1473-1-8838 / 2CKA001473B8838 | 05.04.2016

KNX Technical Reference Manual

Busch-triton®

6320/10-...-500 1/2-fold MF/IR

6320/30-...-500 3/6-fold MF/IR

6321/38-...-500 5/10-fold MF/IR

6320/50-...-500 3/6-fold MF/IR/RTC

6321/58-...-500 5/10-fold MF/IR/RTC

Excitingly different

Unique in their form - versatile in their function: Busch-triton® sensors are redefining the term control elements. Without frame, yet with a design that is at the same time conspicuous, modern and elegant, they become an irresistible eye-catcher in every room. The innovative exterior strongly suggests that the switch behind the facade is not just a standard switch. Rather, they are multi-function elements whose flexibility hardly knows any boundaries. This allows complete flexibility in the programming of each individual rocker, with each side being able to trigger different functions. This turns the sensor into an individual control centre with an unbeatable price-performance ratio because the rockers turn into a 6gang control element. The bus coupler is already integrated, which makes additional devices unnecessary.

The maximum comfort is the result of the interaction between Busch-triton® and an IR remote control with which the functions can be comfortably called up. The sensors can also be used to control the room climate. They record the actual value in the room and regulate the air-conditioning system or heating accordingly. Also the activation of fan coil actuators is possible.

Busch-triton® is available in different versions with one, two, three or five rockers, with or without RTC function. The individual buttons can be labelled individually, which makes operation especially easy. The discreet illumination also cares for orientation in the dark. The design with its five noble colours fits into every environment. The colours and quality of the surfaces are available in other Busch-Jaeger switch ranges, which allows the selection of the entire building technology from the control elements to the socket outlet to match perfectly with regard to visual appeal.

Table of contents

1 Notes on the instruction manual

Please read through this manual carefully and observe the information it contains. This will assist you in preventing injuries and damage to property, and ensure both reliable operation and a long service life for the device.

Please keep this manual in a safe place.

If you pass the device on, also pass on this manual along with it.

ABB accepts no liability for any failure to observe the instructions in this manual.

If you require additional information or have questions about the device, please contact ABB or visit our Internet site at:

www.BUSCH-JAEGER.com

2 Safety

The device has been constructed according to the latest valid regulations governing technology and is operationally reliable. It has been tested and left the factory in a technically safe and reliable state.

However, residual hazards remain. Read and adhere to the safety instructions to prevent hazards of this kind.

ABB accepts no liability for any failure to observe the safety instructions.

2.1 Information and symbols used

The following Instructions point to particular hazards involved in the use of the device or provide practical instructions.

Danger

Risk of death / serious damage to health

– The respective warning symbol in connection with the signal word "Danger" indicates an imminently threatening danger which leads to death or serious (irreversible) injuries.

Warning

Serious damage to health

– The respective warning symbol in connection with the signal word "Warning" indicates a threatening danger which can lead to death or serious (irreversible) injuries.

Caution

Damage to health

– The respective warning symbol in connection with the signal word "Caution" indicates a danger which can lead to minor (irreversible) injuries.

Attention

Damage to property

– This symbol in connection with the signal word "Attention" indicates a situation which could cause damage to the product itself or to objects in its surroundings.

NOTE

This symbol in connection with the word "Note" indicates useful tips and recommendations for the efficient handling of the product.

The following safety symbols are used in the operating manual.

This symbol alerts to electric voltage.

2.2 Intended use

The control elements are suitable as multi-functional push-buttons for sending switching, button, value, dimming and blind commands.

The device is intended for the following:

- the control of a ventilator convector with a fan coil actuator.
- the control of conventional heating and cooling installations.
- the remote control via the integrated IR receiver.
- operation according to the listed technical data.
- the installation in dry interior rooms.
- mounting on a flush-mounted box.

The intended use also includes adherence to all specifications in this manual.

NOTE

- The integrated bus coupler makes possible the connection to a KNX bus line.
- Extensive functions are available for the room temperature controller and the control elements. For the range of applications see .

2.3 Improper use

Each use not listed in Chapter 2.2 “Intended use“ on page 15 is deemed improper use and can lead to personal injury and damage to property.

ABB is not liable for damages caused by use deemed contrary to the intended use of the device. The associated risk is borne exclusively by the user/operator.

The device is not intended for the following:

- Unauthorized structural changes
- Repairs
- Outdoor use
- The use in bathroom areas
- inserting of objects through device openings

2.4 Target group / Qualifications of personnel

2.4.1 Operation

No special qualifications are needed to operate the device.

2.4.2 Installation, commissioning and maintenance

Installation, commissioning and maintenance of the device must only be carried out by trained and properly qualified electrical installers.

The electrical installer must have read and understood the manual and follow the instructions provided.

The electrical installer must adhere to the valid national regulations in his/her country governing the installation, functional test, repair and maintenance of electrical products.

The electrical installer must be familiar with and correctly apply the "five safety rules" (DIN VDE 0105, EN 50110):

1. Disconnect
2. Secure against being re-connected
3. Ensure there is no voltage
4. Connect to earth and short-circuit
5. Cover or barricade adjacent live parts

2.5 Safety instructions

Danger - Electric voltage!

Electric voltage! Risk of death and fire due to electric voltage of 230 V.

Dangerous currents flow through the body when coming into direct or indirect contact with live components. This can result in electric shock, burns or even death.

- Work on the 230 V supply system may only be performed by authorised and qualified electricians.
- Disconnect the mains power supply before installation / disassembly.
- Never use the device with damaged connecting cables.
- Do not open covers firmly bolted to the housing of the device.
- Use the device only in a technically faultless state.
- Do not make changes to or perform repairs on the device, on its components or its accessories.
- Keep the device away from water and wet surroundings.

Caution! - Risk of damaging the device due to external factors!

Moisture and contamination can damage the device.

- Protect the device against humidity, dirt and damage during transport, storage and operation.

3 Information on protection of the environment

3.1 Environment

Consider the protection of the environment!

Used electric and electronic devices must not be disposed of with domestic waste.

– The device contains valuable raw materials which can be recycled. Therefore, dispose of the device at the appropriate collecting depot.

All packaging materials and devices bear the markings and test seals for proper disposal. Always dispose of the packaging material and electric devices and their components via the authorized collecting depots and disposal companies.

The products meet the legal requirements, in particular the laws governing electronic and electrical devices and the REACH ordinance.

(EU Directive 2012/19/EU WEEE and 2011/65/EU RoHS)

(EU REACH ordinance and law for the implementation of the ordinance (EC) No.1907/2006).

4 Setup and function

4.1 Control elements

Fig. 1: Control element6320/10-...-500

1/2gang control element with backlit label field and IR reception

The control elements have "large" freely programmable operating surfaces. They can be occupied with both rocker as well as button-oriented applications.

Fig. 2: Control element 6320/30-...-500

3/6gang control element with backlit label field and IR reception

Via the additional key there is the option of executing all the functions of a button or, on devices with a room temperature control, to access the setting level.

Fig. 3: Control element 6321/38-...-500

3/6gang control element with backlit labelling field, integrated room temperature control and IR reception

The control elements have two operating levels. On the first level, the on-site operations are triggered, the additional key is used to access the second operating level with which the heating control can be operated.

Fig. 4: Control element 6320/50-...-500

5/10gang control element with backlit label field and IR reception

Via the additional key there is the option of saving lighting scenes or controlling the backlighting of the label area.

Fig. 5: Control element 6321/58-...-500

5/10gang control element with backlit labelling field, integrated room temperature control and IR reception

Alternative to the second operating level, also the operating surfaces can be used to control the functions of the room temperature controller.

4.2 Available colours

Platinum

Aluminium silver

Palladium

Studio white

Champagne

Fig. 6: Available colours

5 Technical data

5.1 Technical data

Designation	Value
Power supply	
▪ Bus voltage:	21 to 30 V DC, via the bus
▪ Power consumption:	Type 10 mA (= 2 bus subscribers)
Connections	
▪ KNX:	Bus connection terminal
▪ Temperature sensor system:	▪ Accuracy of temperature sensor +/- 0.3 K (adjustment possible via parameter) ▪ Sensor type: NTC
Control and display elements	
▪ LCD display:	Devices with integrated room temperature controller
▪ 1, 3 or 5 rockers with 2 buttons each	
▪ 1, 3 or 5 two-colour LEDs:	Red and green
▪ Backlit label areas	
Protection type:	IP20, according to DIN EN 60529
Protection class:	III, acc. to DIN EN 61140
Insulation category:	▪ Overvoltage category III, acc. to DIN EN 60664-1 ▪ Contamination degree 2, acc. to DIN EN 60664-1
Temperature range	
▪ Operation:	-5°C … +45°C
▪ Storage:	-25°C … +55°C
▪ Transport:	-25°C … +70°C
Ambient conditions	
▪ Maximum humidity:	93%, no dew permissible
▪ Maximum air pressure:	Atmosphere up to 2000 m
Construction, housing, design	
▪ Surface-mounted with integrated bus coupler:	Without additional supply voltage
▪ Fire characteristics V0	
▪ RoHs conformity and halogen-free	
Mounting:	Clicked onto support ring
Licence	
▪ KNX:	In accordance with EN 50 090-1, -2
▪ According to EMC and low-voltage guidelines	

Table 1: Technical data

5.2 Overview of applications

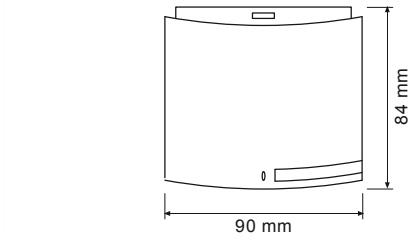
Function	Control elements				
	1/2gang	3/6gang	3/6gang RTC	5/10gang	5/10gang RTC
IR remote control possible	▪	▪	▪	▪	▪
Switching, rocker	▪	▪	▪	▪	▪
Switching, button	▪	▪	▪	▪	▪
Dimming, rocker	▪	▪	▪	▪	▪
Dimming, button	▪	▪	▪	▪	▪
Roller shutter, rocker	▪	▪	▪	▪	▪
Roller shutter, button	▪	▪	▪	▪	▪
Value transmitter, rocker	▪	▪	▪	▪	▪
Value transmitter, button	▪	▪	▪	▪	▪
Value dimming sensor, rocker	▪	▪	▪	▪	▪
Light scene extension unit with memory function	▪	▪	▪	▪	▪
Step switch, rocker	▪	▪	▪	▪	▪
Step switch, button	▪	▪	▪	▪	▪
Short-long operation, button	▪	▪	▪	▪	▪
Setting the RTC operating mode	▪	▪	▪	▪	▪
Switching error protection	▪	▪	▪	▪	▪
13 freely programmable IR channels	▪	▪	▪	▪	▪
Eight light scenes	▪	▪	▪	▪	▪

Table 2: Overview of applications

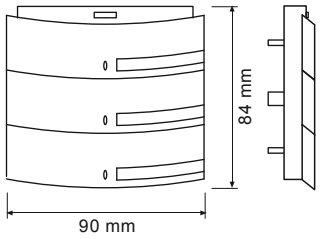
Features	Control elements				
	1/2gang	3/6gang	3/6gang RTC	5/10gang	5/10gang RTC
Markable rockers	▪	▪	▪	▪	▪
Backlit labelling field	▪	▪	▪	▪	▪
Removal protection	▪	▪	▪	▪	▪
Freely programmable operating surfaces	▪	▪	▪	▪	▪
IR remote control possible	▪	▪	▪	▪	▪
Freely programmable additional key	▪	▪	▪	▪	▪
LCD display			▪		▪
Heating with additional stage			▪		▪
Cooling with additional stage			▪		▪
Comfort operation			▪		▪
Standby mode			▪		▪
Night mode			▪		▪
Frost protection			▪		▪
Heat protection			▪		▪
Fan control			▪		▪
Basic load			▪		▪
Master/slave mode			▪		▪

Table 3: Overview of applications, features

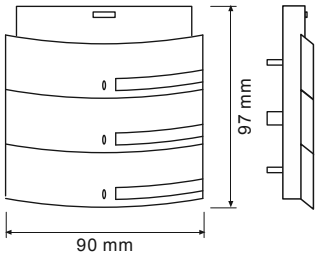
5.3 Dimensional drawings



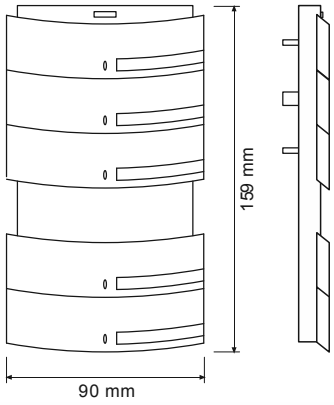
Busch-triton® 6320/10-...-500 control element



Busch-triton® 6320/30-...-500 control element



Busch-triton® 6321/38-...-500 control element



Control element Busch-triton® 6320/50-...-500 und 6321/58-...-500

Fig. 7: Dimensional drawings

6 Connection, installation / mounting

Danger - Electric voltage!

Risk of death due to electrical voltage of 230 V during short-circuit in the low-voltage line.

– Low-voltage and 230 V cables must not be installed together in a flush-mounted socket!

6.1 Requirements for the electrician

Danger - Electric voltage!

Install the device only if you have the necessary electrical engineering knowledge and experience.

- Incorrect installation endangers your life and that of the user of the electrical system.
- Incorrect installation can cause serious damage to property, e.g. due to fire.

The minimum necessary expert knowledge and requirements for the installation are as follows:

- Apply the "five safety rules" (DIN VDE 0105, EN 50110):
  1. Disconnect
  2. Secure against being re-connected
  3. Ensure there is no voltage
  4. Connect to earth and short-circuit
  5. Cover or barricade adjacent live parts.
- Use suitable personal protective clothing.
- Use only suitable tools and measuring devices.
- Check the type of supply network (TN system, IT system, TT system) to secure the following power supply conditions (classic connection to ground, protective earthing, necessary additional measures, etc.).

6.2 Mounting

Caution! The device can sustain damage when coming into contact with hard objects!

The plastic parts of the device are sensitive.

– Pull the attachment off only with your hands.
– Do not lever parts off with screwdrivers or similar hard objects.

The device is mounted on a flush-mounted box. The support ring and the bus terminals required for mounting are enclosed.

For the horizontal installation of two Busch-triton® button sensors, it is recommended to keep a distance of 112 mm (by means of 2 flush-mounted box spacers, e.g. 2 x Kaiser spacing collars 91).

To install the device, perform the following steps:

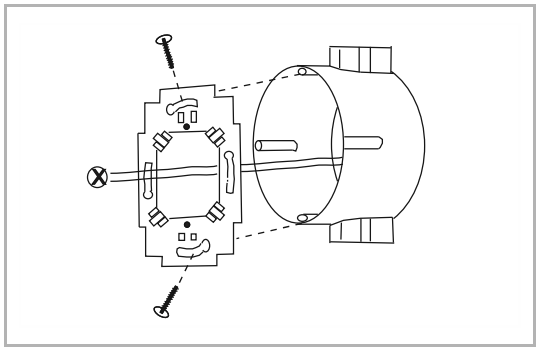


Fig. 8: Mounting the support ring

1. Screw the enclosed support ring and a flush-mounted box together.

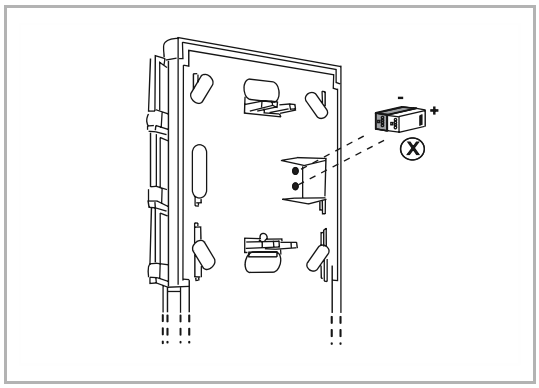


Fig. 9: Mounting the bus terminals

2. Mount the enclosed bus terminals for the connection of the bus voltage.
3. Connect the device to the ABB i-bus® KNX, see chapter 6.3 “Electrical connection“ on page 29.

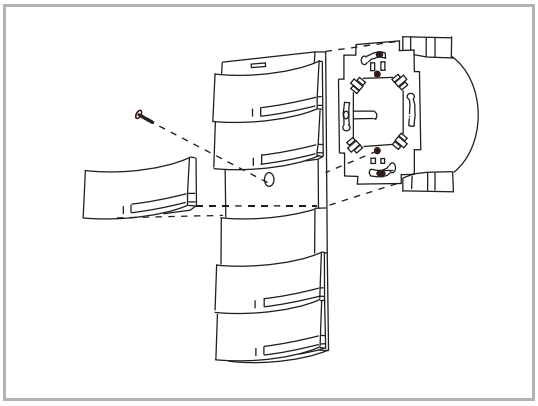


Fig. 10: Mounting the device

4. Screw the top part of the device and the support ring together.

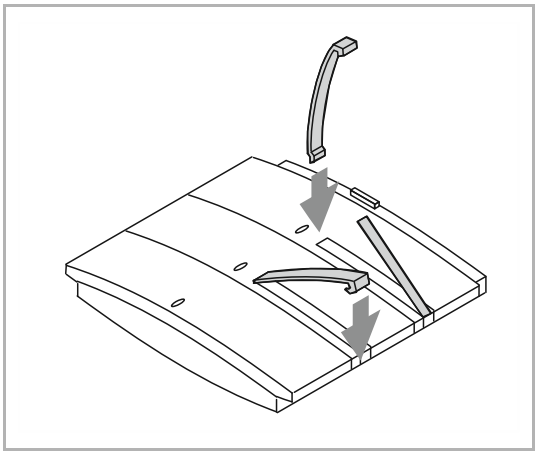


Fig. 11: Inserting the push-button labels

5. Insert the push-button labels into the device.

The device is now mounted.

6.3 Electrical connection

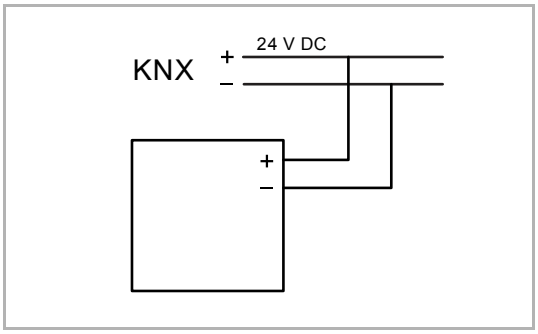


Fig. 12: Connection of bus coupler

Carry out the electrical connection according to the circuit diagram.

7 Operation

7.1 Operating procedure

Operation is carried out by pressing the additional key. The device changes to the RTC adjustment level. This change is indicated via an inverse display of the setpoint temperature (white with black numbers). The jump-back to the first operating level occurs after a waiting period of 3 seconds or with a renewed press of the additional key.

7.2 Operating functions

Operating functions:

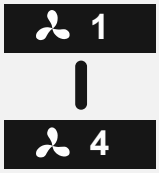
Display	Function	Action of the device
	Setpoint adjustment	The setpoint adjustment is made via the topmost rocker left/right.
	ECO mode	If the ECO mode is selected, this can be activated via the left centre rocker half. The display then changes to the ECO icon: – The other functions of the RTC are blocked. – Deactivation with a renewed press of the rocker. The screen returns to the overall view.
	OFF	The device is switched off by pressing the centre left rocker half. The function is displayed in the centre of the display via the corresponding icon. – It can only be deactivated by pressing the left rocker again.
	Fan coil	The fan coil is operated via the bottom left rocker half. The active fan speed level is shown in the centre of the display. The adjustment is performed with a renewed press of the rocker until the desired manual fan speed level is selected. It is displayed in the centre of the display and consists of the fan icon and the active fan speed level.
	Switchover heating/cooling	The user can switch between heating and cooling via the bottom right rocker (if parameterized).

Table 4: Overview of operating functions

Alarm functions:

The alarm functions are indicated in the centre via the corresponding icon in the display. Local operation is blocked in the RTC operating level. It can be deactivated only by cancelling the alarm.

