SIEMENS

GAMMA instabus | Application program description

Application program “07 B0 A4 switching/dimming actuator 4-fold 9A0502”
Application program “07 B0 A8 switching/dimming actuator 8-fold 9A0602”

Switching/dimming actuators N 536, 4/8 x AC 230 V, 1…10 V

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

Using the application programs

Application program "07 B0 A4 switching/dimming actuator 4-fold 9A0502"

Product family:	Lighting
Product type:	Switching/dimming actuator
Manufacturer:	Siemens
Name:	Switching/dimming actuator N 536D31, 4 x AC 230 V, 1...10 V
Description:	Switching/dimming actuator N 536D31, 4 x AC 230 V, 1...10 V
Order no.:	5WG1536-1DB31

Application program "07 B0 A8 switching/dimming actuator 8-fold 9A0602"

Product family:	Lighting
Product type:	Switching/dimming actuator
Manufacturer:	Siemens
Name:	Switching/dimming actuator N 536D51, 8 x AC 230 V, 1...10 V
Description:	Switching/dimming actuator N 536D51, 8 x AC 230 V, 1...10 V
Order no.:	5WG1536-1DB51

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

Contents

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

1 Function description

Application programs "07 B0 A4 switching/dimming actuator 4-fold 9A0502" and "07 B0 A8 switching/dimming actuator 8-fold 9A0602" can be used for the corresponding KNX devices described in the respective "Using the application program" section. These are briefly described below.

Switching/dimming actuator N 536D31 is a KNX device with four load outputs (channels). The switching/dimming actuator is a rail-mounted device for installation in distributions. The bus is connected using a bus terminal block; the power supply for the device electronics uses the bus voltage.

Switching/dimming actuator N 536D51 is a KNX device with eight load outputs (channels). The switching/dimming actuator is a rail-mounted device for installation in distributions. The bus is connected using a bus terminal block; the power supply for the device electronics uses the bus voltage.

These devices have the properties described below:

The device is used to control dimmable electronic ballasts (ECG Dynamic) for fluorescent lamps via DC 1...10 V control outputs. In addition, it has four or eight switching contacts, each with a capacity of 10 AX for directly switching on and off the AC 230 V for four or eight lamps (or groups of lamps).

The device can control loads on four or eight outputs.

Depending on the selected operating mode, in addition to the objects for the functions "switching," "dimming brighter/darker," "dimming value" 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.

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" 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.

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

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 different priority-dependent override for each output. For the override functions a control value input can be selected instead of a switching control input.

Switch 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.

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

Schematic design of a dimming channel:

The following schema shows the named functions in a logical overview.

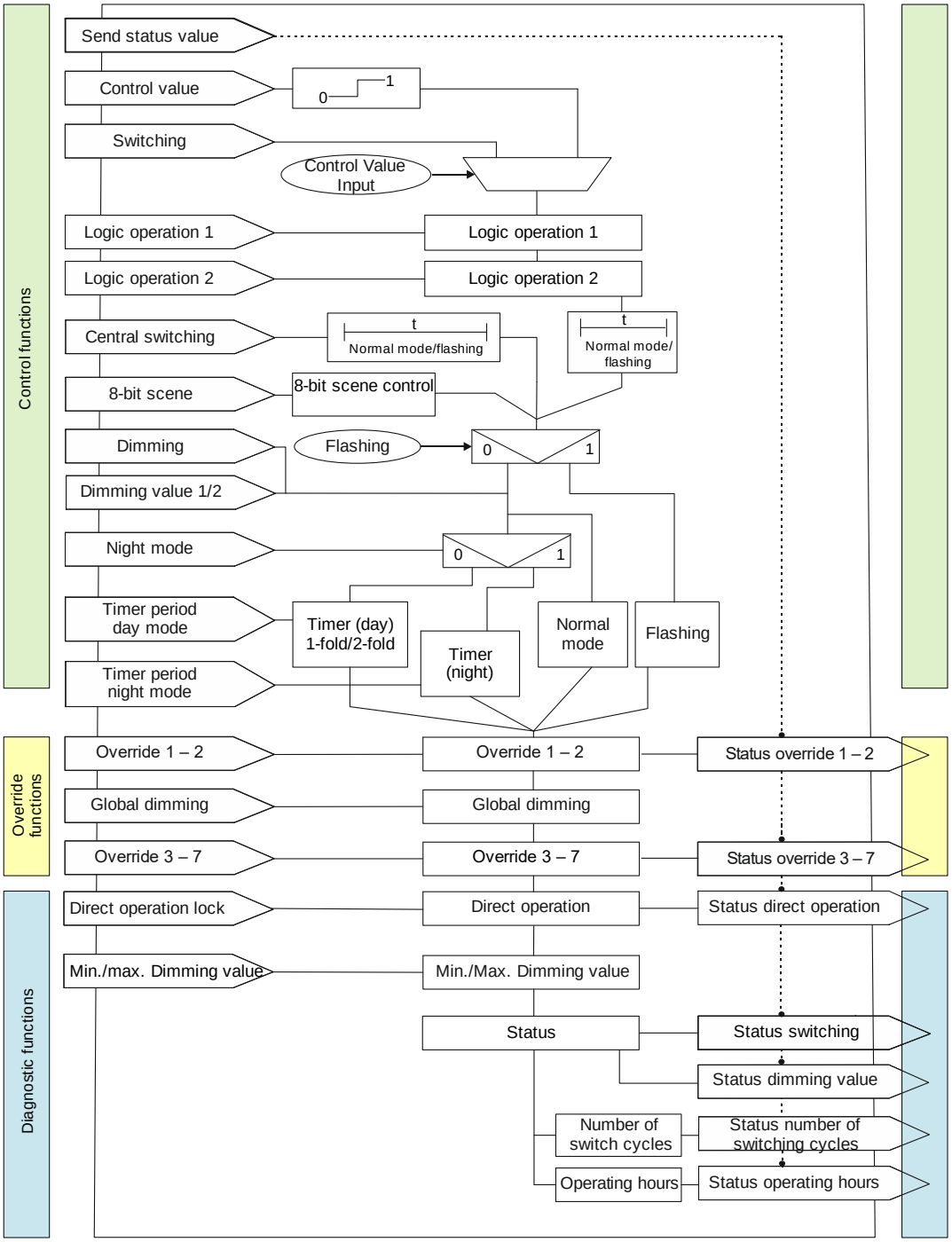


Fig. 1 Schematic design of a dimming channel

1.1 Behavior with voltage failure/recovery

As the electronics of the device are bus-powered, a loss of voltage only results in a loss of function for the switching/dimming actuator if the voltage failure also causes the bus voltage to fail as well.

Each output can be configured individually, using parameters to define what status the output is to assume in case of bus voltage failure (off, on or no change).

In case of bus voltage failure, the current status and other values for each output are permanently saved so that they can be restored when the bus voltage is recovered.

When bus voltage is recovered, one of the following functions can be selected for the starting value: On, off, start value according to the parameter, last switching value status, last received switch command, last received dimming value 1 or last dimming value status.

On bus voltage recovery, the configured actions are executed and, if applicable, new status values are reported.

1.2 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).

1.3 Delivery state

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

1.4 Behavior on unloading the application program

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

A very long push of the programming button of more than 20 seconds resets the device to its factory settings.

1.5 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 an even flashing of the programming LED with a duration of 8 seconds.

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

1.6 Address mode

On bus voltage recovery, wait several seconds before pushing the learning button (not before booting is complete).

Briefly pressing the programming button (< 2 s) activates address mode. This is indicated through constant illumination of the programming LED.

Pressing it again deactivates address mode.

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

2 Communication objects

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

Note
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 4.2 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

Number	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

Number/channel								Object name	Function	Datapoint type	Flags
A	B	C	D	E	F	G	H				
3	82	161	240	319	398	477	556	Switching	On/Off	1.001 switching	CW
4	83	162	241	320	399	478	557	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	84	163	242	321	400	479	558	Dimming	Brighter/darker	3.007 dimmer step	CW
6	85	164	243	322	401	480	559	Dimming value 1	8-bit value	5.001 percent (0 ... 100 %)	CW

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

Number/channel								Object name	Function	Datapoint type	Flags
A	B	C	D	E	F	G	H				
7	86	165	244	323	402	481	560	Dimming value 2	8-bit value	5.001 percent (0 ... 100 %)	CW
8	87	166	245	324	403	482	561	Dimming value 1/time	Dimming value + time	-	CW
10	89	168	247	326	405	484	563	Status switching	On/off	1.001 switching	CRT
11	90	169	248	327	406	485	564	Status dimming value	8-bit value	5.001 percent (0 ... 100 %)	CRT
12	91	170	249	328	407	486	565	Minimum dimming value	Set/request value	5.001 percent (0 ... 100 %)	CRW
13	92	171	250	329	408	487	566	Maximum dimming value	Set/request value	5.001 percent (0 ... 100 %)	CRW
14	93	172	251	330	409	488	567	Dimming time for switching	Set/request dimming time	7.004 time (100 ms)	CRW
15	94	173	252	331	410	489	568	Dimming time for dimming	Set/request dimming time	7.004 time (100 ms)	CRW
16	95	174	253	332	411	490	569	Dimming time for dimming value 1	Set/request dimming time	7.004 time (100 ms)	CRW
17	96	175	254	333	412	491	570	Dimming time for dimming value 2	Set/request dimming time	7.004 time (100 ms)	CRW
18	97	176	255	334	413	492	571	Logic operation 1	On/off	1.001 switching	CW
19	98	177	256	335	414	493	572	Logic operation 2	On/off	1.001 switching	CW
20	99	178	257	336	415	494	573	Central switching	On/off	1.001 switching	CW
21	100	179	258	337	416	495	574	8-bit scene	Recall/ store	18.001 scene control	CW
22	101	180	259	338	417	496	575	Scene value/time	Value/time	-	CW
23	102	181	260	339	418	497	576	Night mode	On/off	1.003 enable	CW
24	103	182	261	340	419	498	577	Timer night mode	ON time (seconds)	7.005 time (s)	CRW
25	104	183	262	341	420	499	578	Timer day mode	ON time 1 (seconds)	7.005 time (s)	CRW

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

Number/channel								Object name	Function	Datapoint type	Flags
A	B	C	D	E	F	G	H				
27	106	185	264	343	422	501	580	Pre-warning expiration of timer period	On/off	1.001 switching	CRT
28	107	186	265	344	423	502	581	Lock timer	On/off	1.003 enable	CW
29	108	187	266	345	424	503	582	Override 1, [type of override]	On/off	1.003 enable	CW
30	109	188	267	346	425	504	583	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	110	189	268	347	426	505	584	Override 1, forced control	On/off	2.001 prio. Switching	CW
32	111	190	269	348	427	506	585	Override 1, [type of override], status	On/off	1.002 Boolean	CRT
33	112	191	270	349	428	507	586	Override 2, [type of override]	On/off	1.003 enable	CW
34	113	192	271	350	429	508	587	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 9.024 output kW 14.056 output W	CW
35	114	193	272	351	430	509	588	Override 2, forced control	On/off	2.001 prio. Switching	CW
36	115	194	273	352	431	510	589	Override 2, [type of override], status	On/off	1.002 Boolean	CRT
37	116	195	274	253	432	511	590	Override 3, [type of override]	On/off	1.003 enable	CW

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

Number/channel								Object name	Function	Datapoint type	Flags
A	B	C	D	E	F	G	H				
38	117	196	275	354	433	512	591	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	118	197	276	355	434	513	592	Override 3, forced control	On/off	2.001 prio. Switching	CW
40	119	198	277	356	435	514	593	Override 3, [type of override], status	On/off	1.002 Boolean	CRT
41	120	199	278	357	436	515	594	Override 4, [type of override]	On/off	1.003 enable	CW
42	121	200	279	358	437	516	595	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	122	201	280	359	438	517	596	Override 4, forced control	On/off	2.001 prio. Switching	CW
44	123	202	281	360	439	518	597	Override 4, [type of override], status	On/off	1.002 Boolean	CRT
45	124	203	282	361	440	519	598	Override 5, [type of override]	On/off	1.003 enable	CW
46	125	204	283	362	441	520	599	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	126	205	284	363	442	521	600	Override 5, forced control	On/off	2.001 prio. Switching	CW
48	127	206	285	364	443	522	601	Override 5, [type of override], status	On/off	1.002 Boolean	CRT

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

Number/channel								Object name	Function	Datapoint type	Flags
A	B	C	D	E	F	G	H				
49	128	207	286	365	444	523	602	Override 6, [type of override]	On/off	1.003 enable	CW
50	129	208	287	366	445	524	603	Override 6, [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
51	130	209	288	367	446	525	604	Override 6, forced control	On/off	2.001 prio. Switching	CW
52	131	210	289	368	447	526	605	Override 6, [type of override], status	On/off	1.002 Boolean	CRT
53	132	211	290	369	448	527	606	Override 7, [type of override]	On/off	1.003 enable	CW
54	133	212	291	370	449	528	607	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	134	213	292	371	450	529	608	Override 7, forced control	On/off	2.001 prio. Switching	CW
56	135	214	293	372	451	530	609	Override 7, [type of override], status	On/off	1.002 Boolean	CRT
57	136	215	294	373	452	531	610	Overrides status	1 = Active	1.002 Boolean	CRT
58	137	216	295	374	453	532	611	Global dimming max. limit	8-bit value	5.001 percent (0...100 %)	CW
59	138	217	296	375	454	533	612	Direct operation lock	On/Off	1.003 enable	CW
60	139	218	297	376	455	534	613	Status direct operation	On/Off	1.002 Boolean	CRT
63	142	221	300	379	458	537	616	Number of switching cycles	Value (switch cycles)	12.001 counting impulses (without prefix)	CRT

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

Number/channel								Object name	Function	Datapoint type	Flags
A	B	C	D	E	F	G	H				
64	143	222	301	380	459	538	617	Number of switching cycles	Set value (in cycles)	12.001 counting impulses (without prefix)	CW
65	144	223	302	381	460	539	618	Threshold for switching cycles	Set/request value (in cycles)	12.001 counting impulses (without prefix)	CRW
66	145	224	303	382	461	540	619	Exceedance of threshold for switching cycles	On/Off	1.002 Boolean	CRT
67	146	225	304	383	462	541	620	Operating hours	Value (in hours)	12.001 counting impulses (without prefix)	CRT
68	147	226	305	384	463	542	621	Operating hours	Value (in seconds)	13.100 time difference (s)	CRT
69	148	227	306	385	464	543	622	Operating hours	Set value	12.001 counting impulses (without prefix)	CW
70	149	228	307	386	465	544	623	Threshold for operating hours	Set/request value	12.001 counting impulses (without prefix)	CRW
71	150	229	308	387	466	545	624	Exceedance of threshold for operating hours	On/Off	1.002 Boolean	CRT

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

3 Structure of configuration options

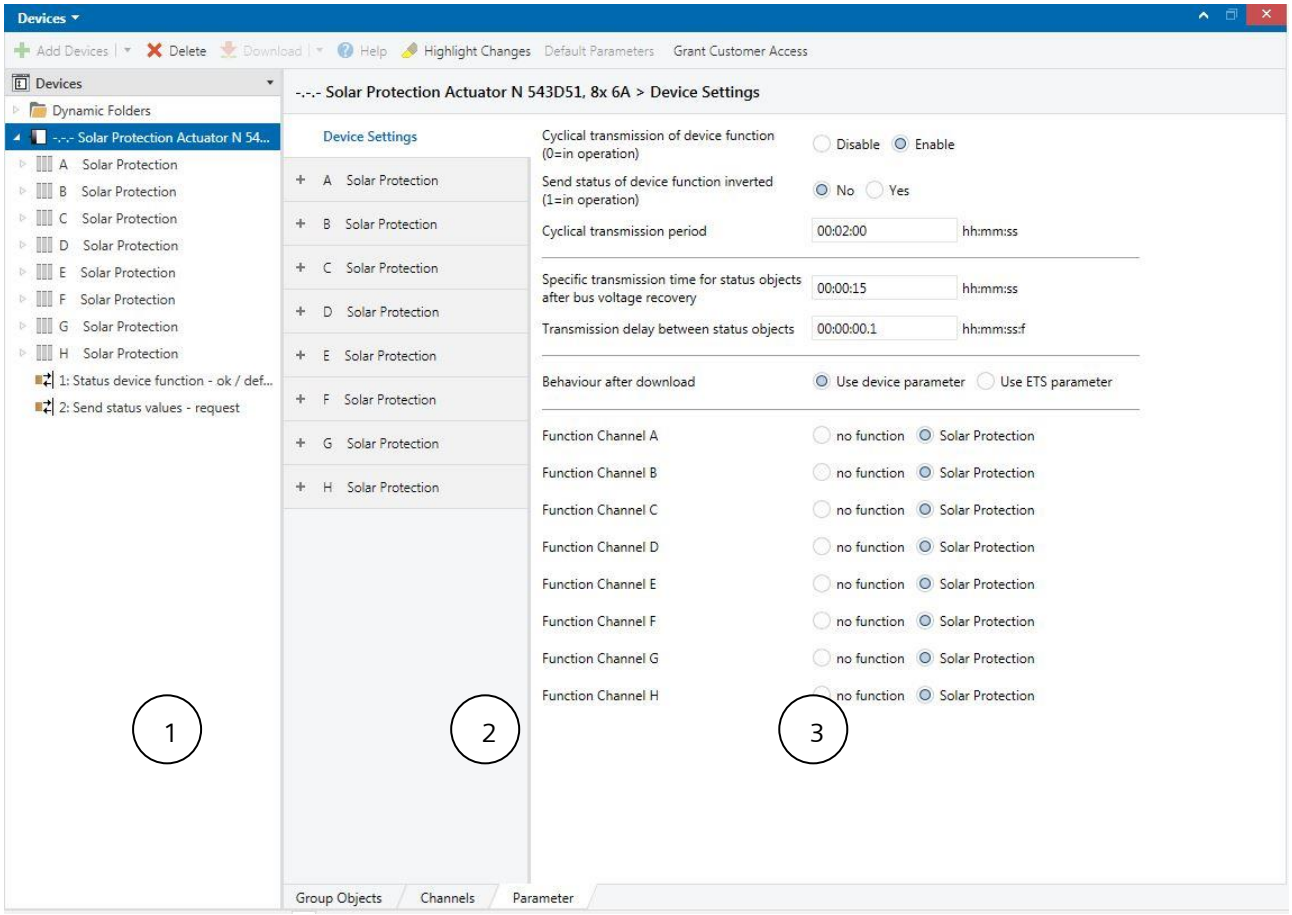


Fig. 2 Structure of configuration options

(1) Tree view of devices and channels

(2) Listing of parameter card 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.

The default settings for the parameter are highlighted in the description of the parameters in this document in bold print.

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

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.				
2	**Send status values**	request	1.017 trigger	CW
Function: If a telegram with any value (“1” or “0”) is received, this object is used to trigger the transmission of the current status values for all status objects for which the transmission is set to “send on request” in the configuration.				

4.2 "Device settings" parameter

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 status of device function inverted (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 (hh:mm:ss)	**00:02:00** [00:00:01...18:12:15]
Function: This parameter can be used to select the time interval for cyclical transmission of device function. **Note:** The device status is also transmitted for the first time after bus voltage failure/recovery after the time set here. **Availability:** This parameter is only visible if the parameter "cyclical transmission of device function" is set to "enabled."	

Parameter	Settings
Specific transmission time for status objects after bus voltage recovery	**00:00:15** [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 voltage recovery and after a re-start of the device. The time of transmission after bus voltage recovery must be set high enough that other KNX devices that have to receive and process the status have also already completed their initialization. The time of transmission applies for the stored status values after bus voltage recovery. If the state changes during bus voltage failure or after bus 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 directly after bus voltage recovery and before this transmission time (e.g. via the “send status values” communication object), 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 (hh:mm:ss:f)	**00:00:00.1** [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 applied after bus voltage recovery and with the send status values function.	

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

Parameter	Settings
Behavior after download	**Use device parameters** Use ETS parameter
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 response for bus 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."	
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.

Obj	Object name	Function	Datapoint type	Flag
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:** ➲ *7.1 Dimming behavior with ON/OFF switching via the “switching” communication object* ➲ *7.4 Dimming behavior with On/Off switching via the “switching” communication object in combination with the communication objects “minimum dimming value” and “maximum dimming value”*				
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:** ➲ *6.1 Control value input*				

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

Obj	Object name	Function	Datapoint type	Flag
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 or, if so configured, transmitted automatically after every object value change.

Availability:

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

More information:

➲ *6.7 Status*

Obj	Object name	Function	Datapoint type	Flag
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:

➲ *6.7 Status*

Obj	Object name	Function	Datapoint type	Flag
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:

➲ *6.2*

➲ *Central switching*

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

Obj	Object name	Function	Datapoint type	Flag
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, then 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."

More information:

➲ *6.4 8-bit scene control*

29/-56	**A Override 1 – 7**			

The communication objects for the override (29 – 56) are described in the “Override” chapter.

➲ *6.6 Overrides*

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:

➲ *6.6 Overrides*

➲ *6.7 Status*

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

Obj	Object name	Function	Datapoint type	Flag
59	**A Direct operation lock**	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*

Example:

Enabling of direct operation through a key switch.

Obj	Object name	Function	Datapoint type	Flag
60	**A Status direct operation**	On/Off	1.002 Boolean	CRT

Function:

This communication object is used to report that direct operation is active.

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*

Obj	Object name	Function	Datapoint type	Flag
63	**A Number of switching cycles**	Value (switch 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:

➲ *6.8 Counting of switching cycles*

Obj	Object name	Function	Datapoint type	Flag
64	**A Number of switching cycles**	Set value (switch cycle)	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:

➲ *6.8 Counting of switching cycles*

Obj	Object name	Function	Datapoint type	Flag
65	**A Threshold for 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 4 294 967 295 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) is set to "enabled" and additionally the parameter "threshold monitoring" (on the counting of switching cycles parameter card) is set to "enabled."

More information:

➲ *6.8 Counting of switching cycles*

Obj	Object name	Function	Datapoint type	Flag
66	**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 query 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) is set to "enabled" and the parameter "threshold monitoring" (on the "counting of switching cycles" parameter card) is also set to "enabled."

More information:

➲ *6.8 Counting of switching cycles*

Obj	Object name	Function	Datapoint type	Flag
67	**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:

➲ *6.9 Counting of operating hours*

Obj	Object name	Function	Datapoint type	Flag
68	**A Operating hours**	Value (in seconds)	13.100 time difference (s)	CRT

Function:

This object can be used to request the current operating duration of the output (i.e. how many seconds the output was switched on) via the bus in seconds 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:

➲ *6.9 Counting of operating hours*

Obj	Object name	Function	Datapoint type	Flag
69	**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:

➲ *6.9 Counting of operating hours*

Obj	Object name	Function	Datapoint type	Flag
70	**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 output as an integer value in the range of 1 to 4 294 967 295 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) is set to "enabled" and additionally the parameter "threshold monitoring" (on the "operating hours" parameter card) is set to "enabled."

More information:

➲ *6.9 Counting of operating hours*

Obj	Object name	Function	Datapoint type	Flag
71	**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 query 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) is set to "enabled" and additionally the parameter "threshold monitoring" (on the "operating hours" parameter card) is set to "enabled."

More information:

➲ *6.9 Counting of operating hours*

5.1.2 Parameters of the “functions, objects” parameter card

Parameter	Settings
Mode	**Normal mode** Timer mode Timer mode 2-fold Flashing

Function:

This parameter can be used to set the desired 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:

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

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:

➲ *6.1 Control value input*

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

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:** ➲ *6.2* ➲ *Central switching*	
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:** ➲ *6.4 8-bit scene control*	

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

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:** ➲ *6.6 Overrides*	
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 ➲ *6.7 Status*. **Communication object:** If the parameter "overrides status" is set to "enabled," the communication object "overrides status" is displayed. **More information:** ➲ *6.6 Overrides*	

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

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 ➲ *6.7 Status*.

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*

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 ➲ *6.7 Status*.

Communication object:

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

More information:

➲ *6.7 Status*

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

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 ➲ *6.7 Status*.

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 (%)	**5 %** [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 wait time between updates 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."

Minimum wait time between updates	**00:00:10.0** [00:00:00.0…1:49:13.5]

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.

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."

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

Parameter	Settings
Switching state on bus voltage failure	Off On **No change**

Function:

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

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

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

Parameter	Settings
Starting value after bus voltage recovery	Off On Starting value according to parameter: Dimming value at power 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 bus voltage recovery. The following settings are possible:

- **Off:**
  The communication object "switching" is in the status "off" after bus voltage recovery.
  The starting value affects the input "switching" (Fig. 1).
- **On:**
  The communication object "switching" is in the status "on" after bus voltage recovery.
  The starting value affects the input "switching" (Fig. 1).
- **Starting value according to parameter:**
  The starting value of the communication object "dimming value 1" is defined with the parameter "dimming value at power recovery (%)."
  The starting value affects the input "dimming value 1" (Fig. 1).
- **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 bus voltage failure.
  The starting value affects the input "switching" (Fig. 1).
- **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 bus voltage failure.
  The starting value affects the input "switching" (Fig. 1).
- **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 input "dimming value 1" (Fig. 1).
- **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 bus voltage failure.
  The starting value affects the input "dimming value 1" (Fig. 1).

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

Other parameters:

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

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

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:

➲ *6.8 Counting of switching cycles*

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 object:

If the parameter "counting of operating hours" is set to "enabled," the communication objects "operating hours – value (in hours)" and "operating hours — set value" are displayed.

