07 B0 A4 Universal dimmer 4-fold 9A0401

Contents

07 B0 A4 Universal dimmer 4-fold 9A0401

07 B0 A4 Universal dimmer 4-fold 9A0401

1 Use the application program

Application program "07 B0 A4 Universal dimmer 4-fold 9A0401"

Product family:	Dimmer
Product type:	Universal dimmer, 4-fold
Manufacturer:	Siemens

Name:	Universal dimmer N554D31
Description:	Universal dimmer 4x 300VA, AC 230V
Order no.:	5WG1 554-1DB31

2 Function description

The application program "07 B0 A4 Universal dimmer 4-fold 9A0401" can be used for the KNX device specified in section ➲ "*1 Use the application* program". This is briefly described in the following.

The universal dimmer N554D31 is a KNX device with four load outputs (channels). The universal dimmer is a rail-mounted device for installation in distributions. The bus connection is made via a bus terminal block, the power supply for the device electronics via the bus voltage.

The device has the characteristics described in the following:

The device is designed for lighting (particularly LED) control, i.e. for switching and dimming resistive, inductive or capacitive loads ranging up to 300 VA with 230 V AC, 50/60 Hz per output. A minimum load is not required.

The device can control load at four outputs or higher load through channel bundling.

Depending in the selected operating mode, in addition to the objects for the functions switching, dimming brighter/darker, dimming value and status requests there is also a series of additional functions.

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 universal dimmer may be set to one of the following operating modes:

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

Timer functions:

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

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

In the "timer mode 2-fold" operating mode, the functions "on period 1 in day mode" and "on period 2 in day mode" 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 on/off switching.

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, blocking function
- 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.

07 B0 A4 Universal dimmer 4-fold 9A0401

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.

Schematic design of a dimming channel:

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

07 B0 A4 Universal dimmer 4-fold 9A0401

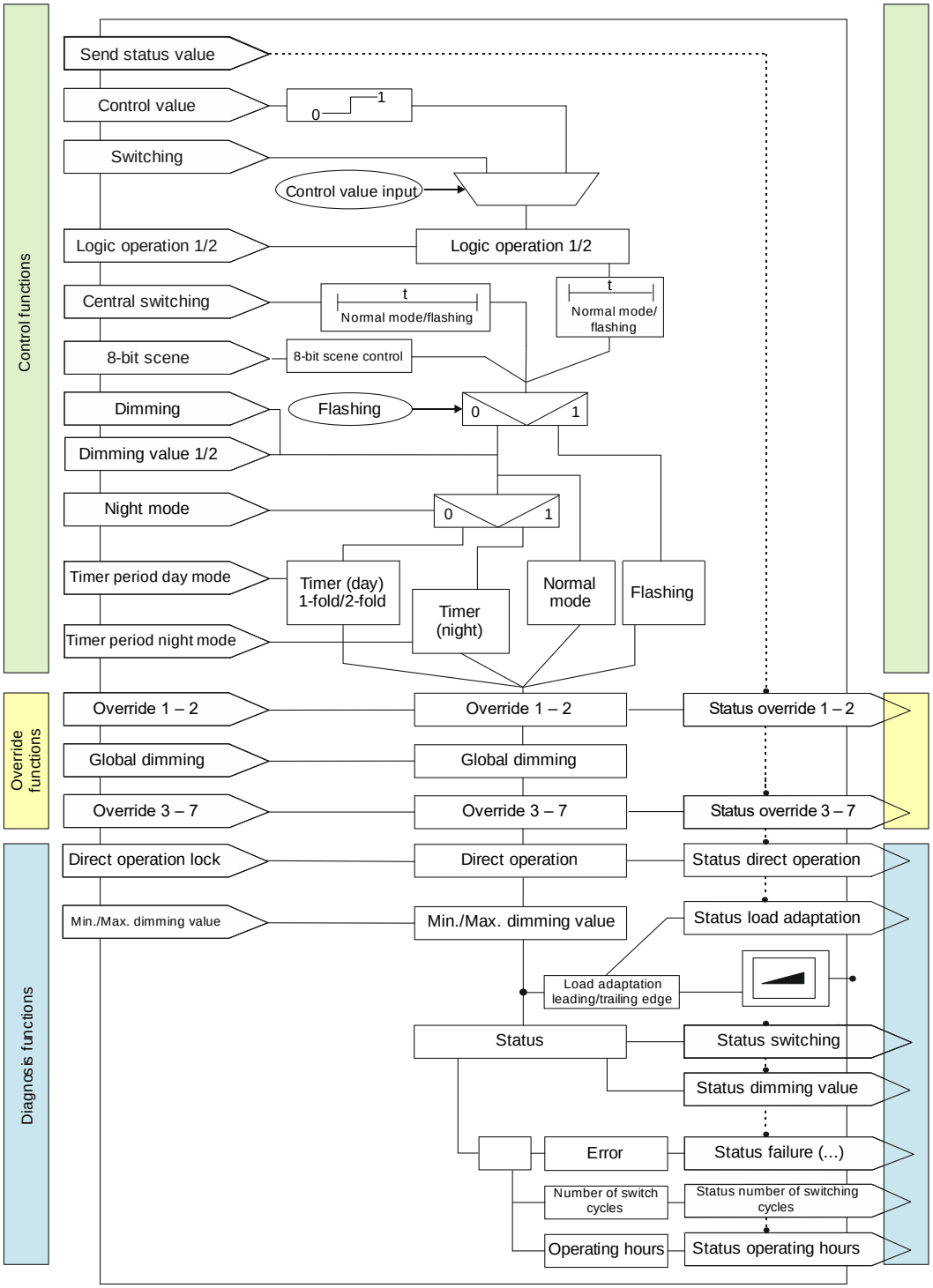


Fig. 1 Schematic design of a dimming channel

07 B0 A4 Universal dimmer 4-fold 9A0401

2.1 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 dimmer if the voltage failure also causes the bus voltage to fail as well.

Each output can be independently configured with parameters to define what status it is to assume in case of bus voltage failure (off, on, dimming value 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 the bus voltage is recovered, one of the following functions can be selected for the start 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.

2.2 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.

2.3 Delivery state

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

2.4 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 (> 20 s) effects a reset to factory settings.

2.5 Resetting the device to factory default settings

A very long push of the programming button (> 20 s) effects a reset to factory settings. This is indicated by a uniform 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.

2.6 Address mode

After briefly pressing the programming button (< 2 s), address mode is activated. This is indicated through constant illumination of the programming LED. Pressing it again deactivates address mode.

07 B0 A4 Universal dimmer 4-fold 9A0401

3 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 it depends 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.

The following list shows all objects of the 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.

Number/channel				Object name	Function	Data point type	Flags
A	B	C	D				
1				Status device function	ok/defect	1.005 alarm	CRT
2				Send status values	request	1.017 triggers	CW
3	87	171	255	Switching	On/off	1.000 switches	CW
4	88	172	256	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	89	173	257	Dimming	Brighter/darker	3.007 dimmer steps	CW
6	90	174	258	Dimming value 1	8-bit value	5.001 percent (0 ... 100 %)	CW
7	91	175	259	Dimming value 2	8-bit value	5.001 percent (0 ... 100 %)	CW
8	92	176	260	Dimming value 1/time	Dimming value + time	-	CW
10	94	178	262	Status switching	On/off	1.000 switches	CRT
11	95	179	263	Status dimming value	8-bit value	5.001 percent (0 ... 100 %)	CRT

07 B0 A4 Universal dimmer 4-fold 9A0401

Number/channel				Object name	Function	Data point type	Flags
A	B	C	D				
12	96	180	264	Minimum dimming value	Set/request value	5.001 percent (0 ... 100 %)	CRW
13	97	181	265	Maximum dimming value	Set/request value	5.001 percent (0 ... 100 %)	CRW
14	98	182	266	Fade time for switching	Set/request fade time	7.004 time (100 ms)	CRW
15	99	183	267	Fade time for dimming	Set/request fade time	7.004 time (100 ms)	CRW
16	100	184	268	Fade time for dimming value 1	Set/request fade time	7.004 time (100 ms)	CRW
17	101	185	269	Fade time for dimming value 2	Set/request fade time	7.004 time (100 ms)	CRW
18	102	186	270	Logic operation 1	On/off	1.000 switches	CW
19	103	187	271	Logic operation 2	On/off	1.000 switches	CW
20	104	188	272	Central switching	On/off	1.000 switches	CW
21	105	189	273	8-bit scene	Recall/store	18.001 scene control	CW
22	106	190	274	Scene value/time	Value/time	-	CW
23	107	191	275	Night mode	On/off	1.003 enable	CW
24	108	192	276	Timer night mode	ON time (seconds)	7.005 time (s)	CRW
25	109	193	277	Timer day mode	ON time 1 (seconds)	7.005 time (s)	CRW
27	111	195	279	Pre-warning expiration of timer period	On/off	1.000 switches	CRT
28	112	196	280	Lock timer	On/off	1.003 enable	CW
29	113	197	281	Override 1, [type of override]	On/off	1.003 enable	CW
30	114	198	282	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	115	199	283	Override 1, forced control	On/off	2.001 prio. Switching	CW

07 B0 A4 Universal dimmer 4-fold 9A0401

Number/channel				Object name	Function	Data point type	Flags
A	B	C	D				
32	116	200	284	Override 1, [type of override], status	On/off	1.002 Boolean	CRT
33	117	201	285	Override 2, [type of override]	On/off	1.003 enable	CW
34	118	202	286	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	119	203	287	Override 2, forced control	On/off	2.001 prio. Switching	CW
36	120	204	288	Override 2, [type of override], status	On/off	1.002 Boolean	CRT
37	121	205	289	Override 3, [type of override]	On/off	1.003 enable	CW
38	122	206	290	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	123	207	291	Override 3, forced control	On/off	2.001 prio. Switching	CW
40	124	208	292	Override 3, [type of override], status	On/off	1.002 Boolean	CRT
41	125	209	293	Override 4, [type of override]	On/off	1.003 enable	CW

07 B0 A4 Universal dimmer 4-fold 9A0401

Number/channel				Object name	Function	Data point type	Flags
A	B	C	D				
42	126	210	294	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	127	211	295	Override 4, forced control	On/off	2.001 prio. Switching	CW
44	128	212	296	Override 4, [type of override], status	On/off	1.002 Boolean	CRT
45	129	213	297	Override 5, [type of override]	On/off	1.003 enable	CW
46	130	214	298	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	131	215	299	Override 5, forced control	On/off	2.001 prio. Switching	CW
48	132	216	300	Override 5, [type of override], status	On/off	1.002 Boolean	CRT
49	133	217	301	Override 6, [type of override]	On/off	1.003 enable	CW
50	134	218	302	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	135	219	303	Override 6, forced control	On/off	2.001 prio. Switching	CW

07 B0 A4 Universal dimmer 4-fold 9A0401

Number/channel				Object name	Function	Data point type	Flags
A	B	C	D				
52	136	220	304	Override 6, [type of override], status	On/off	1.002 Boolean	CRT
53	137	221	305	Override 7, [type of override]	On/off	1.003 enable	CW
54	138	222	306	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	139	223	307	Override 7, forced control	On/off	2.001 prio. Switching	CW
56	140	224	308	Override 7, [type of override], status	On/off	1.002 Boolean	CRT
57	141	225	309	Overrides status	1 = Active	1.002 Boolean	CRT
58	142	226	310	Global dimming max. limit	8-bit value	5.001 percent (0...100 %)	CW
59	143	227	311	Direct operation lock	On/off	1.003 enable	CW
60	144	228	312	Status direct operation	On/off	1.002 Boolean	CRT
63	147	231	315	Number of switching cycles	Value (in cycles)	12.001 counting impulses (without prefix)	CRT
64	148	232	316	Number of switching cycles	Set value (in cycles)	12.001 counting impulses (without prefix)	CW
65	149	233	317	Threshold for switching cycles	Set/request value (in cycles)	12.001 counting impulses (without prefix)	CRW
66	150	234	318	Exceedance of threshold for switching cycles	On/off	1.002 Boolean	CRT
67	151	235	319	Operating hours	Value (in hours)	12.001 counting impulses (without prefix)	CRT
68	152	236	320	Operating hours	Value (in seconds)	13.100 time difference (s)	CRT
69	153	237	321	Operating hours	Set value	12.001 counting impulses (without prefix)	CW
70	154	238	322	Threshold for operating hours	Set/request value	12.001 counting impulses (without prefix)	CRW

07 B0 A4 Universal dimmer 4-fold 9A0401

Number/channel				Object name	Function	Data point type	Flags
A	B	C	D				
71	155	239	323	Exceedance of threshold for operating hours	On/off	1.002 Boolean	CRT
80	164	248	332	Status failure channel	1 = Failure	1.002 Boolean	CRT
81	165	249	333	Status failure over temperature	1 = Failure	1.002 Boolean	CRT
82	166	250	334	Status failure overload	1 = Failure	1.002 Boolean	CRT
83	167	251	335	Status failure short circuit	1 = Failure	1.002 Boolean	CRT
84	168	252	336	Load detection	Value	20.610 load type detection	CRT

07 B0 A4 Universal dimmer 4-fold 9A0401

4 Structure of configuration options

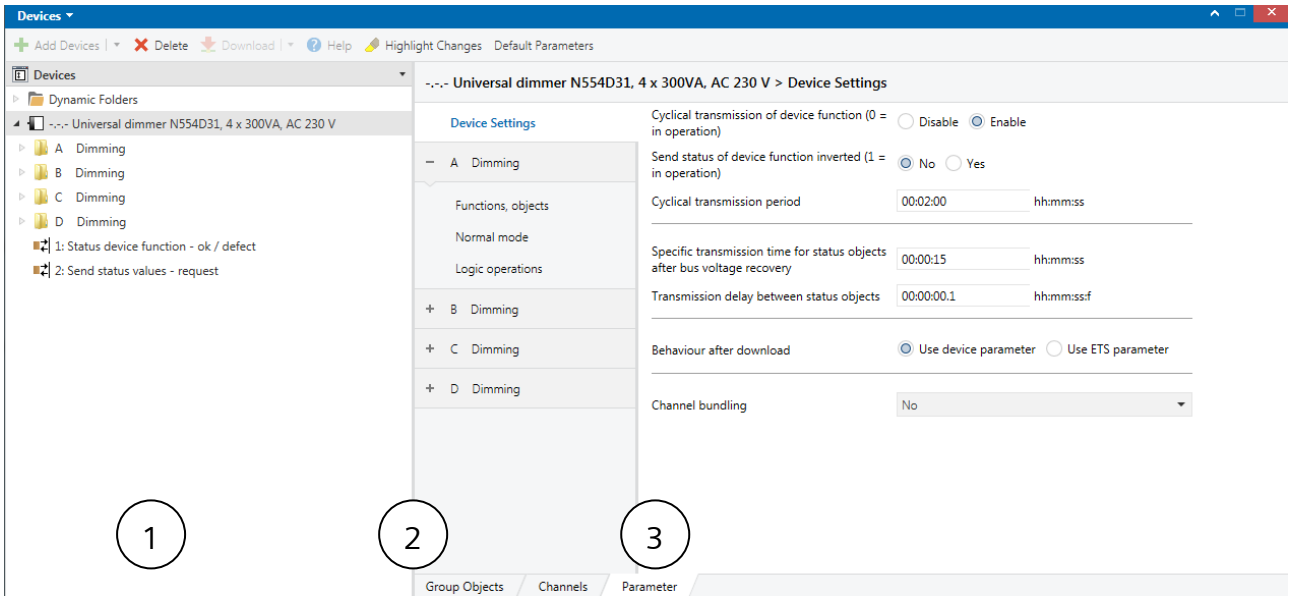


Fig. 2 Structure of configuration options

(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), 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.

5 Device settings

In this parameter window, the cross-function and cross-channel definitions are made. It can also be define if, and if so which, channels are to be bundled.

5.1 Communication objects

No.	Object name	Function	Data point 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. Only in the event of an error that can be detected by the device itself is the value “1” transmitted. The exception to this is errors whose error type the device detects itself and for which there is a dedicated communication object. Here the device transmits the error via the corresponding communication object (e.g. over-temperature).

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

Availability:

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

Examples:

A malfunction might be, for example, the failure of a component of the hardware that is required for the correct functioning of the device or individual channels, but does not lead to the failure of the device communication as in the case with a bus voltage failure.

A malfunction can also be the case if, for example, the requisite calibrations have not been carried out and the device therefore does not function or function correctly.

2	**Send status values**	request	1.017 triggers	CW

Function:

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

07 B0 A4 Universal dimmer 4-fold 9A0401

5.2 "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. Only in the event of an error that can be detected by the device itself is the value "0" transmitted. **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;** [12:00:01 AM...18:12:15]
Function: With this parameter, the time interval for the cyclical transmission of the status of the device function can be selected. **Availability:** This parameter is only visible if the parameter "cyclical transmission of device function" is set to "enabled."	

07 B0 A4 Universal dimmer 4-fold 9A0401

Parameter	Settings
Specific transmission time for status objects after bus voltage recovery	**00:00:15** [00:00:00...18:12:15]
Function: With this parameter, is can be ensured that no unnecessary bus load is generated by status telegrams immediately after recovery of bus voltage 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 time of transmission does not apply for statuses for which the parameter "Send status on request" is set to "enabled." ➲ *7.6 Status* If directly following bus voltage recovery and before this time a status request is initiated (e.g. via the communication object "Send status values"), this request is discarded. Only after the regular transmission of the status is a separate transmission of the status objects possible.	
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 whether and which wait time must be maintained between two successive status telegrams to ensure that no excessive bus load is generated by status telegrams sent in quick succession. **Note:** This transmission delay only applied after bus voltage recovery and with the send status values function.	

07 B0 A4 Universal dimmer 4-fold 9A0401

Parameter	Settings
Behavior after download	**Use device parameters** Use ETS parameters

Function:

This parameter is used to set whether the parameters of the dimmer or the parameters of the ETS software are to be used after downloading the ETS software into the dimmer.

The following settings are possible:

- **Use device parameters:**
  With this setting, parameters that the dimmer has received from other sources via the communication objects are retained and are not overwritten by the parameters set in the ETS software.
  The settings of the channels are not re-initialized and the current switching/dimming state is retained.
- **Use ETS parameters:**
  With this setting, the parameters stored in the device are overwritten and the parameters set in the ETS software are used. The behavior configured in the ETS software is also carried out.

Recommendation:

If the dimmer does not behave as expected, set this parameter to “Use ETS parameters.”

Channel bundling	**No** A+B|C|D A|B+C|D A|B|C+D A|B+C|D A+B+C|D A|B+C+D A+B+C+D

Function:

This parameter is used to define whether individual channels are to be bundled.

With the “No” setting, separate settings can be made for all channels.

With the setting “A+B+C+D,” all channels receive the same setting. In this case only channel A is displayed in the software. The settings made there apply to all channels, however.

Note:

Channel bundling directly on the device is only possible if NO data from the ETS software has been loaded into the device (=delivery state).

6 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 operating mode-dependent settings and the logic operations, all other parameter cards are only displayed with a corresponding parameter selection on the "functions, objects" parameter card.

6.1 "Functions, objects" parameter card

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

Obj	Object name	Function	Data point type	Flag
3	**A Switching**	On/off	1.000 switches	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:** ➲ *8.1 Dimming behavior with ON/OFF switching via the "switching" communication object*				
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.				

