

Technical Manual



MDT Blind Push Button Smart 55

BE–JTA5504.01

Further Documents:

Datasheets:

https://www.mdt.de/EN_Downloads_Datasheets.html

Assembly and Operation Instructions:

https://www.mdt.de/EN_Downloads_Instructions.html

Solution Proposals for MDT products:

https://www.mdt.de/EN_Downloads_Solutions.html

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2 Overview

2.1 Overview Devices

The description refers to the following units (order number printed in bold):

- **BE-JTA5504.01** with colour display, white glossy finish
 - Version with 4 push-button surfaces and integrated time switch

2.2 Special features

Active colour display

The devices have an active colour display. The brightness of the display can be continuously adjusted via various objects. The presentation of the background colour can be set to white or black for Day or Night operation, depending on the customer's requirements.

Direct operating functions via buttons on the unit

Four buttons are available on each unit. The two upper buttons are permanently set to blind and shutter control. The two lower buttons can be freely configured as individual buttons. Internal functions, such as locking the time switch, as well as external functions such as switching, dimming, blinds, sending values or status can be selected here.

Innovative group control

For button pair 1/2, it is possible with the function "Group control extra-long" to send telegrams via separate communication objects using an extra-long button press. This can be used for a group function, for example. With the long button press you move a single blind, with the extra-long button press you move all blinds in a room.

Integrated daily/weekly time switch with Astro switching function and automatic public holiday calculation

The time switch is a daily/weekly time switch and has an Astro switching function as well as an automatic public holiday calculation. Basically, the time switch can be used as a master and supplies all other participants with date and time. If a timer is already present in the KNX system, for example the IP interface with time server function (SCN-IP000.03), the time switch can operate in slave mode with the system time provided.

Up to 8 switching times are possible with the time switch. These can be executed daily or within the week on different days. In addition to selecting the day and time when a function is to be executed, additional mode settings and corresponding conditions can also be defined. For the mode, in addition to the normal standard parameter time, *sunrise*, *sunset*, *dawn*, *dusk* and *random* are available. In combination with the conditions *time shift (+/- up to 2 hours)*, *latest at*, *earliest at* or *with random +/- 10 min up to one hour*, a multitude of useful functions can be generated.

Astro switch function for convenient blind control

The sunrise and sunset times are calculated by means of the Astro function. The location is required, either as location information or by location coordinates, and the date by the time switch. Fine adjustments of the switching threshold of the sunrise and sunset times are possible via the parameter "*individual settings*" - "*sunrise/sunset*".

The automatic summertime/wintertime changeover can be set separately. This can be done via the general changeover within Europe, or there is the option of an individual setting.

Summertime	Month	Rule	Weekday	Time
Start time	March ▼	last ▼	Sunday ▼	02:00 ▼
End time	October ▼	last ▼	Sunday ▼	03:00 ▼

Shift 1 h 2 h

Settings menu

Via the settings menu, it is possible to make various settings directly on the push-button without the ETS software. For example, the time and date can be set manually or existing switching times can be changed.

Logic functions

With a total of 4 logic functions, nested function calls can also be realised. The logic function can process both internal and external status information.

Long Frame Support

Device supports the sending of longer telegrams and thus the storage of more user data per telegram. This significantly shortens the programming time (from ETS5).

Requirements: Use of a programming interface which supports the transmission of long frames, e.g. MDT SCN-USBR.02 or SCN-IP000.03 / SCN-IP100.03.

Updateable via DCA

With the help of the MDT Update Tool, the units can be updated if necessary. The download is available free of charge at www.mdt.de and www.knx.org.

2.3 Exemplary circuit diagram

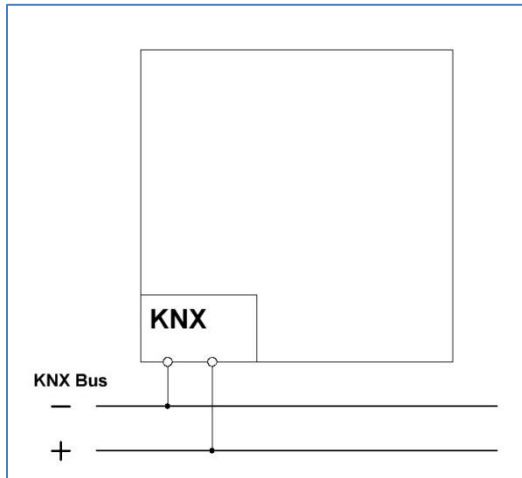


Figure 1: Exemplary circuit diagram

2.4 Structure & Handling

The following picture shows the structure of the Blind Push Button Smart 55:

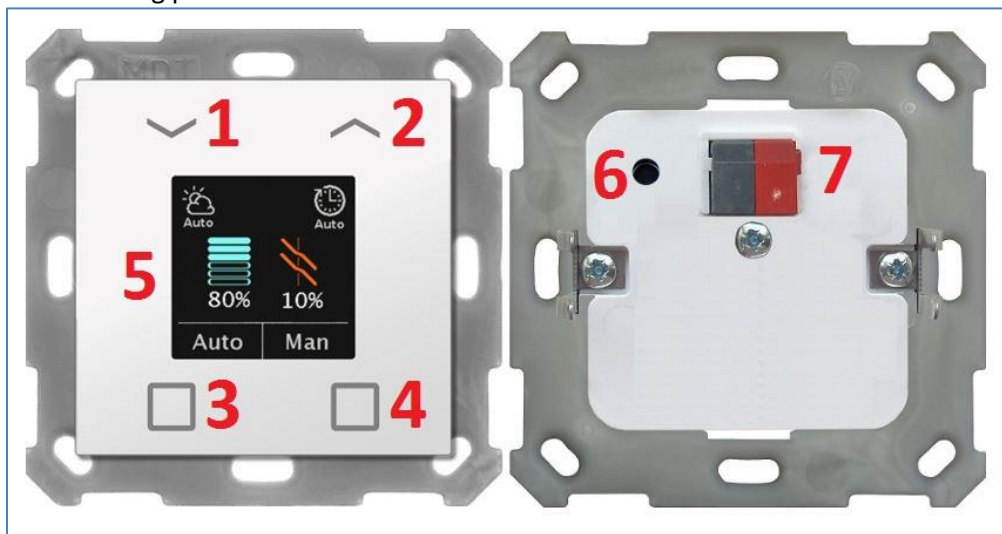


Figure 2: Structure & Handling

- | | | |
|------------|---|-----------------------------|
| 1, 2, 3, 4 | = | Operating buttons |
| 5 | = | Colour display |
| 6 | = | Programming button |
| 7 | = | KNX bus connection terminal |

2.5 Commissioning

After wiring, the allocation of the physical address and the parameterization of every channel follow:

- (1) Connect the interface with the bus, e.g. MDT USB interface.
- (2) Switch on the bus voltage.
- (3) Press the programming button at the device (Indication in the display flashes red alternately).
- (4) Loading the physical address from the ETS software via the interface (red flashing goes out as soon as this has been successfully completed).
- (5) Loading of the application, with requested configuration.
- (6) If the device is enabled you can test the requested functions (also possible by using the ETS-Software).

3 Communication objects

3.1 Standard settings of the communication objects

The following table shows the default settings for the communication objects:

Standard Settings– Buttons									
No.	Name	Object Function	Length	C	R	W	T	U	
1	Blinds/Shutter (Buttons 1/2):	Blinds Up/Down	1 Bit	X			X		
1	Blinds/Shutter (Buttons 1/2):	Shutter Up/Down	1 Bit	X			X		
1	Blinds/Shutter (Buttons 1/2):	Curtain Open/Close	1 Bit	X			X		
1	Blinds/Shutter (Buttons 1/2):	Awning In/Out	1 Bit	X			X		
2	Blinds/Shutter (Buttons 1/2):	Stop/Slats Open/Close	1 Bit	X			X		
2	Blinds/Shutter (Buttons 1/2):	Stop	1 Bit	X			X		
2	Blinds/Shutter (Buttons 1/2):	Stop/Step	1 Bit	X			X		
3	Blinds/Shutter (Buttons 1/2):	Status current position	1 Byte	X		X			
4	Blinds/Shutter (Buttons 1/2):	Status current position of slats	1 Byte	X		X			
5	Blinds/Shutter (Buttons 1/2 Group extra long):	Blinds Up/Down	1 Bit	X			X		
5	Blinds/Shutter (Buttons 1/2 Group extra long):	Shutter Up/Down	1 Bit	X			X		
5	Blinds/Shutter (Buttons 1/2 Group extra long):	Curtain Open/Close	1 Bit	X			X		
5	Blinds/Shutter (Buttons 1/2 Group extra long):	Awning In/Out	1 Bit	X			X		
6	Blinds/Shutter (Buttons 1/2 Group extra long):	Stop/Slats Open/Close	1 Bit	X			X		
6	Blinds/Shutter (Buttons 1/2 Group extra long):	Stop	1 Bit	X			X		
6	Blinds/Shutter (Buttons 1/2 Group extra long):	Stop/Step	1 Bit	X			X		
7	Blinds/Shutter (Buttons 1/2):	Lock buttons	1 Bit	X		X			
8	Blinds/Shutter:	Lock Shading	1 Bit	X			X		
8	Blinds/Shutter:	Enable Shading	1 Bit	X			X		
9	Blinds/Shutter:	Status “Lock Shading”	1 Bit	X		X			
9	Blinds/Shutter:	Status “Enable Shading”	1 Bit	X		X			
10	Blinds/Shutter:	Status Shading	1 Bit	X		X			
11	Blinds/Shutter:	Wind alarm	1 Bit	X		X			
12	Blinds/Shutter:	Frost alarm	1 Bit	X		X			
13	Blinds/Shutter:	Rain alarm	1 Bit	X		X			
14	Blinds/Shutter:	Lock status actuator	1 Bit	X		X	X	X	
15	Button 3:	Switch	1 Bit	X			X		
15	Button 3:	Toggle	1 Bit	X			X		

15	Button 3:	Dimming On/Off	1 Bit	X			X	
15	Button 3:	Blinds Up/Down	1 Bit	X			X	
15	Button 3:	Send state	1 Bit	X			X	
15	Button 3:	Send value	1 Byte	X			X	
15	Button 3:	Send percent value	1 Byte	X			X	
15	Button 3:	Send scene	1 Byte	X			X	
15	Button 3:	Absolute position	1 Byte	X			X	
15	Button 3 short:	Switch	1 Bit	X			X	
15	Button 3 short:	Toggle	1 Bit	X			X	
15	Button 3 short:	Send value	1 Byte	X			X	
15	Button 3 short:	Send percent value	1 Byte	X			X	
15	Button 3 short:	Send scene	1 Byte	X			X	
15	Button 3 short:	Absolute position	1 Byte	X			X	
16	Button 3:	Dim relative	4 Bit	X			X	
16	Button 3:	Slat adjustment/Stop	1 Bit	X			X	
16	Button 3:	Absolute position of slats	1 Byte	X			X	
16	Button 3:	Status for toggle	1 Bit	X		X	X	X
16	Button 3 short:	Absolute position of slats	1 Byte	X			X	
16	Button 3 short:	Status for display	1 Bit	X		X	X	X
16	Button 3 short:	Status for display	1 Byte	X		X	X	X
16	Button 3 short:	Status for toggle	1 Bit	X		X	X	X
17	Button 3:	Status for toggle	1 Bit	X		X	X	X
17	Button 3:	Status for change of direction	1 Bit	X		X	X	X
17	Button 3 long:	Switch	1 Bit	X			X	
17	Button 3 long:	Toggle	1 Bit	X			X	
17	Button 3 long:	Send value	1 Byte	X			X	
17	Button 3 long:	Send percent value	1 Byte	X			X	
17	Button 3 long:	Send scene	1 Byte	X			X	
17	Button 3 long:	Absolute position	1 Byte	X			X	
18	Button 3:	Status for display	1 Bit	X		X	X	X
18	Button 3:	Status for display	1 Byte	X		X	X	X
18	Button 3 long:	Status for display	1 Bit	X		X	X	X
18	Button 3 long:	Status for display	1 Byte	X		X	X	X
18	Button 3 long:	Status for toggle	1 Bit	X		X	X	X
18	Button 3 long:	Position slats	1 Byte	X			X	
19	Button 3:	Lock	1 Bit	X		X		
+5	Button 4							

Table 1: Communication objects – Standard settings: Buttons

Standard Settings – Time Switch									
No.	Name	Object Function	Length	C	R	W	T	U	
25	Time switch	Blinds Up/Down	1 Bit	X			X		
26	Time switch	Absolute position of blinds	1 Byte	X			X		
27	Time switch	Absolute position of slats	1 Byte	X			X		
28	Time switch	Lock	1 Bit	X		X			
28	Time switch	Enable Time switch	1 Bit	X		X			
28	Time switch	Object value lock	1 Byte 2 Byte 4 Byte	X		X			
29	Time switch	Status Lock	1 Bit	X	X		X		
30	Time switch	Activation of public holiday (for external logic)	1 Bit	X		X			
31	Time switch	Status public holiday	1 Bit	X	X		X		
32	Time switch	VisuControlEasy Interface	14 Byte	X		X	X	X	X

