SIEMENS

N 262D31, N 262D51, N 263D31, N 263D51

Binary inputs

Application program description

A6V12316433_en--_a
2021-10-29

gépészbolt

Supplementary information

Purpose of the application program description

The application program description contains detailed information on the parameters and communication objects of the ETS application program as well as a description of the functions that can be set via the different parameters.

Target audience of the application program description

The application program description is intended for people who have attended an ETS course and want to commission or configure the binary inputs product.

Product documentation and support

Product documentation

Documents related the product, such as operating and installation instructions, application program description, product database, additional software and CE declarations can be downloaded from the following website:

http://www.siemens.com/gamma-td

Frequently asked questions

For frequently asked questions about the product and their solutions, see:

https://support.industry.siemens.com/cs/products?dtp=Faq&mfn=ps&lc=de-WW

Support

Contact details for additional questions relating to the product:

Tel.: +49 911 895-7222

Fax: +49 911 895-7223

Email: support.automation@siemens.com

http://www.siemens.com/supportrequest

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1 Information on the binary inputs and on the application programs

Product family: Input

Product type: Binary input

Manufacturer: Siemens

Type	Order number	Application program
Binary input N 262D31, 4 x potential-free	5WG1262-1DB31	07 B0 A4 binary input 4-fold 9A1301
Binary input N 262D51, 8 x potential-free	5WG1262-1DB51	07 B0 A8 binary input 8-fold 9A1401
Binary input N 263D31, 4 x AC/DC 10…230 V	5WG1263-1DB31	07 B0 A4 binary input 4-fold 9A1301
Binary input N 263D51, 8 x AC/DC 10…230 V	5WG1263-1DB51	07 B0 A8 binary input 8-fold 9A1401

In the descriptions of the objects and parameters, the expression “push-button closed” is synonymous with “voltage applied."

2 Function description

2.1 Functions of the binary inputs

The binary inputs serve as an interface for operating KNX systems via conventional voltage-loaded push-buttons and switches or for recording potential-free binary signals sent, for example, by door/window contacts or signal contacts.

Binary inputs offer both functions that use just one input channel and functions for which two input channels are required. Which adjacent channels are connected for this purpose can be configured in the device settings.

Depending on the function selected for the input channel, it can be defined whether a telegram is sent on a rising edge and/or falling edge, on a short and/or long press of the push-button or on a change of state.

Potential-free input:

Binary inputs with potential-free inputs:

- Binary input N 262D31, 4 x potential-free 5WG1262-1DB31
- Binary input N 262D51, 8 x potential-free 5WG1262-1DB51

The devices with potential-free input channels are used to record potential-free contacts, the pulsed polling voltage is generated internally.

Potential-free contacts are, for example, door/window contacts or signal contacts.

Voltage input:

Binary inputs with voltage inputs:

- Binary input N 263D31, 4 x AC/DC 10…230 V 5WG1263-1DB31
- Binary input N 263D51, 8 x AC/DC 10…230 V 5WG1263-1DB51

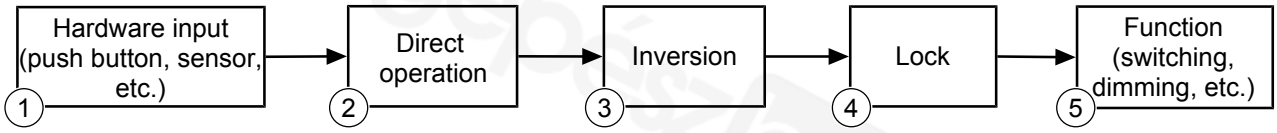
The devices with voltage inputs have far range inputs and are used to record 10...230 V AC/DC signals. The following signals can be recorded and configured differently so that a different KNX telegram is sent depending on the signal:

- Voltage is applied
- Voltage is not applied
- Voltage increasing
- Voltage decreasing
- Voltage pulses

Voltage-loaded contacts are e.g. conventional push-buttons or switches.

2.2 Processing the input signals

The signals arriving at the input channels of the binary input are processed in the following sequence:



1	Functions of the binary inputs [→ 6]	2	Direct operation [→ 33]
3	Invert input [→ 25]	4	Lock input object [→ 27]
5	Setting functions [→ 24]		

First, the signal arriving at the binary input from the connected hardware (e.g. a sensor or push-button) is evaluated. If direct operation is active, this signal is ignored and the signal arriving at the binary input via the direct operation push-button is valid. If an inversion is configured, the signal is inverted. Then it is checked if a lock is active for this channel. If no lock is active, the other parameters that have been configured for this channel are evaluated (e.g. functions such as “switching", “dimming", “solar protection control", ...).

2.3 Operating and display elements and connections

Control and display elements, example: Binary input N 262D51

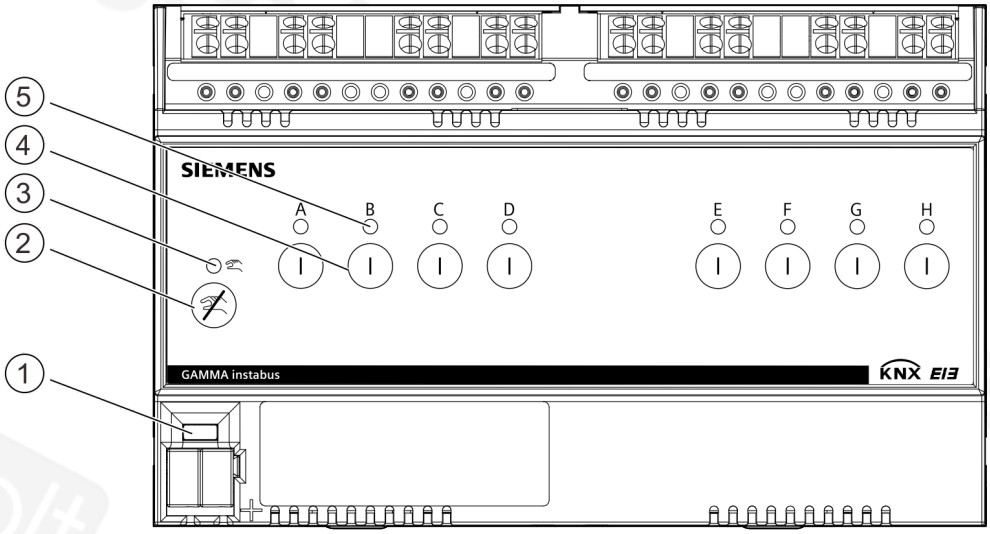


Fig. 1: Control and display elements, example: Binary input 8 x potential-free

Pos.	Operating or display elements	Function
1	Programming LED (red), Programming button	Short push of button (< 2 s): ● Activate programming mode, display status (LED on = active). Very long push of button (> 20 s): ● Reset to factory settings (after 20 s, the LED starts flashing for about 8 s).
2	Button: Deactivate direct operation	Deactivate direct operation for all channels.
3	Status LED of direct operation (yellow)	LED flashes if direct operation is active for at least one channel.
4	Button: Channel state On/Off	Function according to the ETS configuration. In the delivery state, the “switching” function is active. Short or long pressing of push-buttons have a related effect.
5	Status LED of the channel (red)	Indicates the switching state (On/Off) of the respective channel. ● LED switched off: Direct operation is switched off. The contact of the channel is open. ● LED lit: Direct operation is switched off. The contact of the channel is closed. ● LED flashes at short intervals: Direct operation is switched on. An open contact is simulated for this channel. ● LED flashes at long intervals: Direct operation is switched on. A closed contact is simulated for this channel.

Connections, example: Binary input N 262D51

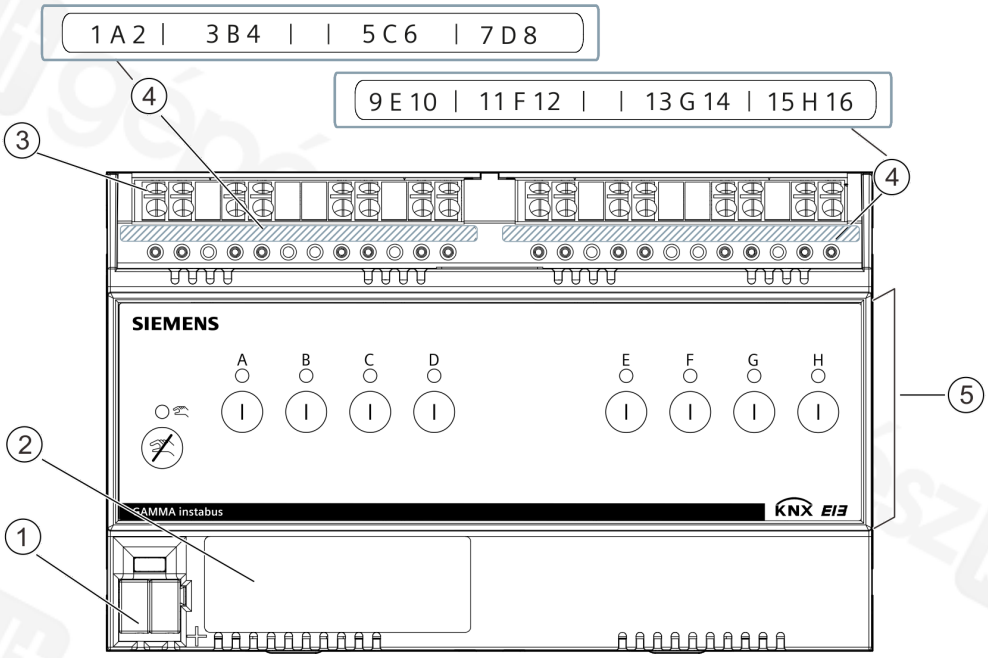


Fig. 2: Position and function of the connections and labeling, example: Binary input 8 x potential-free

Pos.	Element	Function
1	Connection pins for KNX bus terminal block	Connect KNX bus
2	Label field	Enter physical address
3	Terminals of the potential-free binary inputs	Connection of the potential-free binary signals: Push-buttons, switches or contacts
4	Labeling of the potential-free binary inputs for the channels	
5	Membrane keypad	Execute direct operation Display switch status

Control and display elements, example: Binary input N 263D51

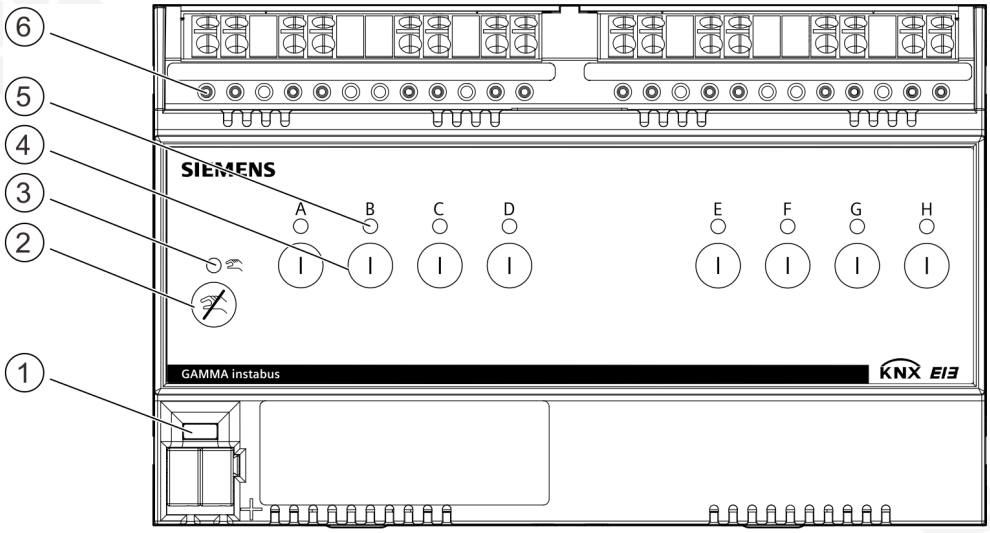


Fig. 3: Control and display elements, example: Binary input 8 x AC/DC 10...230 V

Pos.	Operating or display elements	Function
1	Programming LED (red), Programming button	Short push of button (< 2 s): ● Activate programming mode, display status (LED on = active). Very long push of button (> 20 s): ● Reset to factory settings (after 20 s, the LED starts flashing for about 8 s).
2	Button: Deactivate direct operation	Deactivate direct operation for all channels.
3	Status LED of direct operation (yellow)	LED flashes if direct operation is active for at least one channel.
4	Button: Channel state On/Off	Function according to the ETS configuration. In the delivery state, the “switching” function is active. Short or long pressing of push-buttons have a related effect.
5	Status LED of the channel (red)	Indicates the switching state (On/Off) of the respective channel. ● LED switched off: Direct operation is switched off. No voltage is applied. ● LED lit: Direct operation is switched off. Voltage is applied. ● LED flashes at short intervals: Direct operation is switched on. No applied voltage is simulated for this channel. ● LED flashes at long intervals: Direct operation is switched on. An applied voltage is simulated for this channel.
6	Test contacts	Metering point for voltage testing

Connections, example: Binary input N 263D51

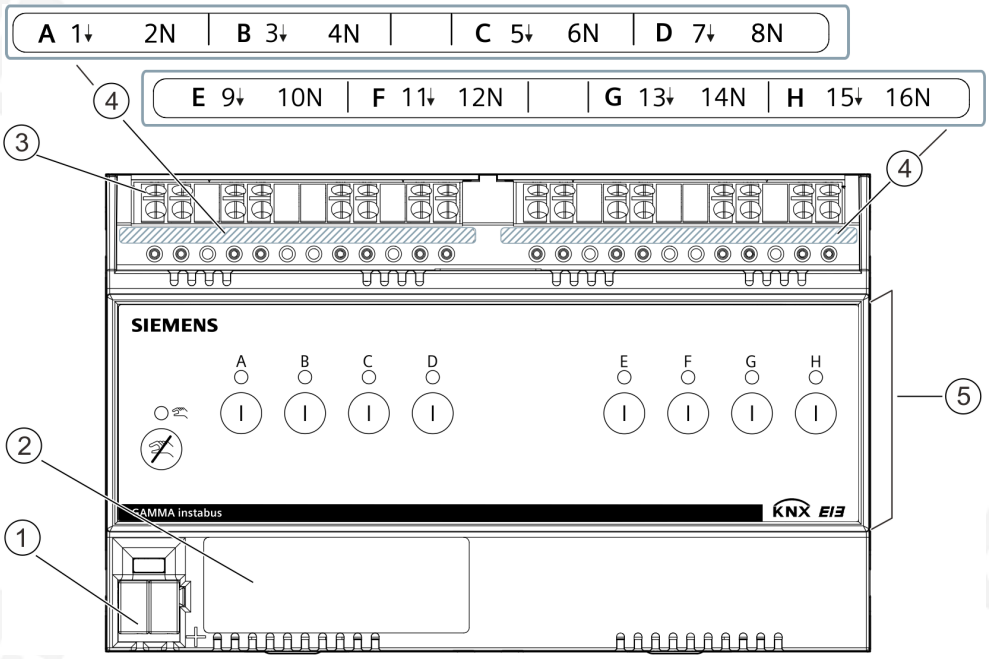


Fig. 4: Position and function of the connections and labeling, example: Binary input 8 x AC/DC 10...230 V

Pos.	Element	Function
1	Connection pins for KNX bus terminal block	Connect KNX bus
2	Label field	Enter physical address
3	Connection terminals of the voltage inputs	Connection of the voltage-loaded switches or push-buttons
4	Labeling of voltage inputs for the channels	
5	Membrane keypad	Execute direct operation Display switch status

2.4 Factory settings

In the delivery state, all inputs (channels) are assigned the function "Switching” for the building site function.

2.5 Building site function

The building site function provided ex-factory enables switching the building site lighting on and off via a bus wall switch or binary input and a respective actuator, even if these devices have not yet been commissioned with the Engineering Tool Software ETS.

Switching the site lighting on and off via the “Channel state On/Off” push-button on the front of the binary input is also possible.

2.6 Programming mode

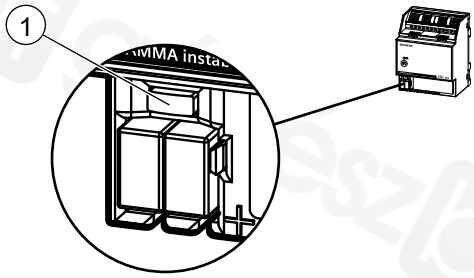


Fig. 5: Programming button and programming LED (example illustration)

After bus voltage recovery, wait several seconds before pushing the programming (1) button (not before booting is complete).

Activate programming mode

- ◈ Briefly press the programming push-button (1) (< 2 seconds).
- ⇨ Programming mode is activated.
- ⇨ The programming LED (1) illuminates continuously.

Deactivating programming mode

- ▷ Programming mode is activated. The programming LED (1) illuminates continuously.
- ◈ Briefly press the programming push-button (1) (< 2 seconds).
- ⇨ Programming mode is deactivated.
- ⇨ The programming LED (1) is not illuminated.

2.7 Behavior on unloading the application program

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

2.8 Behavior on voltage failure/recovery

The electronics of the device are bus powered. Therefore, a grid voltage failure only leads to a functional failure of the device if the bus voltage also fails as a result of the grid voltage failure.

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

When bus voltage is recovered, the configured actions for each input are configured and, depending on the parameters set, new statuses are reported.

3 Communication objects

The application program is loaded in the device ex works.

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

With the help of the ETS the specific parameters and addresses can be assigned.

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

The following lists show all communication objects of the device for one channel. The communication objects are identical for every channel with the only difference being the number.

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

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

3.1 Cross-channel communication objects

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

3.2 Communication objects of the individual channels

No./ channel	Object name	Function	Datapoint type	Flags
A*				
3	A Lock input	locking	1.003 enable	CRWTU
4	A Binary value	On/Off	1.001 switch	CRWT
5	A Switching A + B Switching	Toggle On Off On/Off	1.001 switch	CRWT
8	A + B Dimming A Dimming	brighter/darker darker brighter	3.007 dimming control	CRWT
10	A Solar Protection A + B Solar Protection	Up/Down Up/Down	1.008 up/down	CRWT
11	A Slats A + B Slats	Stop, Up/Down Stop, Up/Down	1.007 step	CRT
12	A Scene 1/2	recall	1.022 scene	CRT
13	A Scene 1/2	store	1.022 scene	CRT

No./ chan-nel	Object name	Function	Datapoint type	Flags
A*				
14	A 8-bit scene	recall/store recall	18.001 scene control	CRT
15	A Value	Value	5.001 percentage (0..100%) 5.010 counter pulses (0..255) 6.010 counter pulses (-128..127) 7.001 pulses 7.012 current (mA) 7.600 absolute colour temperature (K) 8.001 pulses difference 9.001 temperature (°C) 9.004 lux (Lux) 9.005 speed (m/s) 9.007 humidity (%) 9.008 parts/million (ppm) 9.021 current (mA) 9.024 power (kW) 9.026 rain amount (l/m²) 9.027 temperature (°F) 9.* 2-byte float value 10.001 time of day 12.001 counter pulses (unsigned) 13.001 counter pulses (signed) 14.019 electric current (A) 14.031 energy (J) 14.056 power (W) 14.065 speed (m/s) 14.068 temperature (°C) 14.* 4-byte float value 16.000 Character String (ASCII) 232.600 RGB value 3x(0..255) 242.600 colour xyY	CRT
16	A + B Receive value	Value	5.001 percentage (0..100%) 5.010 counter pulses (0..255) 6.010 counter pulses (-128..127) 7.001 pulses 8.001 pulses difference 9.001 temperature (°C) 9.004 lux (Lux) 9.005 speed (m/s) 9.* 2-byte float value 12.001 counter pulses (unsigned) 13.001 counter pulses (signed) 14.056 power (W)	CW
17	A + B Value	Value	5.001 percentage (0..100%)	CRT

No./ chan-nel	Object name	Function	Datapoint type	Flags
A*				
			5.010 counter pulses (0..255) 6.010 counter pulses (-128..127) 7.001 pulses 8.001 pulses difference 9.001 temperature (°C) 9.004 lux (Lux) 9.005 speed (m/s) 9.* 2-byte float value 12.001 counter pulses (unsigned) 13.001 counter pulses (signed) 14.056 power (W)	
18	A Count	Set value	5.010 counter pulses (0..255) 6.010 counter pulses (-128..127) 7.001 pulses 8.001 pulses difference 12.001 counter pulses (unsigned) 13.001 counter pulses (signed)	CW
19	A Threshold	Set/Request value	5.010 counter pulses (0..255) 6.010 counter pulses (-128..127) 7.001 pulses 8.001 pulses difference 12.001 counter pulses (unsigned) 13.001 counter pulses (signed)	CRW
20	A Count	Value	5.010 counter pulses (0..255) 6.010 counter pulses (-128..127) 7.001 pulses 8.001 pulses difference 12.001 counter pulses (unsigned) 13.001 counter pulses (signed)	CRT
21	A Start value	Set value	5.010 counter pulses (0..255) 6.010 counter pulses (-128..127) 7.001 pulses 8.001 pulses difference 12.001 counter pulses (unsigned) 13.001 counter pulses (signed)	CRW
22	A Above limit	On/Off	1.002 boolean	CRT
23	A Below limit	On/Off	1.002 boolean	CRT
24	A Logic operation 1	On/Off	1.001 switch	CW
25	A Logic operation 2	On/Off	1.001 switch	CW
26	A Logic operation 1 output	On/Off	1.001 switch	CRT
27	A Logic operation 2 output	On/Off	1.001 switch	CRT
29	A Dim color temperature	warmer/colder	3.007 dimming control	CRT
30	A Color temperature value	16-bit value	7.600 absolute colour temperature (K)	CRT

No./ chan-nel	Object name	Function	Datapoint type	Flags
A*				
31	A Dim brightness and color temperature	brighter/darker, warmer/ colder	250.600 brightness colour temperature control	CRT
32	A Dimming value/color temperature value/dimming time	Dimming value + color temperature value + dimming time	249.600 brightness colour temperature transition	CRT
33	A Forced control	On/Off	2.001 switch control	CRT
34	A Effect	start/stop	18.001 scene control	CRT
35	A Switching 1	On/Off	1.001 switch	CRT
36	A Switching 2	On/Off	1.001 switch	CRT
37	A Switching 3	On/Off	1.001 switch	CRT
38	A Switching 1	On/Off	1.001 switch	CRWT
39	A Switching 2	On/Off	1.001 switch	CRWT
40	A Switching 3	On/Off	1.001 switch	CRWT
41	A Count	Set value	6.010 counter pulses (-128..127) 8.001 pulses difference 13.001 counter pulses (signed)	CW
42	A Count	Value	6.010 counter pulses (-128..127) 8.001 pulses difference 13.001 counter pulses (signed)	CRT
43	A Start value	Set value	6.010 counter pulses (-128..127) 8.001 pulses difference 13.001 counter pulses (signed)	CRW
44	B Count	Set value	6.010 counter pulses (-128..127) 8.001 pulses difference 13.001 counter pulses (signed)	CW
45	B Count	Value	6.010 counter pulses (-128..127) 8.001 pulses difference 13.001 counter pulses (signed)	CRT
46	B Start value	Set value	6.010 counter pulses (-128..127) 8.001 pulses difference 13.001 counter pulses (signed)	CRW
47	A 2nd telegram, switching	On/Off	1.001 switch	CRWT
48	A 2nd telegram, scene 1/2	recall	1.022 scene	CRT
49	A 2nd telegram, scene 1/2	store	1.022 scene	CRT
50	A 2nd telegram, 8-bit scene A 2nd telegram, 8-bit scene	recall recall/store	18.001 scene control	CRT
51	A 2nd telegram, forced control	On/Off	2.001 switch control	CRT
52	A 2nd telegram, value	Value	5.001 percentage (0..100%) 5.010 counter pulses (0..255) 6.010 counter pulses (-128..127)	CRT

No./ chan-nel	Object name	Function	Datapoint type	Flags
A*				
			7.001 pulses 7.012 current (mA) 7.600 absolute colour temperature (K) 8.001 pulses difference 9.001 temperature (°C) 9.004 lux (Lux) 9.005 speed (m/s) 9.007 humidity (%) 9.008 parts/million (ppm) 9.021 current (mA) 9.024 power (kW) 9.026 rain amount (l/m²) 9.027 temperature (°F) 10.001 time of day 12.001 counter pulses (unsigned) 13.001 counter pulses (signed) 14.019 electric current (A) 14.031 energy (J) 14.056 power (W) 14.065 speed (m/s) 14.068 temperature (°C) 16.000 Character String (ASCII) 232.600 RGB value 3x(0..255) 242.600 colour xyY	
53	A + B Count	Value	6.010 counter pulses (-128..127) 8.001 pulses difference 13.001 counter pulses (signed)	CRT
54	A + B Upper threshold	Set/Request value	6.010 counter pulses (-128..127) 8.001 pulses difference 13.001 counter pulses (signed)	CW
55	A + B Lower threshold	Set/Request value	6.010 counter pulses (-128..127) 8.001 pulses difference 13.001 counter pulses (signed)	CW
56	A + B Exceedance of upper threshold	On/Off	1.002 boolean	CRT
57	A + B Exceedance of lower threshold	On/Off	1.002 boolean	CRT
58	A Direct operation lock A + B Direct operation lock	On/Off On/Off	1.003 enable	CW
59	Status direct operation	On/Off	1.002 Boolean	CRT

* For each additional channel, add the value “57”. Example: Channel A, No. 3 = Channel B, No. 60 = Channel C, No. 117.

4 Overview of the user interface

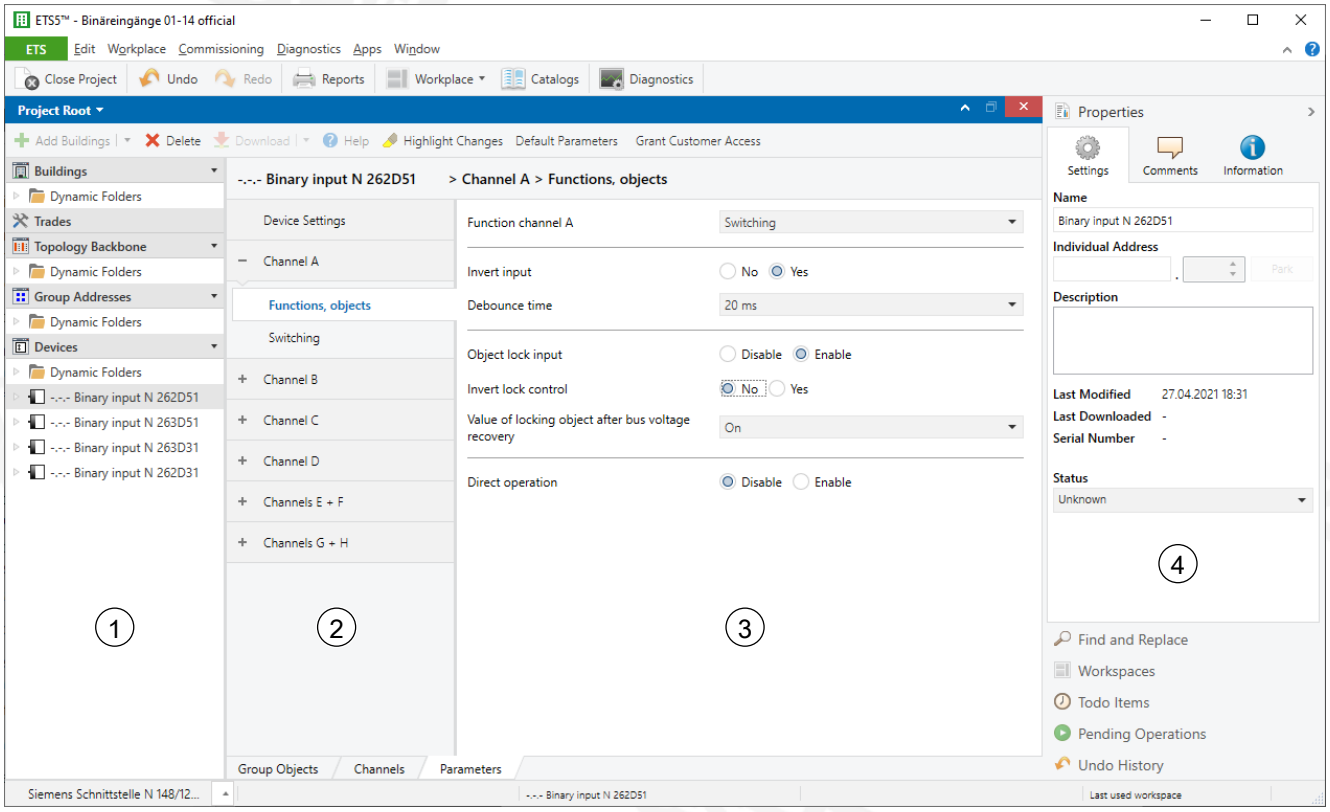


Fig. 6: Structure of the user interface

1 Tree view of devices and channels

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

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

4 Properties area. This area displays the properties of the device.

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

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

5 Resetting the device to factory settings

NOTICE	
!	**Loss of data due to resetting device!** When you reset the device, all parameters and settings entered are deleted. ● Ensure that the device is really supposed to be reset.

Resetting the device to factory settings

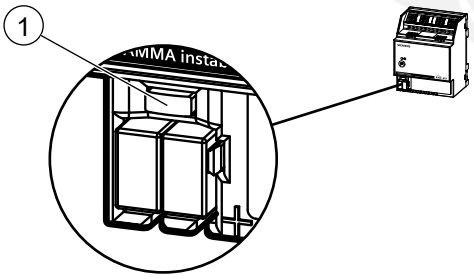


Fig. 7: Programming push-button and programming LED (example illustration)

◈ Press the programming push-button (1) (at least 20 seconds) until the programming LED (1) starts flashing quickly.

⇨ The programming (1) LED flashes for 8 seconds.

⇨ The device has been reset to factory settings. All parameter settings have been deleted.

⇨ The building site function is active again.

6 Device settings

In this parameter window, the cross-function and cross-channel definitions are made.

6.1 “Device settings” parameter

Cyclical transmission of device function (0 = in operation)

Parameter	Settings
Cyclical transmission of device function (0 = in operation)	disable enable

Function:

With this parameter, the cyclic sending of the device function can disabled or enabled.

If the device is functioning properly, the value “0” is transmitted cyclically.

If the device no longer transmits cyclically, this indicates a device failure. A higher-level system can monitor the cyclic sending and trigger a warning or alarm message if the status message is not transmitted.

Note:

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

Other parameters:

If "enable” has been selected, the parameters "Send status of device function inverted” and "Cyclical transmission period” also appear.