More information:

➲ *6.9 Counting of operating hours*

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

The mode is selected on the "functions, objects" parameter card (➲ 5.1.2 Parameters of the "functions, objects" parameter card). Depending on the 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

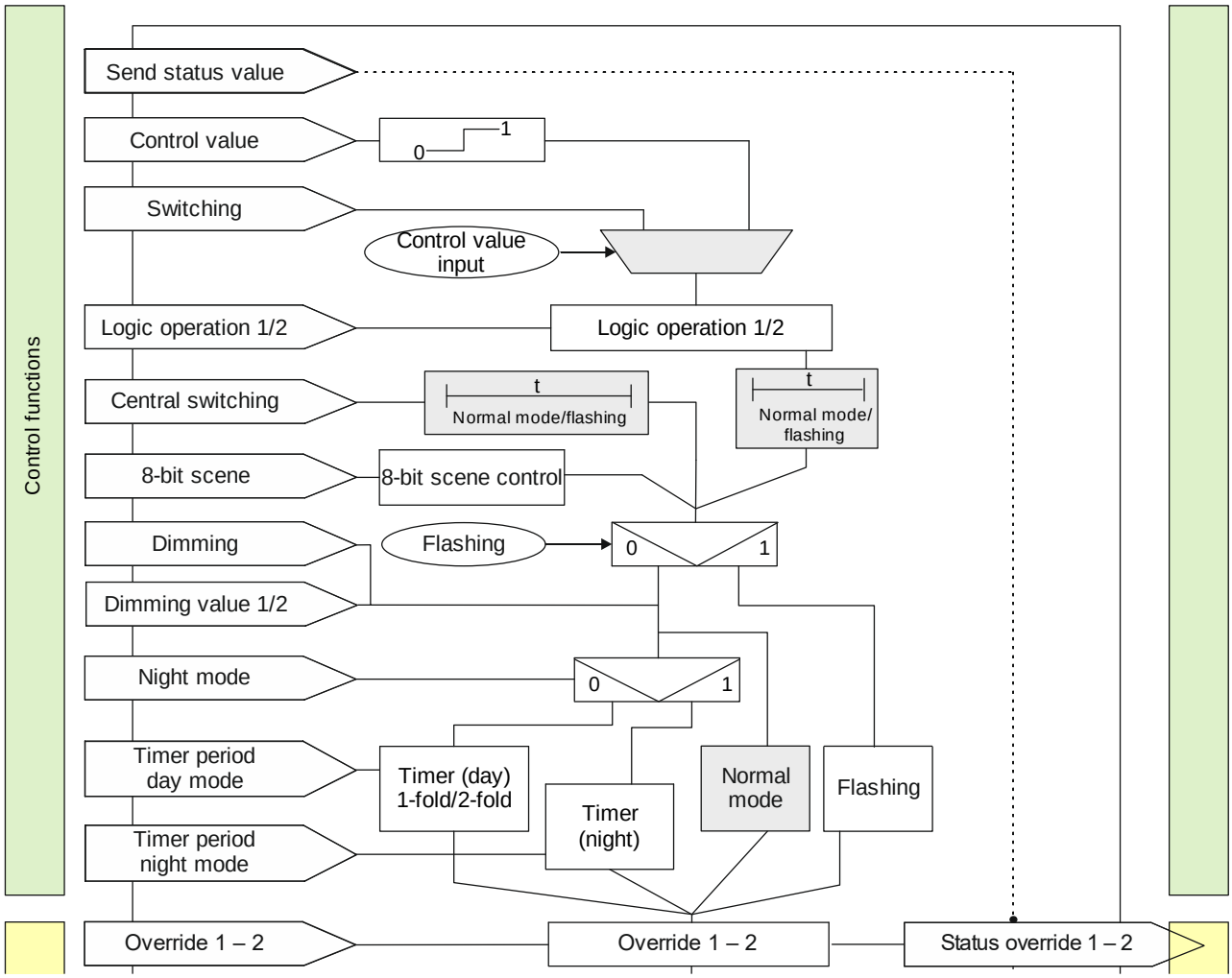


Fig. 3 Normal mode

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

5.2.2 Process diagram timer mode and timer mode 2-fold

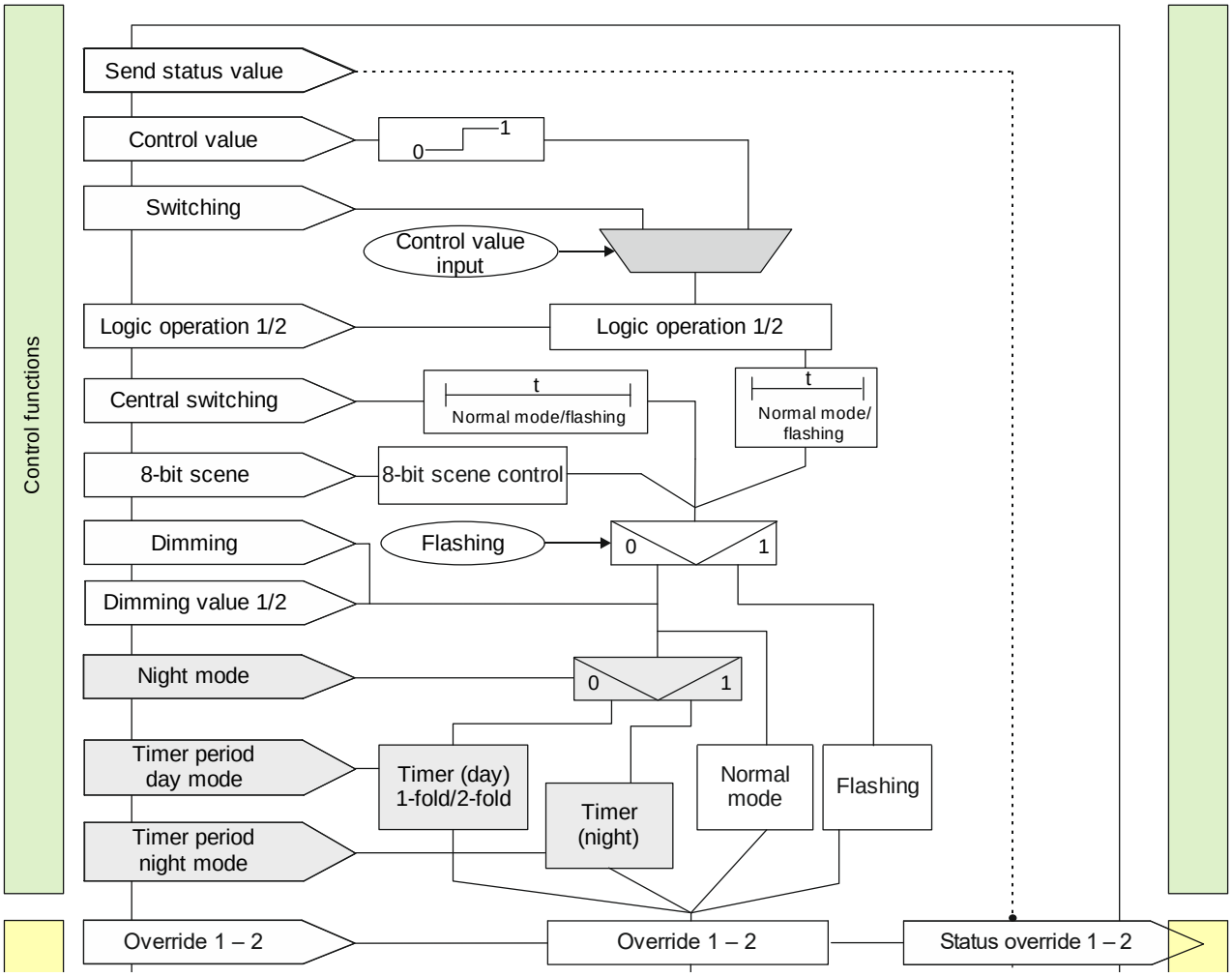


Fig. 4 Timer mode and timer mode 2-fold

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

5.2.3 Process diagram flashing

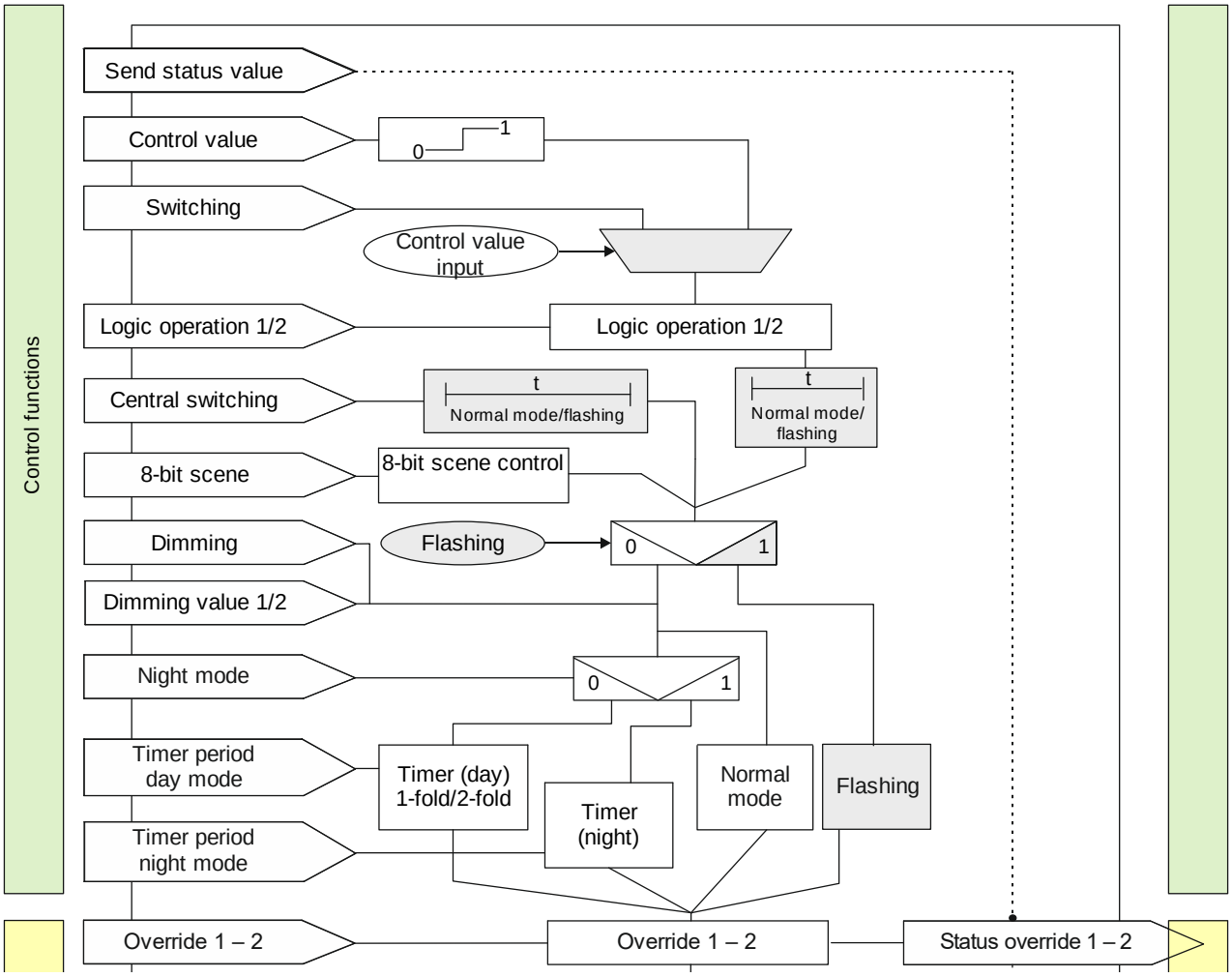


Fig. 5 Flashing

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.

Obj	Object name	Function	Datapoint type	Flag
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:

➲ *7.2 Dimming behavior via the communication object “dimming”*

6 **7**	**A Dimming value 1** **A Dimming value 2**	8-bit value	5.001 percent (0... 100 %)	CW

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 “fade time for dimming value 1” or “fade 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:

➲ *7.3 Dimming behavior via the communication object “dimming value 1”*

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

Obj	Object name	Function	Datapoint type	Flag
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	12	11	10	9	8
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."

12	**A Minimum dimming value**	Set 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:

➲ *7 Graphic representation of output behavior of a channel with different parameter configurations*

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

Obj	Object name	Function	Datapoint type	Flag
13	**A Maximum dimming value**	Set 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.

When 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:

➲ *7 Graphic representation of output behavior of a channel with different parameter configurations*

Obj	Object name	Function	Datapoint type	Flag
14	**A Dimming time for switching**	Set 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) 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:

➲ *7.1 Dimming behavior with ON/OFF switching via the "switching" communication object*

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

Obj	Object name	Function	Datapoint type	Flag
15	**A dimming time for dimming**	Set 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 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:

➲ *7.2 Dimming behavior via the communication object "dimming"*

Obj	Object name	Function	Datapoint type	Flag
16 **17**	**A Dimming time for dimming value 1** **A Dimming time for dimming value 2**	Set 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 1" is only displayed if the parameter "show dimming time objects" is set to "enabled."

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

More information:

➲ *7.3 Dimming behavior via the communication object "dimming value 1"*

Obj	Object name	Function	Datapoint type	Flag
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) and the information 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:

➲ *6.4 8-bit scene control*

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

Obj	Object name	Function	Datapoint type	Flag
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, then 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."

More information:

➲ *6.5 Night mode*

➲ *7.6.6 Behavior on activation and deactivation of night mode in normal mode*

➲ *7.6.7 Behavior on activation and deactivation of night mode in normal mode with a warning prior to switching off*

➲ *7.6.8 Behavior on activation and deactivation of night mode in timer mode (1-fold)*

➲ *7.6.9 Behavior on configured ON delay in normal mode and night mode.*

Example:

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

Obj	Object name	Function	Datapoint type	Flag
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:

➲ *6.5 Night mode*

➲ *7.6.6 Behavior on activation and deactivation of night mode in normal mode*

➲ *7.6.7 Behavior on activation and deactivation of night mode in normal mode with a warning prior to switching off*

➲ *7.6.8 Behavior on activation and deactivation of night mode in timer mode (1-fold)*

➲ *7.6.9 Behavior on configured ON delay in normal mode and night mode.*

Obj	Object name	Function	Datapoint type	Flag
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 operation.

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.”

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

Obj	Object name	Function	Datapoint type	Flag
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 be used to 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:

➲ *6.10 Warning before switching Off*

Obj	Object name	Function	Datapoint type	Flag
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."

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

Obj	Object name	Function	Datapoint type	Flag
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.

Parameter	Settings
Dimming curve	**Linear** 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:

- **Linear:**
  Setting a linear dimming curve. You can use the additional parameters "output voltage - minimum lamp power" and "output voltage - maximum lamp power" to adjust the output voltage of a channel for minimum and maximum lamp power.
- **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.

Example:

The y axis could be configured with the following parameters, for example:

- Value y1 = 21 → 1.0 V
- Value y2 = 67 → 3.0 V
- Value y3 = 112 → 5.0 V
- Value y4 = 178 → 8.0 V
- Value y5 = 223 → 10.0 V

Other parameters:

When selecting the setting "linear," the parameters "output voltage - minimum lamp power" and "output voltage - maximum lamp power" are additionally displayed.

Other parameter cards:

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

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

Parameter	Settings
Output voltage – minimum lamp power (V)	**1** (1...5)
Output voltage – maximum lamp power (V)	**10** (6...10)

Operating modes:

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

Function:

According to DIN EN 60929, the lamp power of a dimmable ballast (ECG) is controlled using DC voltage in the range of n 1...10 V, whereby 1 V corresponds to the minimum and 10 V to the maximum value of the lamp power.

The control range, i.e. 9 V, is split into 255 brightness values. Within this range, the lighting is now dimmable from the minimum value to 100 %.

You can use the parameters “output voltage - minimum lamp power” and “output voltage - maximum lamp power” to adjust the output voltage of a channel for minimum and maximum lamp power. This is necessary, if the lamp power of the connected EVG only starts at a voltage higher than 1 V and possibly already ends at a voltage of less than 10 V.

Availability:

The parameters “output voltage - minimum lamp power” and “output voltage - maximum lamp power” are only available if the “dimming curve” parameter is set to “linear”.

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

Parameter	Settings
Minimum dimming value (%)	**1** (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:

➲ *7 Graphic representation of output behavior of a channel with different parameter configurations*

Parameter	Settings
Maximum dimming value (%)	**100** (1...100)

Operating modes:

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

Function:

This parameter is used to define the maximum dimming value 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:

➲ *7 Graphic representation of output behavior of a channel with different parameter configurations*

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.

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%.

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

Parameter	Settings
Dimming time for switching	**00:00:00:0** [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 (fade 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:

➲ *7.1 Dimming behavior with ON/OFF switching via the "switching" communication object*

Parameter	Settings
Dimming time for dimming	**00:00:05:0** [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:

➲ *7.2 Dimming behavior via the communication object "dimming"*

Parameter	Settings
Dimming time for dimming value 1 **Dimming time for dimming value 2**	**00:00:05:0** [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:

➲ *7.3 Dimming behavior via the communication object "dimming value 1"*

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.

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

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	**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.

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

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: ➲ *7.1Dimming behavior with ON/OFF switching via the* "switching" communication object
- **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:

➲ *7.1 Dimming behavior with ON/OFF switching via the "switching" communication object*

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, this parameter must be set to "enabled" as soon as the brightness is dimmed to a level below the minimum dimming value. **More information:** ➲ *7.2 Dimming behavior via the communication object "dimming"*	
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:** ➲ *7.2 Dimming behavior via the communication object "dimming"*	

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

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/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, then 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 dimming darker (with the configured dimming time for dimming value 1 or dimming value 2) to the minimum dimming value and then to switching off 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," then 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 %," then every dimming value > 0 % leads to the channel switching on. If the dimming value falls below the min. dimming value, then 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:

➲ *7.3 Dimming behavior via the communication object "dimming value 1"*

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

Parameter	Settings
ON time 1 during day mode	**00:15:00** [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 a renewed switch, dim, dimming value or scene recall command is received during an ongoing ON time, the command is executed, the timer is reset to its initial value and the ON time begins again.

Parameter	Settings
Retriggering possible	**1** [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:

➲ *7.6.1Behavior in timer mode (1-fold) with the setting "retriggering possible = 0"*

➲ *7.6.2 Behavior in timer mode (1-fold) with the setting "retriggering possible = 1"*

➲ *7.6.3 Behavior in timer mode (1-fold) with the setting "retriggering possible = 2"*

Parameter	Settings
ON time 2 during day mode	**00:15:00** [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, then this command is executed, the timer with the ON time 1 is loaded and the 2-level timer mode begins again.

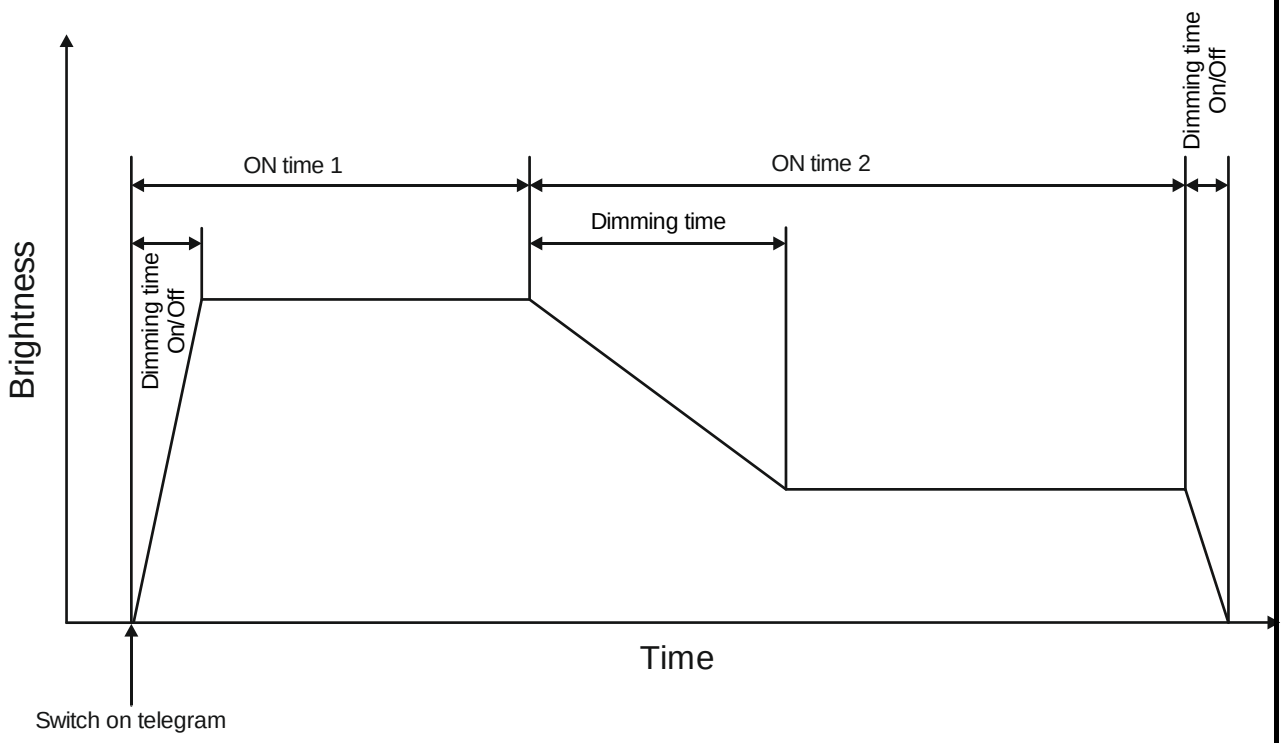
Parameter	Settings
Dimming value during ON time 2 (%)	**50** [0...100]

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 digram below shows an example of the dimming progress with two-level timer mode.



07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

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

➲ *6.10 Warning before switching Off*

➲ *7.6.4 Behavior in timer mode (1-fold) with setting “warning before switching off” = “short switch off/on” and “retriggering possible = 1.”*

➲ *7.6.5 Behavior in timer mode (1-fold) with setting “warning before switching off” = “via dimming to half dimming value” and “retriggering possible = 1.”*

Change ON 1 period 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.

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

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	**00:00:00** [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:

➲ *7.5 Switching behavior when a delay has been configured for switching on and off*

Parameter	Settings
OFF delay	**00:00:00** [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:

➲ *7.5 Switching behavior when a delay has been configured for switching on and off*

Parameter	Settings
ON delay (central switching)	**00:00:00** [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:

5.3 6.2

➲ *Central switching*

Parameter	Settings
OFF delay (central switching)	**00:00:00** [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"

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

Parameter	Settings
(“functions, objects” parameter card).	

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

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 ➲ *6.5 Night* mode. **Other parameters/parameter cards:** If the parameter "night mode" is set to "enabled," additional parameters are displayed. These parameters are discussed in chapter ➲ *6.5 Night* mode . **Communication object:** If the parameter "night mode" is set to "enabled," the communication object "night mode" is displayed. **More information:** ➲ *6.5 Night mode* ➲ *7.6.6 Behavior on activation and deactivation of night mode in normal mode* ➲ *7.6.7 Behavior on activation and deactivation of night mode in normal mode with a warning prior to switching off* ➲ *7.6.8 Behavior on activation and deactivation of night mode in timer mode (1-fold)* ➲ *7.6.9 Behavior on configured ON delay in normal mode and night mode.*	
Number of flashing cycles (0 = indefinite)	**5** [0...10000]
Operating mode: • 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	**00:00:01** [00:00:01...00:04:15]
Operating mode: • 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.	

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

Parameter	Settings
OFF time flashing	**00:00:01** [00:00:01...00:04:15]

Operating mode:

- Flashing

Function:

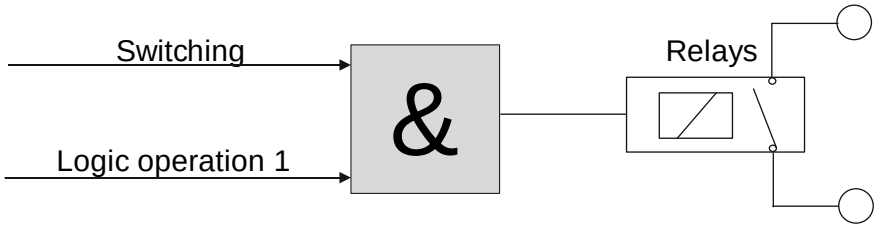
This parameter is used to set the desired OFF time for flashing cycles. Based on this and the configured “ON time flashing,” the respective flashing frequency can be determined.

5.4 "Logic operations" parameter card

Two logic operations are available for each switching output. The switching value of the respective channel forms the first input of the logic operation. The communication object "logic operation 1" is available for the second input of the logic operation. The communication object can be linked via the bus as desired. The logical output value directly affects the switching output.

If a second logic operation is configured, the logical output value of the first logic operation acts as the input for the second logic operation. The communication object "logic operation 2" is available for the second input of logic operation 2. Logical output value 2 directly affects the switching output.