Table 2: Communication objects – Standard settings: Time switch

Standard Settings – General Objects									
No.	Name	Object Function	Length	C	R	W	T	U	
33	Operating	Output	1 Bit	X	X		X		
34	Push button operation	Output	1 Bit	X			X	X	
35	Presence	Input	1 Bit	X		X	X	X	
36	Day/Night	Day = 1 / Night = 0 Night = 1 / Day = 0	1 Bit	X		X	X	X	
37	Display	Brightness	1 Byte 2 Byte	X		X			
38	Time	Receive current value	3 Byte	X		X	X	X	
38	Time	Send current value	3 Byte	X	X		X		
38	Time	Receive (send) current value	3 Byte	X	X	X	X	X	
39	Date	Receive current value	3 Byte	X		X	X	X	
39	Date	Send current value	3 Byte	X	X		X		
39	Date	Receive (send) current value	3 Byte	X	X	X	X	X	
40	Time/Date	Receive current value	8 Byte	X		X	X	X	
40	Time/Date	Send current value	8 Byte	X	X		X		
40	Time/Date	Receive (send) current value	8 Byte	X	X	X	X	X	

Table 3: Communication objects – Standard settings: General Objects

Standard Settings – Logic								
No.	Name	Object Function	Length	C	R	W	T	U
41	Logic A	Input logic 1	1 Bit	X		X	X	X
42	Logic A	Input logic 2	1 Bit	X		X	X	X
43	Logic A	Input logic 3	1 Bit	X		X	X	X
44	Logic A	Input logic 4	1 Bit	X		X	X	X
45	Logic A	Output Switch	1 Bit	X	X		X	
		Ausgang Scene	1 Byte					
		Ausgang Value	1 Byte					
		Ausgang Percent value	1 Byte					
+ 5	next Logic							

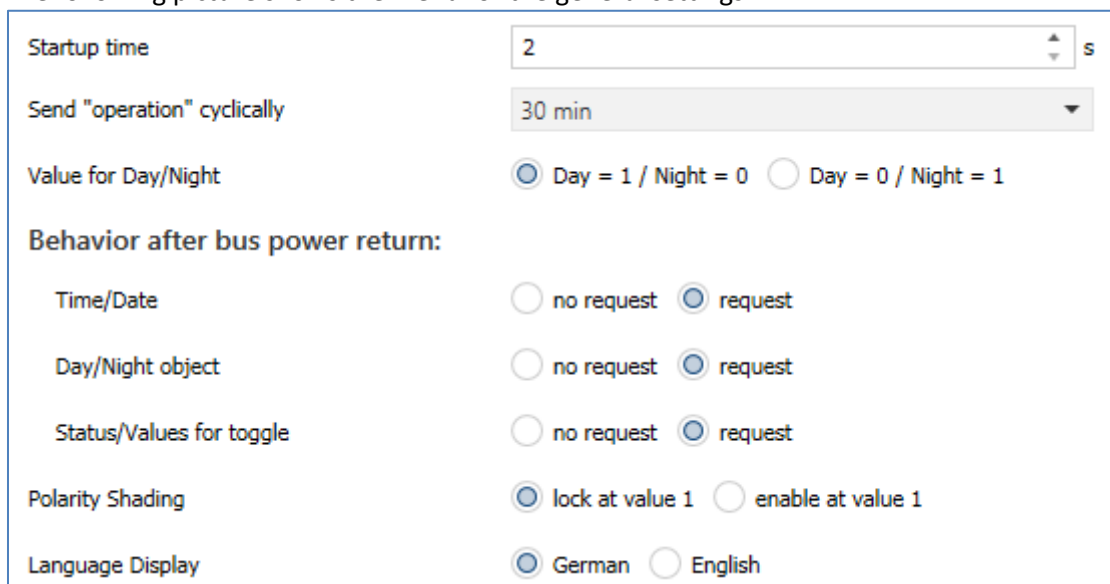
Table 4: Communication objects – Standard settings: Logic

The table above shows the preset default settings. The priority of the individual communications objects and the flags can be adjusted by the user as required. The flags assign the communication objects their respective tasks in programming, where C stands for communication, R for read, W for write, T for transmit and U for update.

4 Reference-ETS-Parameter

4.1 General Settings

The following picture shows the menu for the general settings:



Startup time: 2 s

Send "operation" cyclically: 30 min

Value for Day/Night: Day = 1 / Night = 0 Day = 0 / Night = 1

Behavior after bus power return:

Time/Date: no request request

Day/Night object: no request request

Status/Values for toggle: no request request

Polarity Shading: lock at value 1 enable at value 1

Language Display: German English

Figure 3: General Settings

The following table shows the possible settings:

ETS-Text	Dynamic range [Default value]	Comment
Startup time	2 – 240 s [2 s]	Sets the time between restart and functional start-up of the device
Send „Operation“ cyclically	not active 1 min – 24 h	Setting whether and at what interval a cyclical "In operation" telegram should be sent.
Value for Day/Night	<ul style="list-style-type: none"> ▪ Day = 1 / Night = 0 ▪ Day = 0 / Night = 1 	Sets the polarity for Day / Night switchover
Behavior after bus power return		
Time/Date	<ul style="list-style-type: none"> ▪ no request ▪ request 	Setting whether the values/objects should be requested automatically on bus voltage return.
Day/Night object	<ul style="list-style-type: none"> ▪ no request ▪ request 	
Status/Values for toggle	<ul style="list-style-type: none"> ▪ no request ▪ request 	
Polarity Shading	<ul style="list-style-type: none"> ▪ lock at value 1 ▪ enable at value 1 	Setting whether the Shading should be enabled or disabled with a "1".
Language Display	<ul style="list-style-type: none"> ▪ German ▪ English 	Setting the language for texts in the display

Table 5: General Settings

Startup time

This time defines when the unit "restarts" after a restart (reset, reprogramming, bus voltage recovery). This can be important when - Example 1 - a bus reset is carried out. If there are many units on a line, all units would start at the same time and load the bus. With a variable time, the units can start differently.

Example 2: If the Time/Date, Status/Values for toggle or Day/Night object are requested, it makes sense that the devices responsible for them start up first, and the Blind Push Button only a little later. This ensures that all values are available and correct.

Important: + 10s delay on the device start-up time for the time switch (lock, switching times etc.).

„Operation“

The "operation" telegram is used to show on the bus that the unit is "alive". If activated, an ON telegram is sent cyclically.

Value for Day/Night

The polarity for Day/Night is set here. Regardless of this polarity, the unit always starts in Day mode after reprogramming.

Polarity Shading

The polarity is defined here, whether the Shading is to be locked or enabled with a "1". This affects the symbol in the display. At the same time, make sure that the same polarity is selected on the shutter actuator.

Language Display

The language affects, among other things, the display of texts in the settings menu and in the table for setting the switching times.

The table shows the available communication objects:

Number	Name/Object Function	Length	Usage
8	Blinds/Shutter – Lock Shading	1 Bit	Sending a "1" to lock the Shading and a "0" to unlock it.
8	Blinds/Shutter – Enable Shading	1 Bit	Sending a "1" to enable the Shading and a "0" to disable it.
9	Blinds/Shutter – Status "Lock Shading"	1 Bit	Receiving the status from the shutter actuator
9	Blinds/Shutter – Status "Enable Shading"	1 Bit	Receiving the status from the shutter actuator
33	Operation – Output	1 Bit	Sending a cyclic "In operation" telegram
34	Push button operation – Output	1 Bit	Sends out a "1" when a button is actively pressed. A timeout of 30 sec. is started after each keystroke - no telegram is sent during this time!
36	Day/Night	1 Bit	Receiving the status for Day/Night
38	Time	3 Byte	Receiving the time
39	Date	3 Byte	Receiving the date
40	Time / Date	8 Byte	Receiving time and date via a common object

Table 6: Communication objects – General settings

4.2 Time and astro settings

The following figure shows the menu for the time and astro settings:

System time mode	Slave (Master on failure) ▼
i Attention! Time for cyclic sending "slave" should be set equal to the time for cyclic sending "master".	
Send system time on failure cyclically per...	1 h ▼
Automatic activation of summertime	active (Europe) ▼
<hr/>	
Location determination by	<input type="radio"/> coordinates <input checked="" type="radio"/> place
Country	Germany ▼
Town	Engelskirchen ▼
Time difference from Universal Time (UTC + ...)	(UTC +01:00) Amsterdam, Berlin, Bern, Rome, Vienna ▼
Sunrise / Sunset	<input type="radio"/> standard <input checked="" type="radio"/> individual settings
Sunrise elevation angle	-0° 50' (-0,83°, Sunrise / Sunset) ▼
Sunset elevation angle	-0° 50' (-0,83°, Sunrise / Sunset) ▼
Dawn elevation angle	-6° 00' (-6°, civil twilight) ▼
Dusk elevation angle	-6° 00' (-6°, civil twilight) ▼

Figure 4: Time and astro settings

4.2.1 Time settings

The following table shows the possible settings:

ETS-Text	Dynamic range [Default value]	Comment
System time mode	<ul style="list-style-type: none"> ▪ Master ▪ Slave ▪ Slave (Master on failure) 	Setting according to which operating mode the time switch works.
Send system time cyclically every	not active 1 min – 24 h [1 h]	Only for operating mode "Master" . Defines the transmission intervals of the time.
Send system time cyclically on failure every	not active 1 min – 24 h [1 h]	Only for operating mode "Slave (Master on failure)" . Defines the transmission intervals of the time.
Automatic changeover of summertime	<ul style="list-style-type: none"> ▪ not active ▪ active (Europe) ▪ active (individual) 	Defines whether the clock should automatically change between summer and winter time.
Shift	<ul style="list-style-type: none"> ▪ 1 h ▪ 2 h 	Only shown for "active (individual)" . Setting the difference between summer and winter time.

Table 7: Settings – Time

When operating as a "Master", the system time is actively sent from the unit to the bus.

When selected as a "Slave", the unit receives the system time from another unit on the bus, for example via an MDT IP Interface/Router.

With the setting "Slave (Master on failure)", the unit is set as a slave. If the system time is not received from the external timer within a certain time, the unit becomes the "Master" and sends the current time cyclically to the bus.

Note! A time must be defined for the function. The time for cyclical transmission of the "Slave" should be set the same as the time for cyclical transmission of the "Master".

The "Automatic changeover of summertime" can be done in two ways. With the setting "active (Europe)" the changeover takes place automatically at the set times in spring and autumn. With the setting "active (individual)", the times can be set by the user. When activated, the following table appears and is then configured accordingly:

Summertime	Month	Rule	Weekday	Time
Start time	March ▼	last ▼	Sunday ▼	02:00 ▼
End time	October ▼	last ▼	Sunday ▼	03:00 ▼

Shift 1 h 2 h

Figure 5: Setting – Changeover summertime individual

Furthermore, it can be set whether the time shift should be 1 hour or 2 hours.

The table shows the objects relevant for date and time:

Number	Name/Object Function	Length	Usage
38	Time	3 Byte	Sending/receiving the time
39	Date	3 Byte	Sending/receiving the date
40	Time / Date	8 Byte	Sending/receiving time and date

Table 8: Communication objects – Time/Date

4.2.2 Astro settings

The following settings are possible for the astro function:

ETS-Text	Dynamic range [Default value]	Comment
Location determination by	<ul style="list-style-type: none"> ▪ coordinates ▪ place 	Defines how the location of the device should be determined.
Setting via place:		
Country	any country [Germany]	Setting of the country.
Town	any town [Engelskirchen]	Setting of the town.
Setting via coordinates:		
Latitude	<ul style="list-style-type: none"> ▪ north ▪ south 	Determining whether northern or southern latitude is to be counted.
Latitude in degrees [0° - 90°]	0° ... 90° [50°]	Determination of the latitude.
Latitude in minutes [0' - 59']	0' ... 59' [56']	Determination of the minutes.
Longitude	<ul style="list-style-type: none"> ▪ east ▪ west 	Determining whether east or west longitude is counted.
Longitude in degrees [0° - 180°]	0° ... 180° [6°]	Determination of the longitude.
Longitude in minutes [0' - 59']	0' ... 59' [57']	Determination of the minutes.
Setting via time zone:		
Time difference from Universal time (UTC+...)	any time zone [UTC +01:00 Amsterdam, Berlin]	Setting the time zone for calculating the time and sun position.
Sunrise / Sunset	<ul style="list-style-type: none"> ▪ standard ▪ individual settings 	Setting how to set the times for sunrise/sunset.
Sunrise elevation angle	<ul style="list-style-type: none"> ▪ 12° 00' (12°) ▪ 11° 30' (11,5°) ▪ 11° 00' (11°) ▪ -11° 00' (-11°) ▪ -11° 30' (-11,5°) ▪ -12° 00' (-12°, nautical twilight) 	Only shown when "individual setting" is selected.
Sunset elevation angle		
Dawn elevation angle		
Dusk elevation angle		
		Setting the corresponding elevation angle.

