SIEMENS

N 525D11

Switching/dimming actuator 2x DALI

Application program description

Contents

1 Function description

What is DALI?

DALI (Digital Addressable Lighting Interface) is a bi-directional communication interface as per IEC 60929, the specification of which was defined by manufacturers for electronic control gear (ECG). It enables receiving of e.g. switching and dimming commands as well as sending of status information, such as the failure of a lamp or reporting an error in the ECG.

Up to 64 DALI devices can be connected to a DALI bus line, and each of these devices can be assigned an individual participant address. This makes it possible to control each device individually, and status and error messages can be assigned to a specific electronic control device and therefore to a specific lamp. To control DALI devices individually, one can use the KNX/DALI gateway N 141/03, for example.

For more information on DALI, refer to the DALI manual at:
http://www.digitalilluminationinterface.org

The DALI dimming curve has been adapted to the sensitivity of the human eye. This results in a logarithmic characteristic curve for the luminous flux. However, humans perceive this logarithmic characteristic curve as a linear brightness curve.

IEC 62386-102 describes the DALI values as “ARC Power across the light source,” with an almost linear correlation to the luminous flux in most cases.

The luminous flux describes the entire power emitted by a light source in all directions. The unit is lumen (lm).

DiiA runs a DALI-2 certification program aimed at improving interoperability between DALI devices. The switching/dimming actuator N 525D11 has successfully passed this DALI-2 certification process. For more information on DALI-2, go to www.dali-alliance.org ***.

Function description of switching/dimming actuator N 525D11, 2x DALI Broadcast

Application program “07 B0 A2 switching/dimming actuator 2-fold DALI Broadcast 9A1701” can be used for KNX device “Switching/Dimming Actuator N 525D11, 2x DALI Broadcast.” This is briefly described below.

Switching/dimming actuator N 525D11, 2x DALI Broadcast is a KNX device with two DALI outputs (channels). Up to 20 devices can be connected per channel. Switching/dimming actuator N 525D11, 2x DALI Broadcast is a rail-mounted device for installation in distributions. For DALI, the electronics of the DALI devices are fed via the DALI bus line. Hence, the device has an integrated power supply for AC 230 V for supplying the device electronics and generating the DALI bus voltage for each channel.

The device is used to connect and control a group of dimmable lamps in parallel, e.g. if individual communication with each individual DALI device is not necessary.

In addition, the device can record and transfer status and error messages of DALI lines but not individual DALI devices.

The device can control the brightness of the lamps as well as the color temperature in parallel (“tunable white”). The device can therefore be used in human-centric lighting applications.

*** This section only applies if the device has a DALI-2 logo printed on it.

Properties:

The device is used to control DALI electrical control gear (ECG) with broadcast commands. Pre-defined and user defined dimming curves are available.

Depending on the selected operating mode, in addition to the communication objects for the functions switching, dimming brighter/darker, dimming value, color temperature and status requests, there is a series of additional functions available for each output.

As an alternative to the switching input, a control value input with configurable threshold value for switching on and off can be selected.

In direct operation, a channel can be operated via the corresponding buttons on the user interface.

The device display shows the error codes of the DALI channel error messages. Communication objects are created for the individual error messages.

Operating modes:

Each output (channel) of the switching/dimming actuator may be set to one of the following operating modes:

- Normal mode
- Timer mode
- Timer mode 2-fold
- Flashing

Timer functions:

In the “normal mode” operating mode, the timer functions for delayed switching on and off and timer night mode operation are available. For night mode, an additional warning can be set before switching off.

In the “timer mode” operating mode, the functions “on period 1 in day mode” and “on period in night mode” are available. Moreover, for both functions a warning before switching off can be set separately.

In the “timer mode 2-fold” operating mode, the functions “on period 1 in day mode” and “on period 2 in day mode” and “on period in night mode” are available.

In the “flashing” operating mode, the output is switched on and off cyclically with the selectable on and off period. It also possible to set up delayed switching on and off.

Overrides:

Up to seven different override function blocks can be activated to override the automation functions. For each of the override function blocks, one of the following functions can be selected:

- Manual override (ON)
- Permanent OFF
- Lock
- Central override
- User-defined override function
- Forced control

This enables flexible configuration of a separate priority-dependent override for each output. For the override functions, it is possible to select a control value input instead of a switching control input.

Switching cycle and operating hours count:

The application program includes optional a switching cycle and operating hours count with or without threshold monitoring for each output and an integrated 8-bit scene control, in which each output can be incorporated into up to 8 scenes.

Additional functions:

For each output (channel) of the switching/dimming actuator, the following additional functions are available:

- Color temperature control
- Pre-defined and user defined dimming curves
- Control value input
- Central switching
- 8-bit scene control
- Logic operations
- Status error communication objects for external voltage on DALI line, lamps defective, DALI line short circuit and no ECG found

Schematic design of a dimming channel:

The following schema illustrates the listed functions in a logical overview.

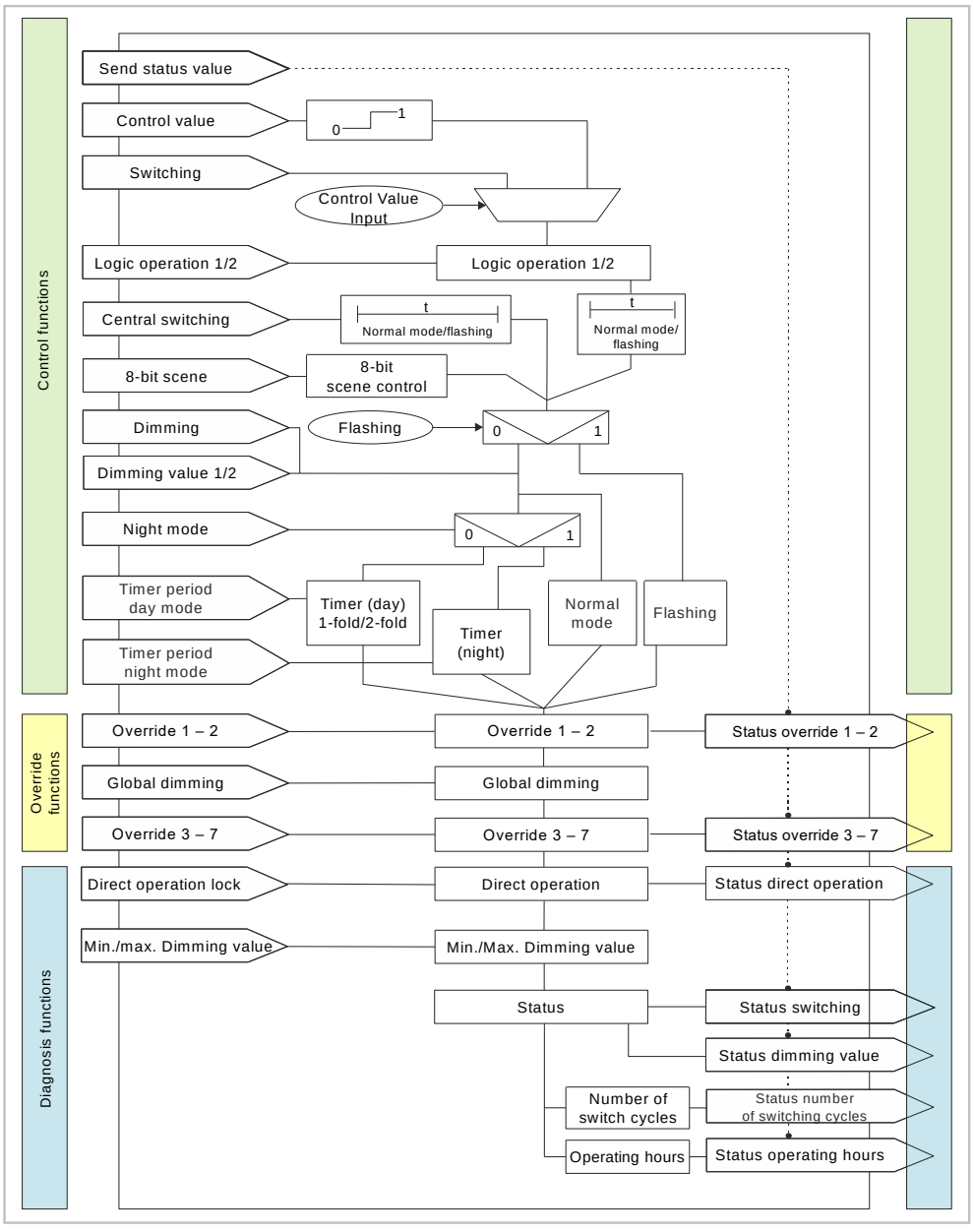


Fig. 1: Schematic design of a dimming channel

1.1 Information on the switching/dimming actuator and on the application program

Product family: Lighting

Product type: Switching/dimming actuator

Manufacturer: Siemens

Name: Switching/dimming actuator N 525D11, 2x DALI Broadcast

Order no.: 5WG1525-1DB11

Application: 07 B0 A2 Switching/Dimming Actuator 2-fold DALI Broadcast 9A1701

System requirement:

- At least ETS 5 or above

1.2 Behavior on mains voltage failure/recovery

A mains voltage failure will cause the functions of the switching/dimming actuator to fail.

Each output can be independently configured with parameters to define what status it is to assume in case of a mains voltage failure.

In case of a mains voltage failure, the current status and other values for each output are permanently saved so that they can be restored on mains voltage recovery.

On mains voltage recovery, a starting value can be set for the switching value, dimming value or color temperature value.

On mains voltage recovery, the configured actions are executed and, if applicable, new statuses are reported.

1.3 Building site function

The building site function provided ex-factory enables switching the building site lighting on and off via bus wall switches and actuators, even if these devices have not yet been commissioned with the Engineering Tool Software (ETS).

1.4 Delivery state

In the delivery state, all outputs (channels) have the functions “switching,” “dimming,” and “dimming value” assigned for the building site function.

1.5 Behavior on unloading the application program

After “unloading” the application program with the ETS, the unloaded device has no functions.

1.6 Resetting the device to factory settings

A very long push of the programming button of more than 20 seconds resets the device to its factory settings. This is indicated by a uniform flashing of the programming LED for 8 seconds.

All configuration settings are deleted. The building site function of the delivery state is re-activated.

1.7 Programming mode

Briefly pushing the programming button (< 2 seconds) activates programming mode. This is indicated through constant illumination of the programming LED. Pressing it again deactivates programming mode.

1.8 Position and function of the operating and display elements

1.8.1 User interface

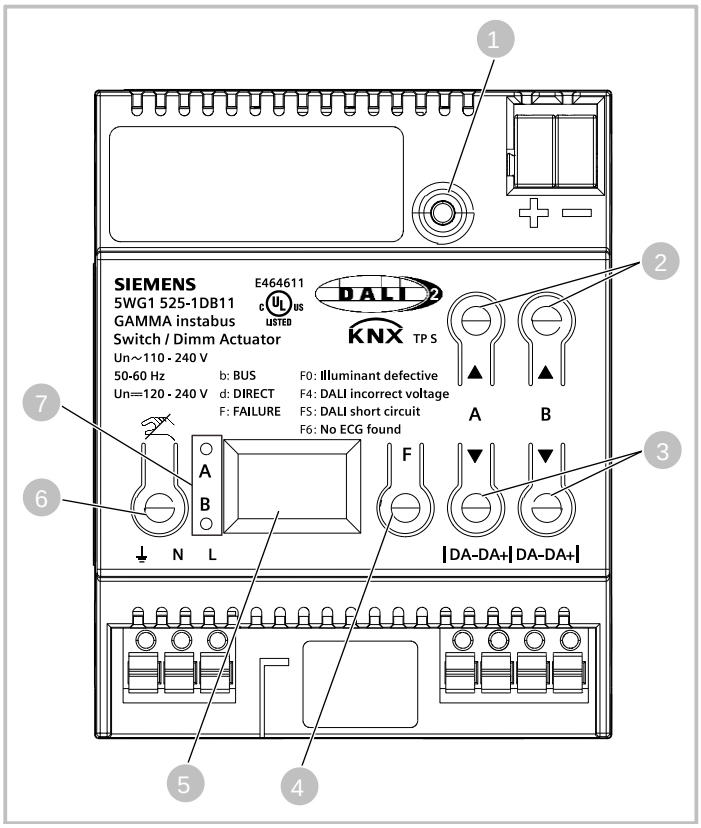


Fig. 2: User interface with operating and display elements

Pos.	Operating or display elements	Function
1	Programming LED (red), Programming button	Short push of button (< 2 s): • Activate programming mode, display status (LED on = active). Very long push of button (> 20 s): • Reset to factory settings (after 20 s, the LED starts flashing for about 8 s).
2	Button: Switch on, dim brighter, channel A or B in direct operation	Short press of button (< 1 s): • Switch on channel A or B and • activate direct operation for channel A or B. Long push of button (> 1 s): • Dim channel A or B brighter and • activate direct operation for channel A or B. If direct operation is activated, a "d" is shown on the display.
3	Button: Switch off, dim darker, channel A or B in direct operation	Short press of button (< 1 s): • Switch off channel A or B and

Pos.	Operating or display elements	Function
		● activate direct operation for channel A or B. Long push of button (> 1 s): ● Dim channel A or B darker and ● activate direct operation for channel A or B.
4	Button: Show error/failure codes	If an error occurs on a channel, the first character shown on the display is an "F" (failure). In addition, the LED of the respective channels flashes in short intervals. Short press of button (< 1 s): ● Show error/failure code. ● In case of several errors, push the button several times until "Fb" (failure in bus mode) or "Fd" (failure in direct operation) is displayed again. Error messages [→ 13]
5	Display	Shows information on the device and errors. Information on the device [→ 13] Error messages [→ 13]
6	Button: Deactivate direct operation	Short press of button (< 1 s): ● Deactivate direct operation for all channels. Keep pushing the button and briefly push the button 'Switch on, dim brighter' or 'Switch off, dim darker' channel A or channel B: ● deactivate direct operation for channel A or B.
7	LED (red), once each for channel A and channel B	Display switching state (On/Off) of the respective channel. ● LED lit: Channel switched on (dimming value > 0). ● LED off: Channel switched off (dimming value = 0). ● LED lights up with brief interruptions: Channel switched on in direct operation. ● LED flashing: Channel switched off in direct operation.

1.8.2 Display

1.8.2.1 Information on the device

Display on the screen (at second position)	Meaning
b	**Normal mode (bus mode)** In normal mode (bus mode), all channels are controlled via telegrams received via the KNKX bus. The LED (7, User interface with operating and display elements [→ 11]) is used to display the switching state of the connected lamps (channels).
d	**Direct operation (bus mode)** Direct operation enables direct switching and dimming of all ECG connected via the switching/dimming actuator, even if the actuator has not yet been commissioned using the ETS or if communication via KNX is interrupted. If at least one channel is in direct operation, the display (5, User interface with operating and display elements [→ 11]) indicates direct operation with a “d.” The LED (7, User interface with operating and display elements [→ 11]) is used to display the switching state of the connected lamps.

1.8.2.2 Error messages

If an error/fault occurs on one of the two channels, the first character shown on the display is an “F.”

- If at least one of the channels is in direct operation, the display (5, User interface with operating and display elements [→ 11]) indicates the error message “Fd.”
- If none of the channels is in direct operation, i.e. if one or both channels are in bus mode, the display (5, User interface with operating and display elements [→ 11]) indicates the error message as “Fb.”

The ‘Display error codes’ button ‘(4, User interface with operating and display elements [→ 11]) can be used to display any errors that occur in sequence on the display.

For the channel on which the error occurred, the corresponding LED (7, User interface with operating and display elements [→ 11]) flashes at short, regular intervals.

Possible errors and remedies

Display on the display	Error	Solution
F0	**Lamps defective** At least one of the connected lights is defective.	Replace lamps.
F4	**External voltage on DALI line** The device is equipped with external voltage detection on both DALI channels. Error code F4 is displayed if external voltage due to incorrectly connected lines is detected on the DALI A and/or B terminals. This protects the device from excess voltage, e.g. if lines with 24 V or 230 V AC (N, L) are connected to the DALI A and/or B terminal pair. This mode is retained until the error is corrected. **Note:** Due to the internal connection of DALI terminal channel A and channel B, any external voltage here is not detected. In this case, there is a direct short circuit and the device is damaged!	Check cabling: ● Check that there is no voltage on the DALI line before connecting it. ● During operation, only be the DALI voltage (approx. 19 V) provided by the switching/dimming actuator may be present on the DALI communication line. Combined lines (e.g. B. NYM–J 5x1,5; 230 V + DALI) are permissible.
F5	**Short circuit of DALI line** The DALI line is short circuited. The DALI gateway can no longer control the DALI devices. **Note:** An overload can also lead to a short circuit on the DALI line.	Check cabling of the DALI communication line for a short circuit.
F6	**No ECG found** No connected ECG was found.	Connect ECG with mains voltage (e.g. 230 V) or connect ECG or replace defective ECG.
"." (Dot in the bottom right corner)	The display only shows a dot in the bottom right corner. The application cannot be started. Possible cause: The configuration was damaged by a termination during a download using ETS or during a firmware update.	Reset the device to factory settings: ● Push the Programming mode button > 20 seconds. If a firmware update got damaged: ● Repeat firmware update.

More information:

Error messages [→ 107]

2 Communication objects

Maximum number of group addresses:	2000
Maximum number of group assignments:	2000

The number and designation of the communication objects displayed in the ETS menu can vary as they depend on the parameter settings. Numbers missing in this table are not assigned.

The application program is loaded in the device ex works.

The device is configured and commissioned with Engineering Tool Software (ETS) version ETS 5 or higher.

Using the ETS, the specific parameters and addresses can be assigned and transferred to the bus device.

Which objects are visible and linkable with group addresses is determined by the functions assigned to the inputs.

The objects and corresponding parameter settings are described with the functions.

The following list shows all communication objects of the device. The communication objects are identical for every channel with the only difference being the number.

2.1 Cross-channel communication objects

Status device function and Send status values

No.	Object name	Function	Datapoint type	Flags
1	Status device function	Ok / Defect	1.005 alarm	CRT
2	Send status values	request	1.017 trigger	CW

2.2 Communication objects of the individual channels

No./channel		Object name	Function	Datapoint type	Flags
A	B				
3	96	Switching	On / Off	1.001 switching	CW
4	97	Control value	Value	5.001 percent (0 … 100 %) 5.010 counting impulses (0 … 255) 9.001 temperature °C 9.004 illuminance lx 9.021 current mA 9.024 output kW 14.056 output W	CW
5	98	Dimming	Brighter / darker	3.007 dimmer step	CW
6	99	Dimming value 1	8-bit value	5.001 percent (0 … 100 %)	CW
7	100	Dimming value 2	8-bit value	5.001 percent (0 … 100 %)	CW
8	101	Dimming value	Dimming value + time	225.001 scaling speed	CW

No./channel		Object name	Function	Datapoint type	Flags
A	B				
		1/ time			
10	103	Status switching	On / Off	1.001 switching	CRT
11	104	Status dimming value	8-bit value	5.001 percent (0 … 100 %)	CRT
12	105	Minimum dimming value	Set / request value	5.001 percent (0 … 100 %)	CRW
13	106	Maximum dimming value	Set / request value	5.001 percent (0 … 100 %)	CRW
14	107	Dimming time for switching	Set / request dimming time	7.004 time (100 ms)	CRW
15	108	Dimming time for dimming	Set / request dimming time	7.004 time (100 ms)	CRW
16	109	Dimming time for dimming value 1	Set / request dimming time	7.004 time (100 ms)	CRW
17	110	Dimming time for dimming value 2	Set / request dimming time	7.004 time (100 ms)	CRW
18	111	Logic operation 1	On / Off	1.001 switching	CW
19	112	Logic operation 2	On / Off	1.001 switching	CW
20	113	Central switching	On / Off	1.001 switching	CW
21	114	8-bit scene	Recall / store	18.001 scene control	CW
22	115	Scene value/time	Value/time	-	CW
23	116	Night mode	On / Off	1.003 enable	CW
24	117	Timer night mode	ON time (seconds)	7.005 time (s)	CRW
25	118	Timer day mode	ON time 1 (seconds)	7.005 time (s)	CRW
27	120	Pre-warning expiration of timer period	On / Off	1.001 switching	CRT
28	121	Lock timer	On / Off	1.003 enable	CW
29	122	Override 1, [type of override]	On / Off	1.003 enable	CW
30	123	Override 1, [type of override], control value	Value	5.001 percent (0 … 100 %) 5.010 counting impulses (0 … 255) 9.001 temperature °C 9.004 illuminance lx 9.021 current mA 9.024 output kW 14.056 output W	CW
31	124	Override 1, forced control	On / Off	2.001 prio. Switching	CW
32	125	Override 1, [type of override], status	On / Off	1.002 Boolean	CRT
33	126	Override 2, [type of override]	On / Off	1.003 enable	CW
34	127	A override 2, [type of override], control value	Value	5.001 percent (0 … 100 %) 5.010 counting impulses (0 … 255) 9.001 temperature °C 9.004 illuminance lx 9.021 current mA	CW

No./channel		Object name	Function	Datapoint type	Flags
A	B				
				9.024 output kW 14.056 output W	
35	128	Override 2, forced control	On / Off	2.001 prio. Switching	CW
36	129	Override 2, [type of override], status	On / Off	1.002 Boolean	CRT
37	130	Override 3, [type of override]	On / Off	1.003 enable	CW
38	131	Override 3, [type of override], control value	Value	5.001 percent (0 … 100 %) 5.010 counting impulses (0 … 255) 9.001 temperature °C 9.004 illuminance lx 9.021 current mA 9.024 output kW 14.056 output W	CW
39	132	Override 3, forced control	On / Off	2.001 prio. Switching	CW
40	133	Override 3, [type of override], status	On / Off	1.002 Boolean	CRT
41	134	Override 4, [type of override]	On / Off	1.003 enable	CW
42	135	Override 4, [type of override], control value	Value	5.001 percent (0 … 100 %) 5.010 counting impulses (0 … 255) 9.001 temperature °C 9.004 illuminance lx 9.021 current mA 9.024 output kW 14.056 output W	CW
43	136	Override 4, forced control	On / Off	2.001 prio. Switching	CW
44	137	Override 4, [type of override], status	On / Off	1.002 Boolean	CRT
45	138	Override 5, [type of override]	On / Off	1.003 enable	CW
46	139	Override 5, [type of override], control value	Value	5.001 percent (0 … 100 %) 5.010 counting impulses (0 … 255) 9.001 temperature °C 9.004 illuminance lx 9.021 current mA 9.024 output kW 14.056 output W	CW
47	140	Override 5, forced control	On / Off	2.001 prio. Switching	CW
48	141	Override 5, [type of override], status	On / Off	1.002 Boolean	CRT
49	142	Override 6, [type of override]	On / Off	1.003 enable	CW
50	143	Override 6, [type of override], control value	Value	5.001 percent (0 … 100 %) 5.010 counting impulses (0 … 255) 9.001 temperature °C	CW

No./channel		Object name	Function	Datapoint type	Flags
A	B				
				9.004 illuminance lx 9.021 current mA 9.024 output kW 14.056 output W	
51	144	Override 6, forced control	On / Off	2.001 prio. Switching	CW
52	145	Override 6, [type of override], status	On / Off	1.002 Boolean	CRT
53	146	Override 7, [type of override]	On / Off	1.003 enable	CW
54	147	Override 7, [type of override], control value	Value	5.001 percent (0 … 100 %) 5.010 counting impulses (0 … 255) 9.001 temperature °C 9.004 illuminance lx 9.021 current mA 9.024 output kW 14.056 output W	CW
55	148	Override 7, forced control	On / Off	2.001 prio. Switching	CW
56	149	Override 7, [type of override], status	On / Off	1.002 Boolean	CRT
57	150	Overrides status	1 = Active	1.002 Boolean	CRT
58	151	Global dimming max. limit	8-bit value	5.001 percent (0…100 %)	CW
59	152	Direct operation lock	On / Off	1.003 enable	CW
60	153	Status direct operation	On / Off	1.002 Boolean	CRT
63	156	Dim color temperature	Warmer / colder	3.007 dimmer step	CW
64	157	Color temperature value	16-bit value	7.600 absolute color temperature (K)	CW
65	158	Dim brightness and color temperature	Brighter / darker, warmer / colder	250.600 brightness color temperature control	CW
66	159	Dimming value 1 / color temperature / dimming time	Dimming value + color temperature value + dimming time	249.600 brightness color temperature transition	CW
67	160	Dimming time for dimming the color temperature	Set / request dimming time	7.004 time (100 ms)	CRW
68	161	Dimming time for color temperature value	Set / request dimming time	7.004 time (100 ms)	CRW
69	162	Global color temperature max. limit	16-bit value	7.600 absolute color temperature (K)	CW
70	163	Minimum color temperature value	Set / request value	7.600 absolute color temperature (K)	CW
71	164	Maximum color temperature value	Set / request value	7.600 absolute color temperature (K)	CW
72	165	Status of color	16-bit value	7.600 absolute color temperature	CRT

No./channel		Object name	Function	Datapoint type	Flags
A	**B**				
		temperature		(K)	
73	166	Number of switching cycles	Value (in cycles)	12.001 counting impulses (without prefix)	CRT
74	167	Number of switching cycles	Set value (in cycles)	12.001 counting impulses (without prefix)	CW
75	168	Threshold for switching cycles	Set / request value (in cycles)	12.001 counting impulses (without prefix)	CRW
76	169	Exceedance of threshold for switching cycles	On / Off	1.002 Boolean	CRT
77	170	Operating hours	Value (in hours)	12.001 counting impulses (without prefix)	CRT
78	171	Operating hours	Value (in seconds)	13.100 time difference (s)	CRT
79	172	Operating hours	Set value	12.001 counting impulses (without prefix)	CW
80	173	Threshold for operating hours	Set / request value	12.001 counting impulses (without prefix)	CRW
81	174	Exceedance of threshold for operating hours	On / Off	1.002 Boolean	CRT
90	183	Status failure external voltage on DALI line	1 = failure	1.002 Boolean	CRT
91	184	Status failure lights defective	1 = failure	1.002 Boolean	CRT
92	185	Status failure short circuit DALI line	1 = failure	1.002 Boolean	CRT
93	186	Status failure no ECG found	1 = failure	1.002 Boolean	CRT

3 Structure of configuration options

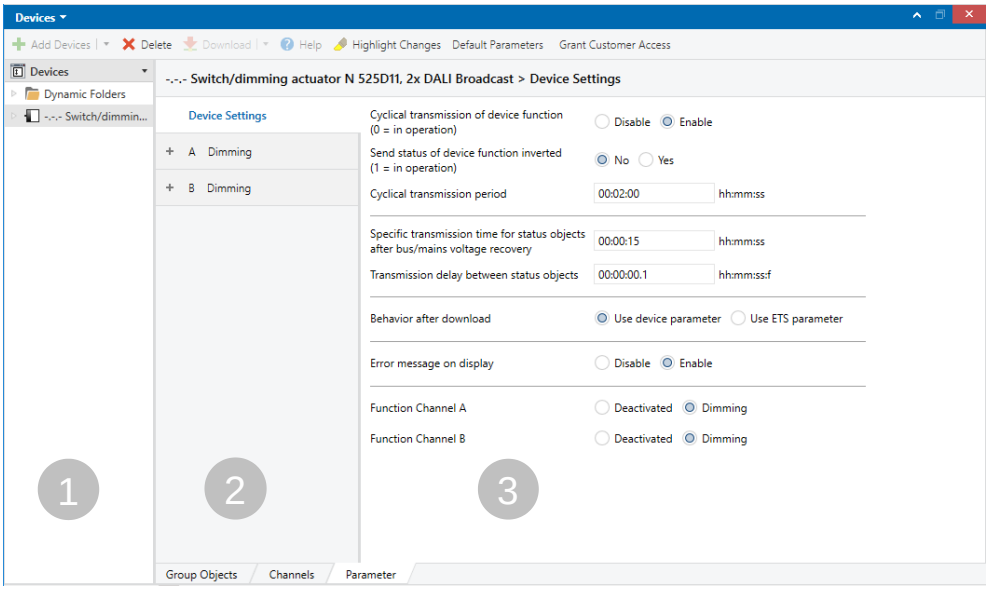


Fig. 3: Structure of configuration options

1 Tree view of devices and channels

2 Listing of parameter cards. Depending on which parameters have been enabled or configured in the parameter area (3), additional parameter cards are displayed here.

3 Parameter area. In this area, parameters are set, enabled or disabled. With some parameters, after enable additional rows or additional parameter cards are displayed.

You can use the ‘Highlight changes’ button to highlight in yellow any parameters that do not have the default settings.

A list of the currently active communication objects is separately displayed on the “communication objects” tab.

4 Device settings

In this parameter window, the cross-function and cross-channel definitions are made. You can also specify which channels are to be activated or deactivating for dimming.

4.1 Communication objects

Status device function

No.	Object name	Function	Datapoint type	Flags
1	Status device function	Ok / Defect	1.005 alarm	CRT

Function:

This object regularly transmits the value “0” when the device is functioning. If the device no longer transmits cyclically, this indicates a device failure.

A higher-level system can monitor the cyclical transmission and trigger a warning or alarm message if the status message is not transmitted.

The parameter “send inverted status for device function” can be used to set that this value is inverted. In this case the value “1” is transmitted cyclically when the device is functioning properly.

Note:

Transmission first takes place after the time configured in the “cyclical transmission period” parameter.

Availability:

The “status device function” communication object is only displayed if the parameter “cyclical transmission of device function (0 = in operation)” has been enabled.

Send status values

No.	Object name	Function	Datapoint type	Flags
2	Send status values	Request	1.017 trigger	CW

Function:

This object is used in the event of the reception of a telegram with any value (“1” or “0”) to trigger the transmission of the current status values for all status objects for which the transmission of set to “on request” in the configuration.

4.2 “Device settings” parameter

Cyclical transmission of device function (0 = in operation)

Parameter	Settings
Cyclical transmission of device function (0 = in operation)	Disable Enable

Function:

With this parameter, the cyclical transmission of the device function can be disabled or enabled. If the device is functioning properly, the value “0” is transmitted cyclically.

Send inverted status of device function (1 = in operation)

Parameter	Settings
Send inverted status of device function (1 = in operation)	No Yes

Function:

A parameter can be used to transmit the status of the device function in inverted form. In this case the value “1” is transmitted cyclically when the device is functioning properly.

Availability:

This parameter is only visible if the parameter “cyclical transmission of device function” is set to “enabled.”

Cyclical transmission period

Parameter	Settings
Cyclical transmission period (hh:mm:ss)	00:00:01…18:12:15

Function:

This parameter can be used to select the time interval for cyclical transmission of the device function status.

Note:

The device status is also transmitted for the first time after bus/mains voltage failure and bus/mains voltage recovery after the time set here.

Availability:

This parameter is only visible if the parameter “cyclical transmission of device function” is set to “enabled.”

Time of transmission for status objects after bus/mains voltage recovery

Parameter	Settings
Time of transmission for status objects after bus/mains voltage recovery (hh:mm:ss)	00:00:00…18:12:15

Function:

This parameter is used to ensure that no unnecessary bus load is generated by status telegrams immediately after bus/mains voltage recovery and after a re-start of the device.

The time of transmission after bus/mains voltage recovery must be set high enough so that other KNX devices that have to receive and process the status have also completed their initialization already.

The time of transmission applies to the stored status values after bus/mains voltage recovery. If the state changes during bus/mains voltage failure or after bus/mains voltage recovery (e.g. due to switching), the respective status is transmitted immediately and once again after the elapse of the time set here.

Note:

The transmission time does not apply if a status request of all status objects is initiated via the “send status values” communication object.

If a status request is initiated (e.g. via the communication object “Send status values”) directly after bus/mains voltage recovery and before this sending time, this request is discarded. A separate transmission of the status objects is possible only after the regular transmission of the status.

Transmission delay between status objects

Parameter	Settings
Transmission delay between status objects (hh:mm:ss:f)	00:00:00.1…00:01:00.0

Function:

This parameter is used to set with which minimal wait time must be maintained between two successive status telegrams to ensure that no excessive bus load is generated by status telegrams sent in too quick a succession.

Note:

This transmission delay only applies after bus/mains voltage recovery and with the “send status values” function.

Behavior after download

Parameter	Settings
Behavior after download	Use device parameters Use ETS parameters

Function:

This parameter is used to set whether the parameters of the switching/dimming actuator or the parameters of the ETS software are to be used after downloading the ETS software into the switching/dimming actuator.

The following settings are possible:

- **Use device parameters:**

  With this setting, parameters that the switching/dimming actuator has received from other sources via the communication objects are retained and are not overwritten by the parameters set in the ETS software.

  The settings of the channels are not re-initialized and the current switching/dimming state is retained.

- **Use ETS parameters:**

  With this setting, the parameters stored in the device are overwritten and the parameters set in the ETS software are used. The behavior for mains voltage recovery configured in the ETS software is also executed.

Recommendation:

If the switching/dimming actuator does not behave as expected, set this parameter to “Use ETS parameters.”

Error message on display

Parameter	Settings
Error message on display	Disable Enable

Function:

This parameter can be used to set whether error messages are to be shown on the display.

More information:

Error messages [→ 107]

Error messages [→ 13]

Channel function

Parameter	Settings
Channel function	Dimming Deactivated

Function:

You can use this parameter to activate or deactivate individual channels.

5 Channel settings (dimming)

The communication objects and parameters are configured in the same way for all channels and are therefore just described once for channel A.

Except for the parameter cards for the settings that depend on the operating mode and the logic operations, all other parameter cards are only displayed with a corresponding parameter selection on the "functions, objects" parameter card.

5.1 "Functions, objects" parameter card

5.1.1 Communication objects of the "functions, objects" parameter card.

A Switching

No.	Object name	Function	Datapoint type	Flags
3	A Switching	On / Off	1.001 switching	CW

Function:

With this object, switch telegrams are received which are then sent to the associated output via the time function. If a logic operation is configured, the result of the time function forms the first value of the operation for the respective output.

Availability/alternative:

Alternatively, a control value input can be used instead of a switching control input. If the parameter "control value input" is enabled, this communication object is hidden and the parameter "control value" is shown instead.

More information:

Dimming behavior with ON/OFF switching via the "switching" communication object [→ 133]

Dimming behavior in combination with "minimum dimming value" and "maximum dimming value" [→ 139]

A Control value

No.	Object name	Function	Datapoint type	Flags
4	A Control value	Value	5.001 percent (0 … 100 %) 5.010 counting impulses (0 … 255) 9.001 temperature °C 9.004 illuminance lx 9.021 current mA 9.024 output kW 14.056 output W	CW

Function:

With this object, control value telegrams for the channel are received. A received control value is converted into a switching signal via a threshold evaluation.

Availability/alternative:

Alternatively, a switching input can be used instead of a control value input. If the parameter "control value input" is disabled, this communication object is hidden and the parameter "switching" is shown.

More information:

Control value input [→ 63]

A Status switching

No.	Object name	Function	Datapoint type	Flags
10	A Status switching	On / Off	1.001 switching	CRT

Function:

In the "status switching" communication object, the current switching state of the respective output is stored and can be requested via a read request. The switching state is transmitted automatically after every object value change, if configured accordingly.

Availability:

The communication object "status switching" is only displayed if the parameter "status switching" is set to "enabled."

More information:

Status [→ 99]

A Status dimming value

No.	Object name	Function	Datapoint type	Flags
11	A Status dimming value	8-bit value	5.001 percent (0…100 %)	CRT

Function:

Depending on the selected parameter setting, this object can be used to request the current dimming status (dimming value) of the channel and, if the dimming value has been changed, to send it automatically.

Availability:

The communication object "status dimming value" is only displayed if the parameter "status dimming value" is set to "enabled" ("functions, objects" parameter card).

More information:

Status [→ 99]

A Central switching

No.	Object name	Function	Datapoint type	Flags
20	A Central switching	On / Off	1.001 switching	CW

Function:

With this object, switch telegrams are received which are then sent to the associated output using a different time function than the one for the communication object "switching."

Availability:

The communication object "central switching" is only displayed if the parameter "central switching" is set to "enabled."

More information:

Central switching [→ 65]

A 8-bit scene

No.	Object name	Function	Datapoint type	Flags
21	A 8-bit scene	Recall / store	18.001 scene control	CW

Function:

This communication object is used to recall (restore) or save the 8-bit scene with the number x (x = 1...64).

Bits 0...5 contain (binary coded) the number of the desired scene as a decimal number in the range 1 to 64 (where the decimal number 1 corresponds to the binary number 0, decimal number 3 the binary number 1, etc.). If bit 7 = log. 1, the scene is stored; if bit 7 = log. 0, it is recalled. Bit 6 currently has no meaning and must be set to log. 0.

Availability:

The communication object "8-bit scene" is only displayed if the parameter "8-bit scene control" is set to "enabled."

More information:

8-bit scene control [→ 66]

A Override 1 – 7

No.	Object name	Function	Datapoint type	Flags
29 – 56	A Override 1 – 7			

The communication objects for overriding (29 – 56) are described in the "Override" chapter.

Overrides [→ 78]

A Overrides status

No.	Object name	Function	Datapoint type	Flags
57	A Overrides status	1 = Active	1.002 Boolean	CRT

Function:

This status object is used to report that an override is active.

Availability:

The communication object "overrides status" is only displayed if the parameter "overrides status" is set to "enabled" ("functions, objects" parameter card).

More information:

Overrides [→ 78]

Status [→ 99]

A Lock direct operation

No.	Object name	Function	Datapoint type	Flags
59	A Lock direct operation	On / Off	1.003 enable	CW

Function:

This communication object can be used to lock or enable direct operation (operation directly on the device).

Availability:

The communication object "direct operation lock" is only displayed if the parameter "direct operation" and the parameter "direct operation lockable" are set to "enabled" ("Functions, Objects" parameter card).

More information:

Direct operation [→ 120]

Example:

Enabling of direct operation through a key switch.

A Status direct operation

No.	Object name	Function	Datapoint type	Flags
60	A Status direct operation	On / Off	1.002 Boolean	CRT

Function:

This communication object is used to report whether direct operation is active or not.

Availability:

The communication object "status direct operation" is only displayed if the parameter "direct operation" and the parameter "status direct operation" are set to "enabled" ("functions, objects" parameter card).

More information:

Direct operation [→ 120]

A Status of color temperature value

No.	Object name	Function	Datapoint type	Flags
72	A Status of color temperature value	16-bit value	7.600 absolute color temperature (K)	CRT

Function:

Depending on the selected parameter setting, this object can be used to request the current color temperature value of the channel and, if the color temperature value has been changed, to send it automatically.

Availability:

The communication object "status of color temperature value" is only displayed if the parameters "color temperature control" and "status of color temperature value" are set to "enabled" ("functions, objects" parameter card).

More information:

Color temperature control [→ 123]

A Number of switching cycles

No.	Object name	Function	Datapoint type	Flags
73	A Number of switching cycles	Value (in cycles)	12.001 counting impulses (without prefix)	CRT

Function:

This communication object can be used to request the number of switching cycles of this channel via the bus at any time. The value is increased by 1 as soon as the channel has been switched off and back on again.

If the parameter "threshold monitoring" ("counting of switching cycles" parameter card) is set to "enabled," a telegram is sent to the bus if the threshold is exceeded.

Availability:

The communication object "number of switching cycles" is only displayed if the parameter "counting of switching cycles" is set to "enabled" ("functions, objects" parameter card).

More information:

Counting of switching cycles [→ 109]

A Number of switching cycles

No.	Object name	Function	Datapoint type	Flags
74	A Number of switching cycles	Set value (in cycles)	12.001 counting impulses (without prefix)	CW

Function:

This communication object can be used to set the value for switching cycle counting for the output to an integer value in the range from 0 to 4294967295 via the bus.

Availability:

The communication object "number of switching cycles" is only displayed if the parameter "counting of switching cycles" is set to "enabled" ("functions, objects" parameter card).

More information:

Counting of switching cycles [→ 109]

A Threshold for number of switching cycles

No.	Object name	Function	Datapoint type	Flags
75	A Threshold for number of switching cycles	Set / request value (in cycles)	12.001 counting impulses (without prefix)	CRW

Function:

This object can be used to read and set the threshold value for switching cycle counting for the output to an integer value in the range from 1 to 4294967295 via the bus.

Availability:

The communication object "threshold for switching cycles" is only displayed if the parameter "counting of switching cycles" (on the "functions, objects" parameter card) and also the parameter "threshold monitoring" (on the "counting of switching cycles" parameter card) are set to "enabled."

More information:

Counting of switching cycles [→ 109]

A Exceedance of threshold for switching cycles

No.	Object name	Function	Datapoint type	Flags
76	A Exceedance of threshold for switching cycles	On / Off	1.002 Boolean	CRT

Function:

This object is used to report the hitting or exceeding of the respective threshold value for switching cycle counting or to request via the bus whether the threshold value has been exceeded.

Availability:

The communication object "exceedance of threshold for switching cycles" is only displayed if the parameter "counting of switching cycles" (on the "functions, objects" parameter card) and also the parameter "threshold monitoring" (on the "counting of switching cycles" parameter card) are set to "enabled."

More information:

Counting of switching cycles [→ 109]

A Operating hours

No.	Object name	Function	Datapoint type	Flags
77	A Operating hours	Value (in hours)	12.001 counting impulses (without prefix)	CRT

Function:

This object can be used to request the current number of operating hours of the output (i.e. how many hours the output was switched on) via the bus at any time.

Availability:

The communication object "operating hours" is only displayed if the parameter "counting of operating hours" is set to "enabled" (on the "functions, objects" parameter card) and additionally the parameter "counting of operating hours in" (on the "operating hours" parameter card) is set to "hours."

More information:

Counting of operating hours [→ 113]

A Operating hours

No.	Object name	Function	Datapoint type	Flags
78	A Operating hours	Value (in seconds)	13.100 time difference (s)	CRT

Function:

This object can be used to query the current operating time of the output in seconds (i.e. how many seconds the output was switched on) via the bus at any time.

Availability:

The communication object "operating hours" is only displayed if the parameter "counting of operating hours" (on the "functions, objects" parameter card) is set to "enabled" and additionally the parameter "counting of operating hours in" (on the "operating hours" parameter card) is set to "seconds."

More information:

Counting of operating hours [→ 113]

A Operating hours

No.	Object name	Function	Datapoint type	Flags
79	A Operating hours	Set value	12.001 counting impulses (without prefix)	CW

Function:

This object can be used to set the value for counting of operating hours for the output to an integer value in the range from 0 to 4294967295 via the bus.

This value is always set in hours, irrespective of the configured operating hours setting for the output in seconds or hours.

Availability:

The communication object "operating hours" is only displayed if the parameter "counting of operating hours" is set to "enabled" ("functions, objects" parameter card).

More information:

Counting of operating hours [→ 113]

A Threshold for operating hours

No.	Object name	Function	Datapoint type	Flags
80	A Threshold for operating hours	Set / request value	12.001 counting impulses (without prefix)	CRW

Function:

This object can be used to transmit and read the threshold value for counting of operating hours for the output to an integer value in the range from 1 to 4294967295 via the bus to the switching/dimming actuator.

The threshold is transmitted in whole hours.

Availability:

The communication object "threshold for operating hours" is only displayed if the parameter "counting of operating hours" (on the "functions, objects" parameter card) and also the parameter "threshold monitoring" (on the "counting of operating hours" parameter card) are set to "enabled."

More information:

Counting of operating hours [→ 113]

A Exceedance of threshold for operating hours

No.	Object name	Function	Datapoint type	Flags
81	A Exceedance of threshold for operating hours	On / Off	1.002 Boolean	CRT

Function:

This object is used to report the hitting or exceeding of the respective threshold value for counting of operating hours or to request via the bus whether the threshold value has been exceeded.

Availability:

The communication object "exceedance of threshold for operating hours" is only displayed if the parameter "counting of operating hours" (on the "functions, objects" parameter card) and also the parameter "threshold monitoring" (on the "operating hours" parameter card) are set to "enabled."

More information:

Counting of operating hours [→ 113]

A Status failure external voltage on DALI line

No.	Object name	Function	Datapoint type	Flags
90	A Status failure external voltage on DALI line	1 = failure	1.002 Boolean	CRT

Function:

The communication object "status failure external voltage on DALI line" is used to report incorrect voltage on the DALI line.

Availability:

The communication object "status failure external voltage on DALI line" is only displayed if the parameter "status failure external voltage on DALI line" is set to "enabled" (on the "functions, objects" parameter card).

More information:

Error messages [→ 107]

A Status failure lights defective

No.	Object name	Function	Datapoint type	Flags
91	A Status failure lights defective	1 = failure	1.002 Boolean	CRT

Function:

The communication object "status failure lights defective" is used to report one or more defective lights.

Availability:

The communication object "status failure lights defective" is only displayed if the parameter "status failure lights defective" is set to "enabled" (on the "functions, objects" parameter card).

More information:

Error messages [→ 107]

A Status failure short circuit DALI line

No.	Object name	Function	Datapoint type	Flags
92	A Status failure short circuit DALI line	1 = failure	1.002 Boolean	CRT

Function:

The communication object "status failure short circuit on DALI line" is used to report a short circuit on the DALI line.

Availability:

The communication object "status failure short circuit DALI line" is only displayed if the parameter "status failure short circuit DALI line" is set to "enabled" (on the "functions, objects" parameter card).

More information:

Error messages [→ 107]

A Status failure no ECG found

No.	Object name	Function	Datapoint type	Flags
93	A Status failure no ECG found	1 = failure	1.002 Boolean	CRT

Function:

The communication object "status failure no ECG found" is used to report an error if no ECG is connected.

Availability:

The communication object "status failure no ECG found" is only displayed if the parameter "status failure no ECG found" is set to "enabled" (on the "functions, objects" parameter card).