1 x Logic operation for chanal A:



2 x Logic operation for chanal A:

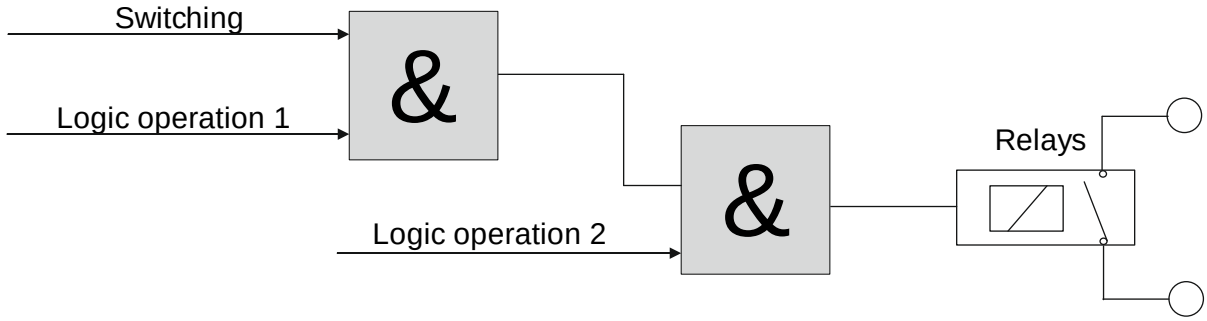


Fig. 6 Logic operations for channel A

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

5.4.1 “Logic operations” process diagram

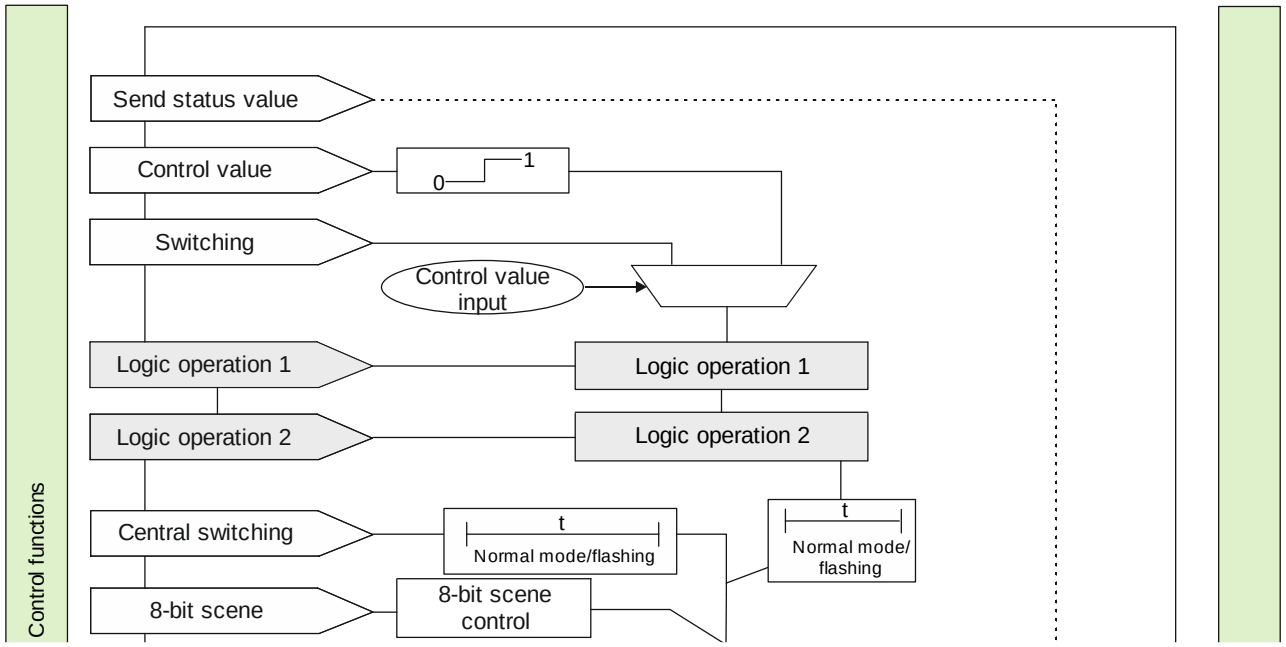


Fig. 7 Logic operations

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

5.4.2 Communication objects of the “logic operation” parameter card:

Obj	Object name	Function	Type	Flag
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.”

5.4.3 Parameters of the “logic operation” parameter card:

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.

Input value	Value Logic operation	Output
X	0	---
0	1	0
1	1	1

--- = no issuance of an output value

X = any value

  For regular normal mode of the channel without an effective filter, after bus voltage recovery this input must be set to “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 bus voltage recovery” are also displayed.

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

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

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

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 chapter ➲ *6.6 Overrides* .

6.1.1 "Control value input" process diagram

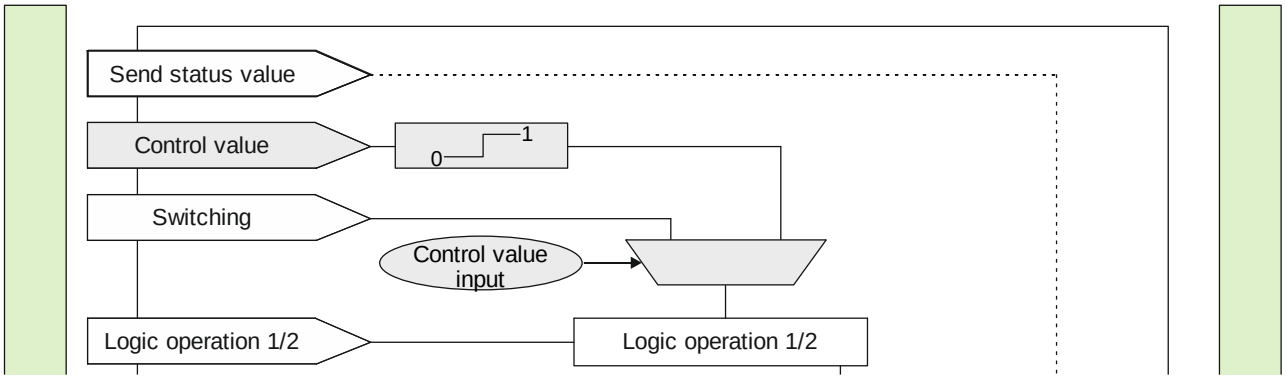


Fig. 8 Control value input function

6.1.2 Communication objects for the “control value input”

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

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.

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

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

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 (<=)	**0** [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 switching value 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.”	

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

Parameter	Settings
Threshold for ON (>=)	**1** [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."

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

6.3 Central switching

6.3.1 "Central switching" process diagram

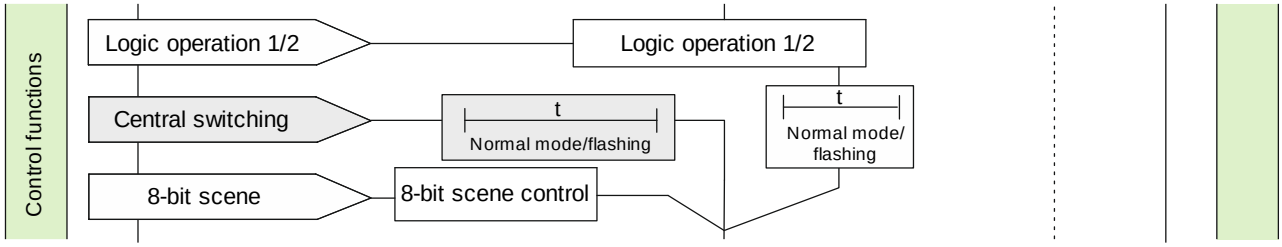


Fig. 9 Central switching

6.3.2 Communication objects for "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."

6.3.3 Parameters for central switching on the "functions, objects" parameter card

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.

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

Parameter	Settings
ON delay (central switching)	**00:00:00** [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).	
OFF delay (central switching)	**00:00:00** [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).	

6.4 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 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 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. If a scene is stored, then 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).

Note:

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

6.4.1 "8-bit scene control" process diagram

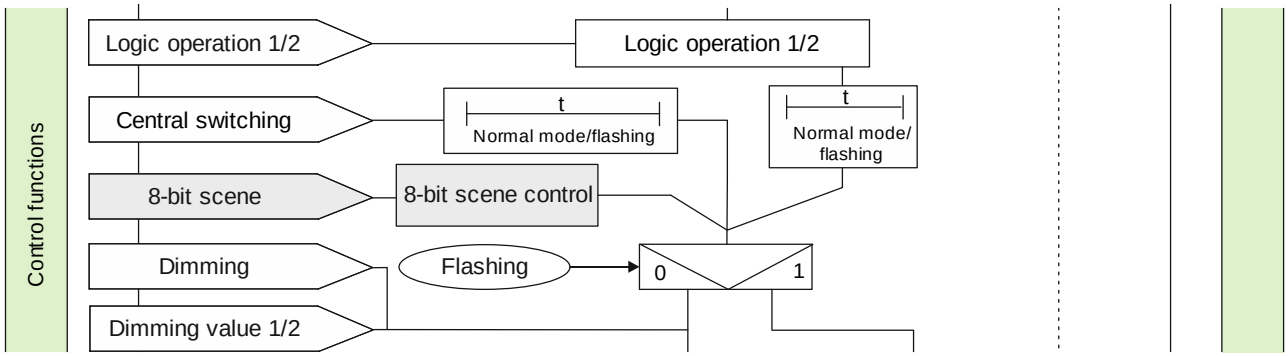


Fig. 10 8-bit scene control

6.4.2 Communication objects for 8-bit scene control

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 (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. That is, scene 1 corresponds to the value 0, scene 64 to the value 63).

If bit 7 = log. 1, then 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.”

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

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) and the information 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).

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

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

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.	

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

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

Parameter	Settings
Link 1 with scene [0...64] (0 = disable)	**0** 1 ... 64
Link 2 with scene [0...64] (0 = disable)	**0** 1 ... 64
Link 3 with scene [0...64] (0 = disable)	**0** 1 ... 64
Link 4 with scene [0...64] (0 = disable)	**0** 1 ... 64
Link 5 with scene [0...64] (0 = disable)	**0** 1 ... 64
Link 6 with scene [0...64] (0 = disable)	**0** 1 ... 64
Link 7 with scene [0...64] (0 = disable)	**0** 1 ... 64
Link 8 with scene [0...64] (0 = disable)	**0** 1 ... 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, then 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.

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

Parameter	Settings
Dimming time	**00:00:00.0** [00:00:00...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 target value 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). **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	**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.	

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	**Disable** Enable
Function: If “disable” 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.	

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

Parameter	Settings
Predefined dimming value for scene (%)	**100 %** [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."

6.5 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).

6.5.1 Night mode process diagram

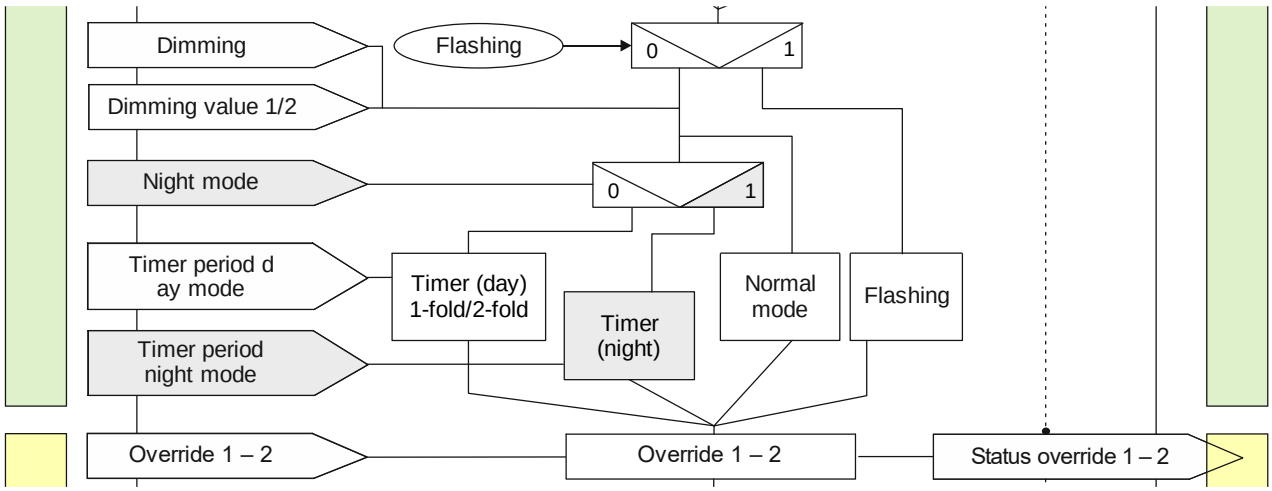


Fig. 11 Night mode

6.5.2 Communication objects for night mode

Obj.	Object name	Function	Datapoint type	Flag
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, then 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 by a button, a timer or a building management system.

More information:

➲ *6.5 Night mode*

➲ *7.6.6 Behavior on activation and deactivation of night mode in normal mode*

➲ *7.6.7 Behavior on activation and deactivation of night mode in normal mode with a warning prior to switching off*

➲ *7.6.8 Behavior on activation and deactivation of night mode in timer mode (1-fold)*

➲ *7.6.9 Behavior on configured ON delay in normal mode and night mode.*

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

Obj.	Object name	Function	Datapoint type	Flag
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:

➲ *6.5 Night mode*

➲ *7.6.6 Behavior on activation and deactivation of night mode in normal mode*

➲ *7.6.7 Behavior on activation and deactivation of night mode in normal mode with a warning prior to switching off*

➲ *7.6.8 Behavior on activation and deactivation of night mode in timer mode (1-fold)*

➲ *7.6.9 Behavior on configured ON delay in normal mode and night mode.*

Obj.	Object name	Function	Datapoint type	Flag
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 be used to 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:

➲ *6.10 Warning before switching Off*

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

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:** ➲ *6.5 Night mode* ➲ *7.6.6 Behavior on activation and deactivation of night mode in normal mode* ➲ *7.6.7 Behavior on activation and deactivation of night mode in normal mode with a warning prior to switching off* ➲ *7.6.8 Behavior on activation and deactivation of night mode in timer mode (1-fold)* ➲ *7.6.9 Behavior on configured ON delay in normal mode and night mode.*	
ON time during night mode	**00:30:00** [00:00:00...23:59:59]
Operating modes: • Normal mode • Timer mode • Timer mode 2-fold **Function:** This parameter is used to set the ON time in night mode. If a renewed switch, dim, dimming value or scene recall command is received during an ongoing ON time, the command is executed, the timer is reset to its initial value and the ON time begins again. **Availability:** The parameter “ON time in night mode” is only available if the parameter “night mode” is set to "enabled.”	

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

Parameter	Settings
Retriggering possible	**1** [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:

➲ *7.6.1Behavior in timer mode (1-fold) with the setting "retriggering possible = 0"*

➲ *7.6.2 Behavior in timer mode (1-fold) with the setting "retriggering possible = 1"*

➲ *7.6.3 Behavior in timer mode (1-fold) with the setting "retriggering possible = 2"*

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

Parameter	Settings
Warning before switching Off	**No** Via briefly switching on - off Via communication object Via briefly switching on - off and via communication object Via dimming to half dimming value Via dimming 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 dimming value and via communication object,” the communication object “pre-warning expiration of timer period” is displayed.

More information:

➲ *6.10 Warning before switching Off*

➲ *7.6.4 Behavior in timer mode (1-fold) with setting “warning before switching off” = “short switch off/on” and “retriggering possible = 1.”*

➲ *7.6.5 Behavior in timer mode (1-fold) with setting “warning before switching off” = “via dimming to half dimming value” and “retriggering possible = 1.”*

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

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.

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

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.)

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

6.6 Overrides

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

The following override function blocks are available:

- ➲ *6.6.4 Manual override (ON)*
- ➲ *6.6.5 Override "permanent OFF"*
- ➲ *6.6.6 Override "lock"*
- ➲ *6.6.7 Override "central override"*
- ➲ *6.6.8 Override "user-defined"*
- ➲ *6.6.9 Override "forced control"*

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:

- ➲ *7.7 Switching behavior in case of activated overrides*

6.6.1 Override process diagram

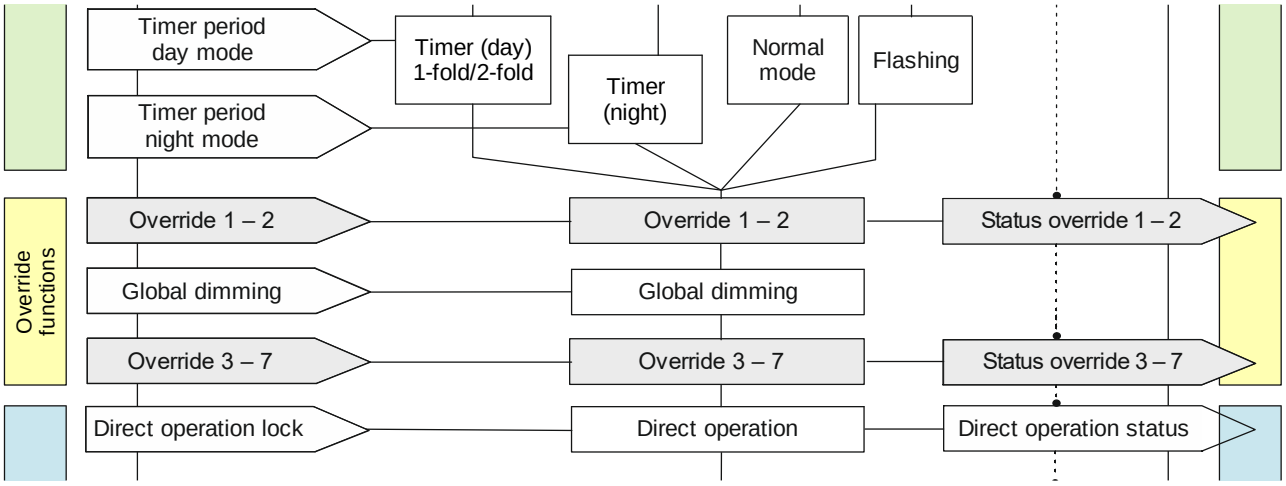


Fig. 12 Overrides

6.6.2 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 (➲ 2 Communication objects).

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

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.	

6.6.4 Manual override (ON)

Note:
When bus voltage is recovered, the override function “manual override (ON)” is “deactivated.”

6.6.4.1 Manual override process diagram

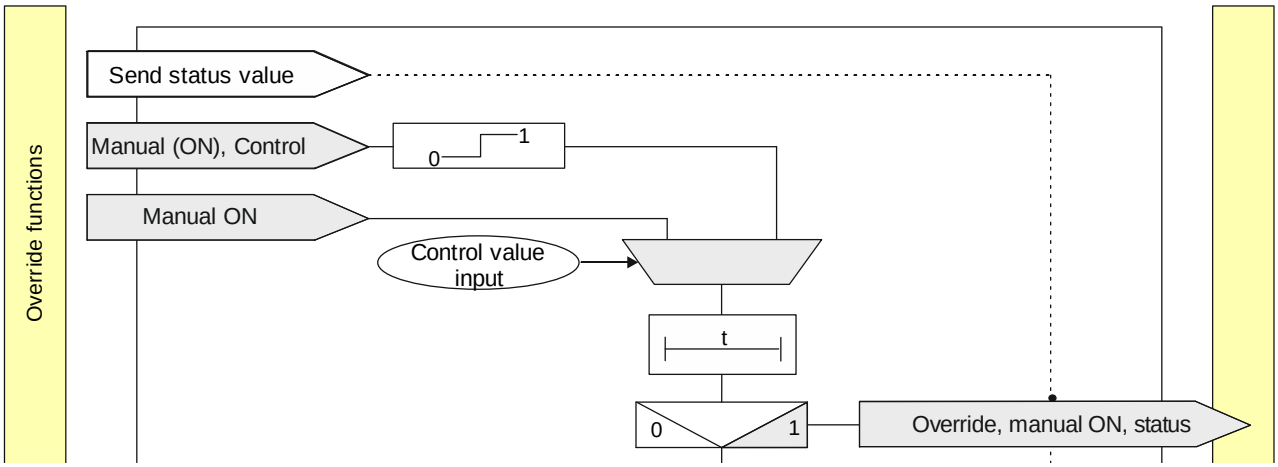


Fig. 13 Override “manual ON”

6.6.4.2 Communication objects for manual override

No.	Object name	Function	Datapoint type	Flags
29	**A Override “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, the “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.

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

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.				
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).				

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

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. ➲ *6.1.4* *Parameters for the control value input* on the “control value input” parameter card **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	**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	**00:00:00** [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.	

Parameter	Settings
Behavior 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 (%)	**0** [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 on override deactivation".	
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:** ➲ *6.7 Status*	

6.6.5 Override “permanent OFF”

6.6.5.1 Override “permanent OFF” process diagram

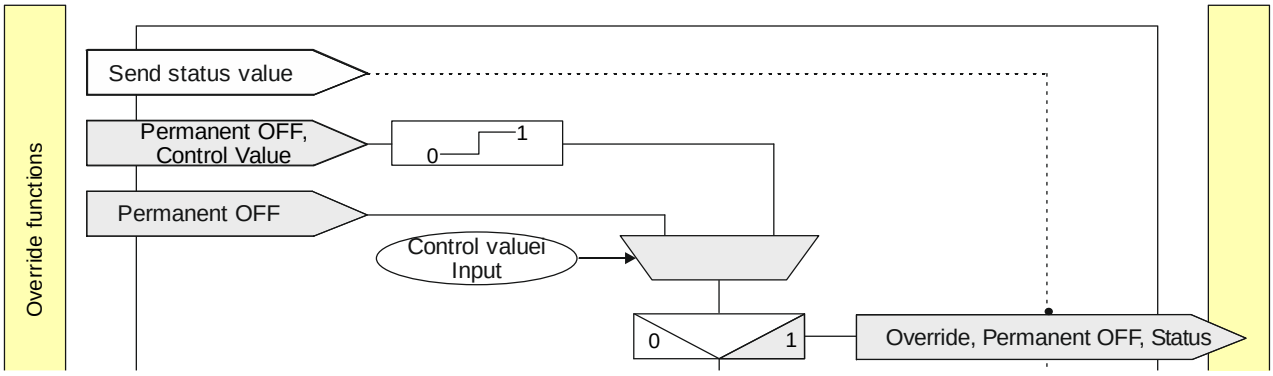


Fig. 14 Override “permanent OFF”

6.6.5.2 Communication objects for override “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.

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

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 parameter card “override 1, permanent OFF” is disabled, this communication object is hidden and communication object “override 1, permanent OFF” is shown.				
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).				

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

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. ➲ *6.1.4* *Parameters for the control value input* on the “control value input” parameter card **Communication object:** If the parameter “control value input” is in the status “enabled,” the communication object “override 1, permanent OFF” is hidden and the parameter “override 1, permanent OFF, control value” is shown. **More information:** ➲ *6.1 Control value input*	
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.	
Behavior 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.	

Parameter	Settings
Value at deactivation (%)	**0** [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 on override deactivation".	
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:** ➲ *6.7 Status*	
Start value / behavior of override input when bus voltage is recovered	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 bus voltage is recovered. The following settings are possible: • **Off** If the parameter is set to "Off," the override function block behaves as if an "Off" had been received at the override block input when bus voltage is recovered. • **On** If the parameter is set to "On," the override function block behaves as if an "On" had been received at the override block input when bus voltage is recovered. • **Deactivated** If this parameter is set to "deactivated," the override function block is deactivated when bus voltage is recovered. • **Last value** If this parameter is set to "last value," the override input of the function block is set to the value stored on bus voltage failure.	

6.6.6 Override “lock”

Note:
When bus voltage is recovered the override function “lock” remains as before bus voltage failure.

6.6.6.1 Override “lock” process diagram

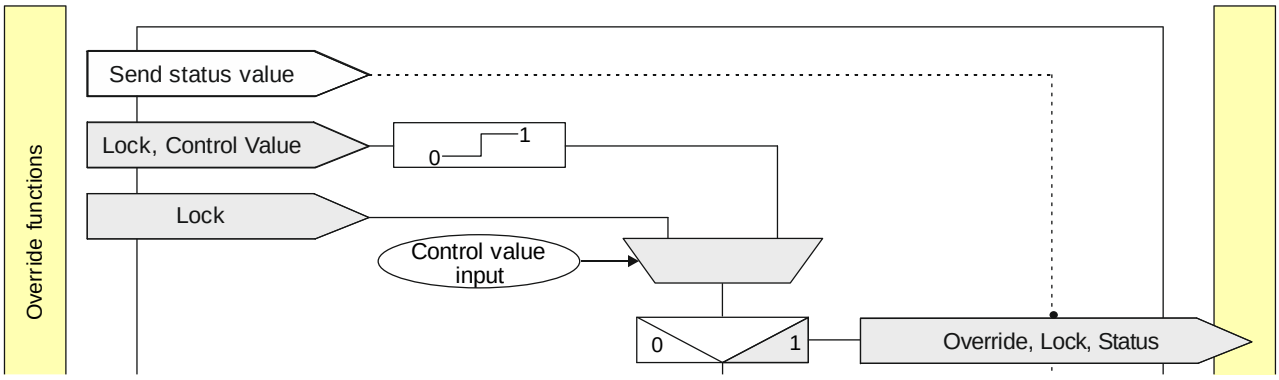


Fig. 15 Override communication objects for the override “lock”

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.

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

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.				
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).				

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

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. ➲ *6.1.4* *Parameters for the control value input* on the “control value input” parameter card **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	**No** Yes
Function: This parameter defines whether the input value of the communication object “override 1, lock” should be used directly or inverted.	
Behavior 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.	