More information:

- “Status device function” communication object [→ 23]
- “Send inverted status for device function” parameter [→ 20]
- “Cyclical transmission period” parameter [→ 21]

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

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

Function:

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

Availability:

The "Send status of device function inverted (1 = in operation)” parameter is displayed when the following configuration has been made:

- Parameter "Cyclical transmission of device function (0 = in operation)” in the "device settings” parameter card
  - Setting: “enable”

More information:

- “Cyclical transmission of device function (0 = in operation)” parameter [→ 20]

Cyclical transmission period

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

Function:

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

Note:

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

Availability:

The "Cyclical transmission period” parameter is displayed when the following configuration has been made:

- Parameter "Cyclical transmission of device function (0 = in operation)” on the "device settings” parameter card
  - Setting: “enable”

More information:

- “Cyclical transmission of device function (0 = in operation)” parameter [→ 20]

Specific transmission time for status objects after bus voltage recovery

Parameter	Settings
Specific transmission time for status objects after bus voltage recovery hh:mm:ss	00:00:00 ... 18:12:15

Function:

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

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

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

Note:

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

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

Transmission delay between status objects

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

Function:

This parameter is used to set with which minimal wait time two successive status telegrams are to be sent to ensure that no excessive bus load is generated by status telegrams sent in quick succession during operation.

Note:

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

Behavior after download

Parameter	Settings
Behavior after download	Use device parameter Use ETS parameter

Function:

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

The following settings are possible:

- Use device parameter**:**
  With this setting, parameters that the device has received from other sources via the communication objects are retained and are not overwritten by the parameters set in the ETS.
  The settings of the channels are not re-initialized and the current status is retained.
- Use ETS parameter**:**
  With this setting, the parameters stored in the device are overwritten and the parameters set in the ETS are used. The behavior for bus voltage recovery configured in the ETS is also executed.

Recommendation:

If the device does not behave as expected, set this parameter to "Use ETS parameter."

Function channels A + B

Parameter	Settings
Function channels A + B	Pairwise Single

Function:

This parameter can be used to set whether each of the two inputs is to be configurable separately or whether a common 2-push-button function is assigned to the two channels. Depending on this setting, the available functions and communication objects change.

The following settings are possible:

- Pairwise
  With this setting, the two channels can be connected to a common input pair and a 2-button function is possible (e.g. dimming or solar protection control). The parameter cards for channels adapt accordingly (e.g. channel A + B) and other additionally required parameters appear.
- Single
  With this setting, the two channels can be configured individually. The parameter cards for channels adapt accordingly (e.g. channel A).

6.2 Communication objects

Status device function

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

Function:

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

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

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

Note:

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

Availability:

The "Status device function” communication object is displayed if the following configurations have been made:

- Parameter "Cyclical transmission of device function (0 = in operation)” on the "device settings” parameter card
  - Setting: “enable”

More information:

- “Cyclical transmission of device function (0 = in operation)” parameter [→ 20]

Send status values

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

Function:

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

7 Setting functions

7.1 “Functions, objects” parameter card

General cross-functional functions for the channel and the function of the channel or channel pair are set on the “functions, objects” parameter card.

Cross-functional settings for the channel:

- Swap channels A and B [→ 25] (only possible when setting the channels together).
  "Function of channels A + B” parameter [→ 22]
- Invert input [→ 25]
- Debounce time [→ 26]
- Lock input object [→ 27]
- Direct operation [→ 33]

Possible functions of a channel:

Setting options for parameter "Function channel A"

This parameter is displayed if "Single” has been selected for the respective channel in the "device settings” section in the "Function channels A + B” parameter.

“Function of channels A + B” parameter [→ 22]

- Deactivated: No functions are assigned to the channel.
- Send switching state / binary value [→ 43]
- Switching [→ 49]
- Dimming [→ 56]
- Scene control [→ 62]
- Solar protection control [→ 71]
- Send value [→ 77]
- Logic operations [→ 105]
- Pulse counting [→ 114]
- Color temperature control [→ 155]
- Forced control [→ 171]
- Effect control [→ 183]
- Group control [→ 187]
- Multiple operation [→ 190]

Possible functions of a channel pair:

Setting options for parameter "Function channels A + B"

This parameter is displayed if "Pairwise” has been selected for the respective channel in the "device settings” section in the "Function channels A + B” parameter.

“Function of channels A + B” parameter [→ 22]

- Deactivated: No functions are assigned to the channel pair.
- Dimming [→ 56]
- Solar protection control [→ 71]
- Send value, variable [→ 98]
- Difference counting [→ 132]

7.2 Swap channels A and B

Parameters of the “functions, objects” parameter card

Swap channels A and B

Parameter	Settings
Swap channels A and B	disable enable

Function:

This parameter determines whether the channels that can be set together should be swapped.

Example:

This parameter can be used, for example, to avoid subsequent interchanging of the connection lines at the terminals.

Availability:

The "Swap channels A and B” parameter is displayed when the following configuration has been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Pairwise”

More information:

- “Function of channels A + B” parameter [→ 22]

7.3 Invert input

Parameters of the “functions, objects” parameter card

Invert input
Invert input channel A
Invert input channel B

Parameter	Settings
Invert input Invert input channel A Invert input channel B	No Yes

Function:

This parameter determines whether the input signal of the channel is inverted.

The following settings are possible:

- No:
  The signal at the input is not inverted.
- Yes:
  The signal at the input is inverted.

Availability: Parameter "Invert input”:

The "Invert input” parameter is displayed when the following configuration has been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”

Availability: Parameters "Invert input channel A” and "Invert input channel B":

The parameters "Invert input channel A” and "Invert input channel B” are displayed if the following configuration has been made:

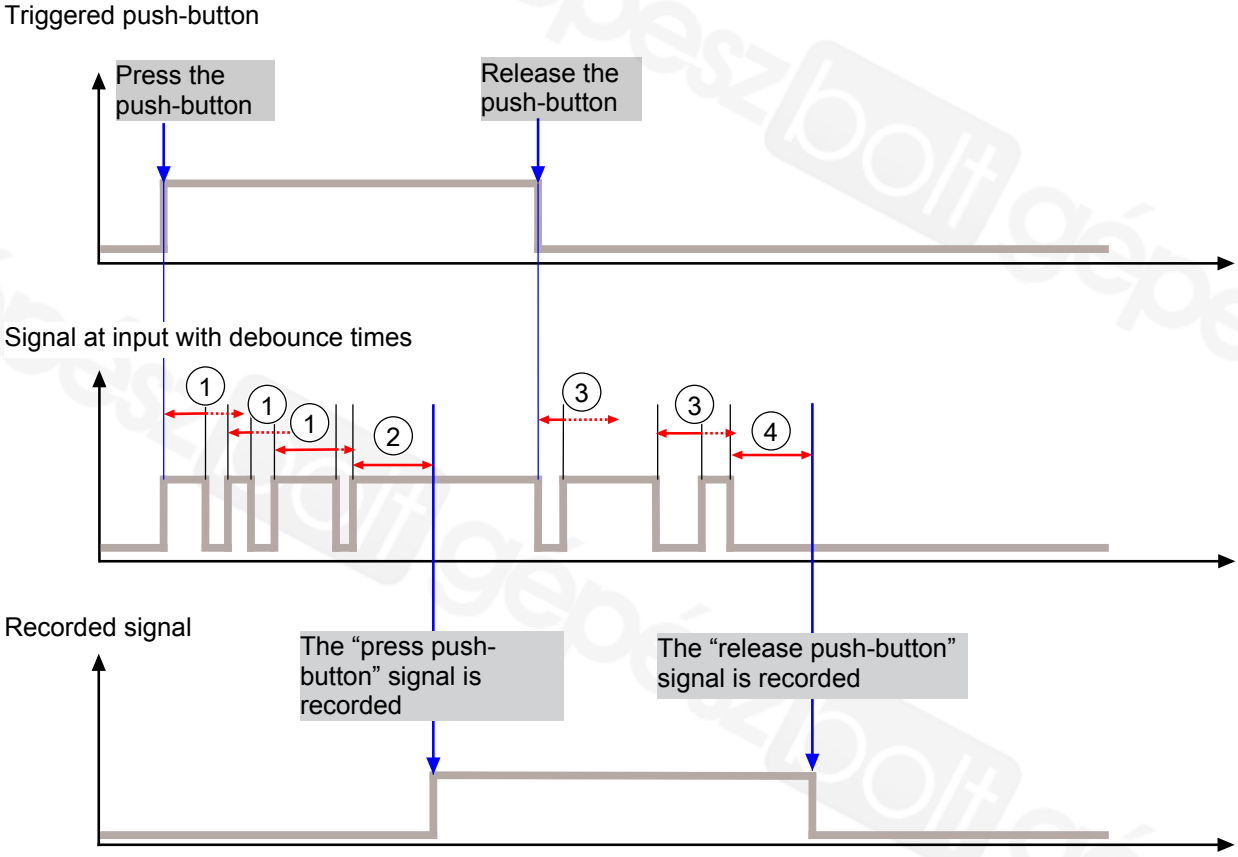
- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Pairwise”

More information:

- “Function of channels A + B” parameter [→ 22]

7.4 Debounce time

Setting a debounce time prevents unintentional multiple triggering when the input is actuated only once, e.g. by bouncing the contact. "Interference signals" are taken into account and the signal is only recorded if it is stably present for longer than the configured debounce time.



←····→	The configured debounce time is interrupted. The signal is not recorded
←——→	The configured debounce time is not interrupted. The signal is recorded
1	The "press push-button" signal is unstable and is therefore not recorded as such. Before the debounce time expires, another signal arrives at the input.
2	The "press push-button" signal is stable and is recorded.
3	The "release push-button" signal is unstable and is therefore not recorded as such. Before the debounce time expires, another signal arrives at the input.
4	The "release push-button" signal is stable and is recorded.

Parameters of the “functions, objects” parameter card

Debounce time

Debounce time input channel A

Debounce time input channel B

Parameter	Settings
Debounce time Debounce time input channel A Debounce time input channel B	30 ms ... 300 ms

Function:

The debounce function prevents unintentional multiple triggering when the input is actuated only once, e.g. by bouncing the contact.

Examples:

- Depending on the wear or degree of corrosion of a contact, a longer debounce time may be necessary.
- Interference coupling with very long supply lines can be compensated by a long debounce time.

Availability: Parameter "Debounce time”:

The "Debounce time” parameter is displayed when the following configuration has been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”

Availability: Parameters "Debounce time input channel A” and "Debounce time input channel B":

The parameters "Debounce time input channel A” and "Debounce time input channel B” are displayed if the following configuration has been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Pairwise”

More information:

- “Function of channels A + B” parameter [➞ 22]

7.5 Lock input object

The parameter "Object lock input” is used to display a separate communication object through which the function of the channel can be switched on and off, e.g. by pressing a push-button. This is useful if you do not want to activate or deactivate the function permanently, but only for a certain period of time.

When an input is unlocked, the current contact status (if it was updated during the time of the lock) is sent immediately after unlocking.

During initial commissioning or after resetting to the delivery state, the communication object of the disable function has no value. This means that in order to be able to use the function after the initial download of the configurations made in the ETS, the communication object must receive a value. This is done, for example, by sending a telegram to the group address assigned to the communication object or by actuating the connected switch, which can be used to switch the lock on and off.

Application examples

Key switch:

Key-operated switch for protection against unauthorized operation: e.g., protection of switches located in publicly accessible areas (e.g., for dimming, switching, or sunshade control functions).

Child lock:

Separate, hard-to-reach switch as a child safety lock for other easy-to-reach switches.

7.5.1 "Lock input object” parameter

The following parameters are used to set the "Object lock input” function:

Parameters of the “functions, objects” parameter card

Object lock input
Object lock input channel A
Lock input channel B object

Parameter	Settings
Object lock input Object lock input channel A Lock input channel B object	disable enable

Function:

If this parameter is set to "enable", the input of the channel can be disabled or enabled via a communication object.

If an input is inhibited (inhibit object = 1), neither signal changes at this input are transmitted nor the signal state are sent.

Other parameters:

If "enable” is selected, the parameters "Invert lock control” and "Value of locking object after bus voltage recovery” also appear.

Availability: "Object lock input” parameter

The "Object lock input” parameter is displayed when the following configuration has been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”

Availability: Parameters "Object lock input channel A” and "Lock input channel B object"

The parameters "Object lock input channel A” and "Lock input channel B object” are displayed if the following configuration has been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Pairwise”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Invert lock input” parameter [→ 29]
- "Lock object when bus voltage is recovered” parameter [→ 30]
- “Lock A input” communication object [→ 32]

Invert lock control
Invert lock control A
Invert lock input B

Parameter	Settings
Invert lock control Invert lock control A Invert lock input B	No Yes

Function:

This parameter is used to set whether the input of the push-button or the inputs of the push-button pair can be locked by receiving “logical 0” at the lock object.

Availability: "Invert lock control” parameter

The "Invert lock control” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Object lock input” on the “functions, objects” parameter card
  - Setting: “enable”

Availability: "Invert lock control A” parameter

The "Invert lock control A” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Pairwise”
- Parameter "Object lock input channel A” on the “functions, objects” parameter card
  - Setting: “enable”

Availability: “Invert lock input B” parameter

The “invert lock input B” parameter is displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Pairwise”
- Parameter “lock object input channel B” on the “functions, objects” parameter card
  - Setting: “enable”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Lock input object” parameter [→ 28]

Value of locking object after bus voltage recovery

Value of locking object channel A after bus voltage recovery

Lock object channel B when bus voltage is recovered

Parameter	Settings
Value of locking object after bus voltage recovery Value of locking object channel A after bus voltage recovery Lock object channel B when bus voltage is recovered	Off On Deactivated Last value Query via bus

Function:

This parameter is used to set the value of the lock object or the lock after bus voltage failure and recovery.

The following settings are possible:

- Off:
  If the parameter is set to "Off", the lock object contains the value "off" after bus voltage recovery.
- On:
  If the parameter is set to "On", the lock object contains the value "on" after bus voltage recovery.
- Deactivated
  If the parameter is set to "Deactivated", the channel lock (regardless of the value of the lock object) is disabled for this channel after bus voltage recovery. The lock is inactive until a new specification via the communication object switches the lock on or off.
- Last value
  If the parameter is set to "Last value", the lock of the channel (regardless of the value of the lock object) contains the last stored value after bus voltage recovery.
  If an inversion has been configured, it is not taken into account with this setting.
- Query via bus
  If the parameter is set to "Query via bus", the lock of the channel (independent of the value of the lock object) is queried via the bus after bus voltage recovery via "ValueRead."
  If there is no response, the channel lock (regardless of the value of the lock object) is set to the last value before bus voltage failure.
  If an inversion has been configured, it is not taken into account with this setting.

Availability: "Value of locking object after bus voltage recovery" parameter

The "Value of locking object after bus voltage recovery" parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B" on the "device settings" parameter card
  - Setting: "Single"
- Parameter "Object lock input" on the "functions, objects" parameter card
  - Setting: "enable"

Availability: "Value of locking object channel A after bus voltage recovery" parameter

The "Value of locking object channel A after bus voltage recovery" parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B" on the "device settings" parameter card
  - Setting: "Pairwise"
- Parameter "Object lock input channel A" on the "functions, objects" parameter card
  - Setting: "enable"

Availability: "Lock object channel B when bus voltage is recovered" parameter

The "lock object channel B when bus voltage is recovered" parameter is displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  – Setting: “Pairwise”
- Parameter “lock object input channel B” on the “functions, objects” parameter card
  – Setting: “enable”

More information:

- “Function of channels A + B” parameter [→ 22]
- "Lock input object” parameter [→ 28]

See also

- Lock input object [→ 27]
- "Lock input object” communication object [→ 32]

7.5.2 "Lock input object” communication object

The following communication objects are used to control the "Object lock input” function:

A Lock input

No.	Object name	Function	Datapoint type	Flags
3	A Lock input	locking	1.003 enable	CRWTU

Function:

This communication object can be used to disable or enable the input of the channel.

If an input is locked (lock object = 1 with no inversion or lock object = 0 with inversion of the lock input), signal changes are not transmitted at this input nor is the signal state sent.

The communication object "A Lock input” can be displayed. The read value corresponds to the actual state of the lock (not the state of the lock object). Inversions of the communication object "A Lock input” are taken into account.

Note:

During initial commissioning or after resetting to the delivery state, this communication object has no value. This means that after the initial download of the configurations made in the ETS, the communication object must receive a value. This is done, for example, by sending a telegram to the group address assigned to the communication object or by actuating the connected switch, which can be used to switch the lock on and off.

Availability:

The "A Lock input” communication object is displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: "Single” or "Pairwise"
- Parameter "Object lock input” or "Object lock input channel A” on the "functions, objects” parameter card
  - Setting: “enable”

More information:

- “Function of channels A + B” parameter [→ 22]
- "Lock input object” parameter [→ 28]
- “Invert lock input” parameter [→ 29]

See also

- Lock input object [→ 27]
- "Lock input object” parameter [→ 28]

7.6 Direct operation

In direct operation, the transmission of the output telegrams can be triggered directly via the push-buttons available at the binary input. Depending on the binary input variant, the opening and closing of the contact or a voltage change is simulated without components needing to have been physically connected to the channels or triggered.

Each channel of the binary input can be operated via a separate push-button (“Channel state On/Off” push-button) (Operation in direct operation [→ 35]). When pressing the “Channel state On/Off” push-button, the closing or opening of a contact or the application of a voltage for this channel is simulated. Depending on the configuration, the transition from the previous input states at the terminals to the new state simulated by the “Channel state On/Off” push-button may result in the telegram being sent. With the operation of the “Channel state On/Off” push-button, the current push-button or voltage states at the input terminals are not taken into account. When direct operation is active, the sending of output telegrams cannot be triggered via the connected push-buttons and sensors, but only via the “Channel state On/Off” push-button.

The “Channel state on/off” push-button can be configured as a switch or as a push-button.

"Mode in direct operation” [→ 38]

Configuration as push-button

When configured as a push-button, the “Channel state On/Off” push-button of the channel behaves as if a push-button were connected to the channel. Both pressing the “Channel state on/off” push-button and releasing the “Channel state on/off” push-button are evaluated separately and result in telegrams being sent depending on the configuration.

Example: This setting can be used, for example, to simulate the ringing function for a connected signal transmitter by pressing and releasing the “Channel state On/Off” push-button. The operation of the “Channel state On/Off” push-button thus corresponds exactly to the function of the push-button connected to the channel.

Configuration as switch

When configured as a switch, the “Channel state On/Off” push-button behaves as if the push-button were a switch that changes its state each time the push-button is pressed. Pressing and releasing the “Channel state On/Off” push-button is evaluated as a common operation and, depending on the configuration, results in telegrams being sent.

Example: A frost protection monitor connected to the duct closes its contact when the temperature is too low. As soon as the temperature has risen, the contact in the frost protection monitor is opened again. The first pressing of the “Channel state On/Off” push-button simulates closing of the contact of the frost protection monitor. After releasing the “Channel state On/Off” push-button, this closure remains. The alarm triggered by the binary input thus remains. Pressing the “Channel state On/Off” push-button a second time causes the (simulated) contact of the frost protection monitor to open again. The alarm triggered by the binary input is cleared.

Application examples

Commissioning and maintenance:

The installer can, for example, check the function of the binary input and the actuated actuators and controllers in an early phase of commissioning or during maintenance work, without components already having been physically connected to the channels or having to be triggered.

Troubleshooting:

The installer can narrow down the error to the connected push-buttons and sensors by operating via the push-buttons present at the binary input. If the telegrams are sent as expected through operation via the “Channel state On/Off” push-button, the fault is with a connected push-button or sensor.

Factory settings

In the delivery state (see also Building site function [→ 11]), the function in direct mode is as if the “switching (On/Off)” function had been configured.

7.6.1 Operation in direct operation

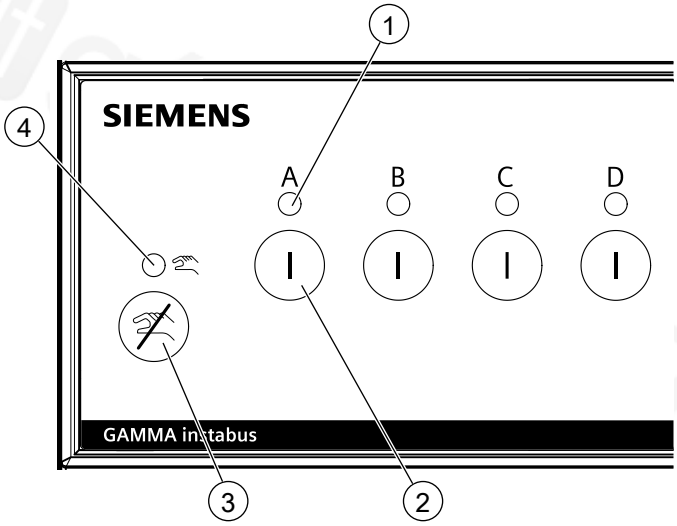


Fig. 8: Front of the binary input

1	Status LED of the channel	2	“Channel state On/Off” push-button
3	Push-button for switching off direct operation	4	Status LED of direct operation

LED	Color	Display	Description
Status LED of the channel (1)	red	Switched off	Direct operation is switched off. N 262: The contact of the channel is open. N 263: No voltage is applied.
		Lit	Direct operation is switched off. N 262: The contact of the channel is closed. N 263: Voltage is applied.
		Flashing at short intervals	Direct operation is switched on. N 262: An open contact is simulated for this channel. N 263: No applied voltage is simulated for this channel.
		Flashing at long intervals	Direct operation is switched on. N 262: A closed contact is simulated for this channel. N 263: An applied voltage is simulated for this channel.
Status LED of direct operation (4)	yellow	Flashing	Direct operation is active for at least one channel.
		Switched off	Direct operation is disabled for all channels.

In the delivery state, direct operation is enabled by default (mode "Switch") and can be switched on and off directly on the device.

Switch on direct operation for one channel and operate channel

▷ Direct operation is enabled ("direct operation" parameter [→ 37]).

1. Press the "Channel state on/off" push-button (2) on the front of the binary input.
   ⇨ Direct operation is switched on for this channel.
   ⇨ The status LED of the channel (1) and the status LED of direct operation (4) flash.
2. For switching operations, press the "Channel state On/Off" push-button (2) again.

⇨ If group addresses have already been assigned to the channel, these are sent to the bus as if the signal were coming directly from the push-button, sensor or similar (e.g. a lamp switches on if the binary input is linked via group addresses to a corresponding actuator for controlling the lighting).

Switch off direct operation for one channel

▷ Direct operation is switched on.

1. Press and hold the push-button for switching off direct operation (3).
2. Press and release the "Channel status on/off" push-button (2).
3. Release the push-button to switch off direct operation (3).

⇨ Direct operation is switched off for this channel.

⇨ The channel returns to the state that is actually present at the device's connector (On or Off).

⇨ The status LED of the channel (1) again indicates the actual status of the contact of the channel (open or closed).

Switch off direct operation for all channels

▷ Direct operation is switched on.

◈ Press and release the push-button to switch off direct operation (3).

⇨ Direct operation is switched off for all channels.

⇨ The status LED of direct operation (4) goes out.

⇨ The channels now have the states that are actually present at the terminals of the device (on or off).

⇨ The status LEDs of the channels (1) again show the actual status of the contacts of the channels (open or closed).

See also

🗎 "Direct operation" parameter [→ 37]
🗎 Direct operation [→ 33]
🗎 "Direct operation" communication objects [→ 42]

7.6.2 “Direct operation“ parameter

The following parameters are used to set the "Direct operation” function:

Parameters of the “functions, objects” parameter card

Direct operation

Parameter	Settings
Direct operation Direct operation channels A + B	disable enable

Function:

This parameter is used to disable or enable operation of the binary input for the respective channel or channels directly on the device.

Availability: "Direct operation” parameter

The "Direct operation” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”

Availability: "Direct operation channels A + B” parameter

The "Direct operation channels A + B” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Pairwise”

Other parameters:

If "enable” is selected, the following additional parameters appear:

- "Mode in direct operation” [→ 38]
- “Direct operation auto reset“ parameter [→ 39]
- “Direct operation lockable” parameter [→ 39]
- “Status direct operation” parameter [→ 40]

More information:

- “Function of channels A + B” parameter [→ 22]

Direct operation mode

Parameter	Settings
Direct operation mode	Pushbutton Switch

Function:

This parameter sets the mode for direct operation of a channel input.

The following settings are possible:

- Pushbutton:
  With this setting, the “Channel State On/Off” push-button behaves as if a push-button were connected to the channel.
  Both pressing the “Channel state on/off” push-button and releasing the “Channel state on/off” push-button are evaluated separately and result in telegrams being sent depending on the configuration.
- Switch:
  With this setting, the “Channel State On/Off” push-button behaves as if the push-button were a switch that changes state each time the push-button is pressed. Pressing and releasing the “Channel state On/Off” push-button is evaluated as a common operation and, depending on the configuration, results in telegrams being sent.

Examples:

Example setting "Pushbutton": This setting can be used, for example, to simulate the ringing function for a connected signal transmitter by pressing and releasing the “Channel state On/Off” push-button. The operation of the direct operation push-button thus corresponds exactly to the function of the push-button connected to the channel.

Example setting "Switch": A frost protection monitor connected to the duct closes its contact when the temperature is too low. As soon as the temperature has risen, the contact in the frost protection monitor is opened again. The first pressing of the “Channel state On/Off” push-button simulates closing of the contact of the frost protection monitor. After releasing the “Channel state On/Off” push-button, this closure remains. The alarm triggered by the binary input thus remains. Pressing the “Channel state On/Off” push-button a second time causes the (simulated) contact of the frost protection monitor to open again. The alarm triggered by the binary input is cleared.

Availability:

The "Direct operation mode” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  – Setting: "Single” or "Pairwise"
- Parameter "Direct operation” on the “functions, objects” parameter card
  – Setting: “enable”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Direct operation“ parameter [→ 37]

Direct operation auto reset

Parameter	Settings
Direct operation auto reset hh:mm:ss	00:00:00 ... 18:12:15

Function:

This parameter is used to set the time after which direct operation is automatically deactivated for this channel.

The setting “00:00:00” means that direct operation is not automatically reset but can only be deactivated directly on the device or through bus voltage failure and recovery.

Note:

If direct operation has been switched on at the binary input, the function of the binary input can only be simulated this way and not by signals at the terminals. This parameter can be used to prevent direct operation from being unintentionally left switched on.

Availability:

The "Direct operation auto reset” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: "Single” or "Pairwise"
- Parameter "Direct operation” on the “functions, objects” parameter card
  - Setting: “enable”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Direct operation“ parameter [→ 37]

Direct operation lockable

Parameter	Settings
Direct operation lockable	disable enable

Function:

This parameter can be used to control the enabling of direct operation via a communication object.

Availability:

The "Direct operation lockable” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: "Single” or "Pairwise"
- Parameter "Direct operation” on the “functions, objects” parameter card
  - Setting: “enable”

Communication object:

If "enable” is selected, the communication object "A Direct operation lock” is displayed.

Example:

Enabling of direct operation via a key switch or a central function in the building. This can, for example, reduce false triggering of direct operation by unauthorized personnel in the equipment room.

More information:

- “Function of channels A + B” parameter [→ 22]
- “Direct operation“ parameter [→ 37]
- "Direct operation lock” communication object [→ 42]

Status direct operation

Parameter	Settings
Status direct operation	disable enable

Function:

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

Availability

The "Status direct operation” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: "Single” or "Pairwise"
- Parameter "Direct operation” on the “functions, objects” parameter card
  - Setting: “enable”

Other parameters and communication objects:

If "enable” is selected, the following parameters and the following communication object are also displayed:

- “Send status on change of status“ [→ 40]
- “Send status on request“ [→ 41]
- “Send status cyclically“ [→ 41]
- "Status direct operation” communication object [→ 42]

More information:

- “Function of channels A + B” parameter [→ 22]
- “Direct operation“ parameter [→ 37]

Send status on change of status

Parameter	Settings
Send status on change of status	disable enable

Function:

This parameter is used to set whether the value of the status object is automatically sent after each status change.

Availability:

The "Send status on change of status” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: "Single” or "Pairwise"
- Parameter "Direct operation” on the “functions, objects” parameter card
  - Setting: “enable”
- Parameter "Status direct operation” on the “functions, objects” parameter card
  - Setting: “enable”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Direct operation“ parameter [→ 37]
- “Status direct operation“ parameter [→ 40]

Send status on request

Parameter	Settings
Send status on request	disable enable

Function:

This parameter is used to set whether the status of the communication object is sent upon request or whether requests for the status value will be rejected.

The request is triggered via the communication object “Send status values.”

Availability:

The "Send status on request” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: "Single” or "Pairwise"
- Parameter "Direct operation” on the “functions, objects” parameter card
  - Setting: “enable”
- Parameter "Status direct operation” on the “functions, objects” parameter card
  - Setting: “enable”

More information:

- “Function of channels A + B” parameter [➞ 22]
- “Direct operation“ parameter [➞ 37]
- “Status direct operation“ parameter [➞ 40]
- “Send status values” communication object [➞ 23]

Send status cyclically

Parameter	Settings
Send status cyclically hh:mm:ss	00:00:00 ... 18:12:15

Function:

This parameter is used to set the time interval at which the value of the status object is sent cyclically. If this is set to “00:00:00,” cyclic sending is deactivated.

Availability:

The "Send status cyclically” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: "Single” or "Pairwise"
- Parameter "Direct operation” on the “functions, objects” parameter card
  - Setting: “enable”
- Parameter "Status direct operation” on the “functions, objects” parameter card
  - Setting: “enable”

More information:

- “Function of channels A + B” parameter [➞ 22]
- “Direct operation“ parameter [➞ 37]
- “Status direct operation“ parameter [➞ 40]

See also

- Direct operation [➞ 33]
- “Direct operation” communication objects [➞ 42]
- Operation in direct operation [➞ 35]

7.6.3 “Direct operation” communication objects

The following communication objects are used to control the "Direct operation” function:

A Direct operation lock

No.	Object name	Function	Datapoint type	Flags
58	A Direct operation lock	On/Off	1.003 enable	CW

Function:

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

Example:

Enabling of direct operation through a key switch.

Note:

When the bus voltage returns, the setting is reset and operation on the device is enabled.

Availability:

The "A Direct operation lock ” communication object is displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: "Single” or "Pairwise"
- Parameter "Direct operation” on the “functions, objects” parameter card
  - Setting: “enable”
- Parameter "Direct operation lockable” on the “functions, objects” parameter card
  - Setting: “enable”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Direct operation“ parameter [→ 37]
- “Direct operation lockable” parameter [→ 39]

A status direct operation

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

Function:

This communication object is used to report whether direct operation is activated.

Note:

After bus voltage recovery, direct operation is deactivated.