07 B0 A4 Universal dimmer 4-fold 9A0401

Obj	Object name	Function	Data point type	Flag
More information: ➲ *7.1 Control Value Input*				
10	**A Status switching**	On/off	1.000 switches	CRT
Function: In the “status switching” communication object, the current switching status 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:** ➲ *7.6 Status*				
11	**A Status dimming value**	8-bit value	5.001 percent (0...100 %)	CRT
Function: This object can be used, depending on the selected parameter setting, 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:** ➲ *7.6 Status*				
20	**A Central switching**	On/off	1.000 switches	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:** ➲ *7.2 Central switching*				

07 B0 A4 Universal dimmer 4-fold 9A0401

Obj	Object name	Function	Data point type	Flag
21	**A 8-bit scene**	Recall/ store	18.000 scene control	CW

Function:

With this communication object, the 8-bit scene with the number x (x = 1...64) 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.). If bit 7 = log. 1, the scene is saved; if bit 7 = log. 0, it is recalled. Bit 6 currently has no meaning and must be set to log. 0.

Availability:

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

More information:

➲ *7.3 8-bit scene control*

29/-56	**A Override 1 – -7**			

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

➲ *7.5 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:

➲ *7.5 Overrides*

➲ *7.6 Status*

07 B0 A4 Universal dimmer 4-fold 9A0401

Obj	Object name	Function	Data point 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.

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

Function:

This status 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*

63	**A Number of switching cycles**	Value (in cycles)	12.001 counting impulses (without prefix)	CRT

Function:

This communication object can be used to request the number of 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.

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

Availability:

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

More information:

➲ *7.7 Counting of switching cycles*

07 B0 A4 Universal dimmer 4-fold 9A0401

Obj	Object name	Function	Data point type	Flag
64	**A Number of switching cycles**	Set value (in cycles)	12.001 counting impulses (without prefix)	CW

Function:

This communication object can be used to set the value for switching cycle counting for the output to an integer value in the range from 0 to 4 294 967 295 via the bus.

Availability:

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

More information:

➲ *7.7 Counting of switching cycles*

65	**A Threshold for switching cycles**	Set/request value (in cycles)	12.001 counting impulses (without prefix)	CRW

Function:

This communication object can be used to read and set the threshold value for switching cycle counting for the output to an integer value in the range from 1 to 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:

➲ *7.7 Counting of switching cycles*

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 additionally the parameter “threshold monitoring” (on the counting of switching cycles parameter card) is set to “enabled.”

More information:

➲ *7.7 Counting of switching cycles*

07 B0 A4 Universal dimmer 4-fold 9A0401

Obj	Object name	Function	Data point 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 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:

➲ *7.8 Counting of operating 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 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:

➲ *7.8 Counting of operating hours*

69	**A Operating hours**	Set value	12.001 counting impulses (without prefix)	CW

Function:

This object can be used to set the value for operating hours counting for the output to an integer value in the range from 0 to 4 294 967 295 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:

➲ *7.8 Counting of operating hours*

07 B0 A4 Universal dimmer 4-fold 9A0401

Obj	Object name	Function	Data point type	Flag
70	**A Threshold for operating hours**	Set/request value	12.001 counting impulses (without prefix)	CRW

Function:

This communication object can be used to transmit and read the threshold value for operating hours counting for the output to an integer value in the range from 1 to 4 294 967 295 via the bus to the dimmer.

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:

➲ *7.8 Counting of operating hours*

Obj	Object name	Function	Data point 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 operating hours counting 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."

More information:

➲ *7.8 Counting of operating hours*

Obj	Object name	Function	Data point type	Flag
80	**A Status failure channel**	1 = Failure	1.002 Boolean	CRT

Function:

The communication object "status failure channel" is used to report the failure of a channel (e.g. through lacking voltage or a defective output).

Availability:

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

More information:

➲ *7.6 Status*

07 B0 A4 Universal dimmer 4-fold 9A0401

Obj	Object name	Function	Data point type	Flag
81	**A Status failure over temperature**	1 = Failure	1.002 Boolean	CRT

Function:

This communication object is used to report the failure of a channel due to overtemperature.

Availability:

The communication object “status failure over temperature” is only displayed if the parameter “status failure channel” is set to "enabled” (“functions, objects” parameter card).

More information:

➲ *7.6 Status*

Obj	Object name	Function	Data point type	Flag
82	**A Status failure overload**	1 = Failure	1.002 Boolean	CRT

Function:

This communication object is used to report the failure of a channel when the channel fails due to an excessive connected load.

Availability:

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

More information:

➲ *7.6 Status*

Obj	Object name	Function	Data point type	Flag
83	**A Status failure short circuit**	1 = Failure	1.002 Boolean	CRT

Function:

This communication object is used to report the failure of a channel due to a short circuit.

Availability:

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

More information:

➲ *7.6 Status*

07 B0 A4 Universal dimmer 4-fold 9A0401

6.1.2 Parameters of the “functions, objects” parameter card

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

Function:

This parameter can be used to set the desired operating mode. Detailed settings for the selected operating 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:

➲ *6.2 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:

➲ *7.1 Control Value Input*

07 B0 A4 Universal dimmer 4-fold 9A0401

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:** ➲ *7.2 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:** ➲ *7.3 8-bit scene control*	

07 B0 A4 Universal dimmer 4-fold 9A0401

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:

➲ *7.5 Overrides*

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 ➲ *7.6 Status*.

Communication object:

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

More information:

➲ *7.5 Overrides*

07 B0 A4 Universal dimmer 4-fold 9A0401

Parameter	Settings
Direct operation	Disable **Enable**

Function:

This parameter is used to disable or enable the operation of the dimmer 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 ➲ *7.6 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 status 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 ➲ *7.6 Status*.

Communication object:

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

More information:

➲ *7.6 Status*

07 B0 A4 Universal dimmer 4-fold 9A0401

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 ➲ *7.6 Status.*

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

Status failure channel	**Disable** Enable

Function:
This parameter is used to activate or deactivate the communication object "status failure channel." This communication object is used to report the failure of a channel (e.g. through lacking voltage or a defective output).

Other parameters:
If the parameter "status failure channel" is set to "enabled," parameters are displayed with which it is possible to set when a status is sent ➲ *7.6 Status.*

Communication object:
If the parameter "status failure channel" is set to "enabled," the communication object "status failure channel" is displayed.

Status failure over temperature	**Disable** Enable

Function:
This parameter is used to activate or deactivate the communication object "status failure over temperature." This communication object is used to report the failure of a channel due to overtemperature.

Other parameters/parameter cards:
If the parameter "status failure over temperature" is set to "enabled," parameters are displayed with which it is possible to set when a status is sent ➲ *7.6 Status.*

Communication object:
If the parameter "status failure over temperature" is set to "enabled," the communication object "status failure over temperature" is displayed.

07 B0 A4 Universal dimmer 4-fold 9A0401

Parameter	Settings
Status failure overload	**Disable** Enable
Function: This parameter is used to activate or deactivate the communication object "status failure overload." This communication object is used to report the failure of a channel when the channel fails due to an excessive connected load. **Other parameters/parameter cards:** If the parameter "status failure overload" is set to "enabled," parameters are displayed with which it is possible to set when a status is sent ➲ *7.6 Status*. **Communication object:** If the parameter "status failure overload" is set to "enabled," the communication object "status failure overload" is displayed.	
Status failure short circuit	**Disable** Enable
Function: This parameter is used to activate or deactivate the communication object "status failure short circuit." This communication object is used to report the failure of a channel due to a short circuit. **Other parameters/parameter cards:** If the parameter "status failure short circuit" is set to "enabled," parameters are displayed with which it is possible to set when a status is sent ➲ *7.6 Status*. **Communication object:** If the parameter "status failure overload" is set to "enabled," the communication object "status failure overload" is displayed.	
Switching state on bus voltage failure	Off On **No change** Switch on to: Dimming value at power failure
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. **Other parameters:** With the selected option "Switch on at value: Dimming value at power failure" the additional parameter "dimming value at power failure (%)" is displayed.	

07 B0 A4 Universal dimmer 4-fold 9A0401

Parameter	Settings
Initial 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 switching value 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.

07 B0 A4 Universal dimmer 4-fold 9A0401

Parameter	Settings
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.	
Counting of switching cycles	**Disable** Enable
Function: This parameter can be 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:** ➲ *7.7 Counting of switching cycles*	
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 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 switching cycles” is set to “enabled,” the communication objects “counting of switching cycles” and “counting of switching cycles – set value” are displayed. **More information:** ➲ *7.8 Counting of operating hours*	

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

The selection of the operating mode is done in the ➲ *6.1 "Functions, objects" parameter* card. Depending on the operating mode, the corresponding parameter card is displayed. Aside from a few exceptions, the same parameters can be set for each operating mode, so the communication objects and parameters for all operating modes are gathered and described in this chapter.

6.2.1 Process diagram normal mode

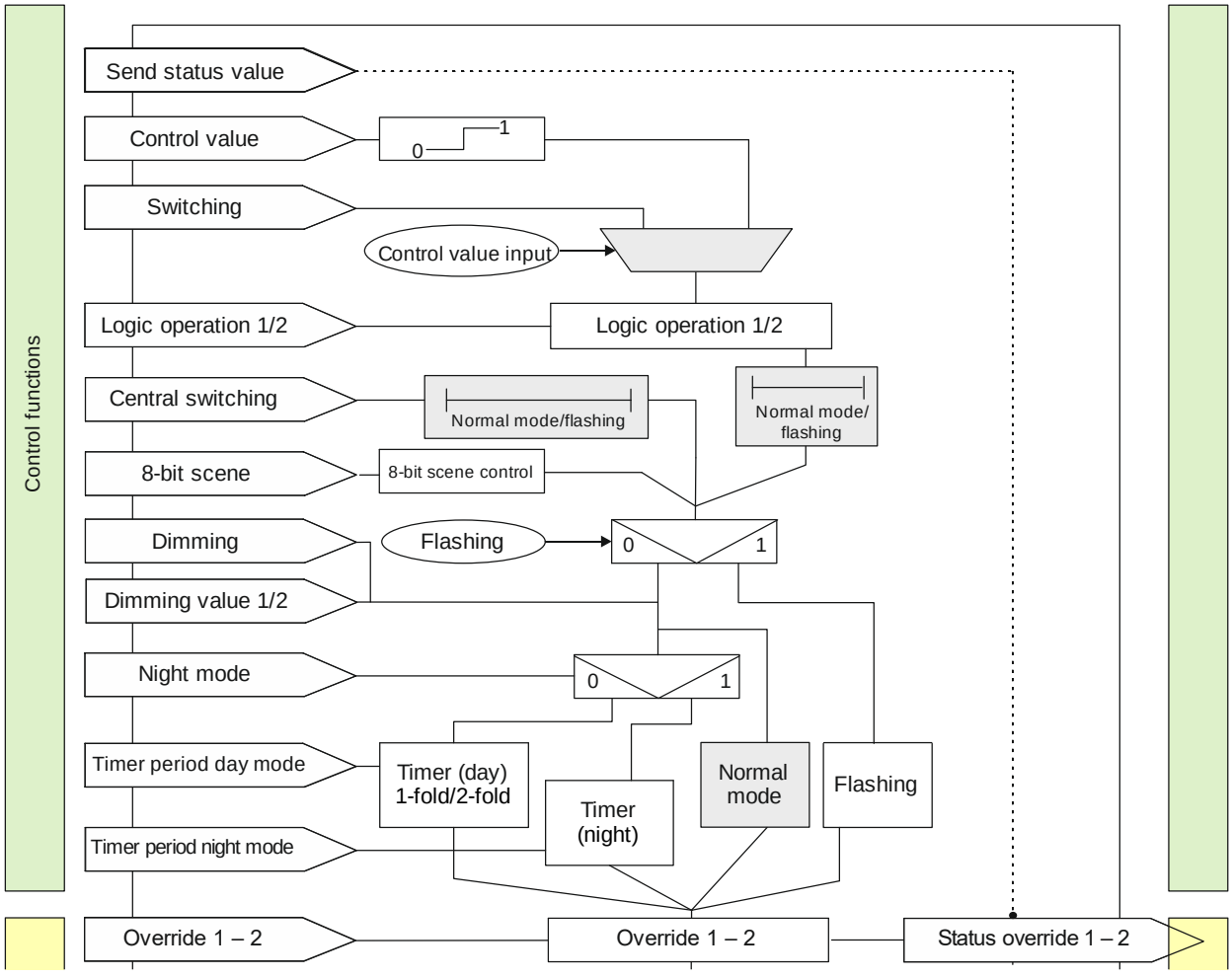


Fig. 3 Normal mode

07 B0 A4 Universal dimmer 4-fold 9A0401

6.2.2 Process diagram timer mode and timer mode 2-fold

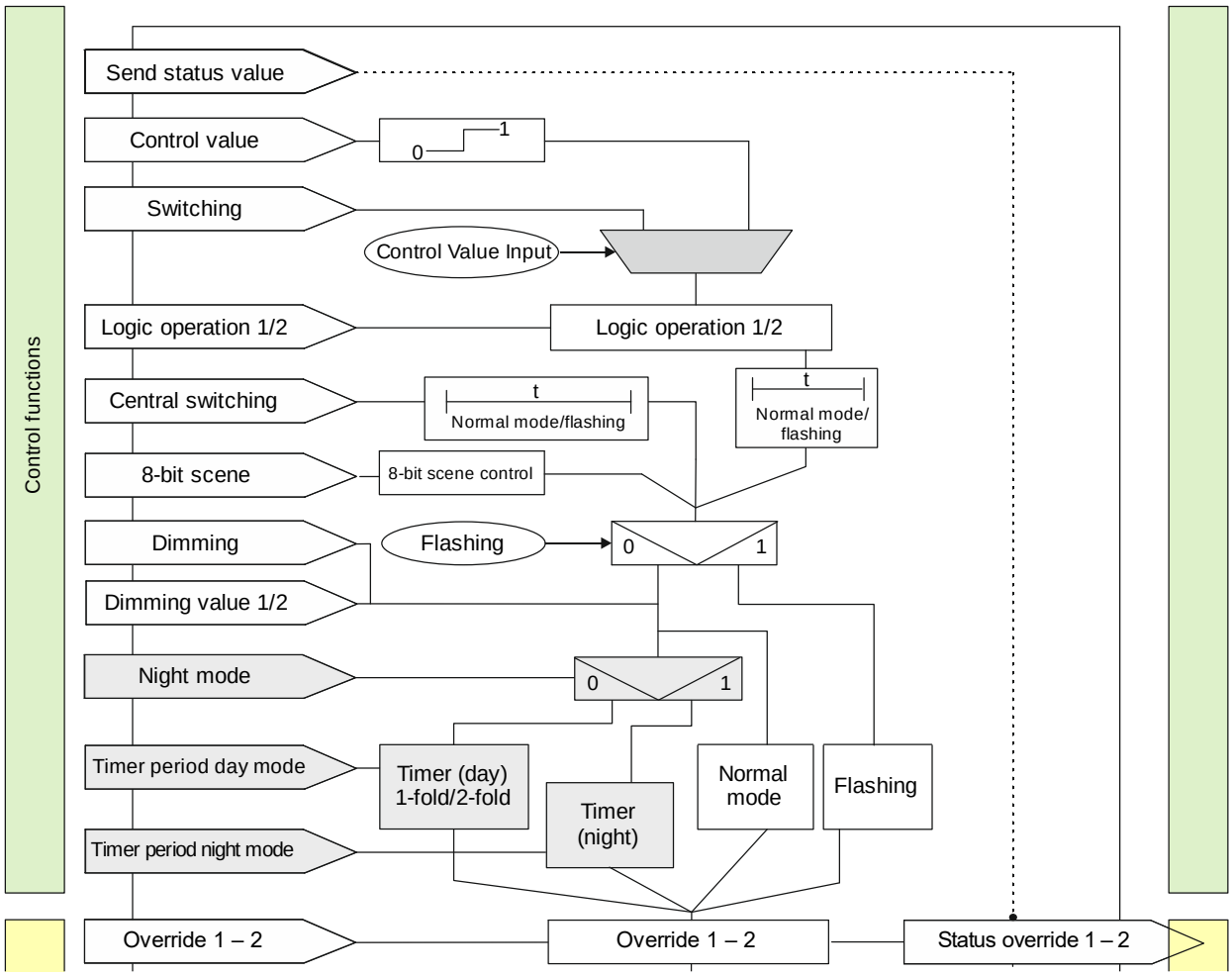


Fig. 4 Timer mode and timer mode 2-fold

07 B0 A4 Universal dimmer 4-fold 9A0401

6.2.3 Process diagram flashing

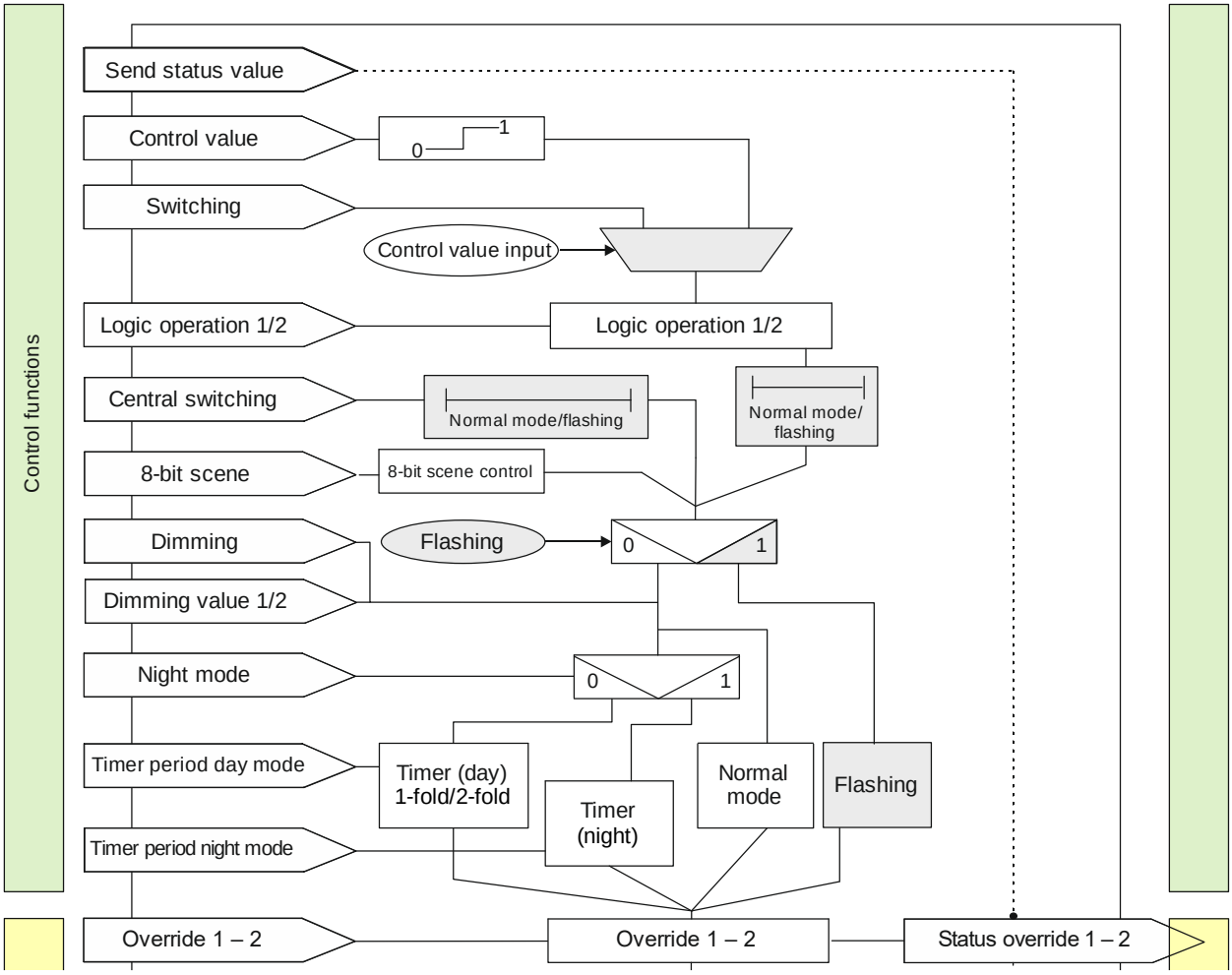


Fig. 5 Flashing

07 B0 A4 Universal dimmer 4-fold 9A0401

6.2.4 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 “tow 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	Data point type	Flag
5	**A Dimming**	Brighter/darker	3.007 dimmer steps	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:

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

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

Operating modes:
- Normal mode
- Timer mode
- Timer mode 2-fold

Function:

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

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

The dimming value is dimmed in the period defined in the parameters “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 “tow dimming values” is set to "enabled.”