More information:

Error messages [→ 107]

5.1.2 Parameters of the "functions, objects" parameter card

Operating mode

Parameter	Settings
Operating mode	Normal mode Timer mode Timer mode 2-fold Flashing

Function:

This parameter can be used to set the desired operating mode. Detailed settings for the selected mode can be made on the parameter card of the same name. The following operating modes can be set:

- Normal mode
- Timer mode
- Timer mode 2-fold
- Flashing

Other parameters/parameter cards:

The parameter card for the selected operating mode is displayed.

More information:

Parameter cards of the operating modes (normal mode, timer mode, timer mode 2-fold, flashing) [→ 38]

Control value input

Parameter	Settings
Control value input	Disable Enable
Function: As an alternative to the switching input, there is also a control value input for each channel. This can be used to implement analog values in switching on/off commands. A threshold value can also be set. **Other parameters/parameter cards:** If the parameter "control value input" is in the status "enabled," the parameter card "control value input" is displayed. **Communication object:** If the parameter "control value input" is in the status "enabled," the communication object "switching" is hidden and the parameter "control value" is shown. **More information:** Control value input [→ 63]	

Central switching

Parameter	Settings
Central switching	Disable Enable
Function: This parameter is used to activate and deactivate the communication object "central switching." **Communication object:** If the parameter "central switching" is set to "enabled," the communication object "central switching" is displayed. **More information:** Central switching [→ 65]	

8-bit scene control

Parameter	Settings
8-bit scene control	Disable Enable
Function: This parameter is used to activate or deactivate 8-bit scene control. **Other parameters/parameter cards:** If the parameter "8-bit scene control" is set to "enabled," the parameter card "scene assignment" is displayed. **Communication object:** If the parameter "8-bit scene control" is set to "enabled," the communication object "8-bit scene" is displayed. **More information:** 8-bit scene control [→ 66]	

Color temperature control

Parameter	Settings
Color temperature control	Disable Enable

Function:

This parameter is used to activate or deactivate the color temperature control.

Other parameters/parameter cards:

If the parameter "color temperature control" is set to "enabled," the parameter card "color temperature control" is displayed.

Communication objects:

If the parameter "color temperature control" is set to "enabled," various communication objects are displayed.

More information:

Color temperature control [→ 123]

Override 1 – 7

Parameter	Settings
Override 1 – 7	Deactivated Manual override (ON) Permanent OFF Lock Central override User-defined Forced control

Function:

This parameter can be used to set 7 overrides. The priority of the override function blocks is determined by the position in the processing chain. Override block 7 has the highest priority, while override block 1 has the lowest priority.

Other parameters/parameter cards:

If an override is activated, the parameter card "override [number], [type of override]" is displayed.

Communication object:

Depending on which override was activated and which settings were made, different communication objects are displayed.

More information:

Overrides [→ 78]

Overrides status

Parameter	Settings
Overrides status	Disable Enable

Function:

This parameter is used to activate or deactivate the communication object for the status of the overrides. This communication object is used to report whether the override is active.

Availability:

The parameter "overrides status" is displayed as soon as an override is activated.

Other parameters/parameter cards:

If the parameter "overrides status" is set to "enabled," additional parameters are displayed with which it is possible to set when a status is sent.
Status [→ 99]

Communication object:

If the parameter "overrides status" is set to "enabled," the communication object "overrides status" is displayed.

More information:

Overrides [→ 78]

Direct operation

Parameter	Settings
Direct operation	Disable Enable

Function:

This parameter is used to disable or enable the operation of the switching/dimming actuator directly on the device.

Other parameters/parameter cards:

If the parameter "direct operation" is set to "enabled," additional parameters are displayed with which it is possible to set when direct operation can be automatically reset or whether direct operation should be restricted. It can also be defined whether the status of direct operation should be disabled or enabled.

If the parameter "status direct operation" is set to "enabled," parameters are displayed with which it is possible to set when a status is sent.
Status [→ 99]

Communication objects:

If the sub-parameter "direct operation lockable" is set to "enabled," the communication object "direct operation lock" is displayed.

If the sub-parameter "status direct operation" is set to "enabled," the communication object "status direct operation" is displayed.

More information:

Direct operation [→ 120]

Status switching

Parameter	Settings
Status switching	Disable Enable

Function:

This parameter is used to define whether the communication object "status switching" is available. This status object can be used, for example, to display the current switching state of the output.

Other parameters/parameter cards:

If the parameter "status switching" is set to "enabled," parameters are displayed with which it is possible to set when a status is sent.
Status [→ 99]

Communication object:

If the parameter "status switching" is set to "enabled," the communication object "status switching" is displayed.

More information:

Status [→ 99]

Status dimming value

Parameter	Settings
Status dimming value	Disable Enable

Function:

This parameter is used to activate or deactivate the communication object "status dimming value." This communication object is used to report the current dimming value.

Other parameters/parameter cards:

If the parameter "status dimming value" is set to "enabled," parameters are displayed with which it is possible to set when a status is sent.
Status [→ 99]

In addition, the parameters "value change since last sent (%)" and "minimum wait time between updates" are shown.

Communication object:

If the parameter "status dimming value" is set to "enabled," the communication object "status dimming value" is displayed.

Value change since last sent (%)

Parameter	Settings
Value change since last sent (%)	0...100 %

Function:

If the parameter "send status on change of status" is set to "enabled," this parameter is used to define the change in value since the last transmission of the value of the communication object "status dimming value" required to trigger a new transmission of the value. Sending takes place if the minimum block time for sending of status has been exceeded.

Availability:

The parameter "value change since last sent (%)" is only displayed if the parameters "status dimming value" and "send status on change of status" are set to "enabled."

Block time for sending of status

Parameter	Settings
Block time for sending of status (hh:mm:ss)	00:00:00...18:12:15

Function:

This parameter is used to set which time since the last sending of the status has to be exceeded in order for it to be sent again. Hence, no additional bus load is generated by status telegrams generated in quick succession during bus mode.

Note:

The block time does not apply to cyclic sending. If the block time is greater than the cycle time, the value is nonetheless sent at the end of the cycle time.

Availability:

The parameter "block time for sending of status" is only displayed if the parameters "status dimming value" and "send status on change of status" are set to "enabled."

Status of color temperature value

Parameter	Settings
Status of color temperature value	Disable Enable

Function:

This parameter is used to activate or deactivate the communication object "status of color temperature value." This communication object is used to report the current color temperature value.

Other parameters/parameter cards:

If the parameter "status of color temperature value" is set to "enabled," parameters are displayed with which it is possible to set when a status is sent.
Status [→ 99]

In addition, the parameters "value change since last sent (K)" and "block time for sending of status" are shown.

Communication object:

If the parameter "status of color temperature value" is set to "enabled," the communication object "status of color temperature value" is displayed.

More information:

Color temperature control [→ 123]

Value change since last sent (K)

Parameter	Settings
Value change since last sent (K)	0…65535

Function:

If the parameter "send status on change of status" is set to "enabled," this parameter is used to define the change in value since the last transmission of the value of the communication object "status of color temperature value" required to trigger a new transmission of the value. Sending takes place if the minimum block time for sending of status has been exceeded.

Availability:

The parameter "value change since last sent (K)" is only displayed if the parameters "status of color temperature value" and "send status on change of status" are set to "enabled."

Block time for sending of status

Parameter	Settings
Block time for sending of status (hh:mm:ss)	00:00:00...18:12:15

Function:

This parameter is used to set which time since the last sending of the status has to be exceeded in order for it to be sent again. Hence, no additional bus load is generated by status telegrams generated in quick succession during bus mode.

Note:

The block time does not apply to cyclic sending. If the block time is greater than the cycle time, the value is nonetheless sent at the end of the cycle time.

Availability:

The parameter "block time for sending of status" is only displayed if the parameters "status of color temperature value" and "send status on change of status" are set to "enabled."

Switching state on mains voltage failure

Parameter	Settings
Switching state on mains voltage failure	Off On No change Switch on to: Dimming value on mains voltage failure

Function:

This parameter can be used to set the desired switching state of the output in case of a mains voltage failure.

In case of a mains voltage failure, the current switching state (according to the configured switching action, if any) is also stored securely. The following settings are possible:

- **Off:**

  In case of a mains voltage failure, the channel is deactivated.
- **On:**

  In case of a mains voltage failure, the channel is switched on to the maximum dimming value.
- **No change:**

  In case of a mains voltage failure, the switching status does not change. The status "Off" is retained. If the status is "On", it is dimmed to the maximum dimming value.
- **Switch on to: Dimming value at mains voltage failure:**

  In case of a mains voltage failure, the channel is dimmed to a configured dimming value.

Other parameters:

When the option "switch on at value: dimming value on mains voltage failure" is selected, the parameter "dimming value on mains voltage failure (%)" is shown.

Color temperature on mains voltage failure

Parameter	Settings
Color temperature on mains voltage failure	No change According to parameter: Color temperature value on mains voltage failure

Function:

This parameter can be used to set the desired color temperature value of the output in case of a mains voltage failure. In case of a mains voltage failure, the current color temperature value is also stored so that it cannot be lost.

Other parameters:

When the option "switch on at value: color temperature value on mains voltage failure" is selected, the additional parameter "color temperature value on mains voltage failure (K)" is shown.

Starting value of switching object / dimming value on mains voltage recovery

Parameter	Settings
Starting value of switching object / dimming value on mains voltage recovery	Off On Starting value according to parameter: Dimming value on mains voltage recovery Last status of the switching value Last received switch command Last received dimming value 1 Last status of the dimming value

Function:

This parameter is used to define the starting value of the communication object "switching" or, depending on the setting, the starting value of the communication object "dimming value 1" after mains voltage recovery. The following settings are possible:

- **Off:**

  The communication object "switching" is in the status "off" after mains voltage recovery.

  The starting value affects the "switching" input (Fig. 1 [→ 9]).
- **On:**

  The communication object "switching" is in the status "on" after mains voltage recovery.

  The starting value affects the "switching" input (Fig. 1 [→ 9]).
- **Starting value according to parameter: Dimming value on mains voltage recovery:**

  The starting value of the communication object "dimming value 1" is defined with the parameter "dimming value on mains voltage recovery (%)."

  The starting value affects the "dimming value 1" input (Fig. 1 [→ 9]).
- **Last status of the switching value:**

  The starting value of the communication object "switching" is the same as the value for the communication object "status switching" in the case of a mains voltage failure.

  The starting value affects the "switching" input (Fig. 1 [→ 9]).
- **Last received switching value:**

  The starting value of the communication object "switching" is the same as the value for the communication object "switching" in the case of mains voltage failure.

  The starting value affects the "switching" input (Fig. 1 [→ 9]).
- **Last received dimming value 1:**

  The starting value of the communication object "dimming value 1" is the same as the last received dimming value from the communication object "dimming value 1."

  The starting value affects the "dimming value 1" input (Fig. 1 [→ 9]).
- **Last status of the dimming value:**

  The starting value of the communication object "dimming value 1" is the same as the value for the communication object "status dimming value" in the case of mains voltage failure.

  The starting value affects the "dimming value 1" input (Fig. 1 [→ 9]).

The switching state of the output can change depending on the parameters for the switching state in the event of mains voltage failure.

Other parameters:

With the selected option "Starting value according to parameter: Dimming value on mains voltage recovery," the additional parameter "dimming value at mains voltage recovery (%)" is displayed.

Starting value of color temperature after mains voltage recovery

Parameter	Settings
Starting value of color temperature after mains voltage recovery	Starting value according to parameter: Color temperature value on mains voltage recovery Last color temperature value received Last color temperature value status

Function:

This parameter is used to set the start value of the "color temperature" communication object after mains voltage recovery.

The following settings are possible:

- **Starting value according to parameter: Color temperature value on mains voltage recovery:**

  The starting value of the communication object "color temperature value" is defined using the parameter "color temperature value on mains voltage recovery (K)." The starting value affects the input "color temperature value."
- **Last received color temperature value:**

  The starting value of the communication object "color temperature value" is the same as the last received color temperature value from the communication object "color temperature value." The starting value affects the input "color temperature value."
- **Last color temperature value status:**

  The starting value of the communication object "color temperature value" is the same as the value for the communication object "status color temperature value" in the event of mains voltage failure. The starting value affects the input "color temperature value."

Other parameters:

With the selected option "Starting value according to parameter: Color temperature value at mains voltage recovery," the additional parameter "dimming value at mains voltage recovery (%)" is displayed.

Counting of switching cycles

Parameter	Settings
Counting of switching cycles	Disable Enable

Function:

This parameter is used to activate the counting of switching cycles for the respective output (i.e. how frequently an output was switched on and off). The switching cycle counter is used to monitor the connected load.

Other parameter cards:

If the parameter "counting of switching cycles" is set to "enabled," the parameter card "counting of switching cycles" is displayed.

Communication object:

If the parameter "counting of switching cycles" is set to "enabled," the communication objects "number of switching cycles – value (in cycles)" and "number of switching cycles – set value (in cycles)" are displayed.

More information:

Counting of switching cycles [→ 109]

Counting of operating hours

Parameter	Settings
Counting of operating hours	Disable Enable

Function:

The operating hours counter is used to record the operating hours of the channel, i.e. how many hours the channel has been switched on.

Other parameters/parameter cards:

If the parameter “counting of operating hours” is set to “enabled,” the parameter card “counting of operating hours” is displayed.

Communication objects:

If the parameter “counting of operating hours” is set to “enabled,” the communication objects “counting of operating hours” and “counting of operating hours – set value” are displayed.

More information:

Counting of operating hours [→ 113]

5.2 Parameter cards of the operating modes (normal mode, timer mode, timer mode 2-fold, flashing)

The operating mode is selected on the “Functions, objects” parameter card [→ 24].

Depending on the operating mode, the corresponding parameter card is displayed. Aside from a few exceptions, the same parameters can be set for each operating mode, so the communication objects and parameters for all operating modes are gathered and described in this chapter.

5.2.1 Process diagram normal mode

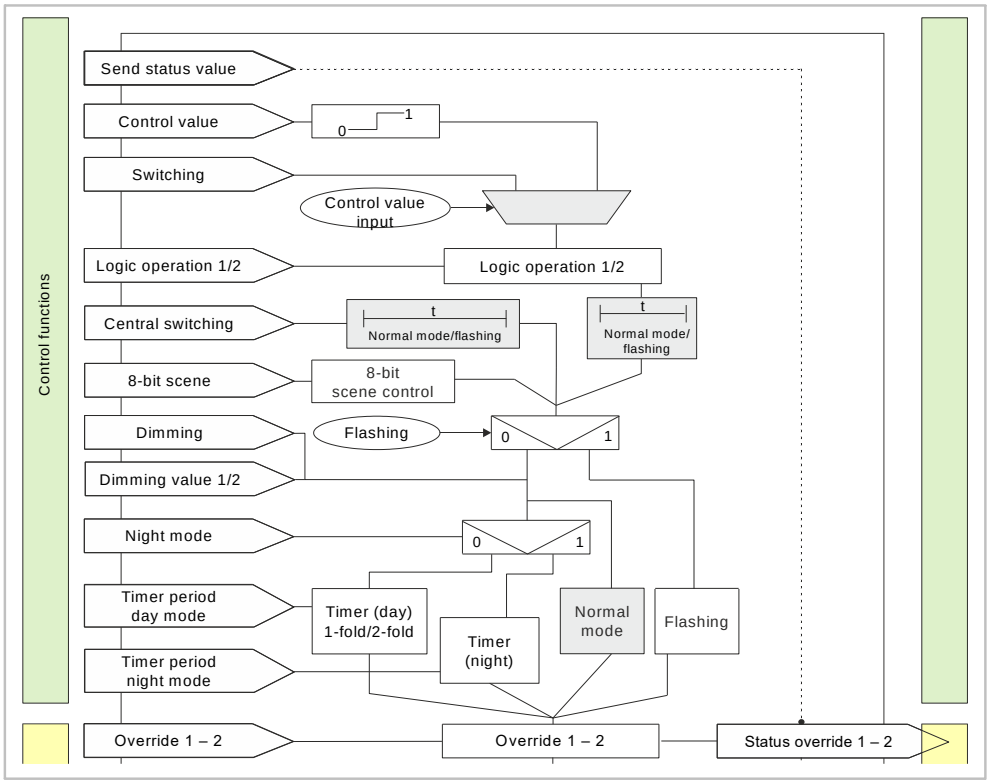


Fig. 4: Normal mode

5.2.2 Process diagram timer mode and timer mode 2-fold

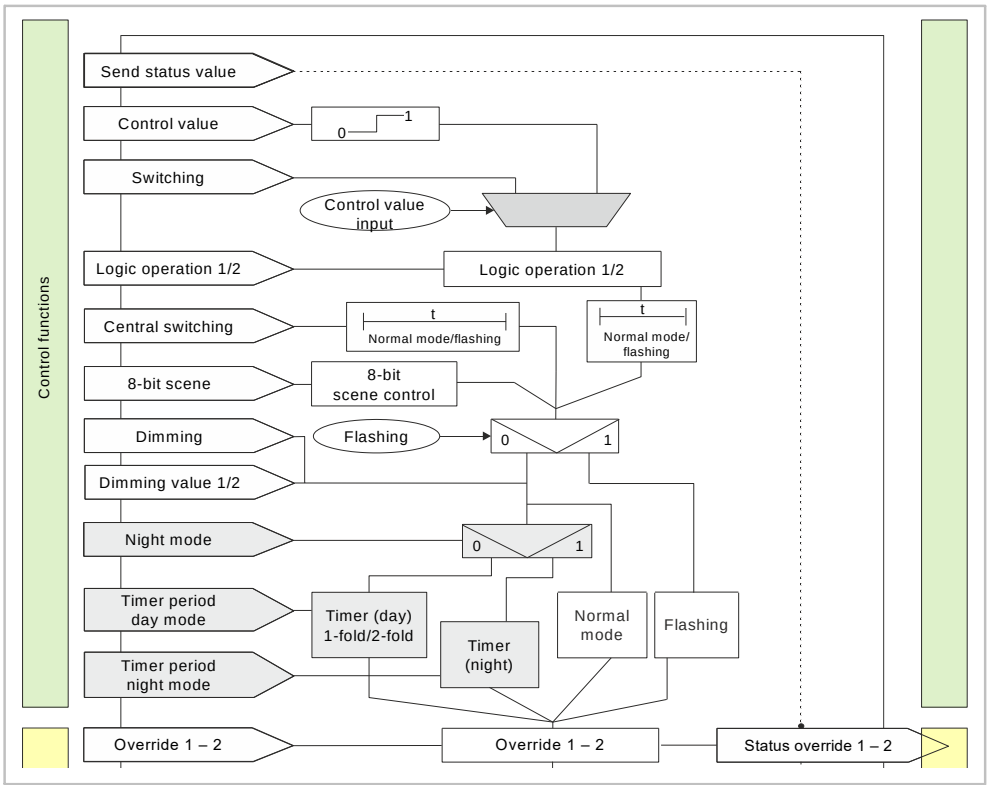


Fig. 5: Timer mode and timer mode 2-fold

5.2.3 Process diagram flashing

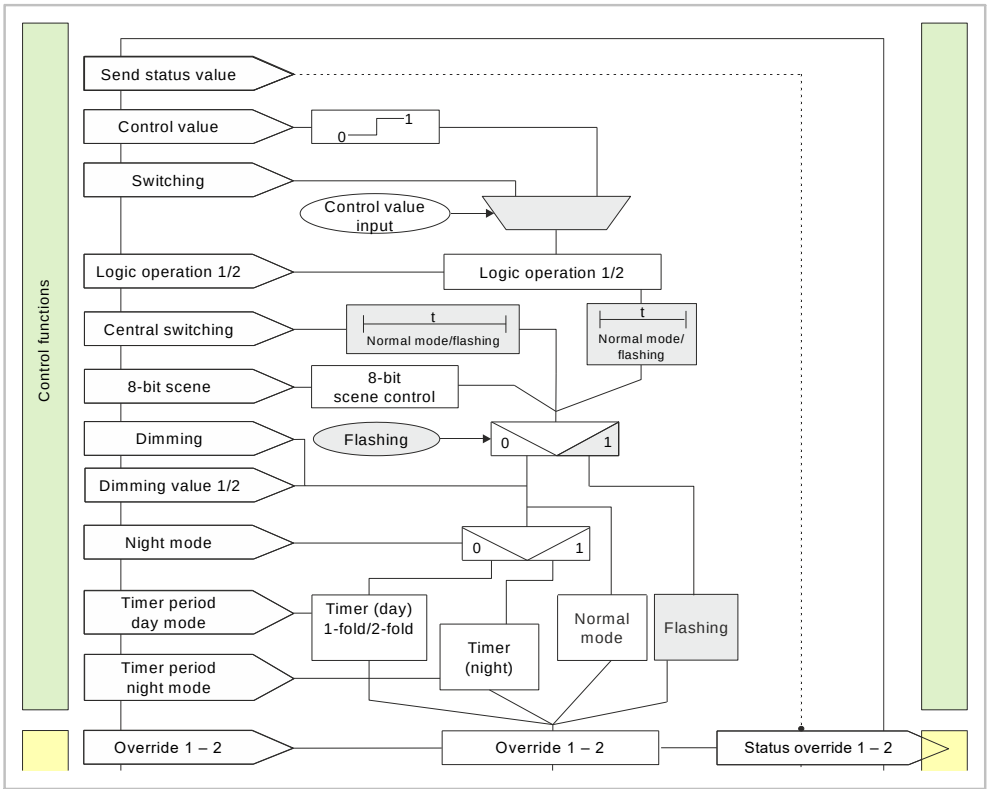


Fig. 6: Flashing

5.2.4 Communication objects on the parameter cards of the operating mode

Under the “operating modes” section, it is shown for each communication object which operating mode must be active in order for this communication object to be displayed. The parameter for displaying the communication object is on the parameter card of the respective operating mode.

Example:

The communication object “dimming value 2” is only displayed if the parameter “two dimming values” is set to "enabled.” The parameter “two dimming values” is visible on the parameter cards “normal mode,” “timer mode,” and “timer mode 2-fold” or available in those operating modes.

A Dimming

No.	Object name	Function	Datapoint type	Flags
5	A Dimming	Brighter / darker	3.007 dimmer step	CW

Operating modes:

- Normal mode
- Timer mode
- Timer mode 2-fold

Function:

This object is used to receive the telegrams for dimming the channel.

More information:

Dimming behavior when dimming via the communication object “dimming” [→ 134]

A Dimming value 1
A Dimming value 2

No.	Object name	Function	Datapoint type	Flags
6	A Dimming value 1	8-bit value	5.001 percent (0… 100 %)	CW
7	A Dimming value 2			

Operating modes:

- Normal mode
- Timer mode
- Timer mode 2-fold

Function:

This communication object is used to receive the telegrams with a dimming value for the channel.

If the received dimming value is below the minimum dimming value, the behavior of the channel is determined by the setting for the parameter “switching via dimming value 1” or “switching via dimming value 2.”

The dimming value is dimmed in the period defined in the parameters “dimming time for dimming value 1” or “dimming time for dimming value 2.”

Availability:

The communication object “dimming value 2” is only displayed if the parameter “two dimming values” is set to "enabled.”

More information:

Dimming behavior when dimming via the communication object “dimming value 1” [→ 136]

A Dimming value 1/time

No.	Object name	Function	Datapoint type	Flags
8	A Dimming value 1/time	Dimming value + time	225.001 scaling speed 3 byte	CW

Operating modes:

- Normal mode
- Timer mode
- Timer mode 2-fold

Function:

This communication object is used to receive a dimming value with a dimming time for the output (length: 3 byte).

Bit	23	22	21	20	19	18	17	16
Meaning	Dimming time (datapoint type: TimePeriod100MSec, high byte)							
Bit	15	14	13	20	19	18	17	16
Meaning	Dimming time (datapoint type: TimePeriod100MSec, low byte)							
Bit	7	6	5	4	3	2	1	0
Meaning	Dimming value (datapoint type: Scaling)							

Availability:

The communication object “dimming value 1/time” is only displayed if the parameter “show dimming value/time object” is set to “enabled.”

A Minimum dimming value

No.	Object name	Function	Datapoint type	Flags
12	A Minimum dimming value	Set / request value	5.001 percent (0… 100 %)	CRW

Operating modes:

- Normal mode
- Timer mode
- Timer mode 2-fold
- Flashing

Function:

The communication object “minimum dimming value” can be used to define the minimum dimming value that can be reached with “darker dimming” (i.e. the dimming can only go as far down as the minimum dimming value). In particular with LED and ESL, this parameter can be used to optimize dimming behavior in the lower dimming range.

Availability:

The communication object “minimum dimming value” is only displayed if the parameter “show min/max limitation objects” is set to “enabled.”

More information:

Initial output behavior of a channel with different parameter configurations [→ 133]

A Maximum dimming value

No.	Object name	Function	Datapoint type	Flags
13	A Maximum dimming value	Set / request value	5.001 percent (0… 100 %)	CRW

Operating modes:

- Normal mode
- Timer mode
- Timer mode 2-fold
- Flashing

Function:

The communication object “maximum dimming value” can be used to define the maximum dimming value of the channel that cannot be exceeded (i.e. the dimming can only go up to the maximum dimming value). In particular with LED and ESL, this parameter can be used to optimize dimming behavior in the upper dimming range.

With dimming brighter, it can only be dimmed up to the max. dimming value.

If a dimming value above the maximum dimming value is received, dimming only goes up to the max. dimming value.

Some LEDs can only be dimmed if the maximum dimming value is set to < 100 %.

Availability:

The communication object “maximum dimming value” is only displayed if the parameter “show min/max limitation objects” is set to “enabled.”

More information:

Initial output behavior of a channel with different parameter configurations [→ 133]

A Dimming time for switching

No.	Object name	Function	Datapoint type	Flags
14	A Dimming time for switching	Set / request dimming time	7.004 time (100 ms)	CRW

Operating modes:

- Normal mode
- Timer mode
- Timer mode 2-fold
- Flashing

Function:

This communication object is used to set whether the configured switch-on value or the switch-off value 0 % is to be triggered (dimming time = 0 s) and in what time the dimming is to take place.

If the switch-off is not from 100 % to 0 % or the switch-on from 0 % to 100 %, the dimming time is calculated proportionally based on the difference between the old and new values. This results in different times in which the setpoint is reached depending on the size of the value difference.

Availability:

The communication object “dimming time for switching” is only displayed if the parameter “show dimming time objects” is set to “enabled.”

More information:

Dimming behavior with ON/OFF switching via the “switching” communication object [→ 133]

A Dimming time for dimming

No.	Object name	Function	Datapoint type	Flags
15	A Dimming time for dimming	Set / request dimming time	7.004 time (100 ms)	CRW

Operating modes:

- Normal mode
- Timer mode
- Timer mode 2-fold

Function:

This communication object is used to set the time in which dimming is to take place in the case of manual dimming from 0 % to 100 % (or from 100 % to 0 %). This time is calculated proportionally based on the selected dimming step (value difference between the old and new values). This results in different times in which the setpoint is reached depending on the size of the dimming step.

Availability:

The communication object “dimming time for dimming” is only displayed if the parameter “show dimming time objects” is set to “enabled.”

More information:

Dimming behavior when dimming via the communication object “dimming” [→ 134]

A Dimming time for dimming value 1
A Dimming time for dimming value 2

No.	Object name	Function	Datapoint type	Flags
16 17	A Dimming time for dimming value 1 A Dimming time for dimming value 2	Set / request dimming time	7.004 time (100 ms)	CRW

Operating modes:

- Normal mode
- Timer mode
- Timer mode 2-fold

Function:

This communication object is used to set whether dimming value 1 or dimming value 2 is to be triggered (dimming time = 0 s) and in what time the dimming is to take place. This time is calculated proportionally based on the selected dimming step (value difference between the old and new values). This results in different times in which the setpoint is reached depending on the size of the dimming step.

Availability:

The communication object “dimming time for dimming value 1” is only displayed if the parameter “show dimming time objects” is set to “enabled.”

The communication object “dimming time for dimming value 2” is only displayed if the parameters “show dimming time objects” and “two dimming values” are set to “enabled.”

More information:

Dimming behavior when dimming via the communication object “dimming value 1” [→ 136]

A Scene value/time

No.	Object name	Function	Datapoint type	Flags
22	A Scene value/time	Value/time		CW

Operating modes:

- Normal mode
- Timer mode
- Timer mode 2-fold

Function:

As its datapoint type, this communication object has a 3-byte value, with 1 byte reserved for the scene number x (bit 0...5) or the information of whether the scene is recalled (bit 7) and the two other bytes (bit 8...23) are reserved for the dimming time until reaching the target brightness.

Bit 6 currently has no meaning and must be set to “0.”

Bit 7 defines whether a scene is recalled:

- Bit 7 = 1: The communication object is ignored (i.e. no scene is recalled or stored).
- Bit 7 = 0: The set scene is recalled.

Bit	23	22	21	20	19	18	17	16
Meaning	Dimming time (datapoint type: TimePeriod100MSec, high byte)							
Bit	15	14	13	12	11	10	9	8
Meaning	Dimming time (datapoint type: TimePeriod100MSec, low byte)							
Bit	7	6	5	4	3	2	1	0
Meaning	Recall	“0”	Scene number x -1 (Scene 1 has the value “0,” scene 64 the value “63”)					
	Scene (datapoint type: SceneControl)							

Availability:

The communication object “scene value/time” is only displayed when the parameter “8-bit scene control” and the parameter “show dimming value/time object” are set to “enabled.”

Note:

In contrast to the other dimming time specifications in the parameters, this dimming time indicates the time in which the current dimming value must reach the target dimming value (i.e. essentially always the same absolute time from the start to reaching the target dimming value).

More information:

8-bit scene control [→ 66]

A Night mode

No.	Object name	Function	Datapoint type	Flags
23	A Night mode	On / Off	1.003 enable	CW

Operating modes:

- Normal mode
- Timer mode
- Timer mode 2-fold

Function:

This communication object can be used to activate and deactivate the operating mode “night mode” via the bus for the respective output. If a logical one is received, the corresponding output switches to night mode.

In the operating mode “night mode,” the output can no longer be switched on permanently but only with a time limit (cleaning lighting for e.g. 30 minutes).

Availability:

The communication object “night mode” is only displayed if the parameter “night mode” is set to "enabled.”

Example:

The command to switch on night mode can be sent e.g. by a button, a timer or a building management system.

More information:

Night mode [→ 71]

Behavior on activation and deactivation of night mode in normal mode with limited ON time [→ 152]

Behavior on activation and deactivation of night mode in normal mode with a warning prior to switching off with limited ON time [→ 155]

Behavior on activation and deactivation of night mode in timer mode (1-fold) with a limited ON time [→ 159]

Behavior on configured ON delay in normal mode and night mode. [→ 164]

A Timer night mode

No.	Object name	Function	Datapoint type	Flags
24	A Timer night mode	ON time (seconds)	7,005	CRW

Operating modes:

- Normal mode
- Timer mode
- Timer mode 2-fold

Function:

This communication object can be used to change the ON time in the operating mode “night mode” via the bus for the respective output. This time is set in seconds.

Note:

In contrast to the ETS parameter, due to the DPT it is not possible to specify a delay time of 23:59:59 here.

Availability:

The communication object “timer night mode” is only displayed if the parameters “night mode” and “change ON time in night mode via object” are set to “enabled.”

More information:

Night mode [→ 71]

Behavior on activation and deactivation of night mode in normal mode with limited ON time [→ 152]

Behavior on activation and deactivation of night mode in normal mode with a warning prior to switching off with limited ON time [→ 155]

Behavior on activation and deactivation of night mode in timer mode (1-fold) with a limited ON time [→ 159]

Behavior on configured ON delay in normal mode and night mode. [→ 164]

A Timer day mode

No.	Object name	Function	Datapoint type	Flags
25	A Timer day mode	ON time 1 (seconds)	7.005 time (s)	CRW

Operating modes:

- Timer mode
- Timer mode 2-fold

Function:

This communication object can be used to change ON time 1 in the operating mode “day mode” via the bus for the respective output. This time is set in seconds.

This makes it possible to change the timer period during operations.

Availability:

The communication object “timer day mode” is only displayed if the parameter “change ON period 1 during day mode via object” is set to “enabled.”

A Pre-warning expiration of timer period

No.	Object name	Function	Datapoint type	Flags
27	A Pre-warning expiration of timer period	On / Off	1.001 switching	CRT

Operating modes:

- Normal mode (if the parameter “night mode” is set to “enabled”)
- Timer mode
- Timer mode 2-fold (if the parameter “night mode” is set to “enabled”)

Function:

This communication object is used to signal the elapse of the timer period in timer mode or night mode. This can switch on a warning lamp, for example.

Availability:

The communication object “pre-warning expiration of timer period” is only displayed if the parameter “warning before switching off” is set to “via communication object” or “via briefly switching on - off via communication object” or “dim to half dimming value and via communication object.”

The parameter “warning before switching off” is displayed an additional time if the parameter “night mode” was set to “enabled.”

More information:

Warning before switching Off [→ 118]

A Lock timer

No.	Object name	Function	Datapoint type	Flags
28	A Lock timer	On / Off	1.003 enable	CW

Operating modes:

- Timer mode
- Timer mode 2-fold

Function:

In timer mode, this communication object can be used to halt, re-start, disable or re-enable the timer function in day and night mode for the respective output. This makes it possible to switch off timer mode if necessary.

Availability:

The communication object “lock timer” is only display if the parameter “blocking characteristics for timer mode” is set to “deactivate timer,” “reset timer,” or “pause timer.” The parameter “blocking characteristics for timer mode” is displayed an additional time if the parameter ‘night mode’ was set to “enabled.”

A Global dimming max. limit

No.	Object name	Function	Datapoint type	Flags
58	A Global dimming max. limit	8-bit value	5.001 percent (0…100 %)	CW

Operating modes:

- Normal mode
- Timer mode
- Timer mode 2-fold
- Flashing

Function:

This communication object can be used to set the dimming value globally for all settings to a particular maximum limit.

Availability:

The communication object "global dimming max. limit" is only displayed if the parameter "global dimming max. limit" is set to "enabled," (parameter card "normal mode," "timer mode," "timer mode 2-fold" or "flashing mode").

Example:

This communication object can be used to save energy if instead of 100 %, for example, dimming is globally limited to 90 %.

5.2.5 Parameters of the parameter card of operating modes

Under the "operating modes" heading it is displayed for each parameter which parameter card the respective parameter is found on.

Dimming curve

Parameter	Settings
Dimming curve	Smooth 2 Smooth 1 Linear Progressive 1 Progressive 2 Progressive 3 User-defined

Operating modes:

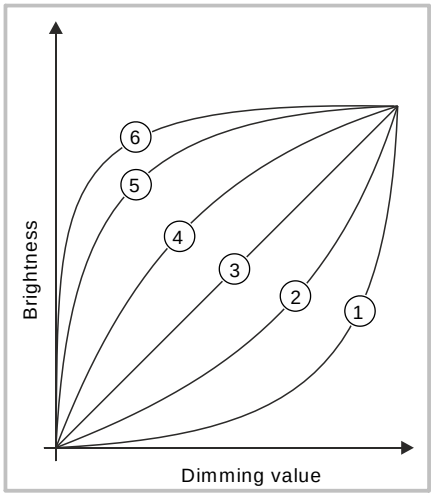
- Normal mode
- Timer mode
- Timer mode 2-fold
- Flashing

Function:

This parameter can be used to set the dimming curve. The dimming curve acts like a correction factor. Lamps can therefore be dimmed brighter or darker in the medium dimming range.

The following settings are possible:

- **Smooth 2:**
  Setting of a dimming curve, see curve (1)
- **Smooth 1:**
  Setting of a dimming curve, see curve (2)
- **Linear:**
  Setting of a dimming curve, see curve (3)
- **Progressive 1:**
  Setting of a dimming curve, see curve (4)
- **Progressive 2:**
  Setting of a dimming curve, see curve (5)
- **Progressive 3:**
  Setting of a dimming curve, see curve (6)



- **User-defined:**
  With this setting the parameter card “dimming curve user-defined” is displayed. Here, the dimming curve can be defined manually by entering up to 16 values for the x-axis (dimming value) and y-axis (brightness).
  Here it must be borne in mind that the curve progressing rises steadily. Incorrect configuration can result in a malfunction.

Other parameter cards:

When selecting the setting “user-defined,” the parameter card “dimming curve user-defined” is additionally displayed.

Minimum dimming value (%)

Parameter	Settings
Minimum dimming value (%)	1…100

Operating modes:

- Normal mode
- Timer mode
- Timer mode 2-fold
- Flashing

Function:

The parameter “minimum dimming value (%)” can be used to define the minimum dimming value that can be reached with “darker dimming” (i.e. the dimming can only go as far down as the minimum dimming value).

If the parameter “off via dimming” is set to “yes,” then a darker dimming value below the minimum dimming value leads to the channel being switched off.

If the parameter “switching via dimming value” is set to “off, if dimming value < min. dimming value,” then the reception of a telegram with a dimming value lower that the minimum dimming value leads to the channel being switched off.

If the parameter “switching via dimming value” is set to “On and Off possible,” then the reception of a telegram with a dimming value below the minimum dimming value leads to the channel being switched off.

More information:

Initial output behavior of a channel with different parameter configurations [→ 133]

Maximum dimming value (%)

Parameter	Settings
Maximum dimming value (%)	1…100

Operating modes:

- Normal mode
- Timer mode
- Timer mode 2-fold
- Flashing

Function:

This parameter is used to define the maximum dimming value of the channel that cannot be exceeded (i.e. the dimming can only go up to the maximum dimming value).

With dimming brighter, it can only be dimmed up to the max. dimming value.

If a dimming value above the maximum dimming value is received, dimming only goes up to the max. dimming value.

More information:

Initial output behavior of a channel with different parameter configurations [→ 133]

Show min/max limitation objects

Parameter	Settings
Show min/max limitation objects	Disable Enable

Operating modes:

- Normal mode
- Timer mode
- Timer mode 2-fold
- Flashing

Function:

This parameter is used to display the communication objects “minimum dimming value” and “maximum dimming value.”

Communication object:

If the parameter “show min/max limitation objects” is set to “enabled,” the communication objects “minimum dimming value” and “maximum dimming value” are displayed.

Global dimming max. limit

Parameter	Settings
Global dimming max. limit	Disable Enable

Operating modes:

- Normal mode
- Timer mode
- Timer mode 2-fold
- Flashing

Function:

This parameter is used to display the communication object “global dimming max. limit.” This communication object can be used to set the dimming value globally for all settings to a particular maximum limit.

Communication object:

If the parameter “global dimming max. limit” is set to “enabled,” the communication object “global dimming max. limit” is displayed.

Example:

This parameter can be used to save energy if instead of 100%, for example, dimming is globally limited to 90%.

Dimming time for switching

Parameter	Settings
Dimming time for switching (hh:mm:ss:f)	00:00:00.0...01:49:13.5

Operating modes:

- Normal mode
- Timer mode
- Timer mode 2-fold
- Flashing

Function:

This parameter is used to set whether the configured switch-on value or the switch-off value 0 % is to be triggered (dimming time = 0 s) and in what time the dimming is to take place.

If the switch-off is not from 100 % to 0 % or the switch-on from 0 % to 100 %, the dimming time is calculated proportionally based on the difference between the old and new values. This results in different times in which the setpoint is reached depending on the size of the value difference.

More information:

Dimming behavior with ON/OFF switching via the “switching” communication object [→ 133]

Dimming time for dimming

Parameter	Settings
Dimming time for dimming (hh:mm:ss:f)	00:00:00:0...01:49:13:5

Operating modes:

- Normal mode
- Timer mode
- Timer mode 2-fold

Function:

This parameter is used to set the time in which dimming is to take place in the case of manual dimming from 0 % to 100 % (or from 100 % to 0 %). This time is calculated proportionally based on the selected dimming step (value difference between the old and new values). This results in different times in which the setpoint is reached depending on the size of the dimming step.

More information:

Dimming behavior when dimming via the communication object “dimming value 1” [→ 136]

Dimming time for dimming value 1
Dimming time for dimming value 2

Parameter	Settings
Dimming time for dimming value 1 Dimming time for dimming value 2 (hh:mm:ss:f)	00:00:00.0...01:49:13.5

Operating modes:

- Normal mode
- Timer mode
- Timer mode 2-fold

Function:

This parameter is used to set whether dimming value 1 or dimming value 2 is to be triggered (dimming time = 0 s) and in what time the dimming is to take place. This time is calculated proportionally based on the selected dimming step (value difference between the old and new values). This results in different times in which the setpoint is reached depending on the size of the dimming step.

Availability:

The parameter “dimming value 2” is only available if the parameter “two dimming values” is set to “enabled.”

More information:

Dimming behavior when dimming via the communication object “dimming value 1” [→ 136]

Two dimming values

Parameter	Settings
Two dimming values	Disable Enable

Operating modes:

- Normal mode
- Timer mode
- Timer mode 2-fold

Function:

If this parameter is set to “enabled,” a second dimming value can be used.

Other parameters:

If the parameter “two dimming values” is set to “enabled,” the additional parameters “dimming time for dimming value 2” and “switching via dimming value 2” are displayed.

Communication object:

If the parameter “two dimming values” is set to “enabled,” the communication object “dimming value 2” is displayed.

Show dimming time objects

Parameter	Settings
Show dimming time objects	Disable Enable

Operating modes:

- Normal mode
- Timer mode
- Timer mode 2-fold
- Flashing

Function:

This parameter can be used to display the communication objects for dimming time.

Communication object:

If the parameter, “show dimming time objects” is set to “enabled,” the communication objects “dimming time for switching,” “dimming time for dimming,” and “dimming time for dimming value 1” are displayed. If the parameter “two dimming values” is set to “enabled,” the communication object “dimming time for dimming value 2” is also displayed.

Show dimming value/time object

Parameter	Settings
Show dimming value/time object	Disable Enable

Operating modes:

- Normal mode
- Timer mode
- Timer mode 2-fold

Function:

This parameter is used to activate or deactivate the communication object “dimming value 1/time.”

Communication object:

If the parameter “show dimming value/time object” is set to “enabled,” the communication object “dimming value 1/time” is displayed.

Switch on at value

Parameter	Settings
Switch on at value	Dimming value at switch off Start value according to parameter Last received dimming value 1

Operating modes:

- Normal mode
- Timer mode
- Timer mode 2-fold

Function:

This parameter indicates to which value the channel should jump or dim when a telegram with the switch command “on” is received. The following settings are possible:

- **Dimming value at switch off:**

  This setting is used to set to the last dimming value before switching off. If the channel was switched off via a dimming value below the minimum dimming value or by dimming brighter/darker below the minimum dimming value or a time limit of the ON time (timer mode), the channel goes back to the last dimming value when switched back on. The setting “dimming value at switch off” is advantageous in children’s rooms or bedrooms, for example. An initial brief touch of the ON button brings the channel back to the dimming value at switch off. A second brief touch of the ON button causes the channel to dim or jump to the max. dimming value.

  More information: Dimming behavior with ON/OFF switching via the “switching” communication object [→ 133]

- **Start value according to parameter:**

  With this parameter an additional parameter through which the desired dimming value can be entered in percent is displayed.

- **Last received dimming value 1:**

  This setting is required, for example, in the case of constant light control if the lighting is not to be switched off by way of dimming values sent by a constant light level controller that are below the min. dimming value and switched on again by way of dimming values above this dimming value. The parameter “switching via dimming value” must be set to “not possible” for this purpose.

More information:

Dimming behavior with ON/OFF switching via the “switching” communication object [→ 133]

Off via dimming

Parameter	Settings
Off via dimming	Disable Enable
Operating modes: ● Normal mode ● Timer mode ● Timer mode 2-fold **Function:** If the channel is to be switched off while in a switched-on state if the brightness is dimmed to a level below the minimum dimming value, this parameter must be set to “enabled.” **More information:** Dimming behavior when dimming via the communication object “dimming” [→ 134]	

On via dimming

Parameter	Settings
On via dimming	Disable Enable
Operating modes: ● Normal mode ● Timer mode ● Timer mode 2-fold **Function:** To enable switching on the channel while in a switched off state by receiving a “brighter” dimming value, this parameter must be set to “enabled.” In this case, the channel must first be switched on, set to the minimum dimming value and then dimmed brighter with the configured dimming time from that starting point. **More information:** Dimming behavior when dimming via the communication object “dimming” [→ 134]	

Switching via dimming value 1
Switching via dimming value 2

Parameter	Settings
Switching via dimming value 1 Switching via dimming value 2	Not possible On, if dimming value >= min. dimming value Off, if dimming value < min. dimming value On and Off possible On, if dimming value > 0% / Off, if dimming value = 0%

Operating modes:

- Normal mode
- Timer mode
- Timer mode 2-fold

Function:

- **Not possible:**

  Switching on or off when reaching the dimming value is not possible.

- **On, if dimming value >= min. dimming value**

  To enable switching on the channel while in a switched off state by receiving a dimming value that is equal to or greater than the respective min. dimming value, this parameter must be set to “on, if dimming value >= min. dimming value.” The channel will then be switched on and the dimming value either dimmed to or jumped to depending on the configured dimming time 1 or dimming time 2. If the received dimming value is below the minimum dimming value, the channel remains switched off.

  Switching off via dimming value 1 or dimming value 2 is not possible with this setting.

- **Off, if dimming value < min. dimming value:**

  If the channel is switched on and this parameter is set to “off, if dimming value < min. dimming value,” the reception of a telegram with a dimming value lower than the minimum dimming value leads to a dimming down (with the configured dimming time for dimming value 1 or dimming value 2) to the minimum dimming value and then to switching off of the channel.

  Switching on via dimming value 1 or dimming value 2 is not possible with this setting.