Parameter	Settings
Value at deactivation (%)	**0** [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 on override deactivation".	
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:** ➲ *6.7 Status*	

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

6.6.7 Override “central override”

Note:
When bus voltage is recovered, the override function “central override” is “deactivated.”

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

6.6.7.1 Override “central override” process diagram

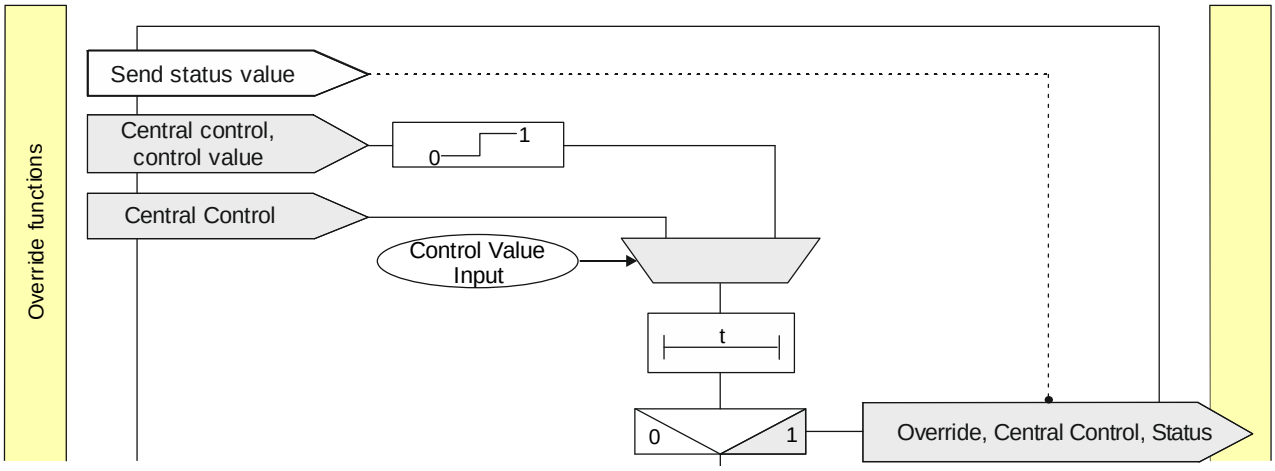


Fig. 16 Central override

6.6.7.2 Communication objects for the override “central override”

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.”

On deactivation of the central override, 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.

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.				
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:** ➲ *6.7 Status*				

6.6.7.3 Parameters for the override “central override” on the parameter card “override x, central control.”

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. ➲ *6.1.4* *Parameters for the control value input* on the “control value input” parameter card. **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	**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	**00:00:00** [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.	

Parameter	Settings
Behavior 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 (%)	**100** [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 on override activation”.	
Behavior 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.	

Parameter	Settings
Value at deactivation (%)	**0** [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 on override deactivation”.	
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:** ➲ *6.7 Status*	

6.6.8 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.

6.6.8.1 “User-defined control” process diagram

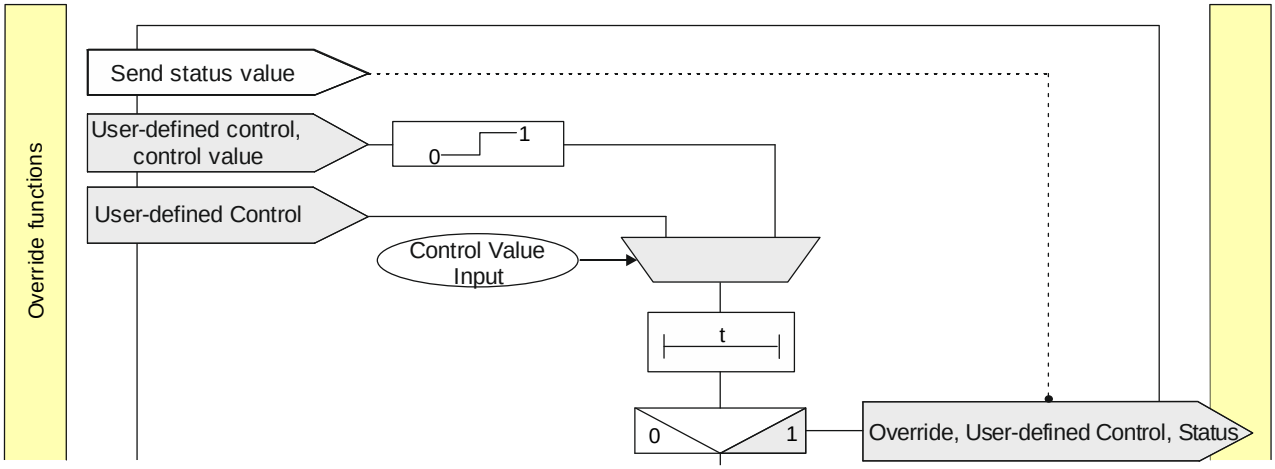


Fig. 17 Override user-defined control

6.6.8.2 Communication objects for the override “user-defined”

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 when 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.			
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.			

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).

6.6.8.3 Parameters for the override "user-defined" on the parameter card "override x, user-defined control"

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.

➲ *6.1.4*

Parameters for the control value input on the "control value input" parameter card

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:

➲ *6.1 Control value input*

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.

Parameter	Settings
Monitoring time	**00:00:00** [00:00:00...18:12:15]
Function: This parameter defines 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 on override deactivation" is used to define which value is passed on to the output of the function block upon deactivation of the override.	
Behavior 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 (%)	**100** [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 on override activation".	

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

Parameter	Settings
Override duration	**00:00:00** [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.	
Behavior 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 (%)	**0** [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 on override deactivation".	

Parameter	Settings
Restart timer on deactivation of override	Disable **Enable**
Function: This parameter defines whether an already expired timer (day, night mode or ON/OFF delay) is restarted with deactivation of the override (“enabled”) or not (“disabled”). **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	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:** ➲ *6.7 Status*	
Start value / behavior of override input when bus voltage is recovered	Off 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, user-defined” when bus voltage is recovered. The following settings are possible: • **Off** If the parameter is set to “Off,” the override function block behaves as if an “Off” had been received at the override block input when bus voltage is recovered. • **On** If the parameter is set to “On,” the override function block behaves as if an “On” had been received at the override block input when bus voltage is recovered. • **Deactivated** If this parameter is set to “deactivated,” the override function block is deactivated when bus voltage is recovered. • **Last value** If this parameter is set to “last value,” the override input of the function block is set to the value stored on bus voltage failure.	

6.6.9 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.

6.6.9.1 Override “forced control” process diagram

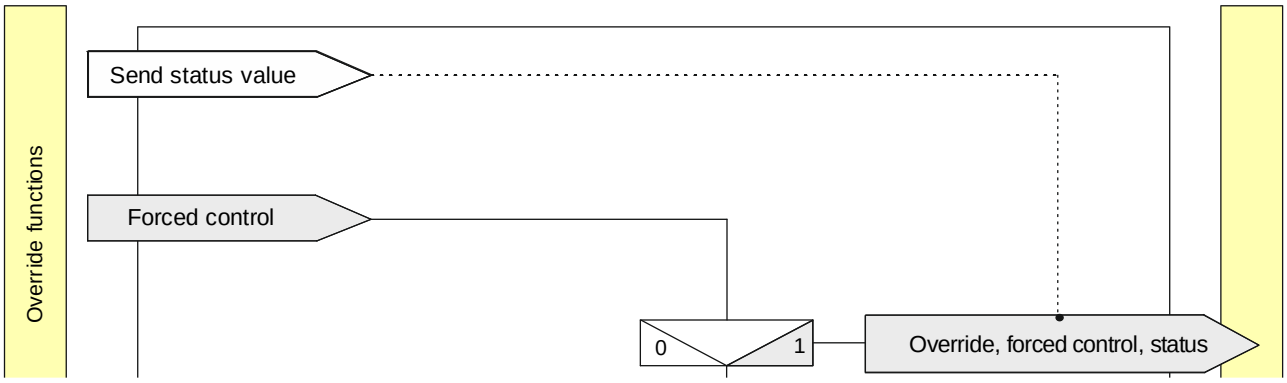


Fig. 18 Forced control

6.6.9.2 Communication objects for the override “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, if the “override 1” parameter is set to “forced control” (“functions, objects” parameter card).

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).

6.6.9.3 Parameters for the override “forced control” on the parameter card “override x, forced control”

Parameter	Settings
Value at activation (%)	**100** [0...100]
Function: This parameter can be used to define which value is passed on upon activation of the override.	
Behavior 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 (%)	**0** [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 on override deactivation”.	
Restart timer on deactivation of override	Disable **Enable**
Function: This parameter defines whether an already expired timer (day, night mode or ON/OFF delay) is restarted with deactivation of the override (“enabled”) or not (“disabled”). **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.”	

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

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:** ➲ *6.7 Status*	
Start value / behavior of override input when bus voltage is recovered	Activated – switched on Activated – switched 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, forced control" when bus voltage is recovered. The following settings are possible: • **Activated – switched off** If this parameter is set "switched off," the override function block is activated when bus voltage is recovered and the output is switched off. • **Activated – switched on** If this parameter is set to "switched on," the override function block is activated when bus 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 bus voltage is recovered. • **Last value** If this parameter is set to "last value," the override input of the function block is set to the value stored on bus voltage failure.	

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

6.7 Status

6.7.1 “Status” process diagram

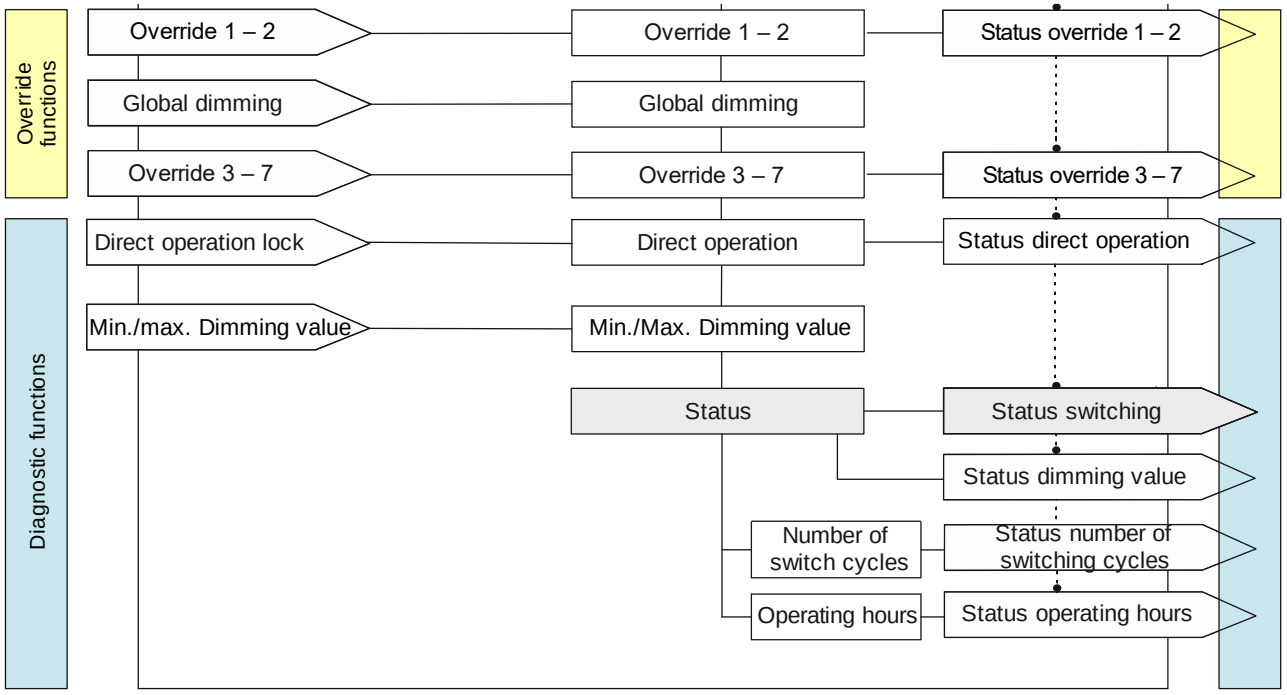


Fig. 19 Status

6.7.2 Communication objects for status

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 or, if so configured, transmitted automatically after every object value change. **Availability:** The communication object “status switching” is only displayed if the parameter “status switching” is set to "enabled.”				
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).				
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).				
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).				

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).				
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).				
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).				
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).				

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).

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:

➲ *6.6 Overrides*

60	**A Status direct operation**	On/Off	1.002 Boolean	CRT

Function:

This communication object is used to report that direct operation is active.

Availability:

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

More information:

➲ *6.11 Direct operation*

63	**A Number of switching cycles**	Value (switch 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:

➲ *6.8 Counting of switching cycles*

No.	Object name	Function	Datapoint type	Flags
66	**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 query 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) is set to "enabled" and the parameter "threshold monitoring" (on the "counting of switching cycles" parameter card) is also set to "enabled."

No.	Object name	Function	Datapoint type	Flags
67	**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:

➲ *6.9 Counting of operating hours*

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

Function:

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

➲ *6.9 Counting of operating hours*

No.	Object name	Function	Datapoint type	Flags
71	**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) is set to “enabled” and additionally the parameter “threshold monitoring” (on the “operating hours” parameter card) is set to “enabled.”

6.7.3 Parameters that are visible if the parameter “status ...” is set to “enabled”

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	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.”

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

Parameter	Settings
Send status cyclically	**00:00:00** [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."

6.7.4 Parameters for the status on the "functions, objects" parameter card

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

➲ *6.7.3 Parameters that are visible if the parameter "status ..." is set to "enabled".*

Communication object:

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

More information:

➲ *6.6 Overrides*

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

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 ➲ *6.7.3 Parameters that are visible if the parameter "status ..." is set to "enabled"*. **Communication objects:** If the parameter "status direct operation" is set to "enabled," the communication object "status direct operation" is displayed. **More information:** ➲ *6.11 Direct operation*	
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 ➲ *6.7.3 Parameters that are visible if the parameter "status ..." is set to "enabled"*. **Communication object:** If the parameter "status switching" is set to "enabled," the communication object "status switching" is displayed.	

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 ➲ *6.7.3 Parameters that are visible if the parameter "status ..." is set to "enabled"*.

Communication object:

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

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:

➲ *6.8 Counting of switching cycles*

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.

6.7.5 Parameters for the status on the “override x, [type of override]” parameter card

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 “enabled,” additional parameters for sending the status of the override are displayed ➲ *6.7.3 Parameters that are visible if the parameter “status ...” is set to “enabled”*.

6.7.6 Parameters for the status on the “switching cycle” parameter card

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 switching cycles” and parameters for sending the status of the threshold are also displayed ➲ *6.7.3 Parameters that are visible if the parameter “status ...” is set to “enabled”*.

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.

6.7.7 Parameters for the status on the “operating hours” parameter card

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 parameters for sending the status of the threshold are also displayed ➲ *6.7.3 Parameters that are visible if the parameter “status ...” is set to “enabled”*.

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.

6.8 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 ➲ *6.10 Warning before switching* Off), each switch cycle is counted during the flashing. If switching is still ongoing during bus voltage failure and a threshold exceedance occurs, this is transmitted when bus voltage is recovered.

The object "exceedance of threshold for switching cycles" is only sent with an object value change (one-off). That is, 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. Once the counter object has reached its maximum possible value (4 294 967 295), it remains at this value until it is reset.

The reset is executed by writing a value in the object "number of switching cycles (set value)."

In case of bus voltage failure, the values of all three objects of switching cycle counting are saved to enable their recovery when bus voltage is recovered. 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

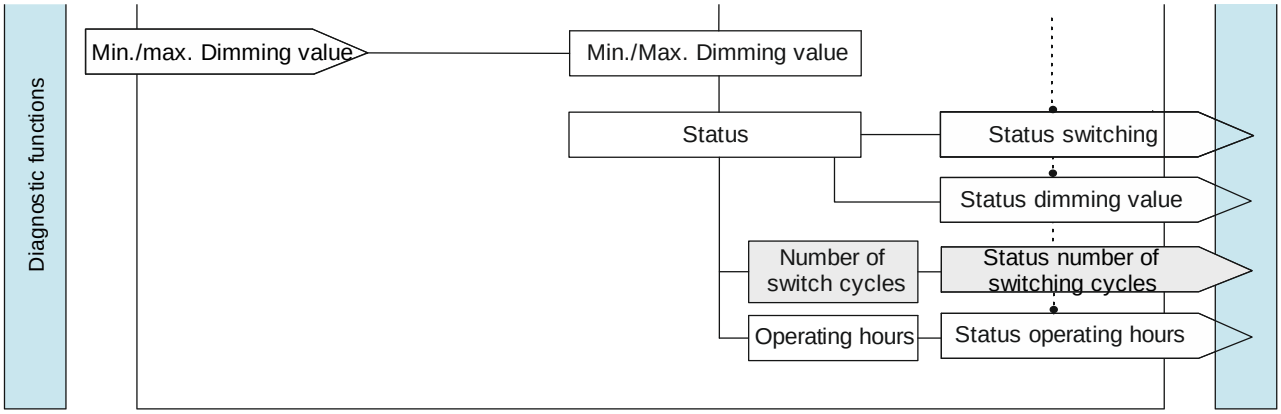


Fig. 20 Counting of switching cycles (overview)

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

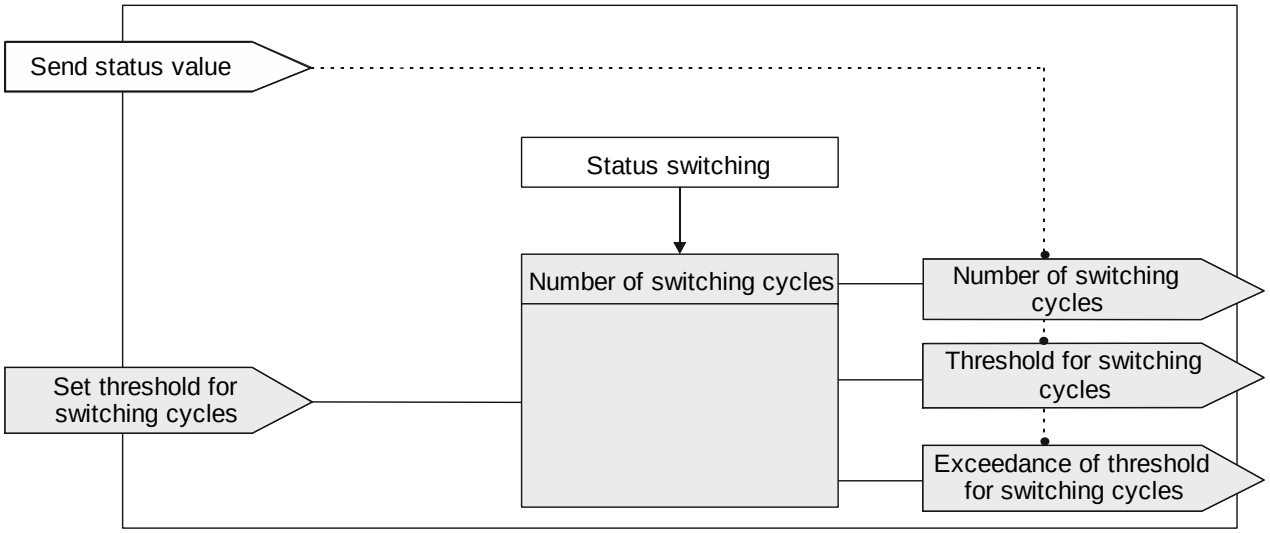


Fig. 21 Counting of switching cycles (details)

6.8.2 Communication objects for switching cycle counting

Obj	Object name	Function	Datapoint type	Flag
63	**A Number of switching cycles**	Value (switch cycles)	12.001 counting impulses (without prefix)	CRT
Function: This communication object can be used to request the number of switch 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).				
64	**A Number of switching cycles**	Set value (switch cycle)	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).				

Obj	Object name	Function	Datapoint type	Flag
65	**A Threshold for switching cycles**	Set/request value (switch 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 4 294 967 295 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) is set to "enabled" and additionally the parameter "threshold monitoring" (on the counting of switching cycles parameter card) is set to "enabled."

Obj	Object name	Function	Datapoint type	Flag
66	**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) is set to "enabled" and the parameter "threshold monitoring" (on the "counting of switching cycles" parameter card) is also set to "enabled."

6.8.3 Parameters for the counting of switching cycles on the "functions, objects" parameter card

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:

➲ *6.8 Counting of switching cycles*

6.8.4 Parameters for the counting of switching cycles on the “counting of switching cycles” parameter card

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	**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)”	**1** [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. **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	**00:00:00** [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.	

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 switching cycles" and parameters for sending the status of the threshold are also displayed ➲ *6.7.3 Parameters that are visible if the parameter "status ..." is set to "enabled"*. **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	**1000** [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," then a telegram is sent to the bus via the communication object "exceedance of threshold for switching cycles" when the threshold is reached or exceeded. **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). If a new threshold is received or the counter value is reset by writing to the object, then the threshold exceedance is only sent, if a change to the object for threshold monitoring occurs as a result. Once the counter object has reached its maximum value (4 294 967 295), it remains at this value until it is reset.

In case of bus voltage failure, counting of operating hours cannot be continued.

In case of bus voltage failure, the values of all three objects for counting of operating hours are saved to enable their recovery when bus voltage is recovered. 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

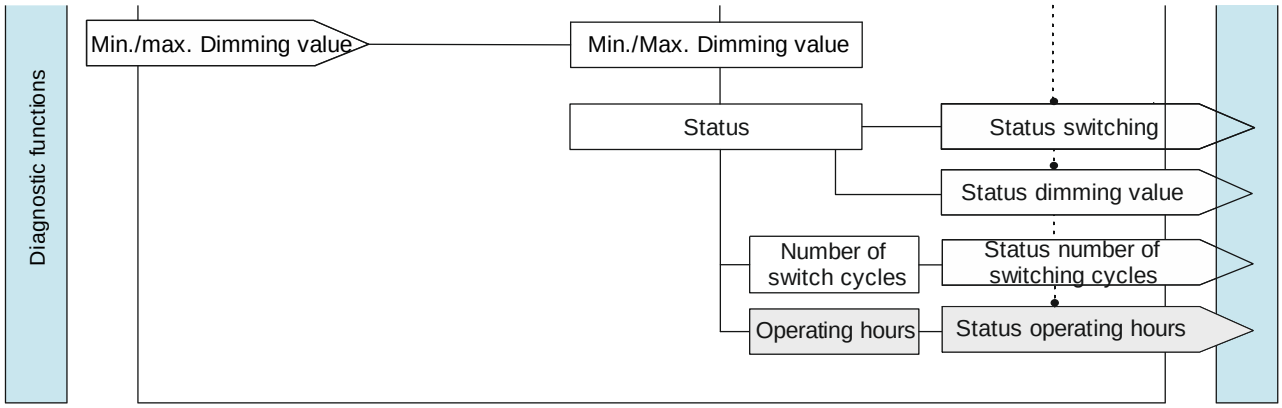


Fig. 22 Counting of operating hours (overview)

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

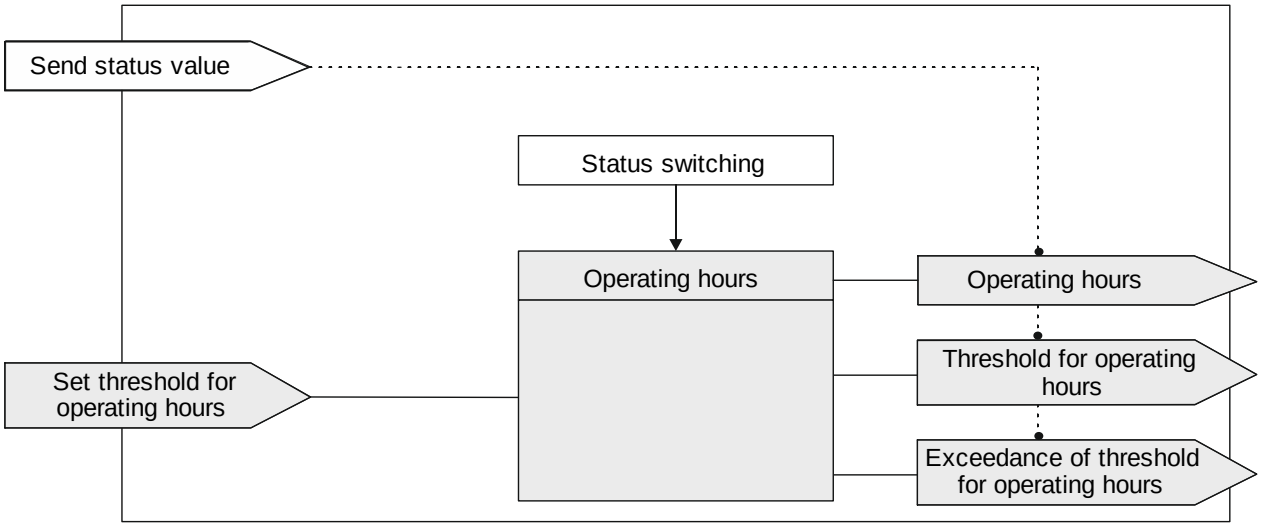


Fig. 23 Counting of operating hours (details)

6.9.2 Communication objects for counting of operating hours

Obj	Object name	Function	Datapoint type	Flag
67	**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.”				
68	**A Operating hours**	Value (in seconds)	13.100 time difference (s)	CRT
Function: This object can be used to request the current operating duration of the output (i.e. how many seconds the output was switched on) via the bus in seconds 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.”				