Table 9: Settings – Astro

Sunrise / Sunset (individual settings)

In certain cases it is necessary to adjust the sunrise/sunset, for example in a very mountainous region where the sun disappears earlier behind the mountain or rises later. For this purpose, the sunrise/sunset and the dawn/dusk can be specifically adjusted with corresponding parameters.

4.3 Display settings

The following picture shows the available settings:

Display	
Background colour	Day = white; Night = black ▾
Colour mode	<input type="radio"/> black / white <input checked="" type="radio"/> coloured
Behavior on presence	display is switched on
Brightness	
Control of display brightness via object	not active, Day/Night ▾
Brightness at Day	100% ▾
Brightness at Night	10% ▾
Dim display after time	not active ▾
<hr/>	
User-defined colours	<input checked="" type="radio"/> not active <input type="radio"/> active
Execute action when key is pressed if display 0% (Off)	<input checked="" type="radio"/> not active <input type="radio"/> active
<hr/>	
Display „Shading“ top left	not active ▾
Display lock of „Time switch“ top right	<input checked="" type="radio"/> not active <input type="radio"/> active
<hr/>	
Alarm/Lock of Shutter Actuator	<input checked="" type="radio"/> display as text and symbol <input type="radio"/> display as symbol
Hide text when Alarm/Lock active	<input checked="" type="radio"/> not active <input type="radio"/> when key is pressed
Text for Wind (highest display priority)	Wind alarm
Text for Frost	Frost alarm
Text for Rain	Rain alarm
Text for Lock (lowest display priority)	Locked
Display settings menu	
Shading	<input type="radio"/> not active <input checked="" type="radio"/> active
Time switch lock	<input type="radio"/> not active <input checked="" type="radio"/> active

Figure 6: Settings – Display presentation/brightness

4.3.1 Display: Representation and Brightness

The following table shows the possible settings:

ETS-Text	Dynamic range [Default value]	Comment
Representation		
Background colour	<ul style="list-style-type: none"> ▪ Day = black; Night = black ▪ Day = white; Night = black ▪ Day = black; Night = white ▪ Day = white; Night = white 	Sets the background colour of the display
Colour mode	<ul style="list-style-type: none"> ▪ black / white ▪ coloured 	Setting the representation in the display
Behavior on presence	Display is switched on	Action for a "1" telegram on the presence object. Fixed setting, cannot be changed
Brightness		
Control of display brightness via object	<ul style="list-style-type: none"> ▪ not active, Day/Night ▪ active via percent value (%) ▪ active via brightness values (Lux) 	Setting whether and how the display brightness is to be controlled
Brightness for Day	0 – 100% [100 %]	Setting a fixed brightness for Day/Night. Only with "Control of display brightness via object" -> "not active".
Brightness for Night	0 – 100% [10 %]	
Control of display brightness via object => „active via brightness values (Lux)“		
Ambient brightness for 100%	200 Lux (bright) – 2000 Lux (dark) [1000 Lux (medium)]	Sets the brightness value at which the display reaches full brightness
Minimum Brightness Day	0 – 100% [20%]	Setting a minimum brightness level in daytime operation
Minimum Brightness Night	0 – 100% [5%]	Setting a minimum brightness level in night operation
Switch off display	<ul style="list-style-type: none"> ▪ not active ▪ only Night ▪ Day / Night 	Setting whether and when the display is switched off. Selection available with setting "Dim display after time" => "not active".
	<ul style="list-style-type: none"> ▪ not active ▪ only Day 	Selection available with setting "Dim display after time" => "only Night".
Ambient brightness for restarting	1 – 200 Lux [100 Lux]	Defines the brightness at which the display switches on again. Available when "Disable display" is active.
Ambient brightness for switch off	1 – 200 Lux [50 Lux]	Defines the brightness at which the display switches off completely. Available when "Disable display" is active.

Control of display brightness via object => „active via percent values (%)“		
Brightness at start	0 – 100% [100%]	Setting the brightness value when starting the unit
The following parameters are available for each setting under "Control of display brightness via objects":		
Dim display after time	<ul style="list-style-type: none"> ▪ not active ▪ only Night ▪ Day / Night 	Setting whether and when the brightness on the display should be dimmed down
Brightness	0 – 100% [0%]	Setting of the value to be dimmed to after the expiry time. Available if "Dim display after time" is active.
Expiration time	0 ... 240 s [20 s]	Setting of the time when dimming should take place after the last operation on the unit. Available if "Dim display after time" is active.

Table 10: Settings – Display: Representation and Brightness

Background colour

This setting affects the basic representation on the display. If "white" is selected, the background is light and the writing is dark. If "black" is selected, the background is black and the writing is light.

Colour mode

The colour mode determines whether the fonts and symbols are displayed in colour or only in black and white..

Behaviour on presence

Here the display can be switched on and off via "Object 35 - Presence". The display is switched on with a "1" telegram and switched off with a "0" telegram. This setting is fixed and cannot be changed. A possible application would be control via a motion detector which switches the display on when presence is detected in the room and switches it off again after the follow-up time has elapsed.

Control of display brightness via object

On the one hand, the brightness can be defined via fixed values (percentage values). These are then not changeable. On the other hand, the brightness can be set "dynamically" via brightness values (lux values). These possibilities are as follows:

Control via percent values (%)

A percentage value is sent to the button via "Object 37 - Display brightness". The display brightness is set accordingly. The parameter "**Brightness at start**" defines the brightness value that the unit assumes after a restart. This remains valid until the first time another value is received via object 37.

Control via brightness values (Lux)

The parameter "**Ambient brightness for 100%**" defines the basic range at which lux value the display has its full brightness.

"**Minimum brightness Day/Night**" defines the brightness at which the display shows a received brightness value of 0 lux.

If the parameter "**Switch off display**" is active, "**Ambient brightness for switch off**" can be used to set whether the display switches off completely when the brightness falls below a certain level. Via "**Ambient brightness for restarting**" you can set whether the display switches on again when the brightness exceeds a certain level.

Valid for both settings:

- If one of the buttons is pressed while the display is off, the display is switched on to enable operation. After the last press of the button, the display switches off again after a fixed time of approx. 20 seconds. The same behaviour applies to switching on via a presence object. The display only switches on again permanently after the brightness has been exceeded (when controlling via brightness) or a value greater than "0 %" (when controlling via percentage value).
- After bus voltage failure and subsequent return, the value last set via object is no longer valid and a value has to be sent again.

The following communication objects are available:

Number	Name/Object Function	Length	Usage
35	Presence – Input	1 Bit	Input for presence to switch the display on and off, e.g. from a presence detector.
37	Display – Brightness	1 Byte 2 Byte	Receive the brightness for the display. DPT according to the parameter setting.

Table 11: Communication objects – Display: Representation and Brightness

4.3.2 User defined colours

Important: The parameter for "User-defined colours" is only available if the setting for the colour mode is set to "coloured"!

When activated, the following setting option appears:

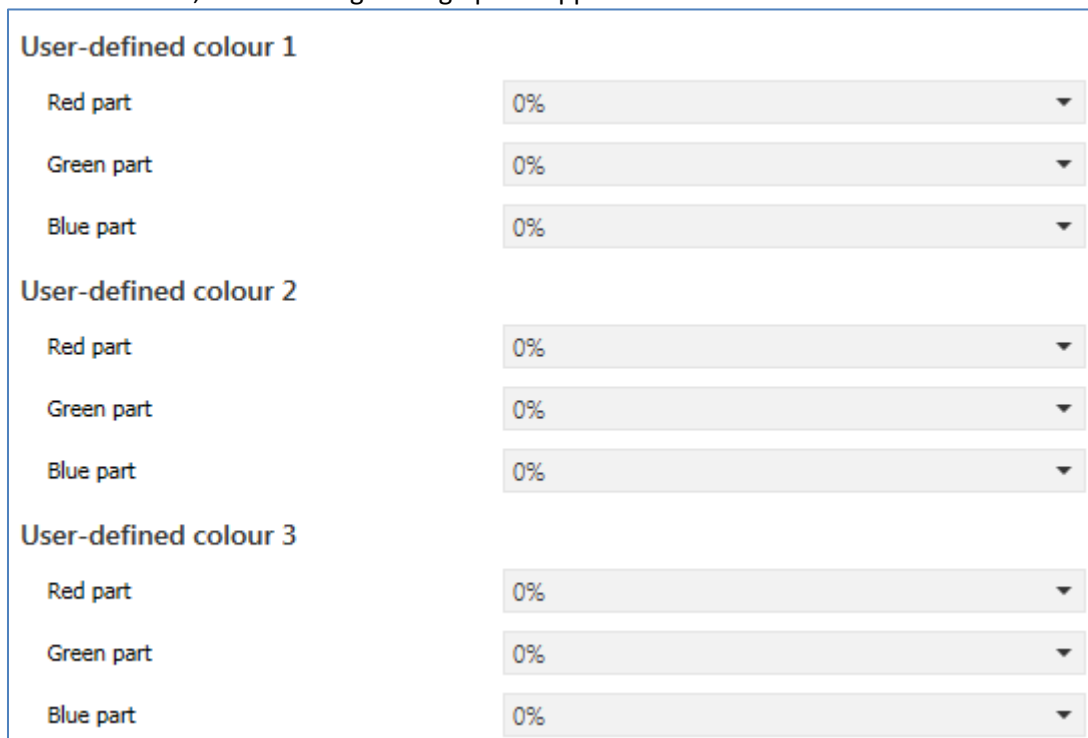


Figure 7: Settings – User-defined colours

The user-defined colours can be mixed with the corresponding red / green / blue share and then be used for the display of the symbols.

4.3.3 Execute action on keypress if display is 0% (Off)

The parameter can be activated with the following setting:

Execute action on keypress if display is 0% (Off) not active active

Figure 8: Setting – Execute action on keypress if display is 0% (Off)

If the display is completely "Off" (via the "Percentage value (0%)" or "Switch off display" via ambient brightness) the following can be achieved with this setting:

- Selection "not active": Pressing any key for the first time brings the display out of "Standby mode" and makes it visible with a basic brightness of 5% for approx. 20 seconds. This does not trigger any function of the key.
- Selection "active": Pressing any key for the first time brings the display out of "Standby mode", makes it visible with a basic brightness of 5% for approx. 20 seconds and simultaneously triggers the function of the key.

The expiry time, which is internally set to approx. 20 seconds, always applies from the last keypress.

4.3.4 Display Shading/Lock of time switch

The current status of the shading and the time switch can be shown in the display. The following settings are available for this purpose:





Display „Shading“ top left	Standby and State
Colour of symbol for "Shading not active"	foreground colour
Symbol for "Shading not active"	
Colour of symbol for "Shading standby"	sun orange
Symbol for "Shading standby"	
Colour of symbol for "Shading activ"	sun orange
Symbol for "Shading active"	
Display lock of „Time switch“ top right	<input type="radio"/> not active <input checked="" type="radio"/> active
Colour of symbol for "Time switch not active"	foreground colour
Symbol for "Time switch not active"	
Colour of symbol for "Time switch active"	sun orange
Symbol for "Time switch active"	

Figure 9: Settings – Display Shading/Lock of time switch

The following table shows the available settings:






ETS-Text	Dynamic range [Default value]	Comment
Display „Shading“ top left	<ul style="list-style-type: none"> ▪ not active ▪ only Standby ▪ only State ▪ Standby and State 	Setting whether "Shading" is indicated by a symbol in the upper left corner of the display.
Colour of symbol for „Shading not active“ “Shading standby“ „Shading active“	any colour [foreground colour] [sun orange] [sun orange]	Only for colour mode "coloured" . Setting the colour of the respective symbol.
Symbol for „Shading not active“ “Shading standby“ „Shading active“	  	Fixed symbols for "Shading". Cannot be changed!
Display “Lock time switch” top right	<ul style="list-style-type: none"> ▪ not active ▪ active 	Setting whether “Lock time switch” is indicated by a symbol in the upper right corner of the display.
Colour of symbol for „Time switch not active“ „Time switch active“	any colour [foreground colour] [sun orange]	Only for colour mode "coloured" . Setting the colour of the respective symbol.
Colour of symbol for „Time switch not active“ „Time switch active“	 	Fixed symbols for "Lock time switch". Cannot be changed!