- **On and Off possible:**

  If this parameter is set to “On and Off possible,” the channel is switched on if the received dimming value is equal to or greater than the min. dimming value and it is switched off if the received dimming value is below the min. dimming value.

- **On, if dimming value > 0% / Off, if dimming value = 0%:**

  If this parameter is set to “On, if dimming value > 0 % / Off, if dimming value = 0 %,” every dimming value > 0 % leads to the channel switching on. If the dimming value falls below the min. dimming value, the channel is set to the min. dimming value. Only if a dimming value of 0 % is received is the channel switched off.

Availability:

The parameter “switching via dimming value 2” is only available if the parameter “two dimming values” is set to “enabled.”

More information:

Dimming behavior when dimming via the communication object “dimming value 1” [→ 136]

ON time 1 during day mode

Parameter	Settings
ON time 1 during day mode (hh:mm:ss)	00:00:00...23:59:59

Operating modes:

- Timer mode
- Timer mode 2-fold

Function:

This parameter is used to set the ON time in timer mode or the ON time 1 in 2-level timer mode.

If during an ongoing ON time, a renewed switch, dim, dimming value or scene recall command is received, the command is executed, the timer is reset and the ON time starts again.

Retriggering possible

Parameter	Settings
Retriggering possible	0…5

Operating modes:

- Timer mode
- Timer mode 2-fold

Function:

This parameter is used to set whether, if a further switch-on telegram, dimming command (brighter, darker, stop) or value-setting command (% value) is received during an ongoing ON time, the ON time is re-started and thus the ON time extended.

If this parameter is “0,” then an extension is not possible during the ON time.

It can also be configured how long the timer period can be extended maximally through multiple receptions of a switching telegram. The maximum time configurable here is:

- 1: up to max. 1x timer period
- 2: up to max. 2x timer period
- 3: up to max. 3x timer period
- 4: up to max. 4x timer period
- 5: up to max. 5x timer period

Note:

If another switch-on command is received, in addition to the extension of the ON time, the maximum brightness is also set.

More information:

Behavior in timer mode (1-fold) with the setting “retriggering possible” = “0” [→ 143]

Behavior in timer mode (1-fold) with the setting “retriggering possible” = “1” [→ 144]

Behavior in timer mode (single) with the setting “retriggering possible” = “2” [→ 145]

ON time 2 during day mode

Parameter	Settings
ON time 2 during day mode (hh:mm:ss)	00:00:00...23:59:59

Operating modes:

- Timer mode 2-fold

Function:

This parameter is used to set the desired ON time 2 if the operating mode “2-level timer mode.”

If during an ongoing ON time 2, a renewed switch, dim, dimming value or scene recall command is received, the command is executed, the timer with the ON time 1 is loaded and the 2-level timer mode begins again.

Dimming value during ON time 2 (%)

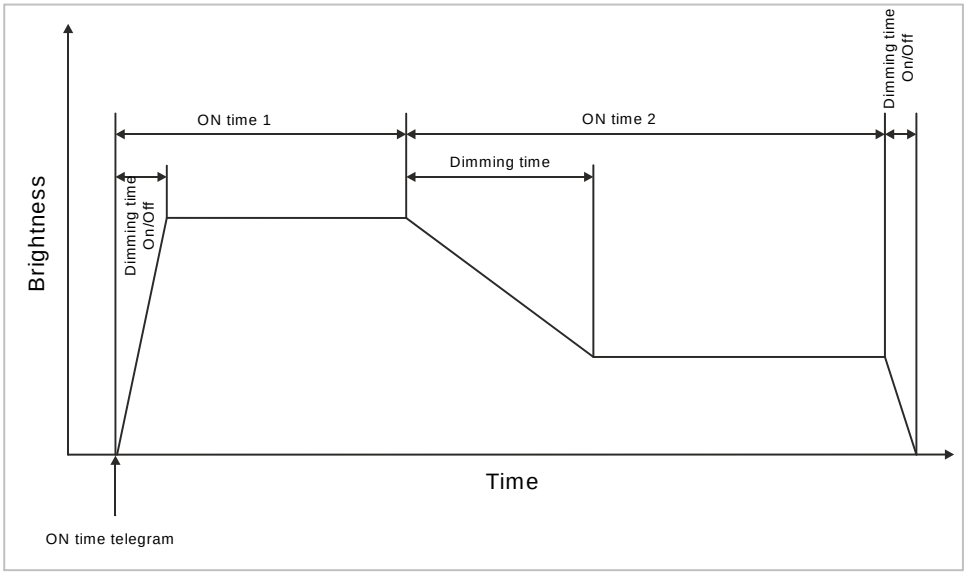
Parameter	Settings
Dimming value during ON time 2 (%)	0...100

Operating modes:

- Timer mode 2-fold

Function:

This parameter is used to set the dimming value during ON time 2 with 2-level timer mode. The diagram below shows an example of the dimming progress with 2-level timer mode.



Warning before switching Off

Parameter	Settings
Warning before switching Off	No Via briefly switching on - off Via communication object Via briefly switching on - off and via communication object Dim to half dimming value Dim to half dimming value and via communication object

Operating modes:

- Timer mode

Function:

This parameter can be used to set whether after the elapse of the ON time the channel should immediately be switched off permanently or a warning should be issued before switching off.

Other parameters/parameter cards:

Depending on the selected option, the parameters “warning period” and “warning signal period” are also displayed.

Communication object:

If the parameter “warning before switching off” is set to the option “via communication object,” “via briefly switching on - off via communication object,” or “via dimming to half dimming value and via communication object,” the communication object “pre-warning expiration of timer period” is displayed.

More information:

Warning before switching Off [→ 118]

Behavior in timer mode (1-fold) with setting “warning before switching off” = “short switch off/on” and “retriggering possible” = “1”. [→ 147]

Behavior in timer mode (1-fold) with setting “warning before switching off” = “dim to half dimming value” and “retriggering possible” = “1.” [→ 149]

Change ON time 1 during day mode via object

Parameter	Settings
Change ON time 1 during day mode via object	Disable Enable

Operating modes:

- Timer mode
- Timer mode 2-fold

Function:

This communication object can be used to change the timer period in day mode via the bus. This time is set in seconds.

Communication object:

If the parameter “change ON time 1 during day mode via object” is set to “enabled,” the communication object “timer day mode” is displayed.

Blocking characteristics for timer mode

Parameter	Settings
Blocking characteristics for timer mode	Deactivate timer Reset timer Pause timer No blocking

Operating modes:

- Timer mode
- Timer mode 2-fold

Function:

This parameter regulates the blocking characteristics for timer mode. The following settings are possible:

- **“No blocking:”**

  Blocking the timer is not possible.

If one of the following parameter settings is selected, the communication object “lock timer” is displayed.

- **“Pause timer”:**

  Triggered time functions are paused and resume at the place where they were paused after release of the communication object “lock timer.”
- **“Reset timer”:**

  Triggered time functions are halted. Upon release of the communication object “lock timer,” the timer is reset and re-started.
- **“Deactivate timer”:**

  Triggered time functions are halted. Upon release of the communication object “lock timer,” the time function neither resumes nor re-starts.

Communication object:

If the parameter “blocking characteristics for timer mode” is set to “no blocking,” the communication object “lock timer” is hidden.

ON delay

Parameter	Settings
ON delay (hh:mm:ss)	00:00:00...23:59:59

Operating modes:

- Normal mode
- Flashing

Function:

This parameter is used to set the desired ON delay. The pre-set value 00:00:00 means that switch-on commands are executed immediately. A configured ON delay affects the object “switching” and any logic object assigned to the output.

More information:

Switching behavior when a delay has been configured for switching on and off [→ 142]

OFF delay

Parameter	Settings
OFF delay (hh:mm:ss)	00:00:00...23:59:59

Operating modes:

- Normal mode
- Flashing

Function:

This parameter is used to set the desired OFF delay. The pre-set value 00:00:00 means that switch-off commands are executed immediately. A configured OFF delay affects the object “switching” and any logic object assigned to the output.

More information:

Switching behavior when a delay has been configured for switching on and off [→ 142]

ON delay (central switching)

Parameter	Settings
ON delay (central switching) (hh:mm:ss)	00:00:00...23:59:59

Operating modes:

- Normal mode
- Flashing

Function:

This parameter is used to set the desired ON delay for central switching. The pre-set value 00:00:00 means that switch-on commands are executed immediately. A configured ON delay only affects the object “central switching.”

Availability:

The parameter “ON delay (central switching)” is only available if the parameter “central switching” is set to "enabled” (“Functions, Objects” parameter card).

More information:

Central switching [→ 65]

OFF delay (central switching)

Parameter	Settings
OFF delay (central switching) (hh:mm:ss)	00:00:00...23:59:59

Operating modes:

- Normal mode
- Flashing

Function:

This parameter is used to set the desired OFF delay for central switching. The pre-set value 00:00:00 means that switch-off commands are executed immediately. A configured OFF delay only affects the object “central switching.”

Availability:

The parameter “OFF delay (central switching)” is only available if the parameter “central switching” is set to "enabled” (“Functions, Objects” parameter card).

Night mode

Parameter	Settings
Night mode	Disable Enable

Operating modes:

- Normal mode
- Timer mode
- Timer mode 2-fold

Function:

With the parameter “night mode,” night mode can be activated.
Night mode [→ 71]

Other parameters/parameter cards:

If the parameter “night mode” is set to “enabled,” additional parameters are displayed. These parameters are discussed in the Night mode [→ 71] chapter.

Communication object:

If the parameter “night mode” is set to “enable,” the communication object “night mode” is displayed.

More information:

Night mode [→ 71]

Behavior on activation and deactivation of night mode in normal mode with limited ON time [→ 152]

Behavior on activation and deactivation of night mode in normal mode with a warning prior to switching off with limited ON time [→ 155]

Behavior on activation and deactivation of night mode in timer mode (1-fold) with a limited ON time [→ 159]

Behavior on configured ON delay in normal mode and night mode. [→ 164]

Number of flashing cycles (0 = indefinite)

Parameter	Settings
Number of flashing cycles (0 = indefinite)	0…10000

Operating modes:

- Flashing

Function:

This parameter is used to set the desired number of flashing cycles.

With the value “0,” the number of flashing cycles.

ON time flashing

Parameter	Settings
ON time flashing (hh:mm:ss)	00:00:01…00:04:15

Operating modes:

- Flashing

Function:

This parameter is used to set the desired ON time for flashing cycles. Based on this and the configured “OFF time flashing,” the respective flashing frequency can be determined.

OFF time flashing

Parameter	Settings
OFF time flashing (hh:mm:ss)	00:00:01…00:04:15

Operating modes:

- Flashing

Function:

This parameter is used to set the desired OFF time for flashing cycles. Based on this and the configured “ON time flashing,” the respective flashing frequency can be determined.

5.3 "Logic operations" parameter card

5.3.1 "Logic operations" process diagram

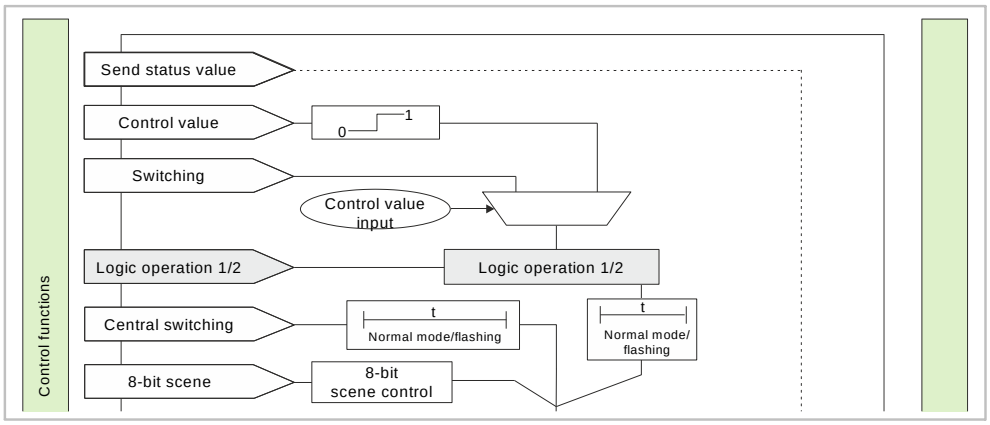


Fig. 7: Logic operations

5.3.2 Communication objects of the "logic operation" parameter card:

Logic operation 1
Logic operation 2

No.	Object name	Function	Datapoint type	Flags
18 19	Logic operation 1 Logic operation 2	On / Off	1.001 switching	CRW

Function:

This object is used to receive the switching information for the second input of the logic operation 1 or 2 for the respective output. With the parameter setting "no logic operation" and "TRIGGER," this object has no function and is therefore not displayed.

Note:

After downloading the values from the software to the switching/dimming actuator, the logical input has the value that was in the input before the download. After reset and start-up, the logical input has the configured value or the value "0."

5.3.3 Parameters of the "logic operation" parameter card:

Logic operation 1
Logic operation 2

Parameter	Settings
Logic operation 1 Logic operation 2	No logic operation AND OR XOR FILTER TRIGGER

Function:

This parameter can be used, if necessary, to add an additional switching object "logic operation 1" to the switching of the output via a logic operation of the switching object. The logic operation object is not subject to any time deal, i.e. the logic operation is always in effect immediately. The following logic operations are possible:

- **AND**

  Only if the values of the logical input and the other input are equal to "1" is the result of the logic operation "1"; otherwise it is "0."

- **OR**

  Only if at least one of the values of the logical input and the other input are equal to "1" is the result of the logic operation "1"; otherwise it is "0."

- **XOR**

  If the values of the logical input and the other input are equal, the result of the logic operation is "0"; otherwise it is "1."

- **FILTER**

  If the value of the logical input is "1," the value of the other input is passed on to the output. If the logical input is "0," the value of the other input is not passed on, i.e. it is filtered.

  If the output is to be inverted and value of the logical input is "1", the inverted value of the other input is passed on to the output. If the logical input is "0," the value of the other input is not passed on, i.e. it is filtered.

For regular normal operation of the channel without an effective filter, after mains voltage recovery, this input must be set to "1."

Input value	Value operation	Output	--- = no issuance of the output value X = any value
X	0	---	
0	1	0	
1	1	1	

- **TRIGGER**

  There is no logical input. For each incoming value ("0" or "1") from the other input, the value "1" is passed on at the output.

Other parameters:

If the option "AND," "OR," "XOR," or "FILTER" is selected, the parameters "invert logical input," "invert logical output," and "initial value of logic operation object after mains voltage recovery" are also displayed.

Communication objects:

If the option "AND," "OR," "XOR," or "FILTER" is selected in the parameter "logic operation 1" or "logic operation 2," the communication object "logic operation 1" or "logic operation 2" is displayed.

Invert logical input

Parameter	Settings
Invert logical input	No Yes
Function: This parameter determines whether the input value of the respective logic object is to be inverted. **Availability:** This parameter is only visible is the parameter "logic operation 1" or "logic operation 2 is set to "AND," "OR," "XOR," or "FILTER."	

Invert logical output

Parameter	Settings
Invert logical output	No Yes
Function: This parameter defines whether the output value of the logic operation (AND, OR, XOR, FILTER) is inverted. **Availability:** This parameter is only visible is the parameter "logic operation 1" or "logic operation 2 is set to "AND," "OR," "XOR," or "FILTER."	

Initial value of logic operation object after mains voltage recovery

Parameter	Settings
Initial value of logic operation object after mains voltage recovery	Off On As before mains voltage failure
Function: This parameter can be used to set the desired starting value of logic operation object on mains voltage recovery. If the parameter is set to "as before mains voltage failure," the logical input is set to the value stored when the mains voltage failure took place. **Availability:** This parameter is only visible is the parameter "logic operation 1" or "logic operation 2 is set to "AND," "OR," "XOR," or "FILTER."	

6 Setting functions

6.1 Control value input

As an alternative to the switching input, there is also a control value input for each channel. This can be used to implement analog values in switching on/off commands.

For the override functions as well, a control value input can be configured with the corresponding communication object instead of the switching input. The communication objects and parameter settings for this are described in the Overrides [→ 78] chapter.

6.1.1 “Control value input” process diagram

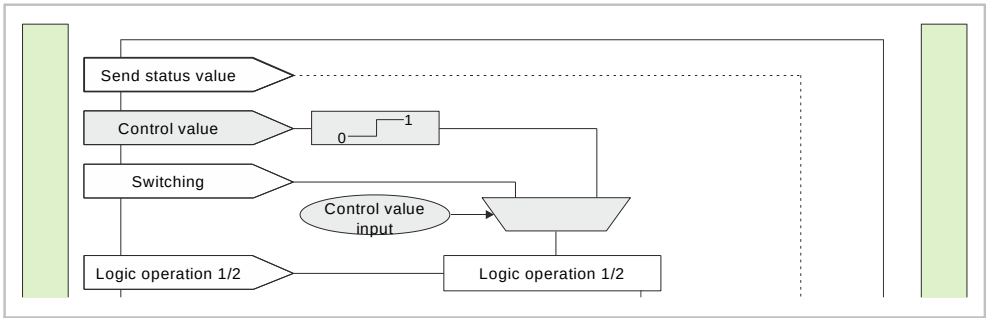


Fig. 8: Control value input function

6.1.2 Communication objects for the “control value input”

A Control value

No.	Object name	Function	Datapoint type	Flags
4	A Control value	Value	5.001 percent (0 … 100 %) 5.010 counting impulses (0 … 255) 9.001 temperature °C 9.004 illuminance lx 9.021 current mA 9.024 output kW 14.056 output W	CW

Function:

With this object, control value telegrams for the channel are received. A received control value is converted into a switching signal via a threshold evaluation.

Availability/alternative:

Alternatively, a switching input can be used instead of a control value input. If the parameter “control value input” is disabled, this communication object is hidden and the parameter “switching” is shown.

6.1.3 Parameters for the control value input on the “functions, objects” parameter card

Control value input

Parameter	Settings
Control value input	Disable Enable

Function:

As an alternative to the switching input, there is also a control value input for each channel. This can be used to implement analog values in switching on/off commands. A threshold value can also be set.

Other parameters/parameter cards:

If the parameter “control value input” is in the status “enabled,” the parameter card “control value input” is displayed.

Communication object:

If the parameter “control value input” is in the status “enabled,” the communication object “switching” is hidden and the parameter “control value” is shown.

6.1.4 Parameters for the control value input on the “control value input” parameter card

Data type

Parameter	Settings
Data Type	Percentage (%) Value (8-bit) Temperature (°C) Illuminance (lx) Current (mA) Power (kW) Power (W)

Function:

This parameter defines the datapoint type of the communication object “control value.” The following datapoint types can be selected:

- Percentage (%): Corresponds to the datapoint type 5.001 percent (0…100 %)
- Value (8-bit): Corresponds to the datapoint type 5.010 counting impulses (0 … 255)
- Temperature (°C): Corresponds to the datapoint type 9.001 temperature °C
- Illuminance (lx): Corresponds to the datapoint type 9.004 illuminance lx
- Current (mA): Corresponds to the datapoint type 9.021 current mA
- Output (kW): Corresponds to the datapoint type 9.024 output kW
- Output (W): Corresponds to the datapoint type 14.056 output W

Threshold for Off (<=)

Parameter	Settings
Threshold for Off (<=)	0…100

Function:

This parameter determines the threshold for OFF.

If the value of this communication object is equal to or smaller than the configured threshold for OFF, then the determined threshold is equal to “OFF” (0).

The permitted values for the threshold depend on the selected data type.

Note:

If the entered threshold values are equal, then when exactly this value is received this is interpreted as the “threshold for ON.”

If the “threshold for OFF” is configured such that it is greater than the “threshold for ON,” then the higher value is automatically used as the “threshold for ON.”

Threshold for On (>=)

Parameter	Settings
Threshold for On (>=)	0…100

Function:

This parameter determines the threshold for ON.

If the value of this communication object is equal to or greater than the configured threshold for ON, then the determined switching value is equal to “ON” (1).

The permitted values for the threshold depend on the selected data type.

Note:

If the entered threshold values are equal, then when exactly this value is received this is interpreted as the “threshold for ON.”

If the “threshold for OFF” is configured such that it is greater than the “threshold for ON,” then the higher value is automatically used as the “threshold for ON.”

6.2 Central switching

6.2.1 “Central switching” process diagram

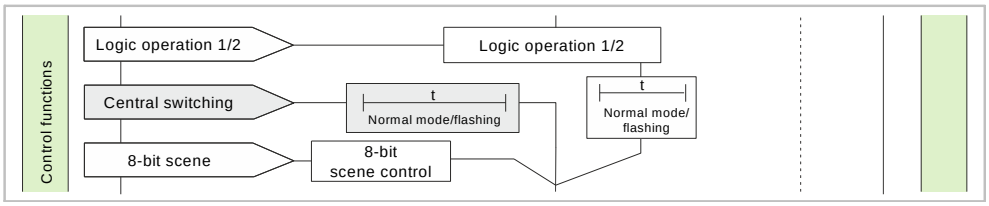


Fig. 9: Central switching

6.2.2 Communication objects for “central switching”

A Central switching

No.	Object name	Function	Datapoint type	Flags
20	A Central switching	On / Off	1.001 switching	CW

Function:

With this object, switch telegrams are received which are then sent to the associated output using a different time function than the one for the communication object “switching.”

Availability:

The communication object “central switching” is only displayed if the parameter “central switching” is set to "enabled."

6.2.3 Parameters for central switching on the “functions, objects” parameter card

Central switching

Parameter	Settings
Central switching	Disable Enable

Function:

This parameter is used to activate and deactivate the communication object “central switching.”

Communication object:

If the parameter “central switching” is set to “enabled,” the communication object “central switching” is displayed.

6.2.4 Parameters for central switching on the parameter card of the operating mode “normal mode” or “flashing mode.”

ON delay (central switching)

Parameter	Settings
ON delay (central switching) (hh:mm:ss)	00:00:00...11:59:59 PM
Operating modes: ● Normal mode ● Flashing **Function:** This parameter is used to set the desired ON delay for central switching. The pre-set value 00:00:00 means that switch-on commands are executed immediately. A configured ON delay only affects the object “central switching.” **Availability:** The parameter “ON delay (central switching)” is only available if the parameter “central switching” is set to "enabled” (“Functions, Objects” parameter card).	

OFF delay (central switching)

Parameter	Settings
OFF delay (central switching) (hh:mm:ss)	00:00:00...23:59:59
Operating modes: ● Normal mode ● Flashing **Function:** This parameter is used to set the desired OFF delay for central switching. The pre-set value 00:00:00 means that switch-off commands are executed immediately. A configured OFF delay only affects the object “central switching.” **Availability:** The parameter “OFF delay (central switching)” is only available if the parameter “central switching” is set to "enabled” (“Functions, Objects” parameter card).	

6.3 8-bit scene control

Users can use the function “8-bit scene recall/store,” without changing the project planning with the ETS, to independently reprogram scene modules for 8-bit scene control or actuators with integrated 8-bit scene control, i.e. to assign current brightness values or switching states to the respective scene.

A single communication object is used both to transmit the command to store a scene as well as the command to recall a stored scene and the number of the desired scene.

Before storing a scene, the affected actuators must be set with the intended buttons/sensors to the desired brightness values or switching states. With the reception of a telegram for storing, the addressed scene modules or actuators dimmers with integrated scene control are prompted to request the currently configured brightness values and switching states from the actuators and store them in the respective scene.

The scenes refer to a dimming value that is dimmed-to with a configured dimming time. When triggering a scene, the corresponding dimming value is activated and then an internal object reception is triggered. The switching/dimming actuator then behaves as if it had received a switching message. When a scene is stored, the current dimming value status is stored.

In contrast to the other dimming time specifications in the parameters, this dimming time of a scene indicates the time in which the current dimming value must reach

the target dimming value (i.e. essentially always the same absolute time from the start to reaching the target dimming value). This fixed dimming time until reaching the setpoint ensures that all lamps connected to different devices/channels achieve the desired brightness at the same time (i.e. synchronized completion of the dimming process of different lamps with different start brightnesses).

In addition to the dimming values, a color temperature value can also be stored in a scene for a device.

Color temperature control [→ 123]

If a scene is recalled before the associated switching states for this scene have been stored, there is no reaction to the scene recall.

6.3.1 “8-bit scene control” process diagram

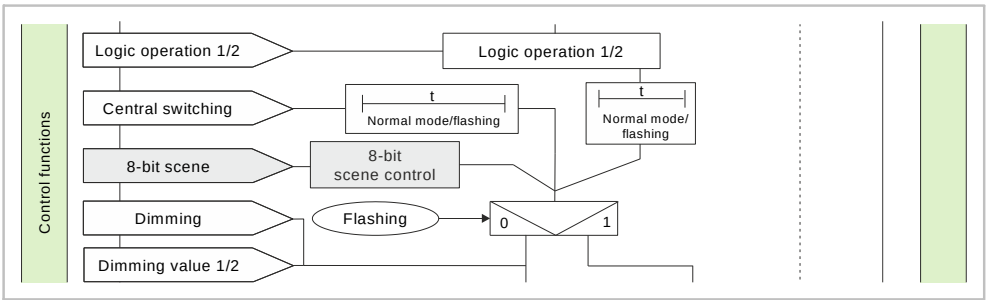


Fig. 10: 8-bit scene control

6.3.2 Communication objects for 8-bit scene control

A 8-bit scene

No.	Object name	Function	Datapoint type	Flags
21	A 8-bit scene	Recall / store	18.001 scene control	CW

Function:

With this communication object, the 8-bit scene with the number x is recalled (restored) or saved.

Bits 0...5 contain the (binary coded) number of the desired scene as a decimal number in the range from 1 to 64 (where decimal number 1 corresponds to binary number 0, decimal number 2 to binary number 1, etc. That is, scene 1 corresponds to the value 0, scene 64 to the value 63).

If bit 7 = log. 1, the scene is saved; if bit 7 = log. 0, it is recalled. Bit 6 currently has no meaning and must be set to log. 0.

Availability:

The communication object “8-bit scene” is only displayed if the parameter “8-bit scene control” is set to "enabled.”

A Scene value/time

No.	Object name	Function	Datapoint type	Flags
22	A Scene value/time	Value/time		CW

Operating modes:

- Normal mode
- Timer mode
- Timer mode 2-fold

Function:

As its datapoint type, this communication object has a 3-byte value, with 1 byte reserved for the scene number x (bit 0...5) or the information of whether the scene is recalled (bit 7) and the two other bytes (bit 8...23) are reserved for the dimming time until reaching the target brightness.

Bit 6 currently has no meaning and must be set to “0.”

Bit 7 defines whether a scene is recalled:

- Bit 7 = 1: The communication object is ignored (i.e. no scene is recalled or stored).
- Bit 7 = 0: The set scene is recalled.

Bit	23	22	21	20	19	18	17	16
Meaning	Dimming time (datapoint type: TimePeriod100MSec, high byte)							
Bit	15	14	13	12	11	10	9	8
Meaning	Dimming time (datapoint type: TimePeriod100MSec, low byte)							
Bit	7	6	5	4	3	2	1	0
Meaning	Recall	“0”	Scene number x -1 (Scene 1 has the value “0,” scene 64 the value “63”)					
	Scene (datapoint type: SceneControl)							

Availability:

The communication object “scene value/time” is only displayed when the parameter “8-bit scene control” and the parameter “show dimming value/time object” are set to “enabled.”

Note:

In contrast to the other dimming time specifications in the parameters, this dimming time indicates the time in which the current dimming value must reach the target dimming value (i.e. essentially always the same absolute time from the start to reaching the target dimming value).

More information:

8-bit scene control [→ 66]

6.3.3 Parameters for 8-bit scene control on the “functions, objects” parameter card

8-bit scene control

Parameter	Settings
8-bit scene control	Disable Enable

Function:

This parameter is used to activate or deactivate 8-bit scene control.

Other parameters/parameter cards:

If the parameter “8-bit scene control” is set to “enabled,” the parameter card “scene assignment” is displayed.

Communication object:

If the parameter “8-bit scene control” is set to “enabled,” the communication object “8-bit scene” is displayed.

6.3.4 Parameters for 8-bit scene control on the “scene assignments” parameter card

Link 1 – 8 to scene [0...64]
(0 = disabled)

Parameter	Settings
Link 1 to scene [0...64] (0 = disabled)	0…64
Link 2 to scene [0...64] (0 = disabled)	0…64
Link 3 to scene [0...64] (0 = disabled)	0…64
Link 4 to scene [0...64] (0 = disabled)	0…64
Link 5 to scene [0...64] (0 = disabled)	0…64
Link 6 to scene [0...64] (0 = disabled)	0…64
Link 7 to scene [0...64] (0 = disabled)	0…64
Link 8 to scene [0...64] (0 = disabled)	0…64

Function:

With this parameter, the output of the switching/dimming actuator can be incorporated in one 8-bit scene with a number in the range 1 to 64. “0” means that this assignment option is not being used.

Note:

If a scene is recalled before the associated switching states for this scene have been stored, there is no reaction to the scene recall.

Other parameters:

If the parameter “link x with scene [0...64]” is not set to “0,” the parameters “8-bit scenes configurable by user” and “predefined dimming value for scene (%)” are also displayed.

Dimming time

Parameter	Settings
Dimming time (hh:mm:ss:f)	00:00:00.0...01:49:13.5

Function:

The parameter “dimming time” is used to set the duration of the dimming procedure in which after the recall of the scene of the previous dimming value it is dimmed to the new dimming value (i.e. always the same absolute time from the start to reaching the target dimming value).

This fixed dimming time until reaching the setpointensures that all lamps connected to different devices/channels achieve the desired brightness at the same time (i.e. synchronized completion of the dimming process of different lamps with different start brightnesses).

Availability:

The parameter "dimming time” is only displayed if the setting of the parameter “link x with scene [0...64]” is not “0.”

8-bit scenes configurable by user

Parameter	Settings
8-bit scenes configurable by user	Disable Enable

Function:

With “disable” the scenes are not programmable (via a scene telegram). The dimming values for recall of the scenes set via the parameter “predefined dimming value for scene (%)” cannot be changed during operation.

Availability:

The parameter “8-bit scenes configurable by user” is only displayed if the setting of the parameter “link x with scene [0...64]” is not “0.”

Other parameters:

If the parameter “8-bit scenes configurable by user” is set to “enabled,” the parameter “delete learned scene” is also displayed. The parameter “predefined dimming value for scene (%)” is hidden.

Delete learned scene

Parameter	Settings
Delete learned scene	Disable Enable

Function:

If the option “disable” is selected, learned scene values in the download of the configuration from the ETS software into the device are not deleted.

If the option “enable” is selected, learned scene values in the download of the configuration from the ETS software into the device are deleted.

Availability:

The parameter “delete learned scene” is only displayed if the setting of the parameter “link x with scene [0...64]” is not “0” and the parameter “8-bit scenes configurable by user” is set to “enable.”

Other parameters:

If the parameter “delete learned scene” is set to “enabled,” the parameter “predefine scene” is also displayed.

Predefine scene

Parameter	Settings
Predefine scene	Disable Enable

Function:

If the “disable” option is selected, the corresponding parameter “predefined dimming value for scene (%)” is hidden. A scene must be programmed by the user. Already learned values are deleted during the download of the configuration from the ETS into the device. If nothing is learned, the scene is not activated.

If “enabled,” the respective parameter “predefined dimming value for scene (%)” is displayed which is stored as a scene value during the download of the configuration from the ETS software into the device.

Availability:

The parameter “predefine scene” is only displayed if the setting of the parameter “link x with scene [0...64]” is not “0” and the parameters “8-bit scenes configurable by user” and “delete learned scene” are set to “enabled.”

Other parameters:

If the parameter “predefine scene” is set to “enabled,” the parameter “predefine scene” is also displayed.

Predefined dimming value for scene (%)

Parameter	Settings
Predefined dimming value for scene (%)	0...100

Function:

This parameter can be used to predefine the dimming value for the selected scene number during the configuration and be loaded into the device along with the ETS software.

Availability/alternative:

The parameter “predefined dimming value for scene (%)” is only displayed if the setting of the parameter “link x with scene [0...64]” is not “0” and the parameter “8-bit scenes configurable by user” is set to “disable” or the parameter or the parameters “8-bit scenes configurable by user,” “delete learned scene,” and “predefine scene” are set to “enable.”

6.4 Night mode

Via an optional “night mode” object, it is possible for each output, if necessary, to activate time-limited switching on (e.g. cleaning lighting) rather than permanent switching on, if appropriate with warning before switching off by switching the output off and on (flashing).

6.4.1 Night mode process diagram

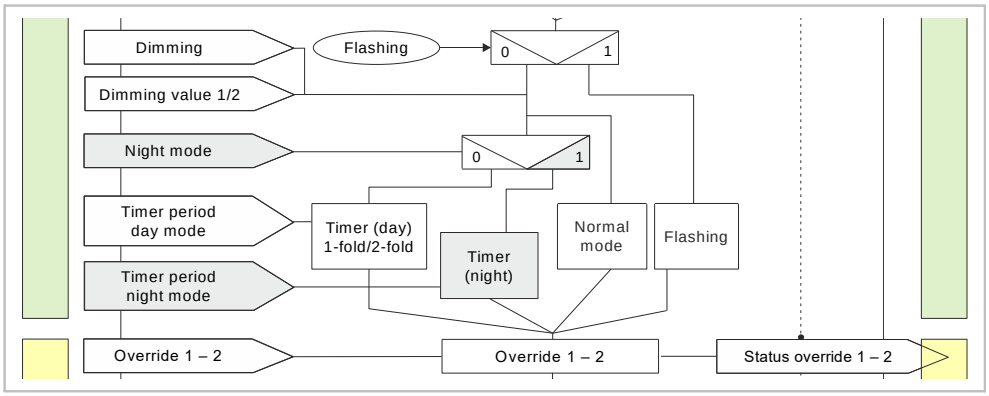


Fig. 11: Night mode

6.4.2 Communication objects for night mode

A Night mode

No.	Object name	Function	Datapoint type	Flags
23	A Night mode	On / Off	1.003 enable	CW

Operating modes:

- Normal mode
- Timer mode
- Timer mode 2-fold

Function:

This communication object can be used to activate and deactivate the operating mode “night mode” via the bus for the respective output. If a logical one is received, the corresponding output switches to night mode.

In the operating mode “night mode,” the output can no longer be switched on permanently but only with a time limit (cleaning lighting for e.g. 30 minutes).

Availability:

The communication object “night mode” is only displayed if the parameter “night mode” is set to "enabled.”

Example:

The command to switch on night mode can be sent e.g. by a button, a timer or a building management system.

More information:

Night mode [→ 71]

Behavior on activation and deactivation of night mode in normal mode with limited ON time [→ 152]

Behavior on activation and deactivation of night mode in normal mode with a warning prior to switching off with limited ON time [→ 155]

Behavior on activation and deactivation of night mode in timer mode (1-fold) with a limited ON time [→ 159]

Behavior on configured ON delay in normal mode and night mode. [→ 164]

A Timer night mode

No.	Object name	Function	Datapoint type	Flags
24	A Timer night mode	ON time (seconds)	7,005	CRW

Operating modes:

- Normal mode
- Timer mode
- Timer mode 2-fold

Function:

This communication object can be used to change the ON time in the operating mode “night mode” via the bus for the respective output. This time is set in seconds.

Note:

In contrast to the ETS parameter, due to the DPT it is not possible to specify a delay time of 23:59:59 here.

Availability:

The communication object “timer night mode” is only displayed if the parameters “night mode” and “change ON time in night mode via object” are set to “enabled.”

More information:

Night mode [→ 71]

Behavior on activation and deactivation of night mode in normal mode with limited ON time [→ 152]

Behavior on activation and deactivation of night mode in normal mode with a warning prior to switching off with limited ON time [→ 155]

Behavior on activation and deactivation of night mode in timer mode (1-fold) with a limited ON time [→ 159]

Behavior on configured ON delay in normal mode and night mode. [→ 164]

A Pre-warning expiration of timer period

No.	Object name	Function	Datapoint type	Flags
27	A Pre-warning expiration of timer period	On / Off	1.001 switching	CRT

Operating modes:

- Normal mode (if the parameter “night mode” is set to “enabled”)
- Timer mode
- Timer mode 2-fold (if the parameter “night mode” is set to “enabled”)

Function:

This communication object is used to signal the elapse of the timer period in timer mode or night mode. This can switch on a warning lamp, for example.

Availability:

The communication object “pre-warning expiration of timer period” is only displayed if the parameter “warning before switching off” is set to “via communication object” or “via briefly switching on - off via communication object” or “dim to half dimming value and via communication object.”

More information:

Warning before switching Off [→ 118]

6.4.3 Parameters for night mode on the parameter card of the operating mode “normal mode,” “timer mode” or “timer mode 2-fold”

Night mode

Parameter	Settings
Night mode	Disable Enable

Operating modes:

- Normal mode
- Timer mode
- Timer mode 2-fold

Function:

With the parameter “night mode,” night mode can be activated.

Other parameters:

If the parameter “night mode” is set to “enabled,” the following additional parameters are displayed.

Communication object:

If the parameter “night mode” is set to “enabled,” the communication object “night mode” is displayed.

More information:

Night mode [→ 71]

Behavior on activation and deactivation of night mode in normal mode with limited ON time [→ 152]

Behavior on activation and deactivation of night mode in normal mode with a warning prior to switching off with limited ON time [→ 155]

Behavior on activation and deactivation of night mode in timer mode (1-fold) with a limited ON time [→ 159]

Behavior on configured ON delay in normal mode and night mode. [→ 164]

ON time during night mode

Parameter	Settings
ON time during night mode (hh:mm:ss)	00:00:00...11:59:59 PM

Operating modes:

- Normal mode
- Timer mode
- Timer mode 2-fold

Function:

This parameter is used to set the ON time in night mode.

If during an ongoing ON time, a renewed switch, dim, dimming value or scene recall command is received, the command is executed, the timer is reset and the ON time starts again.

Availability:

The parameter “ON time in night mode” is only available if the parameter “night mode” is set to "enabled.”

Limit ON time when switching to night mode while lights are on

Parameter	Settings
Limit ON time when switching to night mode while lights are on	Disable Enable

Operating modes:

- Normal mode
- Timer mode
- Timer mode 2-fold

Function:

This parameter can be used to change the response when switching to night mode while lights are on:

- **Disable:**

  If the lights are switched on when night mode is activated, they remain switched on.
- **Enable:**

  If the lights are switched on when night mode is activated, the ON time (night mode) starts and the lights are switched off at the end of this time.

More information:

Behavior on activation and deactivation of night mode in normal mode with a warning prior to switching off with limited ON time [→ 155]

Behavior on activation and deactivation of night mode in normal mode with a warning prior to switching off without limited ON time [→ 157]

Behavior on activation and deactivation of night mode in timer mode (1-fold) with a limited ON time [→ 159]

Behavior on activation and deactivation of night mode in timer mode (1-fold) without limited ON time [→ 162]

Cancel ON time when ending night mode while lights are on

Parameter	Settings
Cancel ON time when ending night mode while lights are on	Disable Enable

Operating modes:

- Normal mode

Function:

This parameter can be used to set the response when ending night mode while lights are already on:

- **Disable:**

  If the lights are already switched on when night mode is deactivated, they switch off at the end of the ON time (night mode).

- **Enable:**

  If the lights are switched on when night mode is deactivated, they remain switched on.

More information:

Behavior on activation and deactivation of night mode in normal mode with a warning prior to switching off with limited ON time [→ 155]

Behavior on activation and deactivation of night mode in normal mode with a warning prior to switching off without limited ON time [→ 157]

Behavior on activation and deactivation of night mode in timer mode (1-fold) with a limited ON time [→ 159]

Behavior on activation and deactivation of night mode in timer mode (1-fold) without limited ON time [→ 162]

Limit ON time when switching from night mode to timer mode while lights are on

Parameter	Settings
Limit ON time when switching from night mode to timer mode while lights are on	Disable Enable

Operating modes:

- Timer mode
- Timer mode 2-fold

Function:

This parameter can be used to specify the response when switching from night mode to timer mode while lights are on:

- **Disable:**

  If the lights are already switched on when night mode is deactivated, they switch off at the end of the ON time (night mode).

- **Enable:**

  If the lights are already switched on when night mode is deactivated, the ON time (day mode) starts and the lights are switched off at the end of this time.

More information:

Behavior on activation and deactivation of night mode in normal mode with a warning prior to switching off with limited ON time [→ 155]

Behavior on activation and deactivation of night mode in normal mode with a warning prior to switching off without limited ON time [→ 157]

Behavior on activation and deactivation of night mode in timer mode (1-fold) with a limited ON time [→ 159]

Behavior on activation and deactivation of night mode in timer mode (1-fold) without limited ON time [→ 162]

Retriggering possible

Parameter	Settings
Retriggering possible	0…5

Operating modes:

- Normal mode
- Timer mode
- Timer mode 2-fold

Function:

This parameter is used to set whether, if a further switch-on telegram is received during an ongoing ON time, the ON time is re-started and thus extended.

If this parameter is “0,” then an extension is not possible during the ON time.

It can also be configured how long the timer period can be extended maximally through multiple receptions of a switching telegram. The maximum time configurable here is:

- 1: up to max. 1x timer period
- 2: up to max. 2x timer period
- 3: up to max. 3x timer period
- 4: up to max. 4x timer period
- 5: up to max. 5x timer period

Availability:

The parameter “retrigger” is only available in normal mode when the parameter “night mode” is set to "enabled.”

More information:

Behavior in timer mode (1-fold) with the setting “retriggering possible” = “0” [→ 143]

Behavior in timer mode (1-fold) with the setting “retriggering possible” = “1” [→ 144]

Behavior in timer mode (single) with the setting “retriggering possible” = “2” [→ 145]

Warning before switching Off

Parameter	Settings
Warning before switching Off	No Via briefly switching on - off Via communicaton object Via briefly switching on - off and via communication object Dim to half dimming value Dim to half dimming value and via communication object

Operating modes:

- Normal mode
- Timer mode
- Timer mode 2-fold

Function:

This parameter can be used to set whether after the elapse of the ON time the channel should immediately be switched off permanently or a warning should be issued before switching off.

Availability:

The parameter “warning before switching off” is only available in normal mode and timer mode 2-fold when the parameter “night mode” is set to "enabled.”

Other parameters:

Depending on the selected option, the parameters “warning period” and “warning signal period” are also displayed.

Communication object:

If the parameter “warning before switching off” is set to the option “via communication object,” “via briefly switching on - off via communication object,” or “via dimming to half the dimming value and via communication object,” the communication object “pre-warning expiration of timer period” is displayed.

More information:

Warning before switching Off [→ 118]

Behavior in timer mode (1-fold) with setting “warning before switching off” = “short switch off/on” and “retriggering possible” = “1”. [→ 147]

Behavior in timer mode (1-fold) with setting “warning before switching off” = “dim to half dimming value” and “retriggering possible” = “1.” [→ 149]

Change ON time in night mode via object

Parameter	Settings
Change ON time in night mode via object	Disable Enable

Operating modes:

- Normal mode
- Timer mode
- Timer mode 2-fold

Function:

This communication object can be used to change the timer period in night mode via the bus. This time is set in seconds.

Availability:

The parameter “change ON time in night mode via object” is only available if the parameter “night mode” is set to "enabled.”

Communication object:

If the parameter “change ON time in night mode via object” is set to “enabled,” the communication object “timer night mode” is displayed.

Blocking characteristics for timer mode

Parameter	Settings
Blocking characteristics for timer mode	Deactivate timer Reset timer Pause timer No blocking

Operating modes:

- Normal mode
- Timer mode
- Timer mode 2-fold

Function:

This parameter regulates the blocking characteristics for timer mode. The following settings are possible:

- **“No blocking:”**
  Blocking the timer is not possible.

If one of the following parameter settings is selected, the communication object “lock timer” is displayed.

- **“Pause timer”:**
  Triggered time functions are paused and resume at the place where they were paused after release of the communication object “lock timer.”
- **“Reset timer”:**
  Triggered time functions are halted. Upon release of the communication object “lock timer,” the timer is reset and re-started.
- **“Deactivate timer”:**
  Triggered time functions are halted. Upon release of the communication object “lock timer,” the time function neither resumes nor re-starts.

Availability:

The parameter “blocking characteristics for timer mode” is only available in normal mode when the parameter “night mode” is set to "enabled.”

Communication object:

If the parameter “blocking characteristics for timer mode” is set to “no blocking,” the communication object “lock timer” is hidden.

(In timer mode the parameter must be set to “no blocking” in both places for the communication object to be hidden.)

6.5 Overrides

Per channel up to 7 override function blocks can be activated.

The following override function blocks are available:

- Manual override (ON) [→ 79]
- Override “permanent OFF” [→ 82]
- Override “lock” [→ 85]
- Override “central override” [→ 88]
- Override “user-defined” [→ 92]
- Override “forced control” [→ 96]

The priority of the override function blocks is determined by the position in the processing chain. Override block 7 has the highest priority, while override block 1 has the lowest priority.