Availability:

The “A status direct operation” communication object is displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: "Single” or "Pairwise"
- Parameter "Direct operation” on the “functions, objects” parameter card
  - Setting: “enable”
- Parameter "Direct operation lockable” on the “functions, objects” parameter card
  - Setting: “enable”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Direct operation“ parameter [→ 37]
- “Status direct operation“ parameter [→ 40]

See also

“Direct operation“ parameter [→ 37]
Direct operation [→ 33]
Operation in direct operation [→ 35]

7.7 Send switching state / binary value

The "Send switching status/binary value” function is used, for example, to query and transmit the switching status of a contact or the voltage level present at the input. The binary value “0” or “1” is sent.

Various parameters can be used to set which switching value is sent after a status change, when the switching value is sent, and whether an additional telegram is sent.

The prerequisite for this function is that the "Single” option is selected in the device settings for the channel concerned.

“Function of channels A + B” parameter [→ 22]

7.7.1 "Send switching state/binary value” parameter

The following parameters are used to set the "Send switching status/binary value” function:

Parameters of the “functions, objects” parameter card

As a prerequisite for the "Send switching status/binary value” function, set the "Function channel A” parameter on the "functions, objects” parameter card as specified:

Function channel A

Parameter	Settings
Function channel A	Send switching status/binary value

Function:

This parameter determines which function is to be assigned to the channel.

Availability:

The "Function channel A” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”

More information:

- “Function of channels A + B” parameter [→ 22]

Parameters of the “send switching state” parameter card

Switching value, if switching status on

Parameter	Settings
Switching value, if switching status on	No action Off On Toggle

Function:

This parameter is used to set which switching value is to be sent when switching state = “On."

The following settings are possible:

- No action:
  When the switching state changes to “on", no telegram is sent.
- Off:
  When the switching state changes to “on,” the switching value “OFF” is sent.
- On:
  When the switching state changes to the switching state “on", the switching value “on” is sent.
- Toggle:
  When the switching state changes to “on", the last sent switching value is inverted and the new value is sent. If there are several switches with the same group address, it does not matter from which switch the last value was sent.

Availability:

The "Switching value, if switching status on” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  – Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  – Setting: “Send switching status/binary value”

More information:

- “Function of channels A + B” parameter [→ 22]

Switching value, if switching status off

Parameter	Settings
Switching value, if switching status off	No action Off On Toggle

Function:

This parameter is used to set which switching value is to be sent when switching state = “Off."

The following settings are possible:

- No action:
  If the switching state changes to “off,” no telegram is sent.
- Off:
  When the switching state changes to “off,” the switching value “off” is sent.
- On:
  When the switching state changes to “off,” the switching value “on” is sent.
- Toggle:
  When the switching state changes to “off,” the last sent switching value is inverted and the new value is sent. If there are several switches with the same group address, it does not matter from which switch the last value was sent.

Availability:

The "Switching value, if switching status off” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Send switching status/binary value”

More information:

- “Function of channels A + B” parameter [→ 22]

Send value on change of value

Parameter	Settings
Send value on change of value	disable enable

Function:

This parameter determines whether the switching value is sent when the value changes.

The following settings are possible:

- disable:
  With this setting, the switching value is not sent automatically when a change is made.
- enable:
  With this setting, a telegram with the new switching value is sent when the switching value has changed.

Availability:

The "Send value on change of value" parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B" on the "device settings" parameter card
  – Setting: "Single"
- Parameter "Function channel A" on the "functions, objects" parameter card
  – Setting: "Send switching status/binary value"

More information:

- "Function of channels A + B" parameter [→ 22]

Send value on request

Parameter	Settings
Send value on request	disable enable

Function:

This parameter is used to set whether the switching value is sent on request or whether requests to send the switching value are rejected.

Availability:

The "Send value on request" parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B" on the "device settings" parameter card
  – Setting: "Single"
- Parameter "Function channel A" on the "functions, objects" parameter card
  – Setting: "Send switching status/binary value"

More information:

- "Function of channels A + B" parameter [→ 22]

Send value cyclically

Parameter	Settings
Send value cyclically hh:mm	00:00 ... 23:59

Function:

This parameter can be used to set the time interval at which the switching value object is sent cyclically. If this is set to “00:00:00,” cyclic sending is deactivated.

Availability:

The "Send value cyclically” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Send switching status/binary value”

More information:

- “Function of channels A + B” parameter [→ 22]

Filter (cyclically sending)

Parameter	Settings
Filter (cyclically sending)	Send On and Off Send only On Send only Off

Function:

This parameter can be used to set which values are sent cyclically.

The following settings are possible:

- Send On and Off:
  With this setting, the switching value is always sent cyclically, regardless of whether the switching value is “on” or “off."
- Send only On:
  With this setting, the switching value is sent cyclically when the switching value is “On." If the switching value is “off", the switching value is sent once, but not cyclically.
- Send only Off:
  With this setting, the switching value is sent cyclically when the switching value is “Off." If the switching value is “On,” the switching value is sent once, but not cyclically.

Availability:

The "Filter (cyclically sending)” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Send switching status/binary value”
- Parameter "Send value cyclically” on the "send switching state” parameter card
  - Setting: greater than 0

More information:

- “Function of channels A + B” parameter [→ 22]
- "Send value cyclically” parameter [→ 47]

Send additional telegram For details on the "Send additional telegram” function, see Send additional telegram [➞ 194]

See also

- Send switching state / binary value [➞ 43]
- "Send switching state/binary value” communication object [➞ 48]

7.7.2 "Send switching state/binary value” communication object

The following communication objects are used to control the "Send switching status/binary value” function:

A Binary value

No.	Object name	Function	Datapoint type	Flags
4	A Binary value	On/Off	1.001 switch	CRWT

Function:

Switching telegrams are sent via the group address linked with this communication object.

Availability:

The "A Binary value” communication object is displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Send switching status/binary value”

More information:

- “Function of channels A + B” parameter [➞ 22]

See also

- Send switching state / binary value [➞ 43]
- "Send switching state/binary value” parameter [➞ 43]

7.8 Switching

With the "Switching” function, lights or lighting groups can be switched on and off with one push-button in conjunction with an actuator.

The sending of the switching telegram can be triggered by pressing the push-button for a short and/or long time or, alternatively, by a rising and/or falling signal edge (generated by pressing and/or letting go of the button).

The prerequisite for this function is that the "Single” option is selected in the device settings for the channel concerned.

“Function of channels A + B” parameter [→ 22]

7.8.1 “Switching” parameter

The following parameters are used to set the "Switching” function:

Parameters of the “functions, objects” parameter card

As a prerequisite for the "Switching” function, set the "Function channel A” parameter on the "functions, objects” parameter card as specified:

Function channel A

Parameter	Settings
Function channel A	Switching

Function:

This parameter determines which function is to be assigned to the channel.

Availability:

The "Function channel A” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”

More information:

- “Function of channels A + B” parameter [→ 22]

Parameters of the “switching” parameter card

Evaluation of input

Parameter	Settings
Evaluation of input	Edge Short/long key press

Function:

This parameter determines whether the sending of a switching telegram is to be triggered by signal edges or by a short or long press of the push-button at the input.

The following settings are possible:

- Edge:
  With this setting, the sending of a switching telegram is triggered by a falling and/or rising edge of the signal at the input. The type of reaction at rising and at falling edge can be selected respectively by the parameters "Reaction on rising edge” and "Reaction on falling edge."
- Short/long key press:
  With this setting, the sending of a switching telegram is triggered by a short or long press of the push-button connected to the input or by an applied voltage. The type of response for a short and a long press of the push-button can be selected by the parameters "Reaction on short key press” and "Reaction on long key press” respectively.
  The duration of the long press of the push-button is set via the "Detect long key press after” parameter.

Example:

The "Edge” setting can be used, for example, to simulate the behavior of a bell push-button.

Availability:

The "Evaluation of input” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Switching”

More information:

- “Function of channels A + B” parameter [→ 22]
- "Reaction to rising edge” parameter [→ 51]
- "Reaction to falling edge” parameter [→ 52]
- “Reaction to short press of the push-button” parameter [→ 53]
- “Reaction to long press of the push-button” parameter [→ 54]
- “Long press of the push-button from” parameter [→ 55]

Reaction on rising edge

Parameter	Settings
Reaction on rising edge	No action Off On Toggle

Function:

This parameter is used to set which switching value is to be sent after a rising edge of the input signal. The rising edge corresponds to pressing the push-button or applying a voltage.

The following settings are possible:

- No action:
  An edge change at the input does not lead to the transmission of a telegram.
- Off:
  With a rising edge, the switching value “off” is sent.
- On:
  With a rising edge, the switching value “on” is sent.
- Toggle:
  With a rising edge, the last sent switching value is inverted and the new value is sent.

Availability:

The "Reaction on rising edge” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  – Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  – Setting: “Switching”
- Parameter "Evaluation of input” on the parameter card "Switching"
  – Setting: “Edge”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Evaluation of input” parameter [→ 50]

Reaction on falling edge

Parameter	Settings
Reaction on falling edge	No action Off On Toggle

Function:

This parameter is used to set which switching value is to be sent after a falling edge of the input signal. The falling edge corresponds to a release of the push-button or the switching off of an applied voltage.

The following settings are possible:

- No action:
  An edge change at the input does not lead to the transmission of a telegram.
- Off:
  With a falling edge, the switching value “off” is sent.
- On:
  With a falling edge, the switching value “on” is sent.
- Toggle:
  With a falling edge, the last sent switching value is inverted and the new value is sent.

Availability:

The "Reaction on falling edge” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  – Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  – Setting: “Switching”
- Parameter "Evaluation of input” on the parameter card "Switching"
  – Setting: “Edge”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Evaluation of input” parameter [→ 50]

Reaction on short key press

Parameter	Settings
Reaction on short key press	No action Off On Toggle

Function:

This parameter is used to set which switching value is to be sent after a short press of a push-button connected to the input.

The following settings are possible:

- No action:
  A short press of the push-button at the input does not cause a telegram to be sent.
- Off:
  With a short press of the push-button, the switching value “off” is sent.
- On:
  With a short press of the push-button, the switching value “on” is sent.
- Toggle:
  With a short press of the push-button, the last sent switching value is inverted and the new value is sent.

Availability:

The "Reaction on short key press” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  – Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  – Setting: “Switching”
- Parameter "Evaluation of input” on the parameter card "Switching"
  – Setting: “Short/long key press”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Evaluation of input” parameter [→ 50]

Reaction on long key press

Parameter	Settings
Reaction on long key press	No action Off On Toggle

Function:

This parameter is used to set which switching value is to be sent after a long press of a push-button connected to the input.

The following settings are possible:

- No action:
  A long press of the push-button at the input does not result in sending a telegram.
- Off:
  With a long press of the push-button, the switching value “off” is sent.
- On:
  With a long press of the push-button, the switching value “on” is sent.
- Toggle:
  With a long press of the push-button, the last sent switching value is inverted and the new value is sent.

Availability:

The "Reaction on long key press” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  – Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  – Setting: “Switching”
- Parameter "Evaluation of input” on the parameter card "Switching"
  – Setting: “Short/long key press”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Evaluation of input” parameter [→ 50]
- “Long press of the push-button from” parameter [→ 55]

Detect long key press after

Parameter	Settings
Detect long key press after hh:mm:ss.f	00:00:00.3 ... 00:00:07.0

Function:

This parameter sets the duration of a long press of the push-button. After the set time has elapsed, the press of the push-button is considered long and the telegram is sent.

Availability:

The "Detect long key press after" parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B" on the "device settings" parameter card
  - Setting: "Single"
- Parameter "Function channel A" on the "functions, objects" parameter card
  - Setting: "Switching"
- Parameter "Evaluation of input" on the parameter card "Switching"
  - Setting: "Short/long key press"

More information:

- "Function of channels A + B" parameter [→ 22]
- "Evaluation of input" parameter [→ 50]

Send additional telegram

For details on the "Send additional telegram" function, see Send additional telegram [→ 194]

See also

- "Switching" communication objects [→ 55]
- Switching [→ 49]

7.8.2 "Switching" communication objects

The following communication objects are used to control the "Switching" function:

A + B Switching

No.	Object name	Function	Datapoint type	Flags
5	A + B Switching	Toggle	1.001 switch	CRWT

Function:

Switching telegrams are sent via the group address linked with this communication object.

Availability:

The "A + B Switching" communication object is displayed if the following configurations have been made:

- Parameter "Function channels A + B" on the "device settings" parameter card
  - Setting: "Single"
- Parameter "Function channel A" on the "functions, objects" parameter card
  - Setting: "Switching" or "Dimming"

More information:

- "Function of channels A + B" parameter [→ 22]
- Dimming [→ 56]
- Switching [→ 49]

See also

- Switching [→ 49]
- "Switching" parameter [→ 49]

7.9 Dimming

With the "Dimming” function, lights or lighting groups can be switched on and off and dimmed up and down with one or two push-buttons.

The "Dimming” function can be implemented using the following push-button options. The "1/2 push-button dimming (...)” and "2 push-button dimming” options differ only in terms of connections and programming, but not for the end user. In both cases, the end user has one push-button to turn the lights on and dim them up, and a second push-button to dim the lights down and turn them off.

1 push-button dimming

With 1-button dimming, all functions (off, on, brighter, darker) are performed with one push-button using a short or long push-button press.

1/2 push-button dimming

In case of 1/2-push-button dimming, both push-buttons are configured and connected completely separately: first the first push-button of two, then the second push-button of two, where one push-button is given the function "1/2 button dimming On/brighter” and the other push-button is given the function "1/2 button dimming Off/darker."

2 push-button dimming

With 2-button dimming, both push-buttons are configured together and connected to adjacent channels at the binary input. The prerequisite for this function is that the "Pairwise” option is selected in the device settings for the adjacent channel concerned.

“Function of channels A + B” parameter [➞ 22]

Application example

The “1/2-button dimming” variant can be used, for example, to set different lights to be dimmed to any value using different push-buttons and switched off again using a single push-button. This is possible because with this setting different communication objects are available for the different dimming commands and these can be assigned to different group addresses.

7.9.1 “Dimming” parameter

The following parameters are used to set the "Dimming” function:

Parameters of the “functions, objects” parameter card

As a prerequisite for the "Dimming” function, set the "Function channel A” parameter or the "Function channels A + B” parameter on the "functions, objects” parameter card as specified:

Function channel A
Function channels A + B

Parameter	Settings
Function channel A Function channels A + B	Dimming

Function:

This parameter determines which function is to be assigned to the channel or channel pair.

For more information on 1-button, 1/2-button and 2-button operation, see Dimming [→ 56]

Availability: "Function channel A” parameter

The "Function channel A” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”

Availability: "Function channels A + B” parameter

The "Function channels A + B” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Pairwise”

More information:

- “Function of channels A + B” parameter [→ 22]

Parameters of the “dimming” parameter card

Function

Parameter	Settings
Function	1 button dimming 1/2 button dimming On/brighter 1/2 button dimming Off/darker 2 button dimming

Function:

This parameter determines whether a dimming actuator can be controlled by one or any two push push-buttons.

The following settings are possible:

- 1 button dimming:
  This function is only available if the "Single” option has been selected for the selected channel in the device settings.
  “Function of channels A + B” [→ 22]
  This function makes it possible to switch a light/lighting group on and off and dim it brighter/darker with just one push-button. A distinction is made between short and long presses of the push-button:
  - Switching UM (short press of the push-button)
    With a short press of the push-button, the value that is in the switching object (switching UM) is inverted and the telegram “on” or “off” is then sent when the push-button is released.
  - Dimming brighter/darker (long press of the push-button)
    A long press of the push-button dims brighter or darker, depending on the object value and the dimming direction last controlled. If the dimming actu-

ator was switched off, a long press of the push-button switches it on and dims it brighter. If the dimming actuator was previously switched on by a short press of the push-button, it is dimmed darker by the first long press of the push-button.
When the push-button is pressed again for a long time, the dimming direction last operated is inverted and then dimmed in the new direction. When the push-button is pressed for a long time, the “100% dimming” command is sent via the dimming object, and when the push-button is released, the “stop” command is sent.

- 1/2 button dimming On/brighter:
  This function is only available if the "Single” option has been selected for the selected channel in the device settings.
  "Function of channels A + B” parameter [→ 22]
  This function allows to perform 2-button dimming with any two push-buttons. A short press of the push-button sends the telegram “On” and a long press of the push-button sends the command “dim 100% brighter." When the push-button is released, the “stop” command is sent.
- 1/2 button dimming Off/darker:
  This function is only available if the "Single” option has been selected for the selected channel in the device settings.
  "Function of channels A + B” parameter [→ 22]
  This function allows to perform 2-button dimming with any two push-buttons. A short press of the push-button sends the telegram “off” and a long press of the push-button sends the command “dim 100% darker." When the push-button is released, the “stop” command is sent.
- 2 button dimming
  This function is only available if the "Pairwise” option has been selected for the selected channel in the device settings.
  "Function of channels A + B” parameter [→ 22]
  This function makes it possible to perform 2-button dimming with any two push-buttons, where the push-buttons are connected to two adjacent channels.
  A short press of the push-button on one of the two push-buttons sends the telegram “off” and a long press of the push-button sends the command “Dim 100 % darker." When the push-button is released, the “stop” command is sent.
  A short press of the push-button on the other push-button sends the telegram “on” and a long press of the push-button sends the command “dim 100% brighter." When the push-button is released, the “stop” command is sent.

Other parameters:

If "1/2 button dimming On/brighter", "1/2 button dimming Off/darker” or "2 button dimming” is selected, the parameter "Toggle function” also appears.

Availability:

The "Function” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  – Setting: "Single” or "Pairwise"
- Parameter "Function channel A” or "Function channels A + B” on the "functions, objects” parameter card
  – Setting: “Dimming”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Toggle function” parameter [→ 59]

Toggle function

Parameter	Settings
Toggle function	disable enable

Function:

This parameter can be used to set whether the inverse object value of the switching object is to be sent with each short press of the push-button (toggle).

The following settings are possible:

- disable:
  If the push-button is pressed briefly, no inverse object value is sent.
- enable:
  When the push-button is pressed briefly, the inverse object value of the switching object is sent.

Availability:

The "Toggle function” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: "Single” or "Pairwise"
- Parameter "Function channel A” or "Function channels A + B” on the "functions, objects” parameter card
  - Setting: “Dimming”
- Parameter "Function” on the "dimming” parameter card
  - Setting: "1/2 button dimming On/brighter", "1/2 button dimming Off/darker” or "2 button dimming"

More information:

- “Function of channels A + B” parameter [→ 22]
- Dimming [→ 56]
- “Function” parameter [→ 57]

Dimming mode

Parameter	Settings
Dimming mode	Dimming with stop telegram Cyclic dimming

Function:

This parameter determines in which mode dimming takes place.

The following settings are possible:

- Dimming with stop telegram:
  With this setting, a “dimming 100% brighter” or “dimming 100% darker” telegram is sent when the push-button is pressed for a long time. When the push-button is released, the “stop” telegram is sent. The dimming actuator receives the “stop” command and the current brightness is maintained.
- Cyclic dimming:
  With this setting, a “dim brighter” or “dim darker” telegram with the step size 1/8 (12.5 %) is sent every 0.5 seconds when the push-button is pressed for a long time, for as long as the push-button remains pressed (i.e., dimming from 0 % to 100% and vice versa is possible in 4 seconds).

Note:

With "Cyclic dimming” the bus load is greater than with "Dimming with stop telegram” due to more frequent sending of telegrams.

Availability:

The "Dimming mode” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  – Setting: "Single” or "Pairwise"
- Parameter "Function channel A” or "Function channels A + B” on the "functions, objects” parameter card
  – Setting: “Dimming”

More information:

- “Function of channels A + B” parameter [➞ 22]

Detect long key press after

Parameter	Settings
Detect long key press after hh:mm:ss.f	00:00:00.3 ... 00:00:07.0

Function:

This parameter sets the duration of a long press of the push-button. After the set time has elapsed, the press of the push-button is considered long and the telegram is sent.

Availability:

The "Detect long key press after” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  – Setting: "Single” or "Pairwise"
- Parameter "Function channel A” or "Function channels A + B” on the "functions, objects” parameter card
  – Setting: “Dimming”

More information:

- “Function of channels A + B” parameter [➞ 22]

See also

🗎 Dimming [➞ 56]
🗎 “Dimming” communication objects [➞ 61]

7.9.2 “Dimming” communication objects

The following communication objects are used to control the "Dimming” function:

A + B Switching
A Switching

No.	Object name	Function	Datapoint type	Flags
5	A + B Switching A Switching	Off On/Off On/Off	1.001 switch	CRWT

Function:

Switching telegrams are sent via the group address linked with this communication object.

Availability: Communication object “A + B Switching”

The "A + B Switching” communication object is displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: "Switching” or "Dimming"

Availability: Communication object “A Switching”

The "A Switching” communication object is displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Pairwise”
- Parameter "Function channels A + B” on the “functions, objects” parameter card
  - Setting: “Dimming”

More information:

- “Function of channels A + B” parameter [➞ 22]
- Send switching state / binary value [➞ 43]
- Dimming [➞ 56]
- Switching [➞ 49]

A Dimming

No.	Object name	Function	Datapoint type	Flags
8	A Dimming A + B Dimming	darker brighter/ darker brighter/ darker	3.007 dimming control	CRWT

Function:

The dimming telegrams are sent via the group address linked with this communication object.

Availability: Communication object “A Dimming”

The "A Dimming” communication object is displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Dimming”

Availability: Communication object “A + B Dimming”

The "A + B Dimming” communication object is displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  – Setting: “Pairwise”
- Parameter "Function channels A + B” on the “functions, objects” parameter card
  – Setting: “Dimming”

More information:

- “Function of channels A + B” parameter [➞ 22]
- Dimming [➞ 56]
- “Dimming” parameter [➞ 57]

See also

- Dimming [➞ 56]
- “Dimming” parameter [➞ 57]

7.10 Scene control

With the "Scene control” function, for example, various devices can be set simultaneously to a certain predefined value at the touch of a push-button.

During configuration, a choice can be made between 1-bit scenes and 8-bit scenes.

The prerequisite for this function is that the "Single” option is selected in the device settings for the channel concerned.

“Function of channels A + B” parameter [➞ 22]

Application example

“Presentation” Scene

Screen moves down, lighting in the front part of the room is dimmed, sunshade moves down.

Teaching scenes

It is possible to give the user the possibility to teach scenes without changing the project engineering with the ETS. This allows the user to reprogram scene modules for scene control or actuators with integrated scene control, i.e. to assign current brightness values or switching states to the respective scene.

With 1-bit scene control, a scene is saved via a communication object and retrieved via a second communication object. Here it can be configured whether scene 1 is saved or restored with a telegram with the value “0” and scene 2 with a telegram with the value “1."

With 8-bit scene control , a single communication object is used to transmit both the command to save a scene and the command to retrieve a saved scene and the number of the desired scene from the binary input to the actuator or to a scene controller.

The scene is taught, for example, by a long press of a push-button connected to the binary input. Before storing a scene, the affected actuators must be set with the intended buttons/sensors to the desired brightness values or switching states. If the telegram for saving a scene is then sent from the binary input, the addressed scene modules or actuators with integrated scene control are requested to query the currently set brightness values and switching states from the actuators and to save them in the corresponding scene. The scene number is set in the binary input.

7.10.1 “Scene control” parameter

The following parameters are used to set the "Scene control” function:

Parameters of the “functions, objects” parameter card

As a prerequisite for the "Scene control” function, set the "Function channel A” parameter on the "functions, objects” parameter card as specified:

Function channel A

Parameter	Settings
Function channel A	Scene control

Function:

This parameter determines which function is to be assigned to the channel.

Availability:

The "Function channel A” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”

More information:

- “Function of channels A + B” parameter [➞ 22]

Parameters of the “scene control” parameter card

Mode

Parameter	Settings
Mode	1-bit scene control 8-bit scene control

Function:

This parameter sets the mode of scene control. Depending on the mode set, a different number of scenes can be stored and recalled.

Saving a scene by a long press of the push-button is only possible if the parameter "Learning” has been set to "enable."

The following settings are possible:

- 1-bit scene control:
  This function allows you to save and recall two different scenes. The desired scene number can be selected in the "Scene number” parameter.
- 8-bit scene control:
  This function allows you to save and recall up to 64 different scenes. The desired scene number can be selected in the "Scene number” parameter.

Note:

To prevent a scene from being saved accidentally, it is recommended to set the long press of the push-button in the "Detect long key press after” parameter to be particularly long.

Availability:

The "Mode” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Scene control”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Scene number” parameter [→ 65]
- “Teach” parameter [→ 66]
- “Long press of the push-button from” parameter [→ 67]
- "Recall A scene 1/2” communication object [→ 68]
- “Save A scene 1/2” communication object [→ 69]
- “A 8-bit scene” communication object [→ 70]

Scene number

Parameter	Settings
Scene number	1...2 1...64

Function:

This parameter can be used to select which scene should be saved.

The following settings are possible:

- 1...2:
  With 1-bit scene control , up to two different scenes can be saved and changed.
- 1...64:
  With 8-bit scene control , up to 64 different scenes can be saved and changed.

Availability:

The "Scene number” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  – Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  – Setting: “Scene control”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Mode” parameter [→ 64]

Learning

Parameter	Settings
Learning	disable enable

Function:

This parameter can be used to set whether the values in the scene can be changed by a long press of the push-button.

The following settings are possible:

- disable:
  The scene setting in the actuator or scene controller cannot be changed by a long press of the push-button.
- enable:
  The scene setting in the actuator or scene controller can be changed by a long press of the push-button. To do this, the actuators must first be set to the desired settings that are to be saved in the scene.

Note:

To prevent a scene from being saved accidentally, it is recommended to set the long press of the push-button in the "Detect long key press after” parameter to be particularly long.

Example:

The "disable” setting is useful if you want to avoid teaching a new scene and thus the wrong shading or lighting (e.g. in public buildings, schools or kindergartens) either by "playing around” or accidentally.

Availability:

The "Learning” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Scene control”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Mode” parameter [→ 64]
- “Long press of the push-button from” parameter [→ 67]

Detect long key press after

Parameter	Settings
Detect long key press after hh:mm:ss.f	00:00:00.3 ... 00:00:07.0

Function:

This parameter sets the duration of a long press of the push-button. After the set time has elapsed, the press of the push-button is considered long and the telegram is sent.

Note:

To prevent a scene from being saved accidentally, it is recommended to set the long press of the push-button to be particularly long.

Availability:

The "Detect long key press after” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Scene control”
- Parameter "Learning” on the "scene control” parameter card
  - Setting: “enable”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Teach” parameter [→ 66]

See also

- Scene control [→ 62]
- "Scene control” communication objects [→ 68]

7.10.2 "Scene control” communication objects

The following communication objects are used to control the "Scene control” function:

A Scene 1/2

No.	Object name	Function	Datapoint type	Flags
12	A Scene 1/2	recall	1.022 scene	CRT

Function:

The telegrams for calling up the 1-bit scene 1 or 2 are sent via the group address linked with this object. If scene 1 was selected as the scene number, “0” is sent. If scene 2 was selected as the scene number, “1” is sent.

The addressed actuators or scene controllers receive the telegram and output the values and states stored in the respective scene.

Availability:

The "A Scene 1/2” communication object is displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Scene control”
- Parameter "Mode” on the "scene control” parameter card
  - Setting: “1-bit scene control”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Mode” parameter [→ 64]
- “Scene number” parameter [→ 65]

A Scene 1/2

No.	Object name	Function	Datapoint type	Flags
13	A Scene 1/2	store	1.022 scene	CRT

Function:

The telegrams for saving the 1-bit scene 1 or 2 are sent via the group address linked with this object. If scene 1 was selected as the scene number, “0” is sent. If scene 2 was selected as the scene number, “1” is sent. The current settings of the actuators concerned are saved to the current scene number when the telegram is received.

Availability:

The "A Scene 1/2” communication object is displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Scene control”
- Parameter "Mode” on the "scene control” parameter card
  - Setting: “1-bit scene control”
- Parameter "Learning” on the "scene control” parameter card
  - Setting: “enable”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Mode” parameter [→ 64]
- “Teach” parameter [→ 66]
- “Scene number” parameter [→ 65]

A 8-bit scene

No.	Object name	Function	Datapoint type	Flags
14	A 8-bit scene	recall/store recall	18.001 scene control	CRT

Function:

The telegrams for recalling and saving the 8-bit scene with the configured scene number (1...64) are sent via the group address linked with this object.

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

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

If the parameter "Learning” is not enabled, a scene can be recalled via this communication object, but no new scene can be saved.

Availability:

The "A 8-bit scene” communication object is displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Scene control”
- Parameter "Mode” on the "scene control” parameter card
  - Setting: “8-bit scene control”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Mode” parameter [→ 64]
- “Teach” parameter [→ 66]
- “Scene number” parameter [→ 65]

See also

- “Scene control” parameter [→ 63]
- Scene control [→ 62]

7.11 Solar protection control

With the "Solar protection control” function, a sunblind can be raised and lowered with one or two push-buttons. In addition, slats can be opened and closed.

The "Solar protection control” function can be implemented using the following push-button options. The "1/2 push-button sunblind” and "2 button shutter” options differ only in terms of connections and configuration, but not for the end user. In both cases, the end user has a push-button to raise the sunblind and open the slats, and a push-button to lower the sunblind and close the slats.

1 push-button sunblind

With the 1-button solar protection, all functions (up/down, open/close) are performed with one push-button using a short or long push-button press.

1/2 push-button sunblind

In case of 1/2-button solar protection, both push-buttons are configured and connected completely separately: first the first push-button, then the second push-button, where one push-button gets the function "1/2 button shutter Down, slat closed” and the other push-button gets the function "1/2 button shutter Up, slat open."

2 push-button sunblind

With 2-button solar protection, both push-buttons are configured together and connected to adjacent channels at the binary input. The prerequisite for this function is that the "Pairwise” option is selected in the device settings for the adjacent channel concerned.

“Function of channels A + B” parameter [→ 22]

Application example

With the “1/2-button solar protection” variant, it is possible to set, for example, that different blinds can be lowered using different push-buttons and raised again using a single push-button. This is possible because with this setting different communication objects are available for the different motion commands and they can be assigned to different group addresses.

7.11.1 “Solar protection control” parameter

The following parameters are used to set the "Solar protection control” function:

Parameters of the “functions, objects” parameter card

As a prerequisite for the "Solar protection control” function, set the "Function channel A” parameter or the "Function channels A + B” parameter on the "functions, objects” parameter card as specified:

Function channel A
Function channels A + B

Parameter	Settings
Function channel A Function channels A + B	Solar protection control

Function:

This parameter determines which function is to be assigned to the channel or channel pair.