Display	Function
	Frost/heat protection
	Condensation
	Dew point
	Comfort mode
	Standby mode
	ECO mode

Table 5: Overview of alarm functions

7.3 Additional operating modes and alarms

Display	Operating mode
	Standby: – Standby mode lowers the temperature during absence below the level of comfort mode. This saves energy. And the room does not cool down during an extended absence.
	Dew point: – If an appropriate telegram is received from a dew point sensor, the room temperature controller will display the corresponding icon and cease cooling and merely protect against the heat.
	Alarm: – The alarm can be freely parameterized. For example, it can occur when an external temperature sensor no longer sends values.
	On/Off: – The room temperature controller can be activated and deactivated. If control is deactivated, this icon appears in the display. The device operates in frost protection mode.
	ECO mode: – The heating/cooling output is extremely lowered.
	Frost protection: – If parameterized, frost protection will ensure that the temperature does not drop below the desired value. It is the lowest setpoint. Heat protection: – If parameterized, heat protection will ensure that the temperature does not exceed the desired value. It is the highest setpoint.
	Condensate: – The operation of a fan coil may cause condensate water, which is collected in a container. If the fan coil sends out a telegram when the container is full, the icon for condensate mode is displayed. The room temperature controller switches automatically into heat protection mode.

NOTE

Local operation is blocked!

– The alarm or the operating mode must first be deactivated.

8 Description of application and parameters

8.1 Application "General functions"

8.1.1 Sending object "In operation"

Options:	No
	Cyclic 0
	Cyclic 1

The "In operation" object signals the correct function of the device to the bus. This cyclical telegram can be monitored with an external device.

8.1.2 Object "In operation", sending cycle time in s [1 - 65,535]

Options:	1 - 60 - 65,535

Here the time interval is set with which the object "In operation" sends a cyclical telegram.

8.1.3 Display illumination

Options:	Always ON
	Always OFF
	5 seconds switch-off delay

This parameter is only available on devices with integrated room temperature controller. This parameter is used to set the background lighting of the LCD. It is either always switched on, always switched off, or it switches itself off automatically 5 seconds after being actuated.

NOTE
If an ON telegram is received on the 1-bit "Illumination" communication object, the background lighting remains on until an OFF telegram is received.

8.1.4 Label area illumination

Options:	Always ON
	Always OFF

This parameter is used to set the label area illumination of the rockers. They are either always switched on or always switched off.

NOTE
If an ON telegram is received on the 1-bit "Label area illumination" communication object, the label area illumination remains on until an OFF telegram is received.

8.1.5 Day/night mode LED

Options:	Inactive
	Active

When parameter "Day/night mode LED" is activated, an additional 1-bit communication object "Day/night mode LED" is displayed.

If an OFF telegram is received on the 1-bit "Day/night mode LED" communication object, all LEDs are switched off and remain switched off until they are switched on again with their former (or changed) status with the receipt of an ON telegram.

The LED can be temporarily deactivated via this object, e.g. in bedrooms during the night.

8.1.6 Working mode of rocker 1 - 5

Options:	Inactive
	Rocker oriented
	Button oriented

Here a rocker oriented or button oriented function can be set.

8.1.7 Working mode of the shift key

Options:	Inactive
	Button oriented

8.2 Application of "Rocker 1 - 5"

8.2.1 Function of rocker 1 - 5

Options:	Switching
	Dimming
	Blind
	Value transmitter
	Value dimming sensor
	Step switch

Additionally for control elements with integrated RTC:

- Setpoint adjustment of the internal RTC
- Operating modes/fans stage switchover of the internal RTC

These channels are only visible when parameter "Function of rocker" is set on "Rocker oriented".

Additional parameters (see parameter description of rockers) are displayed depending on the set function.

8.2.2 Switching - Working mode of the rocker for switching

Options:	Left on, right off
	Left off, right on
	Alternating on/off

The "Working mode of the rocker switch for switching" determines whether operation of the left or right side of the rocker switch will send out an ON or an OFF telegram. Alternatively, for the selection "Alternating on/off", you can switch between switching on and switching off for every operation that triggers a switching telegram. This means that after a switch-on telegram is sent out (or received), a switch-off telegram is sent out for a renewed operation. After it is operated again, a switch-on telegram is sent out.

If a switching telegram is triggered by operation of the button, this will be sent out on the 1-bit communication object "Switching".

8.2.3 Switching - Enable object

Options:	Inactive
	Active

If the "Enable object" parameter is set to "active", the function can temporarily be blocked via the the 1-bit communication object "Enable". The function is active if an ON telegram is received on the 1-bit communication object "Enable". The function is blocked if an OFF telegram is received on the 1-bit communication object "Enable". This means that after an actuation, a telegram is no longer sent out.

8.2.4 Switching - Object value enable

Options:	Normal
	Inverse

This parameter is only adjustable with activated enable object.

The enable function normally functions as follows:

The function is active if an ON telegram is received on the 1-bit communication object "Enable". The function is blocked if an OFF telegram is received on the 1-bit communication object "Enable".

Via the "Object value enable" parameter, the behaviour described above can be inverted. This means that the function is blocked if an ON telegram is received on the 1-bit communication object "Enable". The function is active if an OFF telegram is received on the 1-bit communication object "Enable".

8.2.5 Switching - Enable after bus voltage recovery

Options:	Blocked
	Enabled

This parameter is only adjustable with activated enable object.

The parameter "Behaviour enable after return of voltage" exists to permit a defined behaviour at the "Enable" communication object after a return of voltage. A determination is made here about whether a "1" ("enabled") or a "0" ("blocked") is present on the enable object after the return of voltage.

NOTE

If the logic of the enable function (parameter "object value enable") is set to "inverse", the behaviour is also inverted after the return of voltage. This means that if the parameter "Behaviour enable after return of voltage" is set to "enabled", and the "Object value enable" is at the same time parameterised to "inverse", then the function will initially not be active after the return of voltage. This must first be activated via the receipt of an OFF telegram on the enable object.

8.2.6 Dimming

These parameters are only visible when parameter "Working mode of rocker" is set on "Rocker oriented" and the "Dimming" function has been set.

With the "Dimming" application, a rocker has communication objects for switching and for dimming. A distinction is made a between short and long press of the button.

The "Dimming" application differentiates between whether the rocker is operated on the left or right side. The "Working mode of the rocker for …" parameter allows adjustment of whether the left or right side switches on or off or whether it is dimmed brighter or darker.

8.2.7 Dimming - Working mode of the rocker for switching

Options:	Left on, right off
	Left off, right on
	Alternating on/off

The "Working mode of the rocker for switching" determines whether operation of the left or right side of the rocker switch will send out an ON or an OFF telegram. Alternatively, for the selection "Alternating on/off", you can switch between switching on and switching off for every operation that triggers a switching telegram. This means that after a switch-on telegram is sent out (or received), a switch-off telegram is sent out for a renewed operation. If a switching telegram is triggered with an operation of the rocker, this will be sent out on the 1-bit communication object "Switching".

8.2.8 Dimming - Working mode of the rocker for switching

Options:	Left brighter, right darker
	Left darker, right brighter

The "Working mode of the rocker for dimming" determines whether operation of the left or right side of the rocker switch will send out a dim brighter or a dim darker telegram.

If a dimming telegram is triggered by operation of the rocker switch, a dimming telegram be sent out on the 4-bit communication object "Relative dimming".

8.2.9 Dimming - Manner of dimming

Options:	Start-stop dimming
	Step-wise dimming

You can switch between the dimming versions "Start-Stop dimming" and "Step-wise dimming" via this parameter. "Start-Stop dimming" means that exactly two 4-bit telegrams for dimming are always sent out. For triggering of a dimming command, a telegram with the information "Dim by 100% brighter" or "Dim by 100% darker" is sent. When the rocker switch is released, the second telegram is sent out with the "Dimming stop" information. Hence, a connected dimming actuator can be halted at any time during the dimming phase.

The second dimming procedure is step-wise dimming. A defined value, e.g. "Dim brighter by 6.25%" is always sent out for triggering of a dimming command. This dimming procedure can be utilised if dimming sensor and actuator are installed in different lines. In this case, telegram delays can occur through a coupler and thus varying brightness values if multiple dimming actuators are to be activated in different lines.

8.2.10 Dimming - Step size for step-wise dimming

Options:	1.56
	3.13
	6.25
	12.5
	25
	50

This parameter is only visible if the parameter "Manner of dimming" is set on "Step-wise dimming".

Via the "Step size for dimming" setting you can specify by how much brighter or darker dimming should occur. The value sent out always relates to the current brightness value.

For example:

A dimming actuator is currently dimmed to a brightness value of 70%. By operation of the rocker, a dimming command "Dim by 12.5 % brighter" (step size for step-wise dimming: 12.5%) is sent out. The dimming actuator will adjust its brightness value to 82.5% immediately after receiving the dimming command.

NOTE

If the step-wise dimming is to be used to evenly dim multiple dimming actuators in different lines, a relatively low step size is to be selected e.g. 3.13% and a cyclical repeat activated at the same time. Dimming telegrams are thus sent out continuously as long as the rocker is being operated.

8.2.11 Dimming - Dimming function

Options:	Short operation dimming, long operation switching
	Short operation switching, long operation dimming

This parameter is only visible if the parameter "Manner of dimming" is set on "Step-wise dimming". The basic function of dimming can be determined via the "Dimming function" parameter. You can set whether a switching telegram will be sent out for a short operation of the rocker switch and a dimming telegram will be sent out for a long operation or whether a long operation will cause a switching telegram to be sent out and a short operation will cause a dimming telegram to be sent out.

8.2.12 Dimming - Cyclic sending of the dimming telegrams

Options:	Inactive
	Active

This parameter is only visible if the parameter "Dimming function" is set on "Short operation switching, long operation dimming". If the parameter "Cyclical sending of the dimming telegrams" is activated, dimming telegrams will be sent out cyclically on the 4-bit communication object "Dimming" as long as the rocker switch is operated. After releasing the rocker, the cyclical sending of the dimming telegrams is immediately stopped. The cycle time is specified via the "Duration of the telegram repetition" parameter.

8.2.13 Dimming - Duration of telegram repetition

Options:	0.1 - 0.4 - 5.0

If the parameter "Cyclical sending of the dimming telegrams" is activated, dimming telegrams will be sent out cyclically on the 4-bit communication object "Dimming" as long as the rocker switch is operated. After releasing the rocker, the cyclical sending of the dimming telegrams is immediately stopped. The cycle time is specified via the "Duration of the telegram repetition" parameter.

8.2.14 Dimming - Enable object

Options:	Inactive
	Active

If the "Enable object" parameter is set to "active", the function can temporarily be blocked via the the 1-bit communication object "Enable". The function is active if an ON telegram is received on the 1-bit communication object "Enable". The function is blocked if an OFF telegram is received on the 1-bit communication object "Enable". This means that after an actuation, a telegram is no longer sent out.

8.2.15 Dimming - Object value enable

Options:	Normal
	Inverse

This parameter is only adjustable with activated enable object.

The enable function normally functions as follows:

The function is active if an ON telegram is received on the 1-bit communication object "Enable". The function is blocked if an OFF telegram is received on the 1-bit communication object "Enable".

Via the "Object value enable" parameter, the behaviour described above can be inverted. This means that the function is blocked if an ON telegram is received on the 1-bit communication object "Enable". The function is active if an OFF telegram is received on the 1-bit communication object "Enable".

8.2.16 Dimming - Enable after bus voltage recovery

Options:	Blocked
	Enabled

This parameter is only adjustable with activated enable object.

The parameter "Behaviour enable after return of voltage" exists to permit a defined behaviour at the "Enable" communication object after a return of voltage. A determination is made here about whether a "1" ("enabled") or a "0" ("blocked") is present on the enable object after the return of voltage.

NOTE

If the logic of the enable function (parameter "object value enable") is set to "inverse", the behaviour is also inverted after the return of voltage. This means that if the parameter "Behaviour enable after return of voltage" is set to "enabled", and the "Object value enable" is at the same time parameterised to "inverse", then the function will initially not be active after the return of voltage. This must first be activated via the receipt of an OFF telegram on the enable object.

8.2.17 Blind

These parameters are only visible when parameter "Working mode of rocker" is set on "Rocker oriented" and the "Dimming" function has been set.

Via the application "Blind rocker switch left/right", blind movement and/or slats adjustment commands can be sent to connected blind actuators by short or long operation of the rocker switch. A short button press always triggers a slats adjustment or stop command and a long button press always triggers a travel command.

The control always remembers the last action performed on the side of the rocker that is assigned with the "Blind" application.

Example:

If a blind was lowered and halted at half height via a short button contact, then a renewed long button contact will raise the blind.

8.2.18 Blind - Duration of long operation (s)

Options:	0.3 - 0.4 - 3

A differentiation can be made between a short or long operation of the rocker. Via the "Duration of long operation (s)", the time is specified after which a long button press is recognised. By default, the rocker recognises a long press of the button if the operation occurs for at least 0.4 s. Any time from 0.3 to 3.0 seconds can be set.

8.2.19 Blind - Working mode of rocker

Options:	Left Up, right Down
	Left Down, right Up

The "Working mode of the rocker switch" determines whether operation of the left or right side of the rocker switch will send out commands for moving up or down.

8.2.20 Blind — Object type

Options:	1 bit
	1 byte 0 - 100%

Via the parameter object type, you can specify whether the blind control occurs via two 1-bit or two 1-byte communication objects "Move" and "Adjust".

If 1-byte was selected as object type, the communication objects can be connected with 1-byte position objects from blind actuators. Example: One side of the rocker could lower the blind to 50% with slats closed 50%, while the other rocker side can lower the blind to 80% with slats closed 100%.

8.2.21 Blind - Value for position down (%)

Options:	0 - 100

This parameter can only be set if "1 byte 0 - 100%" has been set as object type.

The position that a connected blind is to be lowered to is set via this parameter. The associated 1-byte "Move" communication object must hereby be connected with a 1-byte position object of a blind actuator. Percent values from 0% to 100% can be set in 1% steps. The value 0% means travel up completely; the value 100% means travel down completely.

8.2.22 Blind - Value for position up (%)

Options:	0 - 100

This parameter can only be set if "1 byte 0 - 100%" has been set as object type.

The position that a connected blind is to be raised to is set via this parameter. The associated 1-byte "Move" communication object must hereby be connected with a 1-byte position object of a blind actuator. Percent values from 0% to 100% can be set in 1% steps. The value 0% means travel up completely; the value 100% means travel down completely.

8.2.23 Blind - Value for slats position down (%)

Options:	0 - 50 - 100

This parameter can only be set if "1 byte 0 - 100%" has been set as object type.

The position that a connected blind slat is to be opened to is set via this parameter. The associated 1-byte "Adjust" communication object must hereby be connected with a 1-byte slat position object of a blind actuator. Percent values from 0% to 100% can be set in 1% steps. The value 0% means travel opened completely; the value 100% means closed completely.

8.2.24 Blind - Value for slats position up (%)

Options:	0 - 50 - 100

This parameter can only be set if "1- byte 0 - 100%" has been set as object type.

The position that a connected blind slat is to be closed to is set via this parameter. The associated 1-byte "Adjust" communication object must hereby be connected with a 1-byte slat position object of a blind actuator. Percent values from 0% to 100% can be set in 1% steps. The value 0% means travel opened completely; the value 100% means closed completely.

8.2.25 Blind - Enable object

Options:	Inactive
	Active

If the "Enable object" parameter is set to "active", the function can temporarily be blocked via the the 1-bit communication object "Enable". The function is active if an ON telegram is received on the 1-bit communication object "Enable". The function is blocked if an OFF telegram is received on the 1-bit communication object "Enable". This means that after an actuation, a telegram is no longer sent out.

8.2.26 Blind - Object value enable

Options:	Normal
	Inverse

This parameter is only adjustable with activated enable object.

The enable function normally functions as follows:

The function is active if an ON telegram is received on the 1-bit communication object "Enable". The function is blocked if an OFF telegram is received on the 1-bit communication object "Enable".

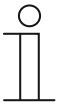
Via the "Object value enable" parameter, the behaviour described above can be inverted. This means that the function is blocked if an ON telegram is received on the 1-bit communication object "Enable". The function is active if an OFF telegram is received on the 1-bit communication object "Enable".

8.2.27 Blind - Enable after bus voltage recovery

Options:	Blocked
	Enabled

This parameter is only adjustable with activated enable object.

The parameter "Behaviour enable after return of voltage" exists to permit a defined behaviour at the "Enable" communication object after a return of voltage. A determination is made here about whether a "1" ("enabled") or a "0" ("blocked") is present on the enable object after the return of voltage.



NOTE

If the logic of the enable function (parameter "object value enable") is set to "inverse", the behaviour is also inverted after the return of voltage. This means that if the parameter "Behaviour enable after return of voltage" is set to "enabled", and the "Object value enable" is at the same time parameterised to "inverse", then the function will initially not be active after the return of voltage. This must first be activated via the receipt of an OFF telegram on the enable object.

8.2.28 Value transmitter

These parameters are only visible when parameter "Working mode of rocker" is set on "Rocker oriented" and the "Value transmitter" function has been set.

With the "Value transmitter, rocker total" application, a telegram with the predefined value is sent out for an operation of the right or left side of the rocker switch. The "Value transmitter" application differentiates here between whether the rocker switch is operated on the left or right side.

8.2.29 Value transmitter — Object type

Options:	1 bit
	1 byte 0 - 100%
	1 byte 0 - 255
	2-byte float
	2-byte signed
	2-byte unsigned
	4-byte signed
	4-byte unsigned

The application "Value transmitter" makes its own communication object available for the rocker switch for the "Value switching". The bit size of the communication object is specified via the "Object type" parameter. For the most diverse applications, the bit size of the communication objects can be adapted from "1 bit" up to "4-byte unsigned" via "Object type for object …".

1 bit: switching functions (on/off, enabled/blocked, true/untrue, …)

- 1 byte 0 - 100%: percentage values (0 = 0%, 255 = 100%)
- 1 byte 0 - 255%: arbitrary values from 0 to 255
- 2-byte float: floating point value (physical values such as temperature, brightness, …)
- 2-byte signed: arbitrary values from -32,768 to 32,767
- 2-byte unsigned: arbitrary values from 0 to 65,535
- 4-byte signed: arbitrary values from -2,147,483,648 to 2,147,483,647
- 4-byte unsigned: arbitrary values from 0 to 4,294,967,295

8.2.30 Value transmitter - Working mode of the rocker switch

Options:	Left Value1, right Value2
	Left Value2, right Value1
	Alternating value 1/value 2

The "Working mode of the rocker switch" application determines whether the right or the left side of the rocker switch sends out the "Value 1" or "Value 2". With the behaviour "Alternating Value1/Value2", switching is always between value 1 and value 2. That means, for example, if value 1 was last sent out, then a renewed operation of the rocker switch will send out value 2. When the rocker is operated again, value 1 is again sent out, etc. The rocker thus always remembers the last state and then switches over to the other value.

This also applies for values that are received via the associated communication object, i.e. if value 1 was sent out for the last rocker switch operation, thereafter value 2 was received via the communication object, the next operation of the rocker switch will send out value 1 again. It must be observed here that the S-flag (writing) of the communication object is activated.

8.2.31 Value transmitter, Value 1 (1 bit)

Options:	Off
	On

This object is only adjustable if the object type parameter is set to 1 bit.

Value 1 (on or off) is specified here, which is sent out for an operation of the right or left side of the rocker. This could be an ON or an OFF telegram, so that connected switching actuators can be switched. The sent out signal could, however, also call up an enable or block or operate a logical function for example.

8.2.32 Value transmitter - Value 2 (1 bit)

Options:	Off
	On

This object is only adjustable if the object type parameter is set to 1 bit.

Value 2 (on or off) is specified here, which is sent out for an operation of the right or left side of the rocker. This could be an ON or an OFF telegram, so that connected switching actuators can be switched. The sent out signal could, however, also call up an enable or block or operate a logical function for example.

8.2.33 Value transmitter - Value 1, 1 byte (0 - 100%)

Options:	0 - 100

This parameter is only adjustable if the object type parameter is set to "1 byte 0 - 100%.

Value 1 is specified here, which is sent out for an operation of the right or left side of the rocker. This can be a percent value from 0% to 100% (adjustable in 1% steps).

8.2.34 Value transmitter - Value 2, 1 byte (0 - 100%)

Options:	0 - 100

This parameter is only adjustable if the object type parameter is set to "1 byte 0 - 100%.

Value 2 is specified here, which is sent out for an operation of the right or left side of the rocker. This can be a percent value from 0% to 100% (adjustable in 1% steps).

8.2.35 Value transmitter - Value 1, 1 byte (0 - 255)

Options:	0 - 255

This object is only adjustable if the object type parameter is set to 1 byte 0 - 255.

Value 1 is specified here, which is sent out for an operation of the right or left side of the rocker. This can be any value from 0 to 255.