More information:

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

07 B0 A4 Universal dimmer 4-fold 9A0401

Obj	Object name	Function	Data point 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 (data point type: TimePeriod100MSec, high byte)							

Bit	15	14	13	12	11	10	9	8
Meaning	Dimming time (data point type: TimePeriod100MSec, low byte)							

Bit	7	6	5	4	3	2	1	0
Meaning	Dimming value (data point 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:

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

07 B0 A4 Universal dimmer 4-fold 9A0401

Obj	Object name	Function	Data point 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 that cannot be exceeded (i.e. the dimming can only go up to the maximum dimming value). In particular with LED and ESL, this parameter can be used to optimize dimming behavior in the upper dimming range.

With brighter dimming, 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:

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

Obj	Object name	Function	Data point type	Flag
14	**A Fade time for switching**	Set fade 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 (fade 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 fade time is calculated proportionally based on the difference between the old and new values. This results in different times in which the target value is reached depending on the size of the value difference.

Availability:

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

More information:

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

07 B0 A4 Universal dimmer 4-fold 9A0401

Obj	Object name	Function	Data point type	Flag
15	**A Fade time for dimming**	Set fade time	7.004 time (100 ms)	CRW

Operating modes:

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

Function:

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

Availability:

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

More information:

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

Obj	Object name	Function	Data point type	Flag
16	**A Fade time for dimming value 1**	Set fade time	7.004 time (100 ms)	CRW
17	**A Fade time for dimming value 2**			

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 (fade time = 0) 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 target value is reached depending on the size of the dimming step.

Availability:

The communication object "fade time for dimming 1" is only displayed if the parameter "show dimming fade time objects" is set to "enabled."

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

More information:

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

07 B0 A4 Universal dimmer 4-fold 9A0401

Obj	Object name	Function	Data point type	Flag
22	**A Scene value/time**	Value/time		CW

Operating modes:

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

Function:

As its data point type, this communication object has a 3-byte value, with 1 byte reserved for the the scene number x (bit 0...5) or the information of whether the scene is recalled (bit 7) and the two other bytes (bit 8...23) are reserved for the fade 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 (data point type: TimePeriod100MSec, high byte)							

Bit	15	14	13	12	11	10	9	8
Meaning	Dimming time (data point 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 (data point 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 fade time specifications in the parameters, this dimming fade 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:

➲ *7.3 8-bit scene control*

07 B0 A4 Universal dimmer 4-fold 9A0401

Obj	Object name	Function	Data point 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, 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:

➲ *7.4 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	Data point 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:

➲ *7.4 Night mode*

07 B0 A4 Universal dimmer 4-fold 9A0401

Obj	Object name	Function	Data point 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 operations.

Availability:

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

Obj	Object name	Function	Data point type	Flag
27	**A Pre-warning expiration of timer period**	On/off	1.000 switches	CRT

Operating modes:

- Normal mode (if the parameter “night mode” is set to “enabled.”
- Timer mode
- Time 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 trigger 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:

➲ *7.9 Warning before switching Off*

07 B0 A4 Universal dimmer 4-fold 9A0401

Obj	Object name	Function	Data point type	Flag
28	**A Lock timer**	On/off	1.003 enable	CW

Operating modes:

- Timer mode
- Timer mode 2-fold

Function:

This communication object can be used in timer mode 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.”

Obj	Object name	Function	Data point 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%.

07 B0 A4 Universal dimmer 4-fold 9A0401

Obj	Object name	Function	Data point type	Flag
84	**A Load detection**	Value	20.610 load type detection	CRT

Operating modes:

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

Function:

This communication object can be used to read out the type of load detection, for example when it is not known due to the setting “automatic load detection.” In the process, integers with the following meanings are transferred:

- 0 = undefined (e.g. load detection still active)
- 1 = leading edge
- 2 = trailing edge
- 3 = failure

Availability:

The communication object “load detection” is only displayed if the parameter “status load type” is set to “enabled.”

07 B0 A4 Universal dimmer 4-fold 9A0401

6.2.5 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
Load adaptation: Dim according to	Automatic load detection Leading edge operation Trailing edge operation

Operating modes:

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

Function:

This parameter is used to set the type of load adaptation. The following settings are possible:

- **Automatic load detection**
  With automatic load detection, the device checks the load type when the voltage is switched on and decides whether leading edge or trailing edge operation is selected.
- **Leading edge operation**
- **Trailing edge operation**

Note:

If the load cannot be uniquely identified, by setting the mode “trailing edge mode” or “leading edge mode” automatic load detection can be deactivated and the operating mode set manually. This is particularly necessary when operating dimmable LEDs or energy saving lamps (ESLs).

Recommendation:

- With LED and ESL lamps, the general recommendation is not to select “automatic load detection” but rather to selected “leading edge mode” or “trailing edge mode” depending on the recommendation of the manufacturer.
- “Leading edge mode” offers advantages in terms of good dimming behavior.
- “Trailing edge mode” causes less power loss, which enables the connection of more lamps or higher loads.
- Load detection checks the load two times. If there is no unambiguous result, “leading edge mode” is set.

Other parameters/parameter cards:

If the “automatic load detection” setting is selected, the parameter “status load type” is also displayed. If this parameter is enabled, additional parameters are also displayed ➲ *7.6 Status*.

Communication object:

If the parameter “status load type” is set to “enabled,” the communication object “load detection” is displayed.

07 B0 A4 Universal dimmer 4-fold 9A0401

Parameter	Settings
Status load type	**Disable** Enable

Operating modes:

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

Function:

This parameter is used to activate and deactivate the communication object "load detection."

If this parameter is in the status "enabled," this communication object can be used to read out whether load detection is set to "leading edge" or "trailing edge."

Availability:

This parameter is only available if the parameter "load adaptation: dim according to" is set to "automatic load detection."

Other parameters/parameter cards:

If this parameter is enabled, additional parameters are also displayed ➲ *7.6 Status*.

Communication object:

If the parameter "status load type" is set to "enabled," the communication object "load detection" is displayed.

07 B0 A4 Universal dimmer 4-fold 9A0401

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

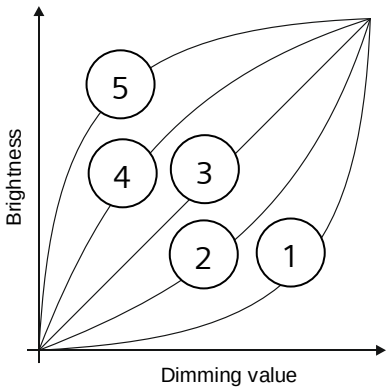
Operating modes:

- 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/darker in the medium dimming range in order to adapt the dimming quality of LEDs, for example, to the dimming behavior of incandescent lamps.

The following settings are possible:



- **Smooth 2:**
  Setting of a dimming curve, see curve (1)
- **Smooth 1:**
  Setting of a dimming curve, see curve (2)
- **Linear:**
  Setting of a dimming curve, see curve (3)
- **Progressive 1:**
  Setting of a dimming curve, see curve (4)
- **Progressive 2:**
  Setting of a dimming curve, see curve (5)
- **User-defined:**
  With this setting the parameter card “dimming curve user-defined” is displayed. Here the dimming curve can be defined manually by entering up to 16 values for the x-axis (dimming value) and y-axis (brightness). Here it must be borne in mind that the curve progressing rises steadily. Incorrect configuration can result in a malfunction.

Other parameter cards:

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

07 B0 A4 Universal dimmer 4-fold 9A0401

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). In particular with LED and ESL, this parameter can be used to optimize dimming behavior in the lower dimming range.

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 lower that the minimum dimming value leads to the channel being switched off.

More information:

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

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). In particular with LED and ESL, this parameter can be used to optimize dimming behavior in the upper dimming range.

With brighter dimming, 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 %.

More information:

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

07 B0 A4 Universal dimmer 4-fold 9A0401

Parameter	Settings
Show Min./Max. Limitation objects	**Disable** Enable
Operating modes: • Normal mode • Timer mode • Timer mode 2-fold • Flashing **Function:** This parameter is used to display the communication objects “minimum dimming value” and “maximum dimming value.” **Communication object:** If the parameter “show min/max limitation objects” is set to “enabled,” the communication objects “minimum dimming value” and “maximum dimming value” are displayed.	
Global dimming max. limit	**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 Universal dimmer 4-fold 9A0401

Parameter	Settings
Fade time for switching	**00:00:00:0** [00:00:00:0...23:59:59:9]

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) 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 fade time is calculated proportionally based on the difference between the old and new values. This results in different times in which the target value is reached depending on the size of the value difference.

More information:

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

Parameter	Settings
Fade time for dimming	**00:00:05:0** [00:00:00:0...23:59:59:9]

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 target value is reached depending on the size of the dimming step.

More information:

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

07 B0 A4 Universal dimmer 4-fold 9A0401

Parameter	Settings
Fade time for dimming value 1 **Fade time for dimming value 2**	**00:00:05:0** [00:00:00:0...23:59:59:9]

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 (fade time = 0) 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 target value is reached depending on the size of the dimming step.

Availability:

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

More information:

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

Parameter	Settings
Two dimming values	**Disable** Enable

Operating modes:
- Normal mode
- Timer mode
- Timer mode 2-fold

Function:

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

Other parameters:

If the parameter "two dimming values" is set to "enabled," the additional parameters "fade 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 Universal dimmer 4-fold 9A0401

Parameter	Settings
Show dimming fade 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 fade time.

Communication object:

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

Parameter	Settings
Show dimming value/time object	**Disable** Enable

Operating modes:

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

Function:

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

Communication object:

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

07 B0 A4 Universal dimmer 4-fold 9A0401

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 a dim 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: ➲ *8.1Dimming 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:

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

07 B0 A4 Universal dimmer 4-fold 9A0401

Parameter	Settings
Off via dimming	Disable **Enable**

Operating modes:

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

Function:

If the channel is to be switched off while in a switched-on state if the brightness is dimmed to a level below the minimum dimming value, this parameter must be set to “enabled.”

More information:

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

Parameter	Settings
On via dimming	Disable **Enable**

Operating modes:

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

Function:

To enable switching on the channel while in an 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, jump to the minimum dimming value and then dimmed brighter with the configured value from that starting point.

More information:

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

07 B0 A4 Universal dimmer 4-fold 9A0401

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 an 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 fade time 1 or fade time 2. If the received dimming value is below the minimum dimming value, the channel remains switched off.
  Switching off via dimming value 1 or dimming value 2 is not possible with this setting.
- **Off, if dimming value < min. dimming value:**
  If the channel is switched on and this parameter is set to "off, if dimming value < min. dimming value," the reception of a telegram with a dimming value lower than the minimum dimming value leads to a dimming down (with the configured fade time for dimming value 1 or dimming value 2) to the minimum dimming value and then to switching off of the channel.
  Switching on via dimming value 1 or dimming value 2 is not possible with this setting.
- **On and Off possible:**
  If this parameter is set to "On and Off possible," the channel is switched on if the received dimming value is equal to or greater than the min. dimming value and it is switched off if the received dimming value is below the min. dimming value.
- **On, if dimming value > 0 % / Off, if dimming value = 0 %:**
  If this parameter is set to "On, if dimming value > 0 % / Off, if dimming value = 0 %," every dimming value > 0 % leads to the channel switching on. If the dimming value is below the min. dimming value, the channel is set to the min. dimming value. Only if a dimming value of 0% is received is the channel switched off.

Availability:

The parameter "switching via dimming value 2" is only displayed if the parameter "two dimming values" is set to "enabled."

More information:

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

07 B0 A4 Universal dimmer 4-fold 9A0401

Parameter	Settings
ON time 1 during day mode	**12:15:00 AM** [00:00:00...23:59:59]

Operating modes:
- Timer mode
- Timer mode 2-fold

Function:

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

If during an ongoing ON time a renewed switch, fade, dim or scene recall command is received, the command is executed, the timer is reset 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 a 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.

07 B0 A4 Universal dimmer 4-fold 9A0401

Parameter	Settings
ON time 2 during day mode	**12:15:00 AM** [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, fade, dim or scene recall command is received, the command is executed, the timer with the ON time 1 is loaded and the 2-level timer mode begins again.

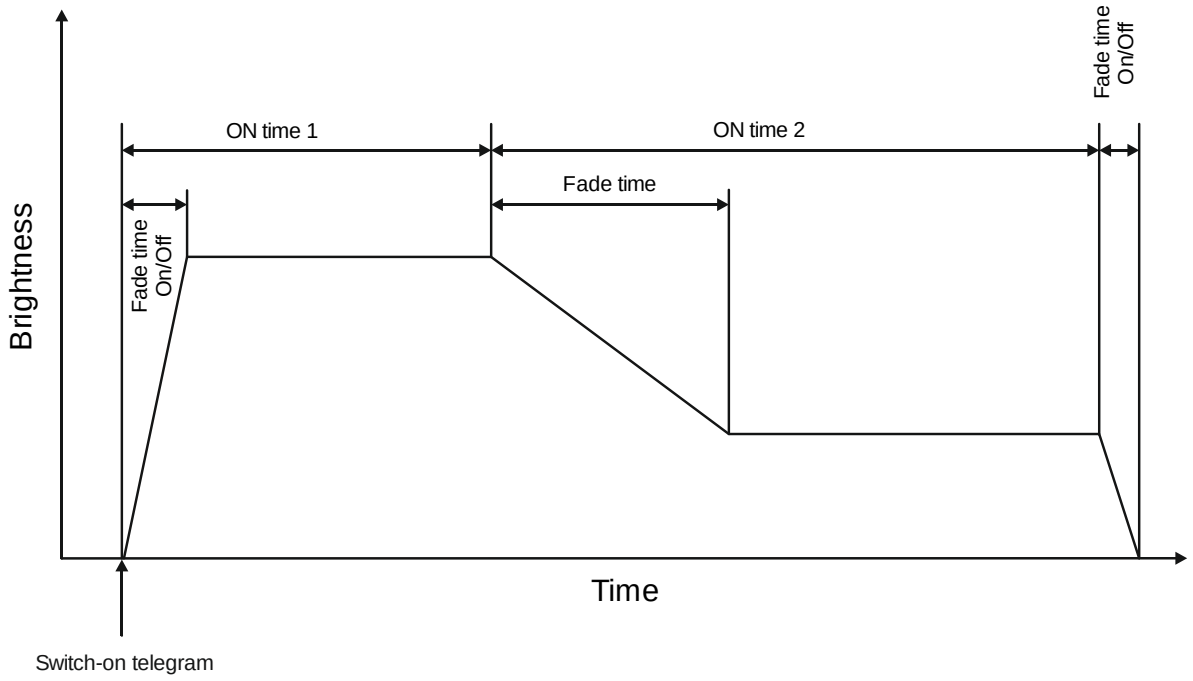
Parameter	Settings
Dimming value during ON time 2 (%)	**50** [0...100]

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 Universal dimmer 4-fold 9A0401

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

Operating modes:
- Timer mode

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

Other parameters/parameter cards:
Depending on the selected option, the parameters "warning period" and "warning signal period" are also displayed.

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

More information:
➲ *7.9 Warning before switching Off*

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

Operating modes:
- Timer mode
- Timer mode 2-fold

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

Communication object:
If the parameter "change ON time in day mode via object" is set to "enabled," the communication object "timer day mode" is displayed.

07 B0 A4 Universal dimmer 4-fold 9A0401

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.

Parameter	Settings
ON delay	**12:00:00 AM** [00:00:00...23:59:59]

Operating modes:
- Normal mode
- Flashing

Function:

This parameter can be 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.

07 B0 A4 Universal dimmer 4-fold 9A0401

Parameter	Settings
OFF delay	**12:00:00 AM** [00:00:00...23:59:59]
Operating modes: • Normal mode • Flashing **Function:** This parameter can be 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.	
ON delay (central switching)	**12:00:00 AM** [00:00:00...23:59:59]
Operating modes: • Normal mode • Flashing **Function:** This parameter can be 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 communication object “ON delay (central switching)” is only displayed if the parameter “central switching” is set to "enabled” (“functions, objects” parameter card). **More information:** ➲ *7.2 Central switching*	
OFF delay (central switching)	**12:00:00 AM** [00:00:00...23:59:59]
Operating modes: • Normal mode • Flashing **Function:** This parameter can be 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 communication object “OFF delay (central switching)” is only displayed if the parameter “central switching” is set to ”enabled” (“functions, objects” parameter card).	

07 B0 A4 Universal dimmer 4-fold 9A0401

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 ➲ *7.4 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 ➲ *7.4 Night* mode . **Communication object:** If the parameter "night mode" is set to "enabled," the communication object "night mode" is displayed.	
Number of flashing cycles (0 = indefinite)	**5** [0...10000]
Operating mode: • Flashing **Function:** This parameter can be used to set the desired number of flashing cycles. With the value "0," the number of flashing cycles.	
ON time flashing	**12:00:01 AM** [12:00:01 AM...12:04:15 AM]
Operating mode: • Flashing **Function:** This parameter can be 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 Universal dimmer 4-fold 9A0401

Parameter	Settings
OFF time flashing	**12:00:01 AM** [12:00:01 AM...12:04:15 AM]

Operating mode:

- Flashing

Function:

This parameter can be 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.