Table 12: Settings – Display Shading/Lock of time switch

When this parameter is activated, the current **state of the shading** (active or not active) as well as the **standby status** (ready or not) can be visualised in the top left of the display. For this purpose, the MDT Shutter Actuator sends the current status of the shading to object 9 - "Status enable/lock Shading" or to object 10 - "Shading state" of the Blind Push Button. The symbols for this are defined via the application (see illustration above).

The current **status of the time switch** can be visualised in the top right of the display. The lock is set with a logical "1" on object 28 - "Time switch - Lock". The time switch is unlocked with a logical "0". Here, too, the symbols are defined via the application (see illustration above).

The following table shows the available communication objects f:

Number	Name/Object Function	Length	Usage
8	Blinds/Shutter – Lock Shading	1 Bit	Sending a "1" to lock Shading and a "0" to unlock it.
8	Blinds/Shutter – Enable Shading	1 Bit	Sending a "1" to enable Shading and a "0" to disable it.
9	Blinds/Shutter – Status "Lock Shading"	1 Bit	Receiving the status from the shutter actuator
9	Blinds/Shutter – Status "Enable Shading"	1 Bit	Receiving the status from the shutter actuator
10	Blinds/Shutter – Status Shading	1 Bit	Receiving the status from the shutter actuator
28	Time switch – Lock	1 Bit	Receiving a telegram to lock/unlock the time switch

Table 13: Communication objects – Display Shading/Lock of time switch

4.3.5 Alarms/Lock of Shutter Actuator

In addition, alarms and the lock of the shutter actuator can also be shown in the display. The following picture shows the possible settings for this:

Figure 10: Settings – Alarms/Lock of Shutter Actuator

The following table shows the available settings:

ETS-Text	Dynamic range [Default value]	Comment
Alarms/Lock of Shutter Actuator	<ul style="list-style-type: none"> ▪ display as text and symbol ▪ display as symbol 	Setting how alarms and the lock are to be shown in the display.
Parameter for setting: "display as text and symbol".		
Hide text when Alarm/Lock active	<ul style="list-style-type: none"> ▪ not active ▪ when button is pressed 	Setting whether text should remain active or be deleted when a button is pressed.
Text for Wind alarm (highest display priority)	any text (15 bytes allowed) [Wind alarm] [Frost alarm] [Rain alarm] [Locked]	Texts displayed when the respective alarm or lock is activated.
Text for Frost alarm		
Text for Rain alarm		
Text for Lock (lowest display priority)		
Displayed symbols		
Symbol for Wind		Symbols are predefined internally and appear in the display when the respective alarm or lock is activated.
Symbol for Frost		
Symbol for Rain		
Symbol for Lock		

Table 14: Settings – Alarms/Lock of Shutter Actuator

The display of the Blind Push Button can also show present alarms and the lock of the Shutter Actuator. You can choose whether this is done with a **text and symbol** or only with a **symbol**. The respective symbol is shown at the top centre of the display, regardless of the selection. The text appears in the centre of the display. The previous display (status curtain, status slat) is hidden.

The setting "**Hide text when alarm/lock is active**" determines whether the alarm or the lock remains permanently displayed until it is cancelled or whether the text is hidden when a button is pressed.

Important: "Hide text – when button is pressed" only applies to the upper two buttons 1 and 2!

If several alarms and the lock are active at the same time, they are displayed according to priority. The order is "Wind alarm/Frost alarm/Rain alarm/Lock".

Example:

Wind alarm and Rain alarm are active. The Wind alarm is shown in the display. Only when the Wind alarm is cancelled does the Rain alarm appear (if it is still active).

When assigning texts, care should be taken to choose them carefully. Many "wide" characters such as a "W" can cause less characters to be displayed than, for example, an "i".

The following table shows the available communication objects:

Number	Name/Object Function	Length	Usage
11	Blinds/Shutter – Wind alarm	1 Bit	Receiving a telegram for Wind Alarm
12	Blinds/Shutter – Frost alarm	1 Bit	Receiving a telegram for Frost Alarm
13	Blinds/Shutter – Rain alarm	1 Bit	Receiving a telegram for Rain Alarm
14	Blinds/Shutter – Lock status actuator	1 Bit	Receiving the status of the lock from the Shutter actuator

Table 15: Communication objects – Alarms/Lock of Shutter Actuator

4.3.6 Display in the „Settings“ menu (in the device)

This parameter refers to the "Settings" menu in the unit, which is activated by pressing the buttons 3+4 simultaneously or by the function of the buttons 3 and 4 "Change to settings menu (internal connection)".

The following settings are possible here:

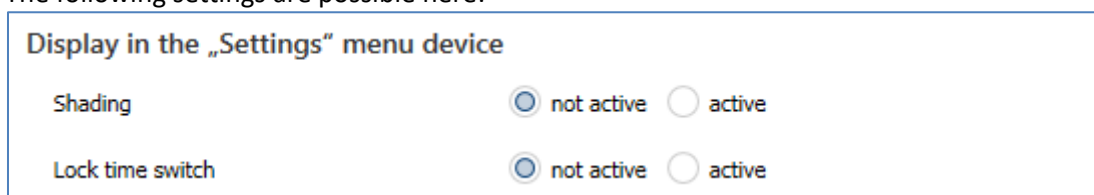


Figure 11: Settings – Display in the „Settings“ menu

If the parameters are set to "active", the selection options "**Shading**" and "**Lock time switch**" appear in the setting menu of the Blinds Push Button. There, both the shading and the time switch lock can then be activated or deactivated directly from the unit.

For details on activating the buttons, see [4.4 Button functions](#)

For details on the „Settings“ menu, see [4.7 "Settings" menu \(in the device\)](#)

4.4 Button functions

The following settings are available:

Function buttons 1/2 (top left / right)	<input type="text" value="Blinds/Shutter, Awning, Curtain"/>
Function button 3 (bottom left)	<input type="radio"/> not active <input checked="" type="radio"/> active
Function button 4 (bottom right)	<input type="radio"/> not active <input checked="" type="radio"/> active
Settings menu via simultaneous pressing of buttons 3/4	<input type="radio"/> not active <input checked="" type="radio"/> active
<hr/>	
Time for long keypress (Basic setting)	<input type="text" value="0,4 s"/>

Figure 12: Settings – Button functions

The **function of the buttons 1/2** is permanently set as a button pair to "Blinds/Shutter" and cannot be assigned otherwise.

When "**Function button 3**" and "**Function button 4**" are activated, a corresponding submenu appears for each of the buttons, which can be configured individually there. Buttons 3 and 4 can only be set as single buttons.

With the setting "**Settings menu via simultaneous pressing of buttons 3/4**" => "active", the "Settings" menu can be called up in the unit by pressing buttons 3 and 4 simultaneously.

The corresponding time can be set via "**Time for long key press (basic setting)**". This time applies to all buttons.

4.4.1 Identical parameter

4.4.1.1 Identical parameter – Lock objects

A lock object can be activated for the button pair 1/2 as well as for the individual buttons 3 and 4. If the lock object is active, a communication object is displayed in each case. If the lock object is assigned a logical "1", the corresponding button is "locked" and can therefore no longer be switched. The lock is cancelled with a "0".

The following table shows the associated communication objects:

Number	Name/Object Function	Length	Usage
7	Blinds/Shutter (Buttons 1/2) – Lock buttons	1 Bit	Lock/unlock button pair 1/2
19	Button 3 – Lock	1 Bit	Lock/unlock Button 3
24	Button 4 – Lock	1 Bit	Lock/unlock Button 4

Table 16: Communication objects – Lock objects

4.4.1.2 Identical parameter – Buttons-/Objects description

A text field for free labelling is available for the button pair 1/2 and for the individual buttons 3 and 4 in each case:

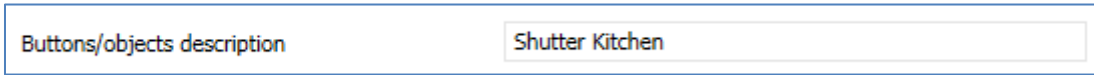


Figure 13: Identical Parameter – Text fields per button/button pair

Texts with up to 30 characters can be stored for the field.

The text entered for the **buttons/objects description** appears both in the menu behind the corresponding buttons and with the communication objects of the buttons.

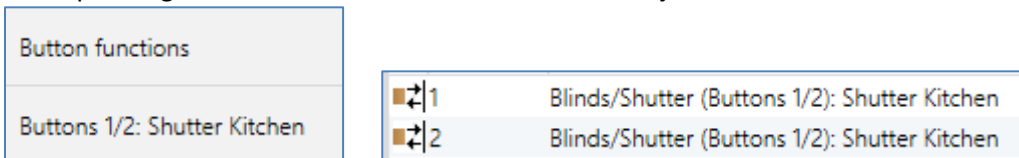


Figure 14: Example – Buttons/Objects description

4.4.2 Function – Buttons 1/2

The following image shows the available settings (here for blinds):

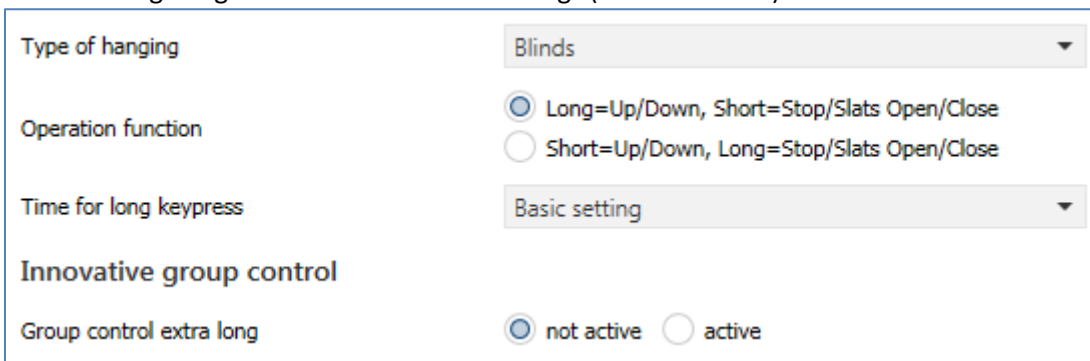


Figure 15: Settings – Function Buttons 1/2

The following table shows the possible settings:

ETS-Text	Dynamic range [Default value]	Comment
Type of hanging	<ul style="list-style-type: none"> ▪ Blinds ▪ Shutter ▪ Awning ▪ Curtain 	Setting which type of hanging is used.
Type of hanging: Blinds		
Operating function	<ul style="list-style-type: none"> ▪ Long=Up/Down, Short=Stop/Slats Open/Close ▪ Short=Up/Down, Long=Stop/Slats Open/Close 	Setting the concept of how to operate with long/short button.
Type of hanging: Shutter		
Operating function	<ul style="list-style-type: none"> ▪ Long=Up/Down, Short=Stop ▪ Short=Up/Down, Long=Stop 	Setting the concept of how to operate with long/short button.

Type of hanging: Awning		
Button assignment (left / right)	<ul style="list-style-type: none"> ▪ move in / move out ▪ move out / move in 	Setting which button is used to move in which direction
Operating function	<ul style="list-style-type: none"> ▪ Long=In/Out, Short=Stop/Step ▪ Short=In/Out, Long=Stop/Step 	Setting the concept of how to operate with long/short button.
Type of hanging: Curtain		
Button assignment (left / right)	<ul style="list-style-type: none"> ▪ open / close ▪ close / open 	Setting which button is used to move in which direction
Operating function	<ul style="list-style-type: none"> ▪ Long=open/close, Short=Stop ▪ Short=open/close, Long=Stop 	Setting the concept of how to operate with long/short button.
The following parameters are available for all types of hangings::		
Time for long keypress	Basic setting 0,1 s – 30,0 s	Setting of an individual time from when a long keypress is detected
Group control extra long	<ul style="list-style-type: none"> ▪ not active ▪ active 	Activation of another function on extra long keypress
Time for extra long keypress	0,1 s – 30,0 s [2,0 s]	Setting of an individual time from when an extra long keypress is detected

Table 17: Basic Settings – Function Buttons 1/2

Two communication objects appear for the "Blind, Shutter, Awning, Curtain" function. On the one hand, the movement object for moving the blind ("Up/Down", "Open/Close", "In/Out", according to the selected hanging), on the other hand, the object for stopping a movement or for sending short impulses (slat adjustment, fabric tension for awning) ("Stop", "Stop/Step" or "Stop/Slats Open/Close", according to the selected hangings).

With the setting "**Type of hanging**", the hanging to be controlled can be selected. The appropriate parameters then appear according to the selection. Among other things, the corresponding symbols can be used, which are then shown in the display.

Via the **operating function**, it is possible to swap the action for the long and short keystroke. In this way, it is possible to select whether to move via a long or a short button press. The stop/step object then adopts the other operating concept.