8.2.36 Value transmitter - Value 2, 1 byte (0 - 255)

Options:	0 - 255

This object is only adjustable if the object type parameter is set to 1 byte 0 - 255.

Value 2 is specified here, which is sent out for an operation of the right or left side of the rocker. This can be any value from 0 to 255.

8.2.37 Value transmitter - Value 1 (2-byte float x factor 0.1)

Options:	0 - 6707600

This parameter can only be set if the object type parameter is set to 2-byte float (floating point value).

Value 1 is specified here, which is sent out for an operation of the right or left side of the rocker. This is a 2-byte floating point value which is used to transfer physical values.

8.2.38 Value transmitter - Value 2 (2-byte float x factor 0.1)

Options:	0 - 6707600

This parameter can only be set if the object type parameter is set to 2-byte float.

Value 2 is specified here, which is sent out for an operation of the right or left side of the rocker. This is a 2-byte floating point value which is used to transfer physical values.

8.2.39 Value transmitter - Value 1 (2-byte signed)

Options:	-32,768 - 0 - 32,767

This parameter can only be set if the object type parameter is set to 2-byte signed.

Value 1 is specified here, which is sent out for an operation of the right or left side of the rocker. This is a signed 2-byte value, that can assume arbitrary values from -32,768 to 32,767.

8.2.40 Value transmitter - Value 2 (2-byte signed)

Options:	-32,768 - 0 - 32,767

This parameter can only be set if the object type parameter is set to 2-byte signed.

Value 2 is specified here, which is sent out for an operation of the right or left side of the rocker. This is a signed 2-byte value, that can assume arbitrary values from -32,768 to 32,767.

8.2.41 Value transmitter - Value 1 (2-byte unsigned)

Options:	0 - 65,535

This parameter can only be set if the object type parameter is set to 2 byte unsigned.

Value 1 is specified here, which is sent out for an operation of the right or left side of the rocker. This is a 2-byte value, that can assume arbitrary values from 0 to 65,535.

8.2.42 Value transmitter - Value 2 (2-byte unsigned)

Options:	0 - 65,535

This parameter can only be set if the object type parameter is set to 2 byte unsigned.

Value 2 is specified here, which is sent out for an operation of the right or left side of the rocker. This is a 2-byte value, that can assume arbitrary values from 0 to 65,535.

8.2.43 Value transmitter - Value 1 (4-byte signed)

Options:	-2,147,483,648 - 0 - 2,147,483,647

This parameter can only be set if the object type parameter is set to 4-byte signed.

Value 1 is specified here, which is sent out for an operation of the right or left side of the rocker. This is a signed 4-byte value, that can assume arbitrary values from -2,147,483,648 to 2,147,483,647.

8.2.44 Value transmitter - Value 2 (4-byte signed)

Options:	-2,147,483,648 - 0 - 2,147,483,647

This parameter can only be set if the object type parameter is set to 4-byte signed.

Value 2 is specified here, which is sent out for an operation of the right or left side of the rocker. This is a signed 4-byte value, that can assume arbitrary values from -2,147,483,648 to 2,147,483,647.

8.2.45 Value transmitter - Value 1 (4-byte unsigned)

Options:	0 - 4,294,967,295

This parameter can only be set if the object type parameter is set to 4 byte unsigned.

Value 1 is specified here, which is sent out for an operation of the right or left side of the rocker. This is a 4-byte value, that can assume arbitrary values from 0 to 4,294,967,295.

8.2.46 Value transmitter - Value 2 (4-byte unsigned)

Options:	0 - 4,294,967,295

This parameter can only be set if the object type parameter is set to 4 byte unsigned.

Value 2 is specified here, which is sent out for an operation of the right or left side of the rocker. This is a 4-byte value, that can assume arbitrary values from 0 to 4,294,967,295.

8.2.47 Value transmitter - Enable object

Options:	Inactive
	Active

If the "Enable object" parameter is set to "active", the function can temporarily be blocked via the 1-bit communication object "Enable". The function is active if an ON telegram is received on the 1-bit communication object "Enable". The function is blocked if an OFF telegram is received on the 1-bit communication object "Enable". This means that after an actuation, a telegram is no longer sent out.

8.2.48 Value transmitter — Object value enable

Options:	Normal
	Inverse

This parameter is only adjustable with activated enable object.

The enable function normally functions as follows:

The function is active if an ON telegram is received on the 1-bit communication object "Enable". The function is blocked if an OFF telegram is received on the 1-bit communication object "Enable".

Via the "Object value enable" parameter, the behaviour described above can be inverted. This means that the function is blocked if an ON telegram is received on the 1-bit communication object "Enable". The function is active if an OFF telegram is received on the 1-bit communication object "Enable".

8.2.49 Value transmitter - Enable after bus voltage recovery

Options:	Blocked
	Enabled

This parameter is only adjustable with activated enable object.

The parameter "Behaviour enable after return of voltage" exists to permit a defined behaviour at the "Enable" communication object after a return of voltage. A determination is made here about whether a "1" ("enabled") or a "0" ("blocked") is present on the enable object after the return of voltage.

NOTE

If the logic of the enable function (parameter "object value enable") is set to "inverse", the behaviour is also inverted after the return of voltage. This means that if the parameter "Behaviour enable after return of voltage" is set to "enabled", and the "Object value enable" is at the same time parameterised to "inverse", then the function will initially not be active after the return of voltage. This must first be activated via the receipt of an OFF telegram on the enable object.

8.2.50 Value dimming sensor

With the "2-button value dimming sensor" application it is possible to send 1-byte value telegrams via an operation of the rocker. Each operation of the left or right side of the rocker will increase or reduce a value. The 1-byte value can be connected with 1-byte brightness value objects from dimming actuators. This allows a dimming actuator to be dimmed brighter or darker with the rocker via value telegrams. For example, temperature setpoints can be influenced with the 2-byte float value.

8.2.51 Value dimming sensor - Duration of long operation (s)

Options:	0.3 - 0.4 - 3

A differentiation can be made between a short or long operation of the rocker. Via the "Duration of long operation (s)", the time is specified after which a long button press is recognised. By default, the rocker recognises a long press of the button if the operation occurs for at least 0.4 s. Any time from 0.3 to 3.0 seconds can be set.

8.2.52 Value dimming sensor - Manner of dimming

Options:	Switch-type dimming
	Step-wise dimming

You can select between the two dimming versions "Switch-type dimming" and "Step-wise dimming" via this parameter.

"Switch-type dimming" means that with a short press of one rocker side the "Minimum value" and a long press of the other side the "Maximum value" is sent. A long press of the rocker side the value is raised or lowered by the "Step size".

The second dimming procedure is step-wise dimming. With step-wise dimming the triggering of a dimming command with a short press of the rocker side raises or lowers the value by the "Step size".

8.2.53 Value dimming sensor - Working mode of the rocker for switching

Options:	Left on, right off
	Left off, right on
	Alternating on/off

This parameter is only adjustable if the "Manner of dimming" parameter is set to "Switch-type dimming". "Working mode of the rocker for switching" is used to specify whether the "Minimum value" or the "Maximum value" is sent out with a short press of the left or the right side of the rocker. Alternatively, when selecting "Alternating on/off", you can switch between switching on and off with each short operation. This means that after a switch-on telegram is sent out (or received), a switch-off telegram is sent out for a renewed operation. After it is operated again, a switch-on telegram is sent out.

8.2.54 Value dimming sensor - Working mode of the rocker

Options:	Left darker, right brighter
	Left brighter, right darker

If the rocker switch is operated left or right, the value that is sent out from the communication object "Value" is increased or lowered.

Whether the operation of the rocker switch increases or lowers the value depends on the setting of the "Working mode of the rocker switch" parameter.

8.2.55 Value dimming sensor - Cyclic sending of the value dimming telegrams

Options:	Inactive
	Active

If the parameter "Cyclical sending of the value dimming telegrams" is activated, value telegrams will be sent out cyclically on the communication object "Value" as long as the rocker is operated. After releasing the rocker, the cyclical sending of the value telegrams is immediately stopped. The cycle time is specified via the "Duration of the telegram repetition" parameter.

8.2.56 Value dimming sensor - Duration of telegram repetition (s)

Options:	0.1 - 0.4 - 5.0

If the parameter "Cyclical sending of the value dimming telegrams" is activated, value telegrams will be sent out cyclically on the communication object "Value" as long as the rocker is operated. After releasing the rocker, the cyclical sending of the value telegrams is immediately stopped. The cycle time is specified via the "Duration of the telegram repetition" parameter.

8.2.57 Value dimming sensor - Object type

Options:	1 byte 0 - 100%
	1 byte 0 - 255
	2-byte float
	2-byte signed
	2-byte unsigned
	4-byte signed
	4-byte unsigned

The communication object "Value" is set via the "Object type" parameter. With the setting "1 byte 0 - 100%", the momentary value is increased or reduced by a specified percentage amount for every operation. With the setting "1 byte 0 - 255" and "2 byte float", the momentary value is increased or reduced by an absolute value for every operation.

How large the percentage value or the absolute value will be is specified via the "Step size" parameter.

8.2.58 Value dimming sensor - Minimum value 1 byte (0 - 100%)

Options:	0 - 100

This parameter is only adjustable if the "object type" parameter is set to "1 byte 0 - 100%".

If the sendable values are to be restricted to a specific value range, the smallest selectable value is specified via the "Minimum value" parameter which can be sent out via the "Value" communication object. An arbitrary specified value from 0 to 100 can be set as minimum value.

8.2.59 Value dimming sensor - Maximum value 1 byte (0 - 100%)

Options:	0 - 100

This parameter is only adjustable if the "object type" parameter is set to "1 byte 0 - 100%".

If the sendable values are to be restricted to a specific value range, the largest selectable value is specified via the "Maximum value" parameter which can be sent out via the "Value" communication object. An arbitrary specified value from 0 to 100 can be set as maximum value.

8.2.60 Value dimming sensor - Step size %

Options:	0 - 5 - 100

This parameter is only adjustable if the "object type" parameter is set to "1 byte 0 - 100%".

The size by which the momentary value is to be increased or reduced for an operation is set via the "Step size" parameter. A percentage value can be specified.

Example: The current value on the 1-byte communication object "Value" amounts to 40%. For a step size of "10%", the current value is increased from 40% to 50% for an operation (for an increase).

8.2.61 Value dimming sensor - Minimum value 1 byte (0 - 255)

Options:	0 - 255

This parameter is only adjustable if the "object type" parameter is set to "1 byte 0 - 255".

If the sendable values are to be restricted to a specific value range, the smallest selectable value is specified via the "Minimum value" parameter which can be sent out via the "Value" communication object. An arbitrary specified value from 0 to 255 can be set as minimum value.

8.2.62 Value dimming sensor - Maximum value 1 byte (0 - 255)

Options:	0 - 255

This parameter is only adjustable if the "object type" parameter is set to "1 byte 0 - 255".

If the sendable values are to be restricted to a specific value range, the largest selectable value is specified via the "Maximum value" parameter which can be sent out via the "Value" communication object. An arbitrary specified value from 0 to 255 can be set as maximum value.

8.2.63 Value dimming sensor - Step size

Options:	0 - 10 - 255

This parameter is only adjustable if the "object type" parameter is set to "1 byte 0 - 255".

The size by which the momentary value is to be increased or reduced for an operation is set via the "Step size" parameter. An absolute value from 1 to 255 can be specified. Example: The current value on the 1-byte communication object "Value" amounts to 100. For a step size of "20", the current value is increased from 100 to 120 for an operation (for an increase).

8.2.64 Value dimming sensor - Minimum value (2-byte float x factor 0.1)

Options:	-670760.64...670433.28

This parameter can only be set if the "Object type" parameter is set to "2-byte float" (floating point value).

If the sendable values are to be restricted to a specific value range, the smallest selectable value is specified via the "Minimum value" parameter which can be sent out via the "Value" communication object. A specified value from -670760.64 to 670433.28 can be set as minimum value.

8.2.65 Value dimming sensor - Maximum value (2-byte float x factor 0.1)

Options:	-670760.64 … 670433.28

This parameter can only be set if the "Object type" parameter is set to "2-byte float" (floating point value).

If the sendable values are to be restricted to a specific value range, the largest selectable value is specified via the "Maximum value" parameter which can be sent out via the "Value" communication object. A specified value from -670760.64 to 670433.28 can be set as maximum value.

8.2.66 Value dimming sensor - Step size (value x factor 0.1)

Options:	0 - 6707600

This parameter can only be set if the "Object type" parameter is set to "2-byte float" (floating point value).

The size by which the momentary value is to be increased or reduced for an operation is set via the "Step size" parameter. An absolute value from 0 to 67076.0 can be specified.

8.2.67 Value dimming sensor - Minimum value (2-byte signed)

Options:	-32,768 - 0 - 32,767

This parameter can only be set if the object type parameter is set to 2-byte signed.

Value 1 is specified here which, is sent out with a short operation of the rocker. This is a signed 2-byte value, that can assume arbitrary values from -32,768 to 32,767.

8.2.68 Value dimming sensor - Maximum value (2-byte signed)

Options:	-32,768 - 0 - 32,767

This parameter can only be set if the object type parameter is set to 2-byte signed.

Value 2 is specified here which, is sent out with a short operation of the rocker. This is a signed 2-byte value, that can assume arbitrary values from -32,768 to 32,767.

8.2.69 Value dimming sensor - Step size (2-byte signed)

Options:	-32,768 - 0 - 32,767

This parameter can only be set if the object type parameter is set to 2-byte signed.

Value 2 is specified here which, is sent out with a short operation of the rocker. This is a signed 2-byte value, that can assume arbitrary values from -32,768 to 32,767.

8.2.70 Value dimming sensor - Minimum value (2-byte unsigned)

Options:	0 - 65,535

This parameter can only be set if the object type parameter is set to 2-byte unsigned.

Value 1 is specified here which, is sent out with a short operation of the rocker. This is a 2-byte value, that can assume arbitrary values from 0 to 65,535.

8.2.71 Value dimming sensor - Maximum value (2-byte unsigned)

Options:	0 - 65,535

This parameter can only be set if the object type parameter is set to 2 byte unsigned.

Value 2 is specified here, which is sent out for an operation of the right or left side of the rocker. This is a 2-byte value, that can assume arbitrary values from 0 to 65,535.

8.2.72 Value dimming sensor - Step size (2-byte unsigned)

Options:	0 - 65,535

This parameter can only be set if the object type parameter is set to 2 byte unsigned.

Value 2 is specified here, which is sent out for an operation of the right or left side of the rocker. This is a 2-byte value, that can assume arbitrary values from 0 to 65,535.

8.2.73 Value dimming sensor - Minimum value (4-byte signed)

Options:	-2,147,483,648 - 0 - 2,147,483,647

This parameter can only be set if the object type parameter is set to 4-byte signed.

Value 1 is specified here, which is sent out for an operation of the right or left side of the rocker. This is a signed 4-byte value, that can assume arbitrary values from -2,147,483,648 to 2,147,483,647.

8.2.74 Value dimming sensor - Maximum value (4-byte signed)

Options:	-2,147,483,648 - 0 - 2,147,483,647

This parameter can only be set if the object type parameter is set to 4-byte signed.

Value 2 is specified here, which is sent out for an operation of the right or left side of the rocker. This is a signed 4-byte value, that can assume arbitrary values from -2,147,483,648 to 2,147,483,647.

8.2.75 Value dimming sensor - Step size (4-byte signed)

Options:	-2,147,483,648 - 0 - 2,147,483,647

This parameter can only be set if the object type parameter is set to 4-byte signed.

Value 2 is specified here, which is sent out for an operation of the right or left side of the rocker. This is a signed 4-byte value, that can assume arbitrary values from -2,147,483,648 to 2,147,483,647.

8.2.76 Value dimming sensor - Minimum value (4-byte unsigned)

Options:	0 - 4,294,967,295

This parameter can only be set if the object type parameter is set to 4 byte unsigned.

Value 1 is specified here, which is sent out for an operation of the right or left side of the rocker. This is a 4-byte value, that can assume arbitrary values from 0 to 4,294,967,295.

8.2.77 Value dimming sensor - Maximum value (4-byte unsigned)

Options:	0 - 4,294,967,295

This parameter can only be set if the object type parameter is set to 4 byte unsigned.

Value 2 is specified here, which is sent out for an operation of the right or left side of the rocker. This is a 4-byte value, that can assume arbitrary values from 0 to 4,294,967,295.

8.2.78 Value dimming sensor - Step size (4-byte unsigned)

Options:	0 - 4,294,967,295

This parameter can only be set if the object type parameter is set to 4 byte unsigned.

Value 2 is specified here, which is sent out for an operation of the right or left side of the rocker. This is a 4-byte value, that can assume arbitrary values from 0 to 4,294,967,295.

8.2.79 Value dimming sensor - Enable object

Options:	Inactive
	Active

If the "Enable object" parameter is set to "active", the function can temporarily be blocked via the the 1-bit communication object "Enable". The function is active if an ON telegram is received on the 1-bit communication object "Enable". The function is blocked if an OFF telegram is received on the 1-bit communication object "Enable". This means that after an actuation, a telegram is no longer sent out.

8.2.80 Value dimming sensor - Object value enable

Options:	Normal
	Inverse

This parameter is only adjustable with activated enable object.

The enable function normally functions as follows:

The function is active if an ON telegram is received on the 1-bit communication object "Enable". The function is blocked if an OFF telegram is received on the 1-bit communication object "Enable".

Via the "Object value enable" parameter, the behaviour described above can be inverted. This means that the function is blocked if an ON telegram is received on the 1-bit communication object "Enable". The function is active if an OFF telegram is received on the 1-bit communication object "Enable".

8.2.81 Value dimming sensor - Enable after bus voltage recovery

Options:	Blocked
	Enabled

This parameter is only adjustable with activated enable object.

The parameter "Behaviour enable after return of voltage" exists to permit a defined behaviour at the "Enable" communication object after a return of voltage. A determination is made here about whether a "1" ("enabled") or a "0" ("blocked") is present on the enable object after the return of voltage.

NOTE

If the logic of the enable function (parameter "object value enable") is set to "inverse", the behaviour is also inverted after the return of voltage. This means that if the parameter "Behaviour enable after return of voltage" is set to "enabled", and the "Object value enable" is at the same time parameterised to "inverse", then the function will initially not be active after the return of voltage. This must first be activated via the receipt of an OFF telegram on the enable object.

8.2.82 Step switch

The application "Step switch" facilitates step-type switching. This means that the user can trigger different switching processes with each new actuation of the left or right side of the rocker.

The application differentiates between whether the left or right side of the rocker switch was operated. Depending on the setting, a stage higher or a stage lower can thus be switched to.

NOTE

For perfect function, the values must increase from step to step. The value of Step 1 must thus be less than the value of Step 2, the value of Step 2 must be less than the value of Step 3, and so on. After a reset, the step switches are preset with values from Step 1. Up to five switching levels can be activated.

8.2.83 Step switch - Working mode of the rocker

Options:	Left down, right up
	Left up, right down

The "Working mode of the rocker switch" parameter specifies whether an operation of the left rocker switch side switches one stage up and an operation of the right rocker switch side switches one stage lower ("left up, right down") or vice versa (i.e. "left down, right up").

8.2.84 Step switch — Number of objects

Options:	1 - 3 - 5

The application can switch up to five levels. The number of the levels is specified via the "Number of objects" parameter.

8.2.85 Step switch - Object type

Options:	1 bit
	1 byte 0 - 100%
	1 byte 0 - 255
	2-byte float
	2-byte signed
	2-byte unsigned
	4-byte signed
	4-byte unsigned

The communication object "Value" is set via the "Object type" parameter. With the "1-bit" setting, the steps that are set according to the values under "Number of objects" are output via 1-bit communication objects. With setting "1 byte", the steps are output via a 1-byte communication object. With setting "2-byte float", the steps are output via a 2-byte float communication object, e.g. for temperature values.

8.2.86 Step switch - Bit pattern of the object values

Options:	x of n
	1 of n

This Parameter is only visible if the "Object type" is set to 1 bit.

The levels can be switched in two different bit patterns.

x of n (for 5 objects, object 0 to 4):

00000

10000

11000

11100

11110

11111

1 of n (for 5 objects, object 0 to 4):

00000

10000

01000

00100

00010

00001

8.2.87 Step switch - Step 1 - 5, 1 byte (0 - 100%)

Options:	0 - 10 - 40 - 70 - 80 - 100

This parameter is only adjustable if the "Object type" parameter is set to 1 byte 0 - 100%.

The value is specified here that is sent out with a short operation of the rocker in dependence of the selected level. This can be a percentage value from 0% to 100%.