For a graphical representation of the response of a channel for parameterized override, see:

- Switching behavior in case of activated overrides [→ 166]

For color temperature control in the event of an override, see:

- Color temperature control [→ 123]

6.5.1 Override process diagram

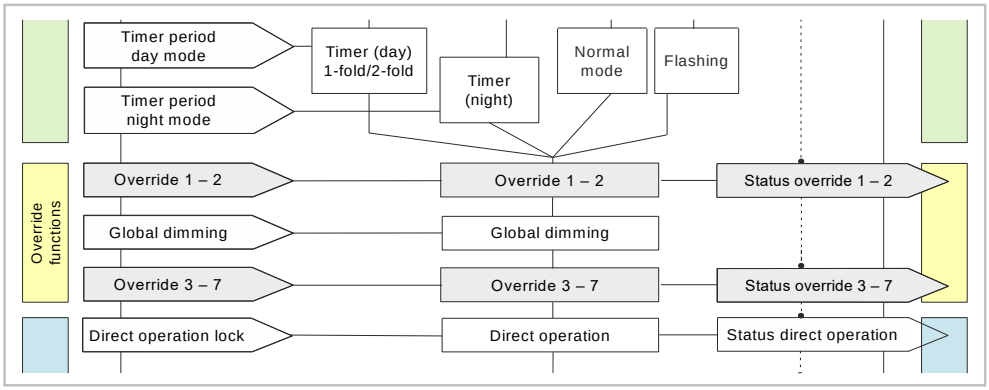


Fig. 12: Overrides

6.5.2 Communication objects for overrides

The communication objects for the various overrides are described in the following sections.

As the communication objects for the 7 override function blocks are the same and only differ in their numbers, the following lists only the communication objects of override function block 1. The respective numbers of the communication objects of the other override function blocks are shown in the table of all communication objects (Communication objects [→ 15]).

6.5.3 Parameters for the overrides on the “functions, objects” parameter card.

Override 1 – 7

Parameter	Settings
Override 1 – 7	Deactivated Manual override (ON) Permanent OFF Lock Central override User-defined Forced control
Function: This parameter can be used to set 7 overrides. The priority of the override function blocks is determined by the position in the processing chain. Override block 7 has the highest priority, while override block 1 has the lowest priority. **Other parameters/parameter cards:** If an override is activated, the parameter card “override [number], [type of override]” is displayed. **Communication object:** Depending on which override was activated and which settings were made, different communication objects are displayed.	

6.5.4 Manual override (ON)

On mains voltage recovery, the override function “manual override (ON)” is “deactivated.”

6.5.4.1 Manual override process diagram

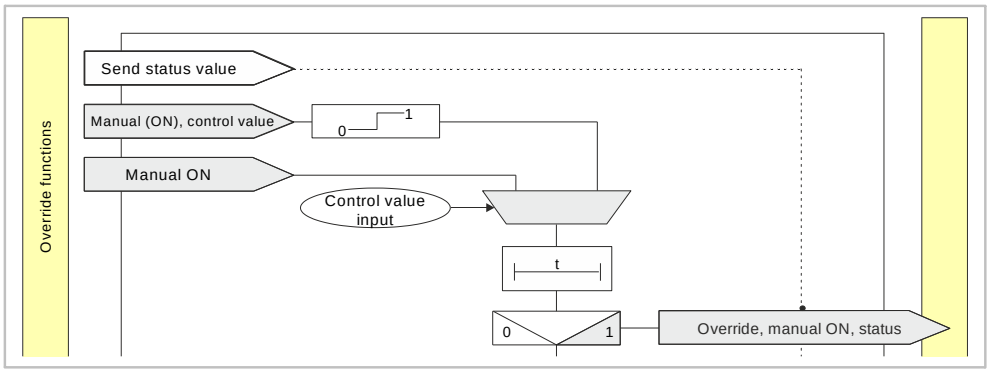


Fig. 13: Override "manual ON"

6.5.4.2 Communication objects for manual override

A Override 1, manual ON

No.	Object name	Function	Datapoint type	Flags
29	A Override 1, manual ON	On / Off	1.003 enable	CRT

Function:

This communication object makes it possible to re-switch on permanently or for a limited duration an output that was switched off via its "normal" switching input (possibly with a logic operation).

Manual (ON) is active when the value of the communication object is "on."

If an inversion is configured, manual (ON) is active when the object value is "off."

The respective output is only switched off via this object if the output was switched off via its "normal" switching input (with a logic operation if any). Otherwise the output remains switched on.

Availability/alternative:

The communication object "override 1, manual ON" is only displayed if the parameter "override 1" is set to "manual override (ON)" ("functions, objects" parameter card).

Alternatively, a control value input can be used instead of a switching control input. If the parameter "control value input" on parameter card "override 1, manual ON" is enabled, this communication object is hidden and communication object "override 1, manual ON, control value" is shown instead.

A Override 1, manual ON, control value

No.	Object name	Function	Datapoint type	Flags
30	A Override 1, manual ON, control value	Value	5.001 percent (0 … 100 %) 5.010 counting impulses (0 … 255) 9.001 temperature °C 9.004 illuminance lx 9.021 current mA 9.024 output kW 14.056 output W	CW

Function:

This communication object enables the use of a control value as the input value for override.

Availability:

The communication object "override 1, manual ON, control value" is only displayed if the parameter "override 1" is set to "manual (ON)" (parameter card "functions, objects") and the parameter "control value input" (parameter "override 2, manual ON) is set to "enabled."

Alternatively, a switching input can be used instead of a control value input. If the parameter "control value input" on parameter card "override 1, manual ON" is disabled, this communication object is hidden and communication object "override 1, manual ON, control value" is shown.

A Override 1, manual ON, status

No.	Object name	Function	Datapoint type	Flags
32	A Override 1, manual ON, status	On / Off	1.002 Boolean	CRT

Function:

This status object is used to report that override 1 is active.

Availability:

The communication object “override 1, manual ON, status” is only displayed if the parameter “status override” is set to “enabled” (“override 1, manual ON” parameter card).

6.5.4.3 Parameters for manual override on the parameter card “override 1, manual ON”

Control value input

Parameter	Settings
Control value input	Disable Enable

Function:

This parameter defines whether instead of the switching input a control value input should be used for the activation and deactivation of the override function.

Other parameters:

If the parameter “control value input” is in the “enabled” status, parameters for the datatype of the control value input and the threshold are displayed.

Parameters for the control value input on the “control value input” parameter card [→ 64]

Communication object:

If the parameter “control value input” is in the status “enabled,” the communication object “override 1, manual ON” is hidden and the parameter “override 1, manual ON, control value” is shown.

Invert override input

Parameter	Settings
Invert override input	No Yes

Function:

This parameter defines whether the input value of the communication object “override 1, manual ON” should be used directly or inverted.

Override duration

Parameter	Settings
Override duration (hh:mm:ss)	00:00:00...18:12:15

Function:

This parameter defines the desired ON time with manual override.

The override duration is then re-started with each incoming activation telegram.

With a parameter value of 00:00:00, the override duration is unlimited.

Response of switching value/dimming value on override deactivation

Parameter	Settings
Response of switching value/dimming value on override deactivation	No change Dimming value according to parameter Updated value

Function:

This parameter defines which value is passed on upon deactivation of the override at the output of the function block. The following settings are possible:

- **No change:**
  The value at the output is retained until a new value arrives at the input of the function block.
- **Dimming value according to parameter:**
  The parameter “value on deactivation (%)” is displayed. Here it is possible to define which value is passed on upon deactivation of the override.
- **Updated value:**
  The value at the input of the function block is passed on at the output of the function block.

Value at deactivation (%)

Parameter	Settings
Value at deactivation (%)	0…100

Function:

This parameter can be used to define which value is passed on upon deactivation of the override, if the option “dimming value according to parameter” was selected in the parameter “behavior of switching value/dimming value on override deactivation.”

Status override

Parameter	Settings
Status override	Disable Enable

Function:

This parameter is used to activate or deactivate the communication object for the status of override 1. This communication object is used to report whether the override is active.

More information:

Status [→ 99]

6.5.5 Override “permanent OFF”

6.5.5.1 Override “permanent OFF” process diagram

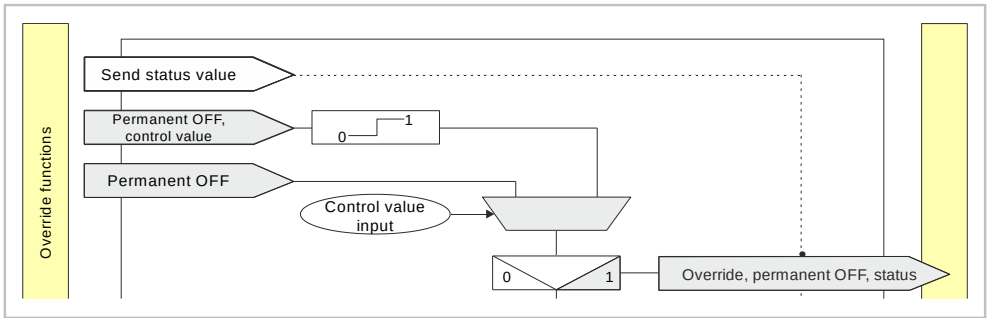


Fig. 14: Override “permanent OFF”

6.5.5.2 Communication objects for override “permanent OFF”

A Override 1, permanent OFF

No.	Object name	Function	Datapoint type	Flags
29	A Override 1, permanent OFF	On / Off	1.003 enable	CRT

Function:

This object can be used to switch of an output irrespective of the upstream sub-functions.

Permanent OFF is active when the value of the object is “on.”

If an inversion is configured, permanent OFF is active when the object value is “off.”

The respective output is only switched on via this object if the output was switched on via its “normal” switching input (with a logic operation if any). Otherwise the output remains switched off.

Availability/alternative:

The communication object “override 1, permanent OFF” is only displayed if the parameter “override 1” is set to "permanent OFF” (“functions, objects” parameter card).

Alternatively, a control value input can be used instead of a switching control input. If the parameter “control value input” on parameter card “override 1, permanent OFF” is enabled, this communication object is hidden and communication object “override 1, permanent OFF, control value” is shown instead.

A Override 1, permanent OFF, control value

No.	Object name	Function	Datapoint type	Flags
30	A Override 1, permanent OFF, control value	Value	5.001 percent (0 … 100 %) 5.010 counting impulses (0 … 255) 9.001 temperature °C 9.004 illuminance lx 9.021 current mA 9.024 output kW 14.056 output W	CW

Function:

This object can be used to switch off an output permanently irrespective of the upstream sub-functions via a threshold switch.

Availability:

The communication object “override 1, permanent OFF, control value” is only displayed if the parameter “override 1” is set to “permanent OFF” (parameter card “functions, objects”) and the parameter “control value input” (parameter “override 1, permanent OFF) is set to “enabled.”

Alternatively, a switching input can be used instead of a control value input. If the parameter “control value input” on the parameter card “override 1, permanent OFF” is disabled, this communication object is hidden and communication object “override 1, permanent OFF” is shown.

A Override 1, permanent OFF, status

No.	Object name	Function	Datapoint type	Flags
32	A Override 1, permanent OFF, status	On / Off	1.002 Boolean	CRT

Function:

This status object is used to report that override 1 is active.

Availability:

The communication object “override 1, permanent OFF, status” is only displayed if the parameter “status override” is set to “enabled” (“override 1, permanent OFF” parameter card).

6.5.5.3 Parameters for the override “permanent OFF” on the parameter card “override x, permanent OFF.”

Control value input

Parameter	Settings
Control value input	Disable Enable

Function:

This parameter defines whether instead of the switching input a control value input should be used for the activation and deactivation of the override function.

Other parameters:

If the parameter “control value input” is in the “enabled” status, parameters for the datatype of the control value input and the threshold are displayed.

Parameters for the control value input on the “control value input” parameter card [→ 64]

Communication object:

If the parameter “control value input” is in the status “enabled,” the communication object “override 1, permanent OFF” is hidden and the communication object “override 1, permanent OFF, control value” is shown.

More information:

Control value input [→ 63]

Invert override input

Parameter	Settings
Invert override input	No Yes

Function:

This parameter defines whether the input value of the communication object “override 1, permanent OFF” should be used directly or inverted.

Response of switching value/dimming value on override deactivation

Parameter	Settings
Response of switching value/dimming value on override deactivation	No change Dimming value according to parameter Updated value

Function:

This parameter defines which value is passed on upon deactivation of the override at the output of the function block. The following settings are possible:

- **No change:**
  The value at the output is retained until a new value arrives at the input of the function block.
- **Dimming value according to parameter:**
  The parameter “value on deactivation (%)” is displayed. Here it is possible to define which value is passed on upon deactivation of the override.
- **Updated value:**
  The value at the input of the function block is passed on at the output of the function block.

Value at deactivation (%)

Parameter	Settings
Value at deactivation (%)	0…100

Function:

This parameter can be used to define which value is passed on upon deactivation of the override, if the option “dimming value according to parameter” was selected in the parameter “behavior of switching value/dimming value on override deactivation.”

Status override

Parameter	Settings
Status override	Disable Enable
Function: This parameter is used to activate or deactivate the communication object for the status of override 1. This communication object is used to report whether the override is active. **More information:** Status [→ 99]	

Start value / behavior of override input on mains voltage recovery

Parameter	Settings
Start value / behavior of override input on mains voltage recovery	On Off Deactivated Last value
Function: This parameter can be used to set the desired start value/behavior of the override input of the function block “override 1, permanent OFF” when mains voltage is recovered. The following settings are possible: • **Off** If this parameter is set, the override function block behaves as if an “off” had been received at the override block input when mains voltage is recovered. • **On** If this parameter is set, the override function block behaves as if an “on” had been received at the override block input when mains voltage is recovered. • **Deactivated** If this parameter is set to “deactivated,” the override function block is deactivated when mains voltage is recovered. • **Last value** If this parameter is set to “last value,” the override input of the function block is set to the stored value in case of mains voltage failure.	

6.5.6 Override “lock”

When mains voltage is recovered the override function “lock” remains as before mains voltage failure.

6.5.6.1 Override “lock” process diagram

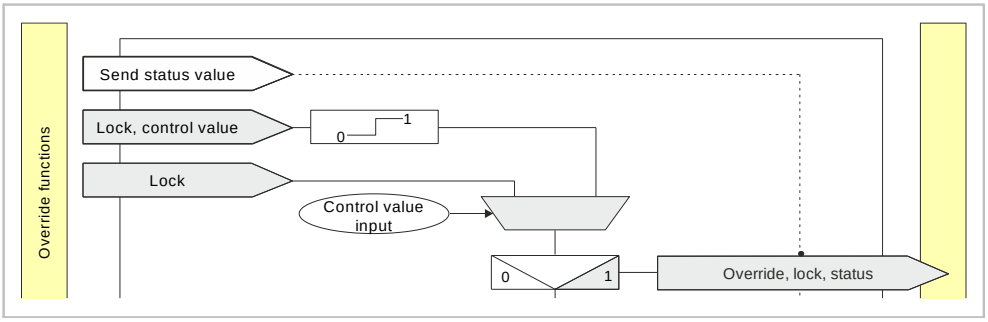


Fig. 15: “Lock” override

6.5.6.2 Communication objects for the override “lock”

A Override 1, lock

No.	Object name	Function	Datapoint type	Flags
29	A Override 1, lock	On / Off	1.003 enable	CRT

Function:

This communication object can be used to lock an output against changes for as long as the lock is active irrespective of the upstream sub-functions.

The lock is active when the value of the communication object is “on.”

If an inversion is configured, the lock is active when the object value is “off.”

If the lock is deactivated, the current value of the processing chain at the input of the function block is passed on to the output. After releasing the lock object, the last received value is processed.

The lock object ensures that all upstream function blocks are internally saved, but not evaluated and sent.

Availability/alternative:

The communication object “override 1, lock” is only displayed when the parameter “override 1” is set to “lock” (“functions, objects” parameter card).

Alternatively, a control value input can be used instead of a switching control input. If the parameter “control value input” on parameter card “override 1, lock” is enabled, this communication object is hidden and communication object “override 1, lock” is shown instead.

A Override 1, lock, control value

No.	Object name	Function	Datapoint type	Flags
30	A Override 1, lock, control value	Value	5.001 percent (0 … 100 %) 5.010 counting impulses (0 … 255) 9.001 temperature °C 9.004 illuminance lx 9.021 current mA 9.024 output kW 14.056 output W	CW

Function:

This communication object enables the use of a control value as the input value for override.

Availability:

The communication object “override 1, lock, control value” is only displayed if the parameter “override 1” is set to “lock” (parameter card “functions, objects”) and the parameter “control value input” (parameter “override 1, lock) is set to “enabled.”

Alternatively, a switching input can be used instead of a control value input. If the parameter “control value input” on parameter card “override 1, lock” is disabled, this communication object is hidden and communication object “override 1, lock” is shown.

A Override 1, lock status

No.	Object name	Function	Datapoint type	Flags
32	A Override 1, lock, status	On / Off	1.002 Boolean	CRT

Function:

This status object is used to report that override 1 is active.

Availability:

The communication object “override 1, lock, status” is only displayed if the parameter “status override” is set to “enabled” (“override 1, lock” parameter card).

6.5.6.3 Parameters for the override “lock” on the parameter card “override x, lock.”

Control value input

Parameter	Settings
Control value input	Disable Enable

Function:

This parameter defines whether instead of the switching input a control value input should be used for the activation and deactivation of the override function.

Other parameters:

If the parameter “control value input” is in the “enabled” status, parameters for the datatype of the control value input and the threshold are displayed.

Parameters for the control value input on the “control value input” parameter card [→ 64]

Communication object:

If the parameter “control value input” is in the status “enabled,” the communication object “override 1, lock” is hidden and the parameter “override 1, lock, control value” is shown.

Invert override input

Parameter	Settings
Invert override input	No Yes

Function:

This parameter defines whether the input value of the communication object “override 1, lock” should be used directly or inverted.

Response of switching value/dimming value on override deactivation

Parameter	Settings
Response of switching value/dimming value on override deactivation	No change Dimming value according to parameter Updated value

Function:

This parameter defines which value is passed on upon deactivation of the override at the output of the function block. The following settings are possible:

- **No change:**
  The value at the output is retained until a new value arrives at the input of the function block.
- **Dimming value according to parameter:**
  The parameter “value on deactivation (%)” is displayed. Here it is possible to define which value is passed on upon deactivation of the override.
- **Updated value:**
  The value at the input of the function block is passed on at the output of the function block.

Value at deactivation (%)

Parameter	Settings
Value at deactivation (%)	0…100

Function:

This parameter can be used to define which value is passed on upon deactivation of the override, if the option “dimming value according to parameter” was selected in the parameter “behavior of switching value/dimming value on override deactivation.”

Status override

Parameter	Settings
Status override	Disable Enable
Function: This parameter is used to activate or deactivate the communication object for the status of override 1. This communication object is used to report whether the override is active. **More information:** Status [→ 99]	

6.5.7 Override “central override”

When mains voltage is recovered, the override function “central override” is “deactivated.”

Example:

For application cases in which central control is required, e.g. for emergency lighting or in case of a fire, the “central override” is available.

6.5.7.1 Override “central override” process diagram

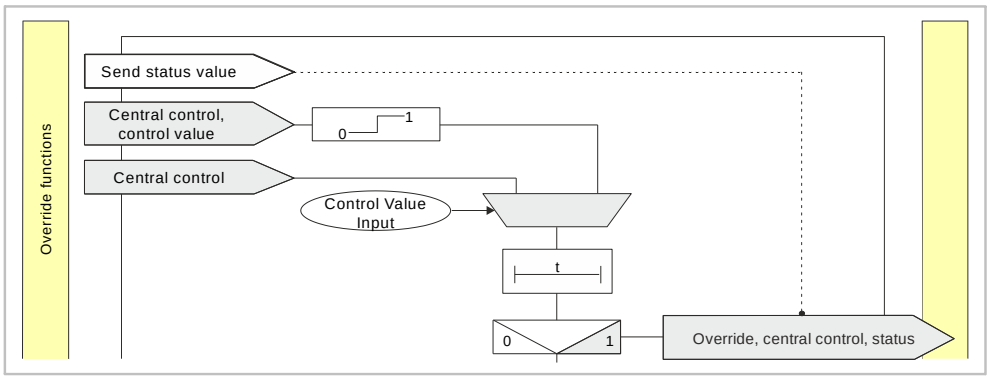


Fig. 16: Central override

6.5.7.2 Communication objects for the override “central override”

A Override 1, central control

No.	Object name	Function	Datapoint type	Flags
29	A Override 1, central control	On / Off	1.003 enable	CRT

Function:

This communication object can be used to fix an output at the current value and switch it on or off irrespective of the upstream sub-functions. The state can be retained permanently or for a limited time.

The central override is active when the value of the communication object is “on.”

If an inversion is configured, the central override is active when the object value is “off.”

If the central override is deactivated, the current value of the processing chain at the input of the function block is passed on to the output. After releasing the central override object, the last received value is processed.

The central control object ensures that all upstream function blocks are internally saved, but not evaluated and sent.

Availability/alternative:

The communication object “override 1, central control” is only displayed when the parameter “override 1” is set to “central override” (“functions, objects” parameter card).

Alternatively, a control value input can be used instead of a switching control input. If the parameter “control value input” on parameter card “override 1, central control” is enabled, this communication object is hidden and communication object “override 1, central control, control value” is shown instead.

A Override 1, central control, control value

No.	Object name	Function	Datapoint type	Flags
30	A Override 1, central control, control value	Value	5.001 percent (0 … 100 %) 5.010 counting impulses (0 … 255) 9.001 temperature °C 9.004 illuminance lx 9.021 current mA 9.024 output kW 14.056 output W	CW

Function:

This communication object enables the use of a control value as the input value for override.

Availability:

The communication object “override 1, central control, control value” is only displayed if the parameter “override 1” is set to “central override” (parameter card “functions, objects”) and the parameter “control value input” (parameter “override 1, central control) is set to “enabled.”

Alternatively, a switching input can be used instead of a control value input. If the parameter “control value input” on parameter card “override 1, central control” is disabled, this communication object is hidden and communication object “override 1, central control” is shown.

A Override 1, central control, status

No.	Object name	Function	Datapoint type	Flags
32	A Override 1, central control, status	On / Off	1.002 Boolean	CRT

Function:

This status object is used to report that override 1 is active.

Availability:

The communication object “override 1, central control, status” is only displayed if the parameter “status override” is set to “enabled” (“override 1, central override” parameter card).

More information:

Status [→ 99]

6.5.7.3 Parameters for the override “central override” on the parameter card “override x, central control.”

Control value input

Parameter	Settings
Control value input	Disable Enable

Function:

This parameter defines whether instead of the switching input a control value input should be used for the activation and deactivation of the override function.

Other parameters:

If the parameter “control value input” is in the “enabled” status, parameters for the datatype of the control value input and the threshold are displayed.

Parameters for the control value input on the “control value input” parameter card [→ 64]

Communication object:

If the parameter “control value input” is in the status “enabled,” the communication object “override 1, central control” is hidden and the parameter “override 1, central control, control value” is shown.

Invert override input

Parameter	Settings
Invert override input	No Yes

Function:

This parameter defines whether the input value of the communication object “override 1, central override” should be used directly or inverted.

Monitoring time

Parameter	Settings
Monitoring time (hh:mm:ss)	00:00:00...18:12:15

Function:

This parameter defines whether the cyclical input of telegrams to the communication object for central override should be monitored and how long the monitoring time is.

With a parameter value of 00:00:00, no monitoring takes place.

For all other parameter values, the cyclical input of deactivation telegrams is monitored. If the monitoring time is exceeded, the central override is activated.

With the reception of the next deactivation telegram, the central override is deactivated and the output of the function block remains unchanged.

Response of switching value/dimming value on override activation

Parameter	Settings
Response of switching value/dimming value on override activation	Off On No change Dimming value according to parameter

Function:

This parameter defines which value is passed on upon activation of the override at the output of the function block. The following settings are possible:

- **Off:**
  The value at the output of the function block is set to “off” (0).
- **On:**
  The value at the output of the function block is set to “on” (1).
- **No change:**
  The value waiting at the output of the function block is retained. Values arriving at the input of the function block are not passed on to the output.
- **Dimming value according to parameter:**
  The parameter “value on activation (%)” is displayed. Here it is possible to define which value is passed on upon activation of the override.

Value at activation (%)

Parameter	Settings
Value at activation (%)	0…100

Function:

This parameter can be used to define which value is passed on upon activation of the override, if the option “dimming value according to parameter” was selected in the parameter “behavior of switching value/dimming value on override activation.”

Response of switching value/dimming value on override deactivation

Parameter	Settings
Response of switching value/dimming value on override deactivation	No change Dimming value according to parameter Updated value

Function:

This parameter defines which value is passed on upon deactivation of the override at the output of the function block. The following settings are possible:

- **No change:**
  The value at the output is retained until a new value arrives at the input of the function block.
- **Dimming value according to parameter:**
  The parameter “value on deactivation (%)” is displayed. Here it is possible to define which value is passed on upon deactivation of the override.
- **Updated value:**
  The value at the input of the function block is passed on at the output of the function block.

Value at deactivation (%)

Parameter	Settings
Value at deactivation (%)	0…100

Function:

This parameter can be used to define which value is passed on upon deactivation of the override, if the option “dimming value according to parameter” was selected in the parameter “behavior of switching value/dimming value on override deactivation.”

Status override

Parameter	Settings
Status override	Disable Enable

Function:

This parameter is used to activate or deactivate the communication object for the status of override 1. This communication object is used to report whether the override is active.

More information:

Status [→ 99]

6.5.8 Override “user-defined”

For use cases in which none of the predefined override functions manual (ON), permanent OFF, blocking function or central override can be used, the “user-defined override function” is available.

This override function enables monitoring of cyclically incoming telegrams. In this case the override is activated when telegrams do not arrive within the monitoring time.

6.5.8.1 “User-defined control” process diagram

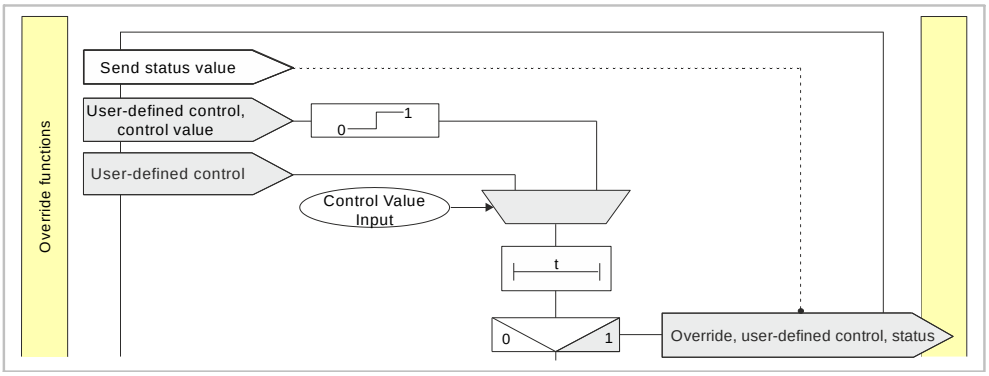


Fig. 17: Override user-defined control

6.5.8.2 Communication objects for the override “user-defined”

A Override 1, user-defined control

No.	Object name	Function	Datapoint type	Flags
29	A Override 1, user-defined control	On / Off	1.003 enable	CRT

Function:

This communication object can be used to fix an output at the current value and switch it on or off irrespective of the upstream sub-functions. The state can be retained permanently or for a limited time.

User-defined control is active when the value of the communication object is “on.”

If an inversion is configured, user-defined control is active when the object value is “off.”

The behavior upon activation or deactivation of user-defined control can be configured using a parameter.

The user-defined control object ensures that all upstream function blocks are internally saved, but not evaluated and sent.

Availability/alternative:

The communication object “override 1, user-defined control” is only displayed if the parameter “override 1” is set to “user-defined” (“functions, objects” parameter card).

Alternatively, a control value input can be used instead of a switching control input. If the parameter “control value input” on parameter card “override 1, user-defined control” is enabled, this communication object is hidden and communication object “override 1, user-defined control, control value” is shown instead.

A Override 1, user-defined control, control value

No.	Object name	Function	Datapoint type	Flags
30	A Override 1, user-defined control, control value	Value	5.001 percent (0 … 100 %) 5.010 counting impulses (0 … 255) 9.001 temperature °C 9.004 illuminance lx 9.021 current mA 9.024 output kW 14.056 output W	CW

Function:

This communication object enables the use of a control value as the input value for override.

Availability:

The communication object “override 1, user-defined control, control value” is only displayed if the parameter “override 1” is set to “user-defined control” (parameter card “functions, objects”) and the parameter “control value input” (parameter “override 1, user-defined control) is set to “enabled.”

Alternatively, a switching input can be used instead of a control value input. If the parameter “control value input” on parameter card “override 1, user-defined control” is disabled, this communication object is hidden and communication object “override 1, user-defined control” is shown.

A Override 1, user-defined control, status

No.	Object name	Function	Datapoint type	Flags
32	A Override 1, user-defined control, status	On / Off	1.002 Boolean	CRT

Function:

This status object is used to report that override 1 is active.

Availability:

The communication object “override 1, user-defined control, status” is only displayed if the parameter “status override” is set to “enabled” (“override 1, user-defined control” parameter card).

6.5.8.3 Parameters for the override “user-defined” on the parameter card “override x, user-defined control”

Control value input

Parameter	Settings
Control value input	Disable Enable

Function:

This parameter defines whether instead of the switching input a control value input should be used for the activation and deactivation of the override function.

Other parameters:

If the parameter “control value input” is in the “enabled” status, parameters for the datatype of the control value input and the threshold are displayed.

Parameters for the control value input on the “control value input” parameter card [→ 64]

Communication object:

If the parameter “control value input” is in the status “enabled,” the communication object “override 1, user-defined control” is hidden and the parameter “override 1, user-defined control, control value” is shown.

More information:

Control value input [→ 63]

Invert override input

Parameter	Settings
Invert override input	No Yes

Function:

This parameter defines whether the input value of the communication object “override 1, user-defined control” should be used directly or inverted.

Monitoring time

Parameter	Settings
Monitoring time (hh:mm:ss)	00:00:00...18:12:15

Function:

This parameter determines whether the cyclical input of telegrams to the communication object for user-defined override should be monitored and how long the monitoring time is.

With a parameter value of 00:00:00, no monitoring takes place.

For all other parameter values, the cyclical input of deactivation telegrams is monitored. If the monitoring time is exceeded, the override is activated.

With the reception of the next deactivation telegram, the override is deactivated. The parameter “behavior of switching value/dimming value on override deactivation” is used to define which value is passed on to the output of the function block upon deactivation of the override.

Response of switching value/dimming value on override activation

Parameter	Settings
Response of switching value/dimming value on override activation	Off On No change Dimming value according to parameter

Function:

This parameter defines which value is passed on upon activation of the override at the output of the function block. The following settings are possible:

- **Off:**

  The value at the output of the function block is set to “off” (0).
- **On:**

  The value at the output of the function block is set to “on” (1).
- **No change:**

  The value waiting at the output of the function block is retained. Values arriving at the input of the function block are not passed on to the output.
- **Dimming value according to parameter:**

  The parameter “value on activation (%)” is displayed. Here it is possible to define which value is passed on upon activation of the override.

Value at activation (%)

Parameter	Settings
Value at activation (%)	0…100

Function:

This parameter can be used to define which value is passed on upon activation of the override, if the option “dimming value according to parameter” was selected in the parameter “behavior of switching value/dimming value on override activation.”

Override duration

Parameter	Settings
Override duration (hh:mm:ss)	00:00:00...18:12:15

Function:

This parameter defines the desired ON time with activated override.

The override duration is then re-started with each incoming activation telegram.

With a parameter value of 00:00:00, the override duration is unlimited.

Note:

If the monitoring time is simultaneously set not equal to 00:00:00, the following behavior will be observed:

- **Monitoring time < override duration**

  The override duration is triggered using cyclically incoming activation telegrams, i.e. the configured override duration is not in effect.
- **Monitoring time > override duration:**

  With the elapse of the override duration, the override is switched off. With the next incoming activation telegram for monitoring, it is re-activated and the override duration begins again.

Response of switching value/dimming value on override deactivation

Parameter	Settings
Response of switching value/dimming value on override deactivation	No change Dimming value according to parameter Updated value

Function:

This parameter defines which value is passed on upon deactivation of the override at the output of the function block. The following settings are possible:

- **No change:**

  The value at the output is retained until a new value arrives at the input of the function block.
- **Dimming value according to parameter:**

  The parameter “value on deactivation (%)” is displayed. Here it is possible to define which value is passed on upon deactivation of the override.
- **Updated value:**

  The value at the input of the function block is passed on at the output of the function block.

Value at deactivation (%)

Parameter	Settings
Value at deactivation (%)	0…100

Function:

This parameter can be used to define which value is passed on upon deactivation of the override, if the option “dimming value according to parameter” was selected in the parameter “behavior of switching value/dimming value on override deactivation.”

Restart timer on deactivation of override

Parameter	Settings
Restart timer on deactivation of override	Disable Enable

Function:

This parameter determines whether an already expired timer (day, night mode or ON/OFF delay) is restarted with deactivation of the override (“enable”) or not (“disable”).

Availability/alternative:

The parameter “restart timer on deactivation of override” is only visible if the parameter “behavior on override deactivation” is set to “no change.”

Status override

Parameter	Settings
Status override	Disable Enable

Function:

This parameter is used to activate or deactivate the communication object for the status of override 1. This communication object is used to report whether the override is active.

More information:

Status [→ 99]

Start value / behavior of override input on mains voltage recovery

Parameter	Settings
Start value / behavior of override input on mains voltage recovery	On Off Deactivated Last value

Function:

This parameter can be used to set the desired start value/behavior of the override input of the function block “override 1, permanent OFF” when mains voltage is recovered. The following settings are possible:

- **Off**
  If this parameter is set, the override function block behaves as if an “off” had been received at the override block input when mains voltage is recovered.
- **On**
  If this parameter is set, the override function block behaves as if an “on” had been received at the override block input when mains voltage is recovered.
- **Deactivated**
  If this parameter is set to “deactivated,” the override function block is deactivated when mains voltage is recovered.
- **Last value**
  If this parameter is set to “last value,” the override input of the function block is set to the stored value in case of mains voltage failure.

6.5.9 Override “forced control”

Switching/dimming actuators with forced control allow an override of particular dimming outputs through centralized control interventions. For example, in energy-saving or night mode it is possible to forcibly prevent the switching on of particular lights or loads.

6.5.9.1 Override “forced control” process diagram

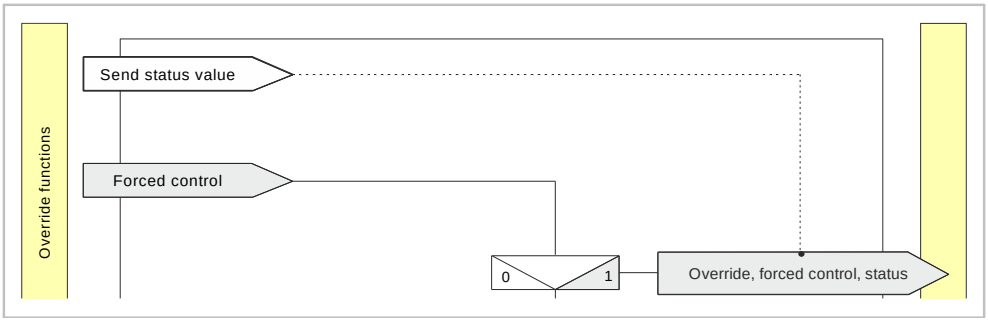


Fig. 18: Forced control

6.5.9.2 Communication objects for the override “forced control”

A Override 1, forced control

No.	Object name	Function	Datapoint type	Flags
31	A Override 1, forced control	On / Off	2.001 prio. Switching	CW

Function:

This 2-bit communication object enables forced switching on to a configured value and forced switching off irrespective of the upstream sub-functions.

The following settings are possible:

Bit 1	Bit 0	Function
0	0	Forced control not active
0	1	Forced control not active
1	0	Forcibly switched off
1	1	Forcibly switched on

Availability:

The communication object “override 1, forced control” is only displayed when the parameter “override 1” is set to “forced control” (“functions, objects” parameter card).

A Override 1, forced control, status

No.	Object name	Function	Datapoint type	Flags
32	A Override 1, forced control, status	On / Off	1.002 Boolean	CRT

Function:

This status object is used to report that override 1 is active.

Availability:

The communication object “override 1, forced control, status” is only displayed if the parameter “status override” is set to “enabled” (“override 1, [type of override]” parameter card).

6.5.9.3 Parameters for the override “forced control” on the parameter card “override x, forced control”

Value at activation (%)

Parameter	Settings
Value at activation (%)	0…100

Function:

This parameter can be used to define which value is passed on upon activation of the override.

Response of switching value/dimming value on override deactivation

Parameter	Settings
Response of switching value/dimming value on override deactivation	No change Dimming value according to parameter Updated value

Function:

This parameter defines which value is passed on upon deactivation of the override at the output of the function block. The following settings are possible:

- **No change:**
  The value at the output is retained until a new value arrives at the input of the function block.
- **Dimming value according to parameter:**
  The parameter “value on deactivation (%)” is displayed. Here it is possible to define which value is passed on upon deactivation of the override.
- **Updated value:**
  The value at the input of the function block is passed on at the output of the function block.

Value at deactivation (%)

Parameter	Settings
Value at deactivation (%)	0…100

Function:

This parameter can be used to define which value is passed on upon deactivation of the override, if the option “dimming value according to parameter” was selected in the parameter “behavior of switching value/dimming value on override deactivation.”

Restart timer on deactivation of override

Parameter	Settings
Restart timer on deactivation of override	Disable Enable

Function:

This parameter determines whether an already expired timer (day, night mode or ON/OFF delay) is restarted with deactivation of the override (“enable”) or not (“disable”).

Availability/alternative:

The parameter “restart timer on deactivation of override” is only visible if the parameter “behavior on override deactivation” is set to “no change.”

Status override

Parameter	Settings
Status override	Disable Enable

Function:

This parameter is used to activate or deactivate the communication object for the status of override 1. This communication object is used to report whether the override is active.

More information:

Status [→ 99]

Start value / behavior of override input on mains voltage recovery

Parameter	Settings
Start value / behavior of override input on mains voltage recovery	Activated - Switched Off Activated - Switched On Deactivated Last value

Function:

This parameter can be used to set the desired start value/behavior of the override input of the function block “override 1, forced control” when mains voltage is recovered. The following settings are possible:

- **Activated - Switched Off**

  If this parameter is set, the override function block is activated when mains voltage is recovered and the output is switched off.
- **Activated - Switched On**

  If this parameter is set, the override function block is activated when mains voltage is recovered and the output is switched on to the specified value.
- **Deactivated**

  If this parameter is set to “deactivated,” the override function block is deactivated when mains voltage is recovered.
- **Last value**

  If this parameter is set to “last value,” the override input of the function block is set to the stored value in case of mains voltage failure.

6.6 Status

6.6.1 “Status” process diagram

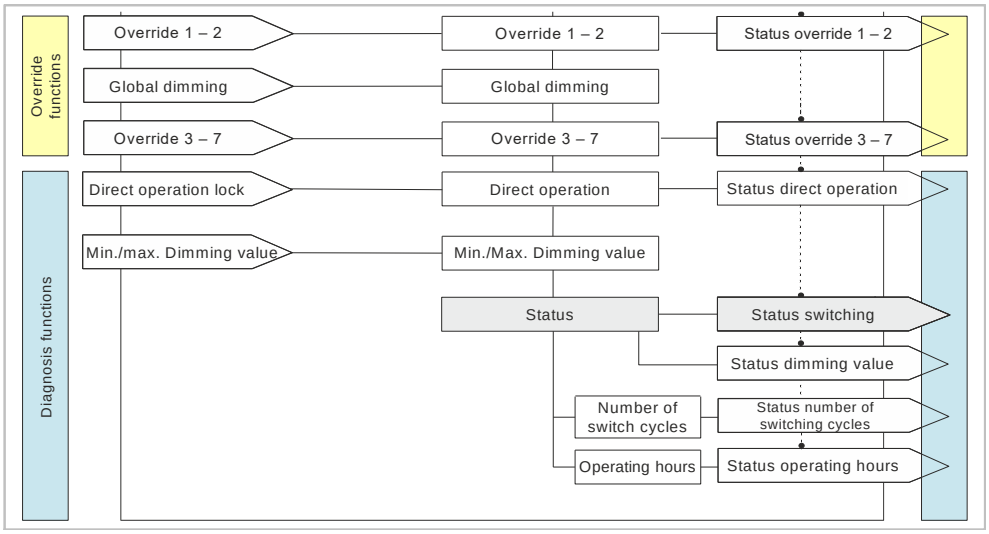


Fig. 19: Status

6.6.2 Communication objects for status

A Status switching

No.	Object name	Function	Datapoint type	Flags
10	A Status switching	On / Off	1.001 switching	CRT

Function:

In the “status switching” communication object, the current switching state of the respective output is stored and can be requested via a read request. The switching state is transmitted automatically after every object value change, if configured accordingly.

Availability:

The communication object “status switching” is only displayed if the parameter “status switching” is set to "enabled.”

A Status dimming value

No.	Object name	Function	Datapoint type	Flags
11	A Status dimming value	8-bit value	5.001 percent (0…100 %)	CRT

Function:

Depending on the selected parameter setting, this object can be used to request the current dimming status (dimming value) of the channel and, if the dimming value has been changed, to send it automatically.

Availability:

The communication object “status dimming value” is only displayed if the parameter “status dimming value” is set to "enabled” (“functions, objects” parameter card).

A Override 1, [type of override], status

No.	Object name	Function	Datapoint type	Flags
32	A Override 1, [type of override], status	On / Off	1.002 Boolean	CRT

Function:

This status object is used to report that override 1 is active.

Availability:

The communication object “override 1, [type of override], status” is only displayed if the parameter “status override” is set to “enabled” (“override 1, [type of override]” parameter card).

A Override 2, [type of override], status

No.	Object name	Function	Datapoint type	Flags
36	A Override 2, [type of override], status	On / Off	1.002 Boolean	CRT

Function:

This status object is used to report that override 2 is active.

Availability:

The communication object “override 2, [type of override], status” is only displayed if the parameter “status override” is set to “enabled” (“override 2, [type of override]” parameter card).

A Override 3, [type of override], status

No.	Object name	Function	Datapoint type	Flags
40	A Override 3, [type of override], status	On / Off	1.002 Boolean	CRT

Function:

This status object is used to report that override 3 is active.

Availability:

The communication object “override 3, [type of override], status” is only displayed if the parameter “status override” is set to “enabled” (“override 3, [type of override]” parameter card).

A Override 4, [type of override], status

No.	Object name	Function	Datapoint type	Flags
44	A Override 4, [type of override], status	On / Off	1.002 Boolean	CRT

Function:

This status object is used to report that override 4 is active.

Availability:

The communication object “override 4, [type of override], status” is only displayed if the parameter “status override” is set to “enabled” (“override 4, [type of override]” parameter card).

A Override 5, [type of override], status

No.	Object name	Function	Datapoint type	Flags
48	A Override 5, [type of override], status	On / Off	1.002 Boolean	CRT

Function:

This status object is used to report that override 5 is active.

Availability:

The communication object “override 5, [type of override], status” is only displayed if the parameter “status override” is set to “enabled” (“override 5, [type of override]” parameter card).

A Override 6, [type of override], status

No.	Object name	Function	Datapoint type	Flags
52	A Override 6, [type of override], status	On / Off	1.002 Boolean	CRT

Function:

This status object is used to report that override 6 is active.

Availability:

The communication object “override 6, [type of override], status” is only displayed if the parameter “status override” is set to “enabled” (“override 6, [type of override]” parameter card).

A Override 7, [type of override], status

No.	Object name	Function	Datapoint type	Flags
56	A Override 7, [type of override], status	On / Off	1.002 Boolean	CRT

Function:

This status object is used to report that override 7 is active.

Availability:

The communication object “override 7, [type of override], status” is only displayed if the parameter “status override” is set to “enabled” (“override 7, [type of override]” parameter card).

A Overrides status

No.	Object name	Function	Datapoint type	Flags
57	A Overrides status	1 = Active	1.002 Boolean	CRT

Function:

This status object is used to report that an override is active.

Availability:

The communication object “overrides status” is only displayed if the parameter “overrides status” is set to "enabled” (“functions, objects” parameter card).

More information:

Overrides [→ 78]

A Status direct operation

No.	Object name	Function	Datapoint type	Flags
60	A Status direct operation	On / Off	1.002 Boolean	CRT

Function:

This communication object is used to report whether direct operation is active or not.

Availability:

The communication object “status direct operation” is only displayed if the parameter “direct operation” and the parameter “status direct operation” are set to “enabled” (“functions, objects” parameter card).

More information:

Direct operation [→ 120]

A Number of switching cycles

No.	Object name	Function	Datapoint type	Flags
73	A Number of switching cycles	Value (in cycles)	12.001 counting impulses (without prefix)	CRT

Function:

This communication object can be used to request the number of switching cycles of this channel via the bus at any time. The value is increased by 1 as soon as the channel has been switched off and back on again.

Availability:

The communication object “number of switching cycles” is only displayed if the parameter “counting of switching cycles” is set to “enabled” (“functions, objects” parameter card).

More information:

Counting of switching cycles [→ 109]

A Exceedance of threshold for switching cycles

No.	Object name	Function	Datapoint type	Flags
76	A Exceedance of threshold for switching cycles	On / Off	1.002 Boolean	CRT

Function:

This object is used to report the hitting or exceeding of the respective threshold value for switching cycle counting or to request via the bus whether the threshold value has been exceeded.

Availability:

The communication object “exceedance of threshold for switching cycles” is only displayed if the parameter “counting of switching cycles” (on the “functions, objects” parameter card) and also the parameter “threshold monitoring” (on the “counting of switching cycles” parameter card) are set to “enabled.”

A Operating hours

No.	Object name	Function	Datapoint type	Flags
77	A Operating hours	Value (in hours)	12.001 counting impulses (without prefix)	CRT

Function:

This object can be used to request the current number of operating hours of the output (i.e. how many hours the output was switched on) via the bus at any time.

Availability:

The communication object “operating hours” is only displayed if the parameter “counting of operating hours” is set to “enabled” (on the “functions, objects” parameter card) and additionally the parameter “counting of operating hours in” (on the “operating hours” parameter card) is set to “hours.”