The **innovative group control** allows you to send to two different group addresses by pressing the "v" or "^" button for a longer time. The time for the long and extra-long button presses is set individually.

Example for "**Group control extra long**":

There are several blinds in the room. Press the long button to move a single blind (e.g. on the south side). With the extra long button press, all blinds in the room can be moved to darken the room completely.

Time for long keypress: 2 s

Time for extra long keypress: 2 s

Note on calculating the release time for the "group extra long":

Time = time long keypress + time extra long keypress

If the button is now pressed for at least 4 seconds, the single blind is moved after 2 seconds and the blinds in the "extra long group" after another 2 seconds.

If "Stop" is then pressed briefly, all stop. If the slat is adjusted with "short", the group also adjusts the slat.

After approx. 90 seconds, the group function is internally deactivated again and a "stop" only affects the individual channel.

For details on the **buttons/objects description** and the **lock object**, see [4.4.1 Identical parameter](#)

The following table shows the available communication objects:

Number	Name/Object Function	Length	Usage
1	Blinds/Shutter (Buttons 1/2) – Blinds Up/Down, Shutter Up/Down, Awning In/Out, Curtain Open/Close	1 Bit	Move command for the shutter actuator. Function according to the selected hanging
2	Blinds/Shutter (Buttons 1/2) – Stop, Stop/Step, Stop/Slats Open/Close	1 Bit	Stop or short-time command for the shutter actuator. Function according to the selected hanging
3	Blinds/Shutter (Buttons 1/2) – Status current position	1 Byte	Receiving the status of the current movement position.
4	Blinds/Shutter (Buttons 1/2) – Status current slat position	1 Byte	Receiving the status of the current slat position.
5	Blinds/Shutter (Buttons 1/2 Group extra long) – Blinds Up/Down, Shutter Up/Down, Awning In/Out, Curtain Open/Close	1 Bit	Move command for the shutter actuator. Function according to the selected hanging
6	Blinds/Shutter (Buttons 1/2 Group extra long) – Stop, Stop/Step, Stop/Slats Open/Close	1 Bit	Stop or short-time command for the shutter actuator. Function according to the selected hanging

Table 18: Communication objects – Function Buttons 1/2

4.4.2.1 Representation on the display

The blind function can be displayed with 3 freely selectable symbols and freely selectable colour. The button evaluates the information from "Object 3 - Status absolute position". The following illustration shows the setting using the example of the "Shutter":

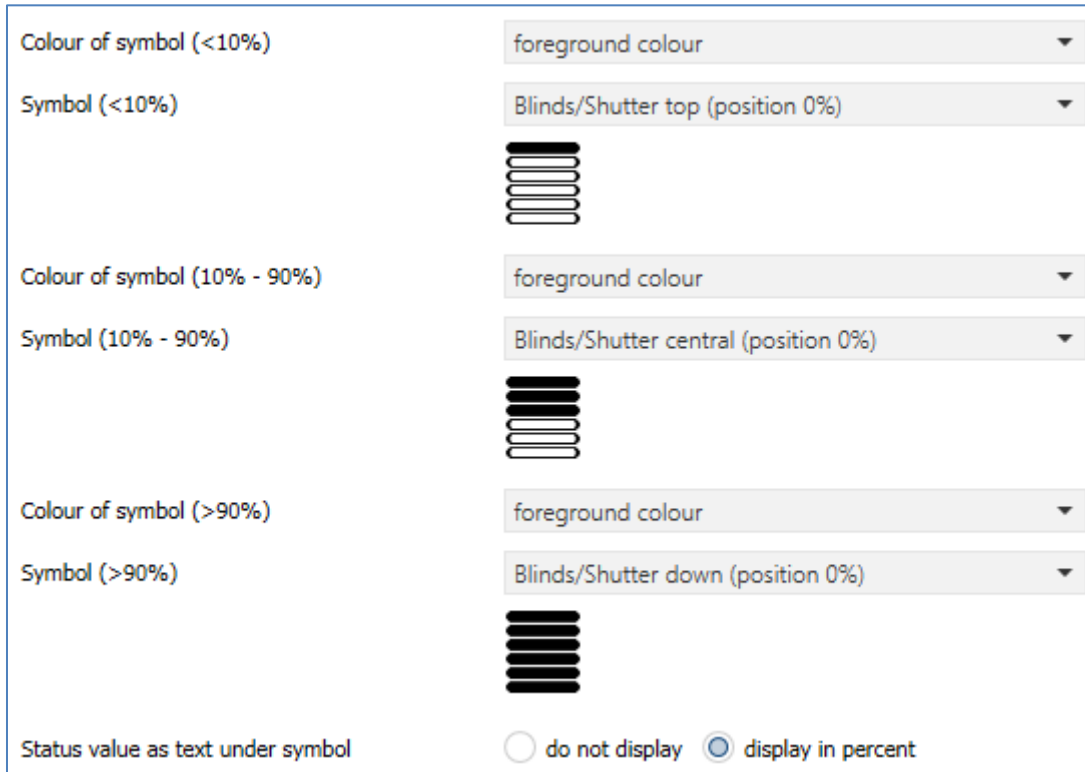


Figure 16: Settings – Representation of Symbols Blinds/Shutter

Note: The settings "Colour of symbol" are only available if the colour mode is set to "coloured" in the "Display settings" menu!

By activating "Status value as text under symbol", the current status can additionally be displayed as a percentage value under the symbol. The evaluation is also carried out here via the status feedback of "Object 3 - Status current position".

Representation of slats (only available with selected hanging "Blinds")

The position of the slats can also be displayed. The button evaluates the information from 'Object 4 - Status slat position'. The position of the slats can be represented by 3 freely selectable symbols and freely selectable colours:

Colour of symbol for slats (<50%)	foreground colour
Symbol for slats (<50%)	Slats 0%
Colour of symbol for slats (50% - 90%)	foreground colour
Symbol for slats (50% - 90%)	Slats 50%
Colour of symbol for slats (>90%)	foreground colour
Symbol for slats (>90%)	Slats 100%
Status value as text under symbol	<input type="radio"/> do not display <input checked="" type="radio"/> display in percent

Figure 17: Settings – Representation of symbols for Slats

Note: The settings "Colour of symbol for slats" are only available if the colour mode is set to "coloured" in the "Display settings" menu!

By activating "Status value as text under symbol", the current status can additionally be displayed as a percentage value under the symbol. The evaluation is also carried out here via the status feedback of "Object 4 - Status current slat position".

4.4.3 Function – Button 3 / Button 4

The two lower buttons on the unit can each be configured as individual buttons. Button 3 is at the bottom left, button 4 is at the bottom right. The setting options are identical. Several functions are available as internal connection (related to functions in the Blind Push Button itself) or external functions. The display for the buttons is in the lower third of the display.

The following setting options are available:

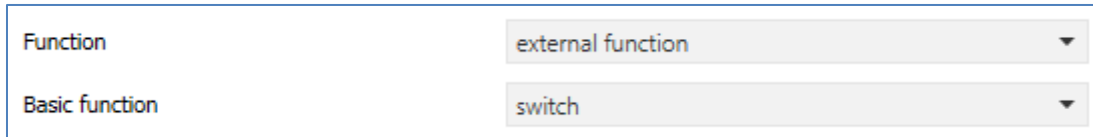


Figure 18: Settings – Function Button 3 / Button 4

The following parameters are available for selecting the functions and basic functions:

ETS-Text	Dynamic range [Default value]	Comment
Funktion	<ul style="list-style-type: none"> ▪ Shading On/Off (global objects) ▪ Time switch On/Off (internal connection) ▪ change to “Settings” menu (internal connection) ▪ external function 	Setting the function for button 3 or button 4.
Basic function	<ul style="list-style-type: none"> ▪ switch ▪ switch short/long ▪ one-button dimming ▪ one-button blinds ▪ send state ▪ send value 	Setting only available if function button 3 or 4 is set to "external function". Defines the basic function of the buttons.

Table 19: Settings – Function Button 3 / Button 4

For details on the **button/object description** and the **lock object**, see [4.4.1 Identical parameter](#)

The presentation on the display, functions and basic functions are described in the following chapters.

4.4.3.1 Identical Settings – Representation on the display

Value/text/symbol for button 3 is shown at the lower left of the display, for button 4, at the lower right of the display. The following parameters are available for the representation on the display of buttons 3 and 4.

(here on the example "External function - switch; colour mode "coloured"):

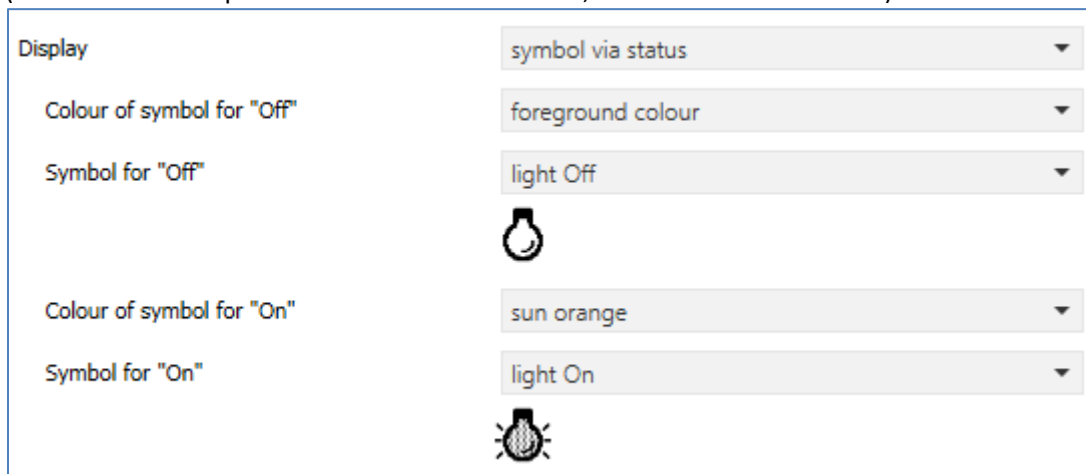


Figure 19: Settings – Representation on the display

The following table shows the available settings:

ETS-Text	Dynamic range [Default value]	Comment
Display	<ul style="list-style-type: none"> ▪ symbol ▪ fix text ▪ text/value by Status ▪ symbol by Status 	Setting for how the function is to be represented in the display.
Colour of symbols for ...	any colour	Any colour can be selected according to the offer in the drop-down menu. Only visible if "Display settings" => colour mode is set to "coloured".
Symbol for ...	any symbol	Symbols can be selected according to the offer in the drop-down menu.
Text / Text for...	any text [up to 9 bytes allowed]	Freely adjustable text. ETS text varies depending on the selected function.

Table 20: Settings – Representation on the display

Symbol: A fixed symbol is selected for the function. This cannot be changed.

Fix text: A fixed text is selected for the function. This cannot be changed.

Text/value by Status: Depending on the selected function and data point type, an adjustable text or value can be displayed. For "internal functions", the evaluation is internal. For "external functions" and "shading on/off (global objects)", the respective status object is evaluated. For this, the status of the actuator must be connected to the "Status for display" object.

Symbol by Status: Depending on the selected function and data point type, up to three symbols can be displayed. For "internal functions", the evaluation is internal. For "external functions" and "shading on/off (global objects)", the respective status object is evaluated. For this, the status of the actuator must be connected to the "Status for display" object.

Note: For the function "Change to settings menu (internal connection)", a fixed symbol is unchangeably preset. The parameter "Display" is not available here.

4.4.3.2 Shading On/Off (global objects)

The following figure shows the available setting:

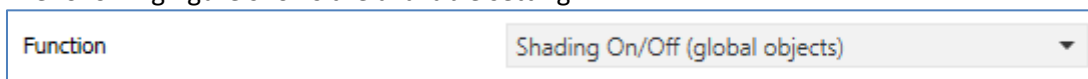


Figure 20: Setting – Shading On/Off (global objects)

With this function, a "1" or "0" is automatically sent via object 8 (lock or enable shading) when the button is pressed. The value at object 9 (status shading...) is evaluated and the corresponding counter value is sent the next time the button is pressed. If no status is received, the system switches over with each press of the button.