For more information on 1-button, 1/2-button and 2-button operation, see Solar protection control [→ 71]

Availability: "Function channel A” parameter

The "Function channel A” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”

Availability: "Function channels A + B” parameter

The "Function channels A + B” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Pairwise”

More information:

- “Function of channels A + B” parameter [→ 22]

Parameters of the “solar protection control” parameter card

Function

Parameter	Settings
Function	1 button shutter 1/2 button shutter Up, slat open 1/2 button shutter Down, slat closed 2 button shutter

Function:

This parameter determines whether the solar protection can be controlled by one or two push-buttons.

The following settings are possible:

- 1 button shutter:
  This function makes it possible to move the shutters up and down, stop the movement and open and close the slats with just one push-button. A distinction is made between short and long presses of the push-button:
  - Solar protection up/down (long press of the push-button):
    If the push-button is pressed for a long time, depending on the last travel direction stored in the “solar protection up/down” object, this is inverted and the telegram for moving up or down is sent.
    If a telegram is received from another push-button or binary input via the “solar protection up/down” object, the value is saved and used for the inverted direction of travel the next time it is triggered.
  - Stop and slats open/close (short press of the push-button):
    In case of a short push-button press, a telegram is sent which, if the solar protection is moving, results in the drive being stopped and, if the solar protection is stationary, results in a short move in the direction opposite the previous travel direction (which is stored in the travel object). With closed slats, for example, this would result in the slats opening by one step. The telegram “stop", “slats open” or “slats closed” is only generated when the push-button is released. Every other short push-button press will result in another “slats open/close” telegram being sent without a change of travel direction.
- 1/2 button shutter Up, slat open:
  The function enables you to execute 2-button solar protection with any two push-buttons. A short press of the push-button stops a movement or opens the slats by one step. A long press of the push-button raises the solar protection.
- 1/2 button shutter Down, slat closed:
  The function enables you to execute 2-button solar protection with any two push-buttons. With a short press of the push-button, a movement is stopped or the slats are closed by one step. With a long press of the push-button, the solar protection is lowered.
- 2 button shutter
  This function is only available if the "Pairwise” option has been selected for the selected channel in the device settings.
  "Function of channels A + B” parameter [→ 22]
  This function makes it possible to perform 2-button solar protection with any two push-buttons, where the push-buttons must be connected to two adjacent channels of the binary input.
  A short press on one of the push-buttons stops a movement or opens the slats by one step. With a long press of the push-button, the solar protection is moved up.
  A short press on the other push-button stops a movement or closes the slats by one step. With a long press of the push-button, the solar protection is moved down.

Availability:

The "Function” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: "Single” or "Pairwise"
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Solar protection control”

More information:

- “Function of channels A + B” parameter [→ 22]
- "A solar protection” communication object [→ 75]
- "A slats” communication object [→ 76]

Detect long key press after

Parameter	Settings
Detect long key press after hh:mm:ss.f	00:00:00.3 ... 00:00:07.0

Function:

This parameter sets the duration of a long press of the push-button. After the set time has elapsed, the press of the push-button is considered long and the telegram is sent.

Availability:

The "Detect long key press after” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: "Single” or "Pairwise"
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Solar protection control”

More information:

- “Function of channels A + B” parameter [→ 22]

See also

- Solar protection control [→ 71]
- “Solar protection control” communication objects [→ 75]

7.11.2 “Solar protection control” communication objects

The following communication objects are used to control the "Solar protection control” function:

A + B Solar Protection
A Solar Protection

No.	Object name	Function	Datapoint type	Flags
10	A + B Solar Protection A Solar Protection	Up/Down	1.008 up/down	CRWT

Function:

The telegrams “solar protection up” or “solar protection down” are sent via the group address linked with this communication object.

Availability: Communication object “A + B Solar Protection”

The "A + B Solar Protection” communication object is displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Solar protection control”

Availability: Communication object “A Solar Protection”

The "A Solar Protection” communication object is displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Pairwise”
- Parameter "Function channels A + B” on the “functions, objects” parameter card
  - Setting: “Solar protection control”

More information:

- “Function of channels A + B” parameter [→ 22]
- Solar protection control [→ 71]

A + B Slats
A Slats

No.	Object name	Function	Datapoint type	Flags
11	A + B Slats A Slats	Stop, Up/ Down	1.007 step	CRT

Function:

The telegrams “slats open,” “slats closed” or “stop” are sent via the group address linked with this communication object. If the solar protection is in motion, the “stop” telegram is sent. In the solar protection is not moving, the last stored direction in which the slats moved is inverted and the opposite telegram is sent.

Availability: Communication object “A + B Slats”

The "A + B Slats” communication object is displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Solar protection control”

Availability: Communication object “A Slats”

The "A Slats” communication object is displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Pairwise”
- Parameter "Function channels A + B” on the “functions, objects” parameter card
  - Setting: “Solar protection control”

More information:

- “Function of channels A + B” parameter [→ 22]
- Solar protection control [→ 71]

See also

- Solar protection control [→ 71]
- “Solar protection control” parameter [→ 72]

7.12 Send value

With the function "Send value” one or two configured values of a defined data type can be sent.

It is possible to set what triggers the sending of the value as well as when which value is sent, e.g. value “A” on a rising edge and value “B” on a falling edge or alternatively on a short and long press of a push-button.

The prerequisite for this function is that the "Single” option is selected in the device settings for the channel concerned.

“Function of channels A + B” parameter [→ 22]

Application example

This function can be used, for example, to set the lighting to a specific dimming value at the touch of a push-button.

7.12.1 “Send value” parameter

The following parameters are used to set the "Send value” function:

Parameters of the “functions, objects” parameter card

As a prerequisite for the "Send value” function, set the "Function channel A” parameter on the "functions, objects” parameter card as specified:

Function channel A

Parameter	Settings
Function channel A	Send value

Function:

This parameter determines which function is to be assigned to the channel.

Availability:

The "Function channel A” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”

More information:

- “Function of channels A + B” parameter [→ 22]

Parameters on the “send value” parameter card

Evaluation of input

Parameter	Settings
Evaluation of input	Edge Short/long key press

Function:

This parameter determines whether the sending of a value telegram is to be triggered by signal edges or by a short or long press of the push-button at the input. The type of value to be sent can be determined via the "Data type” parameter.

The following settings are possible:

- Edge:
  With this setting, the sending of a value telegram is triggered by a falling and/or rising edge of the signal at the input. Whether the value is to be sent on a rising or falling edge can be set via the parameters "Send value at rising edge” and "Send value at rising edge."
- Short/long key press:
  With this setting, the sending of a value telegram is triggered by a short or long press of a push-button connected to the input. Whether the value is to be sent with a short or long press of the push-button can be set via the parameters "Send value at short key press” and "Send value at long key press."
  The duration of the long press of the push-button is set via the "Detect long key press after” parameter.

Availability:

The "Evaluation of input” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  – Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  – Setting: “Send value”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Send value on rising edge” parameter [→ 80]
- “Send value on falling edge” parameter [→ 84]
- “Send value on short press of the push-button” parameter [→ 88]
- “Send value on long press of the push-button” parameter [→ 92]
- “Long press of the push-button from” parameter [→ 96]

Data type

Parameter	Settings
Data type	Percentage (%) DPT 5.001 Value (8-bit) DPT 5.010 Signed value (8-bit) DPT 6.010 Value (16-bit) DPT 7.001 Current (mA) DPT 7.012 Color temperature (K) DPT 7.600 Signed value (16-bit) DPT 8.001 2-byte floating point number DPT 9.x Temperature (°C) DPT 9.001 Illuminance (lx) DPT 9.004 Wind speed (m/s) DPT 9.005 Humidity (%r.H.) DPT 9.007 CO2 concentration (ppm) DPT 9.008 Current (mA) DPT 9.021 Power (kW) DPT 9.024 Rain amount (l/m²) DPT 9.026 Temperature (F) DPT 9.027 Time of day (d:hh:mm:ss) DPT 10.001 Value (32-bit) DPT 12.001 Signed value (32-bit) DPT 13.001 4-byte floating point number DPT 14.x Current (A) DPT 14.019 Energy (J) DPT 14.031 Power (W) DPT 14.056 Speed (m/s) DPT 14.065 Temperature (°C) DPT 14.068 Text (14 characters ASCII) DPT 16.000 Color (RGB) DPT 232.600 Color (xyY) DPT 242.600

Function:

This parameter sets the data type of the values to be sent for the "Send value" function.

Availability:

The "Data type" parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B" on the "device settings" parameter card
  - Setting: "Single"
- Parameter "Function channel A" on the "functions, objects" parameter card
  - Setting: "Send value"

More information:

- "Function of channels A + B" parameter [→ 22]
- "A value" communication object [→ 97]

Send value at rising edge

Parameter	Settings
Send value at rising edge	disable enable

Function:

This parameter is used to set whether the sending of a value telegram is to be triggered by a rising edge of the signal state at the input. Which data type the value should have is determined beforehand via the parameter "Data type."

The following settings are possible:

- disable:
  With this setting, no value telegram is sent on a rising edge.
- enable:
  With this setting, a value telegram is sent on a rising edge of the signal state at the input. The value is determined in the "Value at rising edge” parameter that appears after selecting "enable."

Availability:

The "Send value at rising edge” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  – Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  – Setting: “Send value”
- Parameter "Evaluation of input” on the parameter card "Send value"
  – Setting: “Edge”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Evaluation of input” parameter [→ 78]
- “Data type“ parameter [→ 79]
- "Value on rising edge” parameter [→ 81]

Value at rising edge

Parameter	Settings
Value at rising edge	Permitted values depending on the selected data type and its value range

Function:

This parameter sets the exact value that is sent on a rising edge of the signal state at the input.

The following settings are possible:

The permissible values depend on the selected data type.

The permissible values are based on practice-based usual limits in order to minimize incorrect configuration.

Availability:

The "Value at rising edge” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Send value”
- Parameter "Evaluation of input” on the parameter card "Send value"
  - Setting: “Edge”
- Parameter "Send value at rising edge” on the parameter card "Send value"
  - Setting: “enable”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Evaluation of input” parameter [→ 78]
- “Data type“ parameter [→ 79]
- “Send value on rising edge” parameter [→ 80]

x value at rising edge
y value at rising edge

Parameter	Settings
x value at rising edge y value at rising edge	0...1

Function:

The parameter pair "x value at rising edge” and "y value at rising edge” defines the color value that will be sent. The color value is defined using an x- and a y-value of the CIE standard color space.

The brightness value of the parameter is defined with the parameter “Brightness value at rising edge (%).”

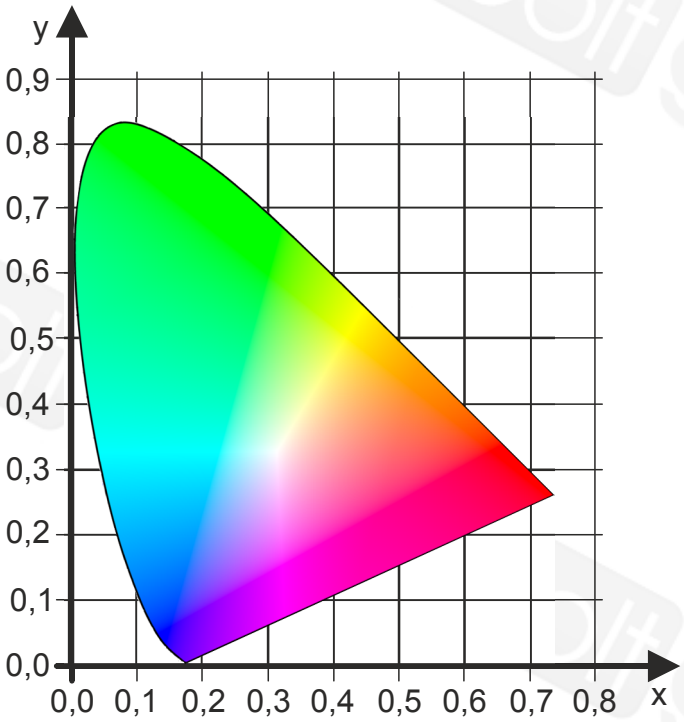


Fig. 9: Coordinate system of the CIE standard color space

Availability:

The parameters "x value at rising edge” and "y value at rising edge” are displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Send value”
- Parameter "Evaluation of input” on the parameter card "Send value"
  - Setting: “Edge”
- Parameter "Data type” on the parameter card "Send value"
  - Setting: “Color (xyY) DPT 242.600”
- Parameter "Send value at rising edge” on the parameter card "Send value"
  - Setting: “enable”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Evaluation of input” parameter [→ 78]
- “Data type“ parameter [→ 79]
- “Send value on rising edge” parameter [→ 80]
- “Brightness value on rising edge (%)” parameter [→ 83]

Brightness value at rising edge (%)

Parameter	Settings
Brightness value at rising edge (%)	0...100

Function:

The "Brightness value at rising edge (%)" parameter sets the brightness value of the color value that will be sent.

The color value is defined by the parameters "x value at rising edge" and "y value at rising edge."

Availability:

The "Brightness value at rising edge (%)" parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B" on the "device settings" parameter card
  - Setting: "Single"
- Parameter "Function channel A" on the "functions, objects" parameter card
  - Setting: "Send value"
- Parameter "Evaluation of input" on the parameter card "Send value"
  - Setting: "Edge"
- Parameter "Data type" on the parameter card "Send value"
  - Setting: "Color (xyY) DPT 242.600"
- Parameter "Send value at rising edge" on the parameter card "Send value"
  - Setting: "enable"

More information:

- "Function of channels A + B" parameter [→ 22]
- "Evaluation of input" parameter [→ 78]
- "Data type" parameter [→ 79]
- "Send value on rising edge" parameter [→ 80]
- "X-value on rising edge" parameter [→ 82]
- "Y-value on rising edge" parameter [→ 82]

Send value at falling edge

Parameter	Settings
Send value at falling edge	disable enable

Function:

This parameter determines whether the sending of a value telegram is to be triggered by a falling edge of the signal state at the input. Which data type the value should have is determined beforehand via the parameter "Data type."

The following settings are possible:

- disable:
  With this setting, no value telegram is sent on a falling edge.
- enable:
  With this setting, a value telegram is sent on a falling edge. The value is determined in the "Value at falling edge” parameter that appears after selecting "enable."

Availability:

The "Send value at falling edge” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  – Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  – Setting: “Send value”
- Parameter "Evaluation of input” on the parameter card "Send value"
  – Setting: “Edge”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Evaluation of input” parameter [→ 78]
- “Data type“ parameter [→ 79]
- "Value on falling edge” parameter [→ 85]

Value at falling edge

Parameter	Settings
Value at falling edge	Permitted values depending on the selected data type and its value range

Function:

This parameter sets the exact value that is sent on a falling edge of the signal state at the input.

The following settings are possible:

The permissible values depend on the selected data type.

The permissible values are based on practice-based usual limits in order to minimize incorrect configuration.

Availability:

The "Value at falling edge” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Send value”
- Parameter "Evaluation of input” on the parameter card "Send value"
  - Setting: “Edge”
- Parameter "Send value at falling edge” on the parameter card "Send value"
  - Setting: “enable”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Evaluation of input” parameter [→ 78]
- “Data type“ parameter [→ 79]
- “Send value on falling edge” parameter [→ 84]

x value at falling edge
y value at falling edge

Parameter	Settings
x value at falling edge y value at falling edge	0...1

Function:

The parameter pair "x value at falling edge” and "y value at falling edge” defines the color value that will be sent. The color value is defined using an x- and a y-value of the CIE standard color space.

The brightness value of the parameter is defined with the parameter “Brightness value at falling edge (%).”

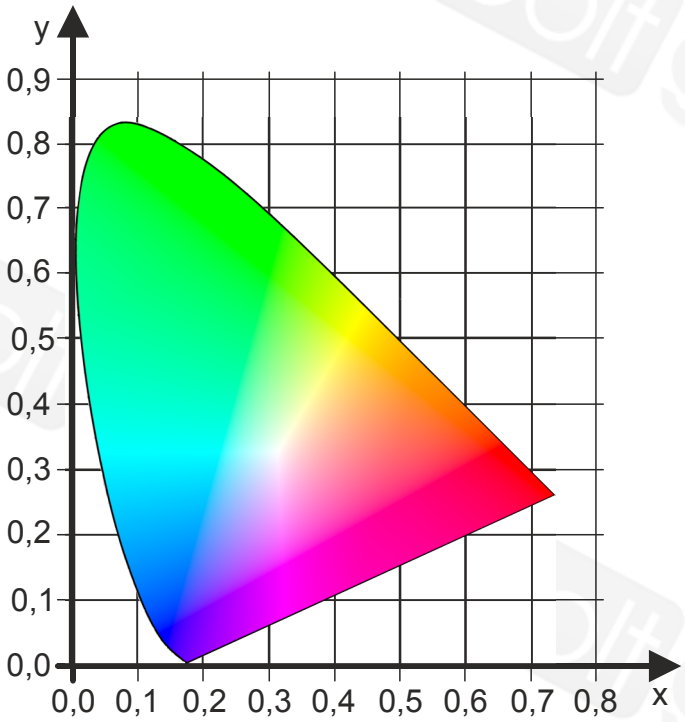


Fig. 10: Coordinate system of the CIE standard color space

Availability:

The parameters "x value at falling edge” and "y value at falling edge” are displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Send value”
- Parameter "Evaluation of input” on the parameter card "Send value"
  - Setting: “Edge”
- Parameter "Data type” on the parameter card "Send value"
  - Setting: “Color (xyY) DPT 242.600”
- Parameter "Send value at falling edge” on the parameter card "Send value"
  - Setting: “enable”

More information:

- “Function of channels A + B” parameter [➞ 22]
- “Evaluation of input” parameter [➞ 78]
- “Data type“ parameter [➞ 79]
- “Send value on falling edge” parameter [➞ 84]
- “Brightness value on falling edge (%)” parameter [➞ 87]

Brightness value at falling edge (%)

Parameter	Settings
Brightness value at falling edge (%)	0...100

Function:

The "Brightness value at falling edge (%)" parameter sets the brightness value of the color value that will be sent.

The color value is defined by the parameters "x value at falling edge" and "y value at falling edge."

Availability:

The "Brightness value at falling edge (%)" parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B" on the "device settings" parameter card
  - Setting: "Single"
- Parameter "Function channel A" on the "functions, objects" parameter card
  - Setting: "Send value"
- Parameter "Evaluation of input" on the parameter card "Send value"
  - Setting: "Edge"
- Parameter "Data type" on the parameter card "Send value"
  - Setting: "Color (xyY) DPT 242.600"
- Parameter "Send value at falling edge" on the parameter card "Send value"
  - Setting: "enable"

More information:

- "Function of channels A + B" parameter [→ 22]
- "Evaluation of input" parameter [→ 78]
- "Data type" parameter [→ 79]
- "Send value on falling edge" parameter [→ 84]
- "X-value on falling edge" parameter [→ 86]
- "Y-value on falling edge" parameter [→ 86]

Send value at short key press

Parameter	Settings
Send value at short key press	disable enable

Function:

This parameter determines whether the sending of a value telegram is to be triggered by a short press of a push-button connected to the input. Which data type the value should have is determined beforehand via the parameter "Data type."

The following settings are possible:

- disable:
  With this setting, no value telegram is sent when the push-button is pressed briefly.
- enable:
  With this setting, a value telegram is sent when the push-button is pressed briefly. The value is determined in the "Value at short key press” parameter that appears after selecting "enable."

Availability:

The "Send value at short key press” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  – Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  – Setting: “Send value”
- Parameter "Evaluation of input” on the parameter card "Send value"
  – Setting: “Short/long key press”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Evaluation of input” parameter [→ 78]
- “Data type“ parameter [→ 79]
- “Value with short press of the push-button” parameter [→ 89]

Value at short key press

Parameter	Settings
Value at short key press	Permitted values depending on the selected data type and its value range

Function:

This parameter sets the exact value that is sent when a push-button connected to the input is pressed briefly.

The following settings are possible:

The permissible values depend on the selected data type.

The permissible values are based on practice-based usual limits in order to minimize incorrect configuration.

Availability:

The "Value at short key press” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Send value”
- Parameter "Evaluation of input” on the parameter card "Send value"
  - Setting: “Short/long key press”
- Parameter "Send value at short key press” on the parameter card "Send value"
  - Setting: “enable”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Evaluation of input” parameter [→ 78]
- “Data type“ parameter [→ 79]
- “Send value on short press of the push-button” parameter [→ 88]

x value at short key press

y value at short key press

Parameter	Settings
x value at short key press y value at short key press	0...1

Function:

The parameter pair "x value at short key press” and "y value at short key press” defines the color value that will be sent. The color value is defined using an x- and a y-value of the CIE standard color space.

The brightness value of the parameter is defined with the parameter “Brightness value at short key press (%).”

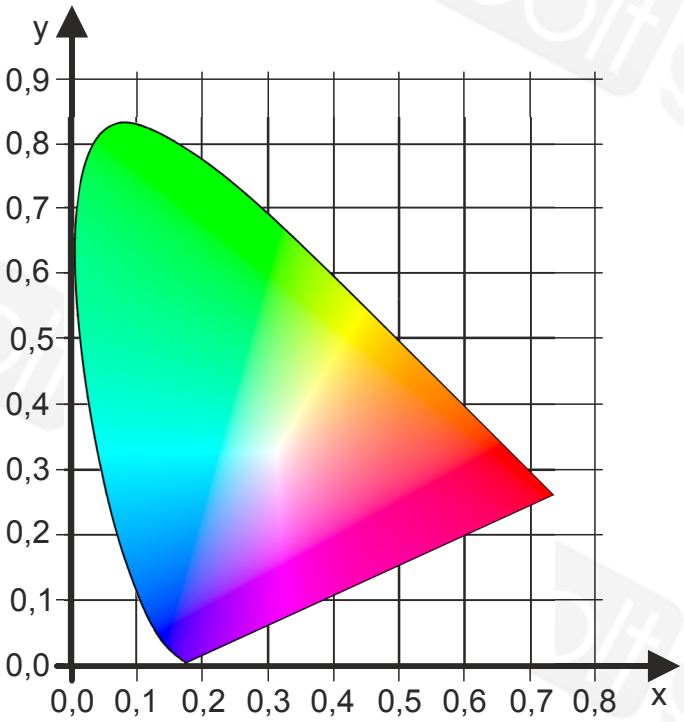


Fig. 11: Coordinate system of the CIE standard color space

Availability:

The parameters "x value at short key press” and "y value at short key press” are displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Send value”
- Parameter "Evaluation of input” on the parameter card "Send value"
  - Setting: “Short/long key press”
- Parameter "Data type” on the parameter card "Send value"
  - Setting: “Color (xyY) DPT 242.600”
- Parameter "Send value at short key press” on the parameter card "Send value"
  - Setting: “enable”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Evaluation of input” parameter [→ 78]
- “Data type“ parameter [→ 79]
- “Send value on short press of the push-button” parameter [→ 88]
- "Brightness value with short press of the push-button (%)” parameter [→ 91]

Brightness value at short key press (%)

Parameter	Settings
Brightness value at short key press (%)	0...100

Function:

The "Brightness value at short key press (%)" parameter sets the brightness value of the color value that will be sent.

The color value is defined by the parameters "x value at short key press" and "y value at short key press."

Availability:

The "Brightness value at short key press (%)" parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B" on the "device settings" parameter card
  - Setting: "Single"
- Parameter "Function channel A" on the "functions, objects" parameter card
  - Setting: "Send value"
- Parameter "Evaluation of input" on the parameter card "Send value"
  - Setting: "Short/long key press"
- Parameter "Data type" on the parameter card "Send value"
  - Setting: "Color (xyY) DPT 242.600"
- Parameter "Send value at short key press" on the parameter card "Send value"
  - Setting: "enable"

More information:

- "Function of channels A + B" parameter [→ 22]
- "Evaluation of input" parameter [→ 78]
- "Data type" parameter [→ 79]
- "Send value on short press of the push-button" parameter [→ 88]
- "X-value with short press of the push-button" parameter [→ 90]
- "Y-value with short press of the push-button" [→ 90]

Send value at long key press

Parameter	Settings
Send value at long key press	disable enable

Function:

This parameter determines whether the sending of a value telegram is to be triggered by a long press of a push-button connected to the input. Which data type the value should have is determined beforehand via the parameter "Data type."

The following settings are possible:

- disable:
  With this setting, no value telegram is sent when the push-button is pressed for a long time.
- enable:
  With this setting, a value telegram is sent when the push-button is pressed for a long time. The value is determined in the "Value at long key press" parameter that appears after selecting "enable."

Availability:

The "Send value at long key press" parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B" on the "device settings" parameter card
  – Setting: "Single"
- Parameter "Function channel A" on the "functions, objects" parameter card
  – Setting: "Send value"
- Parameter "Evaluation of input" on the parameter card "Send value"
  – Setting: "Short/long key press"

More information:

- "Function of channels A + B" parameter [→ 22]
- "Evaluation of input" parameter [→ 78]
- "Data type" parameter [→ 79]
- "Value with long press of the push-button" parameter [→ 93]

Value at long key press

Parameter	Settings
Value at long key press	Permitted values depending on the selected data type and its value range

Function:

This parameter sets the exact value that is sent when a push-button connected to the input is pressed for a long time.

The following settings are possible:

The permissible values depend on the selected data type.

The permissible values are based on practice-based usual limits in order to minimize incorrect configuration.

Availability:

The "Value at long key press” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Send value”
- Parameter "Evaluation of input” on the parameter card "Send value"
  - Setting: “Short/long key press”
- Parameter "Send value at long key press” on the parameter card "Send value"
  - Setting: “enable”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Evaluation of input” parameter [→ 78]
- “Data type“ parameter [→ 79]
- “Send value on long press of the push-button” parameter [→ 92]

x value at long key press
y value at long key press

Parameter	Settings
x value at long key press y value at long key press	0...1

Function:

The parameter pair "x value at long key press” and "y value at long key press” defines the color value that will be sent. The color value is defined using an x- and a y-value of the CIE standard color space.

The brightness value of the parameter is defined with the parameter “Brightness value at long key press (%).”

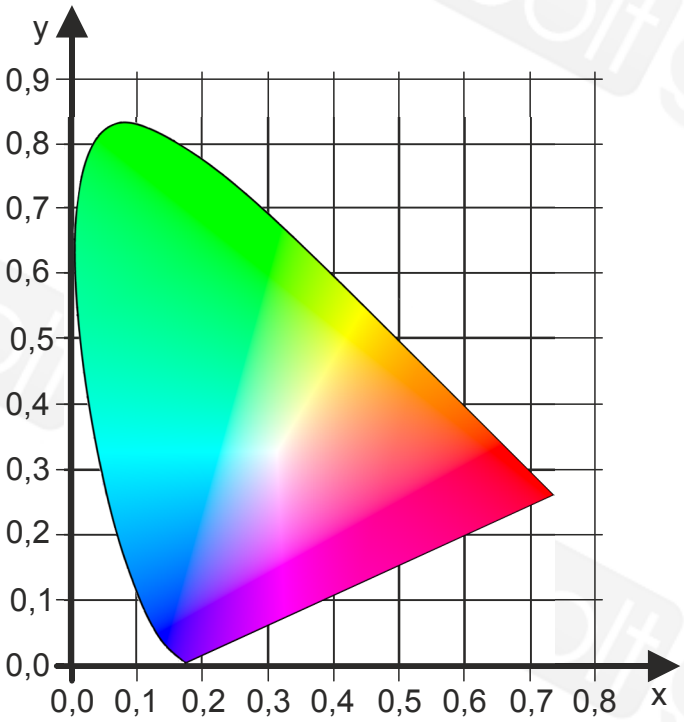


Fig. 12: Coordinate system of the CIE standard color space

Availability:

The parameters "x value at long key press” and "y value at long key press” are displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Send value”
- Parameter "Evaluation of input” on the parameter card "Send value"
  - Setting: “Short/long key press”
- Parameter "Data type” on the parameter card "Send value"
  - Setting: “Color (xyY) DPT 242.600”
- Parameter "Send value at long key press” on the parameter card "Send value"
  - Setting: “enable”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Evaluation of input” parameter [→ 78]
- “Data type“ parameter [→ 79]
- “Send value on long press of the push-button” parameter [→ 92]
- "Brightness value with long press of the push-button (%)” parameter [→ 95]

Brightness value at long key press (%)

Parameter	Settings
Brightness value at long key press (%)	0...100

Function:

The "Brightness value at long key press (%)" parameter sets the brightness value of the color value that will be sent.

The color value is defined by the parameters "x value at long key press" and "y value at long key press."

Availability:

The "Brightness value at long key press (%)" parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B" on the "device settings" parameter card
  - Setting: "Single"
- Parameter "Function channel A" on the "functions, objects" parameter card
  - Setting: "Send value"
- Parameter "Evaluation of input" on the parameter card "Send value"
  - Setting: "Short/long key press"
- Parameter "Data type" on the parameter card "Send value"
  - Setting: "Color (xyY) DPT 242.600"
- Parameter "Send value at long key press" on the parameter card "Send value"
  - Setting: "enable"

More information:

- "Function of channels A + B" parameter [→ 22]
- "Evaluation of input" parameter [→ 78]
- "Data type" parameter [→ 79]
- "Send value on long press of the push-button" parameter [→ 92]
- "X-value with short press of the push-button" parameter [→ 94]
- "Y-value with long press of the push-button" parameter [→ 94]

Detect long key press after

Parameter	Settings
Detect long key press after hh:mm:ss.f	00:00:00.3 ... 00:00:07.0

Function:

This parameter sets the duration of a long press of the push-button. After the set time has elapsed, the press of the push-button is considered long and the telegram is sent.

Availability:

The "Detect long key press after” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Send value”
- Parameter "Evaluation of input” on the parameter card "Switching"
  - Setting: “Short/long key press”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Evaluation of input” parameter [→ 50]

Send additional telegram

For details on the "Send additional telegram” function, see Send additional telegram [→ 194]

See also

- Send value [→ 77]
- “Send value” communication objects [→ 97]

7.12.2 “Send value” communication objects

The following communication objects are used to control the "Send value” function:

A Value

No.	Object name	Function	Datapoint type	Flags
15	A Value	Value	5.001 percentage (0..100%) 5.010 counter pulses (0..255) 6.010 counter pulses (-128..127) 7.001 pulses 7.012 current (mA) 7.600 absolute colour temperature (K) 8.001 pulses difference 9.001 temperature (°C) 9.004 lux (Lux) 9.005 speed (m/s) 9.007 humidity (%) 9.008 parts/million (ppm) 9.021 current (mA) 9.024 power (kW) 9.026 rain amount (l/m²) 9.027 temperature (°F) 9.* 2-byte float value 10.001 time of day 12.001 counter pulses (unsigned) 13.001 counter pulses (signed) 14.019 electric current (A) 14.031 energy (J) 14.056 power (W) 14.065 speed (m/s) 14.068 temperature (°C) 14.* 4-byte float value 16.000 Character String (ASCII) 232.600 RGB value 3x(0..255) 242.600 colour xyY	CRT

Function:

Value telegrams are sent via the group address linked with this communication object.