6.3 "Logic operations" parameter card

6.3.1 "Logic operations" process diagram

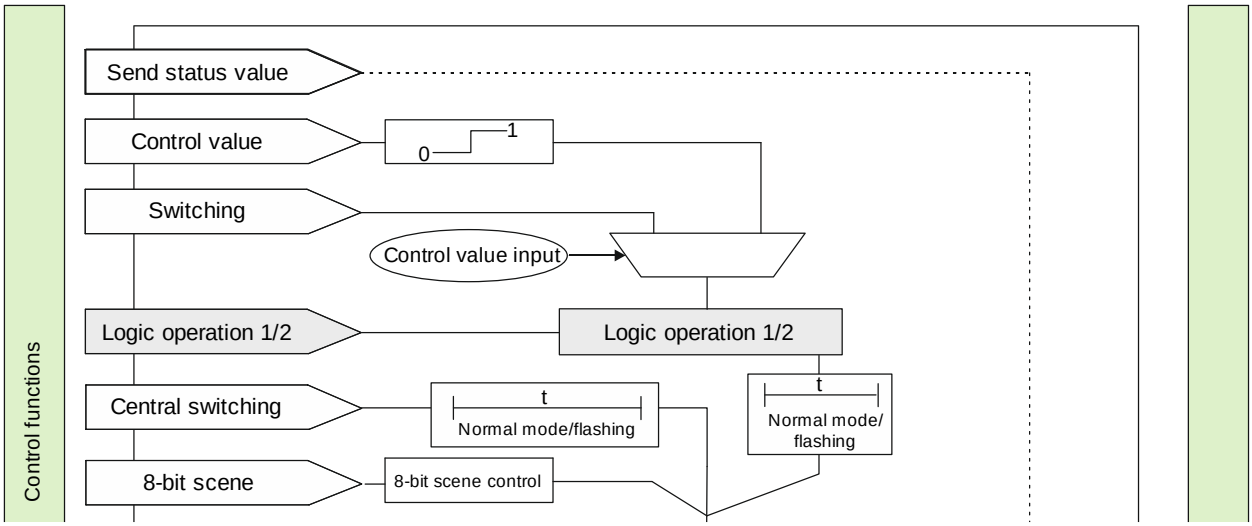


Fig. 6 Logic operations

07 B0 A4 Universal dimmer 4-fold 9A0401

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

Obj	Object name	Function	Type	Flag
18	**Logic operation 1**	On/off	1.000 switches	CRW
19	**Logic operation 2**			

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 dimmer, 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.”

07 B0 A4 Universal dimmer 4-fold 9A0401

6.3.3 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 Universal dimmer 4-fold 9A0401

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 initial value of logic operation object after bus voltage recovery. 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 took place. **Availability:** This parameter is only visible is the parameter "logic operation 1" or "logic operation 2 is set to "AND," "OR," "XOR," or "FILTER."	

7 Setting functions

7.1 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 ➲ *7.5 Overrides*.

7.1.1 "Control value input" process diagram

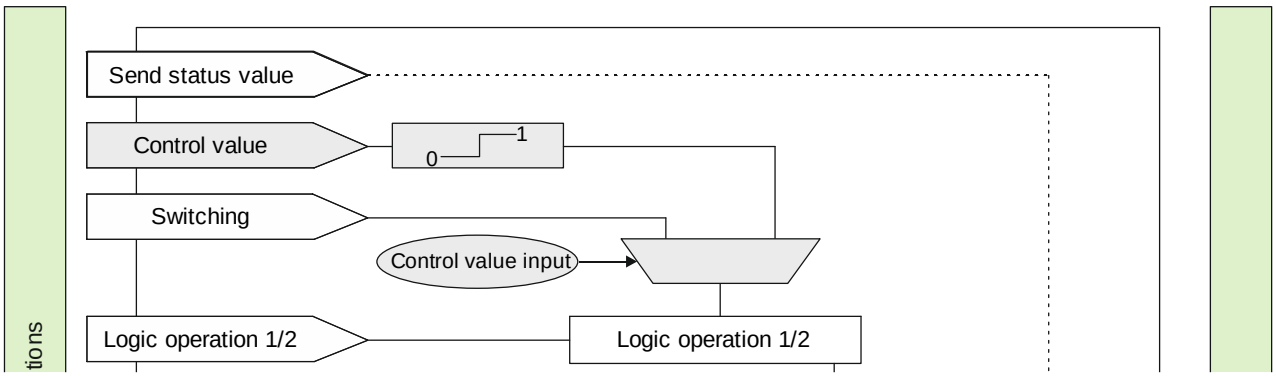


Fig. 7 Control value input function

07 B0 A4 Universal dimmer 4-fold 9A0401

7.1.2 Communication objects for the “control value input”

No.	Object name	Function	Data point 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.

7.1.3 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 Universal dimmer 4-fold 9A0401

7.1.4 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 data point type of the communication object “control value.” The following data point types can be selected: • Percentage (%): Corresponds to the data point type “5.001 percent (0...100 %)” • Value (8-bit): Corresponds to the data point type 5.010 counting impulses (0 ... 255) • Temperature (°C): Corresponds to the data point type 9.001 temperature °C • Illuminance (lx): Corresponds to the data point type 9.004 illuminance lx • Current (mA): Corresponds to the data point type 9.021 current mA • Output (kW): Corresponds to the data point type 9.024 output kW • Output (W): Corresponds to the data point 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 threshold is equal to “OFF” (0). The permitted values for the threshold depend on the selected data type. **Note:** If the entered threshold values are equal, then when exactly this value is received this is interpreted as the “threshold for ON.” If the “threshold for OFF” is configured such that it is greater than the “threshold for ON,” then the higher value is automatically used as the “threshold for ON.”	

07 B0 A4 Universal dimmer 4-fold 9A0401

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 smaller than the configured threshold for OFF, then the determined threshold is equal to "OFF" (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 Universal dimmer 4-fold 9A0401

7.2 Central switching

7.2.1 "Central switching" process diagram

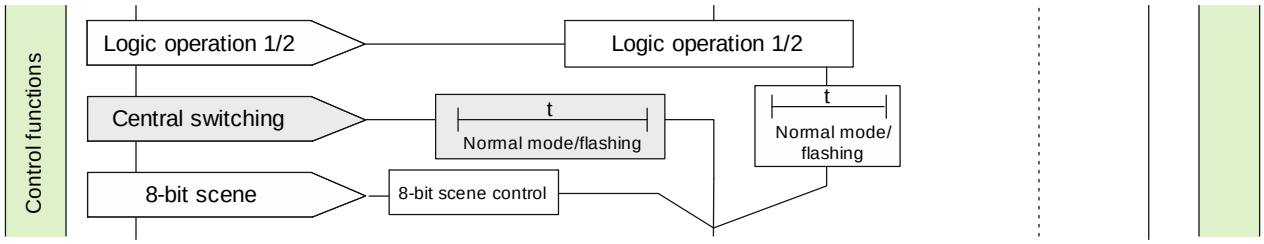


Fig. 8 Central switching

7.2.2 Communication objects for "central switching"

No.	Object name	Function	Data point type	Flags
20	**A Central switching**	On/off	1.000 switches	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."

7.2.3 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.

07 B0 A4 Universal dimmer 4-fold 9A0401

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

Parameter	Settings
ON delay (central switching)	**12:00:00 AM** [00:00:00...23:59:59]
Operating modes: • Normal mode • Flashing **Function:** This parameter can be 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 communication object “ON delay (central switching)” is only displayed if the parameter “central switching” is set to "enabled” (“functions, objects” parameter card).	
OFF delay (central switching)	**12:00:00 AM** [00:00:00...23:59:59]
Operating modes: • Normal mode • Flashing **Function:** This parameter can be 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 communication object “OFF delay (central switching)” is only displayed if the parameter “central switching” is set to "enabled” (“functions, objects” parameter card).	

07 B0 A4 Universal dimmer 4-fold 9A0401

7.3 8-bit scene control

With the function "8-bit scene recall/store" it is possible for the user, without changing the project planning with the ETS, to independently reprogram scene modules for 8-bit scene control or dimmer with integrated 8-bit scene control, i.e. to assign current brightness values or switching states to the respective scene.

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

Before storing a scene, the affected dimmers 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 addresses scene modules or dimmers with integrated scene control are prompted to request the currently configured brightness values and switching states from the dimmers and store them in the respective scene.

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

In contrast to the other fade time specifications in the parameters, this fade 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). Through this fixed dimming time until reaching the target value it is ensured 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 were stored, there is no reaction to the scene recall.

7.3.1 "8-bit scene control" process diagram

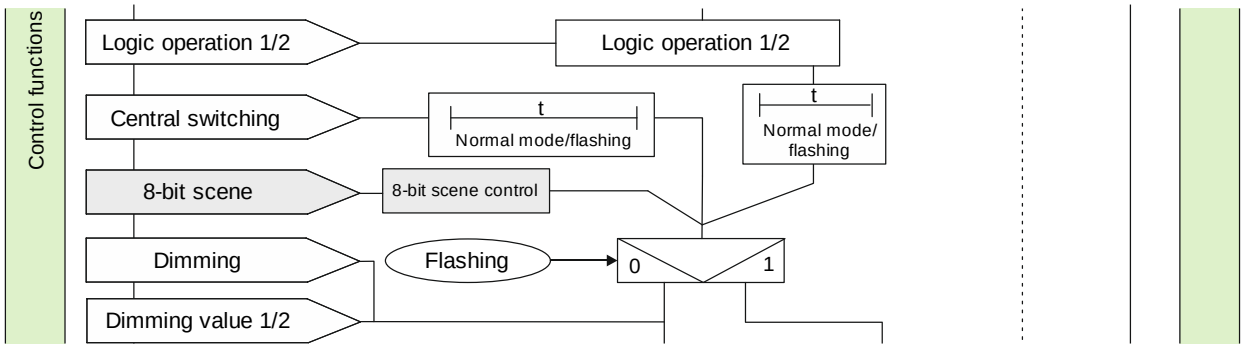


Fig. 9 8-bit scene control

07 B0 A4 Universal dimmer 4-fold 9A0401

7.3.2 Communication objects for 8-bit scene control

No.	Object name	Function	Data point type	Flags
21	**A 8-bit scene**	Recall/store	18.000 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, 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 Universal dimmer 4-fold 9A0401

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

Operating modes:

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

Function:

As its data point type, this communication object has a 3-byte value, with 1 byte reserved for the the scene number x (bit 0...5) or the information of whether the scene is recalled (bit 7) and the two other bytes (bit 8...23) are reserved for the fade 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 (data point type: TimePeriod100MSec, high byte)							

Bit	15	14	13	12	11	10	9	8
Meaning	Dimming time (data point 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 (data point 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 fade 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 Universal dimmer 4-fold 9A0401

7.3.3 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 Universal dimmer 4-fold 9A0401

7.3.4 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 dimmer 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 were stored, there is no reaction to the scene recall.

Other parameters:

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

07 B0 A4 Universal dimmer 4-fold 9A0401

Parameter	Settings
Fade time	**12:00:00 AM** [00:00:00...6:12:15 PM]

Function:

The parameter “fade 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).

Through this fixed dimming time until reaching the target value it is ensured 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 "fade 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.

07 B0 A4 Universal dimmer 4-fold 9A0401

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 “enabled.”

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 Universal dimmer 4-fold 9A0401

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.”

7.4 Night mode

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

7.4.1 Night mode process diagram

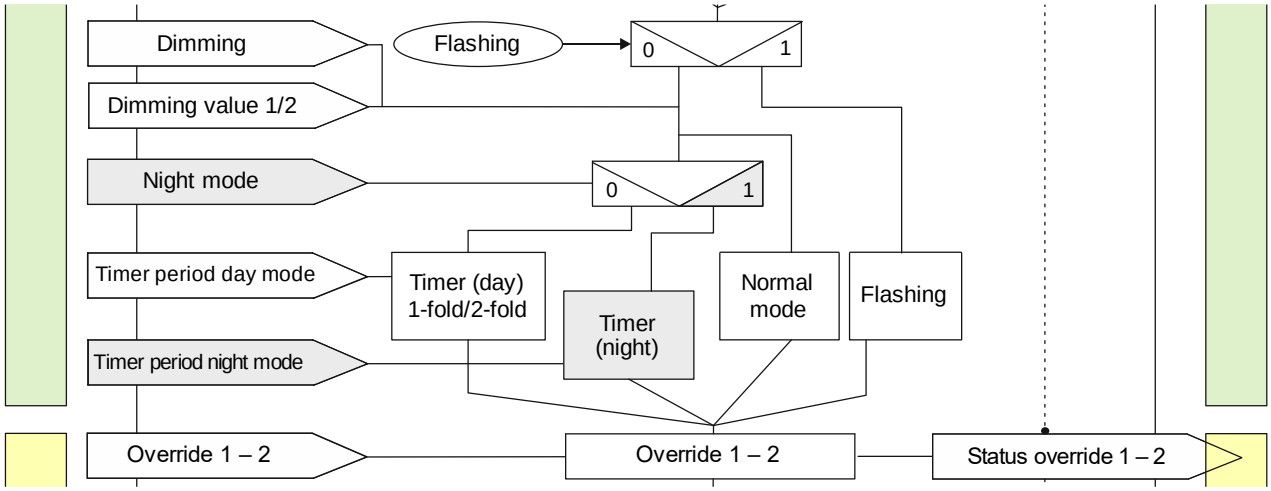


Fig. 10 Night mode

07 B0 A4 Universal dimmer 4-fold 9A0401

7.4.2 Communication objects for night mode

Obj	Object name	Function	Data point 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, 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.

Obj	Object name	Function	Data point 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.”

Obj	Object name	Function	Data point type	Flag
27	**A Pre-warning expiration of timer period**	On/off	1.000 switches	CRT

07 B0 A4 Universal dimmer 4-fold 9A0401

Obj	Object name	Function	Data point type	Flag

Operating modes:

- Normal mode (if the parameter “night mode” is set to “enabled.”
- Timer mode
- Time 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 trigger 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:

➲ *7.9 Warning before switching Off*

7.4.3 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.

07 B0 A4 Universal dimmer 4-fold 9A0401

Parameter	Settings
ON time during night mode	**12:30:00 AM** [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 during an ongoing ON time a renewed switch, fade, dim or scene recall command is received, the command is executed, the timer is reset and the ON time begins again.

Availability:

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

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 during an ongoing ON time, the ON time is restarted 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

Availability:

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

07 B0 A4 Universal dimmer 4-fold 9A0401

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

Operating modes:

- 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 “dim to half dimming value and via communication object,” the communication object “pre-warning expiration of timer period” is displayed.

More information:

➲ *7.9 Warning before switching Off*

07 B0 A4 Universal dimmer 4-fold 9A0401

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 displayed 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 Universal dimmer 4-fold 9A0401

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 Universal dimmer 4-fold 9A0401

7.5 Overrides

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

The following override function blocks are available:

- ➲ *7.5.4 Manual override (ON)*
- ➲ *7.5.5 Override "permanent OFF"*
- ➲ *7.5.6 Override "lock"*
- ➲ *7.5.7 Override "central override"*
- ➲ *7.5.8 Override "user-defined"*
- ➲ *7.5.9 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.

7.5.1 Override process diagram

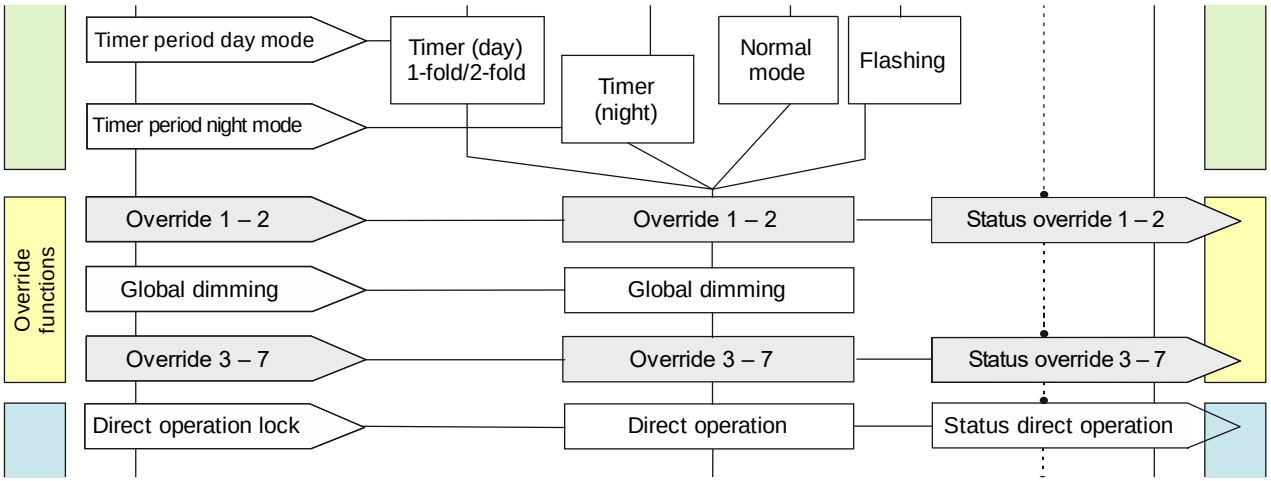


Fig. 11 Overrides

7.5.2 Communication objects for overrides

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

As the communication objects for the 7 override function blocks are the same and only differ in their numbers, the following lists only the communication objects of override function block 1. The respective numbers of the communication objects of the other override function blocks are shown in the table of all communication objects (➲ 3 *Communication objects*).

07 B0 A4 Universal dimmer 4-fold 9A0401

7.5.3 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.	

7.5.4 Manual override (ON)

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

7.5.4.1 Manual override process diagram

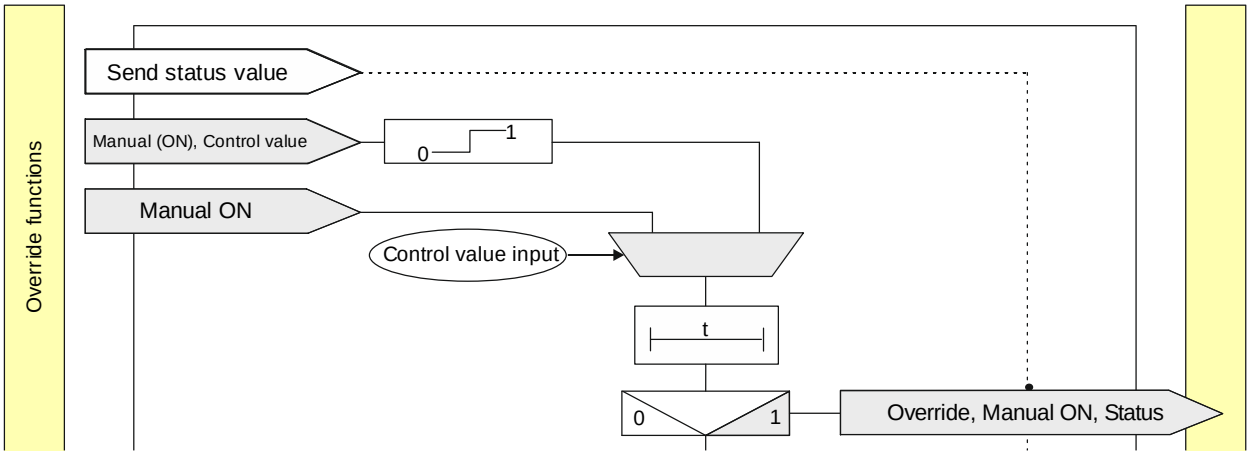


Fig. 12 Override “manual ON”

7.5.4.2 Communication objects for manual override

No.	Object name	Function	Data point 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, 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 Universal dimmer 4-fold 9A0401

No.	Object name	Function	Data point 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.