For details on the **button/object description** and the **lock object**, see [4.4.1 Identical parameter](#)

For details about **display**, see [4.4.3.1 Identical Settings – Representation on the display](#)

The following table shows the available communication objects:

Number	Name/Object Function	Length	Usage
8	Blinds/Shutter – Lock Shading	1 Bit	Sending a "1" to lock the Shading and a "0" to unlock it.
8	Blinds/Shutter – Enable Shading	1 Bit	Sending a "1" to enable Shading and a "0" to lock.
9	Blinds/Shutter – Status "Lock Shading"	1 Bit	Receiving the status from the shutter actuator
9	Blinds/Shutter – Status "Enable Shading"	1 Bit	Receiving the status from the shutter actuator

Table 21: Communication objects – Shading On/Off (global objects)

4.4.3.3 Time switch On/Off (internal connection)

The following figure shows the available setting:

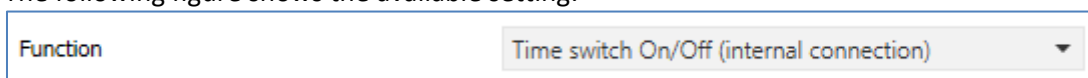


Figure 21: Setting – Time switch On/Off (internal connection)

This function internally locks or unlocks the time switch when a button is pressed. This is controlled internally, no linking of group addresses is necessary.

For details on the **button/object description** and the **lock object**, see [4.4.1 Identical parameter](#)

For details about **display**, see [4.4.3.1 Identical Settings – Representation on the display](#)

4.4.3.4 Change to Settings menu (internal connection)

The following figure shows the available setting:


Function	change to "Settings" menu (internal connection) ▼
Colour of symbol	foreground colour ▼
Symbol	Settings 

Figure 22: Setting – Change to “Settings” menu (internal connection)

With this function, the display changes directly to the "Settings" menu when the key is pressed. The control is internal, no linking of group addresses is necessary.

In this case, the **symbol** is fixed and cannot be changed. The colour is freely adjustable.

For details on the **button/object description** and the **lock object**, see [4.4.1 Identical parameter](#)

4.4.3.5 External function – Basic function: Switch

The following figure shows the available settings:

The screenshot shows a settings panel with the following fields and options:

- Function:** external function (dropdown menu)
- Basic function:** switch (dropdown menu)
- Subfunction:**
 - switch when button is pressed
 - toggle when button is pressed
- Value for pressed button:**
 - Off
 - On

Figure 23: Settings – Basic function: Switch

For the **basic function "switch"**, you can choose between two **subfunctions**:

- **Switch when button is pressed:**
Each time the button is pressed, the respective value set under "**Value for pressed button**" is sent.
- **Toggle when the button is pressed:**
Each time the button is pressed, the respective inverted value is sent in relation to the last received status value. For this purpose, the "Status for toggle" object is connected to the status of the actuator to be controlled. If an "On" signal was received as the last value, the button sends an "Off" command the next time it is pressed. If the status "Off" comes back, an "On" is sent again next.

For details on the **button/object description** and the **lock object**, see [4.4.1 Identical parameter](#)

For details about **display**, see [4.4.3.1 Identical Settings – Representation on the display](#)

The following table shows the available communication objects:

Number	Name/Object Function	Length	Usage
15	Button 3: – Switch	1 Bit	Switch function of the button. Only for the sub-function "switch when button is pressed".
15	Button 3: – Toggle	1 Bit	Toggle function of the button. Only for the sub-function "toggle when button is pressed".
16	Button 3: – Status for toggle	1 Bit	Status to update display/symbol on the unit. Has to be connected to the status of the actuator to be switched. Only for the sub-function "toggle when button is pressed".
18	Button 3: – Status for display	1 Bit	Status to update display/symbol on the unit. Has to be connected to the status of the actuator to be switched. Only for the sub-function "switch when button is pressed".
+5	Button 4		

Table 22: Communication objects – Basic function: Switch

4.4.3.6 External function – Basic function: Switch short/long

The following figure shows the available settings:

Figure 24: Settings – Basic function: Switch short/long

The following table shows all available settings:

ETS-Text	Dynamic range [Default value]	Comment
Value for short/long button – Object 1/2	<ul style="list-style-type: none"> ▪ Off ▪ On ▪ toggle ▪ send value ▪ not active 	Setting the function for the short/long button.
Send value	<ul style="list-style-type: none"> ▪ 1Byte value ▪ 1Byte percent value ▪ absolute position Blinds/Shutter ▪ Scene number 	Setting only available if "Value for short/long button" is set to "Send value" . Setting the data point type for the value to be sent.

Table 23: Settings – Basic function: Switch short/long

With the basic function "**switch short/long**", 2 different values - for the short and long button - can be sent. The short and long buttons have different objects, which also makes it possible to send different types of data points.

With "**send value: On**" or "**send value: Off**", the same, fixed value is always sent.

With "**toggle**", On/Off is sent alternately.

With "**Send value**", the set value (percentage value, decimal value or scene) is always sent. The adjustable values are 0 - 100% (percentage value), 0 - 255 (value) or 1 - 64 (scene). With the "**Absolute position roller Blinds/Shutter**" setting, 2 values (height and slat position) are sent.

The status display always applies to the "short button" / object 1 !

Attention: When selecting "Send value" => "Absolute position Blinds/Shutter", 2 values each (for height and for slats) are sent. For this, **no status can be displayed for the settings "Symbol by status" and "Value/text by status"**.

For details on the **button/object description** and the **lock object**, see [4.4.1 Identical parameter](#)

For details about **display**, see [4.4.3.1 Identical Settings – Representation on the display](#)

The time for "**long keypress**" is defined in the "**Button functions**" menu.

The following table shows the available communication objects:

Number	Name/Object Function	Length	Usage
15	Button 3 short: – Switch, Toggle, Send percent value/ Send value/ Send Scene / absolute position		Sending the value for the short button. DPT depending on the parameter setting
16	Button 3 short: – Status for toggle, Status for display, absolute position of slats		Receiving the status for the short button. DPT depending on the parameter setting. Sending the position for slats
17	Button 3 long: – Switch, Toggle, Send percent value/ Send value...		Sending the value for the long button. DPT depending on the parameter setting
18	Button 3 long: – Status for toggle, absolute position of slats	1 Bit	Receiving the status for the long button. DPT depending on the parameter setting. Sending the position for slats
+5	Button 4		

Table 24: Communication objects – Basic function: Switch short/long

4.4.3.7 External function – Basic function: One-button dimming

The following figure shows the available settings:

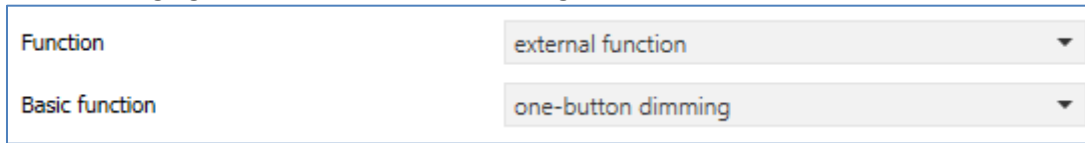


Figure 25: Settings – Basic function: One-button dimming

With the function "One-button dimming", two communication objects appear for this button. On the one hand the object "Dimming On/Off" for the short keypress. On the other hand, the dimming object "Dimming relative" for the long keypress.

The direction (brighter/darker) is reversed depending on the "Status for toggle" communication object.

The dimming function is a start-stop dimming, i.e. as soon as the dimming function becomes active, a light or dark command is assigned to the input until the button is released. After the button is released, a stop telegram is sent, which ends the dimming process.

For details on the **button/object description** and the **lock object**, see [4.4.1 Identical parameter](#)

For details about **display**, see [4.4.3.1 Identical Settings – Representation on the display](#)

The following table shows the available communication objects:

Number	Name/Object Function	Length	Usage
15	Button 3: – Dimming On/Off	1 Bit	Switch command for the dimming function
16	Button 3: – Dimming relative	4 Bit	Command for relative dimming
17	Button 3 – Status for toggle	1 Bit	Receiving the status with current information about the status of the actuator to be controlled
18	Button 3: – Status for display	1 Byte	Receiving the status of the current, absolute brightness
+5	Button 4		

Table 25: Communication objects – Basic function: One-button dimming

4.4.3.8 External function – Basic function: One-button blinds

The following figure shows the available settings:

Figure 26: Settings – Basic function: One-button blinds

Two communication objects appear for the blind function. On the one hand, the function for the stop/step object "Slat adjustment / stop" and, on the other hand, the function for the movement object "Blinds Up/Down".

The movement object is used to raise and lower the blinds/shutters. The stop/step object is used to adjust the slats and it stops the upward or downward movement if the end position has not yet been reached.

The one-button function is a "toggle" function. This means that it is changed between Up and Down after each push of the button. This can be influenced via the "**Status for change of direction**" object. If, for example, the direction of movement is changed from elsewhere, the shutter actuator sends the current direction to the "Status for change of direction" object and the button sends the opposite direction the next time the button is pressed.

It is also possible to swap the **operation function for the long and short button**. In this way, it is possible to select whether to move via a long or a short button press. The stop/step object then adopts the other operating concept in each case.

Only one object is available as "**status for display**". It refers to the height position. The position for the slat cannot be displayed.

For details on the **button/object description** and the **lock object**, see [4.4.1 Identical parameter](#)

For details about **display**, see [4.4.3.1 Identical Settings – Representation on the display](#)

The following table shows the available communication objects:

Number	Name/Object Function	Length	Usage
15	Button 3: – Blinds Up/Down	1 Bit	Up/Down for the Shutter actuator
16	Button 3: – Slat adjustment / Stop	1 Bit	Open/close command of the slats or the stop command for the shutter actuator
17	Button 3 – Status for change of direction	1 Bit	Receiving the status with current information about the direction of the shutter actuator
18	Button 3: – Status for display	1 Byte	Receiving the status of the current blind/shutter position
+5	Button 4		

Table 26: Communication objects – Basic function: One-button blinds

4.4.3.9 External function – Basic function: Send state

The following figure shows the available settings:

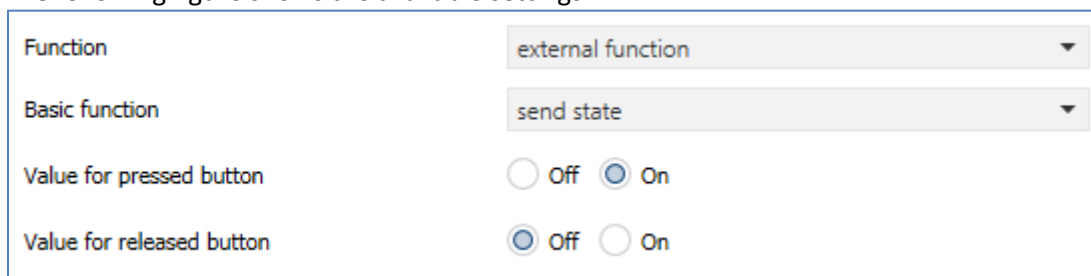


Figure 27: Settings – Basic function: Send state

With the basic function "Send state", fixed values can be sent for a pressed button (rising edge) and a released button (falling edge). This function can be used to implement triggering applications.

The following table shows the available settings:

ETS-Text	Dynamic range [Default value]	Comment
Value for the pressed button	<ul style="list-style-type: none"> ▪ Off ▪ On 	Defines the sending behaviour of the button when pressed
Value for the released button	<ul style="list-style-type: none"> ▪ Off ▪ On 	Defines the sending behaviour of the button when released

Table 27: Settings – Basic function: Send state

For details on the **button/object description** and the **lock object**, see [4.4.1 Identical parameter](#)

For details about **display**, see [4.4.3.1 Identical Settings – Representation on the display](#)

The current status of the actuator is displayed via the "**Status for display**" object. If there is no group address on the object, the switching status of the button is shown in the display.

The following table shows the available communication objects:

Number	Name/Object Function	Length	Usage
15	Button 3: – Send state	1 Bit	Sends the respective value when pressing and releasing the button
18	Button 3: – Status for display	1 Byte	Receiving the status of the current switching state for the indication in the display
+5	Button 4		

Table 28: Communication objects – Basic function: Send State

4.4.3.10 External function – Basic function: Send value

The following figure shows the available settings:

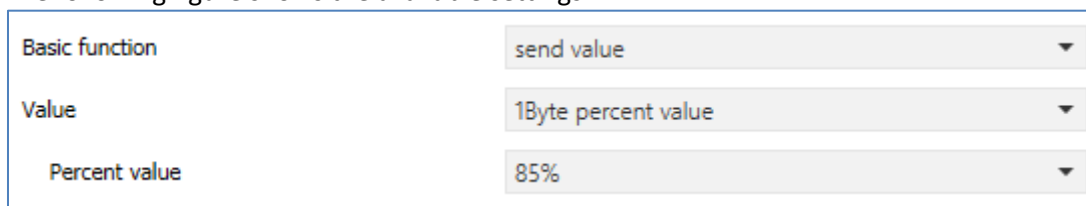


Figure 28: Settings – Basic function: Send value

The following table shows the available settings:

ETS-Text	Dynamic range [Default value]	Comment
Value	<ul style="list-style-type: none"> ▪ 1Byte value ▪ 1Byte percent value ▪ absolute position Blinds/Shutter ▪ Scene number 	Setting the data point type for the value to be sent

Table 29: Settings – Basic function: Send value

Each time the button is pressed, the set value (percentage value, decimal value or scene) is sent. The adjustable values are 0 - 100% (percentage value), 0 - 255 (value) or 1 - 64 (scene number). With the setting "absolute position Blinds/Shutter", 2 values (height and slat position) are sent.