More information:

Counting of operating hours [→ 113]

A Operating hours

No.	Object name	Function	Datapoint type	Flags
78	A Operating hours	Value (in seconds)	13.100 time difference (s)	CRT

Function:

This object can be used to query the current operating time of the output in seconds (i.e. how many seconds the output was switched on) via the bus at any time.

Availability:

The communication object “operating hours” is only displayed if the parameter “counting of operating hours” (on the “functions, objects” parameter card) is set to “enabled” and additionally the parameter “counting of operating hours in” (on the “operating hours” parameter card) is set to “seconds.”

More information:

Counting of operating hours [→ 113]

A Exceedance of threshold for operating hours

No.	Object name	Function	Datapoint type	Flags
81	A Exceedance of threshold for operating hours	On / Off	1.002 Boolean	CRT

Function:

This object is used to report the hitting or exceeding of the respective threshold value for counting of operating hours or to request via the bus whether the threshold value has been exceeded.

Availability:

The communication object “exceedance of threshold for operating hours” is only displayed if the parameter “counting of operating hours” (on the “functions, objects” parameter card) and also the parameter “threshold monitoring” (on the “operating hours” parameter card) are set to “enabled.”

6.6.3 Parameters that are visible if the parameter “status ...” is set to “enabled”

Send status on request

Parameter	Settings
Send status on request	Disable Enable

Function:

This parameter can be used to set whether the status of the communication object is sent upon request of whether requests for the status value will be rejected.

The request is triggered via the communication object “send status values.”

Availability:

The communication object “send status on request” is only displayed if the parameter “status …” is set to "enabled.”

Send status on change of status

Parameter	Settings
Send status on change of status	Disable Enable

Function:

This parameter can be used to set whether the value of the status object is automatically sent after each status change.

Availability:

The communication object “send status on change of status” is only displayed if the respective parameter “status …” is set to "enabled.”

Send status cyclically

Parameter	Settings
Send status cyclically (hh:mm:ss)	00:00:00...18:12:15

Function:

This parameter can be used to set the time interval at which the value of the status object is sent cyclically.

If this is set to “00:00:00,” cyclic sending is deactivated.

Availability:

The communication object “send status cyclically” is only displayed if the respective parameter “status ...” is set to "enabled.”

6.6.4 Parameters for the status on the “functions, objects” parameter card

Overrides status

Parameter	Settings
Overrides status	Disable Enable

Function:

This parameter is used to activate or deactivate the communication object for the status of the overrides. This communication object is used to report whether the override is active.

Availability:

The parameter “overrides status” is displayed as soon as an override is activated.

Other parameters/parameter cards:

If the parameter “overrides status” is set to “enabled,” additional parameters are displayed with which it is possible to set when a status is sent.
Parameters that are visible if the parameter “status ...” is set to “enabled” [→ 103]

Communication object:

If the parameter “overrides status” is set to “enabled,” the communication object “overrides status” is displayed.

More information:

Overrides [→ 78]

Status direct operation

Parameter	Settings
Status direct operation	Disable Enable

Function:

This parameter is used to activate or deactivate the communication object for the status of direct operation. This communication object is used to report whether direct operation is active.

Availability:

The parameter “status direct operation” is only displayed if the respective parameter “status ...” is set to "enabled.”

Other parameters/parameter cards:

If the parameter “status direct operation” is set to “enabled,” parameters are displayed with which it is possible to set when a status is sent.
Parameters that are visible if the parameter “status ...” is set to “enabled” [→ 103]

Communication object:

If the parameter “status direct operation” is set to “enabled,” the communication object “status direct operation” is displayed.

More information:

Direct operation [→ 120]

Status switching

Parameter	Settings
Status switching	Disable Enable

Function:

This parameter is used to define whether the communication object “status switching” is available. This status object can be used, for example, to display the current switching state of the output.

Other parameters/parameter cards:

If the parameter “status switching” is set to “enabled,” parameters are displayed with which it is possible to set when a status is sent.
Parameters that are visible if the parameter “status ...” is set to “enabled” [→ 103]

Communication object:

If the parameter “status switching” is set to “enabled,” the communication object “status switching” is displayed.

Status dimming value

Parameter	Settings
Status dimming value	Disable Enable

Function:

This parameter is used to activate or deactivate the communication object “status dimming value.” This communication object is used to report the current dimming value.

Other parameters/parameter cards:

If the parameter “status dimming value” is set to “enabled,” parameters are displayed with which it is possible to set when a status is sent.
Parameters that are visible if the parameter “status ...” is set to “enabled” [→ 103]

Communication object:

If the parameter “status dimming value” is set to “enabled,” the communication object “status dimming value” is displayed.

Counting of switching cycles

Parameter	Settings
Counting of switching cycles	Disable Enable

Function:

This parameter is used to activate the counting of switching cycles for the respective output (i.e. how frequently an output was switched on and off). The switching cycle counter is used to monitor the connected load.

Other parameter cards:

If the parameter “counting of switching cycles” is set to “enabled,” the parameter card “counting of switching cycles” is displayed.

Communication object:

If the parameter “counting of switching cycles” is set to “enabled,” the communication objects “number of switching cycles – value (in cycles)” and “number of switching cycles – set value (in cycles)” are displayed.

More information:

Counting of switching cycles [→ 109]

Counting of operating hours

Parameter	Settings
Counting of operating hours	Disable Enable
Function: The operating hours counter is used to record the operating hours of the channel, i.e. how many hours the channel has been switched on. **Other parameters/parameter cards:** If the parameter “counting of operating hours” is set to “enabled,” the parameter card “operating hours” is displayed. **Communication objects:** If the parameter “counting of operating hours” is set to “enabled,” the communication objects “counting of operating hours” and “counting of operating hours – set value” are displayed.	

6.6.5 Parameters for the status on the “override x, [type of override]” parameter card

Status override

Parameter	Settings
Status override	Disable Enable
Function: This parameter is used to activate or deactivate the communication object for the status of override x. This communication object is used to report whether the override is active. **Other parameters:** If the parameter “status override” is set to “enable,” additional parameters for sending the status of the override are displayed Parameters that are visible if the parameter “status ...” is set to “enabled” [→ 103]	

6.6.6 Parameters for the status on the “switching cycle” parameter card

Threshold monitoring

Parameter	Settings
Threshold monitoring	Disable Enable
Function: This parameter is used to activate threshold monitoring. **Other parameters:** If the parameter “threshold monitoring” is set to “enable,” the parameter “threshold for switching cycles” and parameters for sending the status of the threshold are also displayed. Parameters that are visible if the parameter “status ...” is set to “enabled” [→ 103] **Communication objects:** If the parameter “threshold monitoring” is set to “enabled,” the communication objects “threshold for switching cycles” and “exceedance of threshold for switching cycles” are additionally displayed.	

6.6.7 Parameters for the status on the “operating hours” parameter card

Threshold monitoring

Parameter	Settings
Threshold monitoring	Disable Enable

Function:

This parameter is used to activate threshold monitoring.

Other parameters:

If the parameter “threshold monitoring” is set to “enabled,” the parameter “threshold for operating hours” and the parameters for sending the status of the threshold value are also displayed. Parameters that are visible if the parameter “status ...” is set to “enabled” [→ 103]

Communication object:

If the parameter “threshold monitoring” is set to “enabled,” the communication objects “threshold for operating hours” and “exceedance of threshold for operating hours” are additionally displayed.

6.7 Error messages

The following error messages are available as communication objects for each channel:

- External voltage on DALI line
- Lamps defective
- Short circuit of DALI line
- No ECG found

In the event of an error/failure, the device’s display flashes. In addition, an “F” is displayed in the first position on the display together with a code in the second position.

Refer to the Error messages [→ 13] chapter for descriptions of the error codes and troubleshooting.

6.7.1 Communication objects on error messages

A Status failure external voltage on DALI line

No.	Object name	Function	Datapoint type	Flags
90	A Status failure external voltage on DALI line	1 = failure	1.002 Boolean	CRT

Function:

The communication object “status failure external voltage on DALI line” is used to report incorrect voltage on the DALI line.

Availability:

The communication object “status failure external voltage on DALI line” is only displayed if the parameter “status failure external voltage on DALI line” is set to “enabled” (on the “functions, objects” parameter card).

A Status failure lights defective

No.	Object name	Function	Datapoint type	Flags
91	A Status failure lights defective	1 = failure	1.002 Boolean	CRT

Function:

The communication object “status failure lights defective” is used to report one or more defective lights.

Availability:

The communication object “status failure lights defective” is only displayed if the parameter “status failure lights defective” is set to “enabled” (on the “functions, objects” parameter card).

A Status failure short circuit DALI line

No.	Object name	Function	Datapoint type	Flags
92	A Status failure short circuit DALI line	1 = failure	1.002 Boolean	CRT

Function:

The communication object “status failure short circuit on DALI line” is used to report a short circuit on the DALI line.

Availability:

The communication object “status failure short circuit DALI line” is only displayed if the parameter “status failure short circuit DALI line” is set to “enabled” (on the “functions, objects” parameter card).

A Status failure no ECG found

No.	Object name	Function	Datapoint type	Flags
93	A Status failure no ECG found	1 = failure	1.002 Boolean	CRT

Function:

The communication object “status failure no ECG found” is used to report an error if no ECG is connected.

Availability:

The communication object “status failure no ECG found” is only displayed if the parameter “status failure no ECG found” is set to “enabled” (on the “functions, objects” parameter card).

6.7.2 Parameters for error messages

Status failure external voltage on DALI line

Parameter	Settings
Status failure external voltage on DALI line	Disable Enable

Function:

This parameter is used to set whether the communication object “status failure external voltage on DALI line” is to be displayed. This object is used to report an error, if external voltage due to incorrectly connected lines on the DALI A and/or B terminals is detected during initialization.

Other parameters:

If the parameter is set to “enabled,” parameters are displayed with which it is possible to set when a status is sent.
Parameters that are visible if the parameter “status ...” is set to “enabled” [→ 103]

More information:

Error messages [→ 13]

Status failure lights defective

Parameter	Settings
Status failure lights defective	Disable Enable

Function:

This parameter is used to set whether the communication object “status failure lights defective” is to be displayed. This object is used to report an error if at least one of the connected lights is defective.

Other parameters:

If the parameter is set to “enabled,” parameters are displayed with which it is possible to set when a status is sent.
Parameters that are visible if the parameter “status ...” is set to “enabled” [→ 103]

Status failure short circuit DALI line

Parameter	Settings
Status failure short circuit DALI line	Disable Enable
Function: This parameter is used to set whether the communication object “status failure short circuit DALI line” is to be displayed. This object is used to report an error if the DALI line is short circuited. The DALI gateway can no longer control the DALI devices. **Other parameters:** If the parameter is set to “enabled,” parameters are displayed with which it is possible to set when a status is sent. Parameters that are visible if the parameter “status ...” is set to “enabled” [→ 103]	

Status failure no ECG found

Parameter	Settings
Status failure no ECG found	Disable Enable
Function: This parameter is used to set whether the communication object “status failure no ECG found” is to be displayed. This object is used to report an error if no connected ECG is found. **Other parameters:** If the parameter is set to “enabled,” parameters are displayed with which it is possible to set when a status is sent. Parameters that are visible if the parameter “status ...” is set to “enabled” [→ 103]	

6.8 Counting of switching cycles

The switching cycle counter is used to monitor the connected load.

The counter is updated with each transition from “on” to “off.” If flashing takes place before switching off (see also Warning before switching Off [→ 118]), each switching cycle is counted during flashing. If switching is still ongoing during mains voltage failure and a threshold exceedance occurs, this is transmitted when mains voltage is recovered.

The object “exceedance of threshold for switching cycles” is only sent with an object value change (one-off). So if a new threshold is received or the counter value is reset, threshold exceedance is only sent if a change to the object for threshold monitoring occurs as a result. If the counter object has reached its maximum possible value (4 294 967 295), it remains at this value until the counter object is reset.

The reset is executed by writing a value in the object “number of switching cycles (set value).”

In case of mains voltage failure, the values of all three objects of switching cycle counting are saved so they can be restored on mains voltage recovery. After a parameter download, the three objects are not reset.

The counting of switching cycles is active even if the parameter “counting of switching cycles” is set to “No.” If activated, the valid count at that point in time in the “number of switching cycles” object is used.

6.8.1 Process diagram for the counting of switching cycles

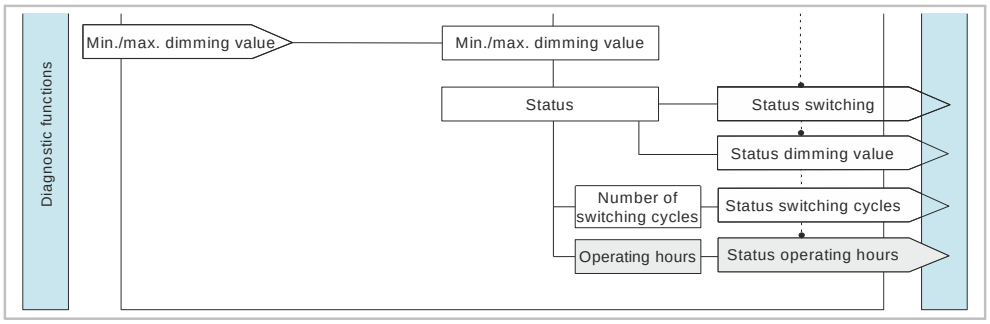


Fig. 20: Counting of switching cycles (overview)

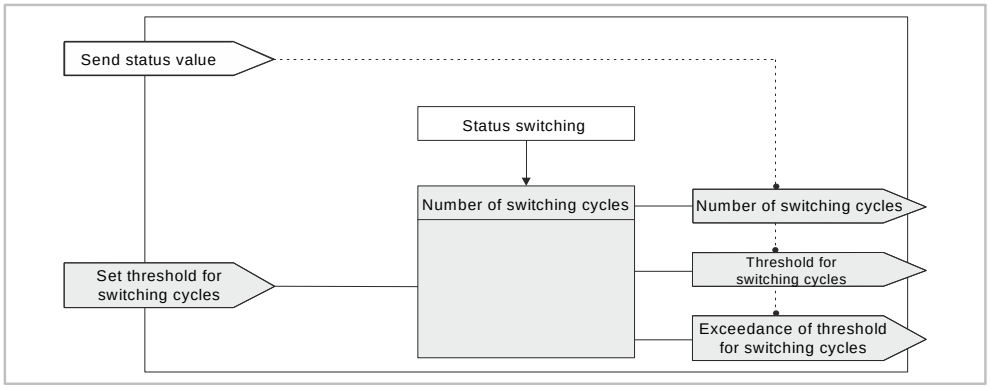


Fig. 21: Counting of switching cycles (details)

6.8.2 Communication objects for switching cycle counting

A Number of switching cycles

No.	Object name	Function	Datapoint type	Flags
73	A Number of switching cycles	Value (in cycles)	12.001 counting impulses (without prefix)	CRT

Function:

This communication object can be used to request the number of switching cycles of this channel via the bus at any time. The value is increased by 1 as soon as the channel has been switched off and back on again.

Availability:

The communication object “number of switching cycles” is only displayed if the parameter “counting of switching cycles” is set to “enabled” (“functions, objects” parameter card).

A Number of switching cycles

No.	Object name	Function	Datapoint type	Flags
74	A Number of switching cycles	Set value (in cycles)	12.001 counting impulses (without prefix)	CW

Function:

This communication object can be used to set the value for switching cycle counting for the output to an integer value in the range from 0 to 4294967295 via the bus.

Availability:

The communication object “number of switching cycles” is only displayed if the parameter “counting of switching cycles” is set to “enabled” (“functions, objects” parameter card).

A Threshold for number of switching cycles

No.	Object name	Function	Datapoint type	Flags
75	A Threshold for number of switching cycles	Set / request value (in cycles)	12.001 counting impulses (without prefix)	CRW

Function:

This communication object can be used to read and set the threshold value for switching cycle counting for the output to an integer value in the range from 1 to 4294967295 via the bus.

Availability:

The communication object “threshold for switching cycles” is only displayed if the parameter “counting of switching cycles” (on the “functions, objects” parameter card) and also the parameter “threshold monitoring” (on the “counting of switching cycles” parameter card) are set to “enabled.”

A Exceedance of threshold for switching cycles

No.	Object name	Function	Datapoint type	Flags
76	A Exceedance of threshold for switching cycles	On / Off	1.002 Boolean	CRT

Function:

This object is used to report the hitting or exceeding of the respective threshold value for switching cycle counting or to request via the bus whether the threshold value has been exceeded.

Availability:

The communication object “exceedance of threshold for switching cycles” is only displayed if the parameter “counting of switching cycles” (on the “functions, objects” parameter card) and also the parameter “threshold monitoring” (on the “counting of switching cycles” parameter card) are set to “enabled.”

6.8.3 Parameters for the counting of switching cycles on the “functions, objects” parameter card

Counting of switching cycles

Parameter	Settings
Counting of switching cycles	Disable Enable

Function:

This parameter is used to activate the counting of switching cycles for the respective output (i.e. how frequently an output was switched on and off). The switching cycle counter is used to monitor the connected load.

Other parameter cards:

If the parameter “counting of switching cycles” is set to “enabled,” the parameter card “counting of switching cycles” is displayed.

Communication object:

If the parameter “counting of switching cycles” is set to “enabled,” the communication objects “number of switching cycles – value (in cycles)” and “number of switching cycles – set value (in cycles)” are displayed.

More information:

Counting of switching cycles [→ 109]

6.8.4 Parameters for the counting of switching cycles on the “counting of switching cycles” parameter card

Send status on request

Parameter	Settings
Send status on request	Disable Enable

Function:

This parameter can be used to set whether the status of the communication object “number of switching cycles” is sent upon request or whether requests for the status value will be rejected.

The request is triggered via the communication object “send status values.”

Send status on change of status

Parameter	Settings
Send status on change of status	Disable Enable

Function:

This parameter can be used to set whether the value of the communication object “number of switching cycles” is automatically sent after each value change. With the selection of “enabled,” an additional parameter is displayed through which it can be defined how many switch cycles there have to have been since the las transmission for the value to be sent again.

Other parameters/parameter cards:

If the parameter “send status on change of status” is set to “enabled,” the parameter “value change since last sent (cycles)” is also displayed.

“Value change since last sent (cycles)”

Parameter	Settings
“Value change since last sent (cycles)”	0…4 294 967 295

Function:

If the parameter “send status on change of status” is set to “enabled,” this parameter is used to define the change in value since the last transmission of the value of the communication object “number of switching cycles” required to trigger a new transmission of the value.

Note:

The configurable value “0” is interpreted as “1.”

Availability:

The parameter “value change since last sent (cycles)” is only displayed if the parameter “send status on change of status” is set to “enabled.”

Send status cyclically

Parameter	Settings
Send status cyclically (hh:mm:ss)	00:00:00...18:12:15

Function:

This parameter can be used to set the time interval at which the value of the communication object “number of switching cycles” is sent cyclically.

Threshold monitoring

Parameter	Settings
Threshold monitoring	Disable Enable

Function:

This parameter is used to activate threshold monitoring.

Other parameters:

If the parameter “threshold monitoring” is set to “enable,” the parameter “threshold for switching cycles” and parameters for sending the status of the threshold are also displayed.
Parameters that are visible if the parameter “status ...” is set to “enabled” [→ 103]

Communication objects:

If the parameter “threshold monitoring” is set to “enabled,” the communication objects “threshold for switching cycles” and “exceedance of threshold for switching cycles” are additionally displayed.

Threshold for switching cycles

Parameter	Settings
Threshold for switching cycles	0…4 294 967 295

Function:

This parameter can be used to configure a threshold for the number of switching cycles.

If the parameter “threshold monitoring” is set to “enabled,” when the threshold is reached or exceeded, a telegram is sent to the bus via the communication object “exceedance of threshold for switching cycles.”

Availability:

The communication object “threshold for switching cycles” is only displayed if the parameter “threshold monitoring” is set to “enabled.”

6.9 Counting of operating hours

The operating hours counter is used to monitor the connected load.

The operating hours are recorded as long as the switch status of the channel is “on.” Only whole seconds are recorded. After 3600 counted seconds, the object value of the operating hours is raised by one.

The object “exceedance of threshold for operating hours” is only sent with an object value change (one-off). Hence, a new threshold is received or the counter value is reset by writing to the object, the threshold exceedance is only sent if a change to the object for threshold monitoring occurs as a result. If the counter object has reached its maximum value (4 294 967 295), it remains at this value until the counter object is reset.

In case of mains voltage failure, counting of operating hours cannot be continued.

In case of mains voltage failure, the values of all three objects for counting of operating hours are saved to enable their recovery on mains voltage recovery. The values of the three objects are not reset by loading the configuration with the ETS.

The counting of operating hours is active even if the parameter “counting of operating hours” is set to “disable.”

6.9.1 Process diagram for counting of operating hours

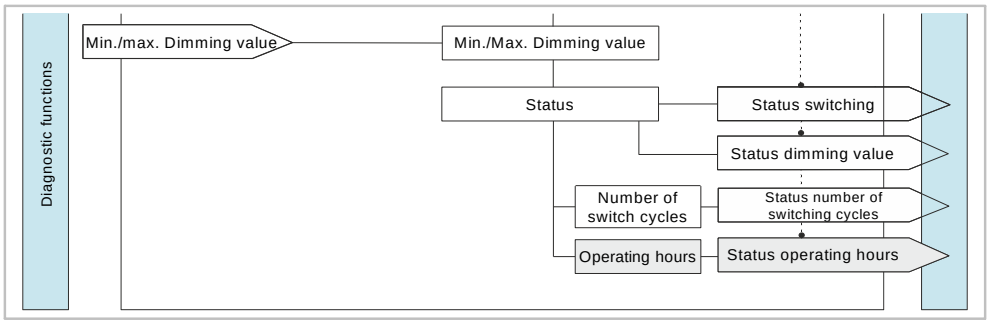


Fig. 22: Counting of operating hours (overview)

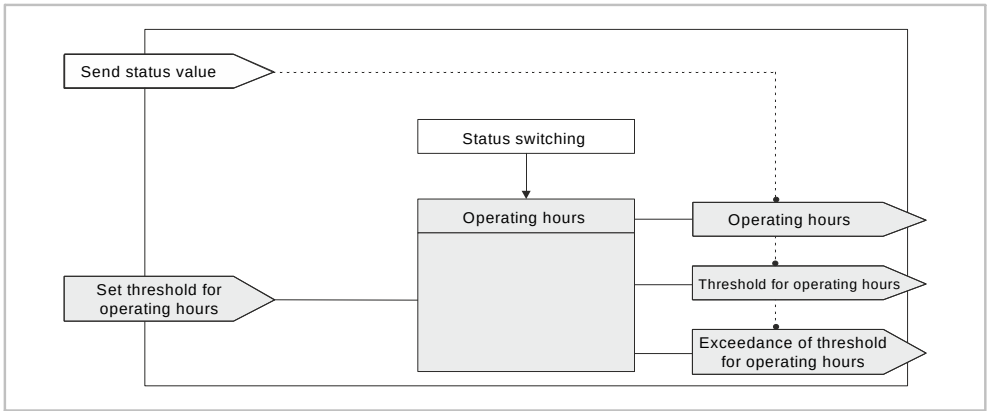


Fig. 23: Counting of operating hours (details)

6.9.2 Communication objects for counting of operating hours

A Operating hours

No.	Object name	Function	Datapoint type	Flags
77	A Operating hours	Value (in hours)	12.001 counting impulses (without prefix)	CRT

Function:

This object can be used to request the current number of operating hours of the output (i.e. how many hours the output was switched on) via the bus at any time.

Availability:

The communication object “operating hours” is only displayed if the parameter “counting of operating hours” is set to “enabled” (on the “functions, objects” parameter card) and additionally the parameter “counting of operating hours in” (on the “operating hours” parameter card) is set to “hours.”

A Operating hours

No.	Object name	Function	Datapoint type	Flags
78	A Operating hours	Value (in seconds)	13.100 time difference (s)	CRT

Function:

This object can be used to query the current operating time of the output in seconds (i.e. how many seconds the output was switched on) via the bus at any time.

Availability:

The communication object “operating hours” is only displayed if the parameter “counting of operating hours” (on the “functions, objects” parameter card) is set to “enabled” and additionally the parameter “counting of operating hours in” (on the “operating hours” parameter card) is set to “seconds.”

A Operating hours

No.	Object name	Function	Datapoint type	Flags
79	A Operating hours	Set value	12.001 counting impulses (without prefix)	CW

Function:

This object can be used to set the value for counting of operating hours for the output to an integer value in the range from 0 to 4294967295 via the bus.

This value is always set in hours, irrespective of the configured operating hours setting for the output in seconds or hours.

Availability:

The communication object “operating hours” is only displayed if the parameter “counting of operating hours” is set to "enabled” (“functions, objects” parameter card).

A Threshold for operating hours

No.	Object name	Function	Datapoint type	Flags
80	A Threshold for operating hours	Set / request value	12.001 counting impulses (without prefix)	CRW

Function:

This object can be used to transmit and read the threshold value for counting of operating hours for the output to an integer value in the range from 1 to 4294967295 via the bus to the switching/dimming actuator.

The threshold is transmitted in whole hours.

Availability:

The communication object “threshold for operating hours” is only displayed if the parameter “counting of operating hours” (on the “functions, objects” parameter card) and also the parameter “threshold monitoring” (on the “operating hours” parameter card) are set to “enabled.”

A Exceedance of threshold for operating hours

No.	Object name	Function	Datapoint type	Flags
81	A Exceedance of threshold for operating hours	On / Off	1.002 Boolean	CRT

Function:

This object is used to report the hitting or exceeding of the respective threshold value for counting of operating hours or to request via the bus whether the threshold value has been exceeded.

Availability:

The communication object “exceedance of threshold for operating hours” is only displayed if the parameter “counting of operating hours” (on the “functions, objects” parameter card) and also the parameter “threshold monitoring” (on the “operating hours” parameter card) are set to “enabled.”

6.9.3 Parameters for the counting of operating hours on the “functions, objects” parameter card

Counting of operating hours

Parameter	Settings
Counting of operating hours	Disable Enable

Function:

The operating hours counter is used to record the operating hours of the channel, i.e. how many hours the channel has been switched on.

Other parameters/parameter cards:

If the parameter “counting of operating hours” is set to “enabled,” the parameter card “operating hours” is displayed.

Communication objects:

If the parameter “counting of operating hours” is set to “enabled,” the communication objects “counting of operating hours” and “counting of operating hours – set value” are displayed.

6.9.4 Parameters for the counting of operating hours on the “operating hours” parameter card

Counting of operating hours in

Parameter	Settings
Counting of operating hours in	Hours Seconds

Function:

This parameter is used to set the counting of operating hours to hours or seconds.

Communication objects:

If the parameter “counting of operating hours in” is set to “seconds,” the communication object “operating hours – value (in seconds)” is displayed instead of the communication object “operating hours – value (in hours).”

Send status on request

Parameter	Settings
Send status on request	Disable Enable

Function:

This parameter can be used to set whether the status of the communication object “counting of operating hours” is sent upon request of whether requests for the status value will be rejected.

The request is triggered via the communication object “send status values.”

Send status on change of status

Parameter	Settings
Send status on change of status	Disable Enable

Function:

This parameter can be used to set whether the value of the communication object “counting of operating hours” is automatically sent after each value change. With the selection of “enabled,” an additional parameter is displayed through which it can be defined how much time has to have passed since the last transmission for the value to be sent again.

Other parameters/parameter cards:

If the parameter “send status on change of status” is set to “enabled,” the parameter “value change since last sent (hours)” is also displayed. With counting of operating hours in seconds, the parameter “value change since last sent (seconds)” is displayed.

“Value change since last sent (hours)” “Value change since last sent (seconds)”

Parameter	Settings
“Value change since last sent (hours)”	0…4 294 967 295
“Value change since last sent (seconds)”	0…4 294 967 295

Function:

If the parameter “send status on change of status” is set to “enabled,” this parameter is used to define the change in value since the last transmission of the value of the communication object “operating hours” required to trigger a new transmission of the value.

Availability:

The parameter “value change since last sent (hours)” is only displayed if the parameter “counting of operating hours in” is set to “hours” and the parameter “send status on change of status” is set to “enabled.”

The parameter “value change since last sent (seconds)” is only displayed if the parameter “counting of operating hours in” is set to “seconds” and the parameter “send status on change of status” is set to “enabled.”

Send status cyclically

Parameter	Settings
Send status cyclically (hh:mm:ss)	00:00:00...18:12:15
Function: This parameter can be used to set the time interval at which the value of the communication object “operating hours” is sent cyclically.	

Threshold monitoring

Parameter	Settings
Threshold monitoring	Disable Enable
Function: This parameter is used to activate threshold monitoring. **Other parameters:** If the parameter “threshold monitoring” is set to “enabled,” the parameter “threshold for operating hours” and the parameters for sending the status of the threshold value are also displayed. Parameters that are visible if the parameter “status ...” is set to “enabled” [→ 103] **Communication object:** If the parameter “threshold monitoring” is set to “enabled,” the communication objects “threshold for operating hours” and “exceedance of threshold for operating hours” are additionally displayed.	

Threshold for operating hours

Parameter	Settings
Threshold for operating hours	0…4 294 967 295
Function: This parameter can be used to configure a threshold value for the respective output. If the parameter “threshold monitoring” is set to “enabled,” when the threshold is reached or exceeded, a telegram is sent to the bus via the communication object “exceedance of threshold for operating hours.” **Note:** The threshold is specified in whole hours, even if the parameter “counting of operating hours in” is set to “seconds.” **Availability:** The communication object “threshold for operating hours” is only displayed if the parameter “threshold monitoring” is set to “enabled.”	

6.10 Warning before switching Off

6.10.1 Communication object for “warning before switching off”

A Pre-warning expiration of timer period

No.	Object name	Function	Datapoint type	Flags
27	A Pre-warning expiration of timer period	On / Off	1.001 switching	CRT

Operating modes:

- Normal mode (if the parameter “night mode” is set to “enabled”)
- Timer mode
- Timer mode 2-fold (if the parameter “night mode” is set to “enabled”)

Function:

This communication object is used to signal the elapse of the timer period in timer mode or night mode. This can switch on a warning lamp, for example.

Availability:

The communication object “pre-warning expiration of timer period” is only displayed if the parameter “warning before switching off” is set to “via communication object” or “via briefly switching on - off via communication object” or “dim to half dimming value and via communication object.”

In timer mode the parameter “warning before switching off” is displayed an additional time if the parameter “night mode” was set to “enabled.”

6.10.2 Parameters for warning before switching off on the parameter card “normal mode,” “timer mode” or “timer mode 2-fold”

On the parameter cards “normal mode” and “timer mode 2-fold” the parameter “warning before switching off” is only displayed if the parameter “night mode” is set to “enabled.”

Warning before switching Off

Parameter	Settings
Warning before switching Off	No Via briefly switching on - off Via communicaton object Via briefly switching on - off and via communication object Dim to half dimming value Dim to half dimming value and via communication object

Function:

This parameter can be used to set whether after the elapse of the ON time the channel should immediately be switched off permanently or a warning should be issued before switching off. The following settings are possible:

- **“No”:**

  The output is immediately switched off without a warning.

With the following parameter settings, the output is not immediately permanently switched off. If the output for the lighting control is used, a user is pre-warned and has enough time to extend the ON time of the lighting or, if necessary, to turn the lights back on.

- **“Via briefly switching on - off”:**

  The output is switched off for the configurable warning signal period (default: 2 s) and then switched back on for a configurable period (difference: parameter “warning period” – parameter “warning signal period”).

  If, within the warning period, the output is switched back on e.g. via the object “switching,” the timer begins again. Otherwise the output switches off.

  Note: The warning signal period must be greater than the warning period as otherwise no warning is issued!

- **“Via communication object”:**

  With this option, the communication object “pre-warning expiration of timer period” is displayed. Through this object, a pre-warning, e.g. to switch on a warning lamp, can be sent to the bus.

  The elapse of the ON time of the timer is signaled via the communication object. At the same time a warning period begins whose duration is defined by the parameter “warning period.” The object value for the warning period is “1.” If, within the warning period, the output is switched back on e.g. via the object “switching,” the timer begins again. Otherwise the output switches off.

  Note: The warning signal period must be greater than the warning period as otherwise no warning is issued!

- **“Via briefly switching on - off and via communication object:”**

  This option combines the options “via briefly switching on - off” and “via communication object.”

- **“Dim to half dimming value”**

  With this option the output is dimmed down to half the dimming value upon expiry of the ON time. If, within the warning period, the output is switched back on e.g. via the object “switching,” the timer begins again. Otherwise the output switches off.

  During the warning, the status dimming value remains unchanged.

- **“Dim to half dimming value and via communication object”**

  This option combines the options “dim to half dimming value” and “via communication object.” During the warning, the status dimming value remains unchanged.

Other parameters/parameter cards:

Depending on the selected option, the following parameters “warning period” and “warning signal period” are also displayed.

Communication object:

If the parameter “warning before switching off” is set to the option “via communication object,” “via briefly switching on - off via communication object,” or “via dimming to half dimming value and via communication object,” the communication object “pre-warning expiration of timer period” is displayed.

More information:

Behavior in timer mode (1-fold) with setting “warning before switching off” = “short switch off/on” and “retriggering possible” = “1”. [→ 147]

Behavior in timer mode (1-fold) with setting “warning before switching off” = “dim to half dimming value” and “retriggering possible” = “1.” [→ 149]

Warning period

Parameter	Settings
Warning period (hh:mm:ss)	00:00:01…18:12:15

Function:

This parameter is used to set the warning period during which the output remains switched of after elapse of timer mode.

Warning signal period

Parameter	Settings
Warning signal period (hh:mm:ss)	12:00:00 AM…18:12:15

Function:

This parameter is used to set that after elapse of the ON time, the output is not immediately switched off permanently but instead initially just for the warning signal period (default: 2 seconds) and then switched back on for a configurable period (difference: parameter “warning period” – parameter “warning signal period”). After the elapse of this warning period, the output is permanently switched off. If the output for the lighting control is used, a user is pre-warned and has enough time to extend the ON time of the lighting or, if necessary, to turn the lights back on.

Note:

The warning signal period must be greater than the warning period as otherwise no warning is issued!

6.11 Direct operation

In direct operation, the switching/dimming actuator can be controlled using the buttons on the switching/dimming actuator. This enables the installer, for example, to check whether the switching/dimming actuator has been connected correctly.

6.11.1 Process diagram for direct operation

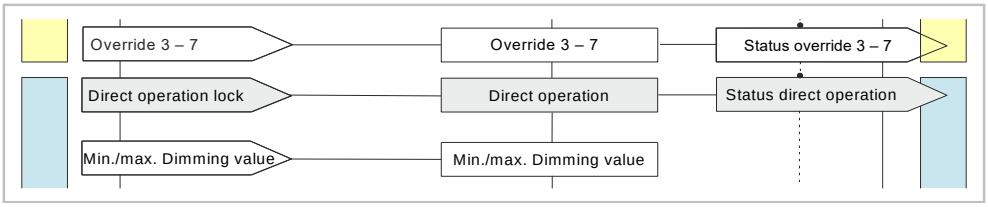


Fig. 24: Direct operation

6.11.2 Communication objects for direct operation

A Lock direct operation

No.	Object name	Function	Datapoint type	Flags
59	A Lock direct operation	On / Off	1.003 enable	CW

Function:

This communication object can be used to lock or enable direct operation (operation directly on the device).

Availability:

The communication object “direct operation lock” is only displayed if the parameter “direct operation” and the parameter “direct operation lockable” are set to “enabled” (“Functions, Objects” parameter card).

Example:

Enabling of direct operation through a key switch.

Note:

On mains voltage recovery, the setting is reset.

A Status direct operation

No.	Object name	Function	Datapoint type	Flags
60	A Status direct operation	On / Off	1.002 Boolean	CRT

Function:

This communication object is used to report whether direct operation is active or not.

Availability:

The communication object “status direct operation” is only displayed if the parameter “direct operation” and the parameter “status direct operation” are set to “enabled” (“functions, objects” parameter card).

6.11.3 Parameters for direct operation on the “functions, objects” parameter card

Direct operation

Parameter	Settings
Direct operation	Disable Enable

Function:

This parameter is used to disable or enable the operation of the switching/dimming actuator directly on the device.

Other parameters/parameter cards:

If the parameter “direct operation” is set to “enabled,” additional parameters are displayed with which it is possible to set when direct operation can be automatically reset or whether direct operation should be restricted. It can also be defined whether the status of direct operation should be disabled or enabled.

If the parameter “status direct operation” is set to “enabled,” parameters are displayed with which it is possible to set when a status is sent.
Parameters for the status on the “functions, objects” parameter card [→ 104]

Communication objects:

If the sub-parameter “direct operation lockable” is set to “enabled,” the communication object “direct operation lock” is displayed.

If the sub-parameter “status direct operation” is set to “enabled,” the communication object “status direct operation” is displayed.

Direct operation auto reset

Parameter	Settings
Direct operation auto reset (hh:mm:ss)	00:00:00...18:12:15

Function:

This parameter is used to set the time after which direct operation is automatically deactivated.

The setting “00:00:00” means that direct operation is not automatically reset but can only be deactivated directly on the device or through mains voltage failure and recovery.

Note:

If direct operation has been activated on the switching/dimming actuator, the switching/dimming actuator can only be controlled directly and not remotely. This parameter can be used to prevent direct operation from being unintentionally left switched on.

Direct operation lockable

Parameter	Settings
Direct operation lockable	Disable Enable
Function: This parameter can be used to control the enabling of direct operation via a communication object. **Communication objects:** If the parameter “direct operation lockable” is set to “enabled,” the communication object “direct operation lock” is displayed. **Example:** Enabling of direct operation through a key switch.	

Status direct operation

Parameter	Settings
Status direct operation	Disable Enable
Function: This parameter is used to activate or deactivate the communication object for the status of direct operation. This communication object is used to report whether direct operation is active. **Other parameters/parameter cards:** If the parameter “status direct operation” is set to “enabled,” parameters are displayed with which it is possible to set when a status is sent. Parameters that are visible if the parameter “status ...” is set to “enabled” [→ 103] **Communication objects:** If the parameter “status direct operation” is set to “enabled,” the communication object “status direct operation” is displayed.	

6.11.4 Operation in direct operation

Activate direct operation and switch brightness

- ◈ For each channel, briefly push the ‘Switch on, dim brighter’ button (< 1 s).
- ⇨ If direct operation is activated, a “d” is shown at the second position on the display.

Deactivate direct operation

1. To deactivate direct operation of an individual channel, hold down the ‘Deactivate direct operation’ button and briefly push the ‘Switch on, dim brighter’ or ‘Switch off, dim darker’ button for channel A or channel B (< 1 s).
2. To deactivate direct operation for all channels, briefly push the ‘Deactivate direct operation’ button.

⇨ If direct operation is deactivated, a “b” is shown at the second position on the display. The device is in bus mode.

Switching brightness in direct operation

- ◈ To activate or deactivate the load connected to the corresponding channel, briefly push the respective button ‘Switch on, dim brighter’ for channel A or channel B.

Dimming in direct operation

1. To dim brighter the load connected to the corresponding channel, push and hold (> 1 s) the button ‘Switch on, dim brighter’ for channel A or channel B until the desired brightness level is reached.
2. To dim darker the load connected to the corresponding channel, push and hold (> 1 s) the button ‘Switch off, dim darker’ for channel A or channel B until the desired brightness level is reached.

6.12 Color temperature control

The color temperature control is defined in standard DALI IEC 62386, in chapter 209 “Color Control.” The ECG is defined as device type 8. Device type 8 refers to color controllable lights. The unit for color temperature is Kelvin (K).

Switching/dimming actuator N 525D11, 2x DALI Broadcast can control the color temperature and brightness of ECG of device type 8.

The device can be used in human-centric lighting application because it can control the color temperature of a DALI LED from warm white to cold white ("tunable white").

Human-centric lighting (HCL) expands the concept of biologically effective lighting with holistic planning and covers the visual, emotional and biological effects of light. HCL supports human health, well-being and performance in the long-term.

The following table shows the color temperature values of different sources of light:

Color temperature:	Light source:
1000 – 1500 K	Candle
2600 K	Incandescent lamp (40 W)
2700 – 2800 K	Halogen lamp (230 V, eco-halogen, 30 – 60 W)
3000 K	Incandescent lamp (200 W)
3000 – 3200 K	Halogen lamp (12 V)
3600 K	Operating theater lighting
4000 K	Fluorescent lamps (neutral white)
4120 K	Moonlight
5000 K	Morning/evening sun
5500 K	Mid-morning/afternoon sun
5500 – 5600 K	Electronic flash device
5500 – 5800 K	Mid-day sun, clouds
6500 – 7500 K	Cloudy sky
7500 – 8500 K	Fog, significant smog
9000 – 12000 K	Blue (cloudless) sky on the shady north side, blue hour
15000 – 20000 K	Clear, blue, northern light

Fig. 25: Color temperature values and light source

The following table shows how the human body perceives the different color temperatures:

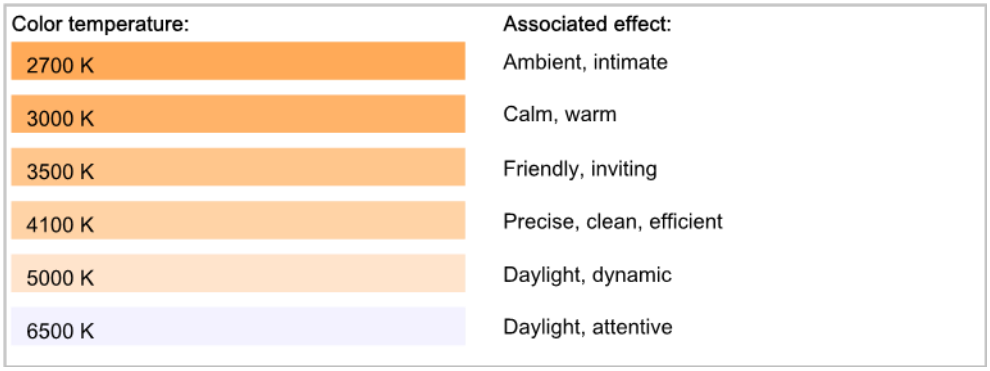


Fig. 26: Color temperature values and associated effect

6.12.1 Flow chart for color temperature control

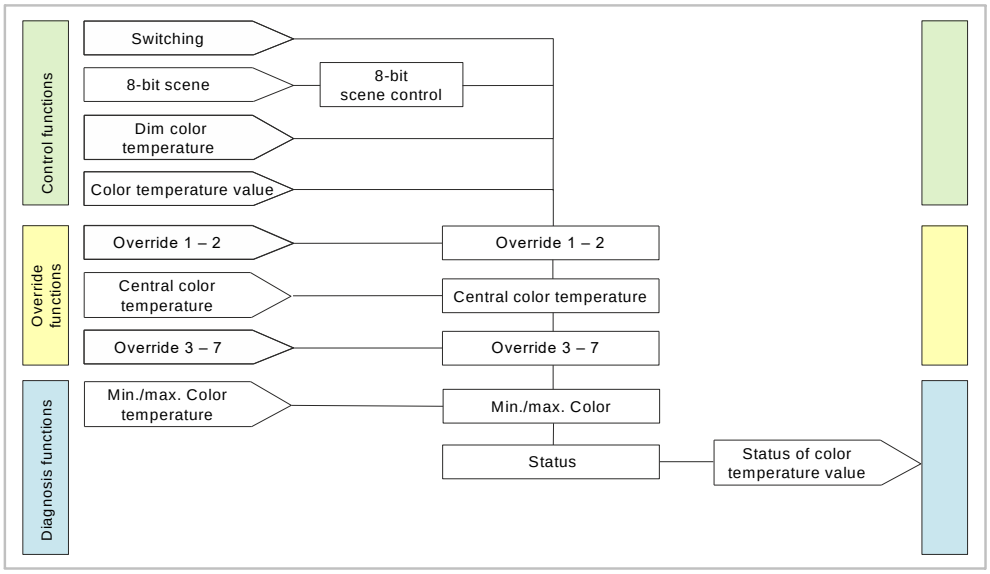


Fig. 27: Color temperature control (overview)

6.12.2 Communication objects for color temperature control

A Dim color temperature

No.	Object name	Function	Datapoint type	Flags
63	A Dim color temperature	Warmer / colder	3.007 dimmer step	CW

Operating modes:

- Normal mode
- Timer mode
- Timer mode 2-fold

Function:

This object is used to receive the telegrams for dimming the color temperature of the channel.

A Color temperature value

No.	Object name	Function	Datapoint type	Flags
64	A Color temperature value	16-bit value	7.600 absolute color temperature (K)	CW

Operating modes:

- Normal mode
- Timer mode
- Timer mode 2-fold

Function:

This communication object is used to receive the telegrams with a color temperature value for the channel.

The color temperature value is dimmed using the time specified in the parameter “dimming time for color temperature value.”

A Dim brightness and color temperature

No.	Object name	Function	Datapoint type	Flags
65	A Dim brightness and color temperature	Brighter / darker, warmer / colder	250.600 brightness color temperature control	CW

Operating modes:

- Normal mode
- Timer mode
- Timer mode 2-fold

Function:

This object is used to receive the telegrams for dimming the brightness and the color temperature of the channel (length: 3 bytes).

