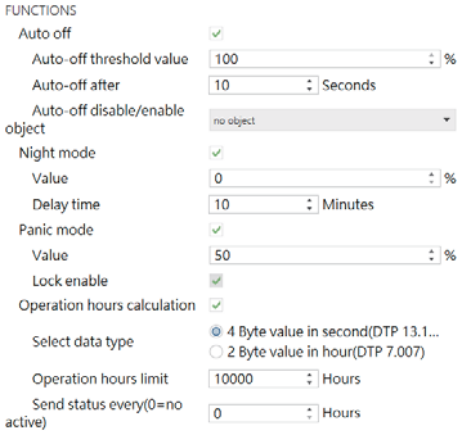
ETS-text	Dynamic range **[default value]**	Comment
Lock object polarity	● **0 = unlock; 1 = lock** ● 0 = lock; 1 = unlock	Sets which value will be interpreted as a lock order and which one as an unlock order.
Behavior at locking	● Switch-off value ● Switch-on value ● **no action** ● defined value	Sets the action to be performed when a lock order is received.

ETS-text	Dynamic range **[default value]**	Comment
Value	0 – 100% **[100%]**	Use this parameter to set a desired value. [This option only exists when "defined value" in "Behavior at locking" is chosen].
Behavior at unlocking	● Switch-off value ● Switch-on value ● **no action** ● defined value ● last value	Sets the action to be performed when an unlock order is received. If you choose "last value", the group back to the previous value before the lock order.
Value	0 – 100% **[0%]**	Use this parameter to set a desired value [This option only exists when "defined value" in "Behavior at unlocking" is chosen]

The following chart shows the objects that belong to general setting:

Number	Name	Length	Usage
937	[A:Group1] Lock	1 bit	This object is used to lock/unlock the group.

6.3.7 Group – FUNCTIONS



● Auto off

The chart shows the dynamic range for this parameter:

ETS-text	Dynamic range **[default value]**	Comment
Auto off	● **Unchecked** ● Checked	Use this parameter to activate the mode.
Auto-off threshold value ★	1 – 100% **[100%]**	Dimming value beneath which the Auto Off will be triggered in case the group remains steady at that value for more than the threshold time.
Auto-off after ★	1 – 65535s [10s]	Time count before triggering the Auto Off mode.
Auto-off disable/ enable object ★	● **no object** ● 0=disable; 1 = enable ● 0= enable; 1 = disable	Utilizes an object to enable/disable Auto-off mode externally or remains enabled continuously.

★: Only appears when "Auto off" is checked

The following chart shows the objects that belong to general setting:

Number	Name	Length	Usage
938	[A:Group1] Auto Off	1 bit	This object is used to enable/disable the Auto Off function of the group.

● Night mode

The chart shows the dynamic range for this parameter:

ETS-text	Dynamic range **[default value]**	Comment
Night mode	● **Unchecked** ● Checked	Use this parameter to activate the mode.
Value ★	0 - 100% **[0%]**	Use this parameter to set the value of all lamps in a group in "Night mode".
Delay time ★	0 – 65535mins **[10mins]**	Time count before setting to the dimming value in the group after the mode is triggered.

★: Only appears when "Night mode" is checked

● Panic mode

The chart shows the dynamic range for this parameter:

ETS-text	Dynamic range **[default value]**	Comment
Panic mode	● **Unchecked** ● Checked	Use this parameter to activate the mode.
Value ★	0 - 100% **[50%]**	Use this parameter to select the value for this operating mode.
Lock enable ★	● **Checked**	Activates Lock mode when the mode is activated.

★: Only appears when "Panic mode" is checked

● Operation hours calculation

The chart shows the dynamic range for this parameter:

ETS-text	Dynamic range **[default value]**	Comment
Operation hours calculation	● **Unchecked** ● Checked	Determines whether an individual operating hour calculation is required for the group.
Select data type	● **4 Byte value in second** ● 2 Byte value in hour	Sends status signals from the object in seconds or in hours.
Operation hours limit	1 – 65535hrs **[10000hrs]**	Sets the life span (operating hours limit) of the group after which an individual alarm is sent.
Send status every (0=no active)	0 – 255hrs **[0hr]**	Sends status signals from the object Operation Value at intervals you desire.

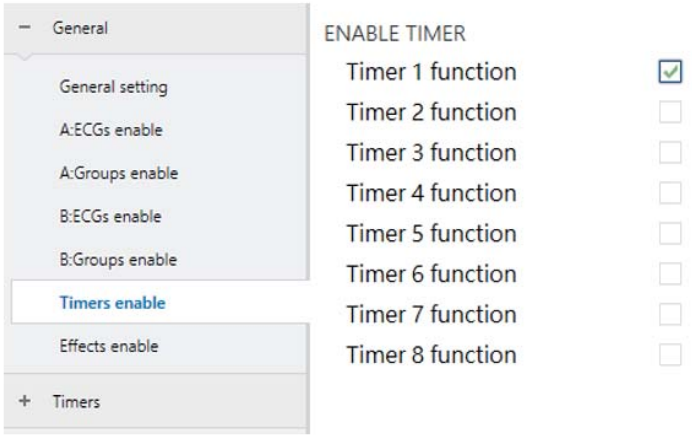
The following chart shows the objects that belong to general setting:

Number	Name	Length	Usage
939	[A:Group1] Operation Hours Reset	1 bit	Resets the operating hours counter of the group.