Availability:

The "A Value” communication object is displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Send value”

More information:

- “Function of channels A + B” parameter [➞ 22]

See also

- Send value [➞ 77]
- “Send value” parameter [➞ 77]

7.13 Send value, variable

With the function "Send value, variable” two adjacent channels of the binary input are used and configured together. The prerequisite for this function is that the "Pairwise” option is selected in the device settings for the adjacent channel concerned.

“Function of channels A + B” parameter [➞ 22]

With the function "Send value, variable,” a changeable value of a defined data type can be sent. The value is changed either by pressing the push-button several times or automatically when the push-button is pressed for a long time. The step size of the value changes, the length of the press of the push-button and limit values can be set. In addition, the value can be sent cyclically. Since this is a 2-button function, the value is adjusted up with one of the two connected push-buttons and down with the other.

Application example

This function can be used, for example, to set the target temperature of a room temperature controller using push-buttons.

7.13.1 "Send value variable” parameter

The following parameters are used to set the "Send value, variable” function:

Parameters of the “functions, objects” parameter card

As a prerequisite for the "Send value, variable” function, set the "Function channels A + B” parameter on the "functions, objects” parameter card as specified:

Function channels A + B

Parameter	Settings
Function channels A + B	Send value, variable

Function:

This parameter determines which function is to be assigned to the channel pair.

Availability:

The "Function channels A + B” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Pairwise”

More information:

- “Function of channels A + B” parameter [➞ 22]

Parameters of the parameter card "Send value, variable"

Data type

Parameter	Settings
Data type	Percentage (%) DPT 5.001 Value (8-bit) DPT 5.010 Signed value (8-bit) DPT 6.010 Value (16-bit) DPT 7.001 Signed value (16-bit) DPT 8.001 2-byte floating point number DPT 9.x Temperature (°C) DPT 9.001 Illuminance (lx) DPT 9.004 Wind speed (m/s) DPT 9.005 Value (32-bit) DPT 12.001 Signed value (32-bit) DPT 13.001 Power (W) DPT 14.056

Function:

This parameter sets the data type of the values sent via the "Send value, variable" function.

Note:

When using the "2-byte floating point number DPT 9.x" data type, it is not possible for technical/mathematical reasons to further increase/decrease values that are already very high with a small step size and send them immediately. In this case, the counter value is further increased or decreased internally, but the new value is not sent until a value is reached that can be sent. Until this value is reached, the old value continues to be sent.

Availability:

The "Data type" parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B" on the "device settings" parameter card
  - Setting: "Pairwise"
- Parameter "Function channels A + B" on the "functions, objects" parameter card
  - Setting: "Send value, variable"

More information:

- "Function of channels A + B" parameter [→ 22]
- "Data type" parameter [→ 99]
- "A + B value" communication object [→ 104]
- "A + B value received" communication object [→ 103]

Lower limit

Parameter	Settings
Lower limit	Depends on the selected data type and its value range

Function:

This parameter sets the lower limit of the selected data type. When the lower limit value is reached and the push-button for decreasing the value step by step is still pressed, the value of the lower limit value is sent once. When the push-button for decreasing the value step by step is released and pressed again, the value of the lower limit is sent again. This happens every time the push-button is pressed again.

The following settings are possible:

The permissible values depend on the selected data type and its value range.

Availability:

The "Lower limit" parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B" on the "device settings" parameter card
  - Setting: "Pairwise"
- Parameter "Function channels A + B" on the "functions, objects" parameter card
  - Setting: "Send value, variable"

More information:

- "Function of channels A + B" parameter [→ 22]
- "Data type" parameter [→ 99]

Upper limit

Parameter	Settings
Upper limit	Depends on the selected data type and its value range

Function:

This parameter sets the upper limit of the selected data type. When the upper limit value is reached and the push-button for increasing the value step by step continues to be pressed, the value of the upper limit value is sent once. When the push-button for increasing the value step by step is released and pressed again, the value of the upper limit is sent again. This happens every time the push-button is pressed again.

The following settings are possible:

The permissible values depend on the selected data type and its value range.

Availability:

The "Upper limit" parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B" on the "device settings" parameter card
  - Setting: "Pairwise"
- Parameter "Function channels A + B" on the "functions, objects" parameter card
  - Setting: "Send value, variable"

More information:

- "Function of channels A + B" parameter [→ 22]
- "Data type" parameter [→ 99]

Step value (decrease)

Parameter	Settings
Step value (decrease)	Depends on the selected data type and its value range

This parameter can be used to set the increment by which the value is decreased when the push-button is pressed. The value is either decreased by this value per press of the push-button or, in the case of a long press of the push-button, automatically each time the value is sent cyclically.

The following settings are possible:

The permissible values depend on the selected data type and its value range.

Availability:

The "Step value (decrease)" parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B" on the "device settings" parameter card
  - Setting: "Pairwise"
- Parameter "Function channels A + B" on the "functions, objects" parameter card
  - Setting: "Send value, variable"

More information:

- "Function of channels A + B" parameter [→ 22]
- "Data type" parameter [→ 99]
- "Long press of the push-button from" parameter [→ 102]
- "Send cyclically" parameter [→ 102]

Step value (increase)

Parameter	Settings
Step value (increase)	Depends on the selected data type and its value range

Function:

This parameter can be used to set the increment by which the value is increased when the push-button is pressed. The value is either increased by this value per press of the push-button or, in the case of a long press of the push-button, automatically each time the value is sent cyclically.

The following settings are possible:

The permissible values depend on the selected data type and its value range.

Availability:

The "Step value (increase)" parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B" on the "device settings" parameter card
  - Setting: "Pairwise"
- Parameter "Function channels A + B" on the "functions, objects" parameter card
  - Setting: "Send value, variable"

More information:

- "Function of channels A + B" parameter [→ 22]
- "Data type" parameter [→ 99]
- "Long press of the push-button from" parameter [→ 102]
- "Send cyclically" parameter [→ 102]

Detect long key press after

Parameter	Settings
Detect long key press after hh:mm:ss.f	00:00:00.3 ... 00:00:07.0

Function:

This parameter sets the duration of a long press of the push-button. At the beginning of the press of the push-button, the set value is increased or decreased and the first telegram is sent. After the set time has elapsed, the press of the push-button is considered long and the cyclic sending of further telegrams starts in addition to the telegram already sent.

Availability:

The "Detect long key press after" parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B" on the "device settings" parameter card
  - Setting: "Single"
- Parameter "Function channel A" on the "functions, objects" parameter card
  - Setting: "Send value, variable"
- Parameter "Evaluation of input" on the parameter card "Switching"
  - Setting: "Short/long key press"

More information:

- "Function of channels A + B" parameter [→ 22]
- "Evaluation of input" parameter [→ 50]

Cyclic sending

Parameter	Settings
Cyclic sending hh:mm:ss.f	00:00:00.3 ... 01:49:13.5

Function:

This parameter can be used to set the interval at which the values are sent in the event of a long press of the push-button.

If the upper or lower limit value has been reached during a long press of the push-button, cyclic sending ends after the limit value has been sent.

Availability:

The "Cyclic sending" parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B" on the "device settings" parameter card
  - Setting: "Pairwise"
- Parameter "Function channels A + B" on the "functions, objects" parameter card
  - Setting: "Send value, variable"

More information:

- "Function of channels A + B" parameter [→ 22]
- "Lower limit" parameter [→ 100]
- "Upper limit" parameter [→ 100]

See also

🗎 Send value, variable [→ 98]
🗎 "Send value variable" communication objects [→ 103]

7.13.2 "Send value variable" communication objects

The following communication objects are used to control the "Send value, variable" function:

A + B Receive value

No.	Object name	Function	Datapoint type	Flags
16	A + B Receive value	Value	5.001 percentage (0..100%) 5.010 counter pulses (0..255) 6.010 counter pulses (-128..127) 7.001 pulses 8.001 pulses difference 9.001 temperature (°C) 9.004 lux (Lux) 9.005 speed (m/s) 9.* 2-byte float value 12.001 counter pulses (unsigned) 13.001 counter pulses (signed) 14.056 power (W)	CW

Function:

This communication object can be used to set a value for variable transmission via the bus, at which sending starts when a push-button is pressed. The current value is stored within the device.

Application example:

In an open-plan office, there are two independent push-buttons that are to be used to set the room temperature (target temperature). Via this communication object, the current setpoint that was set on one of the two push-buttons is passed on to the room temperature controller and the second push-button. At the second push-button, the value serves as a starting value for further settings.

Availability:

The "A + B Receive value" communication object is displayed if the following configurations have been made:

- Parameter "Function channels A + B" on the "device settings" parameter card
  - Setting: "Pairwise"
- Parameter "Function channels A + B" on the "functions, objects" parameter card
  - Setting: "Send value, variable"

More information:

- "Function of channels A + B" parameter [→ 22]

A + B Value

No.	Object name	Function	Datapoint type	Flags
17	A + B Value	Value	5.001 percentage (0..100%) 5.010 counter pulses (0..255) 6.010 counter pulses (-128..127) 7.001 pulses 8.001 pulses difference 9.001 temperature (°C) 9.004 lux (Lux) 9.005 speed (m/s) 9.* 2-byte float value 12.001 counter pulses (unsigned) 13.001 counter pulses (signed) 14.056 power (W)	CRT

Function:

This communication object is used to send the variable value.

Availability:

The "A + B Value" communication object is displayed if the following configurations have been made:

- Parameter "Function channels A + B" on the "device settings" parameter card
  - Setting: "Pairwise"
- Parameter "Function channels A + B" on the "functions, objects" parameter card
  - Setting: "Send value, variable"

More information:

- "Function of channels A + B" parameter [→ 22]

See also

- Send value, variable [→ 98]
- "Send value variable" parameter [→ 98]

7.14 Logic operations

With the function “Logic operations” the input signal physically arriving at the input from a switch or sensor can be linked to one or two further signals received via the bus.

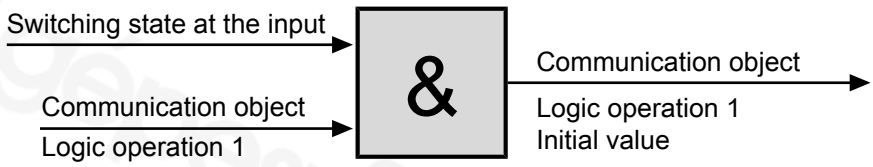
The prerequisite for this function is that the "Single” option is selected in the device settings for the channel concerned.

“Function of channels A + B” parameter [→ 22]

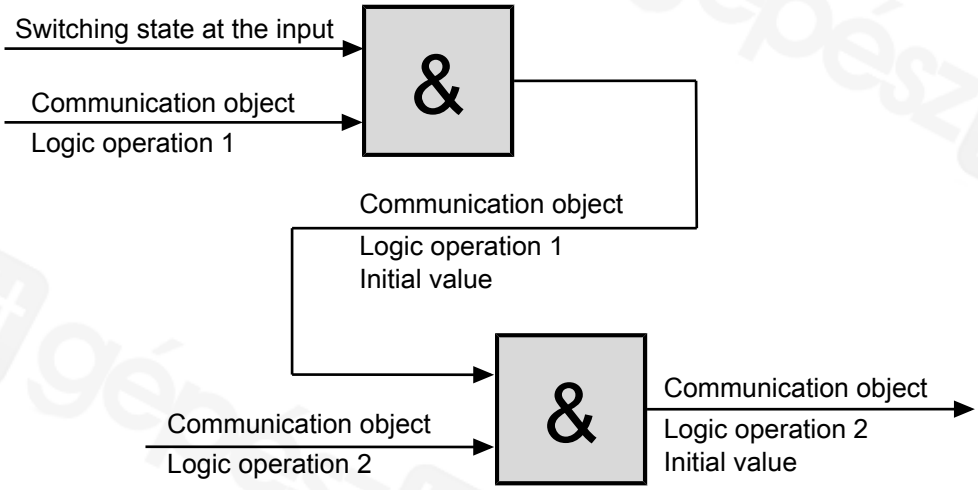
The following logical operators are available for operations:

- AND
- OR
- XOR
- FILTER
- TRIGGER

Two logic operations are available per input. The switching value at the physical input of the respective channel forms the first input of the logic operation. The communication object "A Logic operation 1” is available for the second input of the logic operation. The communication object can be linked to other sensor outputs, status objects or switching presets via group addresses. The result of this logic operation is sent to the bus via the "A Logic operation 1 output” communication object.



If a second logic operation is configured, the logical output value of the first logic operation acts as the input for the second logic operation. The communication object "A Logic operation 2” is available for the second input of logic operation 2. The communication object can be linked to other sensor outputs, status objects or switching presets via group addresses. The result of this logic operation is sent to the bus via the "A Logic operation 2 output” communication object.



Application examples

Alarm signal on the shop window:

The value of an alarm indicator (sensor) arrives at the physical input of the binary input. This value is linked with a logical AND to the communication object of a push-button or a blind. So if now the push-button has been pressed for deactivation (e.g. to clean the window) or the blind has been lowered, the “AND” condition of the linkage is no longer fulfilled and no alarm will be triggered if the alarm indicator sends a corresponding value.

Alarm signal in the apartment building:

Window and locking contacts are installed on the windows and doors of a residential building and linked with “AND." When all windows are closed and the front door is locked (closing contact), the alarm is armed. Now, as soon as a window is opened, the alarm is triggered. If the front door is not locked, all windows can be opened without triggering an alarm.

7.14.1 “Logic operations” parameter

The following parameters are used to set the "Logic operations” function:

Parameters of the “functions, objects” parameter card

As a prerequisite for the "Logic operations” function, set the "Function channel A” parameter on the "functions, objects” parameter card as specified:

Function channel A

Parameter	Settings
Function channel A	Logic operations

Function:

This parameter determines which function is to be assigned to the channel.

Availability:

The "Function channel A” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”

More information:

- “Function of channels A + B” parameter [→ 22]

Parameters of the “logic operation” parameter card:

Logic operation 1
Logic operation 2

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

Function:

This parameter is used to select which logical operator is used to link the physical switching state at the input of the binary input with the value from the "A Logic operation 1” or "A Logic operation 2” communication object.

The following settings are possible:

- No logic operation:
  The logic operation is disabled.
  If logic operation 1 is deactivated and logic operation 2 is set up, the physical switching state at the input of the binary input is used directly as the input value for logic operation 2.
- AND:
  Only if the values of the physical input and the value of the communication object are equal to “1,” then the result of the logic operation is “1,” otherwise “0".
- OR:
  If at least one of the values of the physical input and the communication object is equal to “1,” then the result of the logical operation is “1,” otherwise “0".

- XOR:
  If the values of the physical input and the communication object are the same, the result of the logic operation is “0", otherwise “1."
- FILTER:
  If the value of the physical input is “1", the value of the communication object is passed on to the output. If the physical input is “0,” the value of the communication object is not passed on, i.e. is filtered.
  If the output is to be inverted and value of the physical input is “1,” the inverted value of the communication object is passed on to the output. If the physical input is “0,” the value of the communication object is not passed on, i.e. is filtered.
  For regular operation of the input without an effective filter, after bus voltage recovery this input must be set to “1.”

Input	Linked input	Output
Switching state at the input	**Value of communication object "A Logic operation 1"**	**Value of communication object "A Logic operation 1 output"**
X	0	---
0	1	0
1	1	1

---	No output of the output value	0	Value = 0
X	Any value	1	Value = 1

- TRIGGER:
  There is no input value via communication object "A Logic operation 1." For each incoming value (“0” or “1”) from the physical input, the value “1” is passed on at the output.

Availability:

The parameters "Logic operation 1” and "Logic operation 2” are displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  – Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  – Setting: “Logic operations”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Logic operation 1” communication object [→ 110]
- “Logic operation 2” communication object [→ 111]
- “Logic operation 1 output value” communication object [→ 112]
- “Logic operation 2 output value” communication object [→ 113]

Invert logical input

Parameter	Settings
Invert logical input	No Yes

Function:

This parameter defines whether the logical input value (communication object "A Logic operation 1” or "A Logic operation 2") should be inverted.

Availability:

This parameter is only visible, if the parameter "Logic operation 1” or "Logic operation 2” is set to “AND,” "OR“, "XOR” or "FILTER.”

Availability:

The "Invert logical input” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Logic operations”
- Parameter "Logic operation 1” or "Logic operation 2” on parameter card "Logic operations"
  - Setting: "AND", "OR", "XOR” or "FILTER"

More information:

- “Function of channels A + B” parameter [→ 22]
- “Logic operation 1” communication object [→ 110]
- “Logic operation 2” communication object [→ 111]
- “Logic operation 1” parameter [→ 106]
- “Logic operation 2” parameter [→ 106]

Invert logical output

Parameter	Settings
Invert logical output	No Yes

Function:

This parameter defines whether the logical output value (communication object "A Logic operation 1 output” or "A Logic operation 2 output") is to be inverted.

Note:

By this configuration the logic functions for “NAND” and “NOR” can be simulated.

Availability:

The "Invert logical output” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Logic operations”
- Parameter "Logic operation 1” or "Logic operation 2” on parameter card "Logic operations"
  - Setting: "AND", "OR", "XOR", "FILTER” or "TRIGGER"

More information:

- “Function of channels A + B” parameter [→ 22]
- “Logic operation 1” communication object [→ 110]
- “Logic operation 2” communication object [→ 111]
- “Logic operation 1” parameter [→ 106]
- “Logic operation 2” parameter [→ 106]
- “Logic operation 1 output value” communication object [→ 112]
- “Logic operation 2 output value” communication object [→ 113]

Initial value of logic operation object after bus voltage recovery

Parameter	Settings
Initial value of logic operation object after bus voltage recovery	Off On As before bus voltage failure

Function:

This parameter is used to set the desired starting value of the communication object "A Logic operation 1” or "A Logic operation 2” on bus voltage recovery.

The following settings are possible:

- Off:
  The communication object receives the value "Off" when bus voltage is recovered.
- On:
  The communication object receives the value "On" when bus voltage is recovered.
- As before bus voltage failure:
  The value of the communication object is set to the value stored for bus voltage failure.

Availability:

The "Initial value of logic operation object after bus voltage recovery" parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B" on the "device settings" parameter card
  – Setting: "Single"
- Parameter "Function channel A" on the "functions, objects" parameter card
  – Setting: "Logic operations"
- Parameter "Logic operation 1" or "Logic operation 2" on parameter card "Logic operations"
  – Setting: "AND", "OR", "XOR" or "FILTER"

More information:

- "Function of channels A + B" parameter [→ 22]
- "Logic operation 1" communication object [→ 110]
- "Logic operation 2" communication object [→ 111]
- "Logic operation 1" parameter [→ 106]
- "Logic operation 2" parameter [→ 106]

See also

- Logic operations [→ 105]
- "Logic operations" communication objects [→ 110]

7.14.2 “Logic operations” communication objects

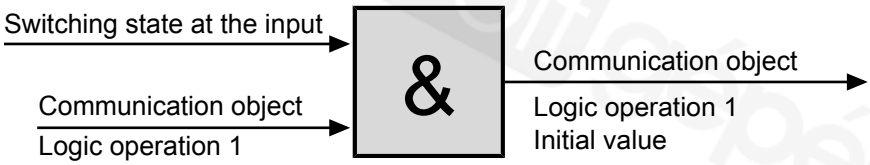
The following communication objects are used to control the "Logic operations” function:

A Logic operation 1

No.	Object name	Function	Datapoint type	Flags
24	A Logic operation 1	On/Off	1.001 switch	CW

Function:

The value of this communication object is logically linked with the physical switching state of the input.



Availability:

The "A Logic operation 1” communication object is displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Logic operations”
- Parameter "Logic operation 1” on the parameter card "Logic operations"
  - Setting: "AND", "OR", "XOR” or "FILTER"

More information:

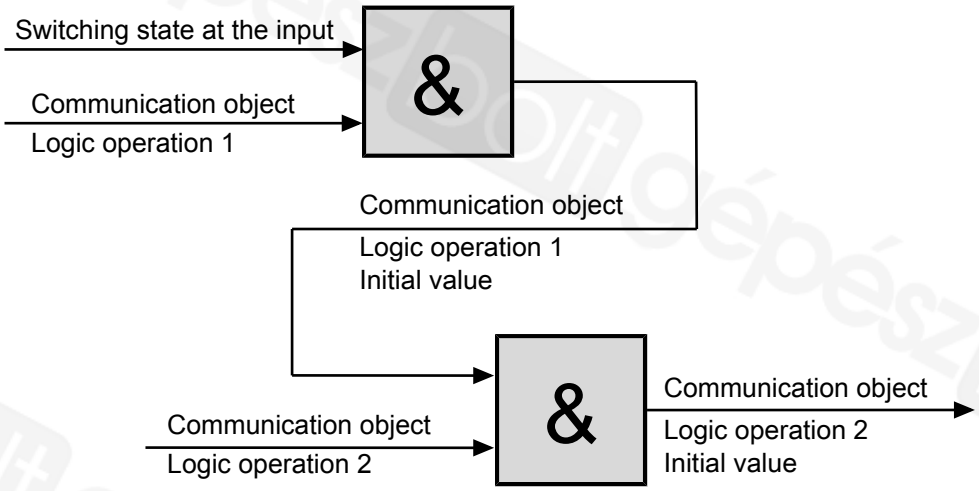
- “Function of channels A + B” parameter [→ 22]
- “Logic operation 1” parameter [→ 106]
- “Logic operation 1” communication object [→ 110]
- “Logic operation 1 output value” communication object [→ 112]

A Logic operation 2

No.	Object name	Function	Datapoint type	Flags
25	A Logic operation 2	On/Off	1.001 switch	CW

Function:

The value of this communication object is logically linked with the communication object "A Logic operation 2 output."



Availability:

The "A Logic operation 2" communication object is displayed if the following configurations have been made:

- Parameter "Function channels A + B" on the "device settings" parameter card
  - Setting: "Single"
- Parameter "Function channel A" on the "functions, objects" parameter card
  - Setting: "Logic operations"
- Parameter "Logic operation 2" on the parameter card "Logic operations"
  - Setting: "AND", "OR", "XOR", "FILTER" or "TRIGGER"

More information:

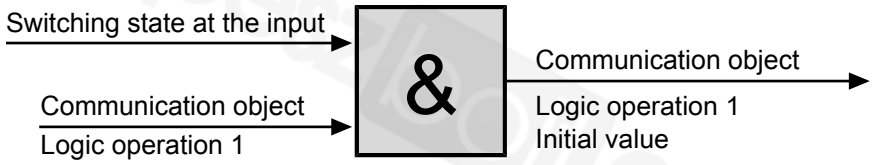
- "Function of channels A + B" parameter [→ 22]
- "Logic operation 2" parameter [→ 106]
- "Logic operation 1" communication object [→ 110]
- "Logic operation 2" communication object [→ 111]
- "Logic operation 1 output value" communication object [→ 112]
- "Logic operation 2 output value" communication object [→ 113]

A Logic operation 1 output

No.	Object name	Function	Datapoint type	Flags
26	A Logic operation 1 output	On/Off	1.001 switch	CRT

Function:

This communication object is used to send the result of logic operation 1.



Availability:

The "A Logic operation 1 output" communication object is displayed if the following configurations have been made:

- Parameter "Function channels A + B" on the "device settings" parameter card
  - Setting: "Single"
- Parameter "Function channel A" on the "functions, objects" parameter card
  - Setting: "Logic operations"
- Parameter "Logic operation 1" on the parameter card "Logic operations"
  - Setting: "AND", "OR", "XOR" or "FILTER"

More information:

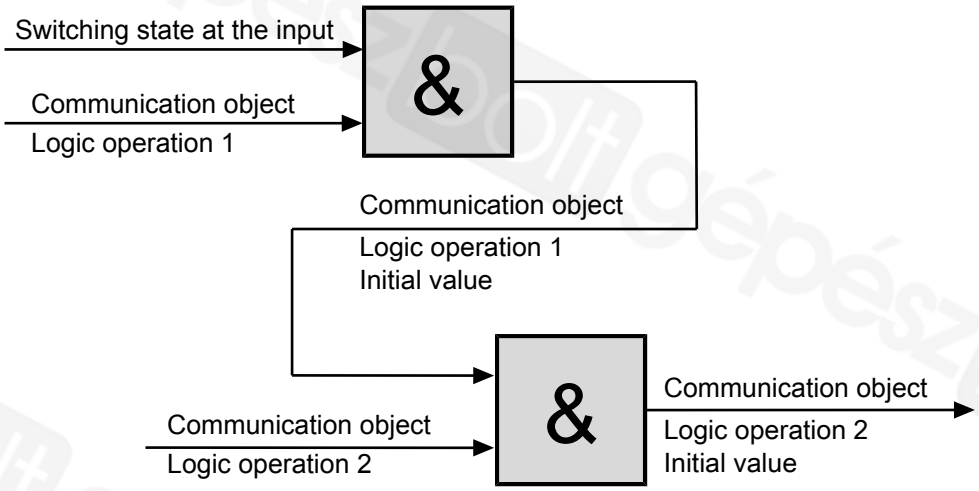
- "Function of channels A + B" parameter [→ 22]
- "Logic operation 1" parameter [→ 106]
- "Logic operation 1" communication object [→ 110]
- "Logic operation 1 output value" communication object [→ 112]

A Logic operation 2 output

No.	Object name	Function	Datapoint type	Flags
27	A Logic operation 2 output	On/Off	1.001 switch	CRT

Function:

This communication object is used to send the result of logic operation 2.



Availability:

The "A Logic operation 2 output” communication object is displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Logic operations”
- Parameter "Logic operation 2” on the parameter card "Logic operations"
  - Setting: "AND", "OR", "XOR", "FILTER” or "TRIGGER"

More information:

- “Function of channels A + B” parameter [→ 22]
- “Logic operation 1” parameter [→ 106]
- “Logic operation 2” parameter [→ 106]
- “Logic operation 1” communication object [→ 110]
- “Logic operation 2” communication object [→ 111]
- “Logic operation 1 output value” communication object [→ 112]

See also

- Logic operations [→ 105]
- “Logic operations” parameter [→ 106]

7.15 Pulse counting

With the "Pulse counting” function, pulses arriving at the binary input can be recorded, counted and saved. It is possible to count in the positive as well as in the negative direction.

The prerequisite for this function is that the "Single” option is selected in the device settings for the channel concerned.

“Function of channels A + B” parameter [→ 22]

This parameter can be used to set whether the counter reading is increased with a rising and/or falling signal edge.

The counter reading is stored in the communication object "A Count” (20) and can be sent on request or automatically after a change by a certain value or cyclically, depending on the configuration.

Via the communication object "A Count” (18) the counter reading can be reset to the value "0” or another value by telegram if required.

Optionally, a limit value and monitoring of the limit value can be configured. Exceeding or, in the case of negative counting, falling below the limit value immediately results in a logical 1 being sent via the communication object "A Above limit” or "A Below limit." The limit value can either be specified via the parameter "Threshold” or changed via the communication object "A Threshold” by telegram. It is also possible to query the limit value via this communication object. If the limit value is undercut again by resetting the counter reading or by changing the limit value, or if it is exceeded again in the case of a negative count, this immediately results in a logical “0” being sent, since the counter reading is again in the permitted range.

If the supply voltage for the electronics fails (bus voltage failure), the counter reading and also the limit value are permanently stored in a memory protected against data loss in the event of a voltage failure and are transferred from this memory back to the main memory when the bus voltage returns.

Application example

Access control:

Only a certain number of people are allowed through, then access is blocked for a certain time.

One use case would be, for example, access to the elevator in the TV tower or access to an area where not too many people are allowed to enter at the same time.

7.15.1 “Pulse counting” parameter

The following parameters are used to set the "Pulse counting” function:

Parameters of the “functions, objects” parameter card

As a prerequisite for the "Pulse counting” function, set the "Function channel A” parameter on the "functions, objects” parameter card as specified:

Function channel A

Parameter	Settings
Function channel A	Pulse counting

Function:

This parameter determines which function is to be assigned to the channel.

Availability:

The "Function channel A” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”

More information:

- “Function of channels A + B” parameter [→ 22]

Parameters of the “pulse counting” parameter card

Data type

Parameter	Settings
Data type	Value (8-bit) DPT 5.010 Signed value (8-bit) DPT 6.010 Value (16-bit) DPT 7.001 Signed value (16-bit) DPT 8.001 Value (32-bit) DPT 12.001 Signed value (32-bit) DPT 13.001

Function:

This parameter sets the data type of the values for the "Pulse counting” function. The data type defines the possible counting range.

The following settings are possible:

Setting	Counting range
Value (8-bit) DPT 5.010	0...255
Signed value (8-bit) DPT 6.010	-128...127
Value (16-bit) DPT 7.001	0...65535
Signed value (16-bit) DPT 8.001	-32768...32767
Value (32-bit) DPT 12.001	0...4294967295
Signed value (32-bit) DPT 13.001	-2147483648...2147483647

Availability:

The "Data type” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Pulse counting”

More information:

- “Function of channels A + B” parameter [→ 22]

Count at

Parameter	Settings
Count at	Rising edge Falling edge Falling and rising edge

Function:

This parameter is used to set when the counter reading changes.

The following settings are possible:

- Rising edge
  This setting changes the value on a rising edge. The rising edge corresponds to pressing the push-button.
- Falling edge
  This setting changes the value on a falling edge. The falling edge corresponds to a release of the push-button.
- Falling and rising edge
  This setting changes the value on rising and falling edge. This means that when a push-button is pressed and released, this corresponds to two counts and the value is changed twice.

Availability:

The "Count at” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Pulse counting”

More information:

- “Function of channels A + B” parameter [→ 22]

Step

Parameter	Settings
Step	The possible settings vary depending on the data type set.

Function:

This parameter is used to set the value by which the counter reading changes with each pulse.

The following settings are possible:

The possible settings vary depending on the data type set in the "Data type” parameter:

Data type	Setting option
Value (8-bit) DPT 5.010	0...255
Signed value (8-bit) DPT 6.010	-128...127
Value (16-bit) DPT 7.001	0...65535
Signed value (16-bit) DPT 8.001	-32768...32767
Value (32-bit) DPT 12.001	0...4294967295
Signed value (32-bit) DPT 13.001	-2147483648...2147483647

Availability:

The "Step” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Pulse counting”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Data type“ parameter [→ 115]

Start value

Parameter	Settings
Start value	The possible settings vary depending on the data type set.

Function:

This parameter is used to set the value with which the counter restarts after downloading the ETS program or after an overload.

The value of this parameter can be overwritten by the value of the "A Start value" communication object.