8.2.88 Step switch - Step 1 - 5, 1 byte (0 - 255)

Options:	0 - 50 - 100 - 150 - 200 -255

This parameter is only adjustable if the "Object type" parameter is set to 1 byte 0 - 255.

The value is specified here that is sent out with a short operation of the rocker in dependence of the selected level. This can be any value from 0 to 255.

8.2.89 Step switch - Step 1 - 5 (2-byte float x factor 0.1)

Options:	-670760.64 - 70433.28

This parameter can only be set if the "Object type" parameter is set to 2-byte float.

The value is specified here that is sent out with a short operation of the rocker in dependence of the selected level. This can be any value from -670760.64 to 670433.28.

8.2.90 Step switch - Step 1 - 5 (2-byte signed)

Options:	-32,768 - 0 - 32,767

This parameter can only be set if the object type parameter is set to 2-byte signed.

Value 1 is specified here which, is sent out with a short operation of the rocker. This is a signed 2-byte value, that can assume arbitrary values from -32,768 to 32,767.

8.2.91 Step switch - Step 1 - 5 (2-byte unsigned)

Options:	0 - 65,535

This parameter can only be set if the object type parameter is set to 2-byte unsigned.

Value 1 is specified here which, is sent out with a short operation of the rocker. This is a 2-byte value, that can assume arbitrary values from 0 to 65,535.

8.2.92 Step switch - Step 1 - 5 (4-byte signed)

Options:	-2,147,483,648 - 0 - 2,147,483,647

This parameter can only be set if the object type parameter is set to 4-byte signed.

Value 1 is specified here, which is sent out for an operation of the right or left side of the rocker. This is a signed 4-byte value, that can assume arbitrary values from -2,147,483,648 to 2,147,483,647.

8.2.93 Step switch - Step 1 - 5 (4-byte unsigned)

Options:	0 - 4,294,967,295

This parameter can only be set if the object type parameter is set to 4-byte unsigned.

Value 1 is specified here, which is sent out for an operation of the right or left side of the rocker. This is a 4-byte value, that can assume arbitrary values from 0 to 4,294,967,295.

8.2.94 Step switch - Enable object

Options:	Inactive
	Active

If the "Enable object" parameter is set to "active", the function can temporarily be blocked via the the 1-bit communication object "Enable". The function is active if an ON telegram is received on the 1-bit communication object "Enable". The function is blocked if an OFF telegram is received on the 1-bit communication object "Enable". This means that after an actuation, a telegram is no longer sent out.

8.2.95 Step switch - Object value enable

Options:	Normal
	Inverse

This parameter is only adjustable with activated enable object.

The enable function normally functions as follows:

The function is active if an ON telegram is received on the 1-bit communication object "Enable". The function is blocked if an OFF telegram is received on the 1-bit communication object "Enable".

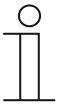
Via the "Object value enable" parameter, the behaviour described above can be inverted. This means that the function is blocked if an ON telegram is received on the 1-bit communication object "Enable". The function is active if an OFF telegram is received on the 1-bit communication object "Enable".

8.2.96 Step switch - Enable after bus voltage recovery

Options:	Blocked
	Enabled

This parameter is only adjustable with activated enable object.

The parameter "Behaviour enable after return of voltage" exists to permit a defined behaviour at the "Enable" communication object after a return of voltage. A determination is made here about whether a "1" ("enabled") or a "0" ("blocked") is present on the enable object after the return of voltage.



NOTE

If the logic of the enable function (parameter "object value enable") is set to "inverse", the behaviour is also inverted after the return of voltage. This means that if the parameter "Behaviour enable after return of voltage" is set to "enabled", and the "Object value enable" is at the same time parameterised to "inverse", then the function will initially not be active after the return of voltage. This must first be activated via the receipt of an OFF telegram on the enable object.

8.2.97 Setpoint adjustment of the internal RTC

Setting the application "Setpoint adjustment of the internal RTC" is possible only on devices with integrated RTC (3gang, 5gang). This selection can make the setpoint adjustment of the RTC also accessible at the operating level. However, the individual parameter settings are still made via the parameter pages of the RTC.

8.2.98 Setpoint adjustment of the internal RTC - Enable object

Options:	Inactive
	Active

If the "Enable object" parameter is set to "active", the function can temporarily be blocked via the the 1-bit communication object "Enable". The function is active if an ON telegram is received on the 1-bit communication object "Enable". The function is blocked if an OFF telegram is received on the 1-bit communication object "Enable". This means that after an actuation, a telegram is no longer sent out.

8.2.99 Setpoint adjustment of the internal RTC - Object value enable

Options:	Normal
	Inverse

This parameter is only adjustable with activated enable object.

The enable function normally functions as follows:

The function is active if an ON telegram is received on the 1-bit communication object "Enable". The function is blocked if an OFF telegram is received on the 1-bit communication object "Enable".

Via the "Object value enable" parameter, the behaviour described above can be inverted. This means that the function is blocked if an ON telegram is received on the 1-bit communication object "Enable". The function is active if an OFF telegram is received on the 1-bit communication object "Enable".

8.2.100 Setpoint adjustment of the internal RTC - Enable after bus voltage recovery

Options:	Blocked
	Enabled

This parameter is only adjustable with activated enable object.

The parameter "Behaviour enable after return of voltage" exists to permit a defined behaviour at the "Enable" communication object after a return of voltage. A determination is made here about whether a "1" ("enabled") or a "0" ("blocked") is present on the enable object after the return of voltage.

NOTE

If the logic of the enable function (parameter "object value enable") is set to "inverse", the behaviour is also inverted after the return of voltage. This means that if the parameter "Behaviour enable after return of voltage" is set to "enabled", and the "Object value enable" is at the same time parameterised to "inverse", then the function will initially not be active after the return of voltage. This must first be activated via the receipt of an OFF telegram on the enable object.

8.2.101 Operating modes / fan stage switchover of the internal RTC

Setting the application "Operating mode switchover/fan stage switchover of the internal RTC" is possible only on devices with integrated RTC (3gang, 5gang). This selection can make the operating mode switchover/fan stage switchover of the RTC also accessible at the operating level. However, the individual parameter settings are still made via the parameter pages of the RTC.

8.2.102 Operating modes / fan stage switchover of the internal RTC - Enable object

Options:	Inactive
	Active

If the "Enable object" parameter is set to "active", the function can temporarily be blocked via the the 1-bit communication object "Enable". The function is active if an ON telegram is received on the 1-bit communication object "Enable". The function is blocked if an OFF telegram is received on the 1-bit communication object "Enable". This means that after an actuation, a telegram is no longer sent out.

8.2.103 Operating modes / fan stage switchover of the internal RTC - Object value enable

Options:	Normal
	Inverse

This parameter is only adjustable with activated enable object.

The enable function normally functions as follows:

The function is active if an ON telegram is received on the 1-bit communication object "Enable". The function is blocked if an OFF telegram is received on the 1-bit communication object "Enable".

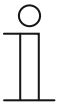
Via the "Object value enable" parameter, the behaviour described above can be inverted. This means that the function is blocked if an ON telegram is received on the 1-bit communication object "Enable". The function is active if an OFF telegram is received on the 1-bit communication object "Enable".

8.2.104 Operating modes / fan stage switchover of the internal RTC - Enable after bus voltage recovery

Options:	Blocked
	Enabled

This parameter is only adjustable with activated enable object.

The parameter "Behaviour enable after return of voltage" exists to permit a defined behaviour at the "Enable" communication object after a return of voltage. A determination is made here about whether a "1" ("enabled") or a "0" ("blocked") is present on the enable object after the return of voltage.



NOTE

If the logic of the enable function (parameter "object value enable") is set to "inverse", the behaviour is also inverted after the return of voltage. This means that if the parameter "Behaviour enable after return of voltage" is set to "enabled", and the "Object value enable" is at the same time parameterised to "inverse", then the function will initially not be active after the return of voltage. This must first be activated via the receipt of an OFF telegram on the enable object.

8.3 Application "Rocker 1 – 5 left / right / shift key"

8.3.1 Function of rocker 1 - 5 left, rocker 1 - 5 right, shift key — overview

Options:	Switching
	Dimming
	Roller shutter
	Value transmitter
	Light scene extension unit with memory function
	Step switch
	Short-long operation
	Setting the RTC operating mode

These channels are only visible when parameter "Working mode of rocker" is set on "button-oriented".

Additional parameters (see parameter description of rockers) are displayed depending on the set function.

Additional function of the shift key for control elements with integrated RTC:

- Changeover to the setting level

8.3.2 Switching

With the application "Switching" a switching telegram is sent when the rocker is actuated and/or released.

The application can differentiate between the operation and the releasing of the rocker. An operation is designated as "Rising edge" and the releasing is designated as "Falling edge".

8.3.3 Switching - Reaction on rising edge

Options:	On
	Off
	Alternating on/off
	Inactive

Via the parameter "Reaction on rising edge", you can set which 1-bit value is sent out for every operation. This can be an ON telegram ("Switch on"), an OFF telegram ("Switch off") or a toggle telegram ("alternating on/off"). Alternatively, no telegram can be sent out for a rocker operation using the "No reaction" setting.

8.3.4 Switching - Reaction on falling edge

Options:	On
	Off
	Alternating on/off
	Inactive

Via the parameter "Reaction on falling edge", you can set which 1-bit value is sent out for every release. This can be an ON telegram ("Switch on"), an OFF telegram ("Switch off") or a toggle telegram ("alternating on/off"). Alternatively, no telegram can be sent out for a rocker releasing using the "No reaction" setting.

8.3.5 Switching - Enable object

Options:	Inactive
	Active

If the "Enable object" parameter is set to "active", the function can temporarily be blocked via the the 1-bit communication object "Enable". The function is active if an ON telegram is received on the 1-bit communication object "Enable". The function is blocked if an OFF telegram is received on the 1-bit communication object "Enable". This means that after an actuation, a telegram is no longer sent out.

8.3.6 Switching - Object value enable

Options:	Normal
	Inverse

This parameter is only adjustable with activated enable object.

The enable function normally functions as follows:

The function is active if an ON telegram is received on the 1-bit communication object "Enable". The function is blocked if an OFF telegram is received on the 1-bit communication object "Enable".

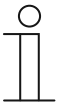
Via the "Object value enable" parameter, the behaviour described above can be inverted. This means that the function is blocked if an ON telegram is received on the 1-bit communication object "Enable". The function is active if an OFF telegram is received on the 1-bit communication object "Enable".

8.3.7 Switching - Enable after bus voltage recovery

Options:	Blocked
	Enabled

This parameter is only adjustable with activated enable object.

The parameter "Behaviour enable after return of voltage" exists to permit a defined behaviour at the "Enable" communication object after a return of voltage. A determination is made here about whether a "1" ("enabled") or a "0" ("blocked") is present on the enable object after the return of voltage.



NOTE

If the logic of the enable function (parameter "object value enable") is set to "inverse", the behaviour is also inverted after the return of voltage. This means that if the parameter "Behaviour enable after return of voltage" is set to "enabled", and the "Object value enable" is at the same time parameterised to "inverse", then the function will initially not be active after the return of voltage. This must first be activated via the receipt of an OFF telegram on the enable object.

8.3.8 Dimming

With the application "Dimming", a switching and/or dimming telegram is sent when the rocker is actuated. A distinction is made between short (switching) and long (dimming) button presses.

8.3.9 Dimming - Duration of long operation (s)

Options:	0.3 - 0.4 - 3.0

A short and long operation can be differentiated between for the operation of the rocker. For a short operation of the rocker switch, a "Switching" switching telegram is sent out on the 1-bit communication object. For a long operation of the rocker switch, a "Relative dimming" dimming telegram is sent out on the 4-bit communication object.

Via the "Duration of long operation (s)", the time is determined after which a long button press is recognised. By default, the rocker recognises a long press of the button if the operation occurs for at least 0.4 s. Any time from 0.3 to 3.0 seconds can be set.

8.3.10 Dimming - Working mode of the rocker for switching

Options:	On
	Off
	Alternating on/off
	Inactive

For a short operation of the rocker, a switching telegram is sent out on the 1-bit communication object "Switching". The "Working mode of the rocker for switching" is used to specify whether a short operation sends out an ON or an OFF telegram. Alternatively, when selecting "Alternating on/off", you can switch between switching on and off with each short operation. This means that after a switch-on telegram is sent out (or received), a switch-off telegram is sent out for a renewed operation. After it is operated again, a switch-on telegram is sent out.

8.3.11 Dimming - Working mode of the rocker for switching

Options:	Darker
	Brighter
	Alternating brighter/darker

For a long operation of the rocker switch, a "Relative dimming" dimming telegram is sent out on the 4-bit communication object.

The "Working mode of the rocker for dimming" is used to specify whether a long operation sends out dim brighter or dim darker telegram. Alternatively, when selecting "Alternating brighter/darker", you can switch between dimming brighter and darker with each long operation. This means that after a dim brighter telegram has been sent out (or received), a dim darker telegram will be sent out for a renewed operation. After it is operated again, a dim brighter telegram is sent out.

8.3.12 Dimming - Manner of dimming

Options:	Start-stop dimming
	Step-wise dimming

You can switch between the dimming versions "Start-Stop dimming" and "Step-wise dimming" via this parameter. "Start-Stop dimming" means that exactly two 4-bit telegrams for dimming are always sent out. For triggering of a dimming command, a telegram with the information "Dim by 100% brighter" or "Dim by 100% darker" is sent. When the rocker switch is released, the second telegram is sent out with the "Dimming stop" information. Hence, a connected dimming actuator can be halted at any time during the dimming phase.

The second dimming procedure is step-wise dimming. A defined value, e.g. "Dim brighter by 6.25%" is always sent out for triggering of a dimming command. This dimming procedure can be utilised if dimming sensor and actuator are installed in different lines. In this case, telegram delays can occur through a coupler and thus varying brightness values if multiple dimming actuators are to be activated in different lines.

8.3.13 Dimming - Step size for step-wise dimming

Options:	1.56
	3.13
	6.25
	12.5
	25
	50

This parameter is only visible if the parameter "Manner of dimming" is set on "Step-wise dimming".

Via the "Step size for dimming" setting you can specify by how much brighter or darker dimming should occur. The value sent out always relates to the current brightness value.

For example:

A dimming actuator is currently dimmed to a brightness value of 70%. By operation of the rocker, a dimming command "Dim by 12.5 % brighter" (step size for step-wise dimming: 12.5%) is sent out. The dimming actuator will adjust its brightness value to 82.5% immediately after receiving the dimming command.

NOTE

If the step-wise dimming is to be used to evenly dim multiple dimming actuators in different lines, a relatively low step size is to be selected e.g. 3.13% and a cyclical repeat activated at the same time. Dimming telegrams are thus sent out continuously as long as the rocker is being operated.

8.3.14 Dimming - Dimming function

Options:	Short operation dimming, long operation switching
	Short operation switching, long operation dimming

This parameter is only visible if the parameter "Manner of dimming" is set on "Step-wise dimming". The basic function of dimming can be determined via the "Dimming function" parameter. You can set whether a switching telegram will be sent out for a short operation of the rocker switch and a dimming telegram will be sent out for a long operation or whether a long operation will cause a switching telegram to be sent out and a short operation will cause a dimming telegram to be sent out.

8.3.15 Dimming - Cyclic sending of the dimming telegrams

Options:	Inactive
	Active

This parameter is only visible if the parameter "Dimming function" is set on "Short operation switching, long operation dimming". If the parameter "Cyclical sending of the dimming telegrams" is activated, dimming telegrams will be sent out cyclically on the 4-bit communication object "Dimming" as long as the rocker switch is operated. After releasing the rocker, the cyclical sending of the dimming telegrams is immediately stopped. The cycle time is specified via the "Duration of the telegram repetition" parameter.

8.3.16 Dimming - Duration of telegram repetition

Options:	0.1 - 0.4 - 5.0

If the parameter "Cyclical sending of the dimming telegrams" is activated, dimming telegrams will be sent out cyclically on the 4-bit communication object "Dimming" as long as the rocker switch is operated. After releasing the rocker, the cyclical sending of the dimming telegrams is immediately stopped. The cycle time is specified via the "Duration of the telegram repetition" parameter.

8.3.17 Dimming - Enable object

Options:	Inactive
	Active

If the "Enable object" parameter is set to "active", the function can temporarily be blocked via the the 1-bit communication object "Enable". The function is active if an ON telegram is received on the 1-bit communication object "Enable". The function is blocked if an OFF telegram is received on the 1-bit communication object "Enable". This means that after an actuation, a telegram is no longer sent out.

8.3.18 Dimming - Object value enable

Options:	Normal
	Inverse

This parameter is only adjustable with activated enable object.

The enable function normally functions as follows:

The function is active if an ON telegram is received on the 1-bit communication object "Enable". The function is blocked if an OFF telegram is received on the 1-bit communication object "Enable".

Via the "Object value enable" parameter, the behaviour described above can be inverted. This means that the function is blocked if an ON telegram is received on the 1-bit communication object "Enable". The function is active if an OFF telegram is received on the 1-bit communication object "Enable".

8.3.19 Dimming - Enable after bus voltage recovery

Options:	Blocked
	Enabled

This parameter is only adjustable with activated enable object.

The parameter "Behaviour enable after return of voltage" exists to permit a defined behaviour at the "Enable" communication object after a return of voltage. A determination is made here about whether a "1" ("enabled") or a "0" ("blocked") is present on the enable object after the return of voltage.

NOTE

If the logic of the enable function (parameter "object value enable") is set to "inverse", the behaviour is also inverted after the return of voltage. This means that if the parameter "Behaviour enable after return of voltage" is set to "enabled", and the "Object value enable" is at the same time parameterised to "inverse", then the function will initially not be active after the return of voltage. This must first be activated via the receipt of an OFF telegram on the enable object.

8.3.20 Roller shutter

Via the application "Roller shutter", blind movement and/or slats adjustment commands can be sent to connected blind actuators with a short or long operation of the rocker. A short button press always triggers a stop command and a long button press always triggers a travel command.

The control always remembers the last action performed on the side of the rocker that is assigned with the "Blind" application.

Example:

If a blind was lowered and halted at half height via a long button press, then a renewed short button press will raise the blind.

8.3.21 Roller shutter - Duration of long operation (s)

Options:	0.3 - 0.4 - 3.0

A short and long operation can be differentiated between for the operation of the rocker. For a short operation of the rocker switch, a "Switching" switching telegram is sent out on the 1-bit communication object. For a long operation of the rocker switch, a "Relative dimming" dimming telegram is sent out on the 4-bit communication object.

Via the "Duration of long operation (s)", the time is specified after which a long button press is recognised. By default, the rocker recognises a long press of the button if the operation occurs for at least 0.4 s. Any time from 0.3 to 3.0 seconds can be set.

8.3.22 Roller shutter - Enable object

Options:	Inactive
	Active

If the "Enable object" parameter is set to "active", the function can temporarily be blocked via the the 1-bit communication object "Enable". The function is active if an ON telegram is received on the 1-bit communication object "Enable". The function is blocked if an OFF telegram is received on the 1-bit communication object "Enable". This means that after an actuation, a telegram is no longer sent out.

8.3.23 Roller shutter - Object value enable

Options:	Normal
	Inverse

This parameter is only adjustable with activated enable object.

The enable function normally functions as follows:

The function is active if an ON telegram is received on the 1-bit communication object "Enable". The function is blocked if an OFF telegram is received on the 1-bit communication object "Enable".

Via the "Object value enable" parameter, the behaviour described above can be inverted. This means that the function is blocked if an ON telegram is received on the 1-bit communication object "Enable". The function is active if an OFF telegram is received on the 1-bit communication object "Enable".

8.3.24 Roller shutter - Enable after bus voltage recovery

Options:	Blocked
	Enabled

This parameter is only adjustable with activated enable object.

The parameter "Behaviour enable after return of voltage" exists to permit a defined behaviour at the "Enable" communication object after a return of voltage. A determination is made here about whether a "1" ("enabled") or a "0" ("blocked") is present on the enable object after the return of voltage.

NOTE

If the logic of the enable function (parameter "object value enable") is set to "inverse", the behaviour is also inverted after the return of voltage. This means that if the parameter "Behaviour enable after return of voltage" is set to "enabled", and the "Object value enable" is at the same time parameterised to "inverse", then the function will initially not be active after the return of voltage. This must first be activated via the receipt of an OFF telegram on the enable object.

8.3.25 Value transmitter

With the "Value transmitter" application, a telegram with the predefined value is sent out for an operation and/or upon release of the rocker.