Number	Name	Length	Usage
940	[A:Group1] Operation Hours Value	4 bytes	The operating hours of the group in seconds are sent via this object. The internal counter can be set to 0 (Reset) or another value via this object.
		2 bytes	The operating hours of the group in hours are sent via this object. The internal counter can be set to 0 (Reset) or another value via this object.
941	[A:Group1] Operation Hours Exeeded	4 bytes	This object is used to report that the operation hours' counter exceeds the set threshold.

6.4 Timers enable

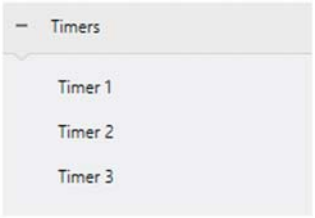
Timer enable page is used to activate timer functions.



The chart shows the dynamic range for this parameter:

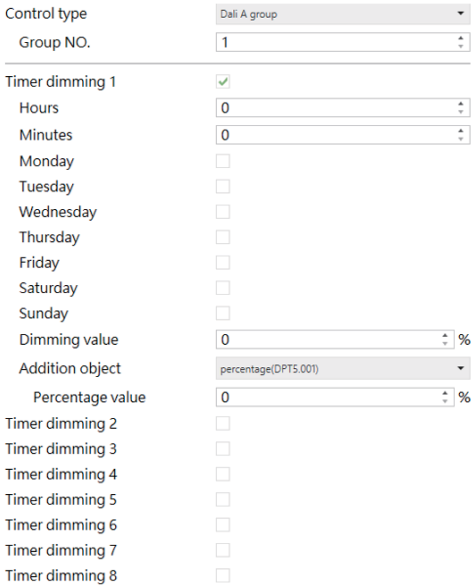
ETS-text	Dynamic range **[default value]**	Comment
Timer n function n = [1, 8]	● **Unchecked** ● Checked	Use this parameter to activate the function.

Once a timer is activated, a new page Timers will appear. At this subpage, the further parameterization can be done. Detailed information is described in the following section.



6.4.1 Timer

Timer function allows the lights to switch on at particular times of a day. Take an office application for example, lamps in group 1 of DALI bus A is used for the lobby, we can set a timer to switch on the lights in the lobby at a certain time on weekday morning before staff coming into work.



● Control type

The chart shows the dynamic range for this parameter:

ETS-text	Dynamic range **[default value]**	Comment
Control type	● **Dali A ECG** ● Dali A group ● Dali A broadcast ● Dali B ECG ● Dali B group ● Dali B broadcast	Select which DALI bus segment, group or ECG to work with the timer.
ECG No.	1 – 64 **[1]**	Select which ECG to work with [This option only exists when "Dali X ECG " in "Control type " is chosen] X=A or B
Group No.	1 – 16 **[1]**	Select which group to work with [This option only exists when "Dali X group " in "Control type " is chosen] X=A or B

● Timer dimming

The chart shows the dynamic range for this parameter:

ETS-text	Dynamic range **[default value]**	Comment
Timer dimming n n=[1, 8]	● **Unchecked** ● Checked	Use this parameter to activate the function.
Hours	0 – 23hrs **[0hr]**	Set a desired time to trigger the timer.
Minutes	0 – 59mins **[0min]**	Set a desired time to trigger the timer.
Monday	● **Unchecked** ● Checked	Whether to trigger the timer on Monday.
Tuesday ★	● **Unchecked** ● Checked	Whether to trigger the timer on Tuesday.

ETS-text	Dynamic range **[default value]**	Comment
Wednesday ★	● **Unchecked** ● Checked	Whether to trigger the timer on Wednesday.
Tuesday ★	● **Unchecked** ● Checked	Whether to trigger the timer on Tuesday.
Friday ★	● **Unchecked** ● Checked	Whether to trigger the timer on Friday.
Saturday ★	● **Unchecked** ● Checked	Whether to trigger the timer on Saturday.
Sunday ★	● **Unchecked** ● Checked	Whether to trigger the timer on Sunday.
Dimming value ★	● **Unchecked** ● Checked	Use this parameter to set a desired value when the timer is triggered.
Addition object ★	● **no use** ● switch ● percentage	Uses an additional object to send status signals when the timer is triggered.
Switch value	● **off** ● on	Send on/off signals when the timer is triggered [This option only exists when "switch" in "Addition object" is chosen].
Percentage value	Percentage value 0 – 100% **[0%]**	Send dimming value signals when the timer is triggered [This option only exists when "percentage" in "Addition object" is chosen].