The following settings are possible:

The possible settings vary depending on the data type set in the "Data type" parameter:

Data type	Setting option
Value (8-bit) DPT 5.010	0...255
Signed value (8-bit) DPT 6.010	-128...127
Value (16-bit) DPT 7.001	0...65535
Signed value (16-bit) DPT 8.001	-32768...32767
Value (32-bit) DPT 12.001	0...4294967295
Signed value (32-bit) DPT 13.001	-2147483648...2147483647

Availability:

The "Start value" parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B" on the "device settings" parameter card
  - Setting: "Single"
- Parameter "Function channel A" on the "functions, objects" parameter card
  - Setting: "Pulse counting"

More information:

- "Function of channels A + B" parameter [→ 22]
- "Data type" parameter [→ 115]
- "Starting value" communication object [→ 130]

Reset counter to start value after download

Parameter	Settings
Reset counter to start value after download	disable enable

Function:

This parameter is used to set whether the counter reading is reset when the setting is downloaded from the ETS again.

The following settings are possible:

- disable
  The counter is not reset.
  With the "disable" setting, counter readings can be retained even if the configuration of other channels is changed. This means that the counter reading is not lost during service measures and there is no loss of data.
- enable
  The counter is reset.

Availability:

The "Reset counter to start value after download" parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B" on the "device settings" parameter card
  – Setting: "Single"
- Parameter "Function channel A" on the "functions, objects" parameter card
  – Setting: "Pulse counting"

More information:

- "Function of channels A + B" parameter [→ 22]

Behavior at max. counter value

Parameter	Settings
Behavior at max. counter value	Stop counter Restart counter (overflow)

Function:

This parameter determines the behavior of the counter when the maximum counter value is reached.

The maximum counter value depends on the set data type.

The following settings are possible:

- Stop counter:
  This setting stops the counter when the maximum counter value is reached. Further counting pulses are no longer recorded.
- Restart counter (overflow):
  With this setting the counter is restarted after reaching the maximum counter value. The new starting value can be set via the parameter "Start value" or the communication object "A Start value."

Availability:

The "Behavior at max. counter value" parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B" on the "device settings" parameter card
  – Setting: "Single"
- Parameter "Function channel A" on the "functions, objects" parameter card
  – Setting: "Pulse counting"

More information:

- "Function of channels A + B" parameter [→ 22]
- "Data type" parameter [→ 115]
- "Starting value" parameter [→ 118]
- "Starting value" communication object [→ 130]

Send value on request

Parameter	Settings
Send value on request	disable enable

Function:

This parameter sets whether the value of the counter is sent on request or whether requests to send the counter value are rejected.

Availability:

The "Send value on request" parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B" on the "device settings" parameter card
  - Setting: "Single"
- Parameter "Function channel A" on the "functions, objects" parameter card
  - Setting: "Pulse counting"

More information:

- "Function of channels A + B" parameter [→ 22]

Send value on change of value

Parameter	Settings
Send value on change of value	disable enable

Function:

This parameter determines whether the counter value is sent when the value changes.

The following settings are possible:

- disable:
  With this setting, the counter value is not sent automatically when a change is made.
- enable:
  With this setting, a telegram with the new counter value is sent when the counter value has changed by the value configured in parameter "Value change since last sent (count)."

Availability:

The "Send value on change of value" parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B" on the "device settings" parameter card
  - Setting: "Single"
- Parameter "Function channel A" on the "functions, objects" parameter card
  - Setting: "Pulse counting"

Other parameters:

If "enable" is selected, the following additional parameters appear:

- "Value change since last transmission (counter reading)" parameter [→ 121]
- "Block time for sending the value" parameter [→ 122]

More information:

- "Function of channels A + B" parameter [→ 22]

Value change since last sent (count)

Parameter	Settings
Value change since last sent (count)	The possible settings vary depending on the data type set.

Function:

This parameter is used to specify at which change of value compared to the last value sent the value of the corresponding communication object is sent again. Transmission occurs when the block time for sending the value has been exceeded.

The following settings are possible:

The possible settings vary depending on the data type set in the "Data type” parameter:

Data type	Setting option
Value (8-bit) DPT 5.010	1...255
Signed value (8-bit) DPT 6.010	1...255
Value (16-bit) DPT 7.001	1...65535
Signed value (16-bit) DPT 8.001	1...65535
Value (32-bit) DPT 12.001	1...4294967295
Signed value (32-bit) DPT 13.001	1...4294967295

Availability:

The "Value change since last sent (count)” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Pulse counting”
- Parameter "Send value on change of value” on the parameter card "Pulse counting"
  - Setting: “enable”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Data type“ parameter [→ 115]
- “Send value on value change” parameter [→ 120]

Block time for sending of value

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

Function:

This parameter determines when the next change of the counter reading will be sent at the earliest. If the changes of the counter value are faster than transmission can be executed, the current value at the time of sending is sent.

This setting prevents the bus load from becoming too high if the counter reading is changed too frequently. If the bus load is too high, telegrams could be lost.

Availability:

The "Block time for sending of value" parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B" on the "device settings" parameter card
  - Setting: "Single"
- Parameter "Function channel A" on the "functions, objects" parameter card
  - Setting: "Pulse counting"
- Parameter "Send value on change of value" on the parameter card "Pulse counting"
  - Setting: "enable"

More information:

- "Function of channels A + B" parameter [→ 22]
- "Send value on value change" parameter [→ 120]

Send value cyclically

Parameter	Settings
Send value cyclically hh:mm:ss	00:00:00 ... 18:12:15

Function:

This parameter can be used to set the time interval at which the counter value object is sent cyclically. If this is set to "00:00:00," cyclic sending is deactivated.

Availability:

The "Send value cyclically" parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B" on the "device settings" parameter card
  - Setting: "Single"
- Parameter "Function channel A" on the "functions, objects" parameter card
  - Setting: "Pulse counting"

More information:

- "Function of channels A + B" parameter [→ 22]

Above limit
Below limit

Parameter	Settings
Above limit Below limit	disable enable

Function:

With this parameter the monitoring of a limit value can be switched on or off.

Exceeding or, in the case of negative counting, falling below the limit value immediately results in a logical 1 being sent via the communication object "A Above limit" or "A Below limit." The limit value can either be specified via the parameter "Threshold" or changed via the communication object "A Threshold" by telegram. It is also possible to query the limit value via this communication object. If the limit value is undercut again by resetting the counter reading or by changing the limit value, or if it is exceeded again in the case of a negative count, this immediately results in a logical "0" being sent, since the counter reading is again in the permitted range.

Note:

The name of the parameter depends on the setting of previous parameters.

If a signed data type has been set in the parameter "Data type” and additionally a negative value has been set in the parameter "Step", a message indicating "Below limit” is switched on with this parameter.

Availability: "Above limit” parameter

The "Above limit” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Pulse counting”
- Parameter "Data type” on the parameter card "Pulse counting"
  - Setting: any
- Parameter "Step” on the parameter card "Pulse counting"
  - Setting: positive value

Availability: "Below limit” parameter

The "Below limit” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Pulse counting”
- Parameter "Data type” on the parameter card "Pulse counting"
  - Setting: “Signed value (...)"
- Parameter "Step” on the parameter card "Pulse counting"
  - Setting: negative value

Other parameters:

- “Limit value” parameter [→ 124]
- "Send status on request” parameter [→ 125]
- "Send status on status change” parameter [→ 125]
- "Send status cyclically” parameter [→ 126]

More information:

- “Function of channels A + B” parameter [→ 22]
- “Data type“ parameter [→ 115]
- "Change of counter reading per pulse” parameter [→ 117]
- “Over limit value” communication object [→ 130]
- “Under limit value” communication object [→ 131]
- “Limit value” communication object [→ 128]

Threshold

Parameter	Settings
Threshold	The possible settings vary depending on the data type set.

Function:

This parameter sets the limit value.

The following settings are possible:

The possible settings vary depending on the data type set in the "Data type” parameter:

Data type	Setting option
Value (8-bit) DPT 5.010	0...255
Signed value (8-bit) DPT 6.010	-128...127
Value (16-bit) DPT 7.001	0...65535
Signed value (16-bit) DPT 8.001	-32768...32767
Value (32-bit) DPT 12.001	0...4294967295
Signed value (32-bit) DPT 13.001	-2147483648...2147483647

Availability:

The "Threshold” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Pulse counting”
- Parameter "Above limit” or "Below limit” on parameter card "Pulse counting"
  - Setting: “enable”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Data type“ parameter [→ 115]
- “Over limit value” parameter [→ 122]
- “Under limit value” parameter [→ 122]

Send status on request

Parameter	Settings
Send status on request	disable enable

Function:

This parameter is used to set whether the status of exceeding or falling below the limit value is sent on request or whether requests for the status value are rejected.

The request is triggered via the communication object “Send status values.”

Availability:

The "Send status on request” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Pulse counting”
- Parameter "Above limit” or "Below limit” on parameter card "Pulse counting"
  - Setting: “enable”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Over limit value” parameter [→ 122]
- “Under limit value” parameter [→ 122]
- “Send status values” communication object [→ 23]

Send status on change of status

Parameter	Settings
Send status on change of status	disable enable

Function:

This parameter is used to set whether the status of exceeding or falling below the limit value is sent automatically after each status change.

Availability:

The "Send status on change of status” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Pulse counting”
- Parameter "Above limit” or "Below limit” on parameter card "Pulse counting"
  - Setting: “enable”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Over limit value” parameter [→ 122]
- “Under limit value” parameter [→ 122]

Send status cyclically

Parameter	Settings
Send status cyclically hh:mm:ss	00:00:00 ... 18:12:15

Function:

This parameter is used to set the time interval at which the status of exceeding or falling below the limit value is sent cyclically. If this is set to “00:00:00,” cyclic sending is deactivated.

Availability:

The "Send status cyclically” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Pulse counting”
- Parameter "Above limit” or "Below limit” on parameter card "Pulse counting"
  - Setting: “enable”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Over limit value” parameter [→ 122]
- “Under limit value” parameter [→ 122]

See also

- Pulse counting [→ 114]
- “Pulse counting” communication objects [→ 127]

7.15.2 “Pulse counting” communication objects

The following communication objects are used to control the "Pulse counting” function:

A Count

No.	Object name	Function	Datapoint type	Flags
18	A Count	Set value	5.010 counter pulses (0..255) 6.010 counter pulses (-128..127) 7.001 pulses 8.001 pulses difference 12.001 counter pulses (unsigned) 13.001 counter pulses (signed)	CW

Function:

A new counter reading can be set via the bus using this communication object. The counter reading is stored inside the device.

Availability:

The "A Count” communication object is displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Pulse counting”

More information:

- “Function of channels A + B” parameter [→ 22]

A Threshold

No.	Object name	Function	Datapoint type	Flags
19	A Threshold	Set/Request value	5.010 counter pulses (0..255) 6.010 counter pulses (-128..127) 7.001 pulses 8.001 pulses difference 12.001 counter pulses (unsigned) 13.001 counter pulses (signed)	CRW

Function:

The limit value of the counter can be set or queried via this communication object.

Availability:

The "A Threshold” communication object is displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Pulse counting”
- Parameter "Below limit” or "Above limit” on parameter card "Pulse counting"
  - Setting: “enable”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Over limit value” parameter [→ 122]
- “Under limit value” parameter [→ 122]

A Count

No.	Object name	Function	Datapoint type	Flags
20	A Count	Value	5.010 counter pulses (0..255) 6.010 counter pulses (-128..127) 7.001 pulses 8.001 pulses difference 12.001 counter pulses (unsigned) 13.001 counter pulses (signed)	CRT

Function:

The current counter status is sent as a telegram via this communication object.

Availability:

The "A Count” communication object is displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Pulse counting”

More information:

- “Function of channels A + B” parameter [➞ 22]

A Start value

No.	Object name	Function	Datapoint type	Flags
21	A Start value	Set value	5.010 counter pulses (0..255) 6.010 counter pulses (-128..127) 7.001 pulses 8.001 pulses difference 12.001 counter pulses (unsigned) 13.001 counter pulses (signed)	CRW

Function:

This communication object is used to set the starting value of the counter. The starting value set via this communication object overwrites the starting value set in the "Start value” parameter.

Availability:

The "A Start value” communication object is displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Pulse counting”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Starting value” parameter [→ 118]

A Above limit

No.	Object name	Function	Datapoint type	Flags
22	A Above limit	On/Off	1.002 boolean	CRT

Function:

This object is used to signal that the limit value has been reached or exceeded, or to query via the bus whether a limit value has been exceeded.

If a counter reading is set below the upper limit value, the limit value exceedance is reset.

Availability:

The "A Above limit” communication object is displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Pulse counting”
- Parameter "Step” on the parameter card "Pulse counting"
  - Setting: positive value
- Parameter "Above limit” on the parameter card "Pulse counting"
  - Setting: “enable”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Over limit value” parameter [→ 122]
- “Under limit value” parameter [→ 122]

A Below limit

No.	Object name	Function	Datapoint type	Flags
23	A Below limit	On/Off	1.002 boolean	CRT

Function:

This object is used to signal that the value is at or under the limit, or it can be queried via the bus whether the value is under the limit.

If a counter reading is set above the lower limit value, the lower limit value is reset.

Availability:

The "A Below limit” communication object is displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Pulse counting”
- Parameter "Step” on the parameter card "Pulse counting"
  - Setting: negative value
- Parameter "Below limit” on the parameter card "Pulse counting"
  - Setting: “enable”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Over limit value” parameter [→ 122]
- “Under limit value” parameter [→ 122]

See also

- Pulse counting [→ 114]
- “Pulse counting” parameter [→ 115]

7.16 Difference counting

With the function "Differential counting” two adjacent channels of the binary input are used and configured together.

The prerequisite for this function is that the "Pairwise” option is selected in the device settings for the adjacent channel concerned.

“Function of channels A + B” parameter [→ 22]

With difference counting, for example, the telegrams from two sensors are recorded, counted and the difference is calculated. The difference is calculated using the formula “counter reading B minus counter reading A."

The telegrams of both sensors are recorded separately and used in a further step in the difference calculation. This makes it possible to configure channels of both sensors separately and optionally to query the counter readings of both counters separately after corresponding configuration.

For both input channels it can be set separately via parameters whether the counter reading is incremented with a rising and/or falling signal edge. It is also possible to set separately for both channels when the counter is incremented and with which increment the counter is incremented.

The counter readings are stored in the communication objects "A Count” (42), "B Count” (45) and the difference value in the communication object "A + B Count” (53). Depending on the configuration, the values can be sent on request or automatically after a change by a certain value or cyclically.

Via the communication objects "A Count” (41) and "B Count” (44) the counter readings can be reset to the value "0” or another value by telegram if required.

Optionally, a limit value for the difference of the two channels and a monitoring of the limit value can be set.

Application example

Access control:

Red light when there are too many people in the room: One sensor (e.g. a light barrier or a contact in a turnstile) sends a telegram as soon as a person enters the room, and a second sensor sends a telegram as soon as a person leaves the room. The binary input counts the telegrams, calculates the difference and sends another telegram as soon as the difference exceeds a certain number. This further telegram can be used, for example, to switch a traffic light.

The difference is calculated using the formula “counter reading B minus counter reading A." Therefore, the sensor for counting people entering the room must be connected to channel B and the sensor for counting people leaving the room must be connected to channel A.

7.16.1 “Difference counting” parameter

The following parameters are used to set the "Differential counting” function:

Parameters of the “functions, objects” parameter card

As a prerequisite for the "Differential counting” function, set the "Function channels A + B” parameter on the "functions, objects” parameter card as specified:

Function channels A + B

Parameter	Settings
Function channels A + B	Differential counting

Function:

This parameter determines which function is to be assigned to the channel pair.

Availability:

The "Function channels A + B” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Pairwise”

More information:

- “Function of channels A + B” parameter [→ 22]

Parameters on the “difference counting” parameter card

Data type

Parameter	Settings
Data type	Signed value (8-bit) DPT 6.010 Signed value (16-bit) DPT 8.001 Signed value (32-bit) DPT 13.001

Function:

This parameter sets the data type of the values for the "Differential counting” function. The data type defines the possible counting range.

The following settings are possible:

Setting	Counting range
Signed value (8-bit) DPT 6.010	-128...127
Signed value (16-bit) DPT 8.001	-32768...32767
Signed value (32-bit) DPT 13.001	-2147483648...2147483647

Availability:

The "Data type” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Pairwise”
- Parameter "Function channels A + B” on the “functions, objects” parameter card
  - Setting: “Differential counting”

More information:

- “Function of channels A + B” parameter [→ 22]

Parameters in the “channel A” section and “channel B” section

Count at

Parameter	Settings
Count at	Rising edge Falling edge Falling and rising edge

Function:

This parameter is used to set when the counter reading changes.

The following settings are possible:

- Rising edge
  This setting changes the value on a rising edge. The rising edge corresponds to pressing the push-button.
- Falling edge
  This setting changes the value on a falling edge. The falling edge corresponds to a release of the push-button.
- Falling and rising edge
  This setting changes the value on rising and falling edge. This means that when a push-button is pressed and released, this corresponds to two counts and the value is changed twice.

Availability:

The "Count at” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  – Setting: “Pairwise”
- Parameter "Function channels A + B” on the “functions, objects” parameter card
  – Setting: “Differential counting”

More information:

- “Function of channels A + B” parameter [→ 22]

Step

Parameter	Settings
Step	The possible settings vary depending on the data type set.

Function:

This parameter is used to set the value by which the counter reading changes with each pulse.

The following settings are possible:

The possible settings vary depending on the data type set in the "Data type” parameter:

Data type	Setting option
Signed value (8-bit) DPT 6.010	-128...127
Signed value (16-bit) DPT 8.001	-32768...32767
Signed value (32-bit) DPT 13.001	-2147483648...2147483647

Availability:

The "Step” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Pairwise”
- Parameter "Function channels A + B” on the “functions, objects” parameter card
  - Setting: “Differential counting”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Data type“ parameter [→ 133]

Start value

Parameter	Settings
Start value	The possible settings vary depending on the data type set.

Function:

This parameter sets the value with which the counter starts.

The following settings are possible:

The possible settings vary depending on the data type set in the "Data type” parameter:

Data type	Setting option
Signed value (8-bit) DPT 6.010	-128...127
Signed value (16-bit) DPT 8.001	-32768...32767
Signed value (32-bit) DPT 13.001	-2147483648...2147483647

Availability:

The "Start value” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Pairwise”
- Parameter "Function channels A + B” on the “functions, objects” parameter card
  - Setting: “Differential counting”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Data type“ parameter [→ 133]

Reset counter to start value after download

Parameter	Settings
Reset counter to start value after download	disable enable

Function:

This parameter is used to set whether the counter reading is reset when the setting is downloaded from the ETS again.

The following settings are possible:

- disable
  The counter is not reset.
  With the "disable” setting, counter readings can be retained even if the configuration of other channels is changed. This means that the counter reading is not lost during service measures and there is no loss of data.
- enable
  The counter is reset.

Behavior at max. counter value

Parameter	Settings
Behavior at max. counter value	Stop counter Restart counter (overflow)

Function:

This parameter determines the behavior of the counter when the maximum counter value is reached.

The maximum counter value depends on the set data type.

The following settings are possible:

- Stop counter:
  This setting stops the counter when the maximum counter value is reached. Further counting pulses are no longer recorded.
- Restart counter (overflow):
  With this setting the counter is restarted after reaching the maximum counter value. The new starting value can be set separately for each input via the "Start value” parameter or the "A Start value” and "B Start value” communication objects.

Availability:

The "Behavior at max. counter value” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  – Setting: “Pairwise”
- Parameter "Function channels A + B” on the “functions, objects” parameter card
  – Setting: “Differential counting”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Data type“ parameter [→ 133]
- “Starting value” parameter [→ 136]
- “A starting value” communication object [→ 152]
- “B starting value” communication object [→ 152]

Object count

Parameter	Settings
Object count	disable enable

Function:

If this parameter is set to "enable," the value of the counter can be set and/or queried via a communication object.

Communication objects:

If the "Object count" parameter is enabled in the "channel A" section, the "A Count (Set value)" and "A Count (Value)" communication objects are displayed.

If the "Object count" parameter is enabled in the "channel B" section, the "B Count (Set value)" and "B Count (Value)" communication objects are displayed.

Availability:

The "Object count" parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B" on the "device settings" parameter card
  - Setting: "Pairwise"
- Parameter "Function channels A + B" on the "functions, objects" parameter card
  - Setting: "Differential counting"

Other parameters:

If "enable" is selected, the following parameters are also displayed:

- "Send value on request" parameter [→ 139]
- "Send value on value change" parameter [→ 140]
- "Send value cyclically" parameter [→ 143]

More information:

- "Function of channels A + B" parameter [→ 22]
- "A counter reading" (set value)" communication object [→ 151]
- "B counter reading" (set value)" communication object [→ 151]
- "A counter reading" communication object [→ 150]
- "B counter reading" communication object [→ 150]

Parameters in the “channel A", “channel B” and “difference channel B – channel A” section

Send value on request

Parameter	Settings
Send value on request	disable enable

Function:

This parameter sets whether the value of the counter is sent on request or whether requests to send the counter value are rejected.

If the parameter in the “channel A” section is set to "enable", the value of the counter of channel A will be sent.

If the parameter in the “channel B” section is set to "enable", the value of the counter of channel B will be sent.

If the parameter in the section “difference channel B - channel A” is set to "enable", the difference between the counter of channel B and the counter of channel A is calculated and sent.

Availability:

The "Send value on request” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Pairwise”
- Parameter "Function channels A + B” on the “functions, objects” parameter card
  - Setting: “Differential counting”

More information:

- “Function of channels A + B” parameter [→ 22]
- "A counter reading” communication object [→ 150]
- "B counter reading” communication object [→ 150]
- “A + B counter status” communication object [→ 152]

Send value on change of value

Parameter	Settings
Send value on change of value	disable enable

Function:

This parameter determines whether the counter value is sent when the value changes.

If the parameter in the “channel A” section is set to "enable", the value of the counter of channel A will be sent.

If the parameter in the “channel B” section is set to "enable", the value of the counter of channel B will be sent.

If the parameter in the section “difference channel B - channel A” is set to "enable", the difference between the counter of channel B and the counter of channel A is calculated and sent.

The following settings are possible:

- disable:
  With this setting, the value of the counter is not sent automatically when a change is made.
- enable:
  With this setting, a telegram with the new counter value is sent each time the counter value is changed.

Availability:

The "Send value on change of value” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  – Setting: “Pairwise”
- Parameter "Function channels A + B” on the “functions, objects” parameter card
  – Setting: “Differential counting”

Other parameters:

If "enable” is selected, the following additional parameters appear:

- "Value change since last transmission (counter reading)” parameter [→ 141]
- "Block time for sending the value” parameter [→ 142]

More information:

- “Function of channels A + B” parameter [→ 22]
- "A counter reading” communication object [→ 150]
- "B counter reading” communication object [→ 150]
- “A + B counter status” communication object [→ 152]

Value change since last sent (count)

Parameter	Settings
Value change since last sent (count)	The possible settings vary depending on the data type set.

Function:

This parameter is used to specify at which change of value compared to the last value sent the value of the corresponding communication object is sent again. Transmission occurs when the block time for sending the value has been exceeded.

The following settings are possible:

The possible settings vary depending on the data type set in the "Data type” parameter:

Data type	Setting option
Signed value (8-bit) DPT 6.010	0...255
Signed value (16-bit) DPT 8.001	0...65535
Signed value (32-bit) DPT 13.001	0...4294967295

Availability:

The "Value change since last sent (count)” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Pairwise”
- Parameter "Function channels A + B” on the “functions, objects” parameter card
  - Setting: “Differential counting”
- Parameter "Send value on change of value” on the parameter card "Differential counting"
  - Setting: “disable”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Data type“ parameter [→ 133]
- "Send value on value change” parameter [→ 140]
- "A counter reading” communication object [→ 150]
- "B counter reading” communication object [→ 150]
- “A + B counter status” communication object [→ 152]

Block time for sending of value

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

Function:

This parameter determines when the next change of the counter reading will be sent at the earliest. If the changes of the counter value are faster than transmission can be executed, the current value at the time of sending is sent.

This setting prevents the bus load from becoming too high if the counter reading is changed too frequently. If the bus load is too high, telegrams could be lost.

Availability:

The "Block time for sending of value” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Pairwise”
- Parameter "Function channels A + B” on the “functions, objects” parameter card
  - Setting: “Differential counting”
- Parameter "Send value on change of value” on the parameter card "Differential counting"
  - Setting: “enable”

More information:

- “Function of channels A + B” parameter [→ 22]
- "Send value on value change” parameter [→ 140]

Send value cyclically

Parameter	Settings
Send value cyclically hh:mm:ss	00:00:00 ... 18:12:15

Function:

This parameter can be used to set the time interval at which the counter value object is sent cyclically. If this is set to “00:00:00,” cyclic sending is deactivated.

If the parameter is set in the “channel A” section, the counter value of channel A will be sent.

If the parameter is set in the “channel B” section, the counter value of channel B will be sent.

If the parameter is set in the “difference channel B – channel A” section, the difference between the counter value of channel B and the counter value of channel A is calculated and sent.

Availability:

The "Send value cyclically” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Pairwise”
- Parameter "Function channels A + B” on the “functions, objects” parameter card
  - Setting: “Differential counting”

More information:

- “Function of channels A + B” parameter [→ 22]
- "A counter reading” communication object [→ 150]
- "B counter reading” communication object [→ 150]
- “A + B counter status” communication object [→ 152]

Other parameters

Above limit

Parameter	Settings
Above limit	disable enable

Function:

This parameter enables or disables the monitoring of the difference value of the counters of channel A and channel B by means of an upper limit value.

If the parameter is set to "enable," a telegram containing the information whether the difference of the counters of channel A and B has exceeded the limit value or not is sent via the object "A + B Upper threshold" on request, on status change or cyclically.

Availability:

The "Above limit" parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B" on the "device settings" parameter card
  - Setting: "Pairwise"
- Parameter "Function channels A + B" on the "functions, objects" parameter card
  - Setting: "Differential counting"

Other parameters:

- "Upper limit" parameter [→ 145]
- "Send status on request" parameter [→ 148]
- "Send status on status change" parameter [→ 148]
- "Send status cyclically" parameter [→ 149]

More information:

- "Function of channels A + B" parameter [→ 22]
- "Upper limit value" communication object [→ 153]
- "Over limit value" communication object [→ 154]

Upper threshold

Parameter	Settings
Upper threshold	The possible settings vary depending on the data type set.

Function:

This parameter sets the upper limit for the difference between the counters of channel A and channel B.

The following settings are possible:

The possible settings vary depending on the data type set in the "Data type” parameter:

Data type	Setting option
Signed value (8-bit) DPT 6.010	-128...127
Signed value (16-bit) DPT 8.001	-32768...32767
Signed value (32-bit) DPT 13.001	-2147483648...2147483647

Availability:

The "Upper threshold” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Pairwise”
- Parameter "Function channels A + B” on the “functions, objects” parameter card
  - Setting: “Differential counting”
- Parameter "Above limit” on the parameter card "Differential counting"
  - Setting: “enable”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Over limit value” parameter [→ 144]
- “Data type“ parameter [→ 133]
- “Upper limit value” communication object [→ 153]
- “Over limit value” communication object [→ 154]

Below limit

Parameter	Settings
Below limit	disable enable

Function:

This parameter is used to enable or disable monitoring of the differential value of the counters of channel A and channel B based on a lower limit value.

If the parameter is set to "enable," a telegram containing the information whether the difference of the counters of channel A and B has below the limit value or not is sent via the object "A + B Exceedance of lower threshold" on request, on status change or cyclically.

Availability:

The "Below limit" parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B" on the "device settings" parameter card
  - Setting: "Pairwise"
- Parameter "Function channels A + B" on the "functions, objects" parameter card
  - Setting: "Differential counting"

Other parameters:

- "Lower limit" parameter [→ 147]
- "Send status on request" parameter [→ 148]
- "Send status on status change" parameter [→ 148]
- "Send status cyclically" parameter [→ 149]

More information:

- "Function of channels A + B" parameter [→ 22]
- "Lower limit" communication object [→ 153]
- "Under limit value" communication object [→ 154]

Lower threshold

Parameter	Settings
Lower threshold	The possible settings vary depending on the data type set.

Function:

This parameter sets the lower limit for the difference of the counters of channel A and channel B.

The following settings are possible:

The possible settings vary depending on the data type set in the "Data type” parameter:

Data type	Setting option
Signed value (8-bit) DPT 6.010	-128...127
Signed value (16-bit) DPT 8.001	-32768...32767
Signed value (32-bit) DPT 13.001	-2147483648...2147483647

Availability:

The "Lower threshold” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Pairwise”
- Parameter "Function channels A + B” on the “functions, objects” parameter card
  - Setting: “Differential counting”
- Parameter "Below limit” on the parameter card "Differential counting"
  - Setting: “enable”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Under limit value” parameter [→ 146]
- “Data type“ parameter [→ 133]
- “Lower limit” communication object [→ 153]
- “Under limit value” communication object [→ 154]

Send status on request

Parameter	Settings
Send status on request	disable enable

Function:

This parameter is used to set whether the status of exceeding or falling below the limit value is sent on request or whether requests for the status value are rejected.

The request is triggered via the communication object “Send status values.”

Availability:

The "Send status on request” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  – Setting: “Pairwise”
- Parameter "Function channels A + B” on the “functions, objects” parameter card
  – Setting: “Differential counting”
- Parameter "Above limit” and/or "Below limit” on parameter card "Differential counting"
  – Setting: “enable”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Send status values” communication object [→ 23]
- “Over limit value” parameter [→ 144]
- “Under limit value” parameter [→ 146]

Send status on change of status

Parameter	Settings
Send status on change of status	disable enable

Function:

This parameter is used to set whether the status of exceeding or falling below the limit value is sent automatically after each status change.

Availability:

The "Send status on change of status” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  – Setting: “Pairwise”
- Parameter "Function channels A + B” on the “functions, objects” parameter card
  – Setting: “Differential counting”
- Parameter "Above limit” and/or "Below limit” on parameter card "Differential counting"
  – Setting: “enable”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Send status values” communication object [→ 23]
- “Over limit value” parameter [→ 144]
- “Under limit value” parameter [→ 146]

Send status cyclically

Parameter	Settings
Send status cyclically hh:mm:ss	00:00:00 ... 18:12:15

Function:

This parameter is used to set the time interval at which the status of exceeding or falling below the limit value is sent cyclically. If this is set to “00:00:00,” cyclic sending is deactivated.