8.3.26 Value transmitter — Object type

Options:	1 bit
	1 byte 0 - 100%
	1 byte 0 - 255
	2-byte float
	2-byte signed
	2-byte unsigned
	4-byte signed
	4-byte unsigned

The application "Value transmitter" makes its own communication object available for the rocker switch for the "Value switching". The bit size of the communication object is specified via the "Object type" parameter. For the most diverse applications, the bit size of the communication objects can be adapted from "1 bit" up to "4-byte unsigned" via "Object type for object …".

1 bit: switching functions (on/off, enabled/blocked, true/untrue, …)

- 1 byte 0 - 100%: percentage values (0 = 0%, 255 = 100%)
- 1 byte 0 - 255%: arbitrary values from 0 to 255
- 2-byte float: floating point value (physical values such as temperature, brightness, …)
- 2-byte signed: arbitrary values from -32,768 to 32,767
- 2-byte unsigned: arbitrary values from 0 to 65,535
- 4-byte signed: arbitrary values from -2,147,483,648 to 2,147,483,647
- 4-byte unsigned: arbitrary values from 0 to 4,294,967,295

8.3.27 Value transmitter - Reaction on rising edge

Options:	No reaction
	Value 1
	Value 2
	Alternating value 1/value 2

The application can differentiate between the operation and the releasing of the rocker. An operation is designated as "Rising edge" and the releasing is designated as "Falling edge".

Here it is specified whether the "Value 1" or the "Value 2" is sent out for a rising edge.

Alternatively, Value1/Value2 can also be alternating set for a rising edge, i.e. after a Value 1 was sent (or received), a renewed operation will send out a Value 2. After it is operated again, a Value 1 is again sent out.

The values 1 and 2 are specified via the parameters "Value 1" and "Value 2".

The "No reaction" setting causes no telegram to be sent out for a operation of the rocker.

8.3.28 Value transmitter - Reaction on falling edge

Options:	No reaction
	Value 1
	Value 2
	Alternating value 1/value 2

The application can differentiate between the operation and the releasing of the rocker. An operation is designated as "Rising edge" and the releasing is designated as "Falling edge".

Here it is specified whether the "Value 1" or the "Value 2" is sent out for a falling edge.

Alternatively, Value1/Value2 can also be alternating set for a falling edge, i.e. after a Value 1 was sent (or received), a renewed release will send out a Value 2. After it is released again, a Value 1 is again sent out.

The values 1 and 2 are specified via the parameters "Value 1" and "Value 2".

The "No reaction" setting causes no telegram to be sent out for a operation of the rocker.

8.3.29 Value transmitter, Value 1 (1 bit)

Options:	Off
	On

This object is only adjustable if the object type parameter is set to 1 bit.

Value 1 (on or off) is specified here, which is sent out for an operation of the right or left side of the rocker. This could be an ON or an OFF telegram, so that connected switching actuators can be switched. The sent out signal could, however, also call up an enable or block or operate a logical function for example.

8.3.30 Value transmitter - Value 2 (1 bit)

Options:	Off
	On

This object is only adjustable if the object type parameter is set to 1 bit.

Value 2 (on or off) is specified here, which is sent out for an operation of the right or left side of the rocker. This could be an ON or an OFF telegram, so that connected switching actuators can be switched. The sent out signal could, however, also call up an enable or block or operate a logical function for example.

8.3.31 Value transmitter - Value 1, 1 byte (0 - 100%)

Options:	0 - 100

This parameter is only adjustable if the object type parameter is set to "1 byte 0 - 100%.

Value 1 is specified here, which is sent out for an operation of the right or left side of the rocker. This can be a percent value from 0% to 100% (adjustable in 1% steps).

8.3.32 Value transmitter - Value 2, 1 byte (0 - 100%)

Options:	0 - 100

This parameter is only adjustable if the object type parameter is set to "1 byte 0 - 100%.

Value 2 is specified here, which is sent out for an operation of the right or left side of the rocker. This can be a percent value from 0% to 100% (adjustable in 1% steps).

8.3.33 Value transmitter - Value 1, 1 byte (0 - 255)

Options:	0 - 255

This object is only adjustable if the object type parameter is set to 1 byte 0 - 255.

Value 1 is specified here, which is sent out for an operation of the right or left side of the rocker. This can be any value from 0 to 255.

8.3.34 Value transmitter - Value 2, 1 byte (0 - 255)

Options:	0 - 255

This object is only adjustable if the object type parameter is set to 1 byte 0 - 255.

Value 2 is specified here, which is sent out for an operation of the right or left side of the rocker. This can be any value from 0 to 255.

8.3.35 Value transmitter - Value 1 (2-byte float x factor 0.1)

Options:	0 - 6707600

This parameter can only be set if the object type parameter is set to 2-byte float (floating point value).

Value 1 is specified here, which is sent out for an operation of the right or left side of the rocker. This is a 2-byte floating point value which is used to transfer physical values.

8.3.36 Value transmitter - Value 2 (2-byte float x factor 0.1)

Options:	0 - 6707600

This parameter can only be set if the object type parameter is set to 2-byte float.

Value 2 is specified here, which is sent out for an operation of the right or left side of the rocker. This is a 2-byte floating point value which is used to transfer physical values.

8.3.37 Value transmitter - Value 1 (2-byte signed)

Options:	-32,768 - 0 - 32,767

This parameter can only be set if the object type parameter is set to 2-byte signed.

Value 1 is specified here, which is sent out for an operation of the right or left side of the rocker. This is a signed 2-byte value, that can assume arbitrary values from -32,768 to 32,767.

8.3.38 Value transmitter - Value 2 (2-byte signed)

Options:	-32,768 - 0 - 32,767

This parameter can only be set if the object type parameter is set to 2-byte signed.

Value 2 is specified here, which is sent out for an operation of the right or left side of the rocker. This is a signed 2-byte value, that can assume arbitrary values from -32,768 to 32,767.

8.3.39 Value transmitter - Value 1 (2-byte unsigned)

Options:	0 - 65,535

This parameter can only be set if the object type parameter is set to 2 byte unsigned.

Value 1 is specified here, which is sent out for an operation of the right or left side of the rocker. This is a 2-byte value, that can assume arbitrary values from 0 to 65,535.

8.3.40 Value transmitter - Value 2 (2-byte unsigned)

Options:	0 - 65,535

This parameter can only be set if the object type parameter is set to 2 byte unsigned.

Value 2 is specified here, which is sent out for an operation of the right or left side of the rocker. This is a 2-byte value, that can assume arbitrary values from 0 to 65,535.

8.3.41 Value transmitter - Value 1 (4-byte signed)

Options:	-2,147,483,648 - 0 - 2,147,483,647

This parameter can only be set if the object type parameter is set to 4-byte signed.

Value 1 is specified here, which is sent out for an operation of the right or left side of the rocker. This is a signed 4-byte value, that can assume arbitrary values from -2,147,483,648 to 2,147,483,647.

8.3.42 Value transmitter - Value 2 (4-byte signed)

Options:	-2,147,483,648 - 0 - 2,147,483,647

This parameter can only be set if the object type parameter is set to 4-byte signed.

Value 2 is specified here, which is sent out for an operation of the right or left side of the rocker. This is a signed 4-byte value, that can assume arbitrary values from -2,147,483,648 to 2,147,483,647.

8.3.43 Value transmitter - Value 1 (4-byte unsigned)

Options:	0 - 4,294,967,295

This parameter can only be set if the object type parameter is set to 4 byte unsigned.

Value 1 is specified here, which is sent out for an operation of the right or left side of the rocker. This is a 4-byte value, that can assume arbitrary values from 0 to 4,294,967,295.

8.3.44 Value transmitter - Value 2 (4-byte unsigned)

Options:	0 - 4,294,967,295

This parameter can only be set if the object type parameter is set to 4 byte unsigned.

Value 2 is specified here, which is sent out for an operation of the right or left side of the rocker. This is a 4-byte value, that can assume arbitrary values from 0 to 4,294,967,295.

8.3.45 Value transmitter - Enable object

Options:	Inactive
	Active

If the "Enable object" parameter is set to "active", the function can temporarily be blocked via the 1-bit communication object "Enable". The function is active if an ON telegram is received on the 1-bit communication object "Enable". The function is blocked if an OFF telegram is received on the 1-bit communication object "Enable". This means that after an actuation, a telegram is no longer sent out.

8.3.46 Value transmitter — Object value enable

Options:	Normal
	Inverse

This parameter is only adjustable with activated enable object.

The enable function normally functions as follows:

The function is active if an ON telegram is received on the 1-bit communication object "Enable". The function is blocked if an OFF telegram is received on the 1-bit communication object "Enable".

Via the "Object value enable" parameter, the behaviour described above can be inverted. This means that the function is blocked if an ON telegram is received on the 1-bit communication object "Enable". The function is active if an OFF telegram is received on the 1-bit communication object "Enable".

8.3.47 Value transmitter - Enable after bus voltage recovery

Options:	Blocked
	Enabled

This parameter is only adjustable with activated enable object.

The parameter "Behaviour enable after return of voltage" exists to permit a defined behaviour at the "Enable" communication object after a return of voltage. A determination is made here about whether a "1" ("enabled") or a "0" ("blocked") is present on the enable object after the return of voltage.

NOTE

If the logic of the enable function (parameter "object value enable") is set to "inverse", the behaviour is also inverted after the return of voltage. This means that if the parameter "Behaviour enable after return of voltage" is set to "enabled", and the "Object value enable" is at the same time parameterised to "inverse", then the function will initially not be active after the return of voltage. This must first be activated via the receipt of an OFF telegram on the enable object.

8.3.48 Value transmitter, 2 objects

With the "Value transmitter, 2 objects" application, two telegrams with predefined values from two different communication objects can be sent out for an operation and/or upon release of the rocker.

8.3.49 Value transmitter, 2 objects — Object type for value 1

Options:	1 bit
	1 byte 0 - 100%
	1 byte 0 - 255
	2-byte float
	2-byte signed
	2-byte unsigned
	4-byte signed
	4-byte unsigned

The application "Value transmitter, 2 objects" makes two separate "Switching" communication objects available for the rocker. The bit size of the first communication object is specified via the "Object type for rising edge" parameter. For the most diverse applications, the bit size of the communication objects can be adapted from "1 bit" up to "4-byte unsigned" via "Object type for rising edge".

1 bit: switching functions (on/off, enabled/blocked, true/untrue, …)

- 1 byte 0 - 100 %: percentage values (0 = 0%, 255 = 100%)
- 1 byte 0 - 255%: arbitrary values from 0 to 255
- 2-byte float: floating point value (physical values such as temperature, brightness, …)
- 2-byte signed: arbitrary values from -32,768 to 32,767
- 2-byte unsigned: arbitrary values from 0 to 65,535
- 4-byte signed: arbitrary values from -2,147,483,648 to 2,147,483,647
- 4-byte unsigned: arbitrary values from 0 to 4,294,967,295

8.3.50 Value transmitter, 2 objects — Object type for value 2

Options:	1 bit
	1 byte 0 - 100%
	1 byte 0 - 255
	2-byte float
	2-byte signed
	2-byte unsigned
	4-byte signed
	4-byte unsigned

The application "Value transmitter, 2 objects" makes two separate "Switching" communication objects available for the rocker. The bit size of the second communication object is specified via the "Object type for falling edge" parameter. For the most diverse applications, the bit size of the communication objects can be adapted from "1 bit" up to "4-byte unsigned" via "Object type for falling edge".

8.3.51 Value transmitter, 2 objects - Reaction on rising edge

Options:	No reaction
	Value 1
	Value 2
	Alternating value1/value2

The application can differentiate between the operation and the releasing of the rocker. An operation is designated as "Rising edge" and the releasing is designated as "Falling edge".

Here it is specified whether the "Value 1" or the "Value 2" is sent out for a rising edge.

Alternatively, Value1/Value2 can also be alternating set for a rising edge, i.e. after a Value 1 was sent (or received), a renewed operation will send out a Value 2. After it is operated again, a Value 1 is again sent out.

The values 1 and 2 are specified via the parameters "Value 1" and "Value 2".

The "No reaction" setting causes no telegram to be sent out for a operation of the rocker.

8.3.52 Value transmitter, 2 objects - Value 1 (1 bit)

Options:	Off
	On

This object is only adjustable if the object type parameter is set to 1 bit.

Value 1 (on or off) is specified here, which is sent out for an operation of the right or left side of the rocker. This could be an ON or an OFF telegram, so that connected switching actuators can be switched. The sent out signal could, however, also call up an enable or block or operate a logical function for example.

8.3.53 Value transmitter, 2 objects - Value 2 (1 bit)

Options:	On
	Off

This parameter is only adjustable if the object type parameter is set to 1 bit.

Value 2 (on or off) is specified here, which is sent out for an operation of the right or left side of the rocker. This could be an ON or an OFF telegram, so that connected switching actuators can be switched. The sent out signal could, however, also call up an enable or block or operate a logical function for example.

8.3.54 Value transmitter, 2 objects - Value 1, 1 byte (0 - 100%)

Options:	0 - 100

This parameter is only adjustable if the object type parameter is set to "1 byte 0 - 100 %.

Value 1 is specified here, which is sent out for an operation of the right or left side of the rocker. This can be a percent value from 0% to 100% (adjustable in 1% steps).

8.3.55 Value transmitter, 2 objects - Value 2, 1 byte (0 - 100%)

Options:	0 - 100

This parameter is only adjustable if the object type parameter is set to "1 byte 0 - 100%.

Value 2 is specified here, which is sent out for an operation of the right or left side of the rocker. This can be a percent value from 0% to 100% (adjustable in 1% steps).

8.3.56 Value transmitter, 2 objects - Value 1, 1 byte (0 - 255)

Options:	0 - 255

This object is only adjustable if the object type parameter is set to 1 byte 0 - 255.

Value 1 is specified here, which is sent out for an operation of the right or left side of the rocker. This can be any value from 0 to 255.

8.3.57 Value transmitter, 2 objects - Value 2, 1 byte (0 - 255)

Options:	0 - 255

This object is only adjustable if the object type parameter is set to 1 byte 0 - 255.

Value 2 is specified here, which is sent out for an operation of the right or left side of the rocker. This can be any value from 0 to 255.

8.3.58 Value transmitter, 2 objects - Value 1 (2-byte float x factor 0.1)

Options:	0 - 6707600

This parameter can only be set if the object type parameter is set to 2-byte float (floating point value).

Value 1 is specified here, which is sent out for an operation of the right or left side of the rocker. This is a 2-byte floating point value which is used to transfer physical values.

8.3.59 Value transmitter, 2 objects - Value 2 (2-byte float x factor 0.1)

Options:	0 - 6707600

This parameter can only be set if the object type parameter is set to 2-byte float.

Value 2 is specified here, which is sent out for an operation of the right or left side of the rocker. This is a 2-byte floating point value which is used to transfer physical values.

8.3.60 Value transmitter, 2 objects - Value 1 (2-byte signed)

Options:	-32,768 - 0 - 32,767

This parameter can only be set if the object type parameter is set to 2-byte signed.

Value 1 is specified here, which is sent out for an operation of the right or left side of the rocker. This is a signed 2-byte value, that can assume arbitrary values from -32,768 to 32,767.

8.3.61 Value transmitter, 2 objects - Value 2 (2-byte signed)

Options:	-32,768 - 0 - 32,767

This parameter can only be set if the object type parameter is set to 2-byte signed.

Value 2 is specified here, which is sent out for an operation of the right or left side of the rocker. This is a signed 2-byte value, that can assume arbitrary values from -32,768 to 32,767.

8.3.62 Value transmitter, 2 objects - Value 1 (2-byte unsigned)

Options:	0 - 65,535

This parameter can only be set if the object type parameter is set to 2 byte unsigned.

Value 1 is specified here, which is sent out for an operation of the right or left side of the rocker. This is a 2-byte value, that can assume arbitrary values from 0 to 65,535.

8.3.63 Value transmitter, 2 objects - Value 2 (2-byte unsigned)

Options:	0 - 65,535

This parameter can only be set if the object type parameter is set to 2 byte unsigned.

Value 2 is specified here, which is sent out for an operation of the right or left side of the rocker. This is a 2-byte value, that can assume arbitrary values from 0 to 65,535.

8.3.64 Value transmitter, 2 objects - Value 1 (4-byte signed)

Options:	-2.147.483.648 - 0 - 2147483647

This parameter can only be set if the object type parameter is set to 4-byte signed.

Value 1 is specified here, which is sent out for an operation of the right or left side of the rocker. This is a signed 4-byte value, that can assume arbitrary values from -2,147,483,648 to 2,147,483,647.

8.3.65 Value transmitter, 2 objects - Value 2 (4-byte signed)

Options:	-2.147.483.648 - 0 - 2147483647

This parameter can only be set if the object type parameter is set to 4-byte signed.

Value 2 is specified here, which is sent out for an operation of the right or left side of the rocker. This is a signed 4-byte value, that can assume arbitrary values from -2,147,483,648 to 2,147,483,647.

8.3.66 Value transmitter, 2 objects - Value 1 (4-byte unsigned)

Options:	0 - 4,294,967,295

This parameter can only be set if the object type parameter is set to 4 byte unsigned.

Value 1 is specified here, which is sent out for an operation of the right or left side of the rocker. This is a 4-byte value, that can assume arbitrary values from 0 to 4,294,967,295.

8.3.67 Value transmitter, 2 objects - Value 2 (4-byte unsigned)

Options:	0 - 4,294,967,295

This parameter can only be set if the object type parameter is set to 4 byte unsigned.

Value 2 is specified here, which is sent out for an operation of the right or left side of the rocker. This is a 4-byte value, that can assume arbitrary values from 0 to 4,294,967,295.

8.3.68 Value transmitter, 2 objects - Reaction on falling edge

Options:	No reaction
	Value 1
	Value 2
	Alternating value1/value2

The application can differentiate between the operation and the releasing of the rocker. An operation is designated as "Rising edge" and the releasing is designated as "Falling edge".

Here it is specified whether the "Value 1" or the "Value 2" is sent out for a falling edge.

Alternatively, Value1/Value2 can also be alternating set for a falling edge, i.e. after a Value 1 was sent (or received), a renewed release will send out a Value 2. After it is released again, a Value 1 is again sent out.

The values 1 and 2 are specified via the parameters "Value 1" and "Value 2".

The "No reaction" setting causes no telegram to be sent out for a operation of the rocker.

8.3.69 Value transmitter, 2 objects - Enable object

Options:	Inactive
	Active

If the "Enable object" parameter is set to "active", the function can temporarily be blocked via the the 1-bit communication object "Enable". The function is active if an ON telegram is received on the 1-bit communication object "Enable". The function is blocked if an OFF telegram is received on the 1-bit communication object "Enable". This means that after an actuation, a telegram is no longer sent out.

8.3.70 Value transmitter, 2 objects — Object value enable

Options:	Normal
	Inverse

This parameter is only adjustable with activated enable object.

The enable function normally functions as follows:

The function is active if an ON telegram is received on the 1-bit communication object "Enable". The function is blocked if an OFF telegram is received on the 1-bit communication object "Enable".

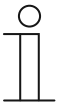
Via the "Object value enable" parameter, the behaviour described above can be inverted. This means that the function is blocked if an ON telegram is received on the 1-bit communication object "Enable". The function is active if an OFF telegram is received on the 1-bit communication object "Enable".

8.3.71 Value transmitter, 2 objects - Enable after bus voltage recovery

Options:	Blocked
	Enabled

This parameter is only adjustable with activated enable object.

The parameter "Behaviour enable after return of voltage" exists to permit a defined behaviour at the "Enable" communication object after a return of voltage. A determination is made here about whether a "1" ("enabled") or a "0" ("blocked") is present on the enable object after the return of voltage.



NOTE

If the logic of the enable function (parameter "object value enable") is set to "inverse", the behaviour is also inverted after the return of voltage. This means that if the parameter "Behaviour enable after return of voltage" is set to "enabled", and the "Object value enable" is at the same time parameterised to "inverse", then the function will initially not be active after the return of voltage. This must first be activated via the receipt of an OFF telegram on the enable object.

8.3.72 Light scene extension unit with memory function

Via the application "Light scene extension unit with storage function", a predefined light scene number is called when the rocker switch is operated.

The application "Light scene extension unit with memory function" makes a separate set of parameters and communication objects available for the rocker.

The user has the option to trigger a light scene memory command via a long button press.