Note: Only one value can be displayed as status!

For details on the **button/object description** and the **lock object**, see [4.4.1 Identical parameter](#)

For details about **display**, see [4.4.3.1 Identical Settings – Representation on the display](#)

The following table shows the available communication objects:

Number	Name/Object Function	Length	Usage
15	Button 3 – Send percent value, Send value, Send scene, absolute position	1 Byte	Sending the value. DPT depending on the parameter setting
16	Button 3 – Absolute position of slats	1 Byte	Sending the slat position
18	Button 3 – Status for display	1 Byte	Receipt of the status. DPT depends on the parameter setting. Not shown when selection "Scene number".
+5	Button 4		

Table 30: Communication objects – Basic function: Send value

4.5 Time switch

4.5.1 Settings

The following figure shows the available settings:

Figure 29: Settings – Time switch: Settings

The following table shows the available settings:

ETS-Text	Dynamic range [Default value]	Comment
Name of Time switch (for Visualisation interface)	free text [up to 20 bytes allowed]	Allocation of a name.
Output objects	<ul style="list-style-type: none"> ▪ height and slats ▪ only height 	Setting whether output objects for shutters or blinds are to be displayed.
Switching times in the device	<ul style="list-style-type: none"> ▪ will be transmitted ▪ remain unchanged 	Setting whether the parameter block for the switching times is transmitted or not.

Setting the Time switch	<ul style="list-style-type: none"> ▪ fix via database (cannot be changed on the device) ▪ manual input and database (database overwrites all switching times) ▪ manual input and database (Transmission aborted if switching times are changed on the device) 	Setting whether and how the settings of the timer can be changed
Make up switching times on restart	<ul style="list-style-type: none"> ▪ not active ▪ active 	Setting whether the unit makes up (sends) all currently valid switching states after a restart.
Make up switching times on time change	<ul style="list-style-type: none"> ▪ not active ▪ active 	Setting whether the unit catches up (sends) the skipped switching states after a clock adjustment to "forward".
Make up switching times after unlock	<ul style="list-style-type: none"> ▪ not active ▪ active 	Setting whether the unit makes up (sends) all omitted switching states after an unlocking process.
Public holiday	<ul style="list-style-type: none"> ▪ not active ▪ active 	Activating the public holiday function
Automatic calculation of public holiday	<ul style="list-style-type: none"> ▪ not active ▪ active 	Activation of the automatic public holiday calculation. When activated, a new submenu "Automatic calculation of public holidays" appears. Shown if public holiday is "active".
Manual control via object	<ul style="list-style-type: none"> ▪ not active ▪ active, reset after the 1st change of day ▪ active, reset after the 2nd change of day ▪ active 	Setting whether and when manual control via an object is active. Shown if public holiday is "active".
Behaviour on public holiday	like Sunday	Specify that public holidays behave like Sundays. Fix setting, cannot be changed!

Table 31: Settings – Time switch: Settings

Name of Time switch (for Visualisation interface)

This parameter is prepared but not yet active. In future, the name will be transmitted via the object "Time switch - VisuControlEasy interface" when using the MDT VisuControl Easy object server and made visible there.

Output objects

The setting refers to the selected hanging.

- **height and slats:** Objects 26 "Blinds absolute position" and 27 "Slats absolute position" are shown here. This setting is used when selecting "Blinds".
- **Only height:** Object 26 "Blinds absolute position" is shown here. This setting is used when selecting "Shutter".

Switching times in the device:

- **will be transmitted:** The parameter block is transmitted depending on the parameter "Setting the time switch"..
- **remain unchanged:** The memory block for the switching times is not written by the ETS and the parameter "Setting the time switch" is hidden.

Setting the time switch:

- **fix via database:** The switching times can only be set in the database and cannot be changed in the unit.
- **manual input and database (database overwrites all switching times):** The switching times can be set in the database and the unit. With each transmission, the complete values are written from the database to the unit.
- **manual input and database (Transmission aborted if switching times are changed on the device):** Before the transfer, the ETS makes a comparison between the switching times set in the database and those in the device. If these are not the same, the download is aborted.
Attention: With this selection, the application must be fully programmed. Partial programming is not sufficient.

Make up switching times:

The make-up of the switching times allows you to set whether switching states that were omitted due to unscheduled events are made up.

- **Make up switching times on restart**
After a restart, the last switching statuses are caught up, i.e. the time switch restores the status that should be in effect at that time.
- **Make up switching times on time change**
In the case of a time jump forward, i.e. a time adjustment +..min/h, the switching events that were omitted due to the time jump are made up. In the case of a time jump up to +90min, all switching events are made up. From a time jump of 90min only the last per function.
- **Make up switching times after unlock**
After unlocking, the switching statuses that were omitted during unlocking are restored. This ensures that all systems are in the "correct" state after unlocking.

Public holiday function

The unit has a comprehensive logic integrated to be able to calculate public holidays. This calculation can be activated via the parameter "**automatic calculation of public holidays**". A new menu then appears. See [4.5.2 Automatic calculation of public holidays](#)

In addition, public holidays can be activated manually via object 30 if the parameter "**Manual control via object**" is set to active. There is also an automatic reset function for this parameter. If the public holiday is deleted, for example, on the 1st day change, the function can be used for the current day, as the public holiday then ends for the unit at 00:00.

If, for example, the raising of the shutters in the morning is to be prevented on the next day, the reset may only take place on the 2nd day change, since in this case a "*public holiday*" is sent to the object the evening before. In this case, the automatic reset takes place on the following day at 00:00.

The interaction between automatic calculation of public holidays and manual activation via the bus (via object) is described in the following table:

Public holiday calculated?	Value of object 29	Action of object 29	Result: Public holiday active/not active?
No	Value 0	Sending a 0	No action
No	Value 0	Sending a 1	Public holiday active until set return, automatic mode becomes active again from the next day onwards
No	Value 1	Sending a 0	Manual deactivation, automatic mode becomes active again the next day
No	Value 1	Sending a 1	Public holiday active until set return, automatic mode becomes active again from the next day onwards
Yes	Value 0	Sending a 0	Manual deactivation, automatic mode becomes active again the next day
Yes	Value 0	Sending a 1	Public holiday active until set return, automatic mode becomes active again from the next day onwards
Yes	Value 1	Sending a 0	Manual deactivation, automatic mode becomes active again the next day
Yes	Value 1	Sending a 1	Public holiday active until set return, automatic mode becomes active again from the next day onwards

Table 32: Automatic calculation of public holidays and manual activation

The following table shows the available communications objects:

Number	Name/Object Function	Length	Usage
25	Time switch – Blinds Up/Down	1 Bit	Sending the Up/Down command to the shutter actuator
26	Time switch – Absolute position of blinds	1 Byte	Sending the absolute height position to the shutter actuator
27	Time switch – Absolute position of slats	1 Byte	Sending the absolute slat position to the shutter actuator. Only with selection "height and slats".
30	Time switch – Activation of public holiday (for external logic)	1 Bit	Activation of the public holiday function via bus, e.g. via Visu/Push button
31	Time switch – Status public holiday	1 Bit	Indicates whether the unit is in public holiday mode. Sends out its status when it changes and always at 00:00h.
32	Time switch – VisuControlEasy interface	14 Byte	Interface to the MDT VisuControl Easy (in preparation, not yet implemented in the MDT VisuControl Easy).

Table 33: Communication object – Time switch: Settings

4.5.2 Automatic calculation of public holidays

The following picture shows the menu for the automatic public holiday calculation:

Country	Germany				
State	North Rhine-Westphalia				
Public holiday	Mode	Fix public holidays	Day	Month	Offset
1	holiday from list	New Year's Day			
2	holiday from list	Good Friday			
3	holiday from list	Easter Monday			
4	holiday from list	Labor Day / May 1st			
5	holiday from list	Ascension Day / Ascension of Christ			
6	holiday from list	Whit Monday			
7	holiday from list	Corpus Christi			
8	holiday from list	Anniversary of german unification			
9	holiday from list	All Saints' Day			
10	holiday from list	1st Christmas Day			
11	holiday from list	2nd Christmas Day			
12	holiday from list	not active			
13	holiday from list	not active			
14	holiday from list	not active			
15	holiday from list	not active			
16	holiday from list	not active			
17	holiday from list	not active			
18	holiday from list	not active			
19	holiday from list	not active			
20	holiday from list	not active			

Figure 30: Automatic calculation of public holidays

Public holidays are predefined for all federal states in Germany and Austria and are calculated each year using integrated logic. Numerous public holidays are also predefined for other EU countries. In addition, further public holidays can be integrated via the following rules:

The "**fixed date**" rule defines public holidays that take place on the same day every year. Common examples are New Year's Day on 1 January or Labour Day on 1 May.

Since many public holidays in the Christian area are based on Easter, public holidays can be defined **relative to Easter Sunday**. Then an offset of -100 to +100 days to Easter Sunday has to be defined. Thus, as the simplest example, Easter Monday is always exactly one day after Easter Sunday.

In addition, rules can also be created "**individual**" with which "own holidays" can be calculated. If this rule is selected, a date can be selected and the public holiday can be calculated depending on this date. The calculated public holiday can be a maximum of 1 week before this date and 1 week after this date.

4.5.3 Times/Locks

4.5.3.1 Switching times

Up to 8 switching times and other settings can be individually configured for the time switch. The switching times can be set via a table format:

#	Mo	Tue	We	Thu	Fri	Sat	Sun	Mode	Condition	Hours	Min	Selection	Position	Slats
1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	time		0	0		0%	50%
2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	sunrise	time shift		0		Up	
3	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	sunset	time shift		0			75%
4	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	dawn	time shift		0		Up	
5	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	dusk	time shift		0		Up	
6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	random	+/- 10 min	0	0		Up	
7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	time		10	15		Up	
8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	time		0	0		Up	

Figure 31: Settings – Switching times 1-8

For each of the 8 switching times you can set on which days of the week they should be active. The following modes are available:

Time:

The action for this time switch is executed at a fixed time.

Sunrise / Sunset / Dawn / Dusk:

The action for this switching time is executed at the corresponding event. In addition, conditions can be defined for this. For example, the time can be shifted forwards/backwards by a fixed time via the condition "**Time shift**".

The action can be further restricted with the condition "latest at..."/"earliest at..."

Example:

Mode	Condition	Hours	Min
sunrise	latest at...	8	0

This function would be performed at sunrise, but not later than 8 am.

Random:

The action for this time switch is carried out in a period at a specified time. The randomness is specified as a condition (e.g. +/- 60min) at this time.

The "**Selection**" parameter defines via symbols whether adjustable values are possible for "height only", "slats only" or "height and slats". According to the setting, the dropdown fields for defining the values then appear next to it in the columns "**Position**" and "**Slats**".

4.5.3.2 Lock object-type

The priority of the locks is set as follows:

- Priority 1: Lock
- Priority 2: Behaviour like Sunday (by public holiday)

The following settings are available:

Lock object type	lock object
Behavior during lock	no action
Behavior after bus power return	lock not active

Figure 32: Settings – Time switch: Lock object type

The following table shows all available settings:

ETS-Text	Dynamic range [Default value]	Comment
Lock object type	<ul style="list-style-type: none"> • not active • lock object • enable object • threshold comparator 	Setting how the object is used.
Threshold Datapoint type	<ul style="list-style-type: none"> • Percent 0...100% (DPT 5.001) • Value 0...255 (DPT 5.005) • Current [mA] (DPT 7.012) • Brightness [Lux] (DPT 7.013) • Temperature [°C] (DPT 9.001) • Brightness [Lux] (DPT 9.004) • Wind speed [m/s] (DPT 9.005) • Humidity [%] (DPT 9.007) • Air quality [ppm] (DPT 9.008) • Current [mA] (DPT 9.021) • Volume [m3] (DPT 12.1201) • Current [A] (DPT 14.019) 	Selection of the data point type according to which the threshold value is determined. Only with setting "Threshold comparator".
Lock active when...	<ul style="list-style-type: none"> • object value greater than comparative value • object value smaller than comparative value • object value equal to comparative value • object value not equal to comparative value 	Condition at which the lock becomes active. Only with setting "Threshold comparator".
Comparative value	Adjustable value range according to "Threshold data point type".	Setting of the value from which the lock becomes active. Only with setting "Threshold comparator".