Bit	23	22	21	20	19	18	17	16
Meaning	Dim color temperature (datapoint type: 3.007 dimmer step)							
Bit	15	14	13	20	19	18	17	16
Meaning	Dimming the brightness (datapoint type: 3.007 dimmer step)							
Bit	7	6	5	4	3	2	1	0
Meaning	-	-	-	-	-	-	Color temperature “0” = invalid “1” = valid	Brightness “0” = invalid “1” = valid

A Dimming value 1 / color temperature value / dimming time

No.	Object name	Function	Datapoint type	Flags
66	A Dimming value 1 / color temperature value / dimming time	Dimming value + color temperature value + dimming time	249.600 brightness color temperature transition	CW

Operating modes:

- Normal mode
- Timer mode
- Timer mode 2-fold

Function:

This communication object is used to receive a dimming value and a color temperature value with a dimming time for the output (length: 6 byte).

Bit	47	46	45	44	43	42	41	40
Meaning	Dimming time (datapoint type: TimePeriod100MSec, high byte)							

No.	Object name		Function		Datapoint type			Flags
Bit	39	38	37	36	35	34	33	32
Meaning	Dimming time (datapoint type: TimePeriod100MSec, low byte)							
Bit	31	30	29	28	27	26	25	24
Meaning	Color temperature value (datapoint type: 7,600 absolute color temperature (K), high byte)							
Bit	23	22	21	20	19	18	17	16
Meaning	Color temperature value (datapoint type: 7,600 absolute color temperature (K), low byte)							
Bit	15	14	13	12	11	10	9	8
Meaning	Dimming value (datapoint type: 5.001 percent (0 … 100 %))							
Bit	7	6	5	4	3	2	1	0
Meaning	-	-	-	-	-	Dimming time “0” = invalid “1” = valid	Color temperature value “0” = invalid “1” = valid	Dimming value “0” = invalid “1” = valid

A Dimming time for dimming the color temperature

No.	Object name	Function	Datapoint type	Flags
67	A Dimming time for dimming the color temperature	Set / request dimming time	7.004 time (100 ms)	CW

Operating modes:

- Normal mode
- Timer mode
- Timer mode 2-fold

Function:

This communication object is used to set the time for dimming from the minimum color temperature value to the maximum color temperature value in case of manual dimming.

This time is calculated proportionally based on the selected dimming step (value difference between the old and new values). This results in different times in which the setpoint is reached depending on the size of the dimming step.

Availability:

The communication object “dimming time for dimming the color temperature” is only displayed if the parameter “show dimming time objects” is set to “enabled.”

A Dimming time for color temperature value

No.	Object name	Function	Datapoint type	Flags
68	A Dimming time for color temperature value	Set / request dimming time	7.004 time (100 ms)	CW

Operating modes:

- Normal mode
- Timer mode
- Timer mode 2-fold

Function:

This communication object is used to set whether the color temperature value is to be triggered (dimming time = 0 s) or in what time dimming to this color temperature value is to take place.

This time is calculated proportionally based on the selected dimming step (value difference between the old and new values). This results in different times in which the setpoint is reached depending on the size of the dimming step.

Availability:

The communication object “dimming time for color temperature value” is only displayed if the parameter “show dimming time objects” is set to “enabled.”

A Global color temperature max. limit

No.	Object name	Function	Datapoint type	Flags
69	A Global color temperature max. limit	16-bit value	7.600 absolute color temperature (K)	CW

Operating modes:

- Normal mode
- Timer mode
- Timer mode 2-fold

Function:

This communication object can be used to set the color temperature globally for all settings to a particular maximum limit.

Availability:

The communication object “central color temperature value max. limit” is only displayed if the parameter “central color temperature max. limit” is set to “enabled.”

A Minimum color temperature value

No.	Object name	Function	Datapoint type	Flags
70	A Minimum color temperature value	Set / request value	7.600 absolute color temperature (K)	CRW

Operating modes:

- Normal mode
- Timer mode
- Timer mode 2-fold

Function:

The communication object “minimum color temperature value” can be used to define the minimum color temperature value that can be reached with “dimming color temperature value” (i.e. the dimming can only go as far down as the minimum color temperature value).

Availability:

The communication object “minimum color temperature value” is only displayed if the parameter “show min/max limitation objects” is set to “enabled.”

A Maximum color temperature value

No.	Object name	Function	Datapoint type	Flags
71	A Maximum color temperature value	Set / request value	7.600 absolute color temperature (K)	CRW

Operating modes:

- Normal mode
- Timer mode
- Timer mode 2-fold

Function:

The communication object “maximum color temperature value” can be used to define the maximum color temperature value that can be reached with “dimming color temperature value” (i.e. the dimming can only go as far up as the maximum color temperature value).

Availability:

The communication object “maximum color temperature value” is only displayed if the parameter “show min/max limitation objects” is set to “enabled.”

6.12.3 Parameters for color temperature control on the “color temperature” parameter card

Minimum color temperature value (K)

Parameter	Settings
Minimum color temperature value (K)	1000...20000

Operating modes:

- Normal mode
- Timer mode
- Timer mode 2-fold

Function:

The parameter “minimum color temperature value (K)” can be used to define the minimum color temperature value that can be reached with “dimming color temperature value” (i.e. the dimming can only go as far down as the minimum color temperature value).

Maximum color temperature value (K)

Parameter	Settings
Maximum color temperature value (K)	1000...20000

Operating modes:

- Normal mode
- Timer mode
- Timer mode 2-fold

Function:

The parameter “maximum color temperature value (K)” can be used to define the maximum color temperature value that can be reached with “dimming color temperature value” (i.e. the dimming can only go as far up as the maximum color temperature value).

Show min/max limitation objects

Parameter	Settings
Show min/max limitation objects	Disable Enable

Operating modes:

- Normal mode
- Timer mode
- Timer mode 2-fold
- Flashing

Function:

This parameter is used to display the communication objects “minimum color temperature value” and “maximum color temperature value.”

Communication object:

If the parameter “show min/max limitation objects” is set to “enabled,” the communication objects “minimum color temperature value” and “maximum color temperature value” are displayed.

Global color temperature max. limit

Parameter	Settings
Global color temperature max. limit	Disable Enable

Operating modes:

- Normal mode
- Timer mode
- Timer mode 2-fold

Function:

This parameter is used to display the communication object “global color temperature max. limit.” This communication object can be used to set the color temperature value globally for all settings to a particular maximum limit.

Communication object:

If the parameter “global dimming max. limit” is set to “enabled,” the communication object “global color temperature max. limit” is displayed.

Dimming time for dimming the color temperature

Parameter	Settings
Dimming time for dimming the color temperature (hh:mm:ss:f)	00:00:00:0...01:49:13:5

Operating modes:

- Normal mode
- Timer mode
- Timer mode 2-fold

Function:

This parameter is used to set the time for dimming from the minimum color temperature value to the maximum color temperature value in case of manual dimming. This time is calculated proportionally based on the selected dimming step (value difference between the old and new values). This results in different times in which the setpoint is reached depending on the size of the dimming step.

Dimming time for color temperature value

Parameter	Settings
Dimming time for color temperature value (hh:mm:ss:f)	00:00:00:0...01:49:13:5

Operating modes:

- Normal mode
- Timer mode
- Timer mode 2-fold
- Flashing

Function:

This parameter is used to set whether the color temperature value is to be triggered (dimming time = 0 s) and/or in what time dimming to this color temperature value is to take place. This time is calculated proportionally based on the selected dimming step (value difference between the old and new values). This results in different times in which the setpoint is reached depending on the size of the dimming step.

Show dimming time objects

Parameter	Settings
Show dimming time objects	Disable Enable

Operating modes:

- Normal mode
- Timer mode
- Timer mode 2-fold
- Flashing

Function:

This parameter can be used to display the communication objects for dimming time.

Communication object:

If the parameter, “show dimming time objects” is set to “enabled,” the communication objects “dimming time for dimming the color temperature,” and “dimming time for color temperature value” are displayed.

Switch on at value

Parameter	Settings
Switch on at value	Color temperature value during switch off Color temperature value according to parameter Last received color temperature value

Operating modes:

- Normal mode
- Timer mode
- Timer mode 2-fold

Function:

This parameter indicates to which color temperature value the channel should jump or dim when a telegram with the switch command “On” is received.

The following settings are possible:

- **Color temperature value on switch off:**

  This setting is used to switch to the last color temperature value before switching off.
- **Color temperature value according to parameter:**

  With this parameter, an additional parameter through which the desired color temperature value can be entered in Kelvin is displayed.
- **Last received color temperature value:**

  This setting is used to set to the last received color temperature value before switching off.

Other parameters:

If the “color temperature according to parameter” option is selected, the additional parameter “switch on value (K)” is displayed.

6.12.4 Parameters for color temperature control on the “scene assignments” parameter card

Recall / store dimming value

Parameter	Settings
Recall / store dimming value	Disable Enable
Function: This parameter is used to activate or deactivate the brightness control via the scene function.	

Recall / store color temperature value

Parameter	Settings
Recall / store color temperature value	Disable Enable
Function: This parameter is used to activate or deactivate the color temperature control via the scene function.	

Predefined color temperature for scene (K)

Parameter	Settings
Predefined color temperature for scene (K)	1000...20000
Function: This parameter can be used to predefine the color temperature value for the selected scene number during the configuration and be loaded into the device along with the ETS software. **Availability/alternative:** The parameter “predefined color temperature for scene (K)” is only displayed if the setting of the parameter “link x with scene [0...64]” is not “0” and the parameter “8-bit scenes configurable by user” is set to “disable” or the parameters “8-bit scenes configurable by user,” “delete learned scene,” and “predefine scene” are set to “enabled.”	

6.12.5 Parameters for color temperature control on the parameter card of the respective override

Behavior of color temperature value on override activation

Parameter	Settings
Behavior of color temperature value on override activation	No change Color temperature value according to parameter
Function: This parameter determines which color temperature value is passed on upon activation of the override at the output of the function block. The following settings are possible: ● **No change:** The value waiting at the output of the function block is retained. Values arriving at the input of the function block are not passed on to the output. ● **Color temperature value according to parameter:** The parameter “color temperature value on activation (K)” is displayed. Here it is possible to define which color temperature value is passed on upon activation of the override.	

Color temperature value on activation (K)

Parameter	Settings
Color temperature value on activation (K)	1000...20000
Function: This parameter can be used to define which color temperature value is passed on upon activation of the override, if the option “color temperature value according to parameter” was selected in the parameter “behavior of color temperature value on override activation.”	

Behavior of color temperature value on override deactivation

Parameter	Settings
Behavior of color temperature value on override deactivation	No change Color temperature value according to parameter Updated value

Function:

This parameter determines which color temperature value is passed on upon deactivation of the override at the output of the function block.

The following settings are possible:

- **No change:**
  The value at the output is retained until a new value arrives at the input of the function block.
- **Color temperature value according to parameter:**
  The parameter “color temperature value on deactivation (K)” is displayed. Here it is possible to define which color temperature value is passed on upon deactivation of the override.
- **Updated value:**
  The value at the input of the function block is passed on at the output of the function block.

Color temperature value on deactivation (K)

Parameter	Settings
Color temperature value on deactivation (K)	1000...20000

Function:

This parameter can be used to define which color temperature value is passed on upon deactivation of the override, if the option “color temperature value according to parameter” was selected in the parameter “behavior of color temperature value on override deactivation.”

7 Initial output behavior of a channel with different parameter configurations

7.1 Dimming behavior with ON/OFF switching via the “switching” communication object

The following graphic shows the dimming curves when switching on/off via the communication object “switching” if the parameter “switch on at value” is set to “dimming value at switch off.” The following parameters are used for this:

Switch on at value (setting: “Dimming value at switch off”)

- Dimming time for switching
- Minimum dimming value
- Maximum dimming value

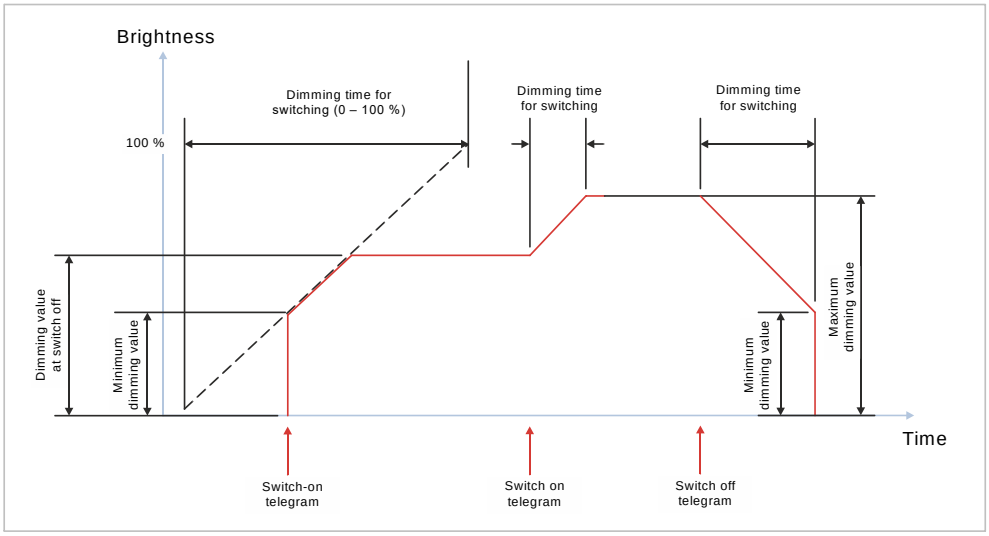


Fig. 28: Dimming curves when switching on/off via the “switching” communication object

7.2 Dimming behavior when dimming via the communication object “dimming”

7.2.1 Dimming via communication object “dimming” – “On and Off not possible”

The following graphic shows the dimming behavior via communication object “dimming” when the option of switching on and off has been deactivated. The following parameters are used for this:

- On via dimming (setting: “Disable”)
- Off via dimming (setting: “Disable”)
- Dimming time for dimming
- Minimum dimming value
- Maximum dimming value

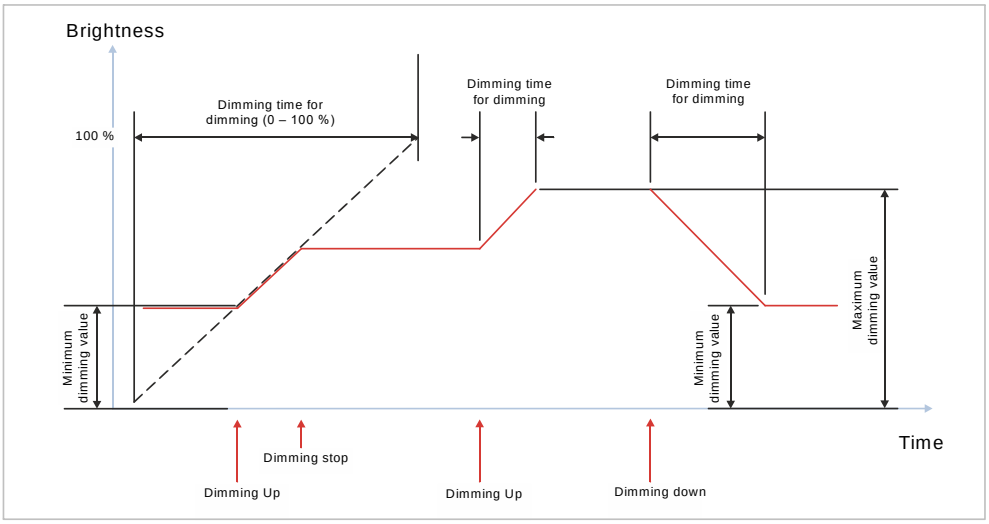


Fig. 29: Dimming via communication object “dimming” – On and Off not possible

7.2.2 Dimming via communication object “dimming” – “On possible”

The following graphic shows the dimming behavior via communication object “dimming” when the option of switching on has been activated and the option of switching off has been deactivated. The following parameters are used for this:

- On via dimming (setting: “Enable”)
- Off via dimming (setting: “Disable”)
- Dimming time for dimming
- Minimum dimming value
- Maximum dimming value

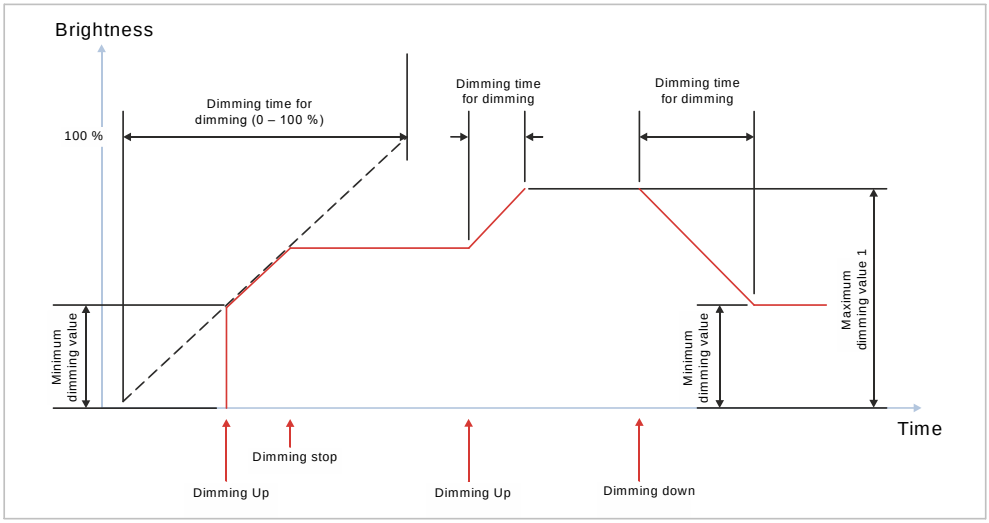


Fig. 30: Dimming via communication object “dimming” – On possible

7.2.3 Dimming via communication object “dimming” – “Off possible”

The following graphic shows the dimming behavior via communication object “dimming” when the option of switching off has been activated and the option of switching on has been deactivated. The following parameters are used for this:

- On via dimming (setting: “Disable”)
- Off via dimming (setting: “Enable”)
- Dimming time for dimming
- Minimum dimming value
- Maximum dimming value

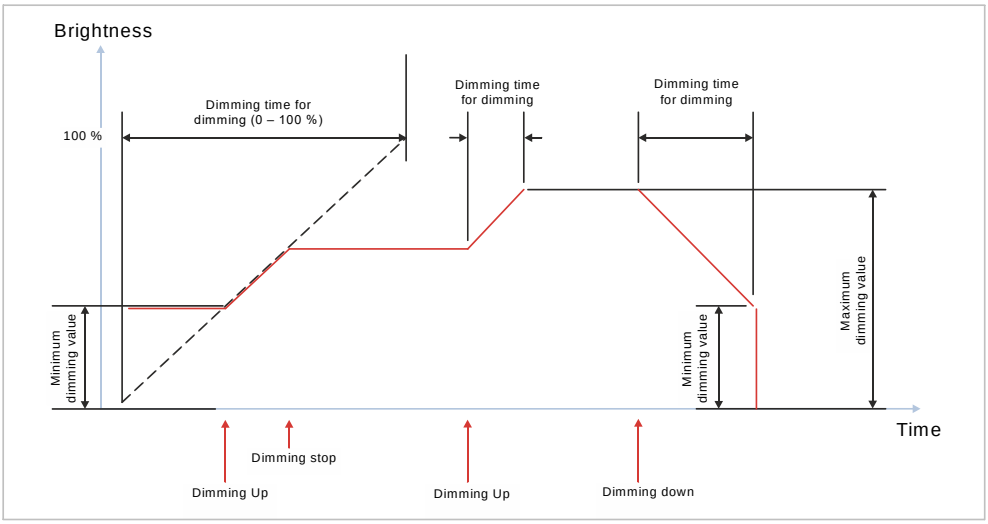


Fig. 31: Dimming via communication object “dimming” – Off possible

7.2.4 Dimming via communication object “dimming” – “On and Off possible”

The following graphic shows the dimming behavior via communication object “dimming” when the option of switching on and off has been activated. The following parameters are used for this:

- On via dimming (setting: “Enable”)
- Off via dimming (setting: “Enable”)
- Dimming time for dimming

- Minimum dimming value
- Maximum dimming value

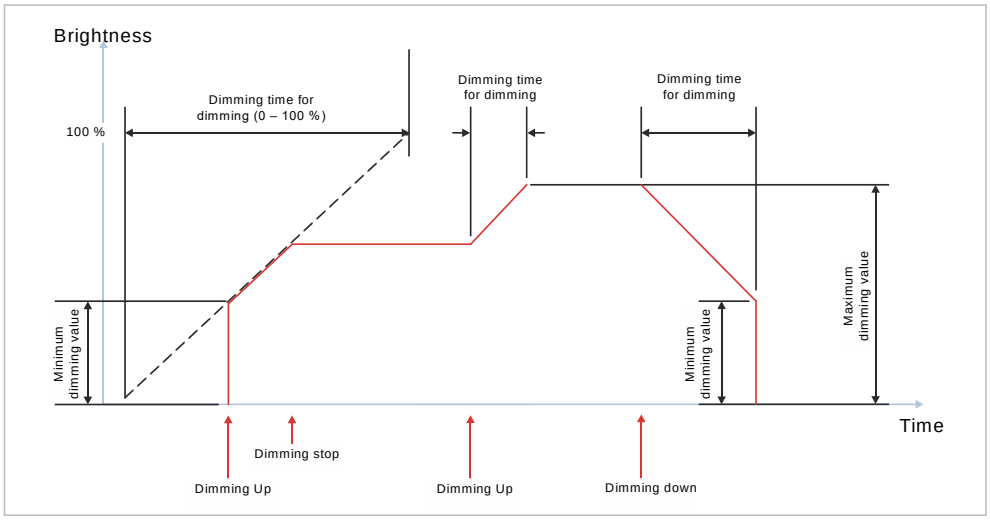


Fig. 32: Dimming via communication object “dimming” – On and Off possible

7.3 Dimming behavior when dimming via the communication object “dimming value 1”

7.3.1 “Switching via dimming value 1” – “not possible”

“Switching via dimming value 1” – “not possible”

The following graphic shows the dimming behavior via the communication object “dimming value” when the parameter “switching via dimming value 1” has been set to “not possible.” The following parameters are used for this:

- Switching via dimming value 1 (setting: “not possible”)
- Dimming time for dimming value 1
- Minimum dimming value
- Maximum dimming value

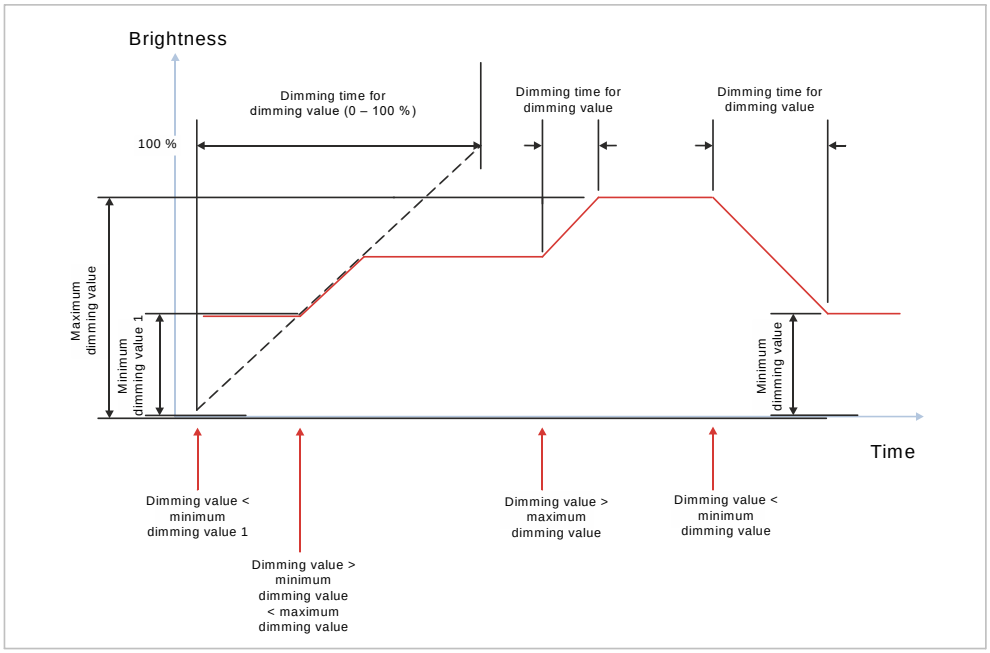


Fig. 33: Dimming behavior with dimming via communication object “dimming value 1”; “switching via dimming value 1” – “not possible.”

7.3.2 “Switching via dimming value 1” – “on, if dimming value >= min. dimming value”

The following graphic shows the dimming behavior with the communication object “dimming value” when the parameter “switching via dimming value 1” has been set to “on, if dimming value >= min. dimming value.” The following parameters are used for this:

- Switching via dimming value 1 (setting: “On, if dimming value >= min. dimming value”)
- Dimming time for dimming value 1
- Minimum dimming value
- Maximum dimming value

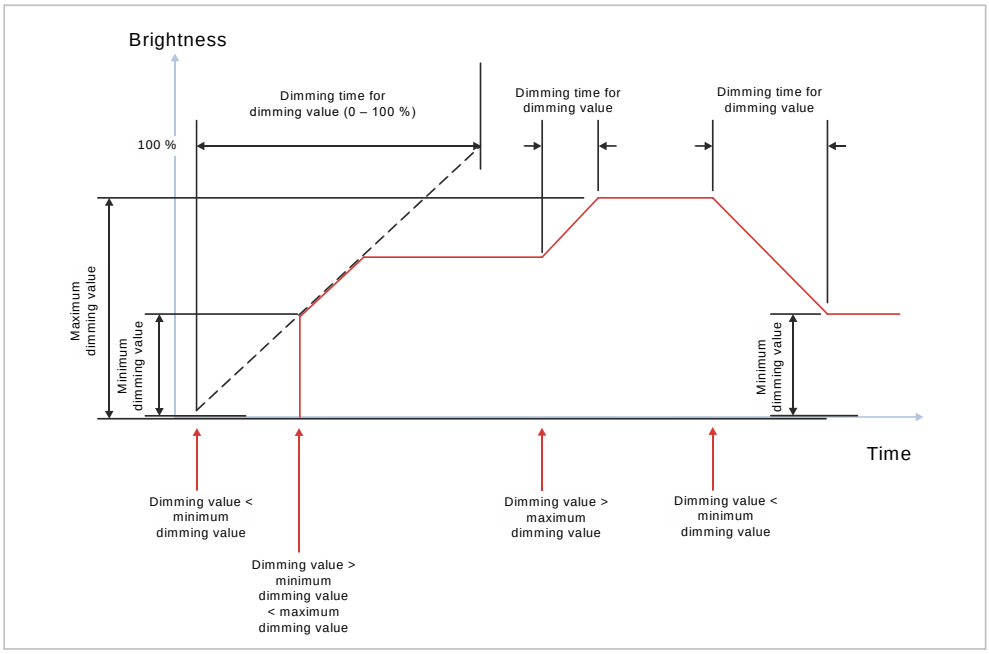


Fig. 34: Dimming behavior with dimming via communication object “dimming value 1”; “switching via dimming value 1” – “on, if dimming value >= min. dimming value.”

7.3.3 “Switching via dimming value 1” – “Off, if dimming value < min. dimming value”

The following graphic shows the dimming behavior with the communication object “dimming value” when the parameter “switching via dimming value 1” has been set to “off, if dimming value <= min. dimming value.” The following parameters are used for this:

- Switching via dimming value 1 (setting: “Off, if dimming value <= min. dimming value”)
- Dimming time for dimming value 1
- Minimum dimming value
- Maximum dimming value

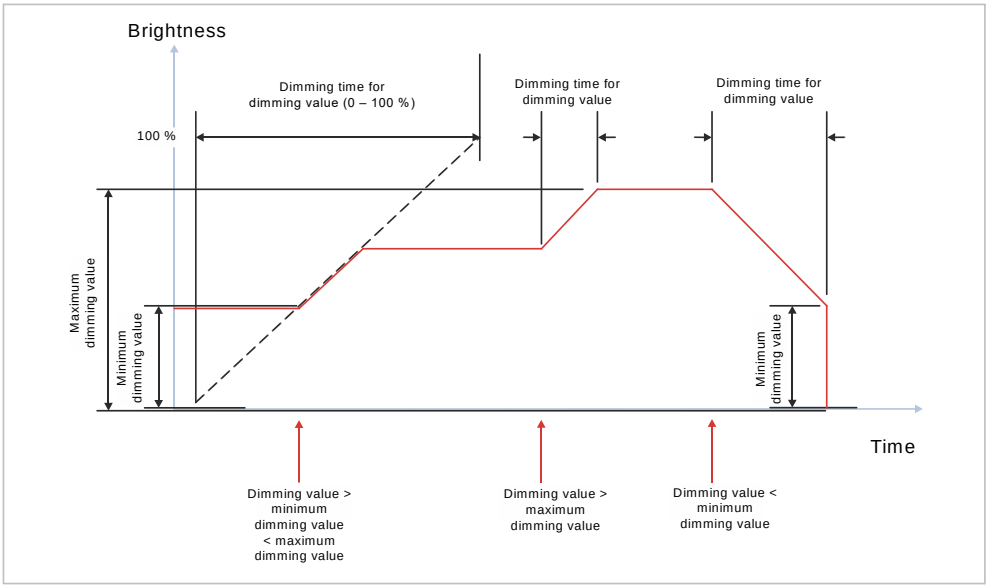


Fig. 35: Dimming behavior with dimming via communication object “dimming value 1”; “switching via dimming value 1” – “off, if dimming value <= min. dimming value”

7.3.4 “Switching via dimming value 1” – “On and Off possible”

The following graphic shows the dimming behavior with the communication object “dimming value” when the parameter “switching via dimming value 1” has been set to “On and Off possible.” The following parameters are used for this:

- Switching via dimming value 1 (setting: “On and Off possible”)
- Dimming time for dimming value 1
- Minimum dimming value
- Maximum dimming value

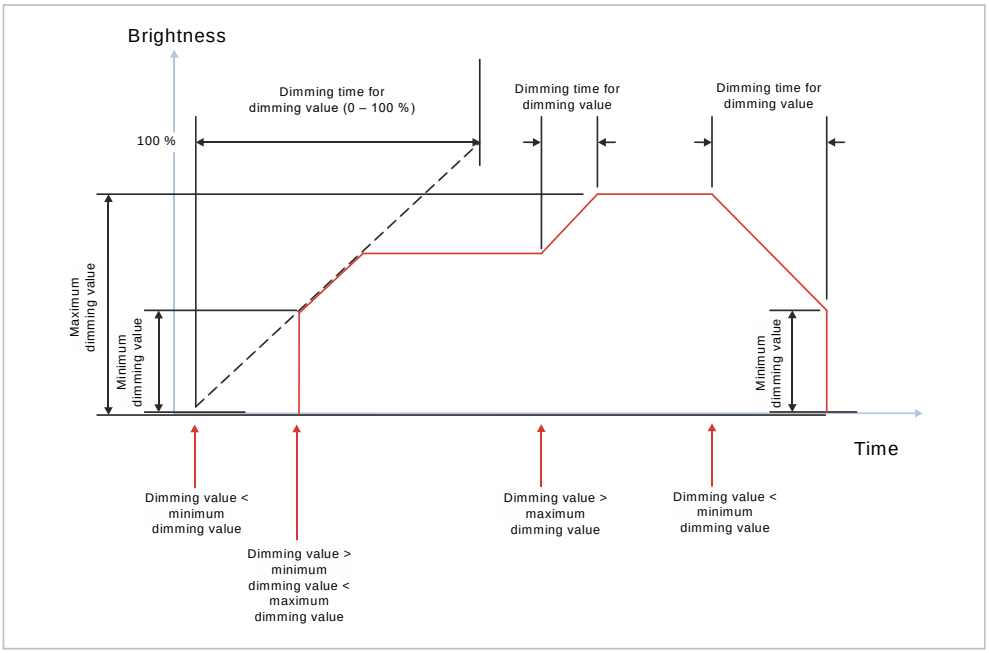


Fig. 36: Dimming behavior with dimming via communication object “dimming value 1”; “switching via dimming value 1” – “On and Off possible”

7.3.5 “Switching via dimming value 1” – “On, if dimming value > 0% Off, if dimming value = 0%”

The following graphic shows the dimming behavior with the communication object “dimming value” when the parameter “switching via dimming value 1” has been set to “on, if dimming value > 0%, off, if = 0%.” The following parameters are used for this:

- Switching via dimming value 1 (setting: “On, if dimming value > 0%, off, if dimming value = 0%”)
- Dimming time for dimming value 1
- Minimum dimming value
- Maximum dimming value

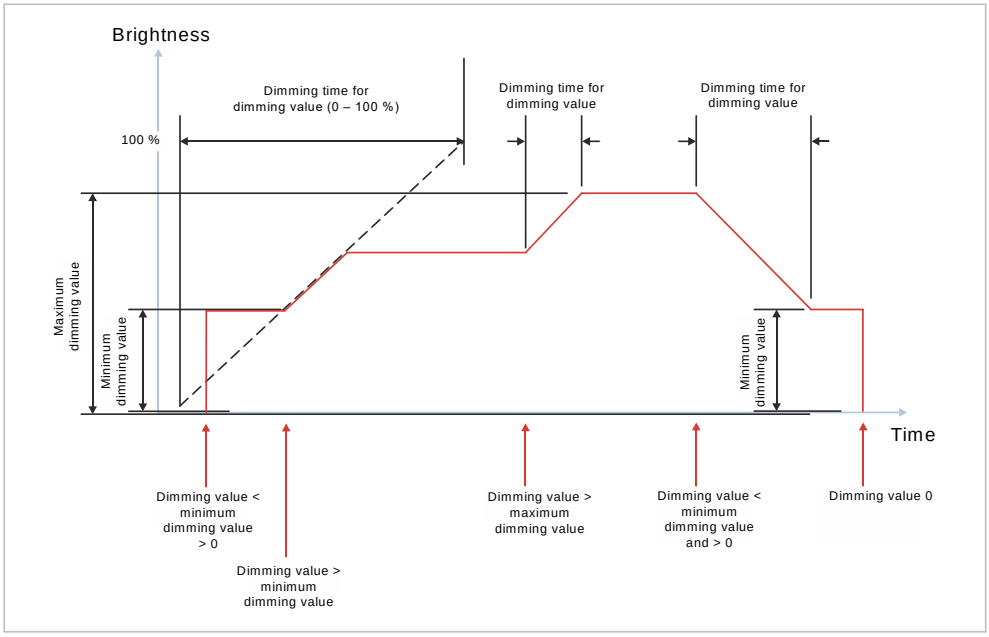


Fig. 37: Dimming behavior with dimming via communication object “dimming value 1”; “switching via dimming value 1” – “on, if dimming value > 0%, off, if dimming value = 0%”

7.4 Dimming behavior in combination with “minimum dimming value” and “maximum dimming value”

7.4.1 Behavior when switching on and dimming to a dimming value under the influence of the minimum and maximum dimming value

The following graphic shows the behavior of the switching/dimming actuator when switching on and dimming to a dimming value under the influence of the minimum and maximum dimming value. The following parameters are used for this:

- Switch on at value (setting: switch on value according to parameter)
- Switch on value (%) (setting: 100 %)
- Minimum dimming value (setting: 5 %)
- Maximum dimming value (setting: 90 %)
- Dimming time for switching
- Dimming time for dimming
- Two dimming values

- Dimming time for dimming value 1
- Dimming time for dimming value 2

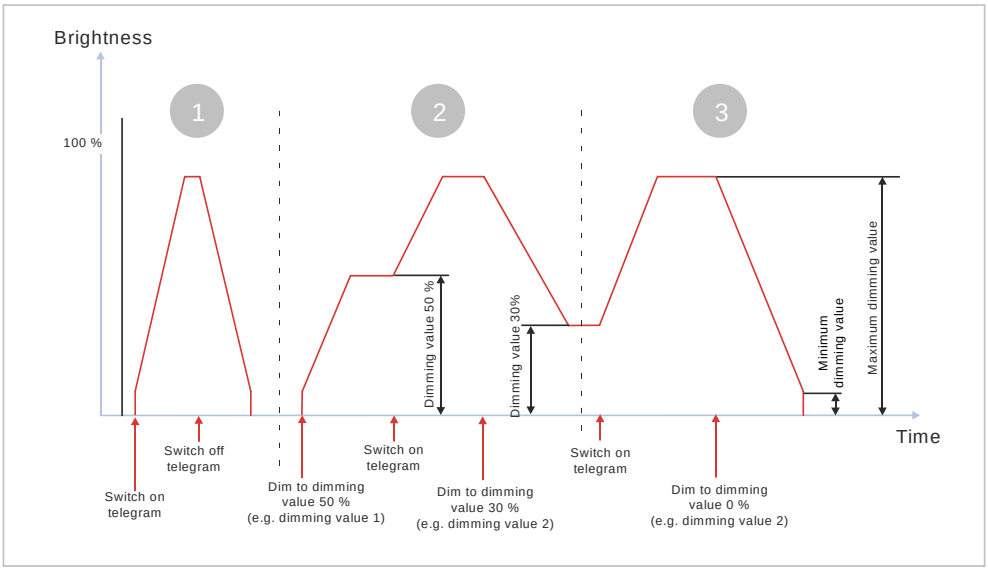


Fig. 38: Behavior when switching on and dimming to a dimming value under the influence of the minimum and maximum dimming value (1)

1 After receiving the switch on telegram, the channel is activated and dimmed to the minimum dimming value (e.g. 5 %). After that, the configured dimming time for switching is used for dimming up to the maximum dimming value (e.g. 90 %).

The configured switch on value of 100 % is limited by setting the maximum dimming value to 90 %.

After receiving the switch off telegram, the configured dimming time for switching is used for dimming down to the minimum dimming value and subsequent switching off.

2 If the channel is switched off, the telegram for dimming to a certain value triggers the switch on to the minimum brightness value (e.g. 5 %). After that, the configured dimming time for dimming value 1 is used for dimming up to the maximum dimming value (e.g. 50 %).

A second switch on command increases the brightness to the maximum dimming value (e.g. 90 %) with the configured dimming time for switching. Value changes due to dimming values are controlled using the configured dimming time.

If the channel is switched on, the telegram for dimming to a certain value is used to dim directly from the current brightness to this value (e.g. 30 %) with the configured dimming time of dimming value 2.

3 If the channel is activated, switch on telegrams lead to an increase to the maximum possible brightness value (e.g. 90 %).

Dimming value telegrams with 0 % lead to dimming down to the minimum dimming value and to subsequent switching off.

7.4.2 Behavior on switching on twice, if the switch on value is less than the maximum dimming value

The following graphic shows the behavior of the switching/dimming actuator when switching on twice and dimming to a dimming value, if the configured switch on value falls below the maximum dimming value. The following parameters are used for this:

- Switch on at value (setting: switch on value according to parameter)
- Switch on value (%) (setting: 50 %)
- Minimum dimming value (setting: 5 %)
- Maximum dimming value (setting: 90 %)
- Dimming time for switching
- Dimming time for dimming
- Two dimming values
- Dimming time for dimming value 1
- Dimming time for dimming value 2

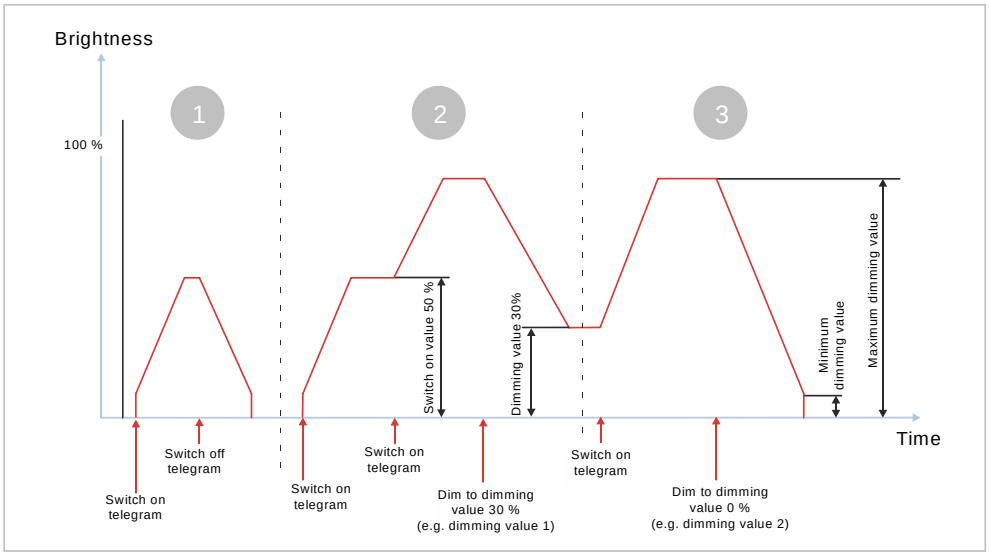


Fig. 39: Behavior on switching on twice, if the switch on value is less than the maximum dimming value

1 After receiving the switch on telegram, the channel is activated and dimmed to the minimum dimming value (e.g. 5 %). After that, the configured dimming time for switching is used for dimming up to the switch on value (e.g. 50 %).

After receiving the switch off telegram, the configured dimming time for switching is used for dimming down to the minimum dimming value and subsequent switching off.

2 After receiving the switch on telegram, the channel is activated and dimmed to the minimum dimming value (e.g. 5 %). After that, the configured dimming time for switching is used for dimming up to the switch on value (e.g. 50 %).

On receiving another switch on telegram while the channel is activated, the configured dimming time is used for dimming to the maximum dimming value (e.g. 90 %).

On receiving a telegram for dimming to a certain value, if the channel is activated, dimming takes place directly from the current brightness to the newly received value (e.g. 30 %) using the configured dimming time from dimming value 1.

3 If the channel is activated, switch on telegrams lead to an increase to the maximum possible brightness value (e.g. 90 %).

Dimming value telegrams with 0 % lead to dimming down to the minimum dimming value and to subsequent switching off.

7.5 Switching behavior when a delay has been configured for switching on and off

The following graphic shows the behavior of the switching/dimming actuator if a delay has been configured for switching on and off.

The following parameters are used for this:

- ON delay
- OFF delay

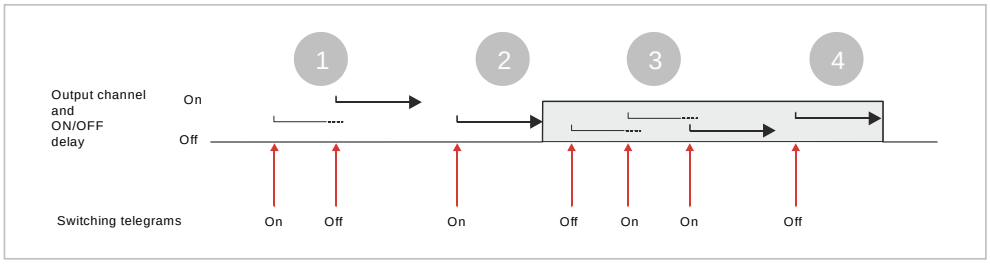


Fig. 40: Switching behavior when a delay has been configured for switching on and off

1 The ON delay starts after receiving the “On” switching telegram. If the switching telegram “Off” is received before the end of the ON delay, the switch on operation terminates and the OFF delay starts. The channel remains switched off.

2 If no switch off telegram is received before the end of the ON delay, the channel is switched on.

3 The OFF delay starts after receiving the “Off” switching telegram. If the switching telegram “On” is received before the end of the OFF delay, the switch on operation terminates and the ON delay starts. The channel remains switched on. If another switch on telegram is received, the switch on delay starts. However, since the channel is already switched on, this has no effect.

4 If no switch on telegram is received before the end of the OFF delay, the channel is switched off.

Relative dimming and dimming to a certain value

The ON and OFF delays only take effect with switching telegrams. The switching on or switching off of the channel by means of relative dimming or setting of dimming values is not affected by this.

Scene commands

The ON and OFF delays do not apply to the switching on/off by means of scene telegrams. Current ON/OFF delays are deleted by triggered scene values and the scene values are configured according to their parameters.

7.6 Switching behavior if the timer and night mode are activated

7.6.1 Behavior in timer mode (1-fold) with the setting “retriggering possible” = “0”

The following graphic shows the behavior of the switching/dimming actuator if the timer function is configured without the option of retriggering.

The following parameters are used for this:

- Operating mode (setting: timer mode)
- Minimum dimming value
- Maximum dimming value
- Dimming time for switching
- Dimming time for dimming
- Dimming time for dimming value 1
- ON time 1 in day mode
- Retriggering possible (setting: 0)

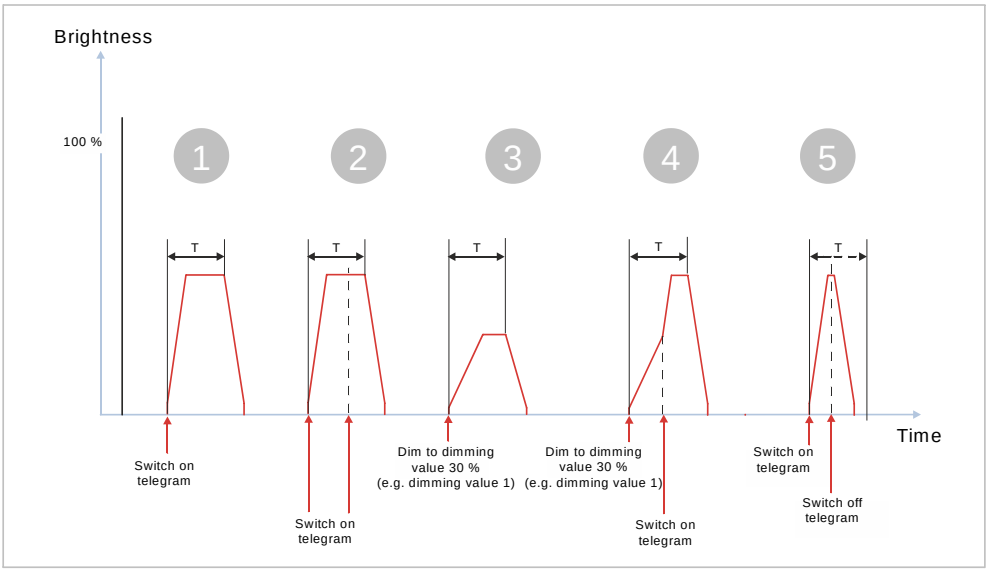


Fig. 41: Behavior in timer mode (single) with the setting “retriggering = 0”

1 The timer is started after receiving the switch on telegram and the time counter (delay time) (T) starts. The time of the dimming ramp is included in this time.