8.3.73 Light scene extension unit with memory function - Light scene memory function

Options:	Inactive
	Active

If the "Light scene memory function" parameter is set to "active", the user has the option of sending out a light scene storage command via a long button press. The same 1-byte communication object that also sends out the light scene number is used for this.

Within the 1-byte value, a memory bit is set in addition to the light scene number. If a light scene module receives this 1-byte value, the module can identify the affected light scene and trigger a storage procedure. Read requests are sent to all connected actuators that in turn answer with their current communication object values. The answers are saved by the light scene module and are sent out again for every future receipt of the light scene number.

8.3.74 Light scene extension unit with memory function - Time for long operation (s)

Options:	0.3 - 3.0 - 10.0

A short and long operation can be differentiated between for the operation of the rocker. For a short operation of the rocker switch, a preset light scene is called up on the 1-byte communication object "Light scene number".

For a long operation, a command for storage of the preset light scene is sent out on the same communication object.

Via the "Duration of long operation (s)", the time is specified after which a long button press is recognised and a command for the light scene storage is sent out instead of the light scene number. Any time from 0.3 to 10.0 seconds can be set. A typical value, after which a rocker triggers a storage for a long press is 3 s.

8.3.75 Light scene extension unit with memory function - Light scene number

Options:	1 - 64

In the parameter "Light scene number", an arbitrary light scene number from 1 to 64 can be specified which can be sent out via the 1-byte communication object "Light scene number" for operation of the rocker switch.

The rocker only serves as light scene extension unit, i.e. the rocker only calls up the light scene number. The individual values for the dimming actuators or blind actuators to be adjusted are either stored in the actuator itself or in connected light scene modules.

A light scene module will receive the light scene number and subsequently send the stored light scene values consecutively to the connected actuators.

8.3.76 Light scene extension unit with memory function - Enable object

Options:	Inactive
	Active

If the "Enable object" parameter is set to "active", the function can temporarily be blocked via the the 1-bit communication object "Enable". The function is active if an ON telegram is received on the 1-bit communication object "Enable". The function is blocked if an OFF telegram is received on the 1-bit communication object "Enable". This means that after an actuation, a telegram is no longer sent out.

8.3.77 Light scene extension unit with memory function - Object value enable

Options:	Normal
	Inverse

This parameter is only adjustable with activated enable object.

The enable function normally functions as follows:

The function is active if an ON telegram is received on the 1-bit communication object "Enable". The function is blocked if an OFF telegram is received on the 1-bit communication object "Enable".

Via the "Object value enable" parameter, the behaviour described above can be inverted. This means that the function is blocked if an ON telegram is received on the 1-bit communication object "Enable". The function is active if an OFF telegram is received on the 1-bit communication object "Enable".

8.3.78 Light scene extension unit with memory function - Enable after bus voltage recovery

Options:	Blocked
	Enabled

This parameter is only adjustable with activated enable object.

The parameter "Behaviour enable after return of voltage" exists to permit a defined behaviour at the "Enable" communication object after a return of voltage. A determination is made here about whether a "1" ("enabled") or a "0" ("blocked") is present on the enable object after the return of voltage.

NOTE

If the logic of the enable function (parameter "object value enable") is set to "inverse", the behaviour is also inverted after the return of voltage. This means that if the parameter "Behaviour enable after return of voltage" is set to "enabled", and the "Object value enable" is at the same time parameterised to "inverse", then the function will initially not be active after the return of voltage. This must first be activated via the receipt of an OFF telegram on the enable object.

8.3.79 Step switch

The application "Step switch" facilitates step-type switching. This means that the user can trigger different switching processes with each new actuation of the left or right side of the rocker.

Depending on the setting, a stage higher or a stage lower can thus be switched to.

NOTE

For perfect function, the values must increase from step to step. The value of Step 1 must thus be less than the value of Step 2, the value of Step 2 must be less than the value of Step 3, and so on. After a reset, the step switches are preset with values from Step 1.

Up to five switching levels can be activated.

8.3.80 Step switch — Behaviour of step switching

Options:	Rolling
	Counting up/down

The "Behaviour of step switching" parameter specifies the behaviour of step-type switching after the last step has been reached.

With "rolling", the first step starts again after the last step is completed. With counting up/down

the next to last step is switched back to after the last step is completed.

8.3.81 Step switch — Number of objects

Options:	1 - 3 - 5

The application can switch up to five levels. The number of the levels is specified via the "Number of objects" parameter.

8.3.82 Step switch - Object type

Options:	1 bit
	1 byte 0 - 100%
	1 byte 0 - 255
	2-byte float
	2-byte signed
	2-byte unsigned
	4-byte signed
	4-byte unsigned

The communication object "Value" is set via the "Object type" parameter. With the "1-bit" setting, the steps that are set according to the values under "Number of objects" are output via 1-bit communication objects. With setting "1 byte", the steps are output via a 1-byte communication object. With setting "2-byte float", the steps are output via a 2-byte float communication object, e.g. for temperature values.

8.3.83 Step switch - Bit pattern of the object values

Options:	x of n
	1 of n

This Parameter is only visible if the "Object type" is set to 1 bit.

The levels can be switched in two different bit patterns.

x of n (for 5 objects, object 0 to 4):

00000

10000

11000

11100

11110

11111

1 of n (for 5 objects, object 0 to 4):

00000

10000

01000

00100

00010

00001

8.3.84 Step switch - Step 1 - 5, 1 byte (0 - 100%)

Options:	0 - 10 - 40 - 70 - 80 - 100

This parameter is only adjustable if the "Object type" parameter is set to 1 byte 0 - 100%.

The value is specified here that is sent out with a short operation of the rocker in dependence of the selected level. This can be a percentage value from 0% to 100%.

8.3.85 Step switch - Step 1 - 5, 1 byte (0 - 255)

Options:	0 - 50 - 100 - 150 - 200 -255

This parameter is only adjustable if the "Object type" parameter is set to 1 byte 0 - 255.

The value is specified here that is sent out with a short operation of the rocker in dependence of the selected level. This can be any value from 0 to 255.

8.3.86 Step switch - Step 1 - 5 (2-byte float x factor 0.1)

Options:	-670760.64 - 70433.28

This parameter can only be set if the "Object type" parameter is set to 2-byte float.

The value is specified here that is sent out with a short operation of the rocker in dependence of the selected level. This can be any value from -670760.64 to 670433.28.

8.3.87 Step switch - Step 1 - 5 (2-byte signed)

Options:	-32,768 - 0 - 32,767

This parameter can only be set if the object type parameter is set to 2-byte signed.

Value 1 is specified here which, is sent out with a short operation of the rocker. This is a signed 2-byte value, that can assume arbitrary values from -32,768 to 32,767.

8.3.88 Step switch - Step 1 - 5 (2-byte unsigned)

Options:	0 - 65,535

This parameter can only be set if the object type parameter is set to 2-byte unsigned.

Value 1 is specified here which, is sent out with a short operation of the rocker. This is a 2-byte value, that can assume arbitrary values from 0 to 65,535.

8.3.89 Step switch - Step 1 - 5 (4-byte signed)

Options:	-2,147,483,648 - 0 - 2,147,483,647

This parameter can only be set if the object type parameter is set to 4-byte signed.

Value 1 is specified here, which is sent out for an operation of the right or left side of the rocker. This is a signed 4-byte value, that can assume arbitrary values from -2,147,483,648 to 2,147,483,647.

8.3.90 Step switch - Step 1 - 5 (4-byte unsigned)

Options:	0 - 4,294,967,295

This parameter can only be set if the object type parameter is set to 4-byte unsigned.

Value 1 is specified here, which is sent out for an operation of the right or left side of the rocker. This is a 4-byte value, that can assume arbitrary values from 0 to 4,294,967,295.

8.3.91 Step switch - Enable object

Options:	Inactive
	Active

If the "Enable object" parameter is set to "active", the function can temporarily be blocked via the the 1-bit communication object "Enable". The function is active if an ON telegram is received on the 1-bit communication object "Enable". The function is blocked if an OFF telegram is received on the 1-bit communication object "Enable". This means that after an actuation, a telegram is no longer sent out.

8.3.92 Step switch - Object value enable

Options:	Normal
	Inverse

This parameter is only adjustable with activated enable object.

The enable function normally functions as follows:

The function is active if an ON telegram is received on the 1-bit communication object "Enable". The function is blocked if an OFF telegram is received on the 1-bit communication object "Enable".

Via the "Object value enable" parameter, the behaviour described above can be inverted. This means that the function is blocked if an ON telegram is received on the 1-bit communication object "Enable". The function is active if an OFF telegram is received on the 1-bit communication object "Enable".

8.3.93 Step switch - Enable after bus voltage recovery

Options:	Blocked
	Enabled

This parameter is only adjustable with activated enable object.

The parameter "Behaviour enable after return of voltage" exists to permit a defined behaviour at the "Enable" communication object after a return of voltage. A determination is made here about whether a "1" ("enabled") or a "0" ("blocked") is present on the enable object after the return of voltage.

NOTE

If the logic of the enable function (parameter "object value enable") is set to "inverse", the behaviour is also inverted after the return of voltage. This means that if the parameter "Behaviour enable after return of voltage" is set to "enabled", and the "Object value enable" is at the same time parameterised to "inverse", then the function will initially not be active after the return of voltage. This must first be activated via the receipt of an OFF telegram on the enable object.

8.3.94 Short-long operation

Via application "Short-long operation", different values can be sent out with a short and/or long operation of the rocker.

The application "Short-long operation" makes two communication objects available: "Reaction for short operation" and "Reaction for long operation". The bit size of both communication objects is specified together via the "Object type" parameter.

8.3.95 Short-long operation - Duration of long operation (s)

Options:	0.3 - 0.4 - 3.0

A short and long operation can be differentiated between for the operation of the rocker. For a short operation of the rocker switch, a "Switching" switching telegram is sent out on the 1-bit communication object. For a long operation of the rocker switch, a "Relative dimming" dimming telegram is sent out on the 4-bit communication object.

Via the "Duration of long operation (s)", the time is determined after which a long button press is recognised. By default, the rocker recognises a long press of the button if the operation occurs for at least 0.4 s. Any time from 0.3 to 3.0 seconds can be set.

8.3.96 Short-long operation - Object type value 1

Options:	1 bit
	1 byte 0 - 100%
	1 byte 0 - 255
	2-byte float
	2-byte signed
	2-byte unsigned
	4-byte signed
	4-byte unsigned

The application "Short-long operation" makes two separate "Switching" communication objects available for the rocker.

The bit size of the first communication object is specified via the "Object type for short operation" parameter.

For the most diverse applications, the bit size of the communication objects can be adapted from "1-bit" up to "4-byte unsigned" via "Object type value 1".

- 1 bit: switching functions (on/off, enabled/blocked, true/untrue, …)
- 1 byte 0 - 100 %: percentage values (0 = 0%, 255 = 100%)
- 1 byte 0 - 255%: arbitrary values from 0 to 255
- 2-byte float: floating point value (physical values such as temperature, brightness, …)
- 2-byte signed: arbitrary values from -32,768 to 32,767
- 2-byte unsigned: arbitrary values from 0 to 65,535
- 4-byte signed: arbitrary values from -2,147,483,648 to 2,147,483,647
- 4-byte unsigned: arbitrary values from 0 to 4,294,967,295

8.3.97 Short-long operation - Object type value 2

Options:	1 bit
	1 byte 0 - 100%
	1 byte 0 - 255
	2-byte float
	2-byte signed
	2-byte unsigned
	4-byte signed
	4-byte unsigned

The application "Short-long operation" makes two separate "Switching" communication objects available for the left rocker. The bit size of the second communication object is specified via the "Object type for long operation" parameter.

For the most diverse applications, the bit size of the communication objects can be adapted from "1-bit" up to "4-byte unsigned" via "Object type value 2".

8.3.98 Short-long operation - Reaction on short operation

Options:	No reaction
	Value 1
	Value 2
	Alternating value1/value2

Here it is specified whether the "Value 1" or the "Value 2" is sent out for a short operation of the rocker.

Alternatively, Value1/Value2 can also be alternating set for a short operation, i.e. after a Value 1 was sent (or received), a renewed operation will send out a Value 2. After it is operated again, a Value 1 is again sent out.

The values 1 and 2 are specified via the "Value … for short operation".

The "No reaction" setting causes no telegram to be sent out for a short operation of the rocker.

8.3.99 Short-long operation - Value 1 (1 bit)

Options:	Off
	On

This object is only adjustable if the object type parameter is set to 1 bit.

Value 1 (on or off) is specified here, which is sent out for an operation of the right or left side of the rocker. This could be an ON or an OFF telegram, so that connected switching actuators can be switched. The sent out signal could, however, also call up an enable or block or operate a logical function for example.

8.3.100 Short-long operation - Value 2 (1 bit)

Options:	On
	Off

This object is only adjustable if the object type parameter is set to 1 bit.

Value 2 (on or off) is specified here, which is sent out for an operation of the right or left side of the rocker. This could be an ON or an OFF telegram, so that connected switching actuators can be switched. The sent out signal could, however, also call up an enable or block or operate a logical function for example.

8.3.101 Short-long operation - Value 1 (1 byte) (0 - 100%)

Options:	0 - 100

This parameter is only adjustable if the object type parameter is set to "1 byte 0 - 100%. Value 1 is specified here, which is sent out for an operation of the right or left side of the rocker. This can be a percent value from 0% to 100% (adjustable in 1% steps).

8.3.102 Short-long operation - Value 2 (1 byte) (0 - 100%)

Options:	0 - 100

This parameter is only adjustable if the object type parameter is set to "1 byte 0 - 100%.

Value 2 is specified here, which is sent out for an operation of the right or left side of the rocker. This can be a percent value from 0% to 100% (adjustable in 1% steps).

8.3.103 Short-long operation - Value 1 (1 byte) (0 - 255)

Options:	0 - 255

This object is only adjustable if the object type parameter is set to 1 byte 0 - 255.

Value 1 is specified here, which is sent out for an operation of the right or left side of the rocker. This can be any value from 0 to 255.

8.3.104 Short-long operation - Value 2 (1 byte) (0 - 255)

Options:	0 - 255

This object is only adjustable if the object type parameter is set to 1 byte 0 - 255.

Value 2 is specified here, which is sent out for an operation of the right or left side of the rocker. This can be any value from 0 to 255.

8.3.105 Short-long operation - Value 1 (2-byte float x factor 0.1)

Options:	0 - 6707600

This parameter can only be set if the object type parameter is set to 2-byte float (floating point value).

Value 1 is specified here, which is sent out for an operation of the right or left side of the rocker. This is a 2-byte floating point value which is used to transfer physical values.

8.3.106 Short-long operation - Value 2 (2-byte float x factor 0.1)

Options:	0 - 6707600

This parameter can only be set if the object type parameter is set to 2-byte float.

Value 2 is specified here, which is sent out for an operation of the right or left side of the rocker. This is a 2-byte floating point value which is used to transfer physical values.

8.3.107 Short-long operation - Value 1 (2-byte signed)

Options:	-32,768 - 0 - 32,767

This parameter can only be set if the object type parameter is set to 2-byte signed.

Value 1 is specified here, which is sent out for an operation of the right or left side of the rocker. This is a signed 2-byte value, that can assume arbitrary values from -32,768 to 32,767.

8.3.108 Short-long operation - Value 2 (2-byte signed)

Options:	-32,768 - 0 - 32,767

This parameter can only be set if the object type parameter is set to 2-byte signed.

Value 2 is specified here, which is sent out for an operation of the right or left side of the rocker. This is a signed 2-byte value, that can assume arbitrary values from -32,768 to 32,767.

8.3.109 Short-long operation - Value 1 (2-byte unsigned)

Options:	0 - 65,535

This parameter can only be set if the object type parameter is set to 2 byte unsigned.

Value 1 is specified here, which is sent out for an operation of the right or left side of the rocker. This is a 2-byte value, that can assume arbitrary values from 0 to 65,535.

8.3.110 Short-long operation - Value 2 (2-byte unsigned)

Options:	0 - 65,535

This parameter can only be set if the object type parameter is set to 2 byte unsigned.

Value 2 is specified here, which is sent out for an operation of the right or left side of the rocker. This is a 2-byte value, that can assume arbitrary values from 0 to 65,535.

8.3.111 Short-long operation - Value 1 (4-byte signed)

Options:	-2,147,483,648 - 0 - 2,147,483,647

This parameter can only be set if the object type parameter is set to 4-byte signed.

Value 1 is specified here, which is sent out for an operation of the right or left side of the rocker. This is a signed 4-byte value, that can assume arbitrary values from -2,147,483,648 to 2,147,483,647.

8.3.112 Short-long operation - Value 2 (4-byte signed)

Options:	-2,147,483,648 - 0 - 2,147,483,647

This parameter can only be set if the object type parameter is set to 4-byte signed.

Value 2 is specified here, which is sent out for an operation of the right or left side of the rocker. This is a signed 4-byte value, that can assume arbitrary values from -2,147,483,648 to 2,147,483,647.

8.3.113 Short-long operation - Value 1 (4-byte unsigned)

Options:	0 - 4,294,967,295

This parameter can only be set if the object type parameter is set to 4 byte unsigned.

Value 1 is specified here, which is sent out for an operation of the right or left side of the rocker. This is a 4-byte value, that can assume arbitrary values from 0 to 4,294,967,295.

8.3.114 Short-long operation - Value 2 (4-byte unsigned)

Options:	0 - 4,294,967,295

This parameter can only be set if the object type parameter is set to 4 byte unsigned.

Value 2 is specified here, which is sent out for an operation of the right or left side of the rocker. This is a 4-byte value, that can assume arbitrary values from 0 to 4,294,967,295.

8.3.115 Short-long operation - Enable object

Options:	Inactive
	Active

If the "Enable object" parameter is set to "active", the function can temporarily be blocked via the the 1-bit communication object "Enable". The function is active if an ON telegram is received on the 1-bit communication object "Enable". The function is blocked if an OFF telegram is received on the 1-bit communication object "Enable". This means that after an actuation, a telegram is no longer sent out.

8.3.116 Short-long operation — Object value enable

Options:	Normal
	Inverse

This parameter is only adjustable with activated enable object.

The enable function normally functions as follows:

The function is active if an ON telegram is received on the 1-bit communication object "Enable". The function is blocked if an OFF telegram is received on the 1-bit communication object "Enable".

Via the "Object value enable" parameter, the behaviour described above can be inverted. This means that the function is blocked if an ON telegram is received on the 1-bit communication object "Enable". The function is active if an OFF telegram is received on the 1-bit communication object "Enable".

8.3.117 Short-long operation - Enable after bus voltage recovery

Options:	Blocked
	Enabled

This parameter is only adjustable with activated enable object.

The parameter "Behaviour enable after return of voltage" exists to permit a defined behaviour at the "Enable" communication object after a return of voltage. A determination is made here about whether a "1" ("enabled") or a "0" ("blocked") is present on the enable object after the return of voltage.

NOTE

If the logic of the enable function (parameter "object value enable") is set to "inverse", the behaviour is also inverted after the return of voltage. This means that if the parameter "Behaviour enable after return of voltage" is set to "enabled", and the "Object value enable" is at the same time parameterised to "inverse", then the function will initially not be active after the return of voltage. This must first be activated via the receipt of an OFF telegram on the enable object.

8.3.118 Setting the RTC operating mode

With the "Setting the RTC operating mode" application, an operating mode switchover for connected room temperature controllers can be carried out with an operation of a rocker side.

8.3.119 Setting the RTC operating mode - Object type for output

Options:	1 bit
	1 byte

The application offers, depending on the setting of the "Object type for output" parameter, either three 1-bit communication objects "Operating mode comfort", "Operating mode night", and "Operating mode frost" or a 1-byte communication object "Operating mode".

The selection "1 bit" is used for activating room temperature controllers that have 1-bit communication objects for operating mode switchover. The "1-byte" selection is used for activating room temperature controllers that have a 1-byte communication object for operating mode switchover to KNX. In this case, the values mean

0	=	Auto
1	=	Comfort
2	=	Standby
3	=	Night
4	=	Frost/heat protection
5 – 255	=	Not permitted

8.3.120 Setting the RTC operating mode - Operating mode

Options:	Auto
	Comfort
	Standby
	Night period
	Frost protection, heat protection

The "Operating mode" parameter specifies the operating mode that is sent out on the three 1-bit communication objects or on the 1-byte communication object for the KNX operating mode switchover when the button is operated.