Availability:

The "Send status cyclically” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Pairwise”
- Parameter "Function channels A + B” on the “functions, objects” parameter card
  - Setting: “Differential counting”
- Parameter "Above limit” and/or "Below limit” on parameter card "Differential counting"
  - Setting: “enable”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Send status values” communication object [→ 23]
- “Over limit value” parameter [→ 144]
- “Under limit value” parameter [→ 146]

See also

- Difference counting [→ 132]
- “Difference counting” communication objects [→ 150]

7.16.2 “Difference counting” communication objects

The following communication objects are used to control the "Differential counting” function:

A Count
B Count

No.	Object name	Function	Datapoint type	Flags
41 44	A Count B Count	Set value	6.010 counter pulses (-128..127) 8.001 pulses difference 13.001 counter pulses (signed)	CW

Function:

The counter status for the counter of channel A can be set via the communication object "A Count."
Due to the difference of “counter B minus counter A,” in practical terms this is the counter for the people leaving the room or zone.

The counter status for the counter of channel B can be set via the communication object "B Count."
Due to the difference of “counter B minus counter A", in practical terms this is the counter for the people entering the room or zone.

Availability: Communication object “A Count”

The "A Count” communication object is displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Pairwise”
- Parameter "Function channels A + B” on the “functions, objects” parameter card
  - Setting: “Differential counting”
- Parameter "Object count” on the parameter card "Differential counting” section "channel A"
  - Setting: “enable”

Availability: Communication object “B Count”

The "B Count” communication object is displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Pairwise”
- Parameter "Function channels A + B” on the “functions, objects” parameter card
  - Setting: “Differential counting”
- Parameter "Object count” on the parameter card "Differential counting” section "channel B"
  - Setting: “enable”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Counter reading object” parameter [→ 138]

A Count
B Count

No.	Object name	Function	Datapoint type	Flags
42 45	A Count B Count	Value	6.010 counter pulses (-128..127) 8.001 pulses difference 13.001 counter pulses (signed)	CRT

Function:

The current counter reading of the counter of channel A is sent as a telegram via the "A Count” communication object.

The current counter reading of the counter of channel B is sent as a telegram via the "B Count” communication object.

Availability: Communication object “A Count”

The "A Count” communication object is displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Pairwise”
- Parameter "Function channels A + B” on the “functions, objects” parameter card
  - Setting: “Differential counting”
- Parameter "Object count” on the parameter card "Differential counting” section "channel A"
  - Setting: “enable”

Availability: Communication object “B Count”

The "B Count” communication object is displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Pairwise”
- Parameter "Function channels A + B” on the “functions, objects” parameter card
  - Setting: “Differential counting”
- Parameter "Object count” on the parameter card "Differential counting” section "channel B"
  - Setting: “enable”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Counter reading object” parameter [→ 138]

A Start value
B Start value

No.	Object name	Function	Datapoint type	Flags
43 46	A Start value B Start value	Set value	6.010 counter pulses (-128..127) 8.001 pulses difference 13.001 counter pulses (signed)	CRW

Function:

Via the communication object "A Start value” the starting value of the counter of channel A is set.

The starting value of the counter of channel B is set via the communication object "B Start value."

Based on these two determinations of the counter readings, the first difference at the beginning of the counting process is determined.

Availability:

The "A Start value” and "B Start value” communication objects are displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Pairwise”
- Parameter "Function channels A + B” on the “functions, objects” parameter card
  - Setting: “Differential counting”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Starting value” parameter [→ 136]

A + B Count

No.	Object name	Function	Datapoint type	Flags
53	A + B Count	Value	6.010 counter pulses (-128..127) 8.001 pulses difference 13.001 counter pulses (signed)	CRT

Function:

The current difference between the counter of channel B and the counter of channel A is sent as a telegram via this communication object.

Availability:

The "A + B Count” communication object is displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Pairwise”
- Parameter "Function channels A + B” on the “functions, objects” parameter card
  - Setting: “Differential counting”

More information:

- “Function of channels A + B” parameter [→ 22]

A + B Upper threshold

No.	Object name	Function	Datapoint type	Flags
54	A + B Upper threshold	Set/Request value	6.010 counter pulses (-128..127) 8.001 pulses difference 13.001 counter pulses (signed)	CW

Function:

This communication object is used to set or query the upper limit value for the difference between the counter values of channel A and B.

Availability:

The "A + B Upper threshold” communication object is displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Pairwise”
- Parameter "Function channels A + B” on the “functions, objects” parameter card
  - Setting: “Differential counting”
- Parameter "Above limit” on the parameter card "Differential counting"
  - Setting: “enable”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Over limit value” parameter [→ 144]
- “Upper limit” parameter [→ 145]

A + B Lower threshold

No.	Object name	Function	Datapoint type	Flags
55	A + B Lower threshold	Set/Request value	6.010 counter pulses (-128..127) 8.001 pulses difference 13.001 counter pulses (signed)	CW

Function:

This communication object is used to set or query the lower limit value for the difference between the counter values of channel A and B.

Availability:

The "A + B Lower threshold” communication object is displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Pairwise”
- Parameter "Function channels A + B” on the “functions, objects” parameter card
  - Setting: “Differential counting”
- Parameter "Below limit” on the parameter card "Differential counting"
  - Setting: “enable”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Under limit value” parameter [→ 146]
- “Lower limit” parameter [→ 147]

A + B Exceedance of upper threshold

No.	Object name	Function	Datapoint type	Flags
56	A + B Exceedance of upper threshold	On/Off	1.002 boolean	CRT

Function:

This object is used to signal that the limit value has been reached or exceeded, or to query via the bus whether a limit value has been exceeded. The difference between the counters of channel A and channel B is monitored.

Availability:

The "A + B Exceedance of upper threshold” communication object is displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Pairwise”
- Parameter "Function channels A + B” on the “functions, objects” parameter card
  - Setting: “Differential counting”
- Parameter "Above limit” on the parameter card "Differential counting"
  - Setting: “enable”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Upper limit value” communication object [→ 153]
- “Over limit value” parameter [→ 144]
- “Upper limit” parameter [→ 145]

A + B Exceedance of lower threshold

No.	Object name	Function	Datapoint type	Flags
57	A + B Exceedance of lower threshold	On/Off	1.002 boolean	CRT

Function:

This object is used to signal that the limit value has been reached or exceeded, or to query via the bus whether a limit value has been exceeded. The difference between the counters of channel A and channel B is monitored.

Availability:

The "A + B Exceedance of lower threshold” communication object is displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Pairwise”
- Parameter "Function channels A + B” on the “functions, objects” parameter card
  - Setting: “Differential counting”
- Parameter "Below limit” on the parameter card "Differential counting"
  - Setting: “enable”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Lower limit” communication object [→ 153]
- “Under limit value” parameter [→ 146]
- “Lower limit” parameter [→ 147]

See also

- Difference counting [→ 132]
- “Difference counting” parameter [→ 133]

7.17 Color temperature control

The "Colour temperature control” function is a 1/2 push-button function in which 2 push-buttons are configured and connected completely separately, one push-button being assigned the "1/2 button dimming On/brighter, warm/warmer” function and the other the "1/2 button dimming Off/darker, cold/colder” function.

The prerequisite for this function is that the "Single” option is selected in the device settings for the channel concerned.

“Function of channels A + B” parameter [→ 22]

With the "Colour temperature control” function, in contrast to the "Dimming” function, the color temperature can be dimmed in addition to the brightness or optionally only the color temperature.

It is possible to dim directly to a specific color temperature set via a parameter by briefly pressing a push-button, or to additionally set the dimming value (brightness) and the time in which the values are dimmed to.

For a long press of the push-button, you can set whether only the color temperature or also the brightness should be dimmed.

The prerequisite for controlling the color temperature is that the relevant communication objects are assigned to a compatible output device (e.g. DALI gateway) and a lamp suitable for color temperature control is connected there.

Human Centric Lighting (HCL)

The device can be used in human-centric lighting application because it can control the color temperature of a suitable LED from warm white to cold white (“tunable white”).

Human-centric lighting (HCL) expands the concept of biologically effective lighting with holistic planning and covers the visual, emotional and biological effects of light. HCL supports human health, well-being and performance in the long-term.

The following table shows the color temperature values of different sources of light:

Color temperature:	Light source:
1000 – 1500 K	Candle
2600 K	Incandescent lamp (40 W)
2700 – 2800 K	Halogen lamp (230 V, eco-halogen, 30 – 60 W)
3000 K	Incandescent lamp (200 W)
3000 – 3200 K	Halogen lamp (12 V)
3600 K	Operating theater lighting
4000 K	Fluorescent lamps (neutral white)
4120 K	Moonlight
5000 K	Morning/evening sun
5500 K	Mid-morning/afternoon sun
5500 – 5600 K	Electronic flash device
5500 – 5800 K	Mid-day sun, clouds
6500 – 7500 K	Cloudy sky
7500 – 8500 K	Fog, significant smog
9000 – 12000 K	Blue (cloudless) sky on the shady north side, blue hour
15000 – 20000 K	Clear, blue, northern light

The following table shows how the human body perceives the different color temperatures:

Color temperature:	Associated effect:
2700 K	Ambient, intimate
3000 K	Calm, warm
3500 K	Friendly, inviting
4100 K	Precise, clean, efficient
5000 K	Daylight, dynamic
6500 K	Daylight, attentive

Application examples

Association meeting in the meeting room of a restaurant:

First, factual topics are discussed where concentration is required. A cold white light with a high color temperature is suitable here. Later, when things move on to the casual part, the color temperature control can be used to dim to a more appropriate warm white light to create a cozy ambiance.

Educational institutions:

Cool white light during the learning phase to increase attention and warm white light for relaxation during the break.

7.17.1 "Color temperature control” parameter

The following parameters are used to set the "Colour temperature control” function:

Parameters of the “functions, objects” parameter card

As a prerequisite for the "Colour temperature control” function, set the "Function channel A” parameter on the "functions, objects” parameter card as specified:

Function channel A

Parameter	Settings
Function channel A	Colour temperature control

Function:

This parameter determines which function is to be assigned to the channel.

Availability:

The "Function channel A” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”

More information:

- “Function of channels A + B” parameter [➞ 22]

Parameters on the “color temperature control” parameter card

Function

Parameter	Settings
Function	1/2 button dimming On/brighter, warm/warmer 1/2 button dimming Off/darker, cold/colder

Function:

This parameter sets the function of the push-button connected to this channel.

The following settings are possible:

- 1/2 button dimming On/brighter, warm/warmer
  This setting gives the connected push-button the function of switching on the lighting and dimming it warmer and, depending on further settings, brighter.
- 1/2 button dimming Off/darker, cold/colder
  This setting gives the connected push-button the function of dimming the lighting colder, optionally darker, and then switching it off.

Availability:

The "Function” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  – Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  – Setting: “Colour temperature control”

Other parameters:

Depending on the setting, the preset value in the parameters "Color temperature value (K)” and "Dimming value (%)” changes, as well as the direction in which dimming takes place when the push-button is pressed for a long time.

More information:

- “Function of channels A + B” parameter [→ 22]
- "Color temperature value (K)” parameter [→ 161]
- Dimming value (%) parameter [→ 163]

“Short press of the push-button” section

Data type at short key press

Parameter	Settings
Data type at short key press	Color temperature (K) DPT 7.600 Dimming value (%)||+ color temperature value (K)||+ dimming time (100ms) DPT 249.600

Function:

This parameter is used to set whether the lighting should be set to a specific color temperature value when the push-button is pressed briefly, or also to a specific brightness in a specific time.

Depending on the setting, communication objects with different datapoint types are displayed.

The following settings are possible:

- Color temperature (K) DPT 7.600
  This setting gives the push-button the function of setting the lighting to a specific color temperature value when the push-button is pressed briefly.

  Communication objects with the datapoint type “7.600” are displayed.
- Dimming value (%)||+ color temperature value (K)||+ dimming time (100ms) DPT 249.600
  This setting gives the push-button the function of setting the lighting to a specific color temperature value and optionally to a specific brightness value when the push-button is pressed briefly. In addition, a parameter can optionally be used to set the time in which the lighting is set to the defined values.

  Communication objects with the datapoint type “249.600” are displayed.

Availability:

The "Data type at short key press” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Colour temperature control”

Other parameters:

If "Dimming value (%)||+ color temperature value (K)||+ dimming time (100ms) DPT 249.600” is selected, the following parameters are also displayed:

- “Set color temperature value” parameter [→ 160]
- “Set dimming value” parameter [→ 162]
- “Set fade time” parameter [→ 163]

Communication objects:

If "Color temperature (K) DPT 7.600” is selected, the following communication object is displayed:

- Communication object
  “color temperature value” (datapoint type “7.600") [→ 168]

If "Dimming value (%)||+ color temperature value (K)||+ dimming time (100ms) DPT 249.600” is selected, the following communication object is displayed:

- Communication object
  “dimming value / color temperature / fade time” (datapoint type “49.600")
  [→ 170]

More information:

- “Function of channels A + B” parameter [→ 22]

Set color temperature value

Parameter	Settings
Set color temperature value	disable enable

Function:

If this parameter is set to "enable," a parameter can be used to define to which color temperature value the lighting should be set.

Availability:

The "Set color temperature value" parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B" on the "device settings" parameter card
  - Setting: "Single"
- Parameter "Function channel A" on the "functions, objects" parameter card
  - Setting: "Colour temperature control"
- Parameter "Data type at short key press" on the parameter card "Colour temperature control"
  - Setting: "Dimming value (%)||+ color temperature value (K)||+ dimming time (100ms) DPT 249.600"

Other parameters:

If "enable" is selected, the parameter "Color temperature value (K)" also appears.

More information:

- "Function of channels A + B" parameter [→ 22]
- "Data type with short press of the push-button" parameter [→ 159]
- "Color temperature value (K)" parameter [→ 161]

Color temperature value (K)

Parameter	Settings
Color temperature value (K)	1000...20000

Function:

This parameter defines the color temperature value to which the lighting is set with a short press of the push-button.

Depending on the setting of the "Function” parameter, the default setting differs.

Availability:

The "Color temperature value (K)” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Colour temperature control”
- Either: Parameter "Data type at short key press” on the parameter card "Colour temperature control"
  - Setting: “Color temperature (K) DPT 7.600”
- Or: Parameter "Set color temperature value” on the parameter card "Colour temperature control"
  - Setting: “enable”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Function” parameter [→ 158]
- "Data type with short press of the push-button” parameter [→ 159]
- “Set color temperature value” parameter [→ 160]
- Color temperature control [→ 155]

Set dimming value

Parameter	Settings
Set dimming value	disable enable

Function:

If this parameter is set to "enable," a parameter can be used to define to which brightness value the lighting should be set.

Other parameters:

If "enable" is selected, the parameter "Dimming value (%)" also appears.

Availability:

The "Set dimming value" parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B" on the "device settings" parameter card
  - Setting: "Single"
- Parameter "Function channel A" on the "functions, objects" parameter card
  - Setting: "Colour temperature control"
- Parameter "Data type at short key press" on the parameter card "Colour temperature control"
  - Setting: "Dimming value (%)||+ color temperature value (K)||+ dimming time (100ms) DPT 249.600"

More information:

- "Function of channels A + B" parameter [→ 22]
- "Data type with short press of the push-button" parameter [→ 159]
- "Dimming value %" parameter [→ 163]

Dimming value (%)

Parameter	Settings
Dimming value (%)	0...100

Function:

This parameter defines the brightness value to which the lighting is set with a short press of the push-button.

Depending on the setting of the "Function" parameter, the default setting differs.

Availability:

The "Dimming value (%)" parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B" on the "device settings" parameter card
  - Setting: "Single"
- Parameter "Function channel A" on the "functions, objects" parameter card
  - Setting: "Colour temperature control"
- Parameter "Data type at short key press" on the parameter card "Colour temperature control"
  - Setting: "Dimming value (%)||+ color temperature value (K)||+ dimming time (100ms) DPT 249.600"
- Parameter "Set dimming value" on the parameter card "Colour temperature control"
  - Setting: "enable"

More information:

- "Function of channels A + B" parameter [→ 22]
- "Function" parameter [→ 158]
- "Data type with short press of the push-button" parameter [→ 159]
- "Set dimming value" parameter [→ 162]

Set dimming time

Parameter	Settings
Set dimming time	disable enable

Function:

If this parameter is set to "enable," a parameter can be used to set the time in which the color temperature value and/or the brightness value is dimmed.

If this parameter is set to "disable," the fade time set on the actuator is used.

Other parameters:

If "enable" is selected, the parameter "Dimming time" also appears.

Availability:

The parameter "Set dimming time" is displayed, if the parameter "Data type at short key press" is set to "Dimming value (%)||+ color temperature value (K)||+ dimming time (100ms) DPT 249.600."

More information:

- "Data type with short press of the push-button" parameter [→ 159]
- "fade time" parameter [→ 164]

Dimming time

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

Function:

This parameter defines the fade time in which the lighting is set to the defined color temperature and/or brightness value with a short press of the push-button.

When operating the switch connected to this input, the fade time set here is used, even if a fade time is also set in the actuator.

If no fade time is defined at this point, the fade time set at the actuator is automatically used.

Availability:

The "Dimming time” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Colour temperature control”
- Parameter "Data type at short key press” on the parameter card "Colour temperature control"
  - Setting: “Dimming value (%)||+ color temperature value (K)||+ dimming time (100ms) DPT 249.600”
- Parameter "Set dimming time” on the parameter card "Colour temperature control"
  - Setting: “enable”

More information:

- “Function of channels A + B” parameter [→ 22]
- "Data type with short press of the push-button” parameter [→ 159]
- “Set fade time” parameter [→ 163]

“Long press of the push-button” section

Data type at long key press

Parameter	Settings
Data type at long key press	Dim color temperature (K) DPT 3.007 Dim brightness (%) and||color temperature (K) DPT 250.600

Function:

This parameter is used to set whether only the color temperature or also the brightness should be dimmed when the push-button is pressed for a long time.

Depending on the setting, communication objects with different datapoint types are displayed.

The following settings are possible:

- Dim color temperature (K) DPT 3.007
  This setting gives the push-button the function of dimming the color temperature when the push-button is pressed for a long time.
- Dim brightness (%) and||color temperature (K) DPT 250.600
  This setting gives the push-button the function of dimming the color value and/or brightness when the push-button is pressed for a long time, depending on the setting of the other parameters.

Availability:

The "Data type at long key press” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Colour temperature control”

Other parameters:

If "Dim brightness (%) and||color temperature (K) DPT 250.600” is selected, the following parameters are also displayed:

- “Set brightness” parameter [→ 166]
- “Set color temperature” parameter [→ 166]

Communication objects:

If "Dim color temperature (K) DPT 3.007” is selected, the following communication object is displayed:

- Communication object “dim color temperature” (datapoint type “3.007") [→ 168]

If "Dim brightness (%) and||color temperature (K) DPT 250.600” is selected, the following communication object is displayed:

- Communication object “dim brightness and color temperature” (datapoint type “250.600") [→ 169]

More information:

- “Function of channels A + B” parameter [→ 22]

Set brightness

Parameter	Settings
Set brightness	disable enable

Function:

If this parameter is set to "enable," the brightness can be adjusted with a long press of the push-button.

Availability:

The "Set brightness" parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B" on the "device settings" parameter card
  - Setting: "Single"
- Parameter "Function channel A" on the "functions, objects" parameter card
  - Setting: "Colour temperature control"
- Parameter "Data type at long key press" on the parameter card "Colour temperature control"
  - Setting: "Dim brightness (%) and||color temperature (K) DPT 250.600"

More information:

- "Function of channels A + B" parameter [→ 22]
- Data type for a long press of the push-button [→ 165]

Set color temperature

Parameter	Settings
Set color temperature	disable enable

Function:

If this parameter is set to "enable," the color temperature can be adjusted with a long press of the push-button.

Availability:

The "Set color temperature" parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B" on the "device settings" parameter card
  - Setting: "Single"
- Parameter "Function channel A" on the "functions, objects" parameter card
  - Setting: "Colour temperature control"
- Parameter "Data type at long key press" on the parameter card "Colour temperature control"
  - Setting: "Dim brightness (%) and||color temperature (K) DPT 250.600"

More information:

- "Function of channels A + B" parameter [→ 22]
- Data type for a long press of the push-button [→ 165]

Detect long key press after

Parameter	Settings
Detect long key press after hh:mm:ss.f	00:00:00.3 ... 00:00:07.0

Function:

This parameter sets the duration of a long press of the push-button. After the set time has elapsed, the press of the push-button is considered long and the telegram is sent.

Availability:

The "Detect long key press after” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Colour temperature control”

More information:

- “Function of channels A + B” parameter [→ 22]

See also

🗎 Color temperature control [→ 155]
🗎 "Color temperature control” communication objects [→ 168]

7.17.2 "Color temperature control” communication objects

The following communication objects are used to control the "Colour temperature control” function:

A Dim color temperature

No.	Object name	Function	Datapoint type	Flags
29	A Dim color temperature	warmer/ colder	3.007 dimming control	CRT

Function:

This communication object is used to send the telegrams for dimming the color temperature of the channel.

Availability:

The "A Dim color temperature” communication object is displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Colour temperature control”
- Parameter "Data type at long key press” on the parameter card "Colour temperature control"
  - Setting: “Dim color temperature (K) DPT 3.007”

More information:

- “Function of channels A + B” parameter [→ 22]
- "Data type at long press of the push-button” parameter [→ 165]

A Color temperature value

No.	Object name	Function	Datapoint type	Flags
30	A Color temperature value	16-bit value	7.600 absolute colour temperature (K)	CRT

Function:

This communication object is used to send the telegrams with a color temperature value for the channel.

Availability:

The "A Color temperature value” communication object is displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Colour temperature control”
- Parameter "Data type at short key press” on the parameter card "Colour temperature control"
  - Setting: “Color temperature (K) DPT 7.600”

More information:

- “Function of channels A + B” parameter [→ 22]
- "Data type with short press of the push-button” parameter [→ 159]

A Dim brightness and color temperature

No.	Object name	Function	Datapoint type	Flags
31	A Dim brightness and color temperature	brighter/ darker, warmer/ colder	250.600 brightness colour temperature control	CRT

Function:

The telegrams for dimming the brightness and the color temperature of the channel are sent via this communication object (length: 3 byte).

Bit	23	22	21	20	19	18	17	16
Meaning	Dim color temperature (datapoint type: 3.007 dimmer step)							
Bit	15	14	13	12	11	10	9	8
Meaning	Dimming brightness (datapoint type: 3.007 dimmer step)							
Bit	7	6	5	4	3	2	1	0
Meaning	-	-	-	-	-	-	Color tem-perat-ure “0” = invalid “1” = valid	Bright-ness “0” = invalid “1” = valid

Availability:

The "A Dim brightness and color temperature” communication object is displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Colour temperature control”
- Parameter "Data type at long key press” on the parameter card "Colour temperature control"
  - Setting: “Dim brightness (%) and||color temperature (K) DPT 250.600”

More information:

- “Function of channels A + B” parameter [→ 22]
- "Data type at long press of the push-button” parameter [→ 165]

A Dimming value/color temperature value/ dimming time

No.	Object name	Function	Datapoint type	Flags
32	A Dimming value/color temperature value/ dimming time	Dimming value + color temperature value + dimming time	249.600 brightness colour temperature transition	CRT

Function:

This communication object is used to receive a brightness value and a color temperature value with a dimming time for the output (length: 6 byte).

Bit	47	46	45	44	43	42	41	40
Meaning	Dimming time (datapoint type: TimePeriod100MSec, high byte)							
Bit	39	38	37	36	35	34	33	32
Meaning	Dimming time (datapoint type: TimePeriod100MSec, low byte)							
Bit	31	30	29	28	27	26	25	24
Meaning	Color temperature value (datapoint type: 7,600 absolute color temperature (K), high byte)							
Bit	23	22	21	20	19	18	17	16
Meaning	Color temperature value (datapoint type: 7,600 absolute color temperature (K), low byte)							
Bit	15	14	13	12	11	10	9	8
Meaning	Dimming value (datapoint type: 5.001 percent (0…100 %))							
Bit	7	6	5	4	3	2	1	0
Meaning	-	-	-	-	-	Dim-ming time “0” = invalid “1” = valid	Color tem-perat-ure value “0” = invalid “1” = valid	Dim-ming value “0” = invalid “1” = valid

Availability:

The "A Dimming value/color temperature value/dimming time” communication object is displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Colour temperature control”
- Parameter "Data type at short key press” on the parameter card "Colour temperature control"
  - Setting: “Dimming value (%)||+ color temperature value (K)||+ dimming time (100ms) DPT 249.600”

More information:

- “Function of channels A + B” parameter [➞ 22]
- "Data type with short press of the push-button” parameter [➞ 159]

See also

🗎 Color temperature control [➞ 155]
🗎 "Color temperature control” parameter [➞ 157]

7.18 Forced control

With the function "Forced Control” at the binary input, the override function of an actuator can be switched on, off or inactive via a switch. Combinations can also be configured such that, for example, the switching value "Forced off” is sent when the push-button is pressed briefly and the switching value "Inactive” is also sent when the push-button is pressed for a long time.

If the forced control is switched to inactive via the binary input, the binary input does not specify a switching value for forced control, but passes on the regular value to the actuator, where it is further evaluated.

Parameters can be used to define whether the telegram is sent with a short and/or with a long press of the push-button or with a rising and/or falling edge.

The prerequisite for this function is that the "Single” option is selected in the device settings for the channel concerned.

“Function of channels A + B” parameter [➞ 22]

Application example

The "Forced Control” function can be used, for example, to prevent certain lights from being switched on or off manually in energy-saving or night mode by pressing a push-button.

7.18.1 “Forced control” parameter

The following parameters are used to set the "Forced Control” function:

Parameters of the “functions, objects” parameter card

As a prerequisite for the "Forced Control” function, set the "Function channel A” parameter on the "functions, objects” parameter card as specified:

Function channel A

Parameter	Settings
Function channel A	Forced Control

Function:

This parameter determines which function is to be assigned to the channel.

Availability:

The "Function channel A” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”

More information:

- “Function of channels A + B” parameter [➞ 22]

Parameters on the “forced control” parameter card

Evaluation of input

Parameter	Settings
Evaluation of input	Edge Short/long key press

Function:

This parameter determines whether the sending of a telegram to control the forced operation is to be triggered by signal edges or by a short or long press of the push-button at the input.

The following settings are possible:

- Edge:
  With this setting, the sending of a switching telegram is triggered by a falling and/or rising edge of the signal at the input. The type of reaction at rising and at falling edge can be selected respectively by the parameters "Send value at rising edge” and "Send value at falling edge."
- Short/long key press:
  With this setting, the sending of a telegram to control forced control is triggered by a short or long press of a push-button connected to the input. The type of response for a short and a long press of the push-button can be selected by the parameters "Send value at short key press” and "Send value at long key press” respectively.
  The duration of the long press of the push-button is set via the "Detect long key press after” parameter.

Availability:

The "Evaluation of input” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  – Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  – Setting: “Forced Control”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Send value on rising edge” parameter [→ 174]
- “Send value on falling edge” parameter [→ 175]
- “Send value on short press of the push-button” parameter [→ 177]
- “Send value on long press of the push-button” parameter [→ 179]
- “Long press of the push-button from” parameter [→ 181]

Send value at rising edge

Parameter	Settings
Send value at rising edge	disable enable

Function:

This parameter is used to set whether a value is to be sent after a rising edge of the input signal. The rising edge corresponds to pressing the push-button. Which value is sent is defined by the parameter "Value at rising edge."

Availability:

The "Send value at rising edge” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Forced Control”
- Parameter "Evaluation of input” on the parameter card "Forced Control"
  - Setting: “Edge”

More information:

- “Function of channels A + B” parameter [→ 22]
- "Value on rising edge” parameter [→ 174]
- “Evaluation of input” parameter [→ 172]

Value at rising edge

Parameter	Settings
Value at rising edge	Inactive Forced off Forced on

Function:

This parameter is used to set which value is to be sent after a rising edge of the input signal. The rising edge corresponds to pressing the push-button.

The following settings are possible:

- Inactive:
  When an edge change occurs at the input, a telegram is sent to deactivate forced control.
- Forced off:
  With a rising edge the switching value "Forced off” is sent.
- Forced on:
  With a rising edge the switching value "Forced on” is sent.

Availability:

The "Value at rising edge” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  – Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  – Setting: “Forced Control”
- Parameter "Evaluation of input” on the parameter card "Forced Control"
  – Setting: “Edge”
- Parameter "Send value at rising edge” on the parameter card "Forced Control"
  – Setting: “enable”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Evaluation of input” parameter [→ 172]
- “Send value on rising edge” parameter [→ 173]

Send value at falling edge

Parameter	Settings
Send value at falling edge	disable enable

Function:

This parameter is used to set whether a value is to be sent after a falling edge of the input signal. The falling edge corresponds to a release of the push-button. Which value is sent is defined by the parameter "Value at falling edge."

Availability:

The "Send value at falling edge” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Forced Control”
- Parameter "Evaluation of input” on the parameter card "Forced Control"
  - Setting: “Edge”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Evaluation of input” parameter [→ 172]
- "Value on falling edge” parameter [→ 176]

Value at falling edge

Parameter	Settings
Value at falling edge	Inactive Forced off Forced on

Function:

This parameter is used to set which switching value is to be sent after a falling edge of the input signal. The falling edge corresponds to a release of the push-button.

The following settings are possible:

- Inactive:
  When an edge change occurs at the input, a telegram is sent to deactivate forced control.
- Forced off:
  With a rising edge the switching value "Forced off” is sent.
- Forced on:
  With a rising edge the switching value "Forced on” is sent.

Availability:

The "Value at falling edge” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  – Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  – Setting: “Forced Control”
- Parameter "Evaluation of input” on the parameter card "Forced Control"
  – Setting: “Edge”
- Parameter "Send value at falling edge” on the parameter card "Forced Control"
  – Setting: “enable”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Evaluation of input” parameter [→ 172]
- “Send value on falling edge” parameter [→ 175]

Send value at short key press

Parameter	Settings
Send value at short key press	disable enable

Function:

This parameter is used to set whether a value should be sent after a short press of the push-button of a push-button connected to the input.

Availability:

The "Send value at short key press” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Forced Control”
- Parameter "Evaluation of input” on the parameter card "Forced Control"
  - Setting: “Short/long key press”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Evaluation of input” parameter [→ 172]
- “Value with short press of the push-button” parameter [→ 178]

Value at short key press

Parameter	Settings
Value at short key press	Inactive Forced off Forced on

Function:

This parameter is used to set which value is sent after a short press of a push-button connected to the input.

The following settings are possible:

- Inactive:
  A short press of the push-button sends a telegram to deactivate forced control.
- Forced off:
  With a short press of the push-button the switching value "Forced off” is sent.
- Forced on:
  With a short press of the push-button the switching value "Forced on” is sent.