Hysteresis	not active, 1%, 2%, 5%, 10%, 20%,30%, 40%, 50% [1%] not active, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 15, 20 [1]	Setting of the hysteresis for the reset of the lock. Scaling according to DTP. Only with setting "Threshold comparator" and there only with "greater than" or "less than" comparative value.
Behaviour during lock	<ul style="list-style-type: none"> • no action • fixed value (one-time) • fixed value (cyclic) 	Setting the behaviour of what is to be done when activated, during a lock
Selection		Only if "Behaviour during lock" is set to "fixed value..." . Setting whether the height and slats, only the slats or only the height should be approached in the case of a lock.
Position: Value at lock	0 % – 100 % [0 %]	Height position which is to be approached during locking
Slats: Value at lock	0 % – 100 % [0 %]	Slat position which is to be approached during locking
Cycle time for value during lock	1 min – 24 h [10 min]	Setting of the interval between the cyclical telegrams. Only for "fixed value (cyclic)"
Behaviour after bus power return	<ul style="list-style-type: none"> • lock not active • lock active • restore lock 	Setting the lock in the event of a voltage recovery on the KNX bus

Table 34: Settings – Time switch: Lock object type

Lock object type

A lock can be triggered or released in three different ways:

- **lock object** : Lock with 1, enable with 0
- **enable object** : Enable with 1, lock with 0
- **threshold comparator** : by specifying a condition "**Lock active when**" and a comparative value - corresponding to the "**Threshold data point type**" - a threshold is defined from which object value the lock is triggered and, according to the set **hysteresis**, enabled.

Important: The hysteresis only affects the withdrawal of the lock.

Example:

Lock active when: object value greater than comparative value

Comparative value: 10000 Lux

Hysteresis: 2%

Object value => 10001 Lux => Lock active

Only at an object value of 10000 lux - 2% (=9800 lux) is the lock withdrawn.


Behaviour during lock:


This defines the behaviour of the lock function.

- **no action**
The time switch is only locked
- **fixed value (one-time)**
The time switch is locked and a fixed value is sent once when it is activated
- **fixed value (cyclic)**
The time switch is locked and a fixed value is sent cyclically.
The time is set via the parameter "**Cycle time for value during lock**".

Value for lock:

With the settings "fixed value (one-time)" and "fixed value (cyclic)", one or two values can be sent, depending on the parameter "selection":

With the selection  only the height position is sent.

With  only the slat position is sent.

With , the height position and the slat position are sent.

Accordingly, the parameters "**Position: Value at lock**" and "**Slat: Value at lock**" are displayed. The positions that are to be sent when the lock is activated are entered there.

Behaviour after bus power return

Defines the behaviour of the lock:

- **Lock not active**
The lock is inactive (regardless of the behaviour before power failure).
- **Lock active**
The lock is set automatically.
- **Restore lock**
The lock assumes the behaviour before the power failure.

The following communication objects are available:

Number	Name/Object Function	Length	Usage
28	Time switch – Lock time switch	1 Bit	Locking / enabling the time switch. For lock object type "lock object".
28	Time switch – Enable time switch	1 Bit	Locking / enabling the time switch. For lock object type "enable object".
28	Time switch – Object value lock	1 Byte 2 Byte 4 Byte	Receiving an external value to lock/enable the time switch. For lock object type "Threshold comparator"
29	Time switch – Status Lock	1 Bit	Sending the current status

Table 35: Communication objects – Time switch: Lock object type

4.6 Logic

The following picture shows the possible settings in the "Logic" menu:

Request logic objects after reset	<input type="radio"/> not active <input checked="" type="radio"/> active
Setting Logic A	OR ▼
Object type for logic output	switch ▼
Send condition	change of output ▼
Invert output	<input checked="" type="radio"/> no <input type="radio"/> yes
Input logic 1	active normal ▼
Input logic 2	active normal ▼
Input logic 3	active normal ▼
Input logic 4	active normal ▼
<hr/>	
Setting Logic B	not active ▼
<hr/>	
Setting Logic C	not active ▼
<hr/>	
Setting Logic D	not active ▼
<hr/>	
Setting Logic E	not active ▼
<hr/>	
Setting Logic F	not active ▼
<hr/>	
Setting Logic G	not active ▼
<hr/>	
Setting Logic H	not active ▼

Figure 33: Settings – Logic

The following table shows the available settings:

ETS-Text	Dynamic range [Default value]	Comment
Request logic objects after reset	<ul style="list-style-type: none"> ▪ not active ▪ active 	Setting whether the logic objects are to be automatically requested after restarting the unit.
Setting Logic A - H	<ul style="list-style-type: none"> ▪ not active ▪ AND ▪ OR ▪ XOR 	Setting the logical operation
Object type for logic output	<ul style="list-style-type: none"> ▪ switch ▪ scene ▪ value ▪ percent value 	Setting the object type for the output object
Sending condition	<ul style="list-style-type: none"> ▪ not automatic ▪ input telegram ▪ change of output ▪ change of output only value 1 ▪ change of output only value 0 	Setting when the value of the output is sent. Only available with object type for logic output "switch".
Invert output	<ul style="list-style-type: none"> ▪ no ▪ yes 	Reverses the output when activated (0 → 1, 1 → 0) Only available with object type for logic output "switch".
Scene number	1 – 64 [2]	Setting which scene is sent when the logic function is fulfilled. Only for the output object type "scene".
1Byte Value	0 – 255 [0]	Setting which value is sent when the logic function is fulfilled. Only for the output object type "value".
Percent value	0% – 100% [0%]	Setting which percentage value is sent when the logic function is fulfilled. Only for the output object type "percent value".
Input logic 1 – 4	<ul style="list-style-type: none"> ▪ not active ▪ active normal ▪ active inverted 	Setting how an input is to be included in the evaluation

Table 36: Settings – Logic A-H

A total of 8 logic blocks are available, each of which can be assigned 4 input objects. The parameter "**Request logic objects after reset**" applies to all 8 logic blocks and defines whether a read request for the input logics is sent out when the unit is restarted.

The "**Object type logic output**" determines which value is sent as the output of the logic.

The **sending conditions** behave as follows:

- **not automatic:** no sending, no request
- **input telegram:** Send on each input change
- **change of output:** Send only when output is changed
- **change of output only value 0/1:** Send only when the output is changed with additional filter function of the value to be sent

The settings for the **input logics** are as follows:

- **not active:** Object for this input logic is deactivated
- **active normal:** Object is evaluated normally
- **active inverted:** Object is first inverted (1 → 0, 0 → 1) and then evaluated

The following table shows the available objects, here for logic A:

Number	Name/Object Function	Length	Usage
41	Logic A – Input logic 1	1 Bit	Input object 1 of logic
42	Logic A – Input logic 2	1 Bit	Input object 2 of logic
43	Logic A – Input logic 3	1 Bit	Input object 3 of logic
44	Logic A – Input logic 4	1 Bit	Input object 4 of logic
45	Logic A – Output Switch / Scene / Value / Percent value	1 Bit/ 1 Byte	Output object of the logic. DPT according to the setting
+5	next Logic		

Table 37: Communication objects – Logic

4.7 "Settings" menu (in the device)

In the "Settings" menu, various changes can be made to the push-button itself.

The menu is accessed either by pressing buttons 3/4 simultaneously or by configuring the individual buttons 3 or 4 accordingly.

The buttons are activated via the "Button functions" menu, see [4.4 Button functions](#).

For buttons 3 and 4, the function "Change to settings menu (internal connection)" has to be activated.

Activation of the "Settings" menu:

If the buttons 3/4 are pressed simultaneously or button 3 or 4 is pressed, the settings menu opens in the display. The corresponding menu item can now be selected with the buttons 1 "v" and 2 "^".

The following options are available:

- Time switch
- Lock time switch
- Date / Time
- Shading
- Time switch reset

The items "Time switch", "Date / Time" and "Time switch reset" are permanently available.

The items "Shading" and "Lock time switch" have to be activated first in the "Display settings" menu in order to be displayed.

Important:

If no change is made in the "Settings" menu, the display jumps back to normal operation after a set time of 20 seconds after the last operation!

4.7.1 Start screen of the "Settings" menu

(including activated "Shading" and "Lock time switch")



Pressing button 4 (bottom right of the display) "**Select**" executes the displayed action.

Pressing button 3 (bottom left of the display) "**Back**" exits the Settings menu.

The scroll bar on the left side means that there are more than the three menu items displayed. These become visible by pressing the buttons 1 "v" or 2 "^".

4.7.2 "Settings" menu „Time switch“:

Use the 1 "v" and 2 "^" buttons to select the menu.

Important:

To be able to make changes, the menu item "Manual input..." must be activated in the menu "Time switch" - "Settings", see [4.5.1 Settings](#)

Pressing button 4 "Select" once takes you to the time switch level.

The desired time switch (1-8) can now be selected with the buttons 1 "v" and 2 "^" and the current settings become visible:



After selecting a time switch (in the example, time switch 1), pressing button 4 "Edit" takes you to the level for making changes to the time switch:



The position to be changed flashes in red. Use the buttons 1 "v" and 2 "^" to change the setting, and the button 4 "Next" to move to the next position.

Important:

- Changes are only saved if each setting is run through once with button 4 "Next" and "Edit" is displayed again at the end with button 4. If you cancel beforehand by pressing button 3 "Back", the previous settings remain valid!
- In this level, the setting menu remains active (does not change to normal operation after 20 seconds without operation) until you leave the level.

4.7.3 "Settings" menu „Lock time switch“:

Important:

- This menu item is only available for selection if it is set to "active" in the menu "Display settings" => "Display in "Settings" menu".
See [4.3.6 Display in the „Settings“ menu \(in the device\)](#)
- To be able to make changes, the menu item "Lock object type" must be active in the "Time switch" menu. See [4.5.3.2 Lock object-type](#)

The menu is selected with the buttons 1 "v" and 2 "^".

Pressing button 4 now activates or deactivates the lock. The display switches here between "Active" and "Inactive". "Active" is displayed in colour.



4.7.4 "Settings" menu „Date / Time“

Important:

To be able to change the Date/Time, the menu item "System Time Mode" in the "Time/Astro Settings" menu must be set to "Master" or "Slave (Master on failure)"!

See [4.2 Time and astro settings](#)



The time and date can be changed here. Pressing button 4 "Select" takes you to the level for changing the settings ("Edit"). Each further press on button 4 "Next" changes to the position to be changed, which flashes in red. Use the buttons 1 "v" and 2 "^" to make the changes.

Important:

Changes are only saved if button 4 is pressed once through each setting and "Edit" is displayed at the bottom right at the end. If you cancel by pressing button 3 "Back", the previous settings remain valid!

4.7.5 "Settings" menu „Shading“

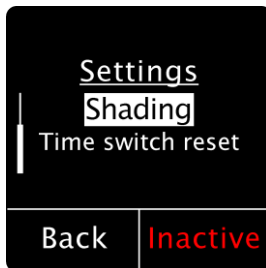
Important:

The settings menu is only available for selection if it is set to "active" in the menu "Display settings" => "Display in "Settings" menu". See [4.3.6 Display in the „Settings“ menu \(in the device\)](#)

The menu is selected with the buttons 1 "v" and 2 "^".

Pressing button 4 sends a 1-bit telegram "On" or "Off" via object 8 - "Enable/lock shading" (expediently to the object for activating/deactivating automatic Shading on the shutter actuator).

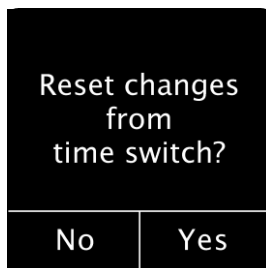
The current status is returned via object 9 - " Enable/lock Shading status". This is shown in the bottom right of the display as "Ready" or "Inactive". "Inactive" is shown in colour. If object 9 is not connected to a group address, the value sent is displayed.



4.7.6 "Settings" menu „Time switch reset“

The menu is selected with keys 1 "v" and 2 "^".

Pressing button 4 "Select" takes you to the next level:



Pressing button 4 "Yes" resets all changes to the time switch and the settings made in the ETS apply. Pressing button 3 "No" returns the display to the "Settings" level and the changes are retained.

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6 Attachment

6.1 Statutory requirements

The devices described above must not be used in conjunction with devices which directly or indirectly serve human, health or life-safety purposes. Furthermore, the devices described must not be used if their use may cause danger to people, animals or property.

Do not leave the packaging material carelessly lying around. Plastic foils/ bags etc. can become a dangerous toy for children.

6.2 Disposal routine

Do not dispose of the old devices in the household waste. The device contains electrical components that must be disposed of as electronic waste. The housing is made of recyclable plastic.

6.3 Assemblage



Danger to life from electric current!

The device may only be installed and connected by qualified electricians. Observe the country-specific regulations and the applicable KNX guidelines

The units are approved for operation in the EU and bear the CE mark.
Use in the USA and Canada is not permitted!

6.4 History

Version 1.0 - First version of Manual

DB V1.0

- State 11/2021