No.	Object name	Function	Data point type	Flags
32	**A Override 1, manual ON, status**	On/off	1.002 Boolean	CRT

Function:

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

Availability:

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

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

Parameter	Settings
Control Value Input	**Disable** Enable
Function: This parameter defined whether instead of the switching input a control value input should be used for the activation and deactivation of the override function. **Other parameters:** When the parameter “control value input” is in the “enabled” statues, parameters for the datatype of the control value input and the threshold are displayed ➲ *Parameters for the control value input on the “control value input” parameter card*. **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 control	**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	**12:00:00 AM:0** [00:00:00:0...23:59:59:9]
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.	
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:** ➲ *7.6 Status*	

7.5.5 Override “permanent OFF”

7.5.5.1 Override “permanent OFF” process diagram

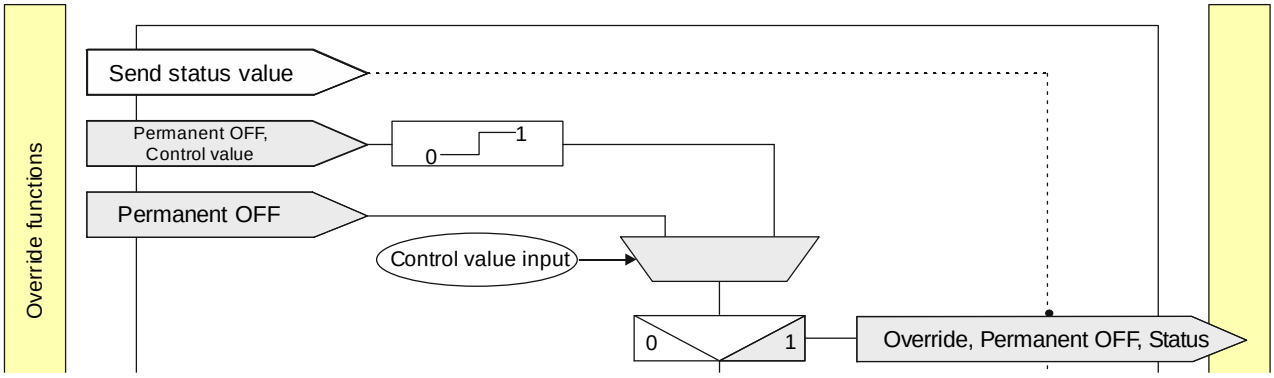


Fig. 13 Override “permanent OFF”

7.5.5.2 Communication objects for override “permanent OFF”

No.	Object name	Function	Data point 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 independently 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 Universal dimmer 4-fold 9A0401

No.	Object name	Function	Data point 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 regardless 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).				

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

Parameter	Settings
Control Value Input	**Disable** Enable
Function: This parameter defined whether instead of the switching input a control value input should be used for the activation and deactivation of the override function. **Other parameters:** When the parameter “control value input” is in the “enabled” statues, parameters for the datatype of the control value input and the threshold are displayed ➲*Parameters for the control value input on the “control value input” parameter card*. **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:** ➲ *7.1 Control Value Input*	
Invert override control	**No** Yes
Function: This parameter defines whether the input value of the communication object “override 1, permanent OFF” should be used directly or inverted.	
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:** 7.6 Status	

07 B0 A4 Universal dimmer 4-fold 9A0401

Parameter	Settings
Start value / behavior of override input on bus voltage recovery	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, permanent OFF” when bus voltage is recovered. The following settings are possible:

- **Off**
  If this parameter is set, the override function block behaves as if an “off” had been received at the override block input when bus voltage is recovered.
- **On**
  If this parameter is set, the override function block behaves as if an “on” had been received at the override block input when 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 stored value in case of bus voltage failure.

7.5.6 Override “lock”

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

7.5.6.1 Override “lock” process diagram

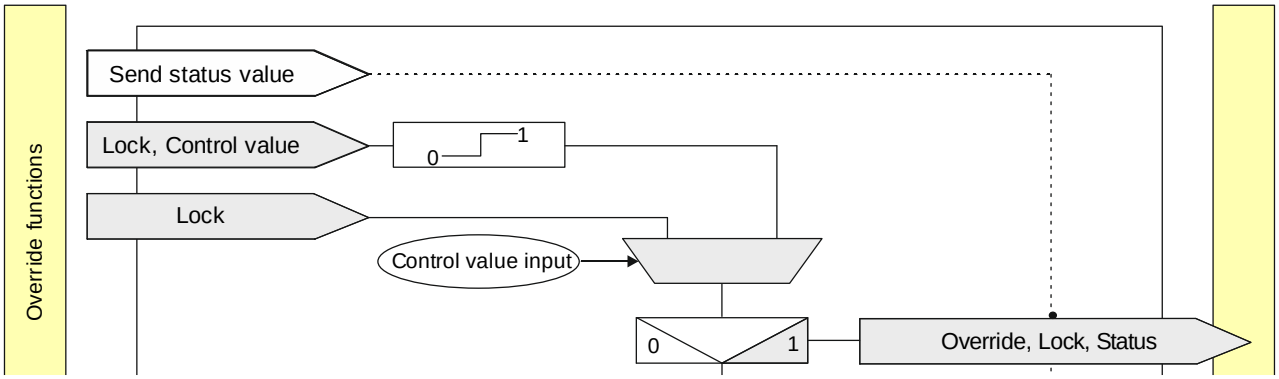


Fig. 14 Override lock

7.5.6.2 Communication objects for the override “lock”

No.	Object name	Function	Data point 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 Universal dimmer 4-fold 9A0401

No.	Object name	Function	Data point 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.

No.	Object name	Function	Data point type	Flags
32	**A Override 1, lock, status**	On/off	1.002 Boolean	CRT

Function:

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

Availability:

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

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

Parameter	Settings
Control Value Input	**Disable** Enable
Function: This parameter defined whether instead of the switching input a control value input should be used for the activation and deactivation of the override function. **Other parameters:** When the parameter “control value input” is in the “enabled” statues, parameters for the datatype of the control value input and the threshold are displayed ➲ *Parameters for the control value input on the* “control value input” parameter card. **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 control	**No** Yes
Function: This parameter defines whether the input value of the communication object “override 1, lock” should be used directly or inverted.	
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:** ➲ *7.6 Status*	

7.5.7 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.

7.5.7.1 Override “central override” process diagram

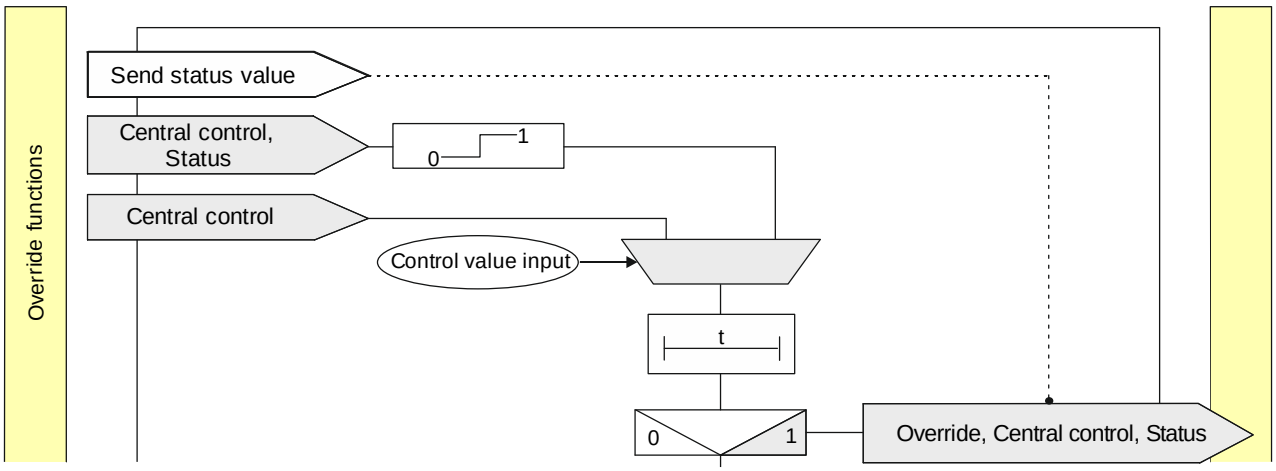


Fig. 15 Central override

07 B0 A4 Universal dimmer 4-fold 9A0401

7.5.7.2 Communication objects for the override “central override”

No.	Object name	Function	Data point type	Flags
29	**A Override 1, central control**	On/off	1.003 enable	CRT

Function:

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

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

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

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

The central override 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.

07 B0 A4 Universal dimmer 4-fold 9A0401

No.	Object name	Function	Data point 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.

No.	Object name	Function	Data point type	Flags
32	**A Override 1, central control, status**	On/off	1.002 Boolean	CRT

Function:

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

Availability:

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

More information:

➲ *7.6 Status*

07 B0 A4 Universal dimmer 4-fold 9A0401

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

Parameter	Settings
Control Value Input	**Disable** Enable
Function: This parameter defined whether instead of the switching input a control value input should be used for the activation and deactivation of the override function. **Other parameters:** When the parameter “control value input” is in the “enabled” statues, parameters for the datatype of the control value input and the threshold are displayed ➲ *Parameters for the control value input on the* “control value input” parameter card. **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 control	**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	**12:00:00 AM:0** [00:00:00:0...23:59:59:9]
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.	

07 B0 A4 Universal dimmer 4-fold 9A0401

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.	
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:** ➲ *7.6 Status*	

7.5.8 Override “user-defined”

For use cases in which none of the predefined override functions manual (ON), permanent OFF, blocking function or central override can be used, the “user-defined override function” is available.

This override function enables monitoring of cyclically incoming telegrams. In this case the override is activated when telegrams do not arrive within the monitoring time.

7.5.8.1 “User-define control” process diagram

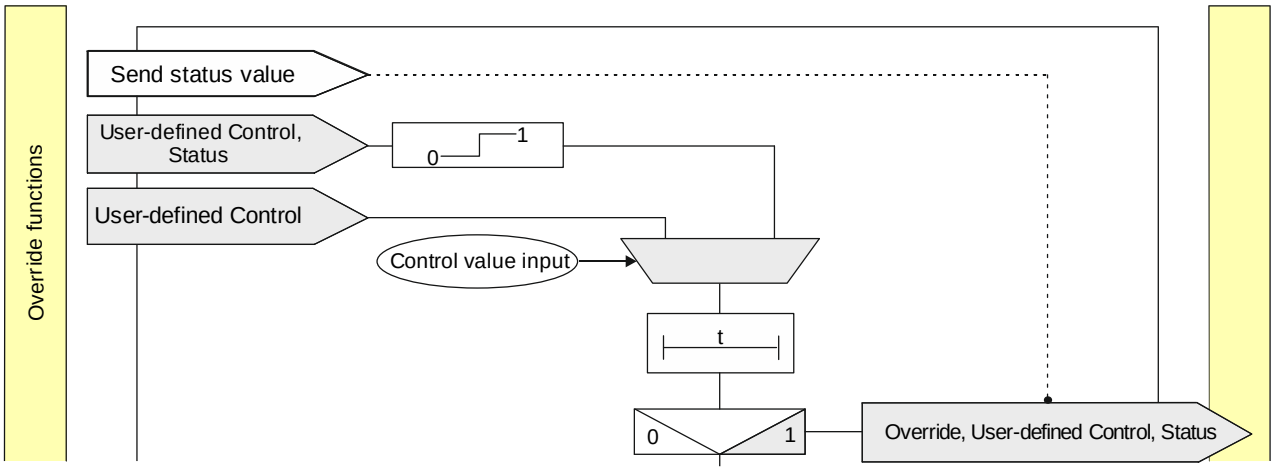


Fig. 16 Override user-defined control

7.5.8.2 Communication objects for the override “user-defined”

No.	Object name	Function	Data point 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-define 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).

07 B0 A4 Universal dimmer 4-fold 9A0401

No.	Object name	Function	Data point type	Flags
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.				
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).				

7.5.8.3 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 defined whether instead of the switching input a control value input should be used for the activation and deactivation of the override function. **Other parameters:** When the parameter “control value input” is in the “enabled” statues, parameters for the datatype of the control value input and the threshold are displayed ➲ *Parameters for the control value input on the “control value input” parameter card*. **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:** ➲ *7.1 Control Value Input*	
Invert override control	**No** Yes
Function: This parameter defines whether the input value of the communication object “override 1, user-defined control” should be used directly or inverted.	
Monitoring time	**12:00:00 AM:0** [00:00:00:0...23:59:59:9]
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.	

07 B0 A4 Universal dimmer 4-fold 9A0401

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.

Override duration	**12:00:00 AM:0** [00:00:00:0...23:59:59:9]

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 with 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.

07 B0 A4 Universal dimmer 4-fold 9A0401

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.

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:

➲ *7.6 Status*

07 B0 A4 Universal dimmer 4-fold 9A0401

Parameter	Settings
Start value / behavior of override input on bus voltage recovery	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 this parameter is set, the override function block behaves as if an “off” had been received at the override block input when bus voltage is recovered.
- **On**
  If this parameter is set, the override function block behaves as if an “on” had been received at the override block input when 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 stored value in case of bus voltage failure.

7.5.9 Override “forced control”

Dimmers with forced control allow an override of particular dimmer 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.

7.5.9.1 Override “forced control” process diagram

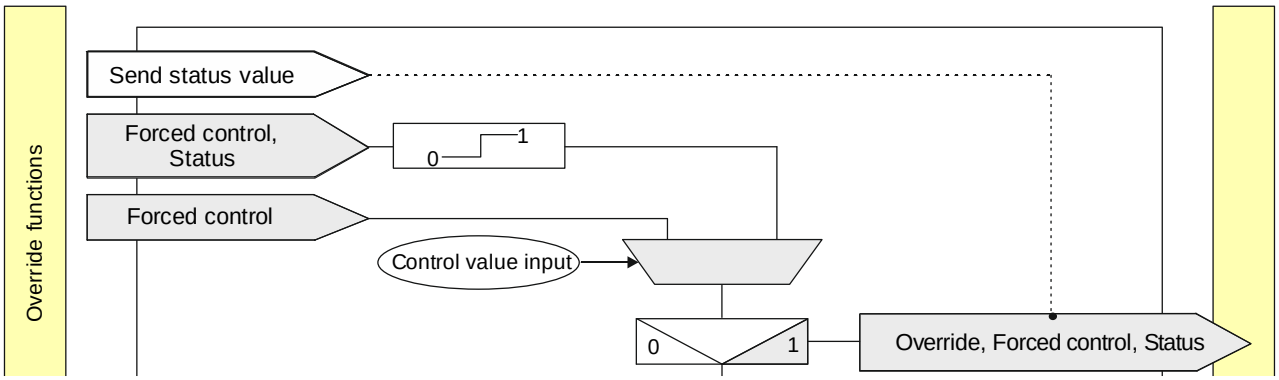


Fig. 17 Forced control

07 B0 A4 Universal dimmer 4-fold 9A0401

7.5.9.2 Communication objects for the override “forced control”

No.	Object name	Function	Data point type	Flags
31	**A Override 1, forced control**	On/off	2.001 prio. Switching	CW

Function:

This 2-bit communication object enables forced switching on to a configured value and forced switching off irrespective of the upstream sub-functions.

The following settings are possible:

Bit 1	Bit 0	Function
0	0	Forced control not active
0	1	Forced control not active
1	0	Forcibly switched off
1	1	Forcibly switched on

Availability:

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

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).

07 B0 A4 Universal dimmer 4-fold 9A0401

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

Parameter	Settings
Value on 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.	
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 Universal dimmer 4-fold 9A0401

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:** ➲ *7.6 Status*	
Start value / behavior of override input on bus voltage recovery	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, forced control” when bus voltage is recovered. The following settings are possible: • **Activated – switched off** If this parameter is set, 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, 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 stored value in case of bus voltage failure.	

07 B0 A4 Universal dimmer 4-fold 9A0401

7.6 Status

7.6.1 "Status" process diagram

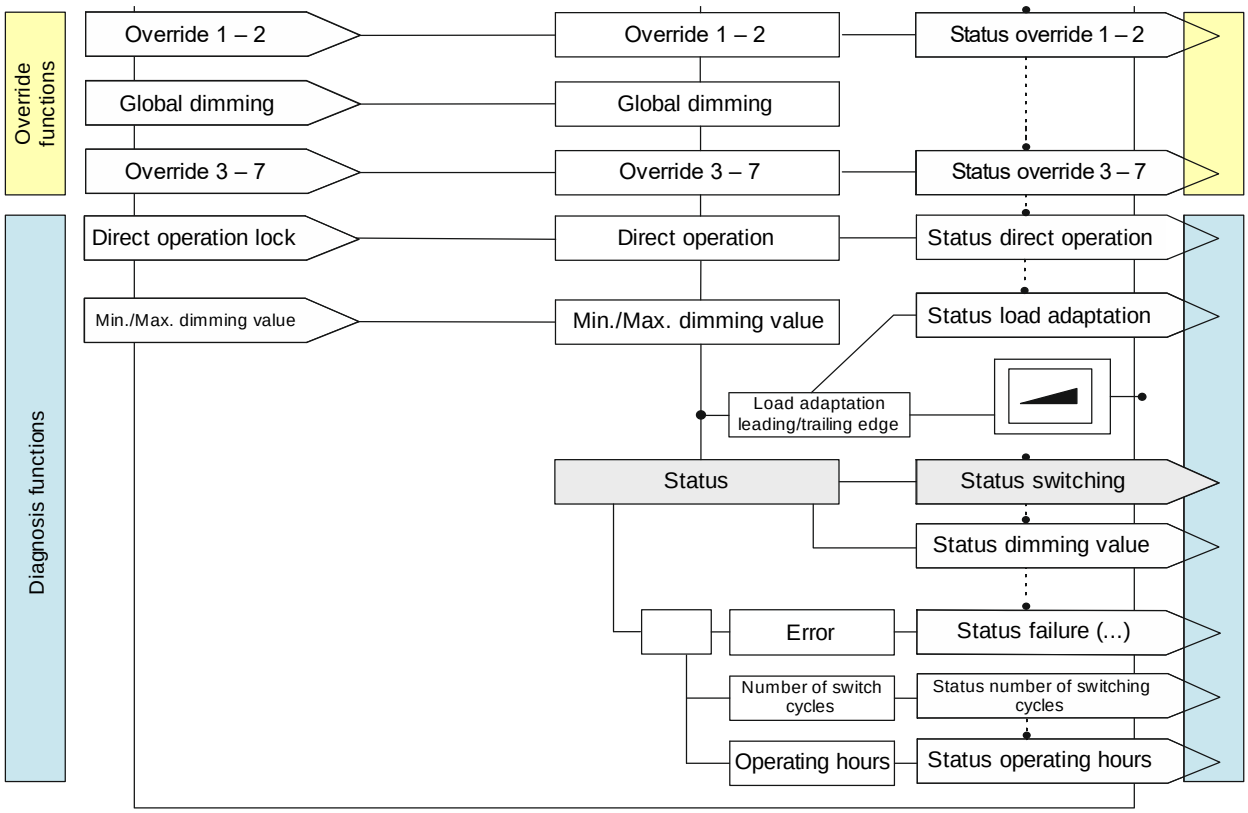


Fig. 18 Status

7.6.2 Communication objects for status

No.	Object name	Function	Data point type	Flags
10	**A Status switching**	On/off	1.000 switches	CRT

Function:

In the "status switching" communication object, the current switching status 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."