Availability:

The "Value at short key press” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  – Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  – Setting: “Forced Control”
- Parameter "Evaluation of input” on the parameter card "Forced Control"
  – Setting: “Short/long key press”
- Parameter "Send value at short key press” on the parameter card "Forced Control"
  – Setting: “enable”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Evaluation of input” parameter [→ 172]
- “Send value on short press of the push-button” parameter [→ 177]

Send value at long key press

Parameter	Settings
Send value at long key press	disable enable

Function:

This parameter is used to set whether a value should be sent after a long press of a push-button connected to the input.

Availability:

The "Send value at long key press” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Forced Control”
- Parameter "Evaluation of input” on the parameter card "Forced Control"
  - Setting: “Short/long key press”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Evaluation of input” parameter [→ 172]
- “Value with long press of the push-button” parameter [→ 180]

Value at long key press

Parameter	Settings
Value at long key press	Inactive Forced off Forced on

Function:

This parameter is used to set which value is to be sent after a long press of a push-button connected to the input.

The following settings are possible:

- Inactive:
  A long press of the push-button sends a telegram to deactivate forced control.
- Forced off:
  With a long press of the push-button the switching value "Forced off” is sent.
- Forced on:
  With a long press of the push-button the switching value "Forced on” is sent.

Availability:

The "Value at long key press” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  – Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  – Setting: “Forced Control”
- Parameter "Evaluation of input” on the parameter card "Forced Control"
  – Setting: “Short/long key press”
- Parameter "enable” on the parameter card "Forced Control"
  – Setting: “enable”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Evaluation of input” parameter [→ 172]
- “Send value on long press of the push-button” parameter [→ 179]

Detect long key press after

Parameter	Settings
Detect long key press after hh:mm:ss.f	00:00:00.3 ... 00:00:07.0

Function:

This parameter sets the duration of a long press of the push-button. After the set time has elapsed, the press of the push-button is considered long and the telegram is sent.

Availability:

The "Detect long key press after” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Forced Control”
- Parameter "Evaluation of input” on the parameter card "Switching"
  - Setting: “Short/long key press”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Evaluation of input” parameter [→ 50]

See also

- Forced control [→ 171]
- “Forced control” communication objects [→ 182]

7.18.2 “Forced control” communication objects

The following communication objects are used to control the "Forced Control” function:

A Forced control

No.	Object name	Function	Datapoint type	Flags
33	A Forced control	On/Off	2.001 switch control	CRT

Function:

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

The following settings are possible:

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

Availability:

The "A Forced control” communication object is displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Forced Control”

See also

Forced control [→ 171]
“Forced control” parameter [→ 171]

7.19 Effect control

The effect control is used to trigger or terminate an effect programmed on another device (e.g. KNX/DALI gateway) with a push-button (or similar) connected to the binary input.

You can define which of 64 possible effects is triggered or terminated. Furthermore, a distinction is made between short and long presses of the push-button.

The prerequisite for this function is that the "Single” option is selected in the device settings for the channel concerned.

“Function of channels A + B” parameter [→ 22]

7.19.1 “Effect control” parameter

The following parameters are used to set the "Effect controller” function:

Parameters of the “functions, objects” parameter card

As a prerequisite for the "Effect controller” function, set the "Function channel A” parameter on the "functions, objects” parameter card as specified:

Function channel A

Parameter	Settings
Function channel A	Effect controller

Function:

This parameter determines which function is to be assigned to the channel.

Availability:

The "Function channel A” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”

More information:

- “Function of channels A + B” parameter [→ 22]

Parameters on the “effect control” parameter card

Send effect at short key press

Parameter	Settings
Send effect at short key press	disable enable

Function:

This parameter is used to set whether an effect is to be triggered with a short press of the push-button.

Availability:

The "Send effect at short key press” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Effect controller”

Other parameters:

If "enable” is selected, the following additional parameters appear:

- “Start or end effect” parameter [→ 184]
- “Effect number” parameter [→ 184]

More information:

- “Function of channels A + B” parameter [→ 22]

Send effect at long key press

This parameter sets the effect number to be started or stopped.

Parameter	Settings
Send effect at long key press	disable enable

Function:

This parameter sets whether a long press of the push-button should trigger an effect.

Availability:

The "Send effect at long key press” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Effect controller”

Other parameters:

If "enable” is selected, the following additional parameters appear:

- “Start or end effect” parameter [→ 184]
- “Effect number” parameter [→ 184]

More information:

- “Function of channels A + B” parameter [→ 22]

Start or stop effect

Parameter	Settings
Start or stop effect	Stop Start

Function:

This parameter is used to set whether the effect is to be started or stopped for each long or short press of the push-button.

The following settings are possible:

- Stop:
  This setting stops the effect when a push-button is pressed.
- Start:
  With this setting, the effect is started when a push-button is pressed.

Availability:

The "Start or stop effect” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Effect controller”
- Parameter "Send effect at long key press” and/or "Send effect at short key press” on parameter card "Effect controller"
  - Setting: “enable”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Send effect on short press of the push-button” parameter [→ 183]
- “Send effect on long press of the push-button” parameter [→ 183]

Effect number

Parameter	Settings
Effect number	1...64

Function:

This parameter selects the number of the effect that will be started or stopped.

Availability:

The "Effect number” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Effect controller”
- Parameter "Send effect at long key press” and/or "Send effect at short key press” on parameter card "Effect controller"
  - Setting: “enable”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Send effect on short press of the push-button” parameter [→ 183]
- “Send effect on long press of the push-button” parameter [→ 183]

Detect long key press after

Parameter	Settings
Detect long key press after hh:mm:ss.f	00:00:00.3 ... 00:00:07.0

Function:

This parameter sets the duration of a long press of the push-button. After the set time has elapsed, the press of the push-button is considered long and the telegram is sent.

Availability:

The "Detect long key press after” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Effect controller”

More information:

- “Function of channels A + B” parameter [→ 22]

See also

- Effect control [→ 183]
- “Effect control” communication objects [→ 186]

7.19.2 “Effect control” communication objects

The following communication objects are used to control the "Effect controller” function:

A Effect

No.	Object name	Function	Datapoint type	Flags
34	A Effect	start/stop	18.001 scene control	CRT

Function:

This communication object is used to start or end the effect.

Availability:

The "A Effect” communication object is displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Effect controller”

More information:

- “Function of channels A + B” parameter [→ 22]

See also

- “Effect control” parameter [→ 183]
- Effect control [→ 183]

7.20 Group control

With the "Sequenced switching group control” function, for example, 2 or 3 lamps can be switched on and off in succession with a single push-button. Lamp groups can also be switched instead of lamps. The sequence of the circuits is determined via the assigned communication objects and cannot be changed via parameters.

If there are several push-buttons with the "Sequenced switching group control” setting for the same lamps, switching is performed independently from each push-button. This means that the push-button switches the switching sequence that is next for it, regardless of which switch command another push-button sent last.

The prerequisite for this function is that the "Single” option is selected in the device settings for the channel concerned.

“Function of channels A + B” parameter [➔ 22]

Application example

Step-by-step switching on and off of lamp groups of a chandelier or another lamp with multiple lamp groups.

Switching sequence 2 switching groups

Push-button pressure	Status of lamp 1	Status of lamp 2
1	●	○
2	●	●
3	○	●
4	○	○

● Switched on

○ Switched off

Switching sequence 3 switching groups

Push-button pressure	Status of lamp 1	Status of lamp 2	Status of lamp 3
1	●	○	○
2	○	●	○
3	●	●	○
4	●	●	●
5	○	●	●
6	●	○	●
7	○	○	●
8	○	○	○

● Switched on

○ Switched off

7.20.1 “Group control” parameter

The following parameters are used to set the "Sequenced switching group control” function:

Parameters of the “functions, objects” parameter card

As a prerequisite for the "Sequenced switching group control” function, set the "Function channel A” parameter on the "functions, objects” parameter card as specified:

Function channel A

Parameter	Settings
Function channel A	Sequenced switching group control

Function:

This parameter determines which function is to be assigned to the channel.

Availability:

The "Function channel A” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”

More information:

- “Function of channels A + B” parameter [→ 22]

Parameters on the “group control” parameter card

Number of sequenced switching groups

Parameter	Settings
Number of sequenced switching groups	2...3

Function:

This parameter is used to set the number of switching sequence groups.

Availability:

The "Number of sequenced switching groups” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Sequenced switching group control”

More information

- “Function of channels A + B” parameter [→ 22]
- Group control [→ 187]
- “Switching 1”communication object [→ 189]
- “Switching 2”communication object [→ 189]
- “Switching 3”communication object [→ 189]

See also

- Group control [→ 187]
- “Group control” communication objects [→ 189]

7.20.2 “Group control” communication objects

The following communication objects are used to control the "Sequenced switching group control” function:

A Switching 1

No.	Object name	Function	Datapoint type	Flags
35	A Switching 1	On/Off	1.001 switch	CRT

Function:

Switching telegrams for lighting group 1 are sent via the group address linked with this communication object.

Availability:

The "A Switching 1” communication object is displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Sequenced switching group control”

A Switching 2

No.	Object name	Function	Datapoint type	Flags
36	A Switching 2	On/Off	1.001 switch	CRT

Function:

Switching telegrams for lighting group 2 are sent via the group address linked with this communication object.

Availability:

The "A Switching 2” communication object is displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Sequenced switching group control”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Number of switching sequence groups” parameter [→ 188]

A Switching 3

No.	Object name	Function	Datapoint type	Flags
37	A Switching 3	On/Off	1.001 switch	CRT

Function:

Switching telegrams for lighting group 3 are sent via the group address linked with this communication object.

Availability:

The "A Switching 3” communication object is displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Sequenced switching group control”
- Parameter "Number of sequenced switching groups” on the parameter card "Sequenced switching group control"
  - Setting: “3”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Number of switching sequence groups” parameter [→ 188]

See also

Group control [→ 187]
“Group control” parameter [→ 188]

7.21 Multiple operation

The function "Multi-touch control” can be used to configure, for example, that different consumers are switched at short intervals when the switch is pressed several times. Pressing the switch once, twice and three times can be assigned the function “Toggle,” “Switch off” or “Switch on” respectively.

The prerequisite for this function is that the "Single” option is selected in the device settings for the channel concerned.

“Function of channels A + B” parameter [→ 22]

Application example

Switching of 3 consumers:

Pressing the push-button once switches consumer 1. Pressing the push-button twice switches consumer 2 and pressing it three times switches consumer 3.

7.21.1 “Multiple actuation” parameter

The following parameters are used to set the "Multi-touch control” function:

Parameters of the “functions, objects” parameter card

As a prerequisite for the "Multi-touch control” function, set the "Function channel A” parameter on the "functions, objects” parameter card as specified:

Function channel A

Parameter	Settings
Function channel A	Multi-touch control

Function:

This parameter determines which function is to be assigned to the channel.

Availability:

The "Function channel A” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”

More information:

- “Function of channels A + B” parameter [→ 22]

Parameters on the “multiple actuation” parameter card

Number of switchable groups

Parameter	Settings
Number of switchable groups	2...3

Function:

This parameter sets the number of switchable groups.

The following settings are possible:

- 2:
  - 1 press of the push-button = consumers of switchable group 1 are switched
  - 2 presses of the push-button = consumers of switchable group 2 are switched
- 3:
  - 1 presses of the push-button = consumers of switchable group 1 are switched
  - 2 presses of the push-button = consumers of switchable group 2 are switched
  - 3 presses of the push-button = consumers of switchable group 3 are switched

Availability:

The "Number of switchable groups” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Multi-touch control”

More information

- “Function of channels A + B” parameter [→ 22]
- “Switch” communication object [→ 193]

Max. delay time between two push button actions

Parameter	Settings
Max. delay time between two push button actions hh:mm:ss.f	00:00:00.5 ... 00:00:02.0

Function:

This parameter sets the maximum time that may elapse between 2 actuations. If the time is exceeded, the switching sequence starts again from the beginning and the consumer of the first vector group is switched again.

Availability:

The "Max. delay time between two push button actions” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Multi-touch control”

More information

- “Function of channels A + B” parameter [→ 22]
- "Number of switchable groups” parameter [→ 191]

Switching 1, value to be sent
Switching 2, value to be sent
Switching 3, value to be sent

Parameter	Settings
Switching 1, value to be sent Switching 2, value to be sent Switching 3, value to be sent	Off On Toggle

Function:

These parameters are used to define which switching telegram is to be sent to the respective switching group when the push-button is pressed once, twice or three times.

The following settings are possible:

- Off:
  The switching group is switched off.
- On:
  The switching group is switched on.
- Toggle:
  The last sent switching value of this switching group is inverted and the new value is sent.

Availability:

The parameters "Switching 1, value to be sent” and "Switching 2, value to be sent” are displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  – Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  – Setting: “Multi-touch control”

The "Switching 3, value to be sent” parameter is displayed if the following configuration has also been made:

- Parameter "Number of switchable groups” on the parameter card "Multi-touch control"
  – Setting: “3”

More information

- “Function of channels A + B” parameter [→ 22]
- "Number of switchable groups” parameter [→ 191]
- “Switch” communication object [→ 193]

See also

- Multiple operation [→ 190]
- “Multiple actuation” communication objects [→ 193]

7.21.2 “Multiple actuation” communication objects

The following communication objects are used to control the "Multi-touch control” function:

A Switching 1
A Switching 2
A Switching 3

No.	Object name	Function	Datapoint type	Flags
38 39 40	A Switching 1 A Switching 2 A Switching 3	On/Off	1.001 switch	CRWT

Function:

Switching telegrams are sent via the group address linked with this communication object.

Communication object "A Switching 1” = consumers of the switchable group 1 are switched = 1 x actuation of the push-button

Communication object "A Switching 2” = consumers of the switchable group 2 are switched = 2 x actuation of the push-button

Communication object "A Switching 3” = consumers of the switchable group 3 are switched = 3 x actuation of the push-button

Availability:

The "A Switching 1” and "A Switching 2” communication objects are displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: “Multi-touch control”
- Parameter "Number of switchable groups” on the parameter card "Multi-touch control"
  - Setting: “2”

The "A Switching 3” communication object is displayed if the following configuration has also been carried out:

- Parameter "Number of switchable groups” on the parameter card "Multi-touch control"
  - Setting: “3”

More information:

- “Function of channels A + B” parameter [➞ 22]
- "Number of switchable groups” parameter [➞ 191]

See also

🗎 Multiple operation [➞ 190]
🗎 “Multiple actuation” parameter [➞ 190]

7.22 Send additional telegram

With the "Send additional telegram” function, another telegram can be sent with a short delay in addition to the set function.

With the following functions it is possible to set up the sending of an additional telegram:

- Send switching status/binary value
- Switching
- Send value
- Forced Control

Application examples

Adjustment of hanging height and slat position at the touch of a push-button:

For some actuators, it is necessary that the telegrams for setting the hanging height and slat position arrive at the actuator in a specific sequence. With the function "Send additional telegram” two percentage values can be sent one after the other with only one press of the push-button.

Automatic switching on of the lighting when the shutter closes:

At the touch of a push-button, the room is darkened and the lighting is switched on at the same time.

Simultaneous switching on of different lamps with different dimming values:

For example, with one press of a push-button, the lamp in the bedroom is switched on at a 30% dimming value and the lamp in the hallway is switched on at a 100% dimming value.

7.22.1 "Send additional telegram” parameter

With the following functions it is possible to set up the sending of an additional telegram:

- Send switching status/binary value
- Switching
- Send value
- Forced Control

The following parameters are used to set the "Send additional telegram” function:

Parameters on the parameter card of the function

As a prerequisite for the "Send additional telegram” function, set the "Send additional telegram” parameter on the parameter card of the function as indicated:

Send additional telegram

Parameter	Settings
Send additional telegram	enable

Function:

This parameter determines whether an additional telegram is to be sent.

Other parameters:

If "enable” is selected, the parameter "Function,” with which the function of the additional telegram is determined, also appears.

More information:

- “Function” parameter [→ 195]

Function

Parameter	Settings
Function	Switching Scene control Send value Forced Control

Function:

This parameter determines the function of the additional telegram.

The following settings are possible:

- Switching:
  The additional telegram receives the function "Switching." Additional parameters for setting the function are displayed: “Switching” parameter [→ 49]
- Scene control:
  This setting is only possible if the option "Short/long key press” has been selected in the parameter "Evaluation of input” in the respective function.
  The additional telegram receives the function "Scene control." Additional parameters for setting the function are displayed: “Scene control” parameter [→ 63]
- Send value:
  The additional telegram receives the function "Send value." Additional parameters for setting the function are displayed: “Send value” parameter [→ 77]
- Forced Control:
  The additional telegram receives the function "Forced Control." Additional parameters for setting the function are displayed: “Forced control” parameter [→ 171]

Availability:

The "Function” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  – Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  – Setting: "Send switching status/binary value", "Switching", "Send value or Forced Control"
- Parameter "Send additional telegram” on the parameter card "Send switching status/binary value", "Switching", "Send value or Forced Control"
  – Setting: “enable”

Other parameters:

If the "Edge” option is selected in the parameter card of the selected function in the "Evaluation of input” parameter, the "Send delay for the second telegram after rising edge” and "Send delay for the second telegram after falling edge” parameters are also displayed.

If the "Short/long key press” option is selected in the parameter card of the selected function in the "Evaluation of input” parameter, the "Send delay for the second telegram after long key press” and "Send delay for the second telegram after short key press” parameters are also displayed.

More information:

- "Send additional telegram” parameter [→ 194]
- “Function of channels A + B” parameter [→ 22]
- "Transmission delay for second telegram after falling edge” parameter [→ 197]
- "Transmission delay for second telegram after rising edge” parameter [→ 196]
- "Transmission delay for second telegram after a short press of the push-button” parameter [→ 198]
- "Transmission delay for the second telegram after a long press of the push-button” parameter [→ 199]
- "Transmission delay for the telegram to retrieve a scene” parameter [→ 200]

Send delay for the second telegram after rising edge

Parameter	Settings
Send delay for the second telegram after rising edge hh:mm:ss.f	00:00:00.0 ... 01:49:13.5

Function:

This parameter determines the delay with which the additional telegram is sent.

Availability:

The "Send delay for the second telegram after rising edge” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: "Send switching status/binary value", "Switching", "Send value or Forced Control"
- Parameter "Send additional telegram” on the parameter card "Send switching status/binary value", "Switching", "Send value or Forced Control"
  - Setting: “enable”
- Parameter "Evaluation of input” on the parameter card "Send switching status/binary value", "Switching", "Send value or Forced Control"
  - Setting: “Edge”
- Parameter "Function” on the parameter card "Send switching status/binary value", "Switching", "Send value or Forced Control"
  - Setting: "Switching", "Send value” or "Forced Control"
- Parameter "Reaction on rising edge” on the parameter card "Send switching status/binary value", "Switching", "Send value or Forced Control"
  - Setting: "Off", "On” or "Toggle"

More information:

- "Send additional telegram” parameter [→ 194]
- “Function of channels A + B” parameter [→ 22]

Send delay for the second telegram after falling edge

Parameter	Settings
Send delay for the second telegram after falling edge hh:mm:ss.f	00:00:00.0 ... 01:49:13.5

Function:

This parameter determines the delay with which the additional telegram is sent.

Availability:

The "Send delay for the second telegram after falling edge” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: "Send switching status/binary value", "Switching", "Send value” or ~"Forced Control"
- Parameter "Send additional telegram” on the parameter card "Send switching status/binary value", "Switching", "Send value” or "Forced Control"
  - Setting: “enable”
- Parameter "Evaluation of input” on the parameter card "Send switching status/binary value", "Switching", "Send value” or "Forced Control"
  - Setting: “Edge”
- Parameter "Function” on the parameter card "Send switching status/binary value", "Switching", "Send value” or "Forced Control"
  - Setting: "Switching", "Send value” or "Forced Control"
- Parameter "Reaction on falling edge” on the parameter card "Send switching status/binary value", "Switching", "Send value” or "Forced Control"
  - Setting: "Off", "On” or "Toggle"

More information:

- "Send additional telegram” parameter [→ 194]
- “Function of channels A + B” parameter [→ 22]

Send delay for the second telegram after short key press

Parameter	Settings
Send delay for the second telegram after short key press hh:mm:ss.f	00:00:00.0 ... 01:49:13.5

Function:

This parameter determines the delay with which the additional telegram is sent.

Availability:

The "Send delay for the second telegram after short key press” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: "Send switching status/binary value", "Switching", "Send value or Forced Control"
- Parameter "Send additional telegram” on the parameter card "Send switching status/binary value", "Switching", "Send value or Forced Control"
  - Setting: “enable”
- Parameter "Evaluation of input” on the parameter card "Send switching status/binary value", "Switching", "Send value or Forced Control"
  - Setting: “Short/long key press”
- Parameter "Function” on the parameter card "Send switching status/binary value", "Switching", "Send value or Forced Control"
  - Setting: "Switching", "Send value” or "Forced Control"
- Parameter "Reaction on short key press” on the parameter card "Send switching status/binary value", "Switching", "Send value or Forced Control"
  - Setting: "Off", "On” or "Toggle"

More information:

- "Send additional telegram” parameter [→ 194]
- “Function of channels A + B” parameter [→ 22]

Send delay for the second telegram after long key press

Parameter	Settings
Send delay for the second telegram after long key press hh:mm:ss.f	00:00:00.0 ... 01:49:13.5

Function:

This parameter determines the delay with which the additional telegram is sent.

Availability:

The "Send delay for the second telegram after long key press” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: "Send switching status/binary value", "Switching", "Send value or Forced Control"
- Parameter "Send additional telegram” on the parameter card "Send switching status/binary value", "Switching", "Send value or Forced Control"
  - Setting: “enable”
- Parameter "Evaluation of input” on the parameter card "Send switching status/binary value", "Switching", "Send value or Forced Control"
  - Setting: “Short/long key press”
- Parameter "Function” on the parameter card "Send switching status/binary value", "Switching", "Send value or Forced Control"
  - Setting: "Switching", "Send value” or "Forced Control"
- Parameter "Reaction on long key press” on the parameter card "Send switching status/binary value", "Switching", "Send value or Forced Control"
  - Setting: "Off", "On” or "Toggle"

More information:

- "Send additional telegram” parameter [→ 194]
- “Function of channels A + B” parameter [→ 22]

Send delay for the telegram to call the scene

Parameter	Settings
Send delay for the telegram to call the scene hh:mm:ss.f	00:00:00.0 ... 01:49:13.5

Function:

This parameter determines the delay with which the additional scene is recalled.

Availability: Parameter “”

The "Send delay for the second telegram after falling edge” parameter is displayed when the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: "Switching", "Send value” or ˜"Forced Control"
- Parameter "Send additional telegram” on the parameter card "Switching", "Send value” or "Forced Control"
  - Setting: “enable”
- Parameter "Evaluation of input” on the parameter card, "Switching", "Send value” or "Forced Control"
  - Setting: “Short/long key press”
- Parameter "Function” on the parameter card, "Switching", "Send value” or "Forced Control"
  - Setting: “Scene control”

More information:

- "Send additional telegram” parameter [→ 194]
- “Function of channels A + B” parameter [→ 22]

See also

- Send additional telegram [→ 194]
- “Send additional telegram” communication objects [→ 200]

7.22.2 “Send additional telegram” communication objects

The following communication objects are used to control the "Send additional telegram” function:

A 2nd telegram, switching

No.	Object name	Function	Datapoint type	Flags
47	A 2nd telegram, switching	On/Off	1.001 switch	CRWT

Function:

Switching telegrams are sent via the group address linked with this communication object.

Availability:

The "A 2nd telegram, switching ” communication object is displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: "Send switching status/binary value", "Switching", "Send value or Forced Control"
- Parameter "Send additional telegram” on the parameter card "Send switching status/binary value", "Switching", "Send value or Forced Control"

  – Setting: “enable”
- Parameter "Function” on the parameter card "Send switching status/binary value", "Switching", "Send value or Forced Control"
  – Setting: “Switching”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Function” parameter [→ 195]
- Switching [→ 49]

A 2nd telegram, scene 1/2

No.	Object name	Function	Datapoint type	Flags
48	A 2nd telegram, scene 1/2	recall	1.022 scene	CRT

Function:

The telegrams for calling up the 1-bit scene 1 or 2 are sent via the group address linked with this object. If scene 1 was selected as the scene number, “0” is sent. If scene 2 was selected as the scene number, “1” is sent.

The addressed actuators or scene controllers receive the telegram and output the values and states stored in the respective scene.

Availability:

The "A 2nd telegram, scene 1/2” communication object is displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: "Switching", "Send value or Forced Control"
- Parameter "Evaluation of input” on the parameter card "Switching", "Send value or Forced Control"
  - Setting: “Short/long key press”
- Parameter "Send additional telegram” on the parameter card "Switching", "Send value or Forced Control"
  - Setting: “enable”
- Parameter "Function” on the parameter card "Switching", "Send value or Forced Control"
  - Setting: “Scene control”
- Parameter "Mode” on the parameter card "Switching", "Send value or Forced Control"
  - Setting: “1-bit scene control”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Function” parameter [→ 195]
- Scene control [→ 62]
- “2nd telegram, 8-bit scene” communication object [→ 204]

A 2nd telegram, scene 1/2

No.	Object name	Function	Datapoint type	Flags
49	A 2nd telegram, scene 1/2	store	1.022 scene	CRT

Function:

The telegrams for saving the 1-bit scene 1 or 2 are sent via the group address linked with this object. If scene 1 was selected as the scene number, “0” is sent. If scene 2 was selected as the scene number, “1” is sent. The current settings of the actuators concerned are saved to the current scene number when the telegram is received.

Availability:

The "A 2nd telegram, scene 1/2” communication object is displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: "Switching", "Send value or Forced Control"
- Parameter "Evaluation of input” on the parameter card "Switching", "Send value or Forced Control"
  - Setting: “Short/long key press”
- Parameter "Send additional telegram” on the parameter card "Switching", "Send value or Forced Control"
  - Setting: “enable”
- Parameter "Function” on the parameter card "Switching", "Send value or Forced Control"
  - Setting: “Scene control”
- Parameter "Learning” on the parameter card "Switching", "Send value or Forced Control"
  - Setting: “enable”
- Parameter "Mode” on the parameter card "Switching", "Send value or Forced Control"
  - Setting: “1-bit scene control”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Function” parameter [→ 195]
- Scene control [→ 62]

A 2nd telegram, 8-bit scene

No.	Object name	Function	Datapoint type	Flags
50	A 2nd telegram, 8-bit scene	A 2nd telegram, 8-bit scene	recall recall/store	CRT

Function:

The telegrams for recalling and saving the 8-bit scene with the configured scene number (1...64) are sent via the group address linked with this object.

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

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

If the parameter "Learning” is not enabled, a scene can be recalled via this communication object, but no new scene can be saved.

Availability:

The "A 2nd telegram, scene 1/2” communication object is displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: "Switching", "Send value or Forced Control"
- Parameter "Evaluation of input” on the parameter card "Switching", "Send value or Forced Control"
  - Setting: “Short/long key press”
- Parameter "Send additional telegram” on the parameter card "Switching", "Send value or Forced Control"
  - Setting: “enable”
- Parameter "Function” on the parameter card "Switching", "Send value or Forced Control"
  - Setting: “Scene control”
- Parameter "Mode” on the parameter card "Switching", "Send value or Forced Control"
  - Setting: “8-bit scene control”

By default, the "8-bit scene control” option is selected in the "Mode” parameter. Alternatively, if the option "1-bit scene control” is selected in this parameter, this communication object is hidden and the communication object "A 2nd telegram, scene 1/2” is displayed.

More information:

- “Function of channels A + B” parameter [→ 22]
- “Function” parameter [→ 195]
- Scene control [→ 62]
- “2nd telegram scene 1/ 2“ communication object [→ 202]

A 2nd telegram, forced control

No.	Object name	Function	Datapoint type	Flags
51	A 2nd telegram, forced control	On/Off	2.001 switch control	CRT

Function:

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

The following settings are possible:

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

Availability:

The "A 2nd telegram, forced control ” communication object is displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: "Send switching status/binary value", "Switching", "Send value or Forced Control"
- Parameter "Send additional telegram” on the parameter card "Send switching status/binary value", "Switching", "Send value or Forced Control"
  - Setting: “enable”
- Parameter "Function” on the parameter card "Send switching status/binary value", "Switching", "Send value or Forced Control"
  - Setting: “Forced Control”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Function” parameter [→ 195]
- Forced control [→ 171]

A 2nd telegram, value

No.	Object name	Function	Datapoint type	Flags
52	A 2nd telegram, value	Value	5.001 percentage (0..100%) 5.010 counter pulses (0..255) 6.010 counter pulses (-128..127) 7.001 pulses 7.012 current (mA) 7.600 absolute colour temperature (K) 8.001 pulses difference 9.001 temperature (°C) 9.004 lux (Lux) 9.005 speed (m/s) 9.007 humidity (%) 9.008 parts/million (ppm) 9.021 current (mA) 9.024 power (kW) 9.026 rain amount (l/m²) 9.027 temperature (°F) 10.001 time of day 12.001 counter pulses (unsigned) 13.001 counter pulses (signed) 14.019 electric current (A) 14.031 energy (J) 14.056 power (W) 14.065 speed (m/s) 14.068 temperature (°C) 16.000 Character String (ASCII) 232.600 RGB value 3x(0..255) 242.600 colour xyY	CRT

Function:

Value telegrams are sent via the group address linked with this communication object.

Availability:

The "A 2nd telegram, value” communication object is displayed if the following configurations have been made:

- Parameter "Function channels A + B” on the "device settings” parameter card
  - Setting: “Single”
- Parameter "Function channel A” on the “functions, objects” parameter card
  - Setting: "Send switching status/binary value", "Switching", "Send value or Forced Control"
- Parameter "Send additional telegram” on the parameter card "Send switching status/binary value", "Switching", "Send value or Forced Control"
  - Setting: “enable”
- Parameter "Function” on the parameter card "Send switching status/binary value", "Switching", "Send value or Forced Control"

– Setting: “Send value”

More information:

- “Function of channels A + B” parameter [→ 22]
- “Function” parameter [→ 195]
- Send value [→ 77]

See also

- Send additional telegram [→ 194]
- "Send additional telegram” parameter [→ 194]

8 Help in case of errors and problems

8.1 Frequently asked questions

Frequently asked questions

For frequently asked questions about the product and their solutions, see:
https://support.industry.siemens.com/cs/products?dtp=Faq&mfn=ps&lc=de-WW

FAQ

8.2 Troubleshooting using ETS

The ETS offers the following error analysis options, among others:

‘Diagnostics’ section

In this area, the physical addresses, the group monitor and the bus monitor can be checked, among others.

‘Reports’ area:

In this area, details on the various areas of the project can be exported as a file or printed directly.

For more information on ETS, see the online help of the ETS software.

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Issued by
Siemens Switzerland Ltd
Smart Infrastructure
Global Headquarters
Theilerstrasse 1a
CH-6300 Zug
+41 58 724 2424
www.siemens.com/buildingtechnologies

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