8.3.121 Setting the RTC operating mode - Enable object

Options:	Inactive
	Active

If the "Enable object" parameter is set to "active", the function can temporarily be blocked via the the 1-bit communication object "Enable". The function is active if an ON telegram is received on the 1-bit communication object "Enable". The function is blocked if an OFF telegram is received on the 1-bit communication object "Enable". This means that after an actuation, a telegram is no longer sent out.

8.3.122 Setting the RTC operating mode - Object value enable

Options:	Normal
	Inverse

This parameter is only adjustable with activated enable object.

The enable function normally functions as follows:

The function is active if an ON telegram is received on the 1-bit communication object "Enable". The function is blocked if an OFF telegram is received on the 1-bit communication object "Enable".

Via the "Object value enable" parameter, the behaviour described above can be inverted. This means that the function is blocked if an ON telegram is received on the 1-bit communication object "Enable". The function is active if an OFF telegram is received on the 1-bit communication object "Enable".

8.3.123 Setting the RTC operating mode - Enable after bus voltage recovery

Options:	Blocked
	Enabled

This parameter is only adjustable with activated enable object.

The parameter "Behaviour enable after return of voltage" exists to permit a defined behaviour at the "Enable" communication object after a return of voltage. A determination is made here about whether a "1" ("enabled") or a "0" ("blocked") is present on the enable object after the return of voltage.

NOTE

If the logic of the enable function (parameter "object value enable") is set to "inverse", the behaviour is also inverted after the return of voltage. This means that if the parameter "Behaviour enable after return of voltage" is set to "enabled", and the "Object value enable" is at the same time parameterised to "inverse", then the function will initially not be active after the return of voltage. This must first be activated via the receipt of an OFF telegram on the enable object.

8.4 Application "LED rocker 1 - 5"

8.4.1 Operating mode

Options:	Orientation illumination
	Status illumination

The LED can serve either as a status display ("Status illumination") or orientation ("Orientation illumination"). If the operating mode "Status illumination" is selected, the LED has its own communication object "Status". This can be either a 1-bit or a 1-byte object. When a telegram is received on the status object, the LED changes colour. If the operating mode "Orientation illumination" is selected, the colour of the LED supports the orientation. The colour is specified via the "Colour of the orientation illumination" parameter.

8.4.2 Colour of orientation illumination

Options:	Green
	Red
	Off

The parameter is only adjustable if the "Operating mode" parameter is set to "Orientation illumination".

8.4.3 Object type for status object

Options:	1 bit
	1 byte 0 - 100%
	1 byte (0 - 255)

The parameter is only adjustable if the "Operating mode" parameter is set to "Status illumination".

With the setting "1-bit", the communication object "Status" has the size "1-bit". If an ON telegram is received on the object, the LED takes on the colour that is stored in the "Colour for On" parameter. If an OFF telegram is received, the LED takes on the colour that is stored in the "Colour for Off" parameter.

With the setting "1-byte 0 - 100%", the communication object "Status" has the size "1-byte". When a value telegram is received on the object, the LED can change colour. Whether the colour and to which colour will be switched to depends on the parameter settings "Colour for Zone …". The three adjustable zones have the following behaviour:

- Zone 1: 0% ≤= value < S1
- Zone 2: S1 ≤= value < S2
- Zone 3: S2 ≤= value < 100%

The two threshold values S1 and S2 are determined via the parameters "Threshold 1 for intermediate level" (S1) and "Threshold 2 for intermediate level" (S2).

8.4.4 Colour for Off

Options:	Green
	Red
	Off

The parameter can only be set if the "Operating mode" parameter is set on "Status illumination" and the parameter "Object type for status object" is set on "1 bit".

8.4.5 Colour for On

Options:	Green
	Red
	Off

The parameter can only be set if the "Operating mode" parameter is set on "Status illumination" and the parameter "Object type for status object" is set on "1 bit".

8.4.6 Colour for Zone 1

Options:	Green
	Red
	Off

The parameter can only be set if the "Operating mode" parameter is set on "Status illumination" and the parameter "Object type for status object" is set on "1 byte".

8.4.7 Threshold between Zone 1 and Zone 2

Options:	0 - 33 - 255

The parameter can only be set if the "Operating mode" parameter and is set to "Status illumination" and the parameter "Format status object" is set to "1 byte 0 - 255".

The value for S1 is specified via the parameter "Threshold between Zone 1 and 2".

8.4.8 Colour for Zone 2

Options:	Green
	Red
	Off

The parameter can only be set if the "Operating mode" parameter is set on "Status illumination" and the parameter "Object type for status object" is set on "1 byte".

8.4.9 Threshold between Zone 2 and Zone 3

Options:	0 - 66 - 255

The parameter can only be set if the "Operating mode" parameter and is set to "Status illumination" and the parameter "Format status object" is set to "1 byte 0 - 255".

The value for S2 is specified via the parameter "Threshold between Zone 2 and 3".

8.4.10 Colour for Zone 3

Options:	Green
	Red
	Off

The parameter can only be set if the "Operating mode" parameter is set on "Status illumination" and the parameter "Object type for status object" is set on "1 byte".

8.4.11 Light scene memory function

Options:	Inactive
	Active

If the "Light scene memory function" is switched active, the LED can be made to flash (3 Hz) via a 1-bit communication object "Scene storage" during the status or function display.

If a scene storage telegram is received on the 1-byte communication object "Scene storage", the LED will blink for 3 s and then stop blinking automatically.

The LED will always flash in green.

8.4.12 Alarm function

Options:	Inactive
	Active

If the alarm function is switched active, the LED can be made to flash (1 Hz) during the status or function display via a 1-bit communication object "Alarm".

The LED will flash if an ON telegram is received on the 1-bit communication object "Alarm". If the object receives an OFF telegram, the LED will no longer flash.

The LED will always flash in red. The alarm function could be used to display a wind alarm to the user, for example, so that the user knows that no blind operation is possible at that time. An additional application would be the signalling of an open door when the user would like to lower a roller shutter.

8.5 Application - "Light scene actuator, general"

8.5.1 Number of scenes

Options:	inactive
	1 - 8

Up to eight different scenes can be called up via the device. The "Number of scenes" parameter defines this. Any arbitrary number from 1 to 8 scenes can be entered.

The values that are sent out over the different actuator objects for the scene call-up are adjustable. But they can also be saved in the device by the user.

8.5.2 Duration of telegram delay

Options:	0.3 - 1.0 - 10

These parameters can only be adjusted when the "Number of scenes" is set on at least "1" and a maximum of "8". When a scene is called up, telegrams are sent out sequentially on the actuator group communication objects. The sequence is strictly specified. First the telegram of actuator group A is sent out, then the telegram of the actuator group B and then the telegram of the actuator group C, etc. The time between the telegrams can be adjusted.

8.5.3 Overwrite scenes at download

Options:	Active
	Inactive

These parameters can only be adjusted when the "Number of scenes" is set on at least "1" and a maximum of "8". When reprogramming the device, the values stored by the user can be overwritten by the preset values in the parameterising software. To do this, the "Overwrite scenes at download" must be set to "active". The values stored by the user remain in the device with the "inactive" setting.

8.6 Application - "Light scene actuator, actuator groups"

8.6.1 Light scene actuator, actuator groups

When a scene is called up, telegrams are sent out sequentially on the actuator group communication objects.

8.6.2 Object type actuator group A-H

Options:	1-bit switching
	1-bit blind
	1 byte 0 - 100%
	1 byte 0 - 255
	Number of light scene
	1-byte RTC operating mode
	2-byte float (-33.5°C - 93.5°C)

The size of the actuator group communication object can be adjusted for different applications.

8.7 Application - "Light scene actuator, scene 1-8"

8.7.1 Scene number

Options:	1-64

The "Scene number" parameter specifies with which value the scene or a scene storage can be called up that is received on the 1-byte "Scene call-up" communication object. An arbitrary scene number from 1 to 64 can be set.

8.7.2 Scene can be saved

Options:	Inactive
	Active

The user has the option of triggering a scene storage via the receipt of a corresponding scene storage command. The actuator groups communication objects in this case send read requests to the connected actuators. Provided that the L-flag is set for the communication objects of the connected actuators, these will send their current values to the device via an answer telegram. The values are stored in the memory and overwrite the previous values. These are also not lost in the event of a possibly occurring power failure.

8.7.3 Actuator group A-H

Options:	Inactive
	Active

These parameters can only be adjusted when the "Number of actuator groups" is set on at least "1" and a maximum of "8". The number of parameters that were defined via the "Number of actuator groups" parameter are displayed.

Via the "Actuator group A-H" parameter you can specify whether the actuator group A-H is sent out or not for a call-up of the scene. Select the "active" setting if the actuator group A-H is to trigger a telegram for a call-up of scene 1-8.

8.7.4 Light scene number

Options:	1 - 64

This parameter can only be set if the actuator group A-H is activated and the "Object type actuator group A-H" parameter is set to "Light scene number".

The parameter specifies which light scene number is to be sent out on the 1-byte communication object of the actuator group for a scene call-up. Arbitrary light scene numbers from 1 to 64 can be entered here.

8.7.5 Value, 1-bit switching

Options:	Off
	On

This parameter can only be set if the actuator group A-H is activated and the "Object type actuator group A-H" parameter is set on "1-bit switching".

The "Value" parameter specifies whether an ON or an OFF telegram is to be sent out on the 1-bit communication object of the actuator group for a scene call-up.

8.7.6 Value, 1-bit blind

Options:	Up
	Down

This parameter can only be set if the actuator group A-H is activated and the "Object type actuator group A-H" parameter is set on "1-bit blind".

The parameter specifies whether a blind up or down command is to be sent out on the 1-bit communication object of the actuator group for a scene call-up.

8.7.7 Value, 1 byte 0 - 100%

Options:	0 - 100%

This parameter can only be set if the actuator group A-H is activated and the "Object type actuator group A-H" parameter is set on "1 byte 0 - 100%".

The "Value" parameter specifies which value is to be sent out on the 1-byte communication object of the actuator group for a scene call up. Percentage values from 0 to 100% can be entered (in 1% steps).

8.7.8 Value, 1 byte 0 - 255

Options:	0 - 255

This parameter can only be set if the actuator group A-H is activated and the "Object type actuator group A-H" parameter is set on "1 byte 0 - 255".

The "Value" parameter specifies which value is to be sent out on the 1-byte communication object of the actuator group for a scene call up. Values from 0 to 255 can be entered here.

8.7.9 Value, temperature °C

Options:	-33.5 - +93.5

This parameter can only be set if the actuator group A-H is activated and the "Object type actuator group A-H" parameter is set on "Temperature value absolute".

The parameter specifies which value is to be sent out on the 2-byte communication object of the actuator group for a scene call up. Absolute temperature values from -33.5 to +93.5°C can be entered. A setpoint shift for a room temperature controller can be carried out here for example.

8.7.10 Setting 1-byte value for RTC operating mode

Options:	Auto
	Comfort
	Standby
	Night
	Frost/heat protection

This parameter can only be set if the actuator group A-H is activated and the "Object type actuator group A-H" parameter is set on "1-byte RTC mode".

The parameter specifies which value is to be sent out on the 1-byte communication object of the actuator group for a scene call up. Different RTC operating modes can be entered. An operating mode switchover for a room temperature controller can be carried out here for example.

8.8 Application "Infrared receiver, general"

8.8.1 IR area

Options:	Inactive
	White
	Blue

The installed infrared receiver of the cover strip can record and process white and blue infrared signals of the Busch remote control. Via the "IR range" parameter, the detection range can be restricted to the "white" and/or the "blue" frequency range.

8.8.2 Button pair 1-5

Options:	Inactive
	Rocker oriented
	Button oriented

This parameter is only visible if the "IR range" parameter is set to "white" or "blue" and isolates the function for this button pair. A separate parameter window is displayed for each activated button pair. These button pairs can be occupied with any application that is rocker or button-oriented.

8.8.3 Memo button 1-2, red memo button

Options:	Inactive
	Active

This parameter is only visible if the "IR range" parameter is set to "white" or "blue" and isolates the function for these buttons.

A separate parameter window is displayed for each activated button. These buttons can be occupied with any button-oriented application.

8.9 Application "Infrared receiver, button pair 1-5"

8.9.1 Button pair 1-5 (white)

Options:	Switching
	Dimming
	Blind
	Value transmitter
	Value dimming sensor
	Step switch

Additionally for control elements with integrated RTC:

Options:	Setpoint adjustment of the internal RTC
	Operating modes/fans stage switchover of the internal RTC

These channels are only visible when parameter "Function of button pair" is set on "rocker oriented".

Additional parameters (see parameter description of rockers) are displayed depending on the set function.

8.9.2 Button 1-5 left; button 1-5 right

Options:	Switching
	Dimming
	Roller shutter
	Value transmitter
	Value transmitter, 2 objects
	Light scene extension unit with memory function
	Step switch
	Short-long operation
	Setting the RTC operating mode

These channels are only visible when parameter "Function of button pair" is set on "button-oriented".

Additional parameters (see parameter description of rockeres) are displayed depending on the set function.

8.10 Application "Infrared receiver memo button 1-2, red"

8.10.1 Memo button 1-2, red memo button

Options:	Switching
	Dimming
	Roller shutter
	Value transmitter
	Value transmitter, 2 objects
	Light scene extension unit with memory function
	Step switch
	Short-long operation
	Setting the RTC operating mode

This channel is only visible if the "IR area" parameter and "Memo button 1-2, red" is set on "active".

8.11 Application "RTC"

8.11.1 General - Device function

Options:	Single device
	Master device
	Slave device

– *Single device*: The device is used singly in a room as room temperature controller.

– *Master device*: At least two room temperature controllers are located in one room. One device is to be set up as a master device, while the others are to be programmed as slave devices / temperature sensors. The master device is to be linked to the slave devices using the appropriately labelled communication objects. The master device regulates the temperature.

– *Slave device*/temperature sensor: At least two room temperature controllers are located in one room. One device is to be set up as a master device, while the others are to be programmed as slave devices / temperature sensors. The slave devices are to be linked to the master device with the appropriately labelled communication objects. The slave device serves the room temperature control functions of the master.

8.11.2 General - Control function

Options:	Heating
	Heating with additional stage
	Cooling
	Cooling with additional stage
	Heating and cooling
	Heating and cooling with additional stage

– *Heating*: For operating a heat-based automatic single-room control. The temperature is regulated to the setpoint value defined in the parameter. The "Controller type" and "Heating type" can be programmed for optimal control.

– *Heating with additional stage*: In addition to the control function described under heating, the additional stage enables the activation of an additional heating circuit. This type of additional stage is used, for example, to quickly heat up a bathroom with floor heating via a heated towel rack.

– *Cooling*: For operating a cooling-based automatic single-room control. The temperature is regulated to the setpoint value defined in the parameter. The "Controller type" and "Cooling type" can be programmed for optimal control.

– *Cooling with additional stage*: In addition to the control function described under cooling, the additional stage enables the activation of an additional cooling device. This type of additional stage is used, for example, to quickly cool a room via an added cooling device.

– *Heating and cooling*: For operating a two-wire or four-wire system used to heat or cool a room. Switching between heating and cooling takes place using a central switch (two-wire system) or is carried out manually and / or automatically via the single room temperature controller (four-wire system).
– *Heating and cooling* with an additional stage: In addition to the heating and cooling functions, one additional stage each with an autonomous controller type can be programmed.

Note
This parameter is only available if the "Device function" parameter is set on "Single device" or "Master device".

8.11.3 General - Operating mode after reset

Options:	Comfort
	Standby
	Eco mode
	Cooling with additional stage
	Frost/heat protection

After a reset the device will run in the operating mode after a restart until a new operating mode is set as the result of device operation or by communication objects, as the case may be. This operating mode should be defined during the planning phase. An improperly defined operating mode can result in a loss of comfort or increased energy consumption.

– *Comfort*: If the room temperature is not automatically lowered and the room is therefore controlled independent of its use.
– *Standby*: If the room is controlled automatically, e.g. by a presence detector, as a function of its use.
– *Eco mode*: If the room is controlled automatically or manually as a function of it use.
– *Frost/heat protection*: If only the building protection function is necessary in the room after a reset.

Note
This parameter is only available if the "Device function" parameter is set on "Single device" or "Master device".

8.11.4 General - Additional functions

Options:	No
	Yes

– This parameter enables additional functions and communication objects, e.g. window contact and presence detector.

8.11.5 General - Send cyclic "In operation" (min)

Options:	Setting option between 5 - 3000 minutes

– The "In operation" communication object serves to inform that the controller still operates. Value "1" is sent cyclic. This parameter is used to set the cycle for sending. If the cyclic telegram fails, the function of the device is faulty and the air-conditioning of the room can be maintained with a forced operation. However, for this the system and/or actuator must have "Forced operation" function.

Note
This parameter is only available if the "Additional function" parameter is set to "Yes".

8.11.6 Heating control

Note
Only available when the "Device function" parameter is set on either "Single device" or "Master device" and the control function parameter is set on either "Heating", "Heating with additional stage", "Heating and cooling" or "Heating and cooling with additional stages".

8.11.7 Heating control - Control value type

Options:	2-point 1 bit, Off/On
	2-point 1 byte, (0/100%)
	PI continuous, 0-100%
	PI PWM, On/Off
	Fan coil

The actuation of the control valve is determined by the selection of the controller type.

– *2-Point 1 Bit, Off/On*: The 2-point control is the simplest type of control. The controller switches on when the room temperature drops below a certain level (setpoint temperature value minus hysteresis) and switches off when a particular value (setpoint temperature value plus hysteresis) is exceeded. The switch-on and switch-off commands are transmitted as 1-bit commands.

– *2-Point 1 Byte, 0/100%*: This is another two-point control as described above. In this case, however, the switch-on and switch-off commands are transmitted as 1-byte values (0% / 100%).

– *PI continuous, 0-100%*: The PI controller adjusts its output value between 0% and 100% to match the difference between the actual value and the setpoint value and enables a precise regulation of the room temperature to the setpoint value. It sends the control value to the bus as a 1-byte value (0% - 100%). To reduce the bus load, the control value is only transmitted if it has changed by a predefined percentage in relation to the previous sent value. The control value can also be transmitted cyclically.

– *PI PWM, On/Off*: This also is a PI controller. Here, the output is a 1-bit command. For this to occur, the calculated control value is converted into a pulse-interval signal.

– *Fan coil*: The fan coil controller operates like the PI continuous controller. In addition, it allows the separate activation of the fan in the fan coil unit (e.g. fan speed levels 1 - 3).

8.11.8 Heating control - Heating type

Options:	PI continuous, 0 – 100% and PI PWM, On/Off: ▪ Area (e.g. floor heating) 4°C 200 min ▪ Convector (e.g. heater) 1.5°C 100 min ▪ Free configuration
	Fan coil: ▪ Fan coil 4°C 90 min ▪ Free configuration

Multiple heating types (panel heating, convector heating or fan coil) with preset parameters are available to the user.

– If the required heating type is not available, individual parameters can be specified in free configuration.

Note
This parameter is only available when "Control value type" parameter is set either on "PI continuous, 0 – 100%", "PI PWM, On/Off“ or "Fan coil".

8.11.9 Heating control - P-component (x 0.1°C)

Options:	Setting option between 10 - 100

The P-component refers to the proportional band of a control. It fluctuates around the setpoint value and can be used to influence control speed with a PI controller. The smaller the setpoint, the faster it reacts to the control. However, to avoid the risk of an overshoot, this value should not be set too low. A P-component from 0.1 to 25.5 K can be set.

Note
This parameter is only available when "Control value type" parameter is set either on "PI continuous, 0 – 100%", "PI PWM, On/Off“ or "Fan coil". In addition, the "Heating type" parameter must be set on "Free configuration".

8.11.10 Heating control - I-component (min.)

Options:	Setting option between 0 - 255

The I-component refers to the reset time of a control. The integral component has the effect of moving the room temperature slowly toward, and ultimately reaching, the setpoint value. Depending on the type of system used, the reset time has to have different values. In general, the more inactive the overall system, the greater the reset time.

Note
This parameter is only available when "Control value type" parameter is set either on "PI continuous, 0 – 100%", "PI PWM, On/Off“ or "Fan coil". In addition, the "Heating type" parameter must be set on "Free configuration".

8.11.11 Heating control - Extended settings

Options:	No
	Yes

– This parameter enables additional functions and communication objects, e.g. "Basic stage heating".

8.11.12 Basic stage heating

Note
Only available when the "Extended settings" parameter under "Heating control" is set on "Yes".

8.11.13 Basic stage heating - Status object heating

Options:	No
	Yes

– This parameter enables the "Status heating" communication object.