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

Obj	Object name	Function	Datapoint type	Flag
69	**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).

Obj	Object name	Function	Datapoint type	Flag
70	**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 output as an integer value in the range of 1 to 4 294 967 295 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) is set to "enabled" and additionally the parameter "threshold monitoring" (on the "operating hours" parameter card) is set to "enabled."

Obj	Object name	Function	Datapoint type	Flag
71	**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) is set to "enabled" and additionally the parameter "threshold monitoring" (on the "operating hours" parameter card) is set to "enabled."

6.9.3 Parameters for the counting of operating hours on the “functions, objects” parameter card

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

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	**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.”	

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)"	**1** [0...4 294 967 295]
"Value change since last sent (seconds)"	**3600** [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	**00:00:00** [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.	

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

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 parameters for sending the status of the threshold are also displayed ➲ *6.7.3 Parameters that are visible if the parameter "status ..." is set to "enabled"*. **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	**1000** [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," then a telegram is sent to the bus via the communication object "exceedance of threshold for switching cycles" when the threshold is reached or exceeded. **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”

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 be used to 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.”

Parameter	Settings
Warning before switching Off	**No** Via briefly switching on - off Via communication object Via briefly switching on - off and via communication object Via dimming to half dimming value Via dimming 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, then a user is 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 object the communication object "pre-warning expiration of timer period" is displayed, through which 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."
- **"Via dimming 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.
- **"Via dimming 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.

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

Parameter	Settings
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:** ➲ *7.6.4 Behavior in timer mode (1-fold) with setting “warning before switching off” = “short switch off/on” and “retriggering possible = 1.”* ➲ *7.6.5 Behavior in timer mode (1-fold) with setting “warning before switching off” = “via dimming to half dimming value” and “retriggering possible = 1.”*	
Warning period	**00:00:30** [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	**00:00:02** [00:00:00...18:12:15]
Function: This parameter is used to set that after elapse of the ON time, the output is not immediately permanently switched off but instead initially just for the warning signal period (default: 2 second) 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 to turn it back on. **Note:** The warning signal period must be greater than the warning period as otherwise no warning is issued!	

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

6.11 Direct operation

In direct operation, the switching/dimming actuator can be controlled via the buttons on the switching/dimming actuator. This enables the installer, for example, to check whether the switching/dimming actuator has been correctly installed.

6.11.1 Process diagram for direct operation

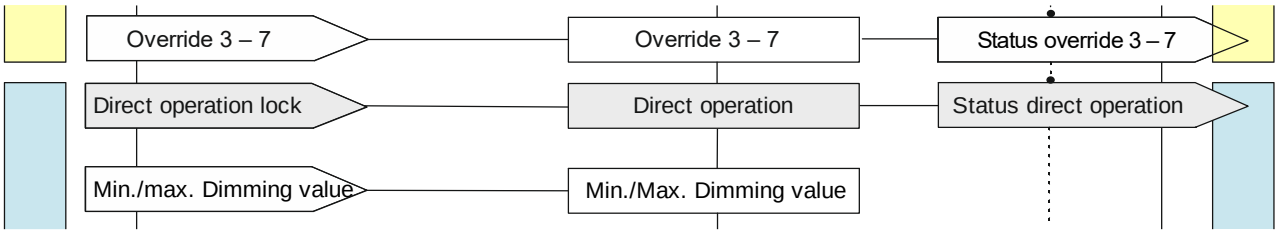


Fig. 24 Direct operation

6.11.2 Communication objects for direct operation

No.	Object name	Function	Datapoint type	Flags
59	**A Direct operation lock**	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:
When bus voltage is recovered the setting is reset.

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 that direct operation is active.

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

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 ➲ *6.7.3 Parameters that are visible if the parameter “status ...” is set to “enabled”.* **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	**00:15:00** [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 bus 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	**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.	

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

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 ➲ *6.7.3 Parameters that are visible if the parameter "status ..." is set to "enabled"*.

Communication objects:

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

7 Graphic representation of 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

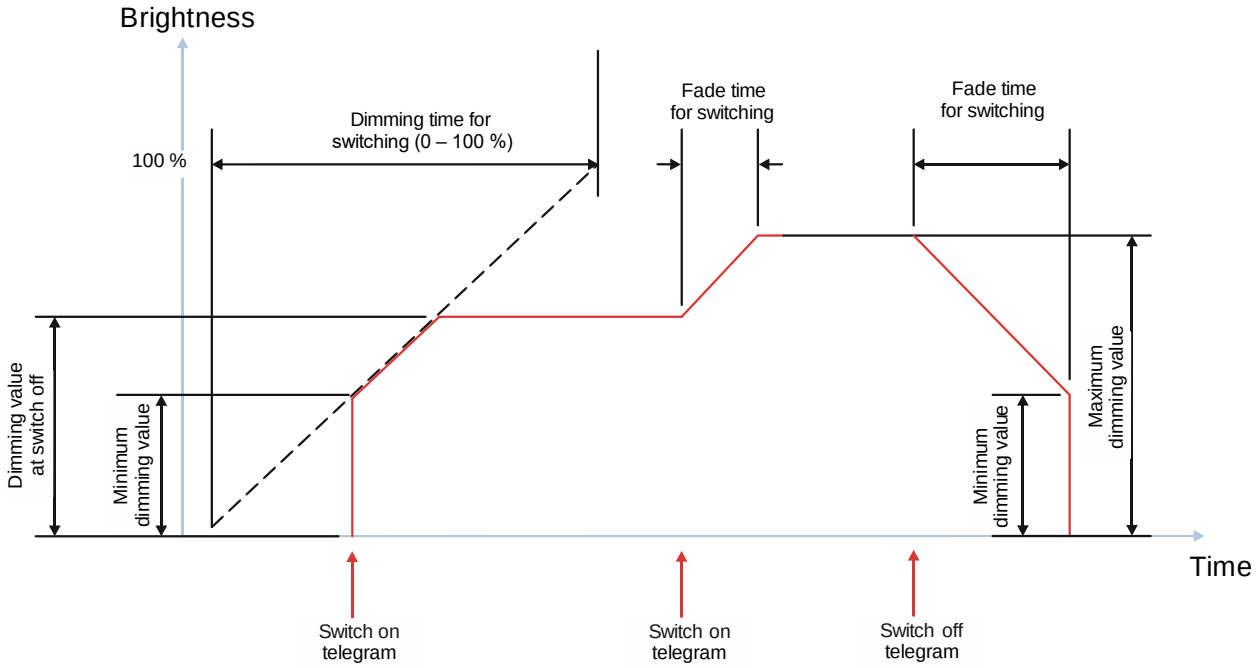


Fig. 25 Dimming curves when switching on/off via the “switching” communication object

7.2 Dimming behavior 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

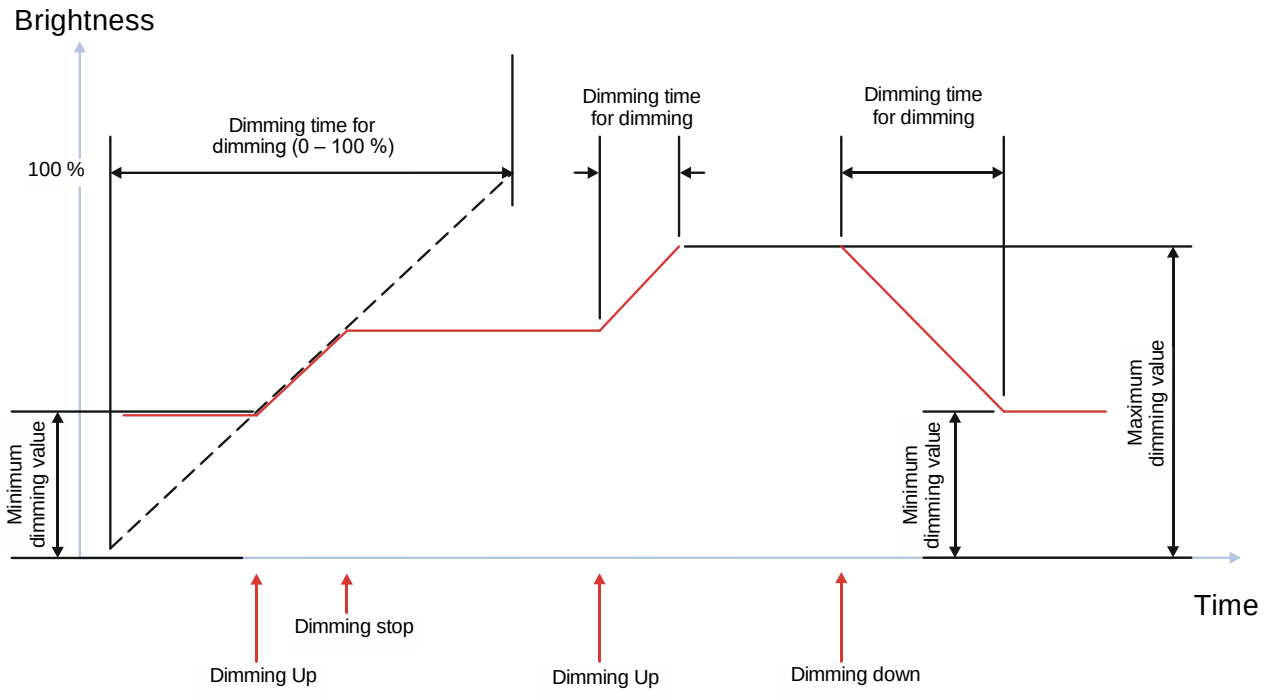


Fig. 26 Dimming via communication object “dimming” – “On and Off not possible”

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

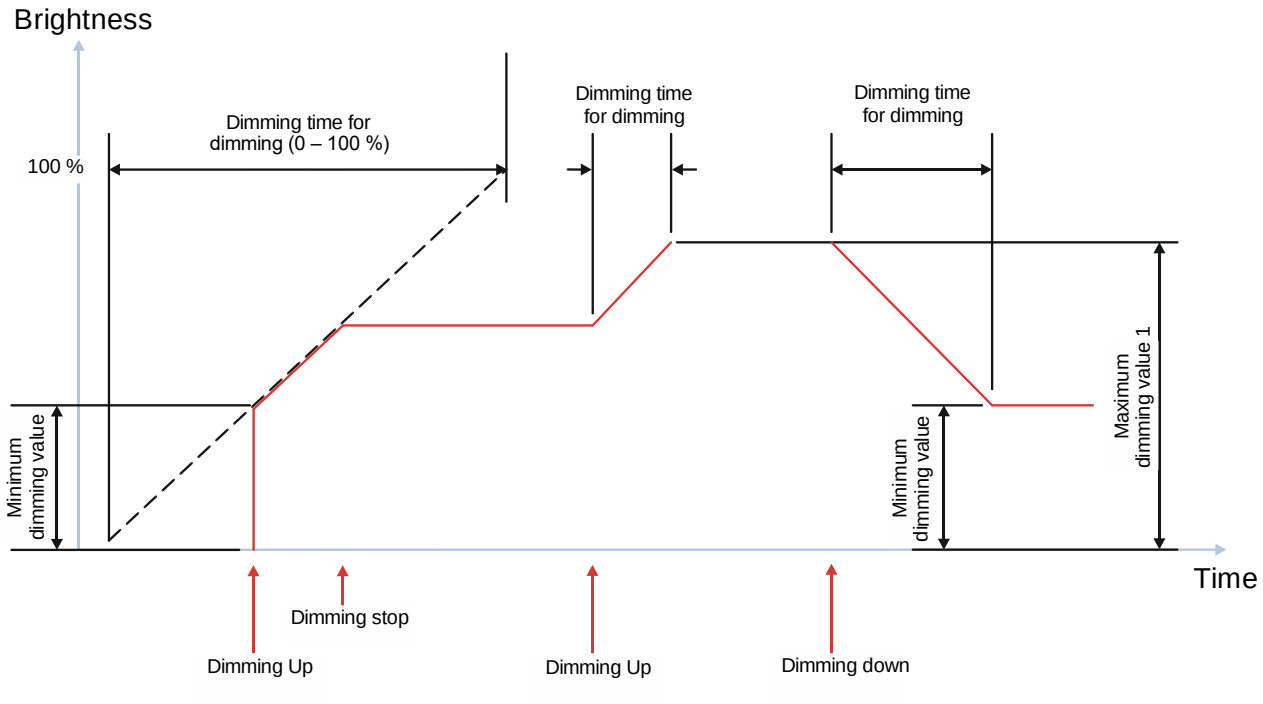


Fig. 27 Dimming via communication object “dimming” – “On possible”

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

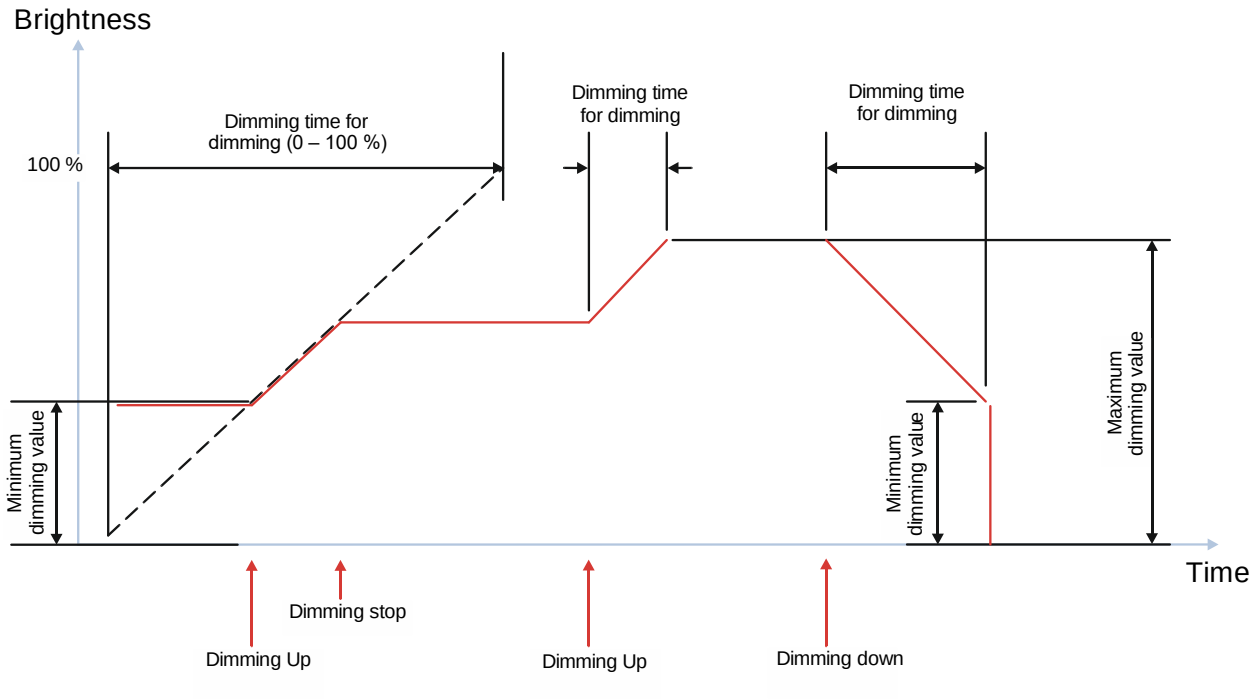


Fig. 28 Dimming via communication object “dimming” – “Off possible”

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

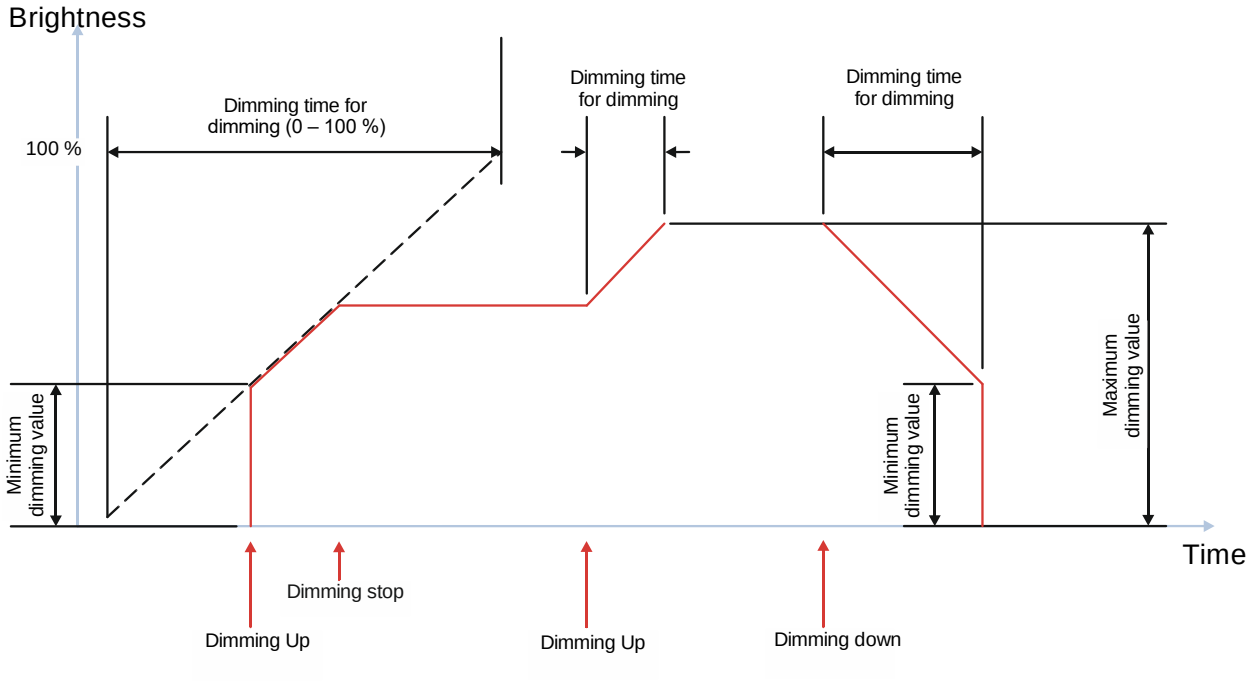


Fig. 29 Dimming via communication object “dimming” – “On and Off possible”

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

7.3 Dimming behavior via the communication object “dimming value 1”

7.3.1 “Switching via dimming value 1” – “not 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 “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

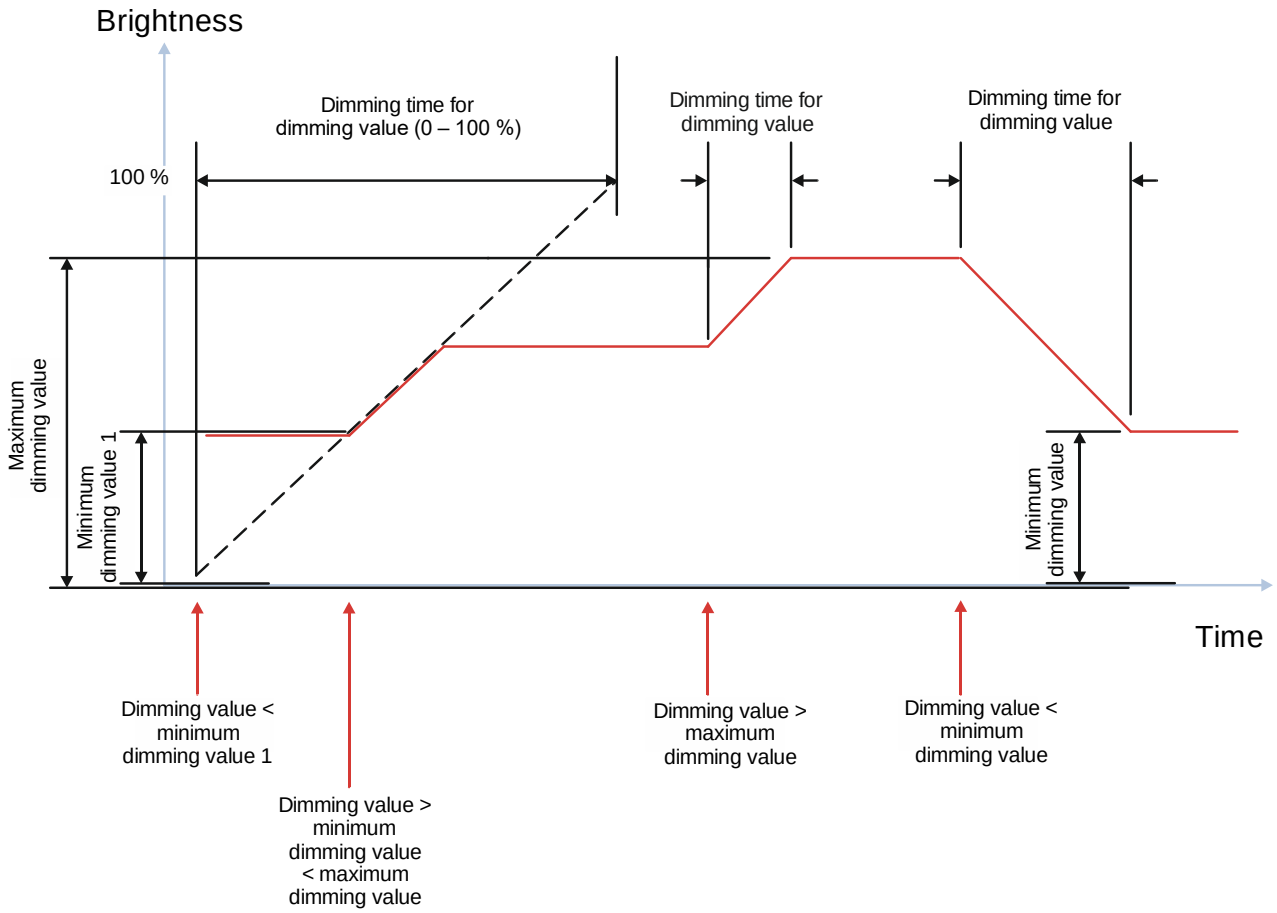


Fig. 30 Dimming behavior with dimming via communication object “dimming value 1”; “switching via dimming value 1” – “not possible.”

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

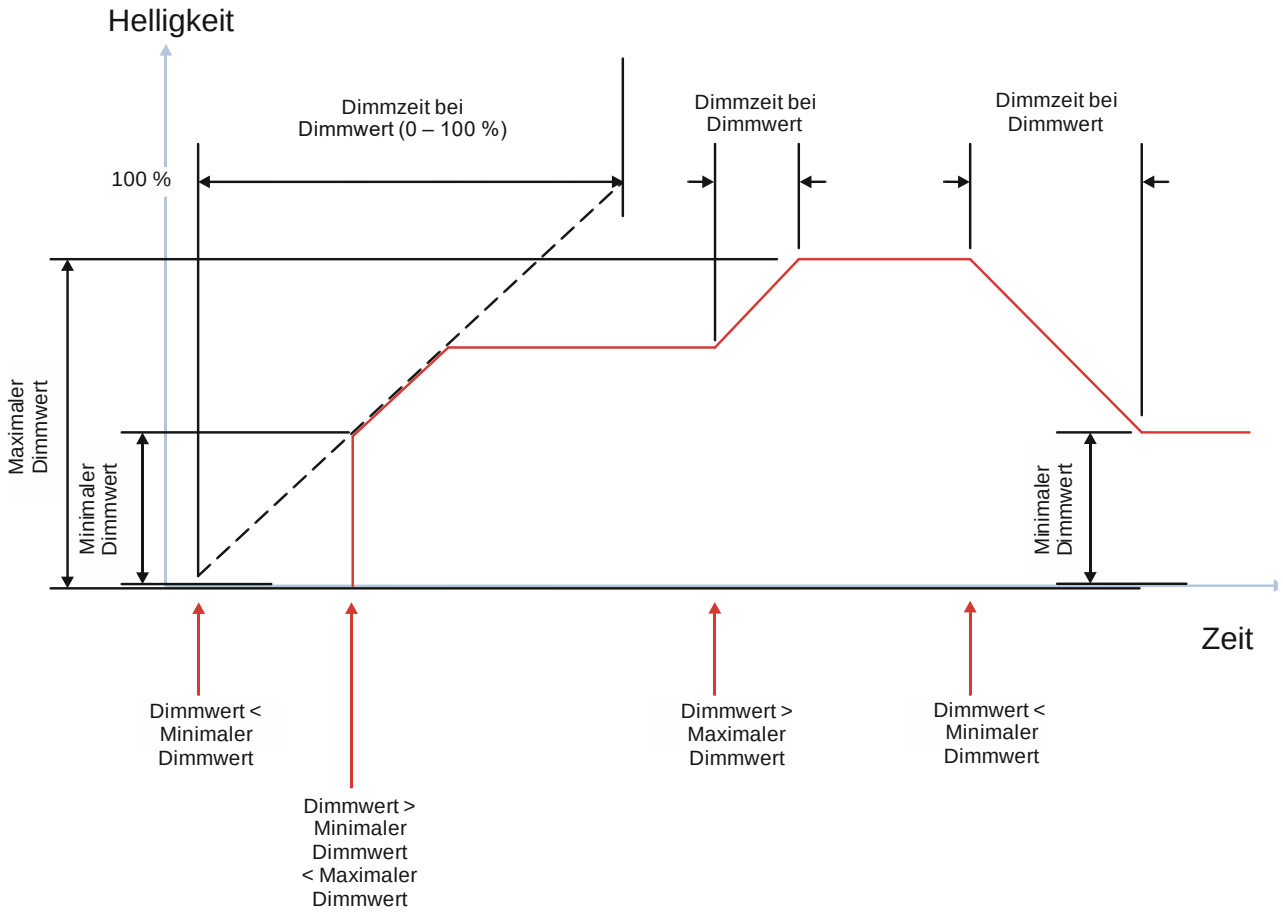


Fig. 31 Dimming behavior with dimming via communication object “dimming value 1”; “switching via dimming value 1” – “on, if dimming value >= min. dimming value.”