07 B0 A4 Universal dimmer 4-fold 9A0401

No.	Object name	Function	Data point type	Flags
11	**A Status dimming value**	8-bit value	5.001 percent (0...100 %)	CRT
Function: This object can be used, depending on the selected parameter setting, 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).				
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).				

07 B0 A4 Universal dimmer 4-fold 9A0401

No.	Object name	Function	Data point type	Flags
44	**A Override 4, [type of override], status**	On/off	1.002 Boolean	CRT

Function:

This status object is used to report that override 4 is active.

Availability:

The communication object “override 4, [type of override], status” is only displayed if the parameter “status override” is set to “enabled” (“override 4, [type of override]” parameter card).

No.	Object name	Function	Data point type	Flags
48	**A Override 5, [type of override], status**	On/off	1.002 Boolean	CRT

Function:

This status object is used to report that override 5 is active.

Availability:

The communication object “override 5, [type of override], status” is only displayed if the parameter “status override” is set to “enabled” (“override 5, [type of override]” parameter card).

No.	Object name	Function	Data point type	Flags
52	**A Override 6, [type of override], status**	On/off	1.002 Boolean	CRT

Function:

This status object is used to report that override 6 is active.

Availability:

The communication object “override 6, [type of override], status” is only displayed if the parameter “status override” is set to “enabled” (“override 6, [type of override]” parameter card).

No.	Object name	Function	Data point 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).

07 B0 A4 Universal dimmer 4-fold 9A0401

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

Function:

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

Availability:

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

More information:

➲ *7.5 Overrides*

No.	Object name	Function	Data point type	Flags
60	**A Status direct operation**	On/off	1.002 Boolean	CRT

Function:

This status 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:

➲ *7.10 Direct operation*

No.	Object name	Function	Data point type	Flags
63	**A Number of switching cycles**	Value (in cycles)	12.001 counting impulses (without prefix)	CRT

Function:

This communication object can be used to request the number of 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 “counting of switching cycles” is only displayed if the parameter “counting of switching cycles” is set to "enabled” (“functions, objects” parameter card).

More information:

➲ *7.7 Counting of switching cycles*

07 B0 A4 Universal dimmer 4-fold 9A0401

No.	Object name	Function	Data point 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 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 additionally the parameter “threshold monitoring” (on the counting of switching cycles parameter card) is set to “enabled.”

No.	Object name	Function	Data point 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 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:

➲ *7.8 Counting of operating hours*

No.	Object name	Function	Data point 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 operating duration of the output (i.e. how many seconds the output was 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:

➲ *7.8 Counting of operating hours*

07 B0 A4 Universal dimmer 4-fold 9A0401

No.	Object name	Function	Data point 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 operating hours counting 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.”

80	**A Status failure channel**	1 = Failure	1.002 Boolean	CRT

Function:

The communication object “status failure channel” is used to report the failure of a channel (e.g. through lacking voltage or a defective output).

Availability:

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

81	**A Status failure over temperature**	1 = Failure	1.002 Boolean	CRT

Function:

This communication object is used to report the failure of a channel due to overtemperature.

Availability:

The communication object “status failure over temperature” is only displayed if the parameter “status failure channel” is set to “enabled” (“functions, objects” parameter card).

82	**A Status failure overload**	1 = Failure	1.002 Boolean	CRT

Function:

This communication object is used to report the failure of a channel when the channel fails due to an excessive connected load.

Availability:

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

07 B0 A4 Universal dimmer 4-fold 9A0401

No.	Object name	Function	Data point type	Flags
83	**A Status failure short circuit**	1 = Failure	1.002 Boolean	CRT

Function:

This communication object is used to report the failure of a channel due to a short circuit.

Availability:

The communication object “status failure short circuit” is only displayed if the parameter “status failure short circuit” is set to “enabled” (“functions, objects” parameter card).

7.6.3 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 Universal dimmer 4-fold 9A0401

Parameter	Settings
Send status cyclically	**12:00:00 AM** [00:00:00...6:12:15 PM]

Function:

This parameter can be used to set the time interval at which the value of the status object is sent cyclically.

With the setting "00:00:00" cyclical transmission is deactivated.

Availability:

The communication object "send status cyclically" is only displayed if the respective parameter "status ..." is set to "enabled."

7.6.4 Parameters for 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 ➲ *7.6.3 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:

➲ *7.5 Overrides*

07 B0 A4 Universal dimmer 4-fold 9A0401

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 status object is used to report whether direct operation is active.

Availability:

The communication object “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 ➲ *7.6.3 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:

➲ *7.10 Direct operation*

Parameter	Settings
Status switching	Disable **Enable**

Function:

This parameter is used to define whether the communication object “status switching” is available. This status object can be used, for example, to display the current switching status 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 ➲ *7.6.3 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.

07 B0 A4 Universal dimmer 4-fold 9A0401

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 ➲ *7.6.3 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
Status failure channel	**Disable** Enable

Function:

This parameter is used to activate or deactivate the communication object "status failure channel." This communication object is used to report the failure of a channel (e.g. through lacking voltage or a defective output).

Other parameters:

If the parameter "status failure channel" is set to "enabled," parameters are displayed with which it is possible to set when a status is sent ➲ *7.6.3 Parameters that are visible if the parameter "status ..." is set to "enabled".*

Communication object:

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

07 B0 A4 Universal dimmer 4-fold 9A0401

Parameter	Settings
Status failure over temperature	**Disable** Enable

Function:

This parameter is used to activate or deactivate the communication object “status failure over temperature.” This communication object is used to report the failure of a channel due to overtemperature.

Other parameters/parameter cards:

If the parameter “status failure over temperature” is set to “enabled,” parameters are displayed with which it is possible to set when a status is sent ➲ *7.6.3 Parameters that are visible if the parameter “status ...” is set to “enabled”*.

Communication object:

If the parameter “status failure over temperature” is set to “enabled,” the communication object “status failure over temperature” is displayed.

Parameter	Settings
Status failure overload	**Disable** Enable

Function:

This parameter is used to activate or deactivate the communication object “status failure overload.” This communication object is used to report the failure of a channel when the channel fails due to an excessive connected load.

Other parameters/parameter cards:

If the parameter “status failure overload” is set to “enabled,” parameters are displayed with which it is possible to set when a status is sent ➲ *7.6.3 Parameters that are visible if the parameter “status ...” is set to “enabled”*.

Communication object:

If the parameter “status failure overload” is set to “enabled,” the communication object “status failure over temperature” is displayed.

07 B0 A4 Universal dimmer 4-fold 9A0401

Parameter	Settings
Status failure short circuit	**Disable** Enable

Function:

This parameter is used to activate or deactivate the communication object "status failure short circuit." This communication object is used to report the failure of a channel due to a short circuit.

Other parameters/parameter cards:

If the parameter "status failure short circuit" is set to "enabled," parameters are displayed with which it is possible to set when a status is sent ➲ *7.6.3 Parameters that are visible if the parameter "status ..." is set to "enabled".*

Communication object:

If the parameter "status failure overload" is set to "enabled," the communication object "status failure short circuit" is displayed.

Parameter	Settings
Counting of switching cycles	**Disable** Enable

Function:

This parameter can be 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:

➲ *7.7 Counting of switching cycles*

07 B0 A4 Universal dimmer 4-fold 9A0401

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 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 switching cycles" is set to "enabled," the communication objects "counting of switching cycles" and "counting of switching cycles – set value" are displayed.

7.6.5 Parameters for the status on the parameter card "override x, [type of override]"

Parameter	Settings
Status override	**Disable** Enable

Function:

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

Other parameters:

If the parameter "status override" is set to "enabled," additional parameters for sending the status of the override are displayed ➲ *7.6.3 Parameters that are visible if the parameter "status ..." is set to "enabled"*.

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

Parameter	Settings
Threshold monitoring	**Disable** Enable
Function: This parameter can be 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 ➲ *7.6.3 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.	

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

Parameter	Settings
Threshold monitoring	**Disable** Enable
Function: This parameter can be 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 ➲ *7.6.3 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.	

7.7 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 ➲ *7.9 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). So it a new threshold is received or the counter value is reset, the threshold exceedance is only sent if a change to the object for threshold monitoring occurs as a result. If the counter object has reached its maximum value (4 294 967 295), it remains at this value until 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.

7.7.1 Process diagram for the counting of switching cycles

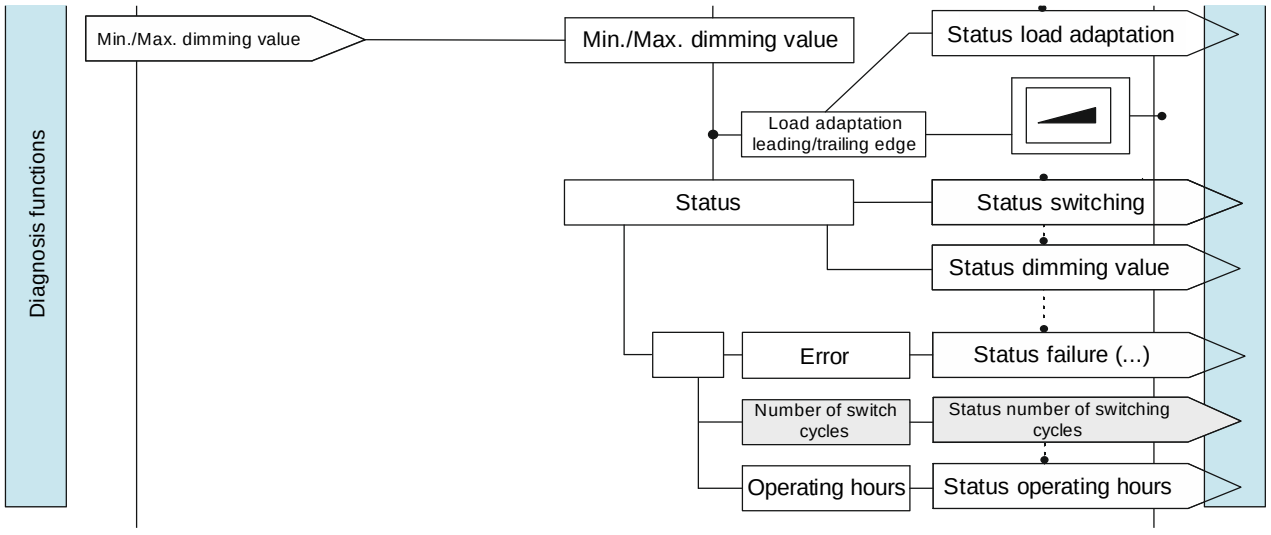


Fig. 19 Counting of switching cycles (overview)

07 B0 A4 Universal dimmer 4-fold 9A0401

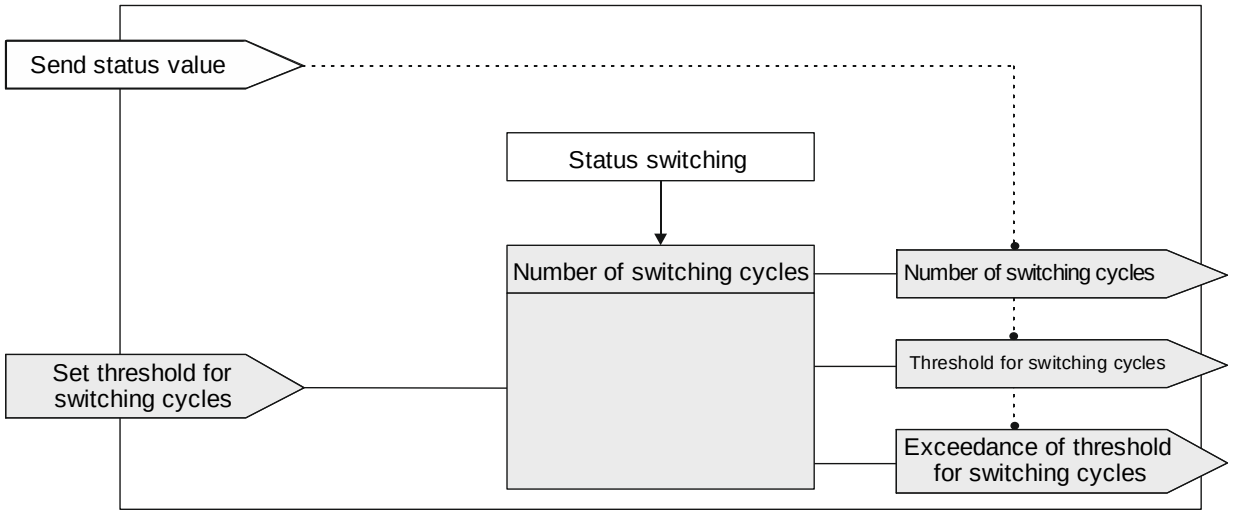


Fig. 20 Counting of switching cycles (details)

7.7.2 Communication objects for switching cycle counting

Obj	Object name	Function	Data point type	Flag
63	**A Number of switching cycles**	Value (in cycles)	12.001 counting impulses (without prefix)	CRT
Function: This communication object can be used to request the number of 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 “counting 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 (in cycles)	12.001 counting impulses (without prefix)	CW
Function: This communication object can be used to set the value for switching cycle counting for the output to an integer value in the range from 0 to 4 294 967 295 via the bus. **Availability:** The communication object “counting of switching cycles” is only displayed if the parameter “counting of switching cycles” is set to "enabled” (“functions, objects” parameter card).				

07 B0 A4 Universal dimmer 4-fold 9A0401

Obj	Object name	Function	Data point type	Flag
65	**A Threshold for switching cycles**	Set/request value (in cycles)	12.001 counting impulses (without prefix)	CRW

Function:

This communication object can be used to read and set the threshold value for switching cycle counting for the output to an integer value in the range from 1 to 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	Data point 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 additionally the parameter "threshold monitoring" (on the counting of switching cycles parameter card) is set to "enabled."

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

Parameter	Settings
Counting of switching cycles	**Disable** Enable

Function:

This parameter can be 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:

➲ *7.7 Counting of switching cycles*

7.7.4 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 “counting of switching cycles” is sent upon request of whether requests for the status value will be rejected. The request is triggered via the communication object “send status values.”	
Send status on change of status	**Disable** Enable
Function: This parameter can be used to set whether the value of the communication object “counting 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 “number of switching cycles” required to trigger a new transmission of the value. **Note:** The configurable value “0” is interpreted as “1.” **Availability:** The parameter “value change since last sent (cycles)” is only displayed if the parameter “send status on change of status” is set to “enabled.”	

07 B0 A4 Universal dimmer 4-fold 9A0401

Parameter	Settings
Send status cyclically	**12:00:00 AM** [00:00:00...6:12:15 PM]
Function: This parameter can be used to set the time interval at which the value of the communication object "number of switching cycles" is sent cyclically.	
Threshold monitoring	**Disable** Enable
Function: This parameter can be 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 ➲ *7.6.3 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," when the threshold is reached or exceeded, a telegram is sent to the bus via the communication object "exceedance of threshold for switching cycles." **Availability:** The communication object "threshold for switching cycles" is only displayed if the parameter "threshold monitoring" is set to "enabled."	

7.8 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). So it a new threshold is received or the counter value is reset by writing to the object, the threshold exceedance is only sent if a change to the object for threshold monitoring occurs as a result. If the counter object has reached its maximum value (4 294 967 295), it remains at this value until 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 of operating hours counting 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."

7.8.1 Process diagram for counting of operating hours

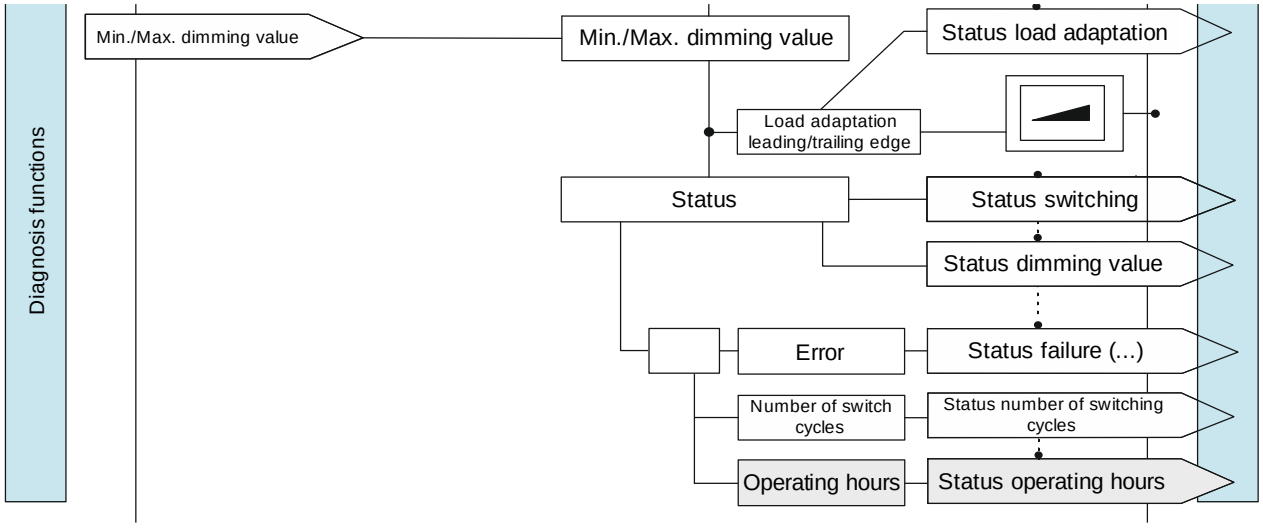


Fig. 21 Counting of operating hours (overview)

07 B0 A4 Universal dimmer 4-fold 9A0401

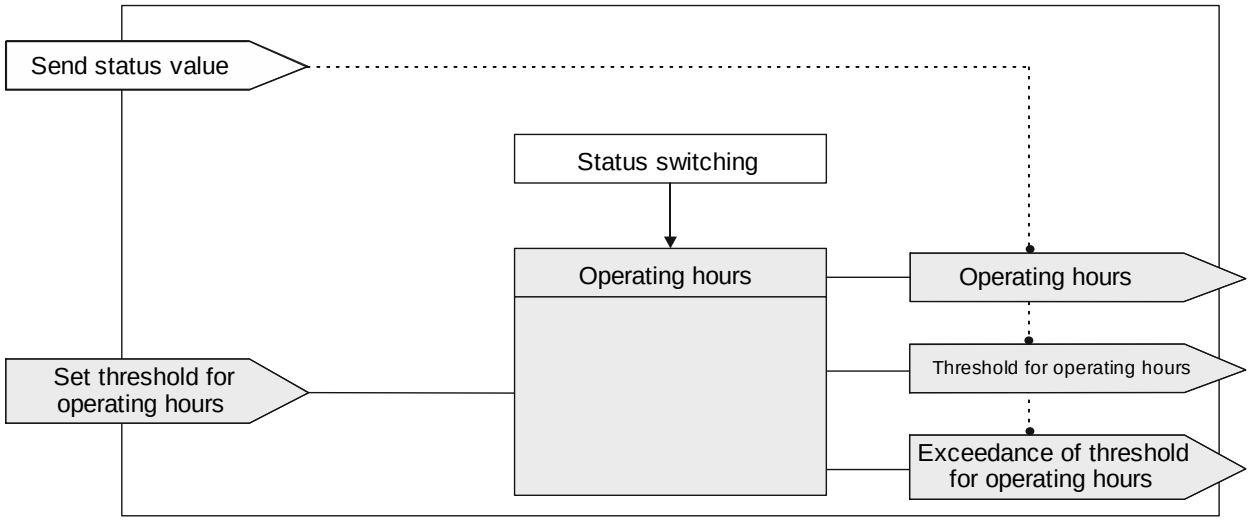


Fig. 22 Counting of operating hours (details)

7.8.2 Communication objects for counting of operating hours

Obj	Object name	Function	Data point 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 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."