At the end of the time configured in the timer, the channel is dimmed down. In both cases, the dimming time corresponds to the dimming time configured for switching.

2 The timer is started after receiving the switch on telegram and the time counter (delay time) (T) starts. Switch on telegrams received during the delay time are ignored.

At the end of the time configured in the timer, the channel is dimmed down and switched off using the dimming time for switching.

3 The timer is started by the telegram for dimming to a certain value and the counting of time (delay time) (T) starts. The time of the dimming ramp is included in this time.

At the end of the time configured in the timer, the channel is dimmed down and switched off using the dimming time for switching.

4 The timer is started by the telegram for dimming to a certain value and the counting of time (delay time) (T) starts. The time of the dimming ramp is included in this time.

During dimming up, a switch on telegram is received. Following that, the dimming ramp for switching is used to continue dimming to the maximum dimming value. The delay time is not extended and progresses as if the switch on telegram had not been received.

At the end of the time configured in the timer, the channel is dimmed down and switched off using the dimming time for switching.

5 The timer is started by the switch on telegram and time counting (delay time) (T) starts.

During the delay time, a switch off telegram is received. Following that, the channel is dimmed down prematurely and switched off. In both cases, the dimming time corresponds to the dimming time configured for switching.

7.6.2 Behavior in timer mode (1-fold) with the setting “retriggering possible” = “1”

The following graphic shows the behavior of the switching/dimming actuator if the timer function is configured with the option of retriggering.

The following parameters are used for this:

- Operating mode (setting: timer mode)
- Minimum dimming value
- Maximum dimming value
- Dimming time for switching
- Dimming time for dimming
- Dimming time for dimming value 1
- ON time 1 in day mode
- Retriggering possible (setting: 1)

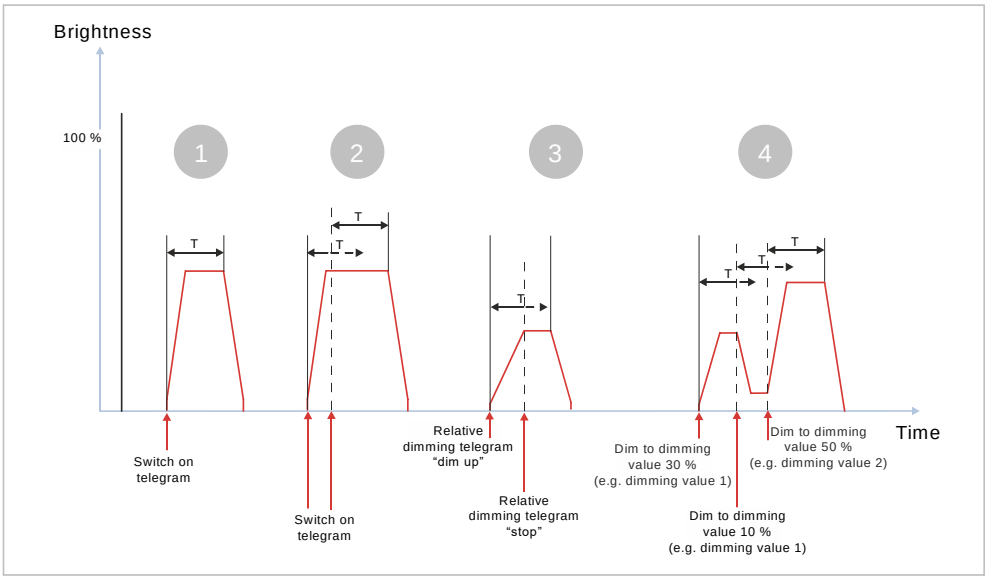


Fig. 42: Behavior in timer mode (single) with the setting “retriggering = 1”

1 The timer is started by the switch on telegram and time counting (delay time) (T) starts. The time of the dimming ramp is included in this time.

At the end of the time configured in the timer, the channel is dimmed down and switched off. In both cases, the dimming time corresponds to the

dimming time configured for switching.

2 The timer is started by the switch on telegram and time counting (delay time) (T) starts.

During the delay time, a switch on telegram is received. This has the effect that the residual delay time is discarded. The timer is restarted with the configured delay time.

Even in case of switching on several times, only the delay time of the last received switching telegram applies.

3 The channel is switched on by the telegram for relative dimming (e.g. at long key press on a button) and dimmed up. The timer is started and time counting (delay time) (T) starts.

When the relative dimming stops (e.g. when letting go of the button), a telegram for stopping the relative dimming is received. This telegram stops the dimming up and the timer is not restarted.

At the end of the delay time, the channel is dimmed down and switched off using the dimming time for switching.

4 The timer is started by the telegram for dimming to a certain value and the counting of time (delay time) (T) starts. The channel is dimmed up until the setpoint is reached.

During the delay time, any additional telegrams for dimming to a certain value are received. Following that, the respective remaining delay time is discarded, restarted and light is dimmed to the newly received value.

7.6.3 Behavior in timer mode (single) with the setting “retriggering possible” = “2”

The following graphic shows the behavior of the switching/dimming actuator if the timer function is configured with the option of multiple retriggering.

Setting the parameter “retriggering possible” to parameters “3”, “4” or “5” results in a response analogous to the principle for setting to “2”, which is described here.

The following parameters are used:

- Operating mode (setting: timer mode)
- ON time 1 in day mode
- Retriggering possible (setting: 2)

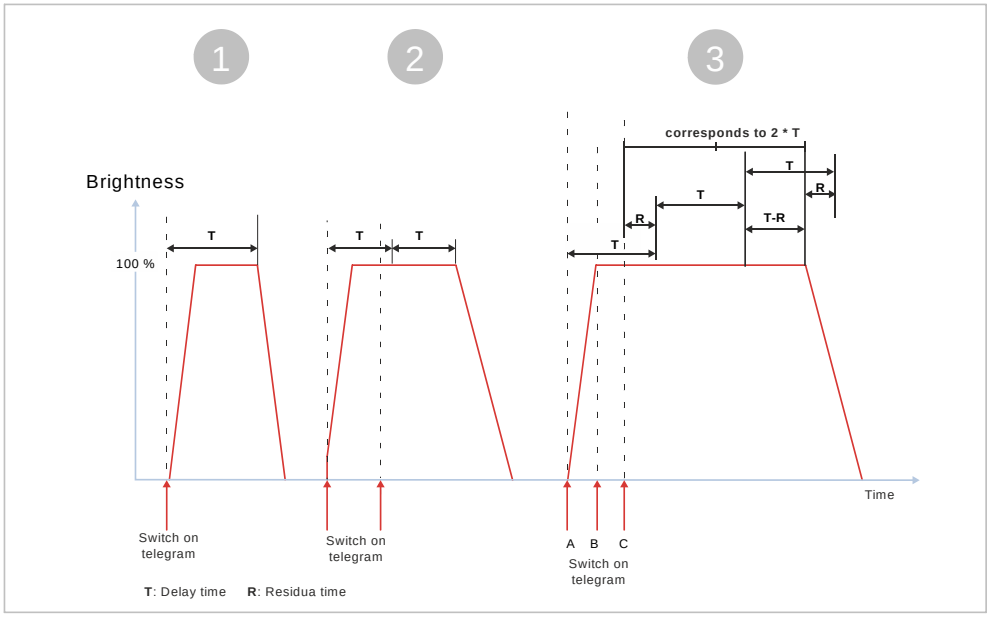


Fig. 43: Behavior in timer mode (single) with the setting “retriggering possible” = “2”

1 The timer is started by the switch on telegram and time counting (delay time) (T) starts. The time of the dimming ramp is included in this time.

At the end of the time configured in the timer, the channel is dimmed down and switched off. In both cases, the dimming time corresponds to the dimming time configured for switching.

2 The timer is started by the switch on telegram and time counting (delay time) (T) starts.

During the delay time, another switch on telegram is received. Since the parameter “retriggering possible” has been configured with “2”, the delay time of the newly received telegram is appended to the first delay time. That is, the delay time is extended.

3 The timer is started by the switch on telegram (A) and the time counter (delay time) (T) starts.

During the delay time, a second switch on telegram (B) is received. Since the parameter “retriggering possible” has been configured with “2”, the delay time of the newly received telegram is appended to the first delay time. That is, the delay time is extended.

Before the end of the first delay time, a third switch on telegram (C) is received. Since the parameter “retriggering possible” has been configured as “2” and there is still a residual time (R) from the first delay time, any further appending of the delay time would exceed the permissible total delay time (2*T). Hence, the entire delay time is not appended here; the residual time of the first delay time is deducted from the third delay time. That is, the total delay time is R+T+T-R = 2*T.

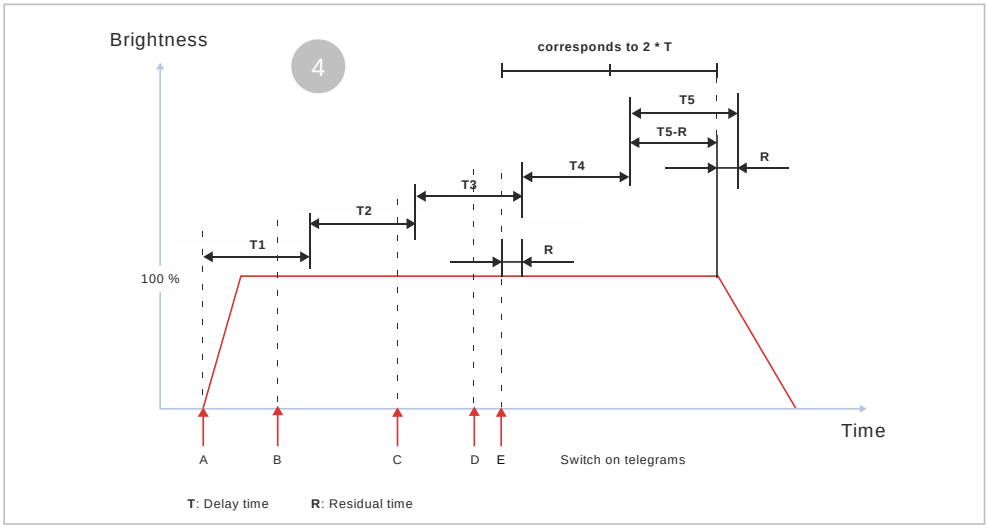


Fig. 44: Behavior in timer mode (1-fold) with the setting "retriggering possible" = "2" (2)

4 The timer is started by the switch on telegram (A) and the time counter (delay time) (T1) starts.

During the delay time (T1), a second switch on telegram (B) is received. Since the parameter "retriggering possible" has been configured with "2", the delay time (T2) of the newly received telegram is appended to the first delay time. That is, the delay time is extended.

During the delay time (T2), a third switch on telegram (C) is received. Since the parameter "retriggering possible" has been configured with "2" and the first delay time (T1) has already expired, the delay time (T3) of the newly received telegram is appended to the second delay time. That is, the delay time is extended.

During the delay time (T3), a fourth switch on telegram (D) is received. Since the parameter "retriggering possible" has been configured with "2" and the first two delay times (T1 and T2) have already expired, the delay time (T4) of the newly received telegram is appended to the third delay time. That is, the delay time is extended.

Before the end of the third delay time (T3), a fifth switch on telegram (E) is received. Since the parameter "retriggering possible" has been configured as "2" and there is still a residual time (R) from the third delay time, any further appending of the delay time would exceed the permissible total delay time (2*T). Hence, the entire delay time is not appended here; the residual time of the third delay time (R) is deducted from the fifth delay time. That is, the total delay time from the time of the fifth switch on telegram (E) is R+T+T-R = 2*T.

7.6.4 Behavior in timer mode (1-fold) with setting "warning before switching off" = "short switch off/on" and "retriggering possible" = "1".

The following graphic shows the behavior of the switching/dimming actuator if the timer function is configured with a warning before switching off with the option of retriggering.

The following parameters are used:

- Operating mode (setting: timer mode)
- Switch on at value (setting: switch on value according to parameter)
- Switch on value (%) (setting: 80 %)
- Minimum dimming value (setting: 5 %)

- Maximum dimming value (setting: 90 %)
- Dimming time for switching (setting: 00:00:01.0)
- Dimming time for dimming value 1 (setting: 12:00:05 AM.0)
- Warning before switching off (setting: via briefly switching on - off)
- Warning period
- Warning signal period
- ON time 1 in day mode
- Retriggering possible (setting: 1)

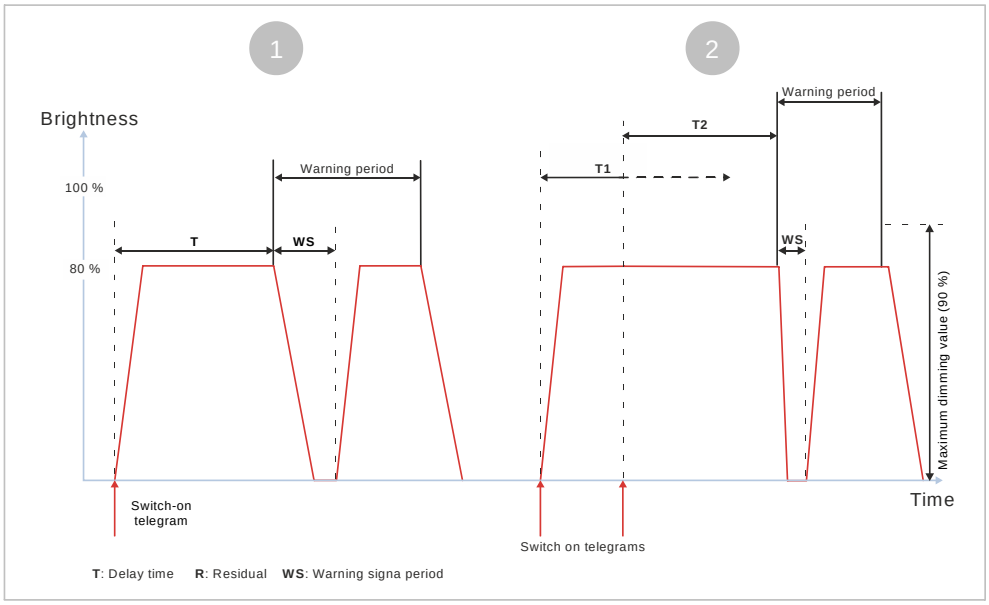


Fig. 45: Behavior in timer mode (1-fold) with setting "warning before switching off" = "via briefly switching on - off" and "retriggering possible" = "1."

1 After receiving the switch on telegram, the timer is started and time counting (delay time) (T) starts. The channel is switched on and the configured dimming time for switching is used for dimming up to the switch on value (e.g. 80 %).

The warning period starts at the end of the delay time (T). At the start of the warning period, the channel is briefly switched off and on again using the dimming time for switching. At the end of the warning period, the channel is dimmed down and switched off using the dimming time for switching.

2 After receiving the switch on telegram, the timer is started and time counting (delay time) (T) starts. The channel is switched on and the configured dimming time for switching is used for dimming up to the switch on value (e.g. 80 %).

During the delay time (T1), a second switch on telegram is received. Following that, the residual delay time of T1 is discarded and the delay time is restarted (T2).

The warning period starts at the end of the delay time (T2). At the start of the warning period, the channel is briefly switched off and on again using the dimming time for switching. At the end of the warning period, the channel is dimmed down and switched off using the dimming time for switching.

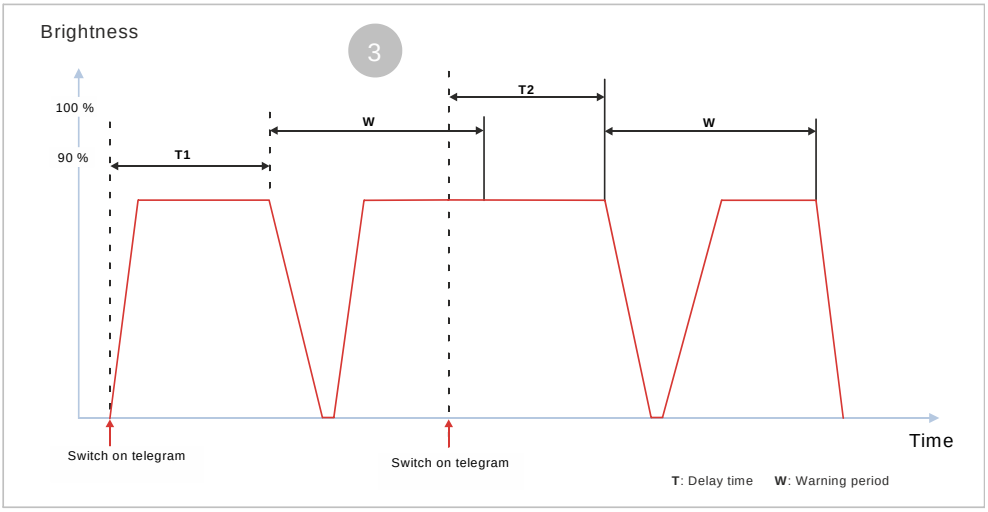


Fig. 46: Behavior in timer mode (1-fold) with setting "warning before switching off" = "via briefly switching on - off" and "retriggering possible" = "1" (2)

3 After receiving the switch on telegram, the timer is started and time counting (delay time) (T) starts. The channel is switched on and the configured dimming time for switching is used for dimming up to the switch on value (e.g. 80 %).

The warning period starts at the end of the delay time (T1). At the start of the warning period, the channel is briefly switched off and on again using the dimming time for switching.

During the warning period, a second switch on telegram is received. Following that, the residual warning period is discarded and the delay time is restarted (T2).

The warning period starts at the end of the delay time (T2). At the start of the warning period, the channel is briefly switched off and on again using the dimming time for switching. At the end of the warning period, the channel is dimmed down and switched off using the dimming time for switching.

Example:

Staircase timer:

- Somebody enters the staircase, switches on the light by pressing the button, the timer runs.
- The timer expires. To ensure people do not have to climb the stairs in the dark, a short interruption of the light indicates that the light will soon be switched off completely.
- Pressing the button in the staircase again restarts the timer, giving the user enough time to reach the next floors.

7.6.5 Behavior in timer mode (1-fold) with setting "warning before switching off" = "dim to half dimming value" and "retriggering possible" = "1."

The following graphic shows the behavior of the switching/dimming actuator if the timer function is configured with a warning before switching off by dimming to half dimming value and the option of retriggering.

The following parameters are used:

- Operating mode (setting: timer mode)
- Switch on at value (setting: switch on value according to parameter)
- Switch on value (%) (setting: 70 %)

- Minimum dimming value (setting: 20 %)
- Maximum dimming value (setting: 100 %)
- Dimming time for switching (setting: 00:00:01.0)
- Dimming time for dimming value 1 (setting: 12:00:05 AM.0)
- Warning before switching off (setting: dim to half dimming value)
- Warning period
- ON time 1 in day mode
- Retriggering possible (setting: 1)

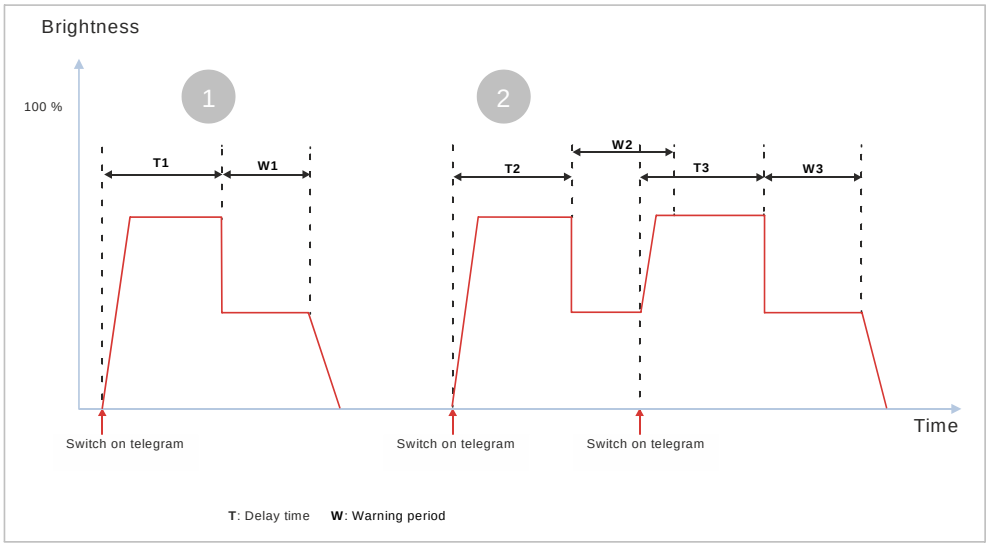


Fig. 47: Behavior in timer mode (1-fold) with setting "warning before switching off" = "dim to half dimming value" and "retriggering possible" = "1."

1 After receiving the switch on telegram, the timer is started and time counting (delay time) (T1) starts. The channel is switched on and the configured dimming time for switching is used for dimming up to the switch on value (e.g. 70 %).

The warning period (W1) starts at the end of the delay time (T1). At the start of the warning period, the channel is dimmed to half the current dimming value with a dimming time of 0 seconds. At the end of the warning period, the channel is dimmed down and switched off using the dimming time for switching.

2 After receiving the switch on telegram, the timer is started and time counting (delay time) (T2) starts. The channel is switched on and the configured dimming time for switching is used for dimming up to the switch on value (e.g. 70 %).

The warning period (W2) starts at the end of the delay time (T2). At the start of the warning period, the channel is dimmed to half the current dimming value with a dimming time of 0 seconds.

During the warning period, a second switch on telegram is received. Following that, the residual warning period is discarded and the delay time is restarted (T3). At the same time, the channel is dimmed to the configured dimming value (e.g. 70 %).

The warning period (W3) starts at the end of the delay time (T3). At the start of the warning period, the channel is dimmed to half the current dimming value with a dimming time of 0 seconds.

At the end of the warning period (W3), the channel is dimmed down and switched off using the dimming time for switching.

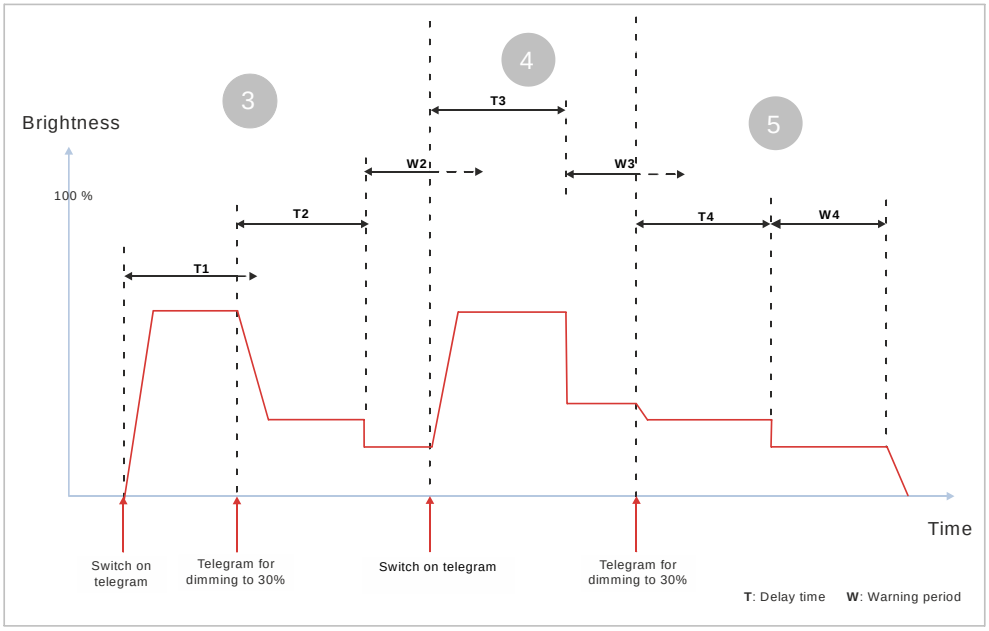


Fig. 48: Behavior in timer mode (1-fold) with setting "warning before switching off" = "dim to half dimming value" and "retriggering possible" = "1."

3 After receiving the switch on telegram, the timer is started and time counting (delay time) (T1) starts. The channel is switched on and the configured dimming time for switching is used for dimming up to the switch on value (e.g. 70 %).

During the delay time (T1), a telegram for dimming to a certain value is received. Following that, the residual delay time of T1 is discarded and the delay time is restarted (T2). At the same time, the channel is dimmed to the received dimming value (e.g. 30 %).

The warning period (W2) starts at the end of the delay time (T2). At the start of the warning period, the channel is dimmed to half the current dimming value with a dimming time of 0 seconds.

4 During the warning period, a second switch on telegram is received. Following that, the residual warning period is discarded and the delay time is restarted (T3). At the same time, the channel is dimmed to the configured dimming value (e.g. 70 %).

The warning period (W3) starts at the end of the delay time (T3). At the start of the warning period, the channel is dimmed to half the current dimming value with a dimming time of 0 seconds.

5 During the warning period (W3), another telegram for dimming to a certain value is received. Following that, the residual warning period is discarded and the delay time is restarted (T4). At the same time, the channel is dimmed to the received dimming value (e.g. 30 %).

The warning period (W4) starts at the end of the delay time (T4). At the start of the warning period, the channel is dimmed to half the current dimming value with a dimming time of 0 seconds.

At the end of the warning period (W4), the channel is dimmed down and switched off using the dimming time for switching.

Example:

Staircase timer:

- Somebody enters the staircase, switches on the light by pressing the button, the timer runs.
- The timer expires. To ensure people do not have to climb the stairs in the dark, a sudden dimming to have the dimming value indicates that the light will be switched off soon.
- Pressing the button in the staircase again restarts the timer, giving the user enough time to reach the next floors.

7.6.6 Behavior on activation and deactivation of night mode in normal mode with limited ON time

The following graphic shows the behavior of the switching/dimming actuator on activation and deactivation of night mode in normal mode with a limited ON time.

The following parameters are used:

- Operating mode (setting: normal mode)
- Switch on at value (setting: switch on value according to parameter)
- Switch on value (%) (setting: 70 %)
- Dimming time for switching (setting: 00:00:01.0)
- Dimming time for dimming value 1 (setting: 12:00:05 AM.0)
- Night mode (setting: enabled)
- ON time during night mode
- Retriggering possible (setting: 1)
- Limit ON time if the lights are switched on when switching to night mode (setting: enable)
- Cancel ON time if the lights are switched on when ending night mode (setting: disable)

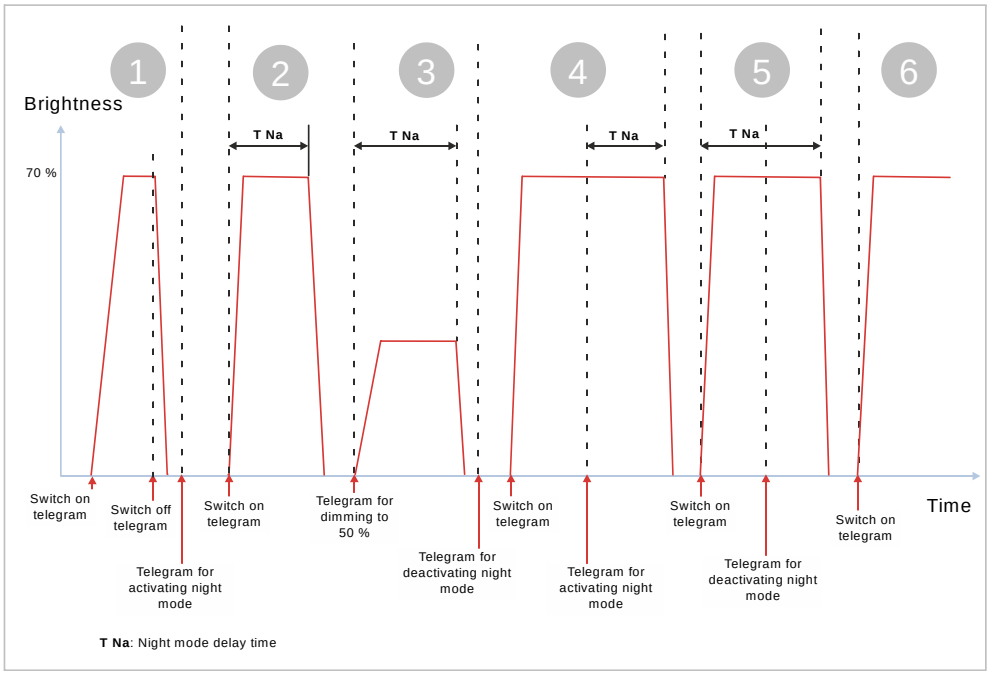


Fig. 49: Behavior on activation and deactivation of night mode in normal mode with limited ON time

1 After receiving the switch on telegram, the channel is switched on and dimmed to the configured switch on value with the dimming time for switching (e.g. 70 %).

After receiving the switch off telegram, the configured dimming time for switching is used for dimming down to the minimum dimming value and subsequent switching off.

Once the channel has been switched off, night mode is activated. No reaction happens.

2 After receiving the switch on telegram, the timer for night mode is started and time counting for night mode delay time (T Na) starts. The channel is switched on and the configured dimming time for switching is used for dimming up to the switch on value (e.g. 70 %).

At the end of the time configured in night mode, the channel is dimmed down and switched off. In both cases, the dimming time corresponds to the dimming time configured for switching.

3 The timer is started by the telegram for dimming to a certain value and the delay time for night mode (T Na) starts. The time of the dimming ramp is included in this time.

At the end of the time configured in the timer, the channel is dimmed down and switched off using the dimming time for switching.

Once the channel has been switched off, night mode is deactivated. No reaction happens.

4 After receiving the switch on telegram, the channel is switched on and dimmed to the configured switch on value with the dimming time for switching (e.g. 70 %). Since night mode is deactivated, there is no time limit.

Night mode is activated during regular operation. Following this, the delay time for night mode (T Na) commences.

At the end of the time configured in night mode, the channel is dimmed down and switched off using the dimming time for switching. Night mode remains activated.

5 After receiving the switch on telegram, the timer for night mode is started and time counting for night mode delay time (T Na) starts. The channel is switched on and the configured dimming time for switching is used for dimming up to the switch on value (e.g. 70 %).

During the delay time, night mode is deactivated. The delay time continues as normal and is not stopped. At the end of the delay time, the channel is dimmed down and switched off using the dimming time for switching. Night mode remains deactivated.

6 After receiving the switch on telegram, the channel is switched on and dimmed to the configured switch on value with the dimming time for switching (e.g. 70 %).

Since night mode has been deactivated, no automatic switching off takes place.

7.6.7 Behavior on activation and deactivation of night mode in normal mode without a limited ON time

The following graphic shows the behavior of the switching/dimming actuator on activation and deactivation of night mode in normal mode without a limited ON time.

The following parameters are used:

- Operating mode (setting: normal mode)
- Switch on at value (setting: switch on value according to parameter)
- Switch on value (%) (setting: 70 %)
- Dimming time for switching (setting: 00:00:01.0)
- Dimming time for dimming value 1 (setting: 12:00:05 AM.0)
- Night mode (setting: enabled)

- ON time during night mode
- Retriggering possible (setting: 1)
- Limit ON time if the lights are switched on when switching to night mode (setting: disable)
- Cancel ON time if the lights are switched on when ending night mode (setting: enable)

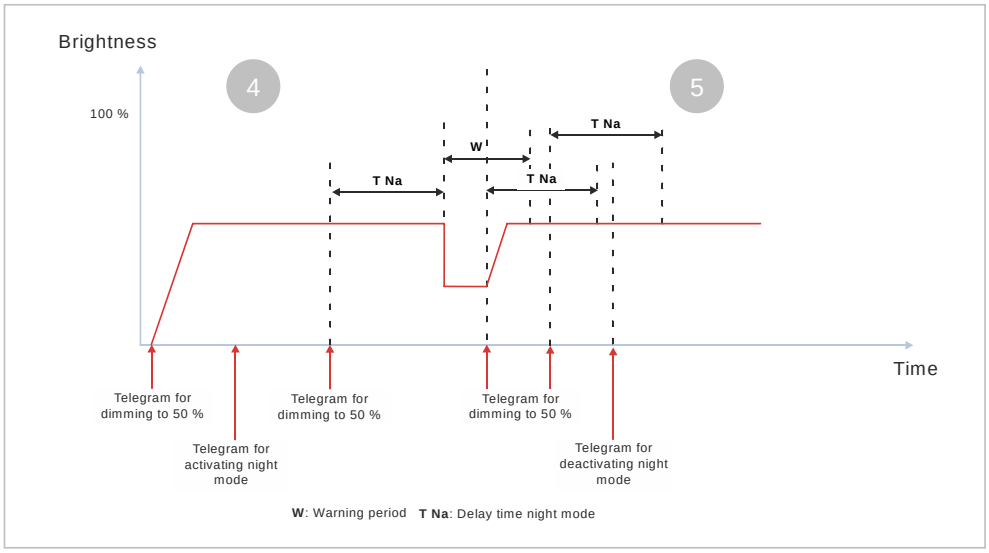


Fig. 50: Behavior on activation and deactivation of night mode in normal mode without a limited ON time

1 After receiving the switch on telegram, the channel is switched on and dimmed to the configured switch on value (e.g. 70 %) with the dimming time for switching.

After receiving the switch off telegram, the configured dimming time for switching is used for dimming down to the minimum dimming value and subsequently switching off the channel.

Once the channel has been switched off, night mode is activated. No reaction happens.

2 After receiving the switch on telegram, the timer for night mode is started and time counting for night mode delay time (T Na) starts. The channel is switched on and the configured dimming time for switching is used for dimming up to the switch on value (e.g. 70 %).

At the end of the time configured in night mode, the channel is dimmed down and switched off. In both cases, the dimming time corresponds to the dimming time configured for switching.

3 The timer is started by the telegram for dimming to a certain value and the delay time for night mode (T Na) starts. The time of the dimming ramp is included in this time.

At the end of the time configured in the timer, the channel is dimmed down and switched off using the dimming time for switching.

Once the channel has been switched off, night mode is deactivated. No reaction happens.

4 After receiving the switch on telegram, the channel is switched on and dimmed to the configured switch on value (e.g. 70 %) with the dimming time for switching. Since night mode is deactivated, there is no time limit.

Night mode is activated during regular operation. There is no action; the time configured for night mode is not started.

After receiving the switch off telegram, the configured dimming time for switching is used for dimming down to the minimum dimming value and

subsequently switching off the channel.

5 After receiving the switch on telegram, the timer for night mode is started and time counting for night mode delay time (T Na) starts. The channel is switched on and the configured dimming time for switching is used for dimming up to the switch on value (e.g. 70 %).

During the delay time, night mode is deactivated. The delay time is stopped and no automatic switching off takes place.

7.6.8 Behavior on activation and deactivation of night mode in normal mode with a warning prior to switching off with limited ON time

The following graphic shows the behavior of the switching/dimming actuator on activation and deactivation of night mode in normal mode with a warning prior to switching off and limiting the ON time

The following parameters are used:

- Operating mode (setting: normal mode)
- Switch on at value (setting: switch on value according to parameter)
- Switch on value (%) (setting: 70 %)
- Dimming time for switching (setting: 00:00:01.0)
- Dimming time for dimming value 1 (setting: 12:00:05 AM.0)
- Night mode (setting: enabled)
- ON time during night mode
- Retriggering possible (night mode) (setting: 1)
- Warning before switching off (night mode) (setting: dim to half dimming value)
- Warning period (night mode)
- Limit ON time if the lights are switched on when switching to night mode (setting: enable)
- Cancel ON time if the lights are switched on when ending night mode (setting: disable)

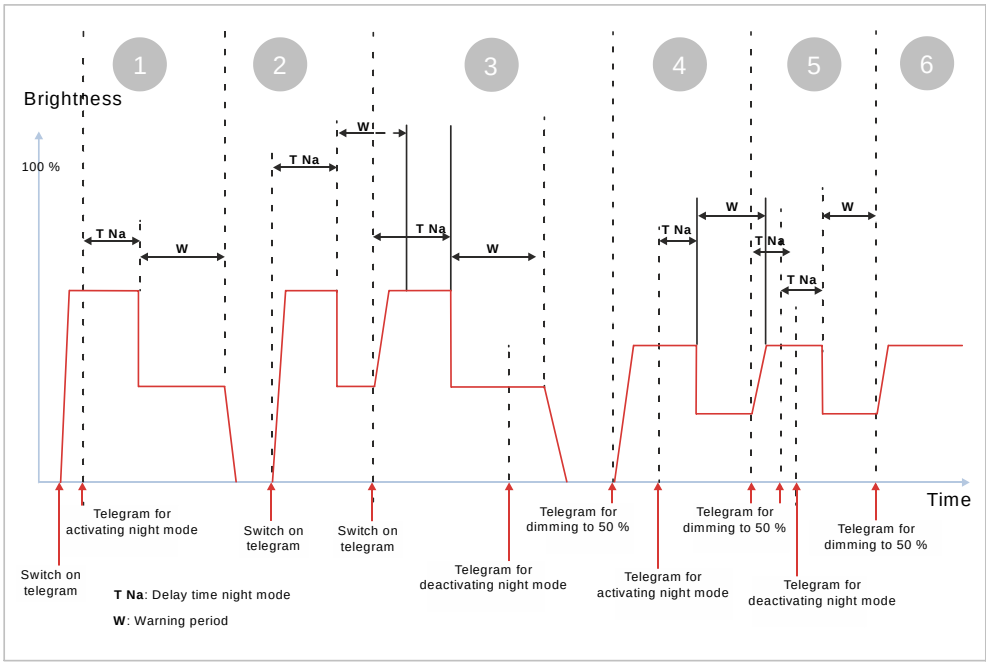


Fig. 51: Behavior on activation and deactivation of night mode in normal mode with a warning prior to switching off with limited ON time

1 After receiving the switch on telegram, the channel is switched on and dimmed to the configured switch on value (e.g. 70 %) with the dimming time for switching. Since night mode is deactivated, there is no time limit.

Night mode is activated during regular operation. Following this, the delay time for night mode (T Na) commences.

The warning period starts (W) at the end of the night mode delay time (T Na). At the start of the warning period, the channel is dimmed to half the current dimming value with a dimming time of 0 seconds.

At the end of the warning period, the channel is dimmed down and switched off using the dimming time for switching. Night mode remains activated.

2 After receiving the switch on telegram, the timer for night mode is started and time counting for night mode delay time (T Na) starts. The channel is switched on and the configured dimming time for switching is used for dimming up to the switch on value (e.g. 70 %).

The warning period (W) starts at the end of the delay time (T Na). At the start of the warning period, the channel is dimmed to half the current dimming value with a dimming time of 0 seconds.

3 During the warning period, a second switch on telegram is received. Following that, the residual warning period is discarded and the delay time is restarted (T Na). At the same time, the channel is dimmed to the configured dimming value (e.g. 70 %).

The warning period starts at the end of the delay time. At the start of the warning period, the channel is dimmed to half the current dimming value with a dimming time of 0 seconds.

During the warning period, night mode is deactivated. The warning period continues as normal and is not stopped. At the end of the warning period, the channel is dimmed down and switched off using the dimming time for switching. Night mode remains deactivated.

4 After receiving the telegram for dimming to a certain value, the channel is switched on and dimmed to the configured value (e.g. 50 %) with the dimming time for dimming value 1. Since night mode is deactivated, there is no time limit.

Night mode is activated during regular operation. Following this, the delay time for night mode (T Na) commences.

The warning period starts (W) at the end of the night mode delay time (T Na). At the start of the warning period, the channel is dimmed to half the current dimming value with a dimming time of 0 seconds.

5 During the warning period, a second telegram for dimming to a certain value is received. Following that, the residual warning period is discarded and the delay time is restarted (T Na). At the same time, the channel is dimmed to the received dimming value (e.g. 50 %) with the dimming time of dimming value 1.

During the delay time, a second telegram for dimming to a certain value is received. Since retriggering is possible once, the residual delay time is then discarded and the delay time (T Na) restarted. At the same time, the channel is dimmed down to the dimming value received, if this dimming value results in a change to the current dimming value.

During the delay time, night mode is deactivated. The delay time continues as normal and is not stopped.

The warning period starts (W) at the end of the night mode delay time (T Na). At the start of the warning period, the channel is dimmed to half the current dimming value with a dimming time of 0 seconds.

6 During the warning period, another telegram for dimming to a certain value

(e.g. 50 %) is received. Since night mode was deactivated, the delay time is not started. The channel remains switched on and is dimmed from dimming value 1 to the received dimming value with the dimming time.

7.6.9 Behavior on activation and deactivation of night mode in normal mode with a warning prior to switching off without limited ON time

The following graphic shows the behavior of the switching/dimming actuator on activation and deactivation of night mode in normal mode with a warning prior to switching off and without limiting the ON time.

The following parameters are used:

- Operating mode (setting: normal mode)
- Switch on at value (setting: switch on value according to parameter)
- Switch on value (%) (setting: 70 %)
- Dimming time for switching (setting: 00:00:01.0)
- Dimming time for dimming value 1 (setting: 12:00:05 AM.0)
- Night mode (setting: enabled)
- ON time during night mode
- Retriggering possible (night mode) (setting: 1)
- Limit ON time if the lights are switched on when switching to night mode (setting: disable)
- Cancel ON time if the lights are switched on when ending night mode (setting: enable)

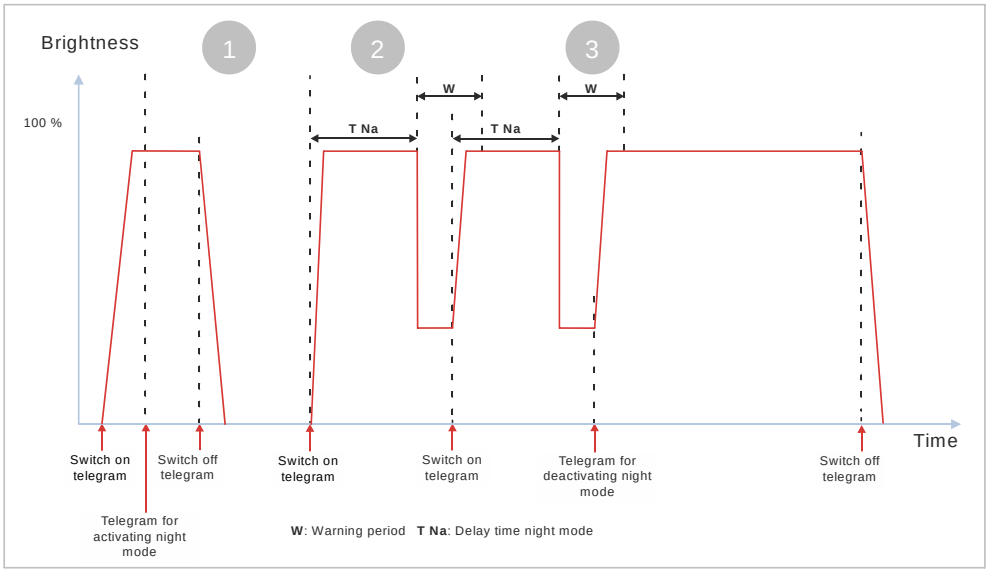


Fig. 52: Behavior on activation and deactivation of night mode in normal mode with a warning prior to switching off without limited ON time (1)

1 After receiving the switch on telegram, the channel is switched on and dimmed to the configured switch on value (e.g. 70 %) with the dimming time for switching. Since night mode is deactivated, there is no time limit.

Night mode is activated during regular operation. There is no action; the time configured for night mode is not started.

After receiving the switch off telegram, the configured dimming time for switching is used for dimming down to the minimum dimming value and subsequently switching off the channel.

Night mode remains activated.

2 After receiving the switch on telegram, the timer for night mode is started and time counting for night mode delay time (T Na) starts. The channel is switched on and the configured dimming time for switching is used for dimming up to the switch on value (e.g. 70 %).

The warning period (W) starts at the end of the delay time (T Na). At the start of the warning period, the channel is dimmed to half the current dimming value with a dimming time of 0 seconds.

3 During the warning period, a second switch on telegram is received. Following that, the residual warning period is discarded and the delay time is restarted (T Na). At the same time, the channel is dimmed to the configured dimming value (e.g. 70 %).

The warning period starts at the end of the delay time. At the start of the warning period, the channel is dimmed to half the current dimming value with a dimming time of 0 seconds.

During the warning period, night mode is deactivated. The warning period is stopped and the channel is dimmed brighter to the configured switch on value (e.g. 70 %); no automatic switching off takes place.

After receiving the switch off telegram, the configured dimming time for switching is used for dimming down to the minimum dimming value and subsequently switching off the channel.

Night mode remains deactivated.