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

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

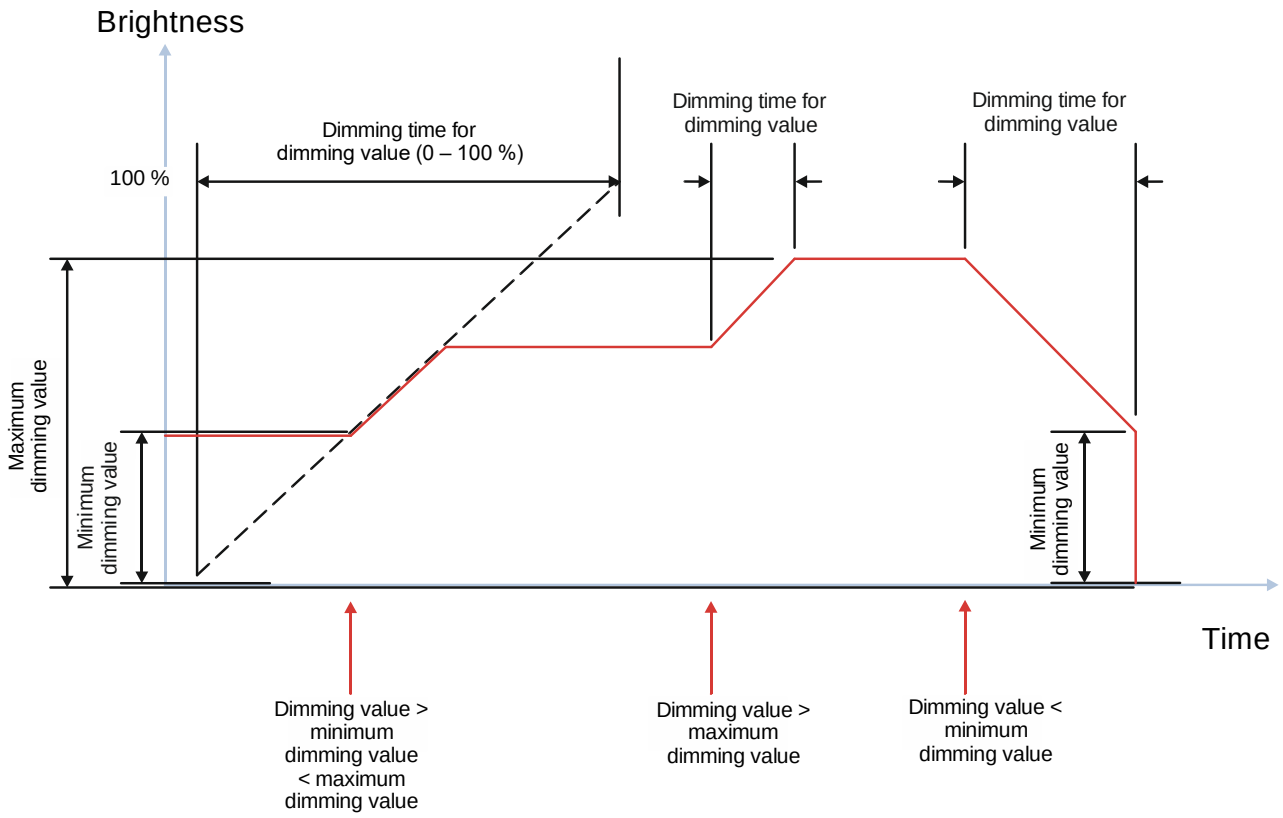


Fig. 32 Dimming behavior with dimming via communication object “dimming value 1”; “switching via dimming value 1” – “off, if dimming value <= min. dimming value”

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

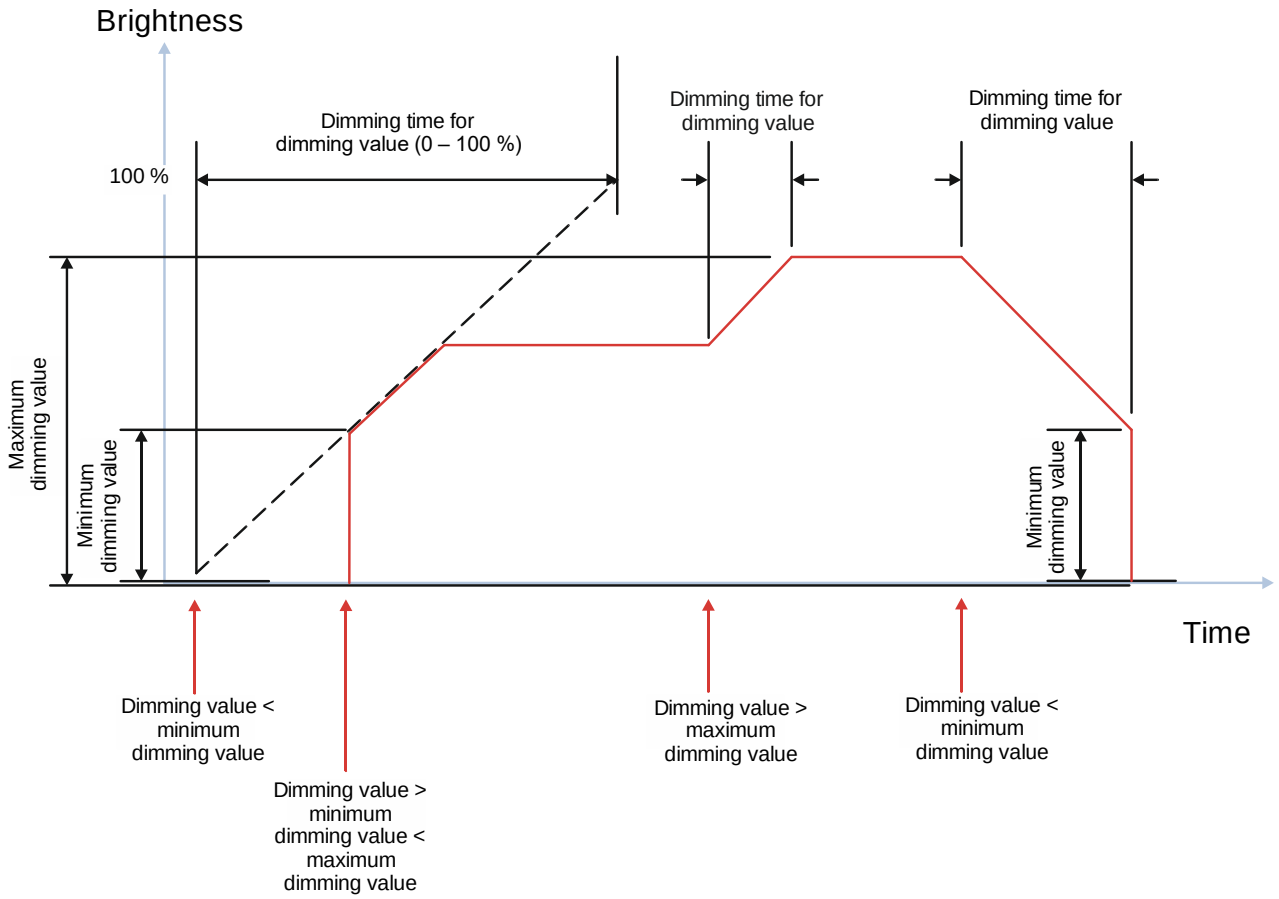


Fig. 33 Dimming behavior with dimming via communication object “dimming value 1”; “switching via dimming value 1” – “On and Off possible”

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

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

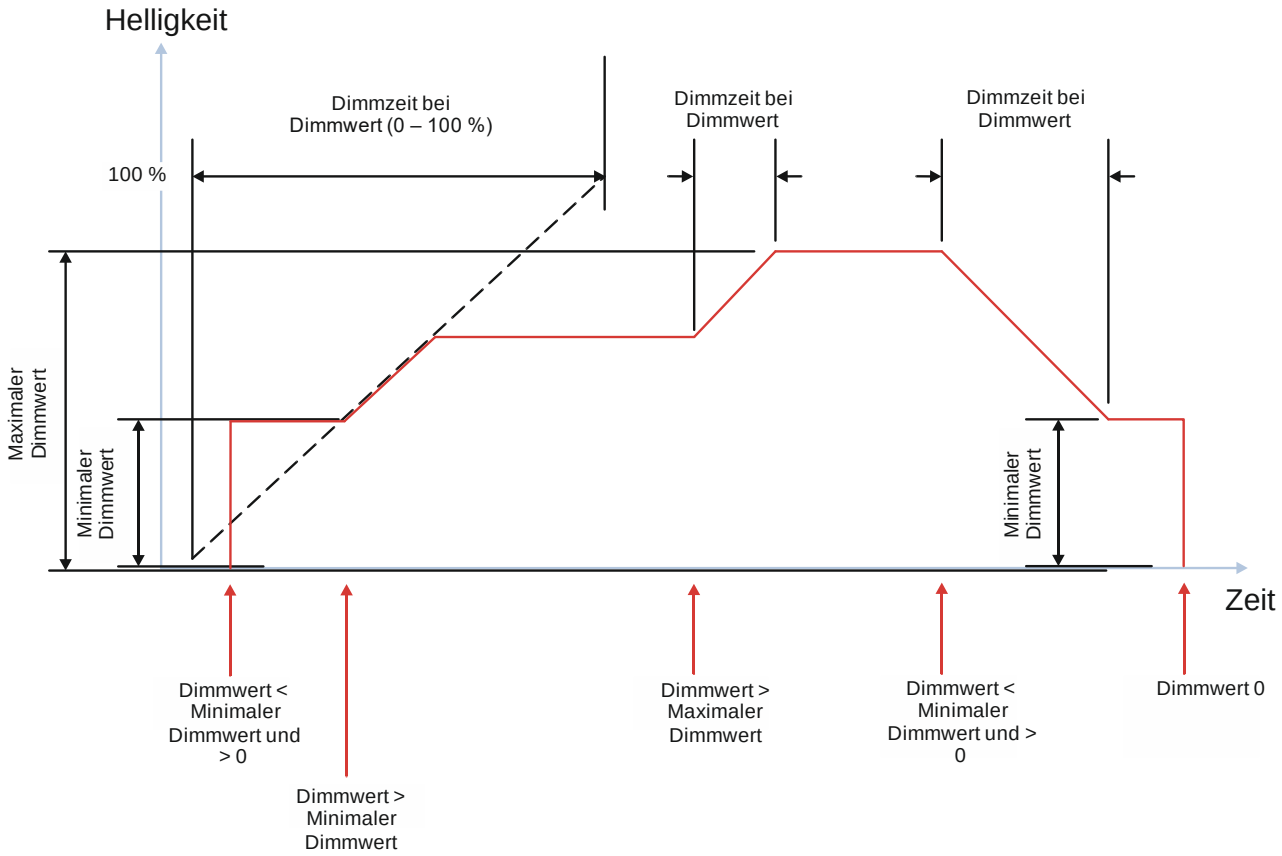


Fig. 34 Dimming behavior with dimming via communication object “dimming value 1”; “switching via dimming value 1” – “on, if dimming value > 0 %, off, if dimming value = 0 %”

7.4 Dimming behavior with On/Off switching via the “switching” communication object in combination with the communication objects “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

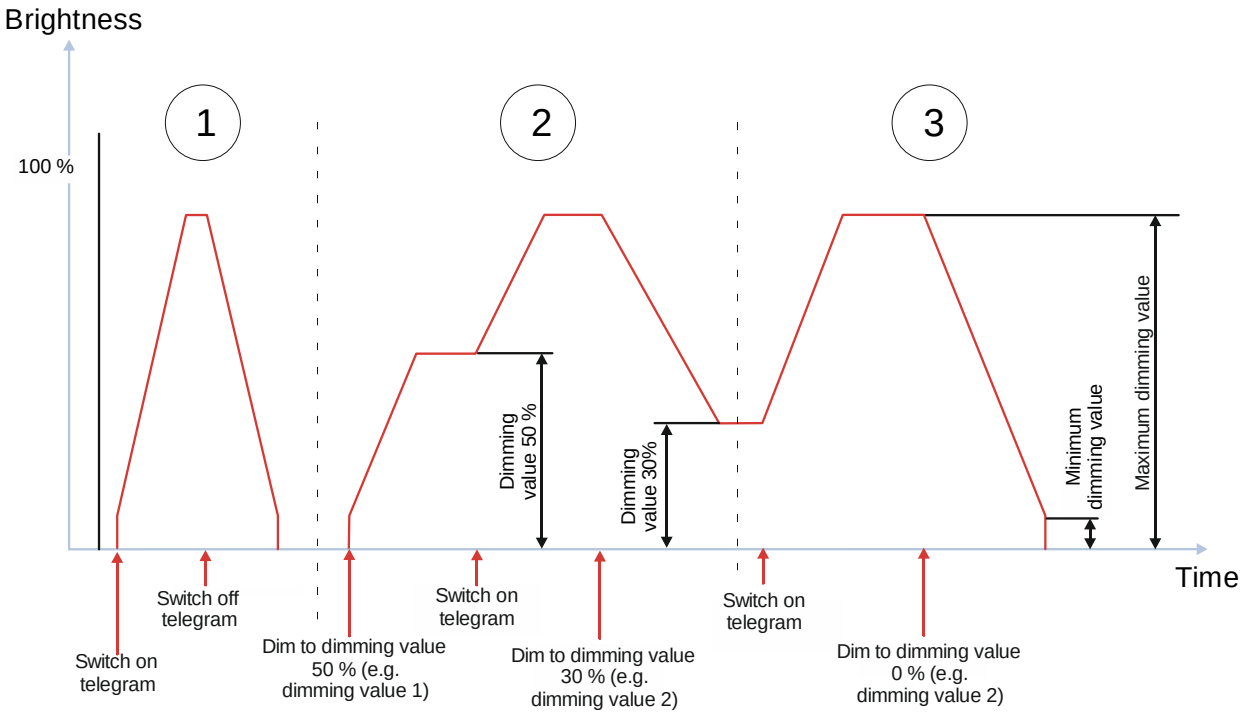


Fig. 35 Behavior when switching on and dimming to a dimming value under the influence of the minimum and maximum dimming value

(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 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

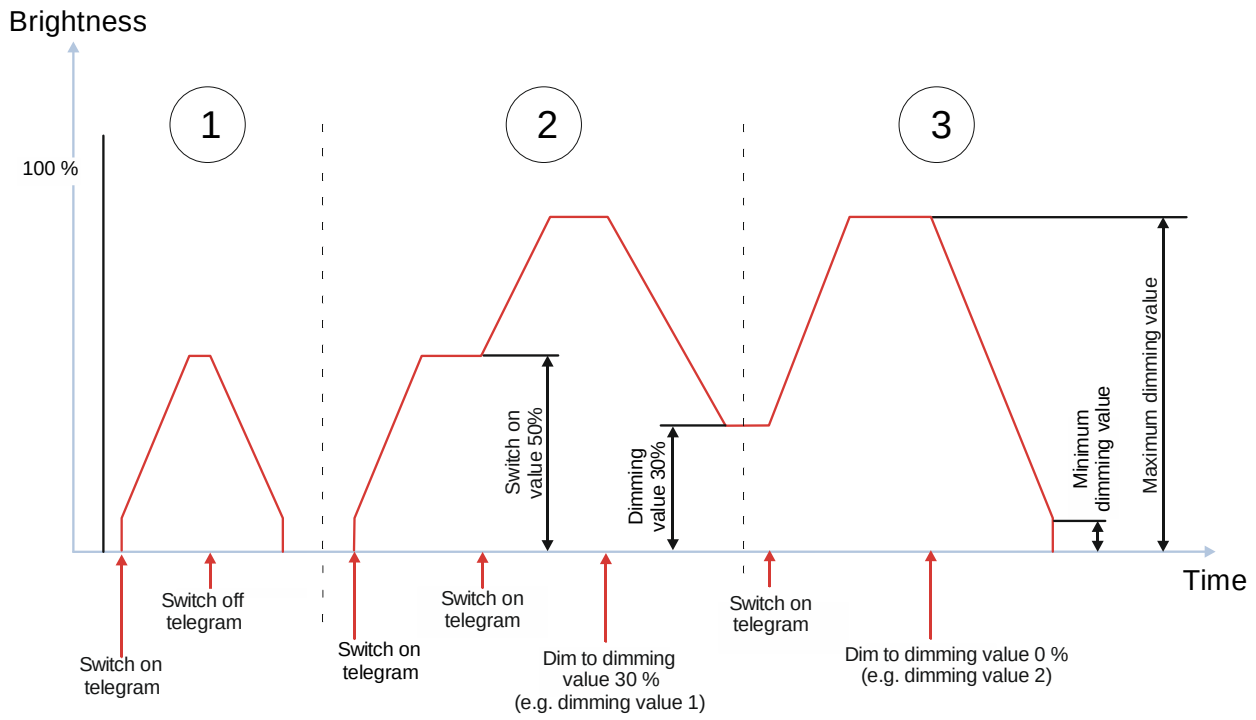


Fig. 36 Behavior when switching on and dimming to a dimming value under the influence of the minimum and maximum dimming value

(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 from dimming value 1 to the newly received value (e.g. 30%) using the configured dimming time.

(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

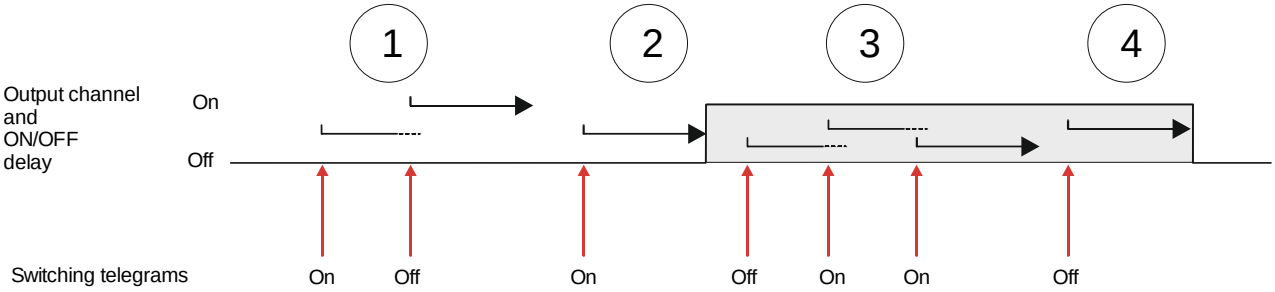


Fig. 37 Switching behavior when a delay has been configured for switching on and off

(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.

Note on 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.

Note on 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)

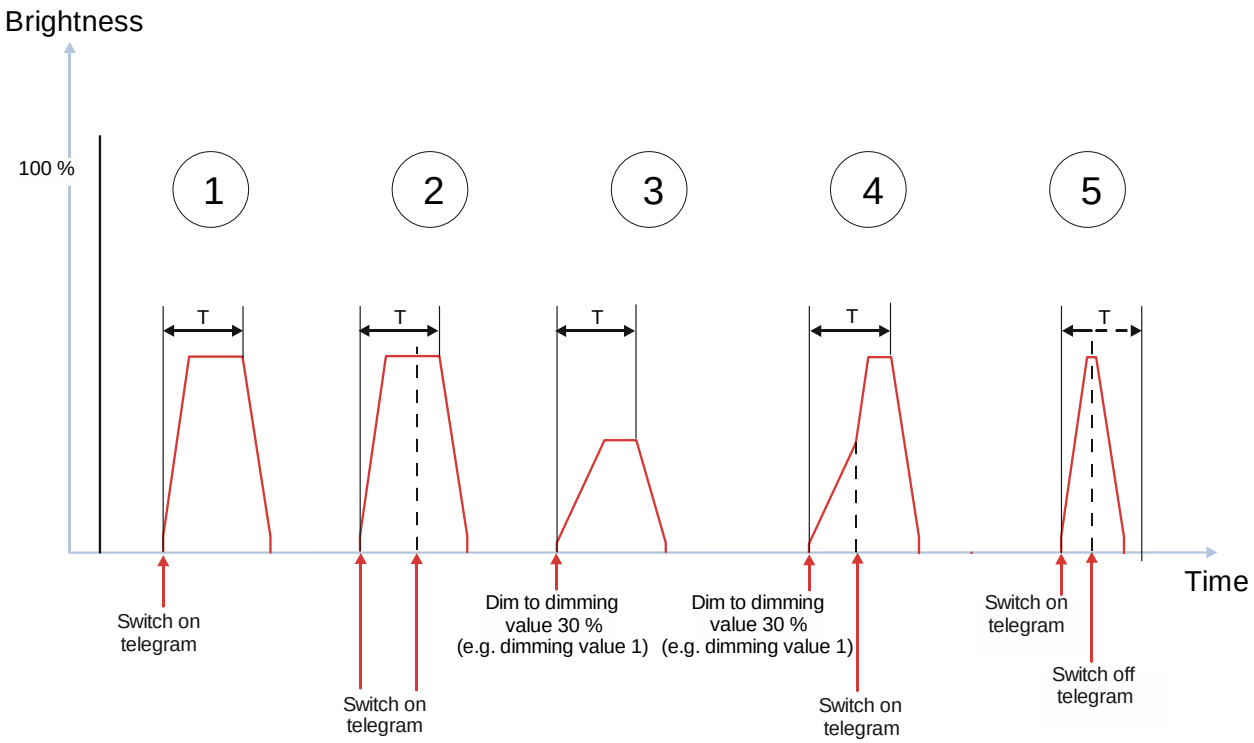


Fig. 38 Behavior in timer mode (single) with the setting “retriggering = 0”

(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)

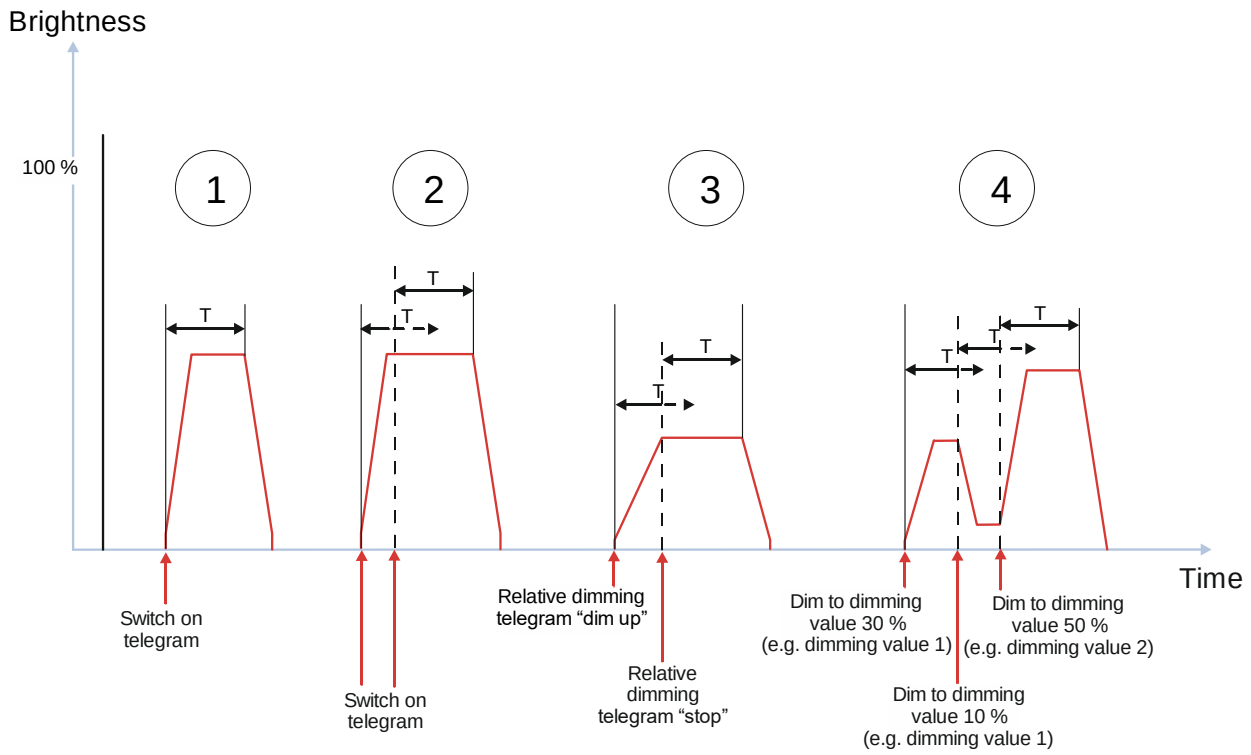


Fig. 39 Behavior in timer mode (single) with the setting “retriggering = 1”

(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 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, re-started and light is dimmed to the newly received value.