Obj	Object name	Function	Data point 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 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 Universal dimmer 4-fold 9A0401

Obj	Object name	Function	Data point 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 operating hours counting for the output to an integer value in the range from 0 to 4 294 967 295 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).				
70	**A Threshold for operating hours**	Set/request value	12.001 counting impulses (without prefix)	CRW
Function: This communication object can be used to transmit and read the threshold value for operating hours counting for the output to an integer value in the range from 1 to 4 294 967 295 via the bus to the dimmer. 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.”				
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 operating hours counting 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.”				

07 B0 A4 Universal dimmer 4-fold 9A0401

7.8.3 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 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 switching cycles” is set to “enabled,” the communication objects “counting of switching cycles” and “counting of switching cycles – set value” are displayed.	

7.8.4 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 can be 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.”	

07 B0 A4 Universal dimmer 4-fold 9A0401

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	**12:00:00 AM** [00:00:00...6:12:15 PM]
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 Universal dimmer 4-fold 9A0401

Parameter	Settings
Threshold monitoring	**Disable** Enable
Function: This parameter can be 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 ➲ *7.6.3 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 set a threshold value for the respective output. If the parameter "threshold monitoring" is set to "enabled," when the threshold is reached or exceeded, a telegram is sent to the bus via the communication object "exceedance of threshold for operating hours." **Note:** The threshold is specified in whole hours, even if the parameter "counting of operating hours in" is set to "seconds." **Availability:** The communication object "threshold for operating hours" is only displayed if the parameter "threshold monitoring" is set to "enabled."	

7.9 Warning before switching Off

7.9.1 Communication object for “warning before switching off”

No.	Object name	Function	Data point type	Flags
27	**A Pre-warning expiration of timer period**	On/off	1.000 switches	CRT

Operating modes:

- Normal mode (if the parameter “night mode” is set to “enabled.”
- Timer mode
- Time 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 trigger 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.”

7.9.2 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.”

07 B0 A4 Universal dimmer 4-fold 9A0401

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

Function:

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

- **"No":**
  The output is immediately switched off without a warning.

With the following parameter settings, the output is not immediately permanently switched off. If the output for the lighting control is used, a user is pre-warned and has enough time to extend the ON time of the lighting or to turn it back on.

- **"Via briefly switching on - off":**
  The output is switched off for the configurable warning signal period (default: 1 second) 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 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 be greater than the warning period as otherwise no warning is issued!
- **"Via briefly switching on - off and via communication object":**
  This option combines the options "via briefly switching on - off" and "via communication object."
- **"Dim to half dimming value":**
  With this option the output is dimmed down to half the dimming value upon expiry of the ON time. If within the warning period the output is switched back on e.g. via the object "switching," the timer begins again. Otherwise the output switches off.
  During the warning, the status dimming value remains unchanged.
- **"Dim to half dimming value and via communication object"**
  This option combines the options "dim to half dimming value" and "via communication object." During the warning, the status dimming value remains unchanged.

Other parameters/parameter cards:

Depending on the selected option, the following parameters "warning period" and "warning signal period" are also displayed.

07 B0 A4 Universal dimmer 4-fold 9A0401

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 “dim to half dimming value and via communication object,” the communication object “pre-warning expiration of timer period” is displayed.	
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	**12:00:01 AM** [00:00:00...18:12:15]
Function: This parameter can be 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: 1 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 be greater than the warning period as otherwise no warning is issued!	

07 B0 A4 Universal dimmer 4-fold 9A0401

7.10 Direct operation

In direct operation, the dimmer can be controlled via the buttons on the dimmer; this allows the installer, for example, to check whether the dimmer was correctly installed.

7.10.1 Process diagram for direct operation

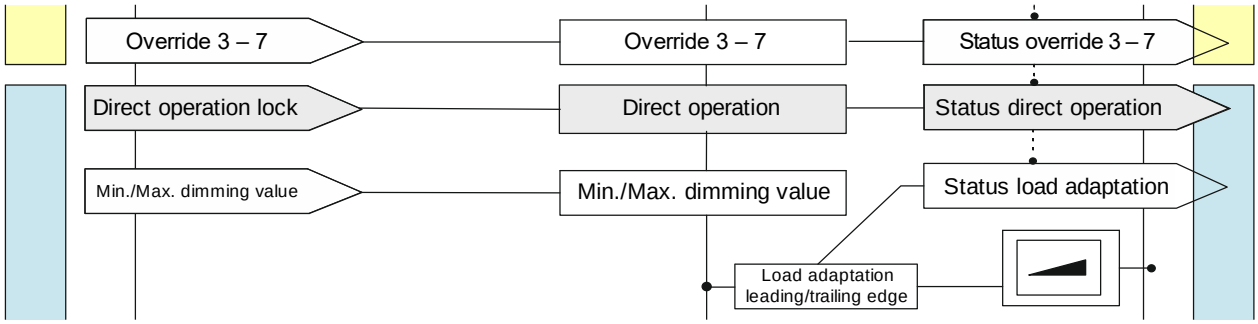


Fig. 23 Direct operation

7.10.2 Communication objects for direct operation

No.	Object name	Function	Data point 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.

07 B0 A4 Universal dimmer 4-fold 9A0401

No.	Object name	Function	Data point type	Flags
60	**A Status direct operation**	On/off	1.002 Boolean	CRT

Function:

This status 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).

7.10.3 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 dimmer 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 ➲ *7.6.3 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.

07 B0 A4 Universal dimmer 4-fold 9A0401

Parameter	Settings
Direct operation auto reset	**12:15:00 AM** [00:00:00...6:12:15 PM]
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 switched on on the dimmer, the dimmer 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.	
Status direct operation	**Disable** Enable
Function: This parameter is used to activate or deactivate the communication object for the status of direct operation. This status 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 ➲ *7.6.3 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.	

8 Graphic representation of output behavior of a channel with different parameter configurations

8.1 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”)
- Fade time for switching
- Minimum dimming value
- Maximum dimming value

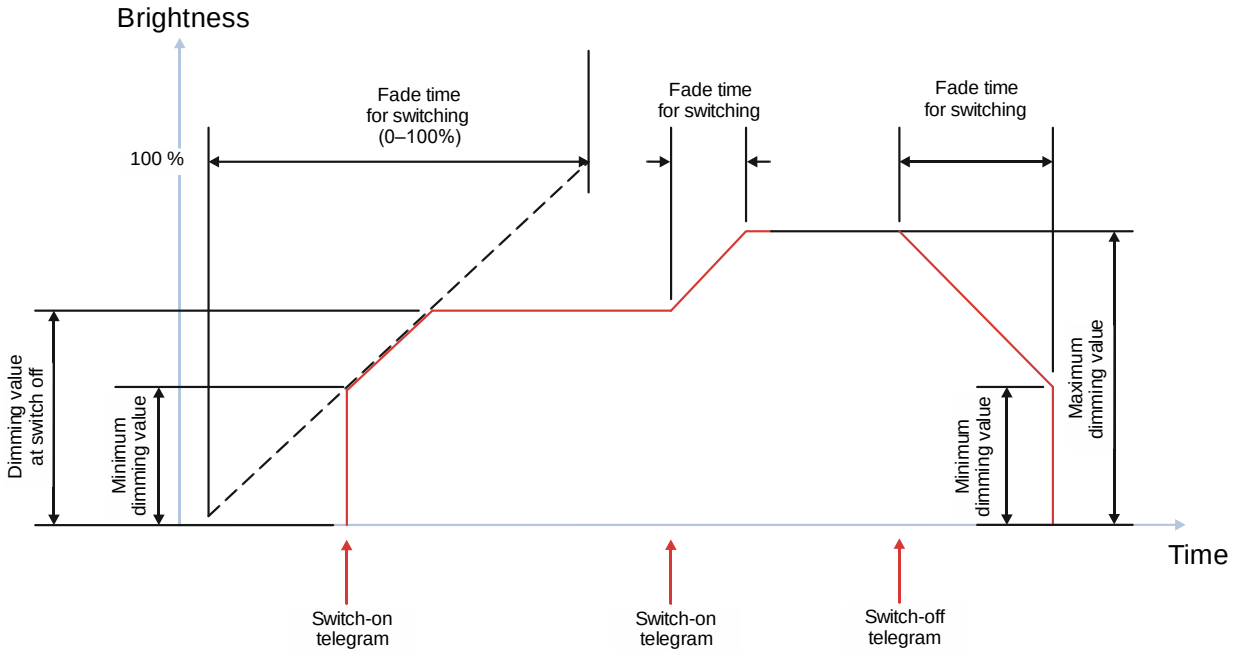


Fig. 24 Dimming curves with ON/OFF switching via the “switching” communication object

8.2 Dimming behavior via the communication object “dimming”

8.2.1 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”)
- Fade time for dimming
- Minimum dimming value
- Maximum dimming value

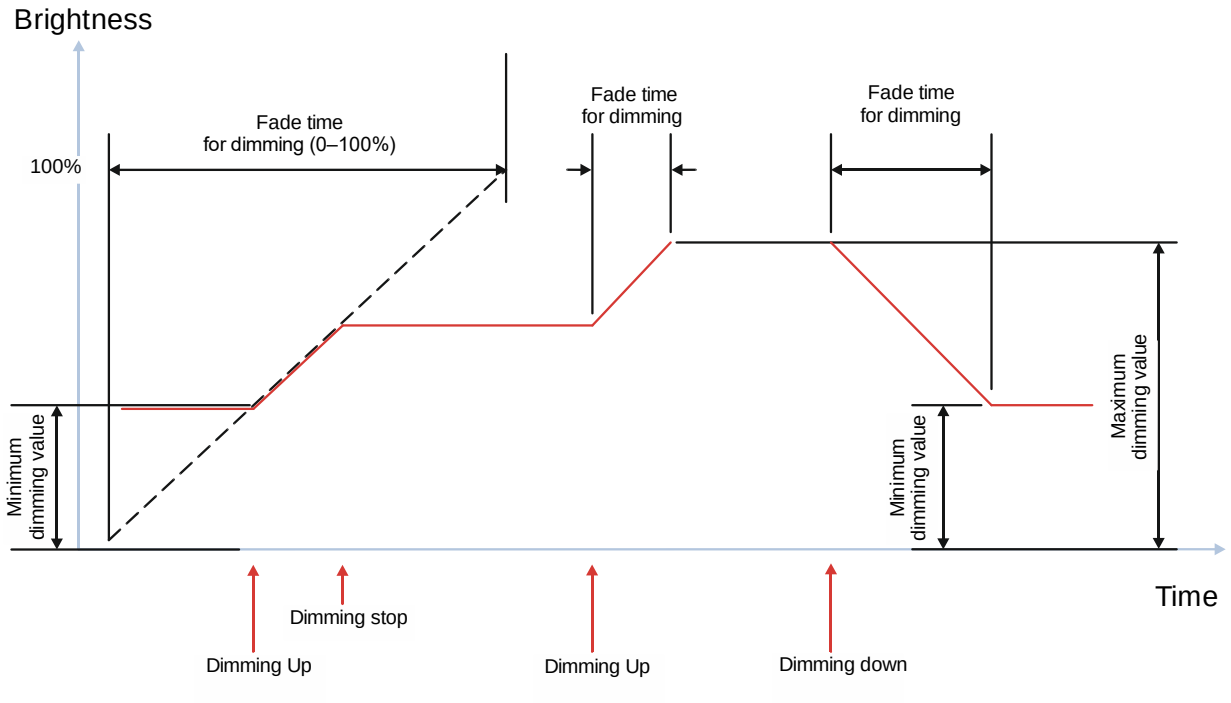


Fig. 25 Dimming via communication object “dimming” – On and Off not possible

8.2.2 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”)
- Fade time for dimming
- Minimum dimming value
- Maximum dimming value

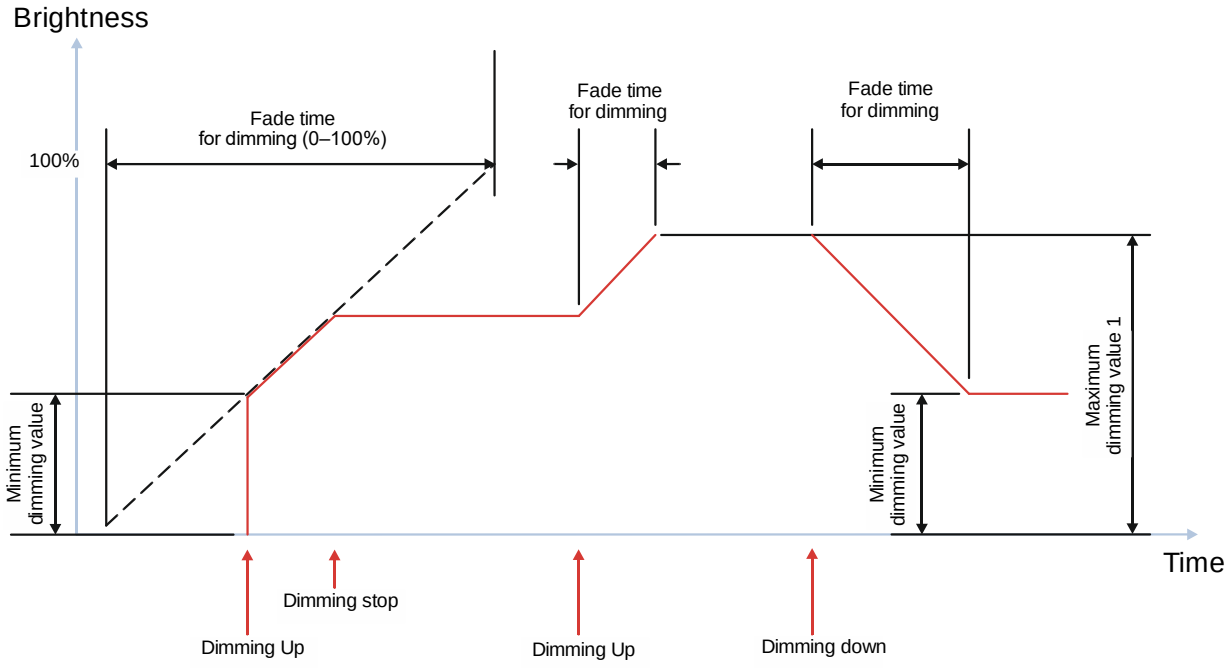


Fig. 26 Dimming via communication object “dimming” – On possible

8.2.3 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”)
- Fade time for dimming
- Minimum dimming value
- Maximum dimming value

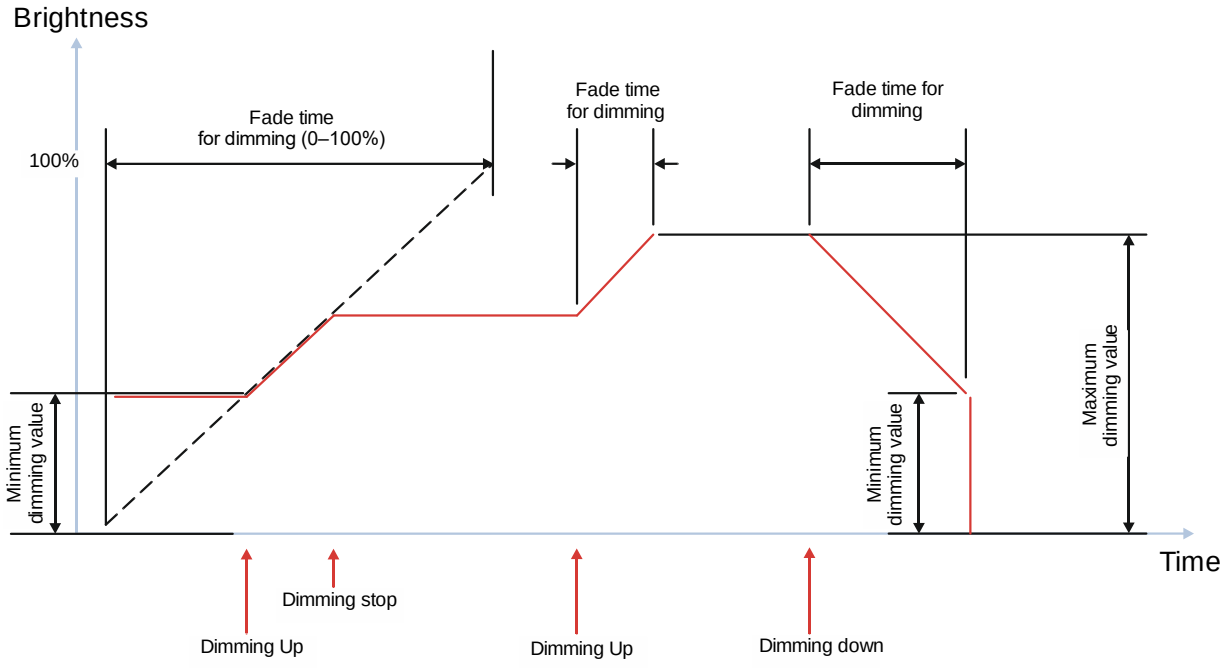


Fig. 27 Dimming via communication object “dimming” – Off possible

8.2.4 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”)
- Fade time for dimming
- Minimum dimming value
- Maximum dimming value

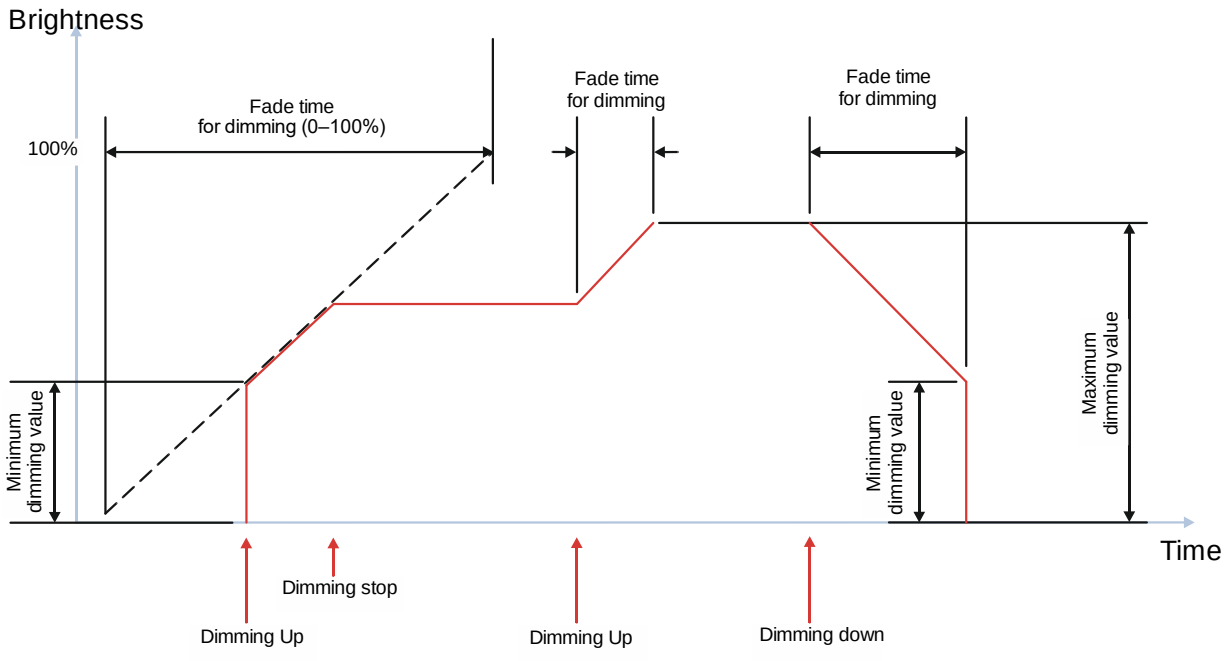


Fig. 28 Dimming via communication object “dimming” – On and Off possible

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

8.3.1 “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”)
- Fade time for dimming value 1
- Minimum dimming value
- Maximum dimming value