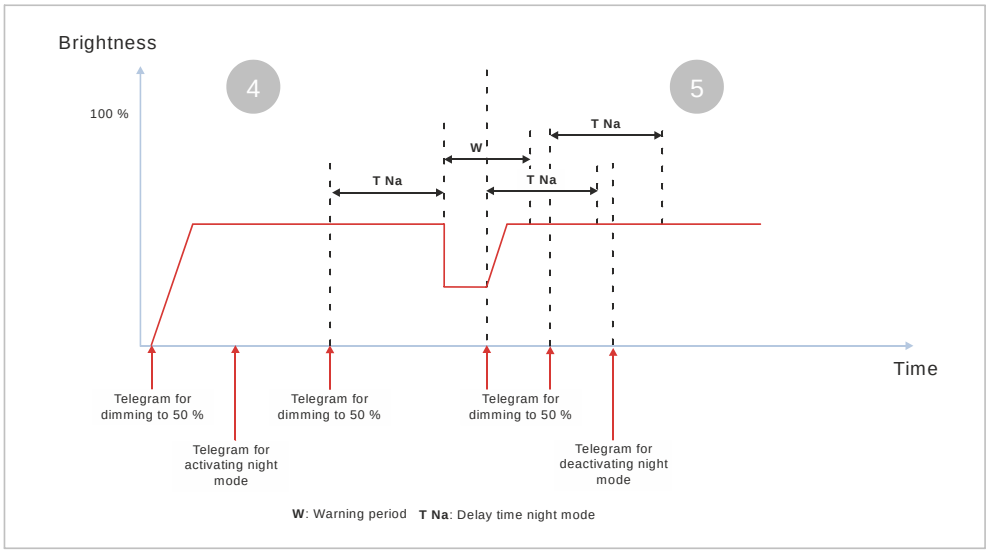


Fig. 53: Behavior on activation and deactivation of night mode in normal mode with a warning prior to switching off without limited ON time (2)

4 After receiving the telegram for dimming to a certain value, the channel is switched on and dimmed to the configured value (e.g. 50 %) with the dimming time for dimming value 1. Since night mode is deactivated, there is no time limit.

Night mode is activated during regular operation. There is no action; the time configured for night mode is not started.

After receiving the telegram for dimming to a specified value (e.g. 50 %), the delay time for night mode (T Na) starts.

The warning period starts (W) at the end of the night mode delay time (T Na). At the start of the warning period, the channel is dimmed to half the current dimming value with a dimming time of 0 seconds.

5 During the warning period, another telegram for dimming to a certain value is received. Following that, the residual warning period is discarded and the delay time is restarted (T Na). At the same time, the channel is dimmed to

the received dimming value (e.g. 50 %) with the dimming time of dimming value 1.

During the delay time, another telegram for dimming to a certain value is received. Since retriggering is possible once, the residual delay time is then discarded and the delay time (T Na) restarted. At the same time, the channel is dimmed down to the dimming value received, if this dimming value results in a change to the current dimming value.

During the delay time, night mode is deactivated. The delay time is stopped and no automatic switching off takes place.

7.6.10 Behavior on activation and deactivation of night mode in timer mode (1-fold) with a limited ON time

The following graphic shows the behavior of the switching/dimming actuator on activation and deactivation of night mode in timer mode (1-fold) with a warning prior to switching off in both cases and with a limited ON time.

The following parameters are used:

- Operating mode (setting: timer mode)
- Switch on at value (setting: switch on value according to parameter)
- Switch on value (%) (setting: 70 %)
- Minimum dimming value (setting: 1 %)
- Maximum dimming value (setting: 100 %)
- Dimming time for switching (setting: 00:00:01.0)
- Dimming time for dimming value 1 (setting: 12:00:05 AM.0)
- ON time 1 in day mode
- Retriggering possible (day mode) (setting: 3)
- Warning before switching off (day mode) (setting: dim to half dimming value)
- Warning period (day mode)
- Night mode (setting: enabled)
- ON time during night mode
- Retriggering possible (night mode) (setting: 2)
- Warning before switching Off (night mode) (setting: Via briefly switching on - off)
- Warning period (night mode)
- Warning signal period (night mode)
- Limit ON time if the lights are switched on when switching to night mode (setting: enable)
- Limit ON time if the lights are switched on when switching from night mode to timer mode (setting: disable)

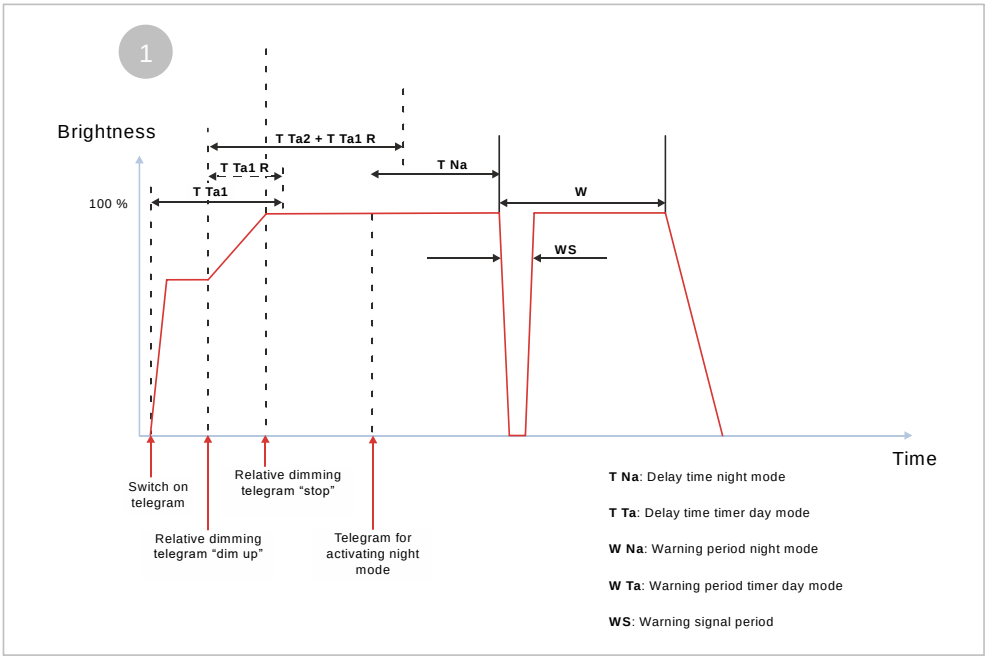


Fig. 54: Behavior on activation and deactivation of night mode in timer mode (1-fold) with limited ON time (1)

1 Night mode is deactivated.

After receiving the switch on telegram, the timer (day) is started and time counting (delay time) (T Ta1) starts. The channel is switched on and the configured dimming time for switching is used for dimming up to the switch on value (e.g. 70 %).

During the delay time (T Ta1), a telegram for relative dimming (e.g. at long key press on a button) is received and the light is dimmed up. Since retriggering is possible, the new delay time (T Ta2) is added to the remaining time of the first delay time (T Ta 1 R). That is, the delay time is extended.

When the relative dimming stops (e.g. when letting go of the button), a telegram for stopping the relative dimming is received. This telegram is used to stop the dimming up.

During the delay time, a telegram for activating night mode is received. Following this, the delay time for night mode (T Na) commences. The current delay time of the timer for day mode is discarded.

The warning period starts (W) at the end of the night mode delay time (T Na). At the start of the warning period, the channel is briefly switched off and on again using the dimming time for switching (warning signal period) (night mode).

At the end of the warning period, the channel is dimmed down and switched off using the dimming time for switching. Night mode remains activated

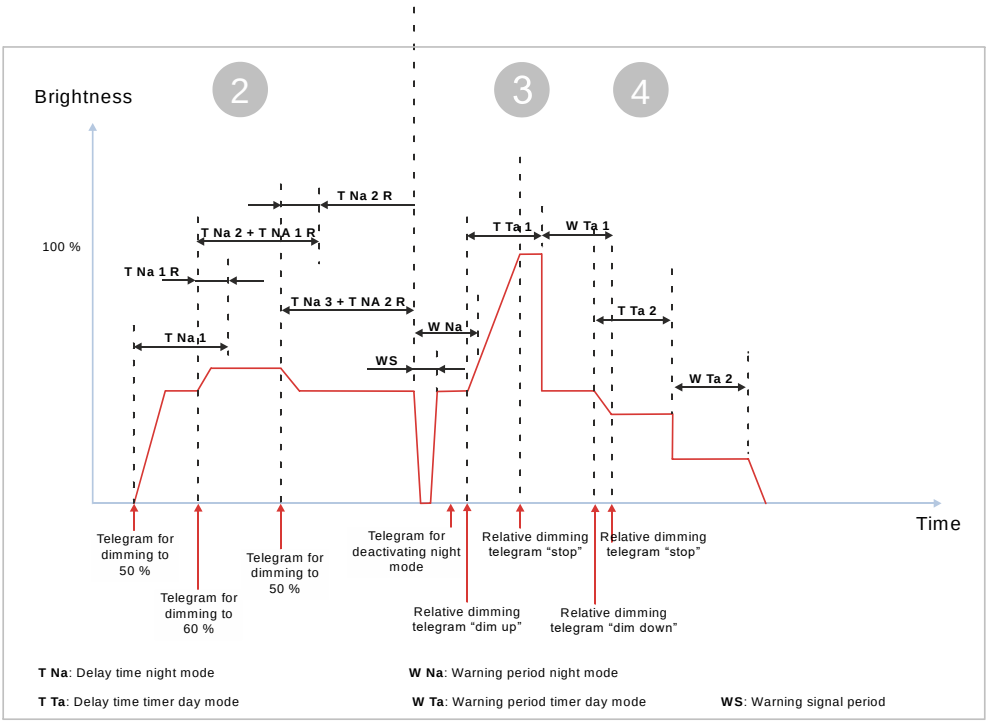


Fig. 55: Behavior on activation and deactivation of night mode in timer mode (1-fold) with limited ON time (2)

2 Night mode is activated.

After receiving the telegram for dimming to a certain value, the channel is switched on and dimmed to the received value (e.g. 50 %) with the dimming time for dimming value 1. The delay time for night mode starts (T Na 1).

During the delay time (T Na 1), a telegram for dimming to a certain dimming value (e.g. 60 %) is received and the light is dimmed to this value. Since retriggering is possible, the new delay time (T Na 2) is added to the residual time of the first delay time (T Na 1 R). That is, the delay time is extended.

During the delay time (T Na 2), a telegram for dimming to a certain dimming value (e.g. 50 %) is received and the light is dimmed to this value. Since retriggering is possible, the new delay time (T Na 3) is added to the residual time of the second delay time (T Na 2 R). That is, the delay time is extended.

3 The warning period (W Na) starts at the end of the delay time. At the start of the warning period, the channel is briefly switched off and on again using the dimming time for switching (warning signal period) (night mode).

Prior to the end of the warning period, night mode is deactivated. This has no effect on the dimming value or timer at first. The warning period for night mode continues and would lead to the channel being switched off at the end.

During the warning period, a telegram for relative dimming (e.g. at long key press on a button) is received. Since night mode is deactivated, the timer (day mode) (T Ta 1) is then started and the light is dimmed up. The residual warning period is discarded.

When relative dimming stops (e.g. when letting go of the button) at the desired brightness (e.g. 100 %), a telegram for stopping relative dimming is received. This telegram is used to stop the dimming up.

4 The warning period (W Ta 1) starts at the end of the delay time (T Ta 1). At the start of the warning period, the channel is dimmed to half the current dimming value with a dimming time of 0 seconds.

During the warning period, a telegram for relative dimming (e.g. at long key

press on a button) is received. This is followed by starting the timer (day mode) and the delay time (T Ta 2) as well as dimming down. The residual warning period is discarded.

When relative dimming stops (e.g. when letting go of the button) at the desired brightness (e.g. 40 %), a telegram for stopping relative dimming is received. This telegram is used to stop the dimming down.

The warning period (W Ta 2) starts at the end of the delay time (T Ta 2). At the start of the warning period, the channel is dimmed to half the current dimming value with the dimming time for switching. At the end of the warning period, the channel is dimmed down and switched off using the dimming time for switching. Night mode remains deactivated.

7.6.11 Behavior on activation and deactivation of night mode in timer mode (1-fold) without limited ON time

The following graphic shows the behavior of the switching/dimming actuator on activation and deactivation of night mode in timer mode (1-fold) with a warning prior to switching off in both cases and without a limited ON time.

The following parameters are used:

- Operating mode (setting: timer mode)
- Switch on at value (setting: switch on value according to parameter)
- Switch on value (%) (setting: 70 %)
- Minimum dimming value (setting: 1 %)
- Maximum dimming value (setting: 100 %)
- Dimming time for switching (setting: 00:00:01.0)
- Dimming time for dimming value 1 (setting: 12:00:05 AM.0)
- ON time 1 during day mode
- Retriggering possible (day mode) (setting: 3)
- Warning before switching off (day mode) (setting: dim to half dimming value)
- Warning period (day mode)
- Night mode (setting: enabled)
- ON time during night mode
- Retriggering possible (night mode) (setting: 2)
- Warning before switching Off (night mode) (setting: Via briefly switching on - off)
- Warning period (night mode)
- Warning signal period (night mode)
- Limit ON time if the lights are switched on when switching to night mode (setting: disable)
- Limit ON time if the lights are switched on when switching from night mode to timer mode (setting: enable)

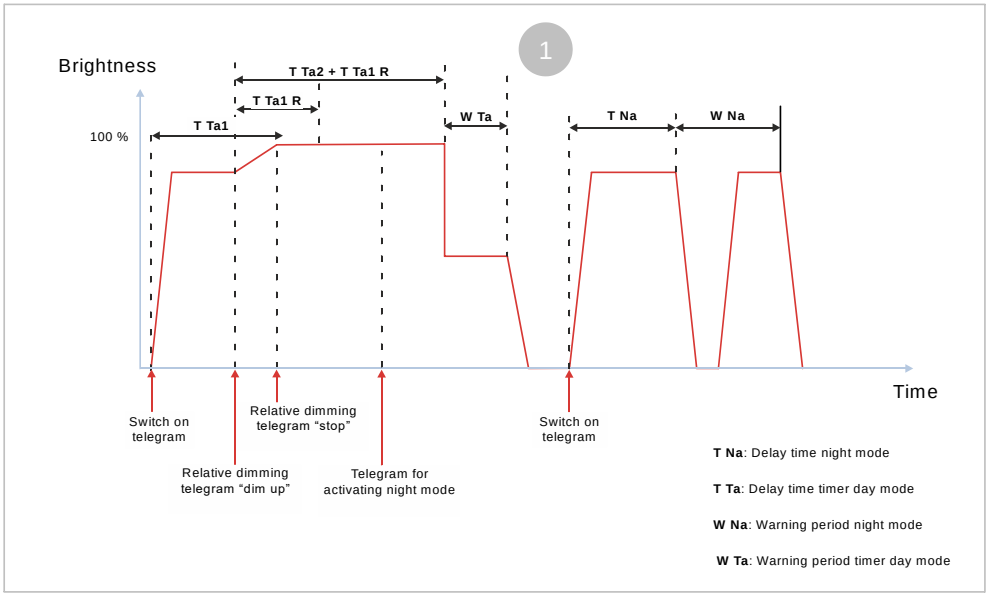


Fig. 56: Behavior on activation and deactivation of night mode in timer mode (1-fold) without limited ON time (1)

1 Night mode is deactivated.

After receiving the switch on telegram, the timer (day) is started and time counting (delay time) (T Ta1) starts. The channel is switched on and the configured dimming time for switching is used for dimming brighter up to the configured switch on value (e.g. 70 %).

During the delay time (T Ta1), a telegram for relative dimming (e.g. at long key press on a key) is received and the light is dimmed up. Since retriggering is possible, the new delay time (T Ta 2) is added to the residual time of the first delay time (T Ta 1 R). That is, the delay time is extended.

When the relative dimming stops (e.g. when letting go of the button), a telegram for stopping the relative dimming is received. This telegram is used to stop the dimming up.

During the delay time, a telegram for activating night mode is received. There is no action; the time configured for night mode is not started. The delay time of the timer (day) continues. The warning period (W Ta) starts at the end of the delay time (T Ta 2). At the start of the warning period, the channel is dimmed to half the current dimming value with the dimming time for switching. At the end of the warning period, the channel is dimmed down and switched off using the dimming time for switching. Night mode remains activated.

After receiving the switch on telegram, the timer for night mode is started and time counting (delay time) (T Na) begins. The channel is switched on and the configured dimming time for switching is used for dimming brighter up to the configured switch on value (e.g. 70 %).

The warning period starts (W) at the end of the night mode delay time (T Na). At the start of the warning period, the channel is briefly switched off and then on again using the dimming time for switching (warning signal period) (night mode).

At the end of the warning period, the channel is dimmed down and switched off using the dimming time for switching.

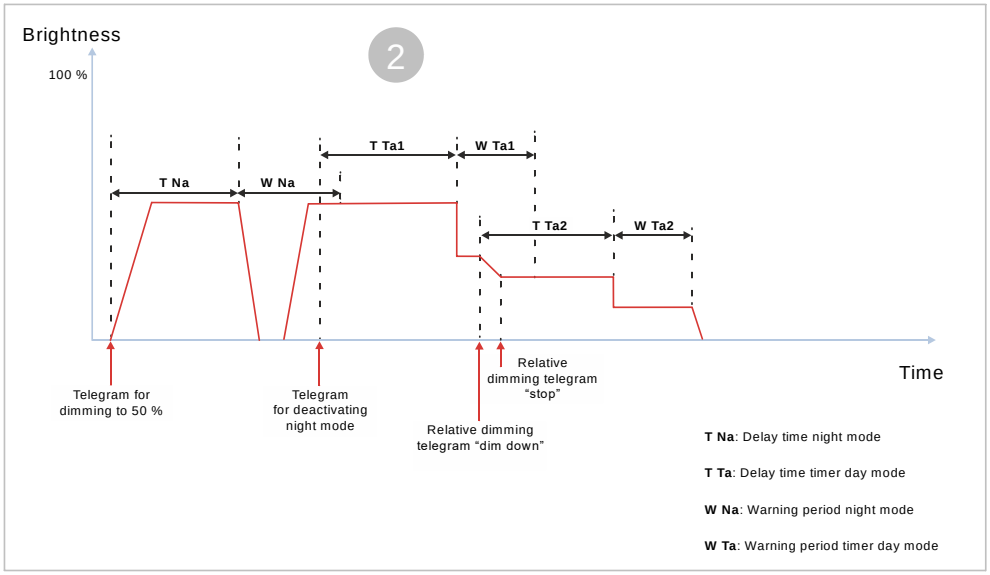


Fig. 57: Behavior on activation and deactivation of night mode in timer mode (1-fold) without limited ON time (2)

2 Night mode is activated.

After receiving the telegram for dimming to a certain value, the channel is switched on and dimmed to the received value (e.g. 50 %) with the dimming time for dimming value 1. The delay time for night mode starts (T Na).

The warning period (W Na) starts at the end of the delay time. At the start of the warning period, the channel is briefly switched off and then on again using the dimming time for switching (warning signal period) (night mode).

Prior to the end of the warning period, night mode is deactivated. Following that, the warning period (W Na) is discarded and the delay time of the timer (day) (T Ta 1) is started.

The warning period (W Ta 1) starts at the end of the delay time (T Ta 1). At the start of the warning period, the channel is dimmed to half the current dimming value with a dimming time of 0 seconds.

During the warning period, a telegram for relative dimming (e.g. at long key press on a key) is received. This is followed by starting the timer (day mode) and the delay time (T Ta 2) as well as dimming down. The residual warning period is discarded.

When the relative dimming stops (e.g. when letting go of the key) at the desired brightness (e.g. 40 %), a telegram for stopping the relative dimming is received. This telegram is used to stop the dimming down.

The warning period (W Ta 2) starts at the end of the delay time (T Ta 2). At the start of the warning period, the channel is dimmed to half the current dimming value with the dimming time for switching. At the end of the warning period, the channel is dimmed down and switched off using the dimming time for switching. Night mode remains deactivated.

7.6.12 Behavior on configured ON delay in normal mode and night mode.

The following graphic shows the behavior of the switching/dimming actuator if an ON delay has been configured in normal mode and night mode.

The following parameters are used:

- Operating mode (setting: normal mode)
- Dimming time for switching (setting: 12:00:00 AM.0)
- ON delay (normal mode) (setting: > 00:00:00)

- OFF delay (normal mode) (setting: 00:00:00)
- Night mode (setting: enabled)
- ON time during night mode
- Warning before switching Off (night mode) (setting: No)

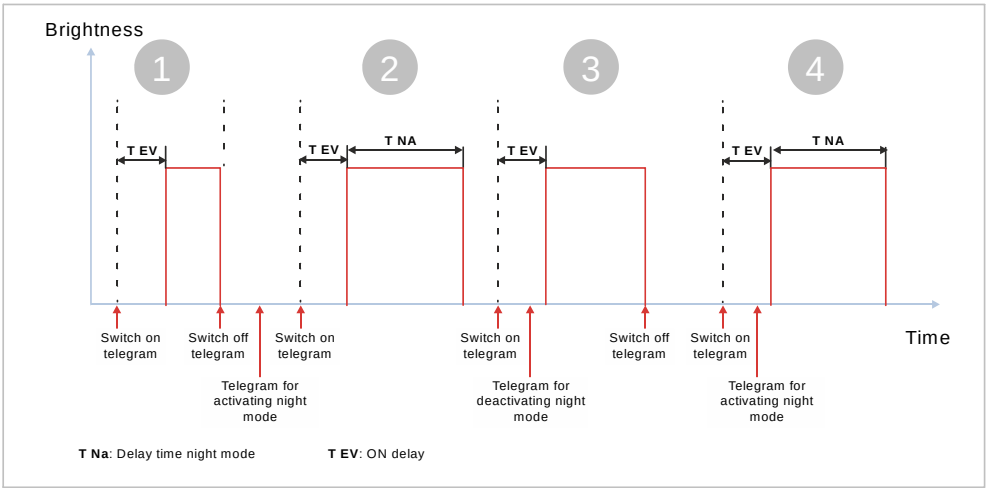


Fig. 58: Behavior on configured ON delay in normal mode and night mode.

1 After receiving the switch on telegram, the ON delay starts with the configured time. At the end of the ON delay, the channel is switched on.
After receiving the switch off telegram, the channel is switched off.
Night mode is activated. This does not lead to any switch reaction.

2 Night mode is activated. This does not lead to any switch reaction.
After receiving the switch on telegram, the ON delay starts with the configured time. At the end of the ON delay, the channel is switched on. Since night mode is active, the delay time of night mode (T Na) starts.
At the end of the delay time, the channel is switched off. Night mode remains activated.

3 After receiving the switch on telegram, the ON delay starts with the configured time.
During the ON delay, night mode is deactivated.
At the end of the ON delay, the channel is switched on. Since night mode is already deactivated at this point in time, no delay time starts and the channel is not automatically switched off.

4 After receiving the switch on telegram, the ON delay starts with the configured time.
During the ON delay, night mode is activated.
At the end of the ON delay, the channel is switched on. Since night mode is active, the delay time of night mode (T Na) starts.
At the end of the delay time, the channel is switched off. Night mode remains activated.

7.7 Switching behavior in case of activated overrides

7.7.1 Behavior of overrides of the channel when “switching on/off” or “dimming to a specific value” (e.g. with override “manual ON”)

The following graphic shows the behavior of the switching/dimming actuator when switching on/switching off and when dimming to a specific value if the “manual ON” override has been configured.

The following parameters are used:

- Switch on at value (setting: switch on value according to parameter)
- Switch on value (%) (setting: 70 %)
- Minimum dimming value (setting: 1 %)
- Maximum dimming value (setting: 100 %)
- Dimming time for switching (setting: 12:00:00 AM.0)
- Dimming time for dimming value 1 (setting: 00:00:05.0)

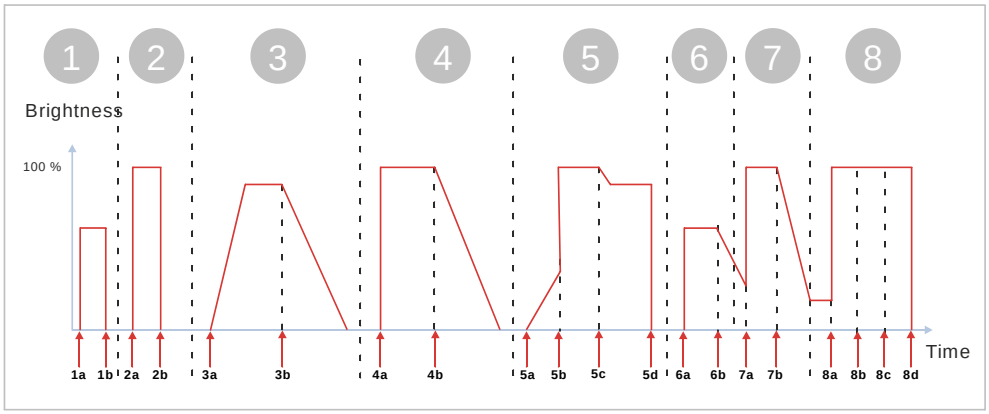


Fig. 59: Behavior of overrides of the channel when “switching on/off” or “dimming to a specific value” (e.g. with override “manual ON”)

1 After receiving the switch on telegram, the channel is switched on and dimmed to the configured switch on value (e.g. 70 %) with the dimming time for switching.

Upon receipt of the switch off telegram, the channel is dimmed down and switched off using the dimming time for switching.

1a Switch on telegram

1b Switch off telegram

2 After receiving the telegram for activating the override, the channel is switched on and dimmed to the maximum dimming value with the dimming time for switching.

After receiving the telegram for deactivating the override, the channel is dimmed down using the dimming time that belongs to the last received value on the input of the override block (see (1)). In this case, the last value was the telegram “switch off.” That is, the channel is dimmed down and switched off using the dimming time for switching.

2a Telegram for activating override

2b Telegram for deactivating override

3 After receiving the telegram for dimming up to a certain value, the channel is switched on and dimmed up with the dimming time for dimming value 1 (e.g. 90 %).

After receiving the telegram for dimming down and switching off (0 %), the channel is dimmed down and switched off using the dimming time of dimming value 1.

3a Telegram for dimming to 90 %

3b Telegram for dimming to 0 %

4 After receiving the telegram for activating the override, the channel is switched on and dimmed to the maximum dimming value with the dimming time for switching.

After receiving the telegram for deactivating the override, the channel is dimmed down using the dimming time that belongs to the last received value on the input of the override block (see (3)). In this case, the last value was the telegram “dim to a specific value.” That is, the channel is dimmed down and switched off using the dimming time for dimming value 1.

4a Telegram for activating override

4b Telegram for deactivating override

5 After receiving the telegram for dimming up to a certain value, the channel is switched on and dimmed up with the dimming time for dimming value 1 (e.g. 90 %).

During dimming, a telegram for activating the override is received. Following that, the dimming time for switching is used for dimming to the maximum dimming value (100 %).

After receiving the telegram for deactivating the override, the channel is dimmed down to the last active dimming value (e.g. 90 %) using the dimming time that belongs to the last value received on the input of the override block. In this case, the last value was the telegram “dim to a specific value.” That is, the channel is dimmed down using the dimming time for dimming value 1.

Upon receipt of the switch off telegram, the channel is dimmed down and switched off using the dimming time for switching.

5a Telegram for dimming to 90 %

5b Telegram for activating override

5c Telegram for deactivating override

5d Switch off telegram

6 After receiving the switch on telegram, the channel is switched on and dimmed to the configured switch on value (e.g. 70 %) with the dimming time for switching.

After receiving the telegram for dimming down to a certain value, the channel is dimmed down with the dimming time for dimming value 1 (e.g. 20 %).

6a Switch on telegram

6b Telegram for dimming to 20 %

7 After receiving the telegram for activating the override, the channel is dimmed from the current dimming value to the maximum dimming value

with the dimming time for switching.

After receiving the telegram for deactivating the override, the channel is dimmed down to the last active dimming value (e.g. 20 %) using the dimming time that belongs to the last value received at the input of the override block (see (6)). In this case, the last value was the telegram “dim to a specific value.” That is, the channel is dimmed down using the dimming time for dimming value 1.

7a Telegram for activating override

7b Telegram for deactivating override

8 After receiving the switch on telegram, the channel is dimmed up to the maximum dimming value (e.g. 100 %) using the dimming time for switching.

The receipt of the telegram for the override has no effect on the dimming value as dimming to the maximum dimming value has already been executed.

The receipt of the switch off telegram has no effect because the override is active.

After receiving the telegram for deactivating the override, the channel is dimmed down using the dimming time that belongs to the last received value on the input of the override block. In this case, the last value was the telegram “switch off.” That is, the channel is dimmed down and switched off using the dimming time for switching.

8a Switch on telegram

8b Telegram for activating override

8c Switch off telegram

8d Telegram for deactivating override

When activating the “manual ON” override, the configured dimming time for switching is always used. This happens irrespective of whether the channel has to be switched on or is already switched on and only the brightness has to be changed and irrespective of the last received dimming telegram and the corresponding dimming time.

When deactivating the “manual ON” override, the dimming time of the last received dimming telegram is always used, irrespective of whether the channel is switched of for this purpose or merely the brightness is changed.

If another switching telegram is received in switched on status, irrespective of whether this had been triggered by a previous switching or dimming telegram, then the maximum dimming value is set with the dimming time for switching.

7.7.2 Behavior of overrides of the channel when “switching on/off” or “dimming to a specific value” (example with override “user-defined”)

The following graphic shows the behavior of the switching/dimming actuator if a delay has been configured for the “user-defined” override.

The following parameters are used:

- Operating mode (setting: normal mode)
- Override (setting: user-defined)
- Switch on at value (setting: switch on value according to parameter)

- Switch on value (%) (setting: 50 %)
- Minimum dimming value (setting: 1 %)
- Maximum dimming value (setting: 100 %)
- Behavior of switching/dimming value on override activation (setting: dimming value according to parameter)
- Value at activation (setting: 80 %)
- Behavior of switching/dimming value on override deactivation (setting: updated value)
- Dimming time for switching (setting: 12:00:00 AM.0)
- Dimming time for dimming value 1 (setting: 00:00:05.0)

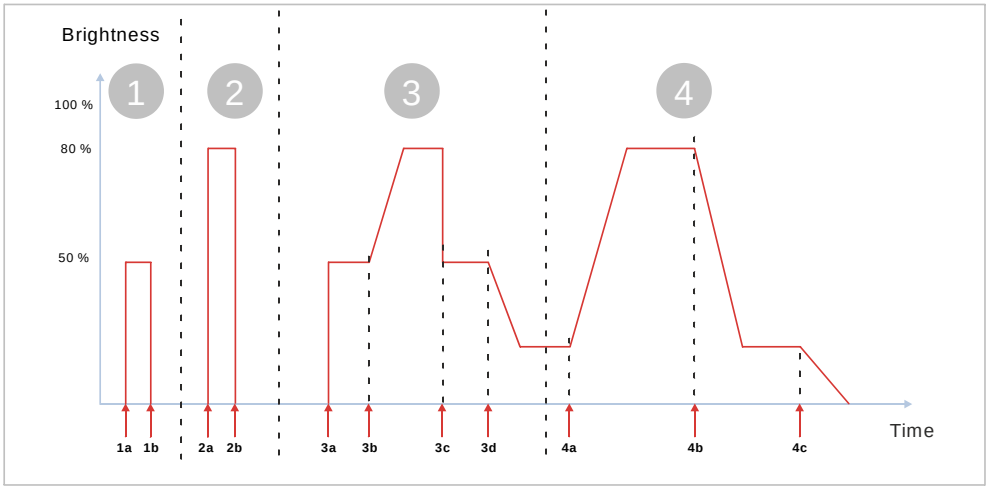


Fig. 60: Behavior of overrides of the channel when "switching on/off" or "dimming to a specific value" (example with override "user-defined")

1 After receiving the switch on telegram, the channel is switched on and dimmed to the configured switch on value (e.g. 5 %) with the dimming time for switching.

Upon receipt of the switch off telegram, the channel is dimmed down and switched off using the dimming time for switching.

1a Switch on telegram

1b Switch off telegram

2 After receiving the telegram for activating the override, the channel is switched on and dimmed to the value on activation of the override (e.g. 80 %) using the dimming time for switching.

After receiving the telegram for deactivating the override, the channel is dimmed down using the dimming time that belongs to the last received value on the input of the override block (see (1)). In this case, the last value was the telegram "switch off." That is, the channel is dimmed down and switched off using the dimming time for switching.

2a Telegram for activating override

2b Telegram for deactivating override

3 After receiving the switch on telegram, the channel is switched on and dimmed to the configured switch on value (e.g. 50 %) with the dimming time for switching.

After receiving the telegram for activating the override, the channel is switched on and dimmed to the value on activation of the override (e.g. 80 %). Since the channel is already switched on (and is therefore not being

switched on), the dimming time of dimming value 1 is used for dimming brighter (e.g. 80 %) in this configuration (behavior of switching/dimming value on override activation = “dimming value according to parameter”).

After receiving the telegram for deactivating the override, the channel is dimmed down to the last active dimming value (e.g. 50 %) using the dimming time that belongs to the last value received on the input of the override block. In this case, the last value was the telegram “switch on.” That is, the channel is dimmed down using the dimming time for switching.

After receiving the telegram for dimming to a certain value, the channel is dimmed down with the dimming time for dimming value 1 (e.g. 20 %).

3a Switch on telegram

3b Telegram for activating override

3c Telegram for deactivating override

3d Telegram for dimming to 20 %

4 After receiving the telegram for activating the override, the channel is dimmed to the value on activation of the override (e.g. 80 %). Since the channel is already switched on (and is therefore not being switched on), the dimming time of dimming value 1 is used for dimming brighter (e.g. 80 %) in this configuration (behavior of switching/dimming value on override activation = “dimming value according to parameter”).

After receiving the telegram for deactivating the override, the channel is dimmed down to the last active dimming value (e.g. 20 %) using the dimming time that belongs to the last value received at the input of the override block (see (3)). In this case, the last value was the telegram “dim to a specific value.” That is, the channel is dimmed down using the dimming time for dimming value 1.

After receiving the telegram for dimming to a specific value (0 %), the channel is dimmed down and switched off with the dimming time for dimming value 1.

4a Telegram for activating override

4b Telegram for deactivating override

4c Telegram for dimming to 0 %

7.7.3 Behavior of the switching/dimming actuator in timer mode if the override (forced control) is configured and there is a specification for restarting the timer on deactivation of override.

The following graphic shows the behavior of the switching/dimming actuator in timer mode if the override (forced control) is configured and there is a specification for restarting the timer on deactivation of override.

The following parameters are used:

- Operating mode (setting: timer mode)
- Override (setting: forced control)
- Switch on at value (setting: switch on value according to parameter)
- Switch on value (%) (setting: 50 %)
- Minimum dimming value (setting: 1 %)
- Maximum dimming value (setting: 100 %)

- Retriggering possible (day mode) (setting: 1)
- Warning before switching off (day mode) (setting: dim to half dimming value)
- Value at activation (setting: 80 %)
- Behavior of switching/dimming value on override deactivation (setting: no change)
- Restart timer on deactivation of override (setting: enabled)
- Dimming time for switching (setting: 00:00:00.0)
- Dimming time for dimming value 1 (setting: 00:00:05.0)

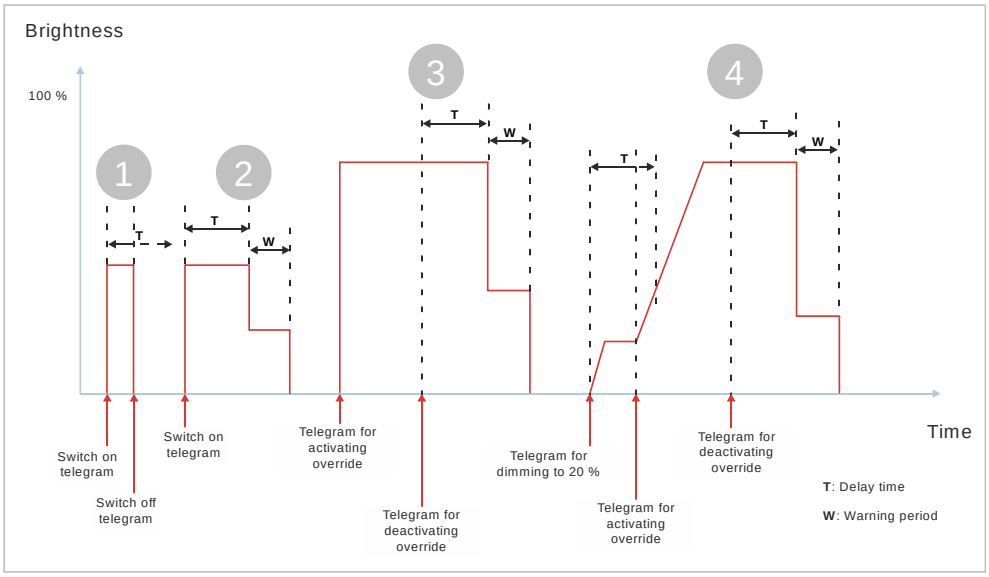


Fig. 61: Behavior of the switching/dimming actuator in timer mode if the override (forced control) is configured and there is a specification for restarting the timer on deactivation of override.

1 After receiving the switch on telegram, the timer (day) is started and time counting (delay time) (T) starts. The channel is switched on and the configured dimming time for switching is used for dimming up to the switch on value (e.g. 50 %).

Upon receipt of the switch off telegram, the channel is dimmed down and switched off using the dimming time for switching. The residual delay time of the timer is discarded.

2 After receiving the switch on telegram, the timer is started and time counting (delay time) (T) starts. The channel is switched on and the configured dimming time for switching is used for dimming up to the switch on value (e.g. 50 %).

The warning period (W) starts at the end of the delay time (T). At the start of the warning period, the channel is dimmed to half the current dimming value with a dimming time of 0 seconds. At the end of the warning period, the channel is dimmed down and switched off using the dimming time for switching.

3 After receiving the telegram for activating the override, the channel is switched on and dimmed to the value configured for activation of the override (e.g. 80 %) using the dimming time for switching.

After receiving the telegram for deactivating the override, the input of the override no longer has a dimming value; hence the timer for day mode is started and time counting (delay time) (T) commences. The current brightness value is retained.

The warning period (W) starts at the end of the delay time (T). At the start of the warning period, the channel is dimmed to half the current dimming value with a dimming time of 0 seconds. At the end of the warning period, the channel is dimmed down and switched off using the dimming time for

switching.

4 After receiving the telegram for dimming to a certain value, the timer (day) is started and time counting (delay time) (T) starts. The channel is switched on and is dimmed brighter using the dimming time of dimming value 1 (e.g. 20 %).

During delay time, a telegram for activating the override is received. Following that, the channel is dimmed to the dimming value configured for activation of the override (e.g. 80 %). Since the channel is already switched on (and is therefore not being switched on), the channel is dimmed up using the dimming time of dimming value 1. The delay time continues in the background. Since the override is active at the end of the delay time, no warning period is started and the channel remains switched on.

After receiving the telegram for deactivating the override, the inbox of the override no longer has a dimming value; hence the timer for day mode is started and time counting (delay time) (T) commences. The current dimming value is retained.

The warning period (W) starts at the end of the delay time (T). At the start of the warning period, the channel is dimmed to half the current dimming value with a dimming time of 0 seconds. At the end of the warning period, the channel is dimmed down and switched off using the dimming time for switching.

Example 1:

The regular timer is used for lighting in rooms that are used infrequently or in hallways. Lighting is set to manual when required. The warning functions provides the option to switch the light back to full brightness before the timer expires and the light is turned off to avoid being left in the dark.

Example 2:

In case of an alarm (e.g. smoke alarm), all people must leave the building, hence the override function is activated for all light channels in the entire building.

When the all-clear is given, people can return to the building. If the alarm is deactivated in the process, this would result in all persons in hallways or corresponding spaces being suddenly left in the dark. When the alarm is deactivated, the timer is automatically triggered once for the affected dimming channel. This ensures that people are not left in the dark once the alarm is deactivated. At the end of the automatic timer, the warning function is activated again to inform people in the affected areas that they have to manually extend the time.

7.7.4 Behavior of the switching/dimming actuator in timer mode with night mode if the override (forced control) is configured and there is a specification for restarting the timer on deactivation of override.

The following graphic shows the behavior of the switching/dimming actuator in timer mode with night mode if the override (forced control) is configured and there is a specification for restarting the timer on deactivation of override.

The following parameters are used:

- Operating mode (setting: timer mode)
- Override (setting: forced control)
- Switch on at value (setting: switch on value according to parameter)
- Switch on value (%) (setting: 50 %)
- Minimum dimming value (setting: 1 %)
- Maximum dimming value (setting: 100 %)

- ON time 1 in day mode
- Retriggering possible (day mode) (setting: 1)
- Warning before switching off (day mode) (setting: dim to half dimming value)
- Warning period (day mode)
- Night mode (setting: enabled)
- ON time during night mode
- Retriggering possible (night mode) (setting: 1)
- Warning before switching off (night mode) (setting: dim to half dimming value)
- Warning period (night mode)
- Value on activation (%) (override) (setting: 80 %)
- Behavior of switching/dimming value on override deactivation (setting: no change)
- Restart timer on deactivation of override (setting: enabled)
- Dimming time for switching (setting: 12:00:00 AM.0)
- Dimming time for dimming value 1 (setting: 00:00:05.0)

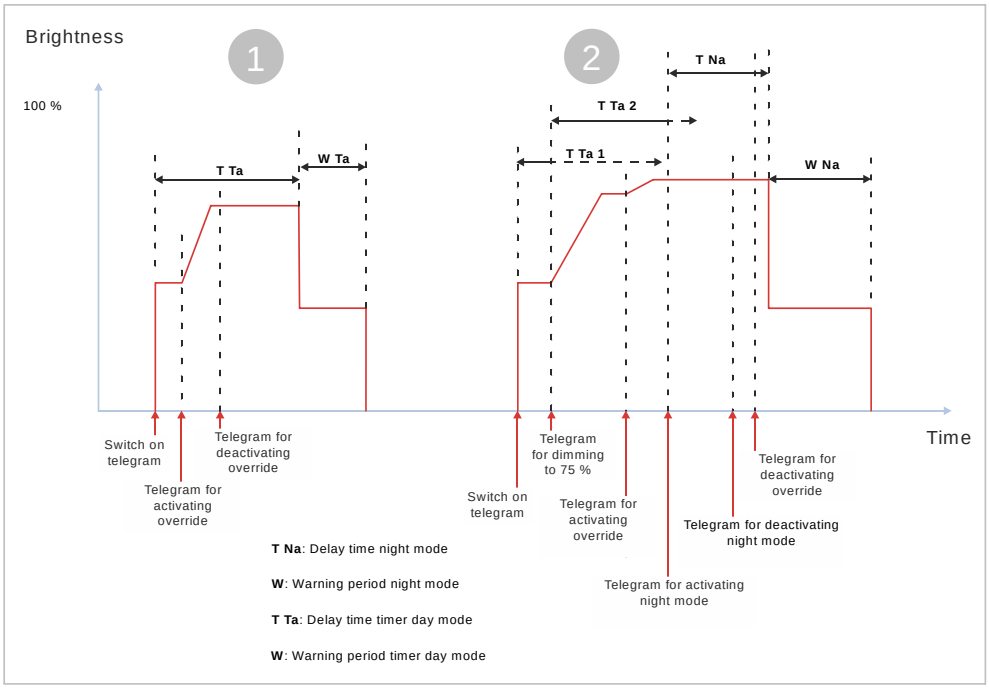


Fig. 62: Behavior of the switching/dimming actuator in timer mode with night mode if the override (forced control) is configured and there is a specification for restarting the timer on deactivation of override.

1 Night mode is deactivated. After receiving the switch on telegram, the timer (day) is started and time counting (delay time) (T Ta) starts. The channel is switched on and the configured dimming time for switching is used for dimming up to the switch on value (e.g. 50 %).

During delay time, a telegram for activating the override is received. Following that, the channel is dimmed to the dimming value configured for activation of the override (e.g. 80 %) with the dimming time of dimming value 1. Since the channel is already switched on (and is therefore not being switched on), it is dimmed up using the dimming time of dimming value 1. The delay time continues in the background.

After the receipt of the telegram for deactivation of the override, the override no longer specifies a dimming value. The delay time of the timer for day mode is therefore active again. The current dimming value is retained.

The warning period (W Ta) starts at the end of the delay time (T Ta). At the start of the warning period, the channel is dimmed to half the current dimming value with a dimming time of 0 seconds. At the end of the warning

period, the channel is dimmed down and switched off using the dimming time for switching.

2 Night mode is deactivated. After receiving the switch on telegram, the timer (day) is started and time counting (delay time) (T Ta 1) starts. The channel is switched on and the configured dimming time for switching is used for dimming up to the switch on value (e.g. 50 %).

During the delay time (T Ta 1), a telegram for dimming to a certain value is received. Since retriggering is set to “1,” the residual time is then discarded and the delay time (T Ta 2) restarted. At the same time, the channel is dimmed up using the dimming time of dimming value 1 (e.g. 75 %).

During delay time (T Ta 2), a telegram for activating the override is received. Following that, the channel is dimmed to the dimming value configured for activation of the override (e.g. 80 %) with the dimming time of dimming value 1. Since the channel is already switched on (and is therefore not being switched on), the channel is dimmed up using the dimming time of dimming value 1. The delay time continues in the background.

During delay time (T Ta 2), a telegram for activating the night mode is also received. Following that, the residual day mode delay time is discarded and the delay time is restarted (T Na).

During the delay time (T Na), night mode is deactivated. The delay time continues as normal and is not stopped.

During the delay time (T Na), a telegram for deactivating the override is also received. Since the delay time of night mode is still running and there is thus a signal for another brightness on the channel at the override block, it is not necessary to automatically retrigger the timer.

The warning period (W Na) starts at the end of the delay time (T Na). At the start of the warning period, the channel is dimmed to half the current dimming value with a dimming time of 0 seconds. At the end of the warning period, the channel is dimmed down and switched off using the dimming time for switching.

Night mode remains deactivated. Switching it on again would start the timer and the delay time for day mode.

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