7.6.3 Behavior in timer mode (1-fold) 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)

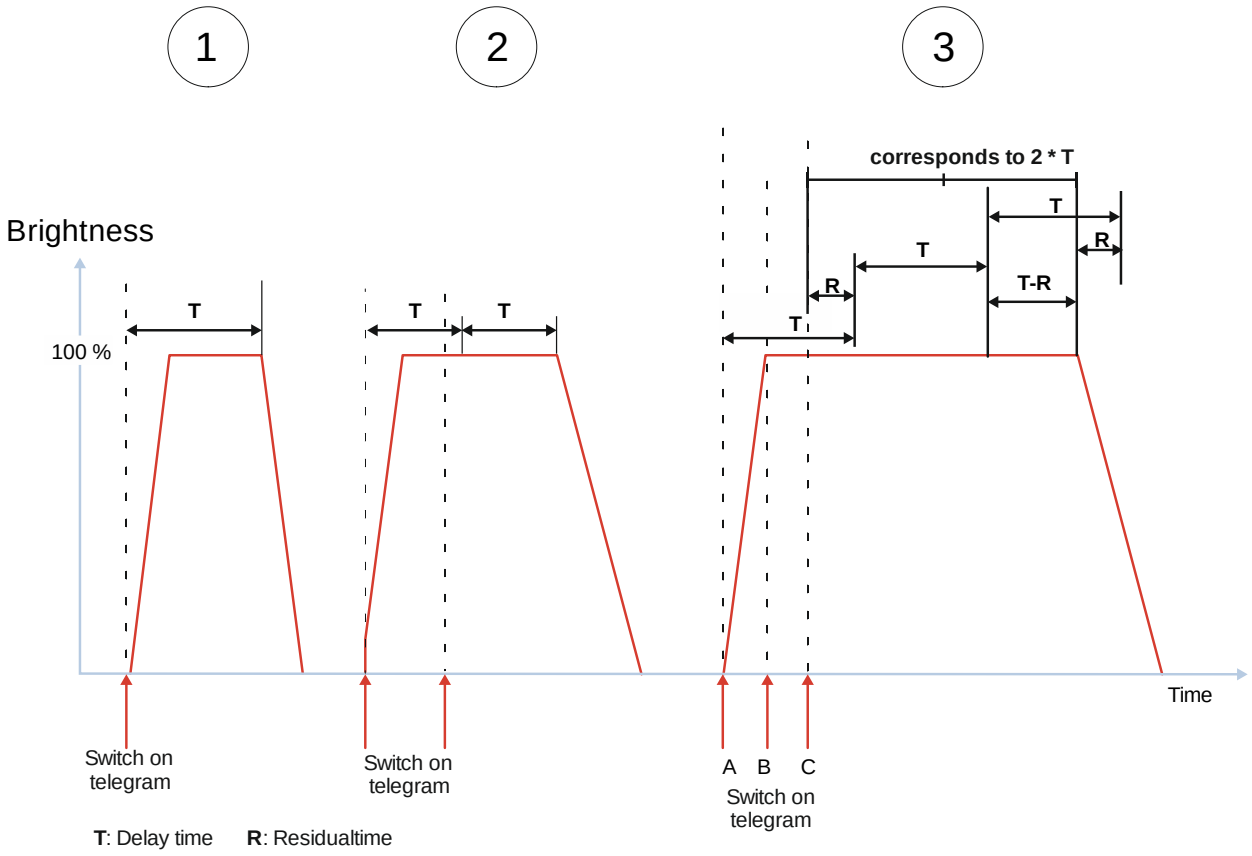


Fig. 40 Behavior in timer mode (1-fold) with the setting “retriggering possible = 2”

(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.

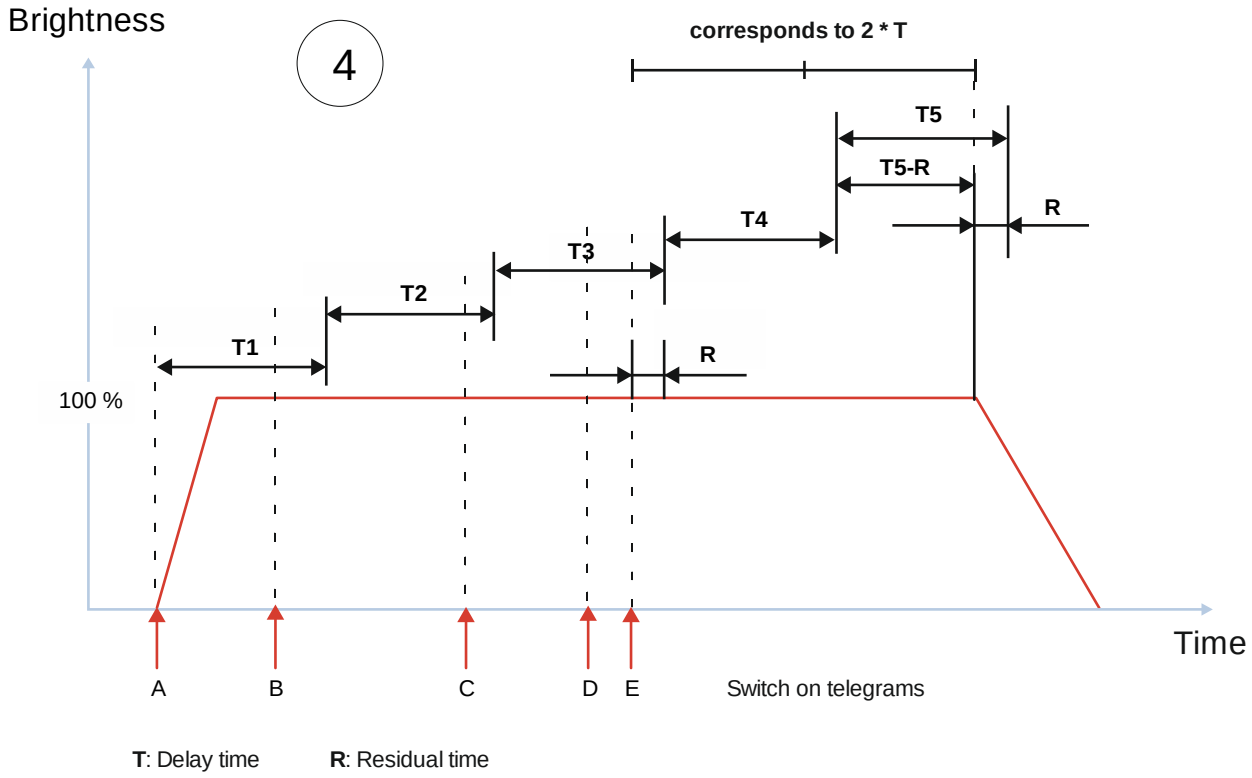


Fig. 41 Behavior in timer mode (1-fold) with the setting "retriggering possible = 2"

(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: 00:00:05.0)
- 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)

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

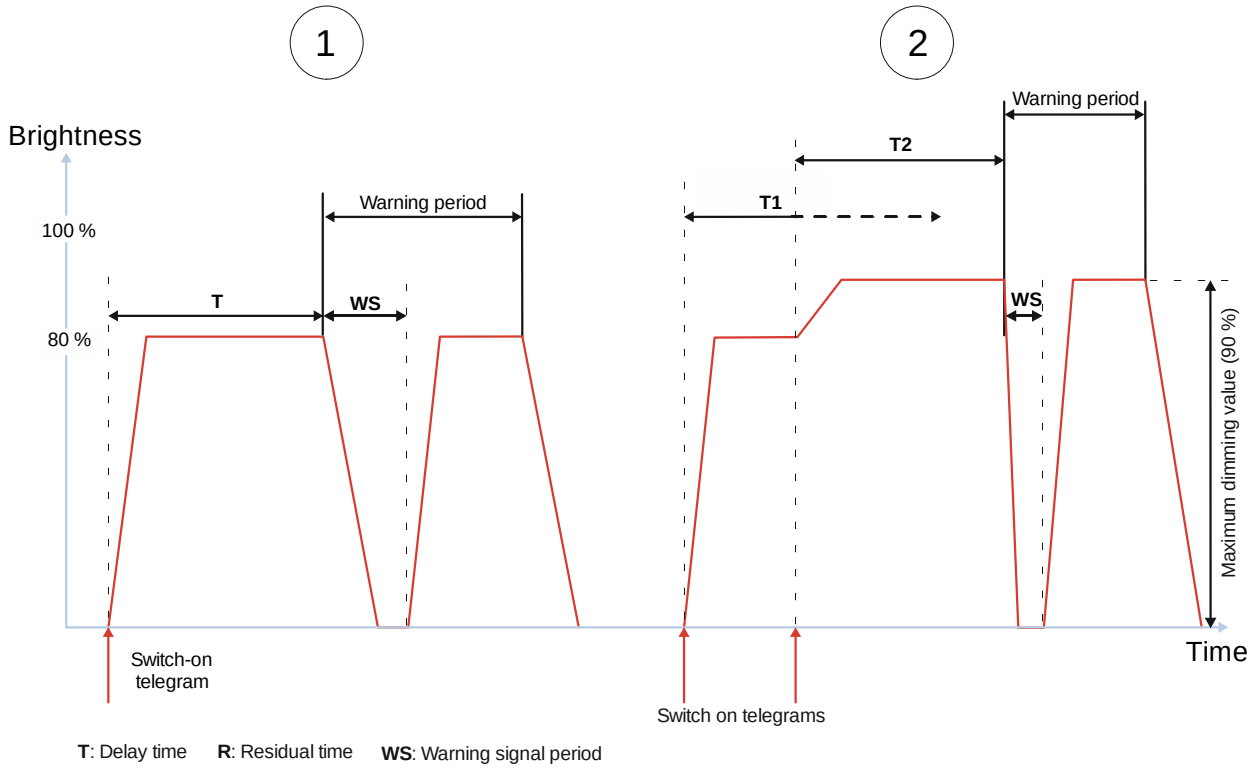


Fig. 42 Behavior in timer mode (1-fold) with setting “warning before switching off” = “short switch off/on” and “retriggering possible = 1.”

(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 re-started (T2). At the same time, the channel is dimmed up to the maximum dimming value.

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.

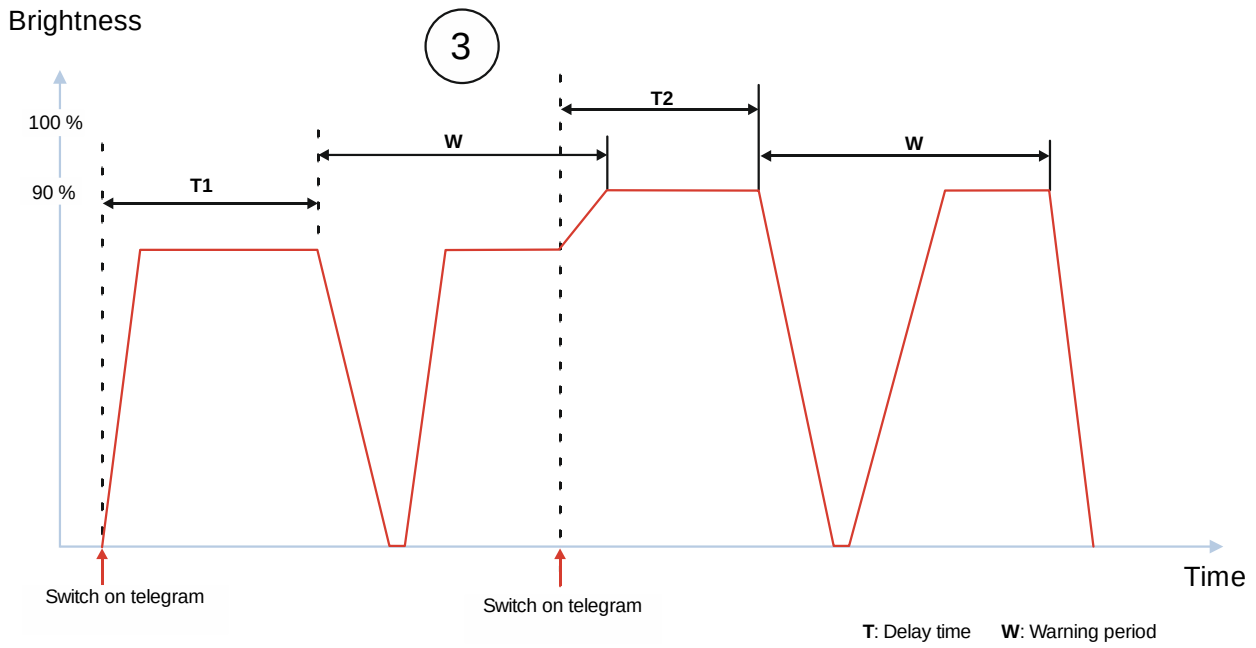


Fig. 43 Behavior in timer mode (1-fold) with setting “warning before switching off” = “short switch off/on” and “retriggering possible = 1.”

(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). At the same time, the channel is dimmed up to the maximum dimming value.

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 floor.

7.6.5 Behavior in timer mode (1-fold) with setting “warning before switching off” = “via dimming 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: 00:00:05.0)
- Warning before switching off (setting: dim to half dimming value)
- Warning period
- ON time 1 in day mode
- Retriggering possible (setting: 1)

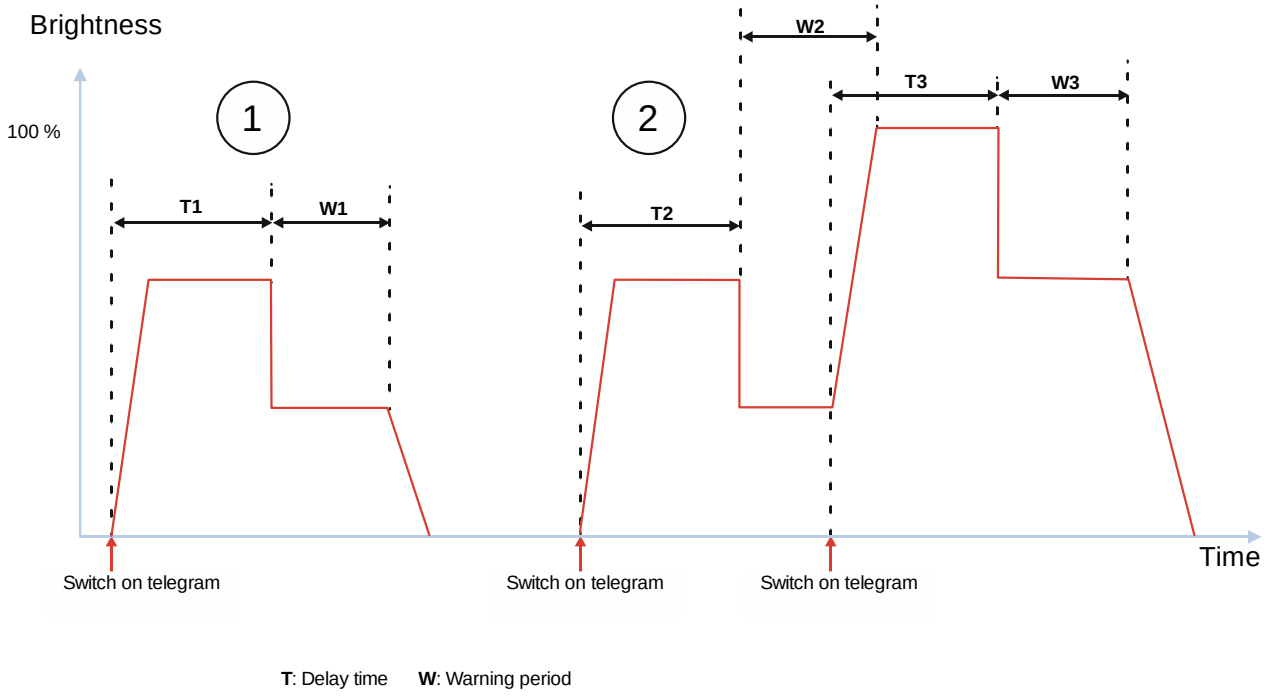


Fig. 44 Behavior in timer mode (1-fold) with setting “warning before switching off” = “dim to half dimming value” and “retriggering possible” = “1”.

(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 up to the maximum dimming value.

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.

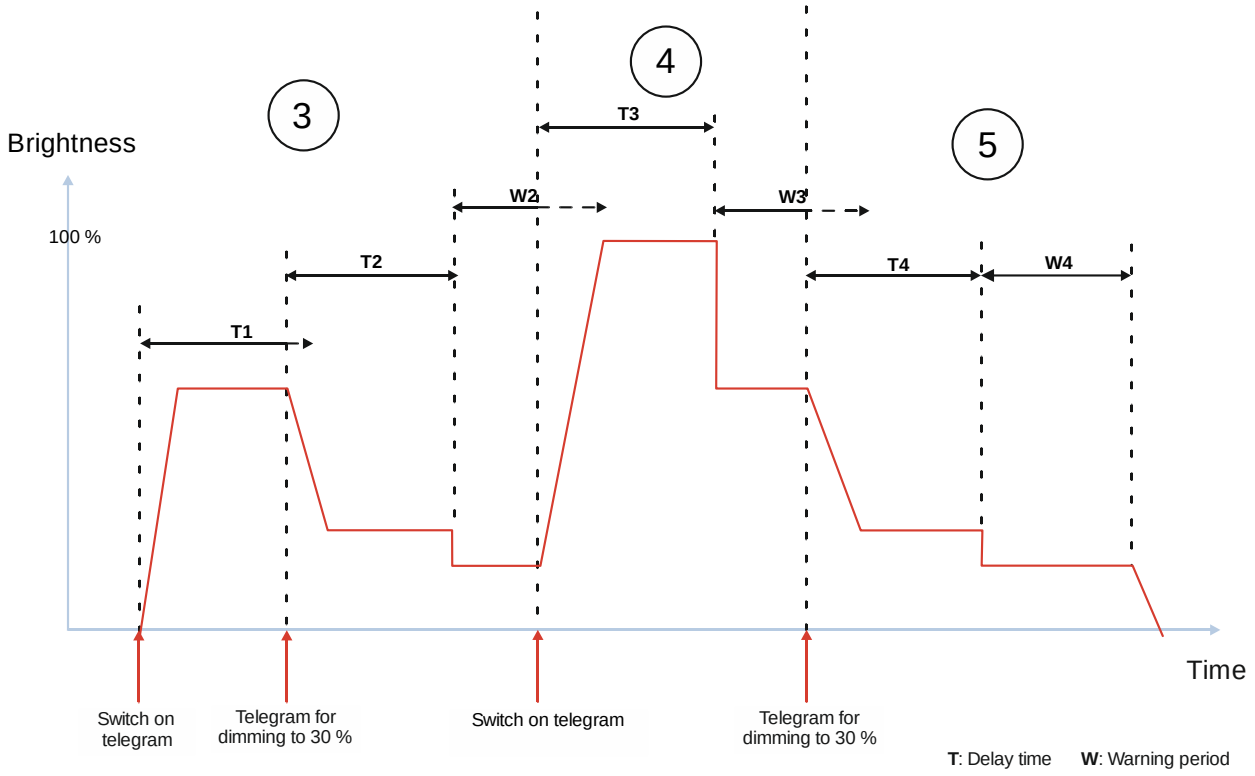


Fig. 45 Behavior in timer mode (1-fold) with setting “warning before switching off” = “via dimming to half dimming value” and “retriggering possible = 1.”

(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 re-started (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 up to the maximum dimming value.

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 floor.

7.6.6 Behavior on activation and deactivation of night mode in normal mode

The following graphic shows the behavior of the switching/dimming actuator on activation and deactivation of night mode in normal mode.

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: 00:00:05.0)
- Night mode (setting: enabled)
- ON time during night mode
- Retriggering possible (setting: 1)

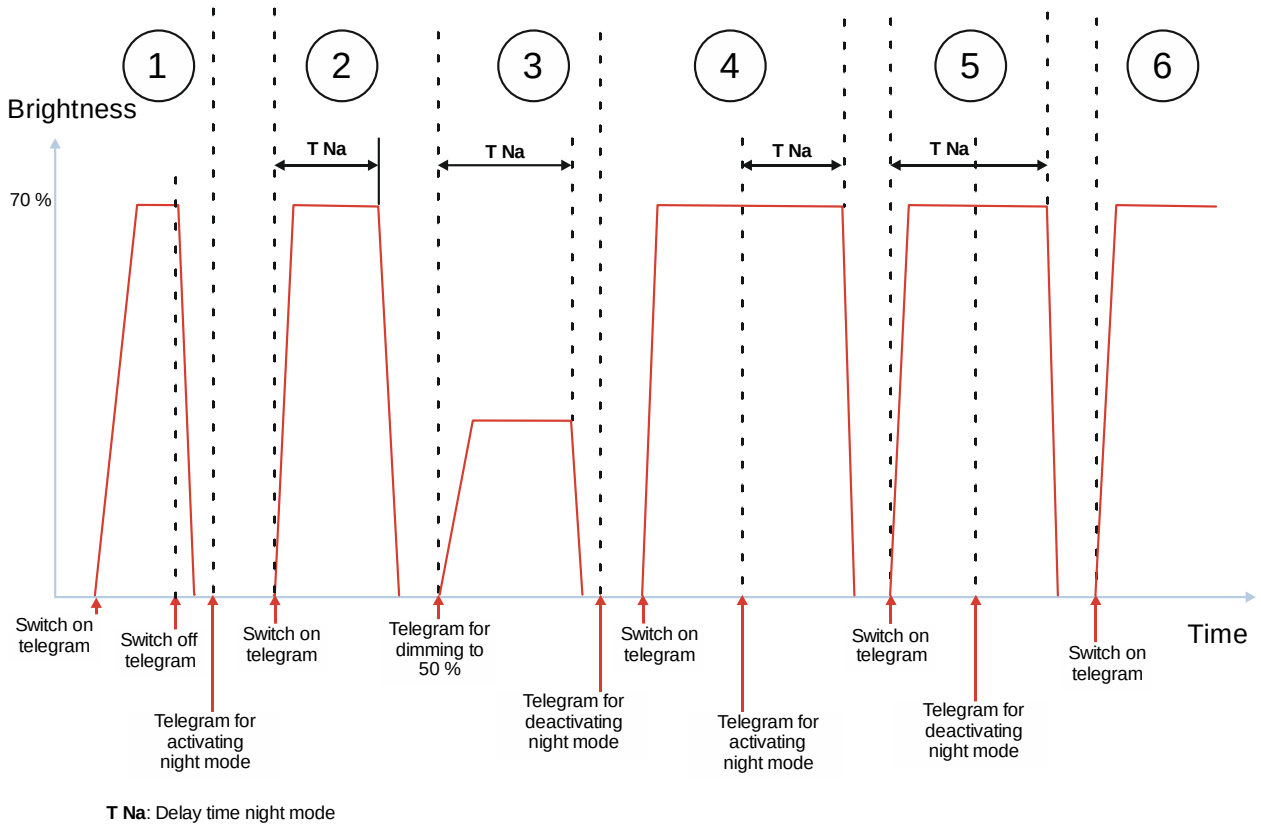


Fig. 46 Behavior on activation and deactivation of night mode in normal mode

(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 configured 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 with a warning prior to switching off

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

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: 00:00:05.0)
- 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)

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

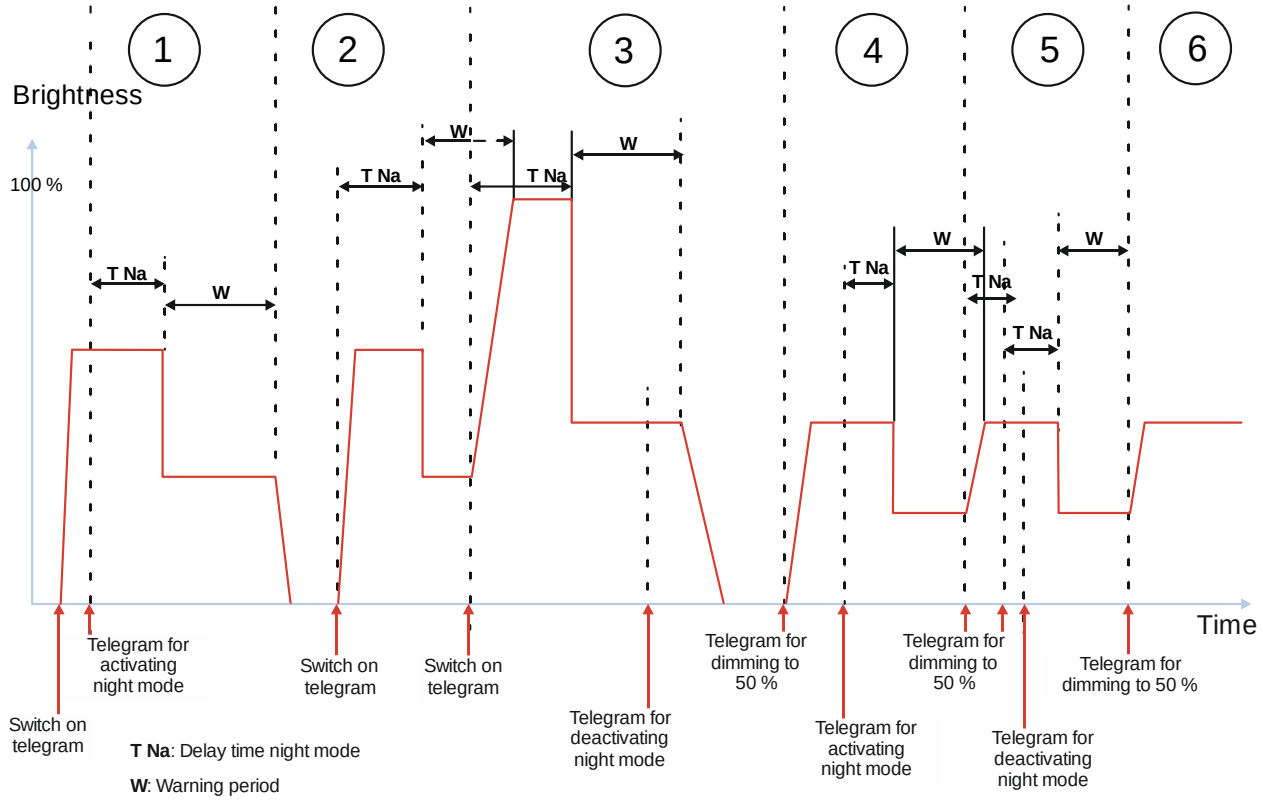


Fig. 47 Behavior on activation and deactivation of night mode in normal mode with a warning prior to switching off

(1) After receiving the switch on telegram, the channel is switched on and dimmed to the configured switch on value with the dimming time configured 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.