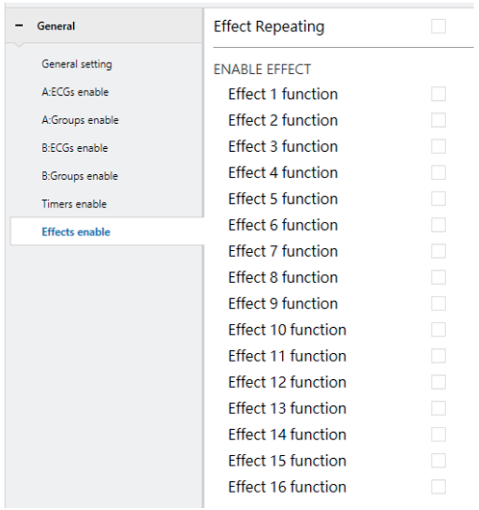
★: Only appears when "Timer dimming" is checked

The following chart shows the objects that belong to general setting:

Number	Name	Length	Usage
2200	[Timer 1] Switch	1 bit	This object is used to send on/off signals of the timer when it is triggered. This object only available when the object Addition object is set at switch.
2201	[Timer 1] Percentage	1 byte	This object is used to send dimming value signals of the timer when it is triggered. This object only available when the object Addition object is set at percentage.

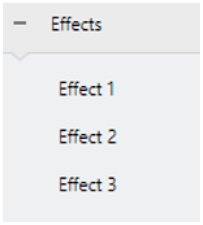
6.5 Effects enable

Effects enable page is used to activate effect functions. There are 16 independent effects available.



ETS-text	Dynamic range **[default value]**	Comment
Effect Repeating	● **Unchecked** ● Checked	Decide whether to repeat the effect functions or not.
Effect n function n = [1, 16]	● **Unchecked** ● Checked	Use this parameter to activate the function.

Once an effect function is activated, a new page Effects will appear. At this subpage, the further parameterization can be done. Detailed information is described in the following section.



6

6.5.1 Effect

In addition to light scenes the gateway also enables the use of effects. An effect is essentially the process control of light values of different groups and individual ECGs. The individual light values can either be directly controlled or dimmed via a dim value. 64 effect steps can be programmed by an effect function. An effect step can also be programmed as a delay.

Number	Channel	ECG/ Group	Value	Fade time	Delay
1	no use	none	0 %	2.0s	0 s
2	no use	none	0 %	2.0s	0 s
3	no use	none	0 %	2.0s	0 s
4	no use	none	0 %	2.0s	0 s
5	no use	none	0 %	2.0s	0 s
6	no use	none	0 %	2.0s	0 s
7	no use	none	0 %	2.0s	0 s
8	no use	none	0 %	2.0s	0 s
9	no use	none	0 %	2.0s	0 s
10	no use	none	0 %	2.0s	0 s
11	no use	none	0 %	2.0s	0 s
12	no use	none	0 %	2.0s	0 s
13	no use	none	0 %	2.0s	0 s
14	no use	none	0 %	2.0s	0 s
15	no use	none	0 %	2.0s	0 s

The chart shows the dynamic range for this parameter:

ETS-text	Dynamic range **[default value]**	Comment
Channel	● **no use** ● Dali A ECG ● Dali A group ● Dali B ECG ● Dali B group	Choose which segment, group or ECG to work with this effect.
ECG/Group	● 1 – 64 (ECG) ● 1 – 16 (group)	Choose which ECG or group to work with this
Value	0 -100% **[0%]**	Use this parameter to set a desired value.
Fade time	Immediately, 0.7s, 1.0s, ...64s, 90.5s **[2.0s]**	Defines the time needed to achieve the required setting.
Delay	0 – 255s **[0s]**	Time count before setting to the dimming value after the effect is triggered.

The following chart shows the objects that belong to general setting:

Number	Name	Length	Usage
2216	[Effect 1] Start/Stop	1 bit	Activate or deactivates the Effect. Note: This object is only valid when the parameter "Effect function" is checked.

6

7.Warranty

This product provides five years warranty under normal usage. Do not replace parts or any form of modification to the product in order to keep the warranty effectively.

※ **MEAN WELL possesses the right to adjust the content of this manual. Please refer to the latest version of our manual on our website. https://www.meanwell.com**

MEAN WELL WEB

7

明緯企業股份有限公司
MEAN WELL ENTERPRISES CO., LTD.
248 新北市五股區五權三路 28 號
No.28, Wuquan 3rd Rd., Wugu Dist., New Taipei City 248, Taiwan
Tel:886-2-2299-6100 Fax:886-2-2299-6200
http://www.meanwell.com E-mail:info@meanwell.com