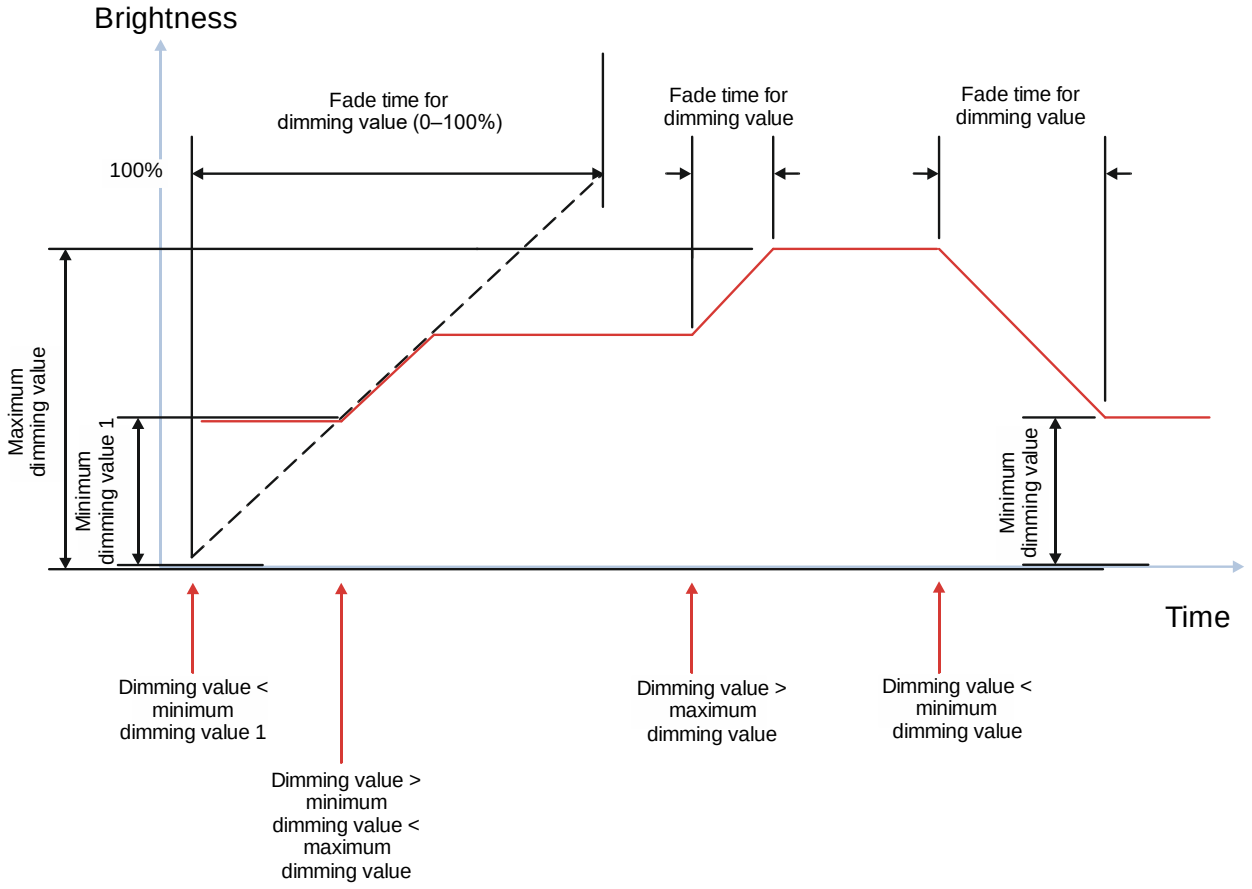


Fig. 29 Dimming behavior with dimming via communication object “dimming value 1”; “switching via dimming value 1” – “not possible.”

8.3.2 “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”)
- Fade time for dimming value 1
- Minimum dimming value
- Maximum dimming value

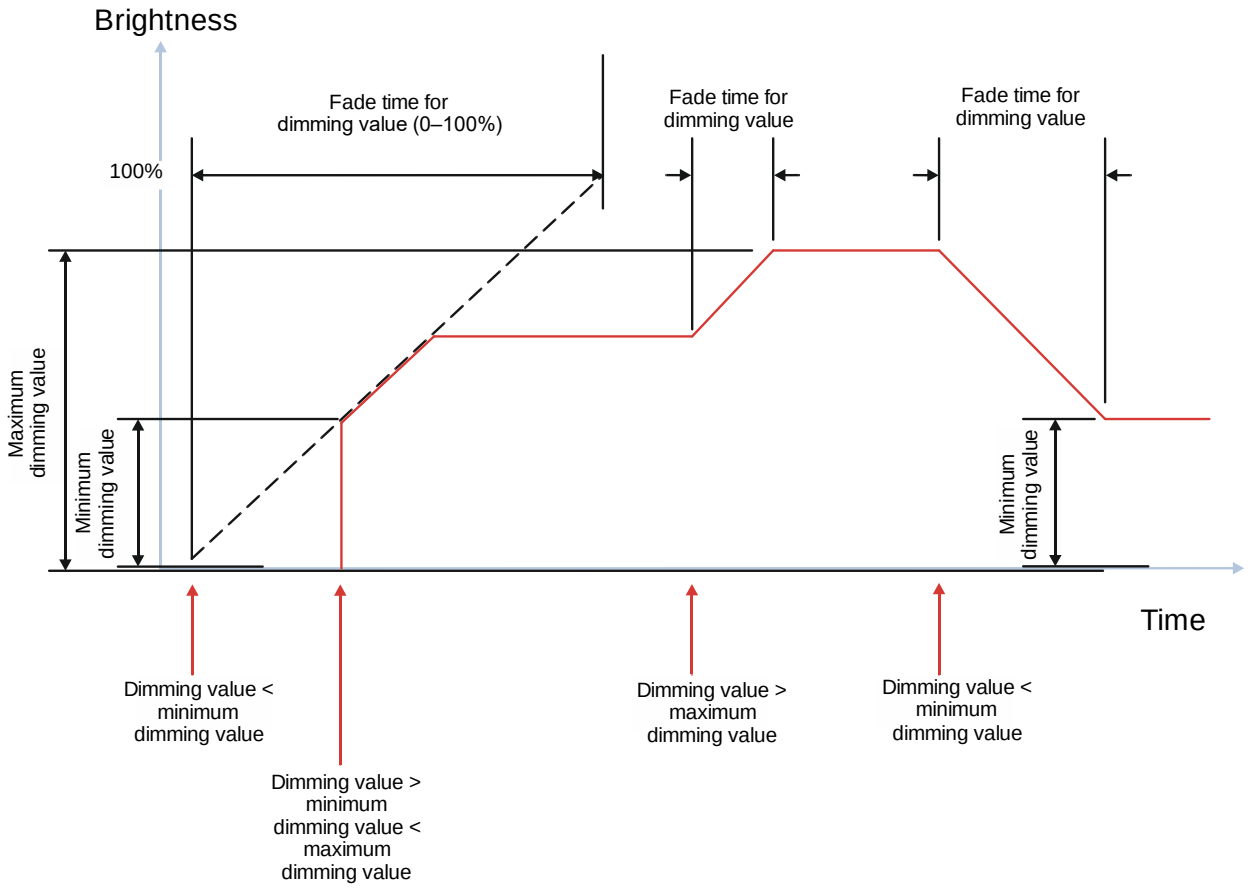


Fig. 30 Dimming behavior with dimming via communication object “dimming value 1”; “switching via dimming value 1” – “on, if dimming value >= min. dimming value.”

8.3.3 "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 "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")
- Fade time for dimming value 1
- Minimum dimming value
- Maximum dimming value

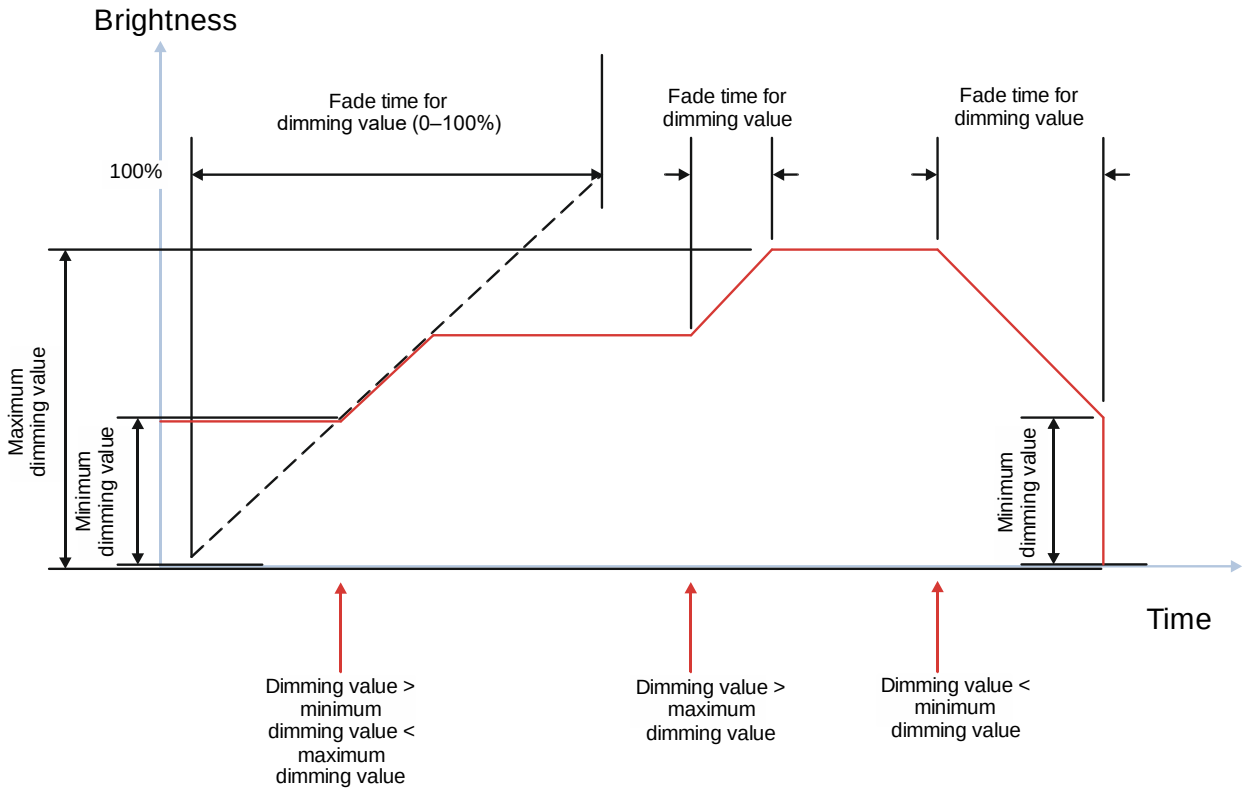


Fig. 31 Dimming behavior with dimming via communication object "dimming value 1"; "switching via dimming value 1" – "off, if dimming value <= min. dimming value"

8.3.4 “Switching via dimming value” – “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”)
- Fade time for dimming value 1
- Minimum dimming value
- Maximum dimming value

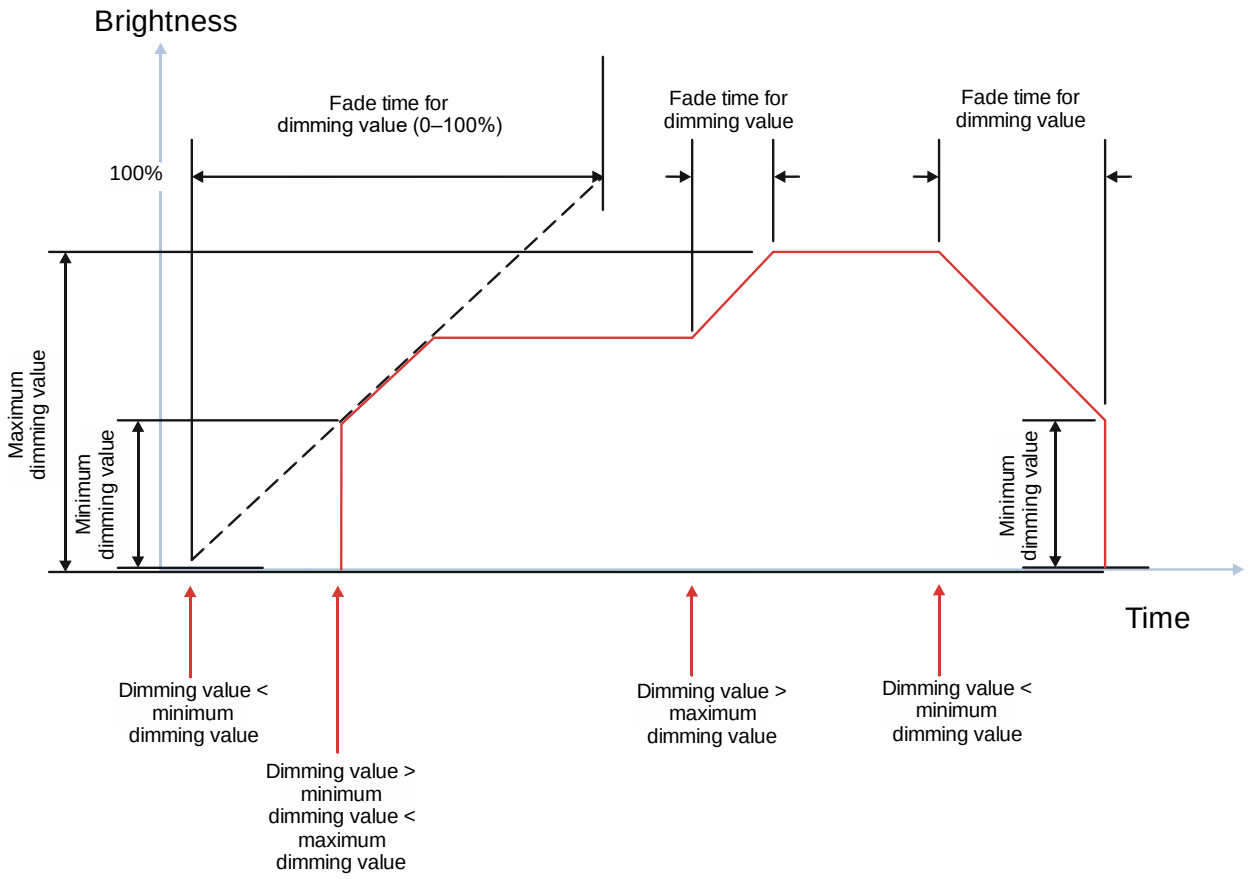


Fig. 32 Dimming behavior with dimming via communication object “dimming value 1”; “switching via dimming value 1” – “on and off possible”

8.3.5 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 %")
- Fade time for dimming value 1
- Minimum dimming value
- Maximum dimming value

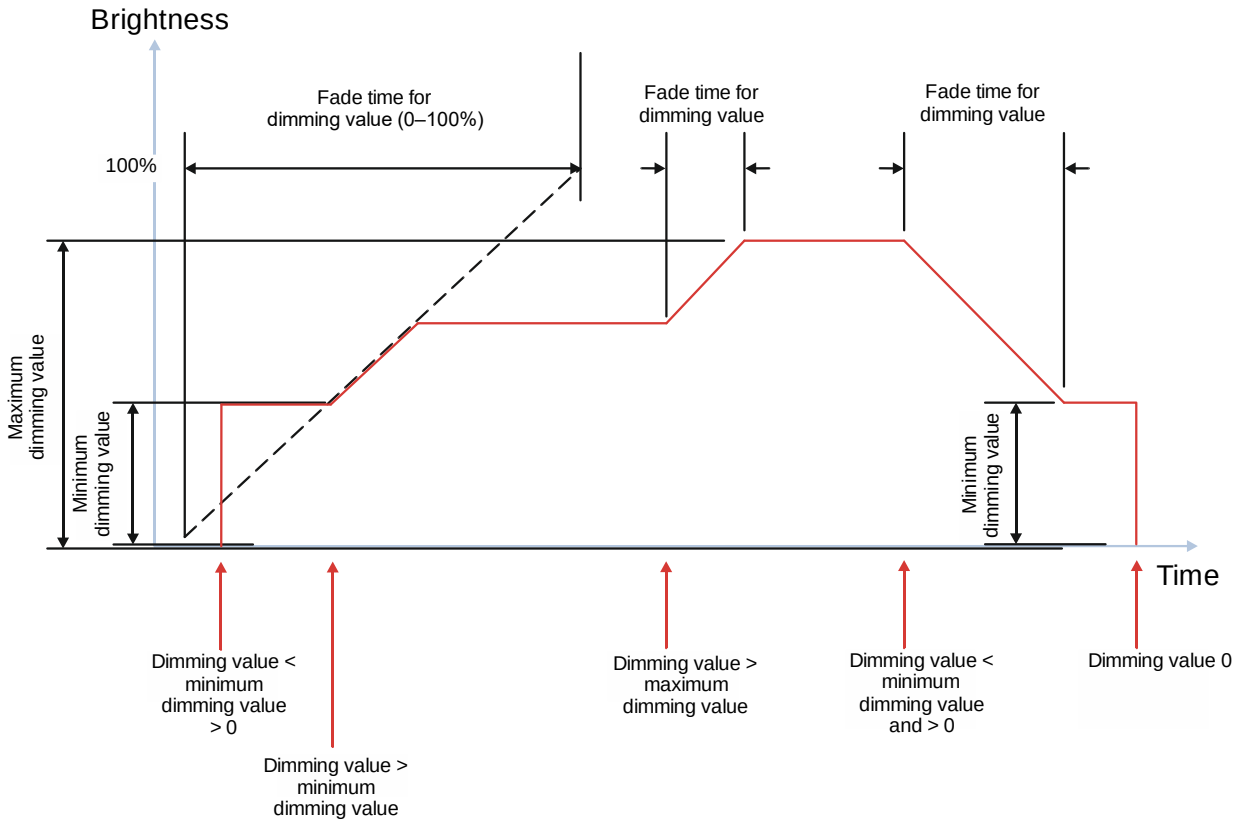


Fig. 33 Dimming behavior with dimming via communication object "dimming value 1"; "switching via dimming value 1" – "on, if dimming value > 0 %, off, if dimming value = 0 %"