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 up to the maximum dimming value.

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 with the dimming time for dimming value 1 (e.g. 50 %). 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 with the dimming time of dimming value 1 (e.g. 50 %).

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) re-started. 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.

7.6.8 Behavior on activation and deactivation of night mode in timer mode (1-fold)

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.

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: 00:00:05.0)
- 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)

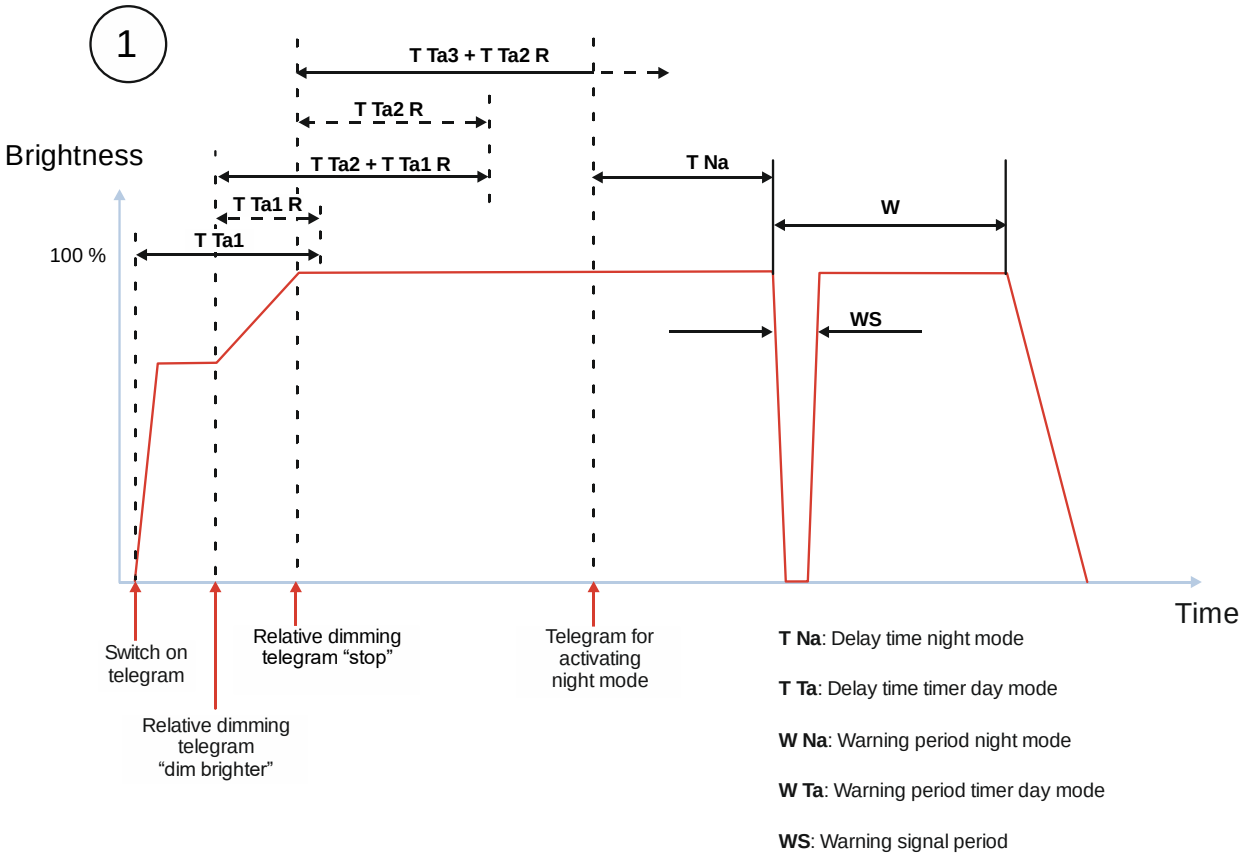


Fig. 48 Behavior on activation and deactivation of night mode in timer mode (1-fold)

(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 Ta1 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. Since retriggering is possible, the new delay time (T Ta3) is added to the remaining time of the current delay time (T Ta2 R). That is, the delay time is extended again.

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.

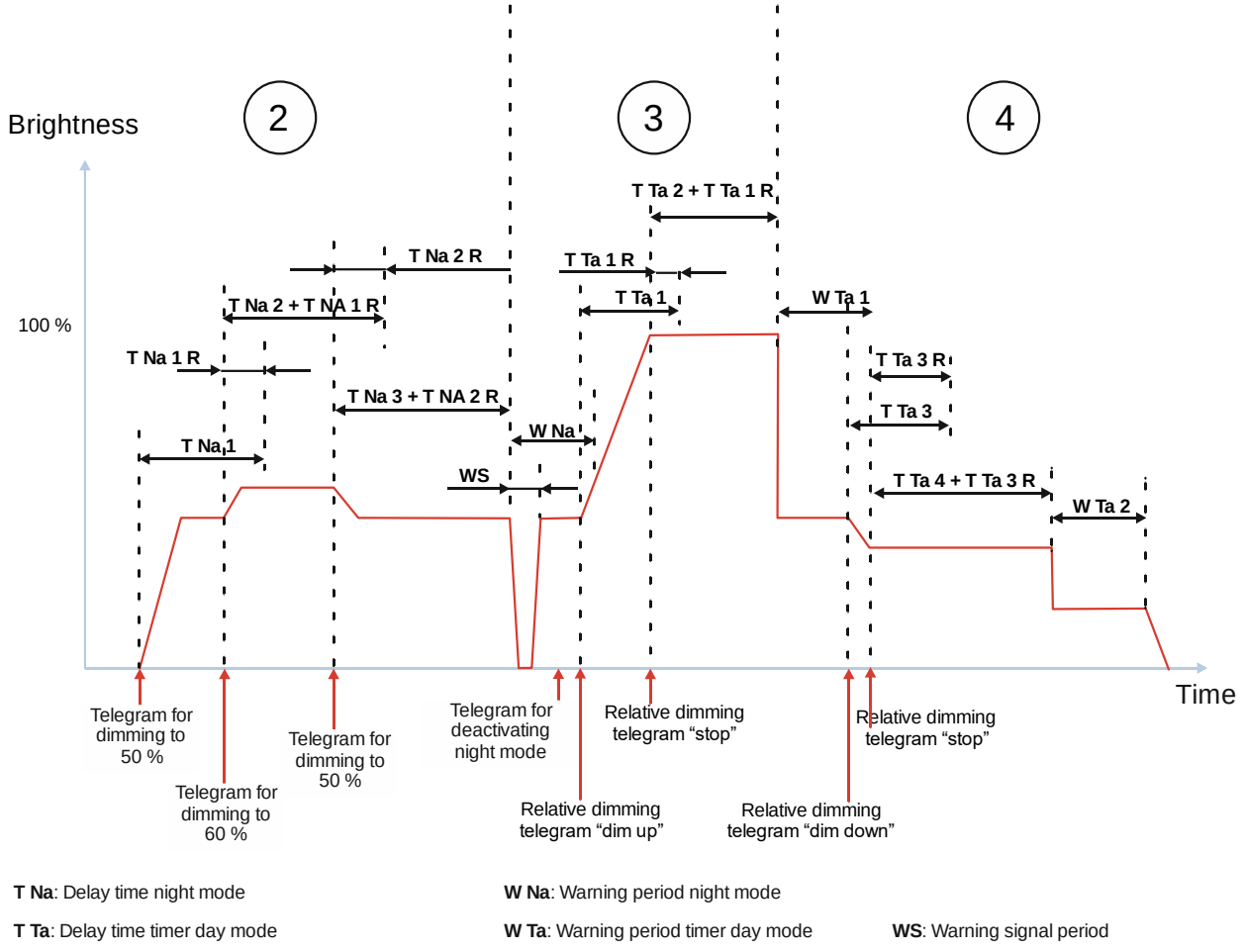


Fig. 49 Behavior on activation and deactivation of night mode in timer mode (1-fold)

(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 with the dimming time for dimming value 1 (e.g. 50 %). 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 2R). That is, the delay time is extended.

(3) The warning period (W Na) starts at the end of the night mode 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. Since retriggering is possible, the new delay time (T Ta2) is added to the remaining time of the current delay time (T Ta1 R). That is, the delay time is extended.

(4) The warning period (W Ta 1) 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 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 the timer (day mode) (T Ta 3) starting and dimming down. The residual warning period is discarded.

When the relative dimming stops (e.g. when letting go of the button) 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. Since retriggering is possible, the new delay time (T Ta 4) is added to the remaining time of the current delay time (T Ta3 R). That is, the delay time is extended.

The warning period (W Ta 2) starts at the end of the delay time (T Ta 4). 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.

7.6.9 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: 00:00:00.0)
- 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)

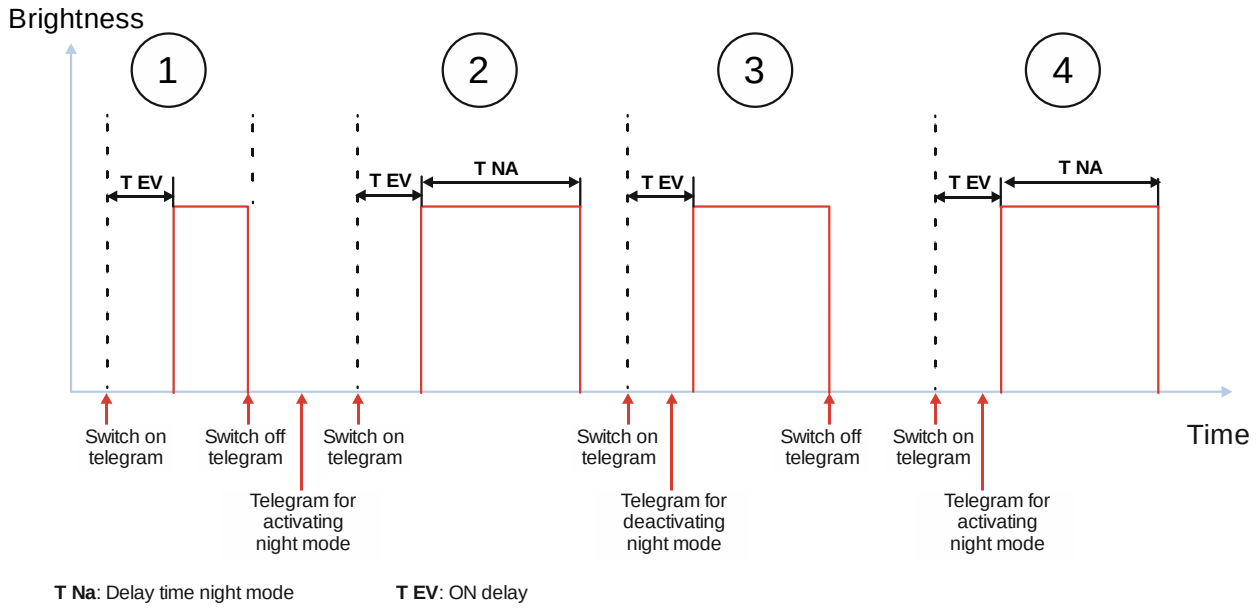


Fig. 50 Behavior on configured ON delay in normal mode and night mode.

(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.

(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.

After receiving the switch off telegram, the channel is 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 the channel's overrides 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/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: 00:00:00.0)
- Dimming time for dimming value 1 (setting: 00:00:05.0)

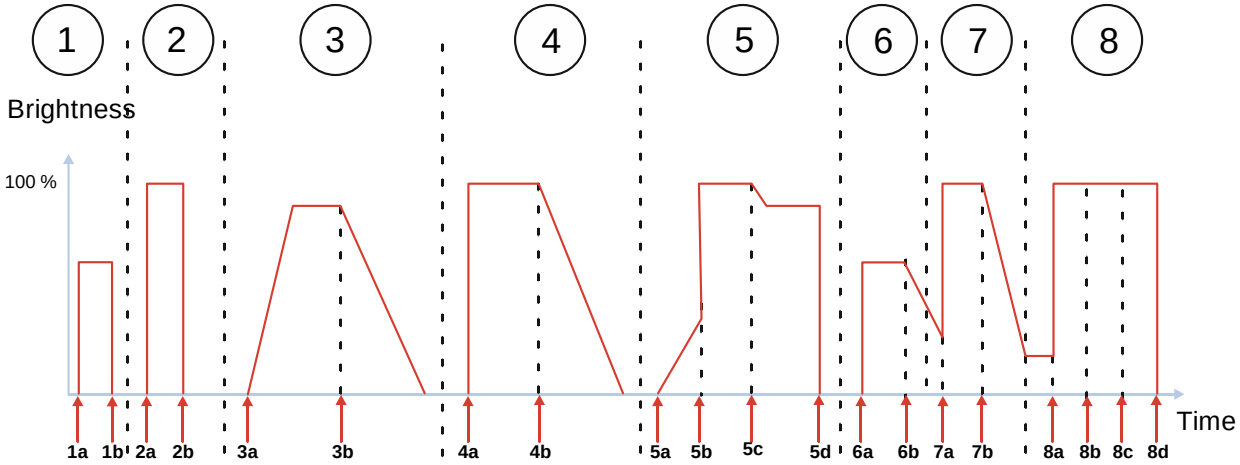


Fig. 51 Behavior of the channel's overrides when "switching on/off" or "dimming to a specific value" (e.g. with override "manual ON")

1a: Switch on telegram
1b: Switch off telegram
2a: Telegram for activating override
2b: Telegram for deactivating override
3a: Telegram for dimming to 90 %
3b: Telegram for dimming to 0 %
4a: Telegram for activating override
4b: Telegram for deactivating override
5a: Telegram for dimming to 90 %
5b: Telegram for activating override
5c: Telegram for deactivating override
5d: Switch off telegram
6a: Switch on telegram
6b: Telegram for dimming to 20 %
7a: Telegram for activating override
7b: Telegram for deactivating override
8a: Switch on telegram
8b: Telegram for activating override
8c: Switch off telegram
8d: Telegram for deactivating override

(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 %).

Upon receipt of the switch off telegram, the channel is dimmed down and switched off using the dimming time for switching.

(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 in the inbox 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.

(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.

(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 in the inbox 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 of dimming value 1.

(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 in the inbox 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.

(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 %).

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 %).

(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 in the inbox 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.

(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 in the inbox 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.

Notes:

- 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 off 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 channel overrides when "switching on/off" or "dimming to a specific value" (e.g. 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 on override activation (setting: dimming value according to parameter)
- Value at activation (setting: 80 %)
- Behavior on override deactivation (setting: updated value)
- Dimming time for switching (setting: 00:00:00.0)
- Dimming time for dimming value 1 (setting: 00:00:05.0)

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

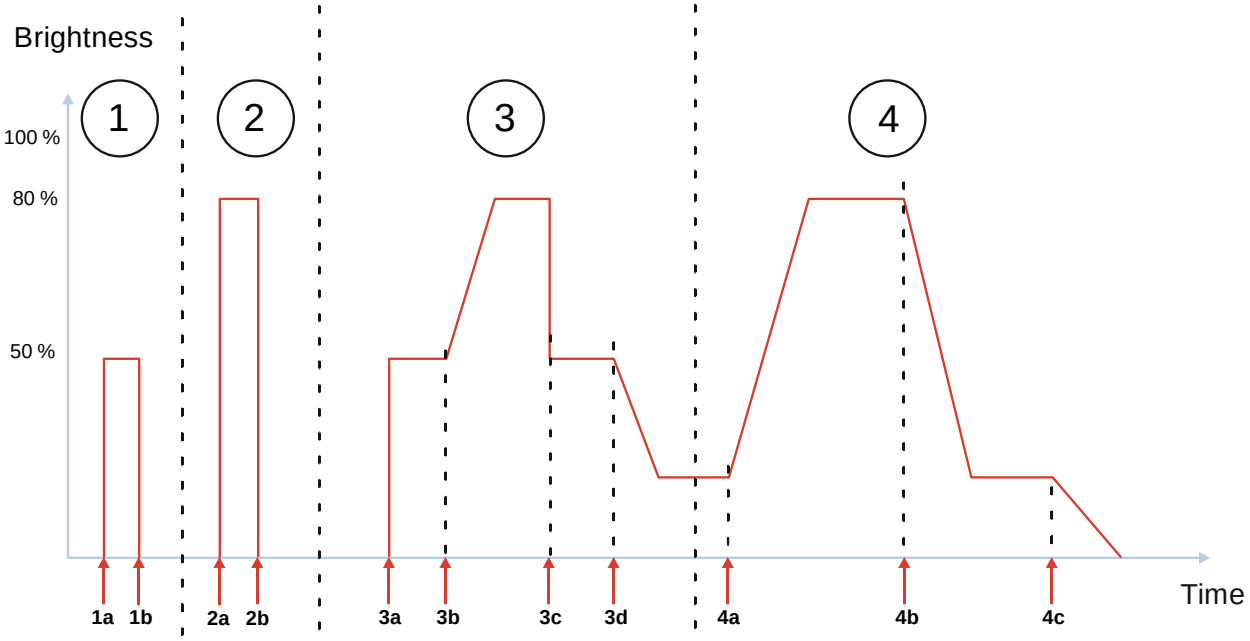


Fig. 52 Behavior on overrides of the channel when “switching on/off” or “dimming to a specific value” (e.g. with override “user-defined”)

1a: Switch on telegram

1b: Switch off telegram

2a: Telegram for activating override

2b: Telegram for deactivating override

3a: Switch on telegram

3b: Telegram for activating override

3c: Telegram for deactivating override

3d: Telegram for dimming to 20 %

4a: Telegram for activating override

4b: Telegram for deactivating override

4c: Telegram for dimming to 0 %

(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. 50 %).

Upon receipt of the switch off telegram, the channel is dimmed down and switched off using the dimming time for switching.

(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 in the inbox 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.

(3) 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. 50 %).

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 up (e.g. 80%) in this configuration (behavior 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 in the inbox 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 %).

(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 up (e.g. 80%) in this configuration (behavior 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 in the inbox 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.

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 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)

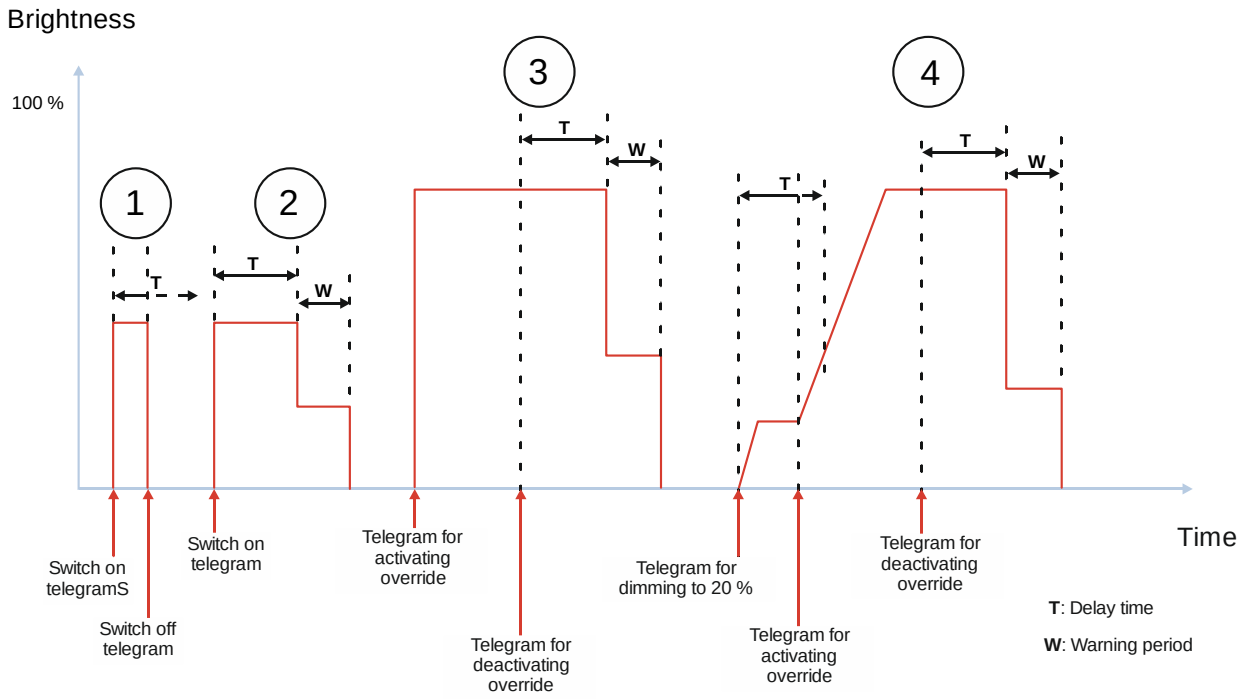


Fig. 53 Behavior of the switching/dimming actuator in timer mode if the override (forced control) is configured and there is a specification for restarting the timer on deactivation of override.

(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 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 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 up 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 illumination in rooms that are rarely used or in hallways. Illumination 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, then 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 therefore automatically triggered once more 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 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)

07 B0 A4 switching/dimming actuator 4-fold 9A0502
07 B0 A8 switching/dimming actuator 8-fold 9A0602

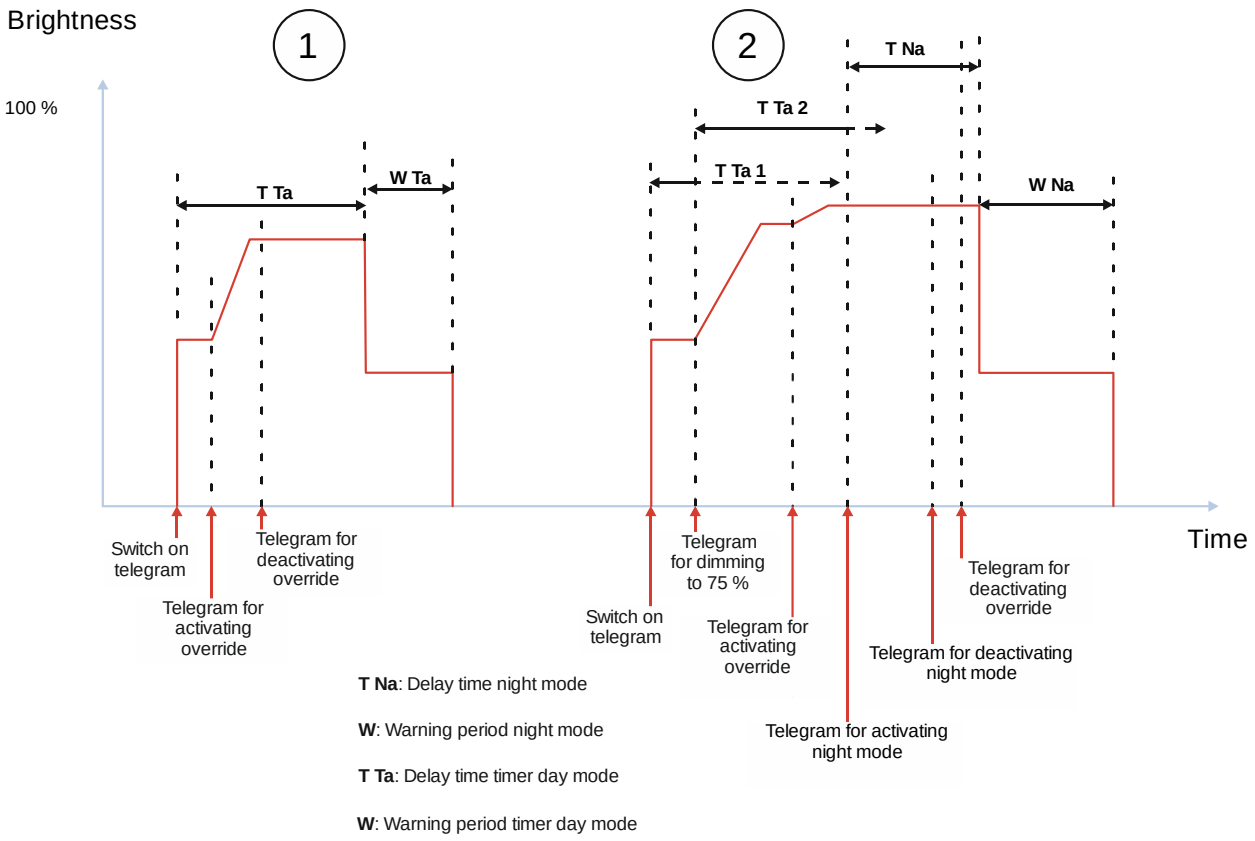


Fig. 54 Behavior of the switching/dimming actuator in timer mode with night mode if the override (forced control) is configured and there is a specification for restarting the timer on deactivation of override.

(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) re-started. 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 at the inbox of 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. If it was switched on again, the timer and the delay time for day mode would start.