8.11.14 Basic stage heating - Mode of the control value

Options:	Normal
	Inverse

The mode of the control value can be used to adapt the control value to de-energised opened (normal) or de-energised closed (inverse) valves.

– N*ormal*: Value 0 means "Valve closed".

– *Inverse*: Value 0 means "Valve open".

8.11.15 Basic stage heating - Hysteresis (x 0.1°C)

Options:	Setting option between 3 - 255

The hysteresis of the two-point controller specifies the fluctuation range of the controller around the setpoint value. The lower switching point is located at "Setpoint value minus hysteresis" and the upper point is at "Setpoint value plus hysteresis".

Note
This parameter is only available when the "Control value type" parameter is set either on "2-point 1 Bit, Off/On" or "2-point 1 Byte, 0/100%".

8.11.16 Basic stage heating - Control value difference for sending of heating control value

Options:	2 %
	5 %
	10 %
	Send cyclic only

The control values of the 0 - 100% PI continuous controller are not transmitted after every calculation. Instead, they are transmitted when the calculation results in a value that is different enough to the previous sent value to make a transmission meaningful. This value difference can be entered here.

Note
This parameter is only available when "Control value type" parameter is set either on "PI continuous, 0 – 100%", "PI PWM, On/Off“ or "Fan coil".

8.11.17 Basic stage heating - Cyclic sending of the control value (min)

Options:	Setting option between 1 - 60 minutes

The current control value used by the device can be cyclically transmitted to the bus.

Note
This parameter is only available when the "Control value type" parameter is set either on "2-point 1 Bit, Off/On", "2-point 1 Byte, 0/100%", "PI continuous, 0-100%" or "Fan coil".

8.11.18 Basic stage heating - PWM cycle heating (min)

Options:	Setting option between 1 - 60 minutes

In PI PWM, On/off the control value percentage values are converted into a pulse-interval signal. This means that a selected PWM cycle will be divided into an on-phase and an off-phase based on the control value. Accordingly, a control value output of 33% in a PWM cycle of 15 min. results in an "On-phase" of five minutes and an "Off-phase" of 10 min. The time for a PWM cycle can be specified here.

Note
This parameter is only available when the "Control value type" parameter is set on "PI PWM, On/Off".

8.11.19 Basic stage heating - Maximum control value (0 - 255)

Options:	Setting option between 0 - 255

The maximum control value of the PI controller defines the maximum value outputted by the controller. If a maximum value under 255 is chosen, the value will not be exceeded, even if the controller calculates a higher control value.

Note
This parameter is only available when "Control value type" parameter is set either on "PI continuous, 0 – 100%", "PI PWM, On/Off" or "Fan coil".

8.11.20 Basic stage heating - Minimum control value for basic load (0 to 255)

Options:	Setting option between 0 - 255

The minimum control value of the PI controller defines the minimum value output by the controller. If a minimum value greater than zero is chosen, the controller will not output a lower value, even if it calculates a value that is lower. This parameter can be used to set a basic load, e.g. for operating floor heating. Even if the controller calculates the control value zero, a heating medium will flow through the floor heating system to prevent the floor from cooling down. Under "Settings of basic load", it is also possible to define whether this basic load will be permanently active or whether it will be switched by the "Basic load" object.

Note
This parameter is only available when "Control value type" parameter is set either on "PI continuous, 0 – 100%", "PI PWM, On/Off" or "Fan coil".

8.11.21 Control of additional heating stage

Note
Only available when the "Device function" parameter is set on either "Single device" or "Master device" and the control function parameter is set on either "Heating with additional stage" or "Heating and cooling with additional stages".

8.11.22 Control of additional heating stage - Control value type

Options:	2-point 1 bit, Off/On
	2-point 1 byte, (0/100%)
	PI continuous, 0-100%
	PI PWM, On/Off
	Fan coil

The actuation of the control valve is determined by the selection of the controller type.

– *2-Point 1 Bit, Off/On*: The 2-point control is the simplest type of control. The controller switches on when the room temperature drops below a certain level (setpoint temperature value minus hysteresis) and switches off when a particular value (setpoint temperature value plus hysteresis) is exceeded. The switch-on and switch-off commands are transmitted as 1-bit commands.

– *2-Point 1 Byte, 0/100%*: This is another two-point control as described above. In this case, however, the switch-on and switch-off commands are transmitted as 1-byte values (0% / 100%).

– *PI continuous, 0-100%*: The PI controller adjusts its output value between 0% and 100% to match the difference between the actual value and the setpoint value and enables a precise regulation of the room temperature to the setpoint value. It sends the control value to the bus as a 1-byte value (0% - 100%). To reduce the bus load, the control value is only transmitted if it has changed by a predefined percentage in relation to the previous sent value. The control value can also be transmitted cyclically.

– *PI PWM, On/Off*: This also is a PI controller. Here, the output is a 1-bit command. For this to occur, the calculated control value is converted into a pulse-interval signal.

– *Fan coil*: The fan coil controller operates like the PI continuous controller. In addition, it allows the separate activation of the fan in the fan coil unit (e.g. fan speed levels 1 - 3).

8.11.23 Control of additional heating stage - Additional heating type

Options:	PI continuous, 0 – 100% and PI PWM, On/Off: ▪ Area (e.g. floor heating) 4°C 200 min ▪ Convector (e.g. heater) 1.5°C 100 min ▪ Free configuration
	Fan coil: ▪ Fan coil 4°C 90 min ▪ Free configuration

Multiple heating types (panel heating, convector heating or fan coil) with preset parameters are available to the user.

– If the required heating type is not available, individual parameters can be specified in free configuration.

Note
This parameter is only available when "Control value type" parameter is set either on "PI continuous, 0 – 100%", "PI PWM, On/Off“ or "Fan coil".

8.11.24 Control of additional heating stage - P-component (x 0.1°C)

Options:	Setting option between 10 - 100

The P-component refers to the proportional band of a control. It fluctuates around the setpoint value and can be used to influence control speed with a PI controller. The smaller the setpoint, the faster it reacts to the control. However, to avoid the risk of an overshoot, this value should not be set too low. A P-component from 0.1 to 25.5 K can be set.

Note
This parameter is only available when "Control value type" parameter is set either on "PI continuous, 0 – 100%", "PI PWM, On/Off“ or "Fan coil". In addition, the "Additional heating type" parameter must be set on "Free configuration".

8.11.25 Control of additional heating stage - P-component (min)

Options:	Setting option between 0 - 255

The I-component refers to the reset time of a control. The integral component has the effect of moving the room temperature slowly toward, and ultimately reaching, the setpoint value. Depending on the type of system used, the reset time has to have different values. In general, the more inactive the overall system, the greater the reset time.

Note
This parameter is only available when "Control value type" parameter is set either on "PI continuous, 0 – 100%", "PI PWM, On/Off“ or "Fan coil". In addition, the "Additional heating type" parameter must be set on "Free configuration".

8.11.26 Control of additional heating stage - Temperature difference to basic stage (x 0.1°C)

Options:	Setting option between 0 - 255

The setpoint temperature of the additional stage is defined as a function of the current setpoint temperature of the base stage and is expressed as a difference. The value represents the setpoint value starting at which the additional stage will operate.

8.11.27 Control of additional heating stage - Extended settings

Options:	No
	Yes

This parameter enables additional functions and communication objects, e.g. "Additional heating stage".

8.11.28 Additional heating stage

Note
Only available when the "Extended settings" parameter under "Control of additional heating stage" is set on "Yes".

8.11.29 Additional heating stage - Mode of the control value

Options:	Normal
	Inverse

The mode of the control value can be used to adapt the control value to de-energised opened (normal) or de-energised closed (inverse) valves.

– N*ormal*: Value 0 means "Valve closed".
– *Inverse*: Value 0 means "Valve open".

8.11.30 Additional heating stage - Hysteresis (x 0.1°C)

Options:	Setting option between 3 - 255

The hysteresis of the two-point controller specifies the fluctuation range of the controller around the setpoint value. The lower switching point is located at "Setpoint value minus hysteresis" and the upper point is at "Setpoint value plus hysteresis".

Note
This parameter is only available when the "Control value type" parameter is set either on "2-point 1 Bit, Off/On" or "2-point 1 Byte, 0/100%".

8.11.31 Additional heating stage - Control value difference for sending of heating control value

Options:	2 %
	5 %
	10 %
	Send cyclic only

The control values of the 0 - 100% PI continuous controller are not transmitted after every calculation. Instead, they are transmitted when the calculation results in a value that is different enough to the previous sent value to make a transmission meaningful. This value difference can be entered here.

Note
This parameter is only available when "Control value type" parameter is set either on "PI continuous, 0 – 100%", "PI PWM, On/Off“ or "Fan coil".

8.11.32 Additional heating stage - Cyclic sending of the control value (min)

Options:	Setting option between 1 - 60 minutes

The current control value used by the device can be cyclically transmitted to the bus.

Note
This parameter is only available when the "Control value type" parameter is set either on "2-point 1 Bit, Off/On", "2-point 1 Byte, 0/100%", "PI continuous, 0-100%" or "Fan coil".

Additional heating stage - Maximum control value (0 - 255)

Options:	Setting option between 0 - 255

The maximum control value of the PI controller defines the maximum value outputted by the controller. If a maximum value under 255 is chosen, the value will not be exceeded, even if the controller calculates a higher control value.

Note
This parameter is only available when "Control value type" parameter is set either on "PI continuous, 0 – 100%", "PI PWM, On/Off“ or "Fan coil".

8.11.33 Additional heating stage - Minimum control value for basic load (0 - 255)

Options:	Setting option between 0 - 255

The minimum control value of the PI controller defines the minimum value output by the controller. If a minimum value greater than zero is chosen, the controller will not output a lower value, even if it calculates a value that is lower. This parameter can be used to set a basic load, e.g. for operating floor heating. Even if the controller calculates the control value zero, a heating medium will flow through the floor heating system to prevent the floor from cooling down. Under "Settings of basic load", it is also possible to define whether this basic load will be permanently active or whether it will be switched by the "Basic load" object.

Note
This parameter is only available when "Control value type" parameter is set either on "PI continuous, 0 – 100%", "PI PWM, On/Off“ or "Fan coil".

8.11.34 Cooling control

Note
Only available when the "Device function" parameter is set on either "Single device" or "Master device" and the control function parameter is set on either "Cooling", "Cooling with additional stage", "Heating and cooling" or "Heating and cooling with additional stages".

8.11.35 Cooling control - Control value type

Options:	2-point 1 bit, Off/On
	2-point 1 byte, (0/100%)
	PI continuous, 0-100%
	PI PWM, On/Off
	Fan coil

The actuation of the control valve is determined by the selection of the controller type.

– *2-Point 1 Bit, Off/On*: The 2-point control is the simplest type of control. The controller switches on when the room temperature drops below a certain level (setpoint temperature value minus hysteresis) and switches off when a particular value (setpoint temperature value plus hysteresis) is exceeded. The switch-on and switch-off commands are transmitted as 1-bit commands.

– *2-Point 1 Byte, 0/100%*: This is another two-point control as described above. In this case, however, the switch-on and switch-off commands are transmitted as 1-byte values (0% / 100%).

– *PI continuous, 0-100%*: The PI controller adjusts its output value between 0% and 100% to match the difference between the actual value and the setpoint value and enables a precise regulation of the room temperature to the setpoint value. It sends the control value to the bus as a 1-byte value (0% - 100%). To reduce the bus load, the control value is only transmitted if it has changed by a predefined percentage in relation to the previous sent value. The control value can also be transmitted cyclically.

– *PI PWM, On/Off*: This also is a PI controller. Here, the output is a 1-bit command. For this to occur, the calculated control value is converted into a pulse-interval signal.

– *Fan coil*: The fan coil controller operates like the PI continuous controller. In addition, it allows the separate activation of the fan in the fan coil unit (e.g. fan speed levels 1 - 3).

8.11.36 Cooling control - Cooling type

Options:	PI continuous, 0 – 100% and PI PWM, On/Off: ▪ Area (e.g. cooling ceiling) 5°C 240 min ▪ Free configuration
	Fan coil: ▪ Fan coil 4°C 90 min ▪ Free configuration

Two cooling types (area or fan coil) with preset parameters are available to the user.

If the required cooling type is not available, individual parameters can be specified in free configuration.

Note
This parameter is only available when "Control value type" parameter is set either on "PI continuous, 0 – 100%", "PI PWM, On/Off“ or "Fan coil".

8.11.37 Cooling control - P-component (x 0.1°C)

Options:	Setting option between 10 - 100

The P-component refers to the proportional band of a control. It fluctuates around the setpoint value and can be used to influence control speed with a PI controller. The smaller the setpoint, the faster it reacts to the control. However, to avoid the risk of an overshoot, this value should not be set too low. A P-component from 0.1 to 25.5 K can be set.

Note
This parameter is only available when "Control value type" parameter is set either on "PI continuous, 0 – 100%", "PI PWM, On/Off“ or "Fan coil". In addition, the "Cooling type" parameter must be set on "Free configuration".

8.11.38 Cooling control - I-component (min.)

Options:	Setting option between 0 - 255

The I-component refers to the reset time of a control. The integral component has the effect of moving the room temperature slowly toward, and ultimately reaching, the setpoint value. Depending on the type of system used, the reset time has to have different values. In general, the more inactive the overall system, the greater the reset time.

Note
This parameter is only available when "Control value type" parameter is set either on "PI continuous, 0 – 100%", "PI PWM, On/Off“ or "Fan coil". In addition, the "Cooling type" parameter must be set on "Free configuration".

8.11.39 Cooling control - Extended settings

Options:	No

	Yes

This parameter enables additional functions and communication objects, e.g. "Basic stage cooling".

8.11.40 Basic stage cooling

Note
Only available when the "Extended settings" parameter under "Cooling control" is set on "Yes".

8.11.41 Basic stage cooling - Status object cooling

Options:	No
	Yes

This parameter enables the "Status cooling" communication object.

8.11.42 Basic stage cooling - Mode of the control value

Options:	Normal
	Inverse

The mode of the control value can be used to adapt the control value to de-energised opened (normal) or de-energised closed (inverse) valves.

– N*ormal*: Value 0 means "Valve closed".
– *Inverse*: Value 0 means "Valve open".

8.11.43 Basic stage cooling - Hysteresis (x 0.1°C)

Options:	Setting option between 3 - 255

The hysteresis of the two-point controller specifies the fluctuation range of the controller around the setpoint value. The lower switching point is located at "Setpoint value minus hysteresis" and the upper point is at "Setpoint value plus hysteresis".

Note
This parameter is only available when the "Control value type" parameter is set either on "2-point 1 Bit, Off/On" or "2-point 1 Byte, 0/100%".

Basic stage cooling - Control value difference for sending of cooling control value

Options:	2 %
	5 %
	10 %
	Send cyclic only

The control values of the 0 - 100% PI continuous controller are not transmitted after every calculation. Instead, they are transmitted when the calculation results in a value that is different enough to the previous sent value to make a transmission meaningful. This value difference can be entered here.

Note
This parameter is only available when "Control value type" parameter is set either on "PI continuous, 0 – 100%", "PI PWM, On/Off“ or "Fan coil".

8.11.44 Basic stage cooling - Cyclic sending of the control value (min)

Options:	Setting option between 1 - 60 minutes

The current control value used by the device can be cyclically transmitted to the bus.

NOTE
This parameter is only available when the "Control value type" parameter is set either on "2-point 1 Byte, Off/On", "2-point 1 Byte, 0/100%", "PI continuous, 0-100%" or "Fan coil".

8.11.45 Basic stage cooling

Note
Only available when the "Extended settings" parameter under "Cooling control" is set on "Yes".

8.11.46 Basic stage cooling - Maximum control value (0 - 255)

Options:	Setting option between 0 - 255

The maximum control value of the PI controller defines the maximum value outputted by the controller. If a maximum value under 255 is chosen, the value will not be exceeded, even if the controller calculates a higher control value.

Note
This parameter is only available when "Control value type" parameter is set either on "PI continuous, 0 – 100%", "PI PWM, On/Off“ or "Fan coil".

8.11.47 Basic stage cooling - Minimum control value for basic load (0 to 255)

Options:	Setting option between 0 - 255

The minimum control value of the PI controller defines the minimum value output by the controller. If a minimum value greater than zero is chosen, the controller will not output a lower value, even if it calculates a value that is lower. This parameter can be used to set a basic load, e.g. for operating surface cooling. Even if the controller calculates the control value zero, a cooling medium will flow through the cooling area to prevent the floor from heating up. Under "Settings of basic load", it is also possible to define whether this basic load will be permanently active or whether it will be switched by the "Basic load" object.

Note
This parameter is only available when "Control value type" parameter is set either on "PI continuous, 0 – 100%", "PI PWM, On/Off“ or "Fan coil".

8.11.48 Control of additional cooling stage

Note
Only available when the "Device function" parameter is set on either "Single device" or "Master device" and the control function parameter is set on either "Cooling with additional stage" or "Heating and cooling with additional stages".

Options:	2-point 1 bit, Off/On
	2-point 1 byte, (0/100%)
	PI continuous, 0-100%
	PI PWM, On/Off
	Fan coil

The actuation of the control valve is determined by the selection of the controller type.

– *2-Point 1 Bit, Off/On*: The 2-point control is the simplest type of control. The controller switches on when the room temperature drops below a certain level (setpoint temperature value minus hysteresis) and switches off when a particular value (setpoint temperature value plus hysteresis) is exceeded. The switch-on and switch-off commands are transmitted as 1-bit commands.

– *2-Point 1 Byte, 0/100%*: This is another two-point control as described above. In this case, however, the switch-on and switch-off commands are transmitted as 1-byte values (0% / 100%).

– *PI continuous, 0-100%*: The PI controller adjusts its output value between 0% and 100% to match the difference between the actual value and the setpoint value and enables a precise regulation of the room temperature to the setpoint value. It sends the control value to the bus as a 1-byte value (0% - 100%). To reduce the bus load, the control value is only transmitted if it has changed by a predefined percentage in relation to the previous sent value. The control value can also be transmitted cyclically.

– *PI PWM, On/Off*: This also is a PI controller. Here, the output is a 1-bit command. For this to occur, the calculated control value is converted into a pulse-interval signal.

– *Fan coil*: The fan coil controller operates like the PI continuous controller. In addition, it allows the separate activation of the fan in the fan coil unit (e.g. fan speed levels 1 - 3).

8.11.49 Control of additional cooling stage - Cooling type

Options:	PI continuous, 0 – 100% and PI PWM, On/Off: ▪ Area (e.g. cooling ceiling) 5°C 240 min ▪ Free configuration
	Fan coil: ▪ Fan coil 4°C 90 min ▪ Free configuration

Two cooling types (area or fan coil) with preset parameters are available to the user.

If the required cooling type is not available, individual parameters can be specified in free configuration.

Note
This parameter is only available when "Control value type" parameter is set either on "PI continuous, 0 – 100%", "PI PWM, On/Off“ or "Fan coil".

8.11.50 Control of additional cooling stage - P-component (x 0.1°C)

Options:	Setting option between 10 - 100

The P-component refers to the proportional band of a control. It fluctuates around the setpoint value and can be used to influence control speed with a PI controller. The smaller the setpoint, the faster it reacts to the control. However, to avoid the risk of an overshoot, this value should not be set too low. A P-component from 0.1 to 25.5 K can be set.

Note
This parameter is only available when "Control value type" parameter is set either on "PI continuous, 0 – 100%", "PI PWM, On/Off“ or "Fan coil". In addition, the "Cooling type" parameter must be set on "Free configuration".

8.11.51 Control of additional cooling stage - P-component (min)

Options:	Setting option between 0 - 255

The I-component refers to the reset time of a control. The integral component has the effect of moving the room temperature slowly toward, and to ultimately reaching, the setpoint. Depending on the type of system used, the reset time has to have different values. In general, the more inactive the overall system, the greater the reset time.

Note
This parameter is only available when "Control value type" parameter is set either on "PI continuous, 0 – 100%", "PI PWM, On/Off“ or "Fan coil". In addition, the "Cooling type" parameter must be set on "Free configuration".

8.11.52 Control of additional cooling stage - Extended settings

Options:	No
	Yes

This parameter enables additional functions and communication objects, e.g. "Additional cooling stage".

8.11.53 Additional cooling stage

Note
Only available when the "Extended settings" parameter under "Control of additional cooling stage" is set on "Yes".

8.11.54 Additional cooling stage - Mode of the control value

Options:	Normal
	Inverse

The mode of the control value can be used to adapt the control value to de-energised opened (normal) or de-energised closed (inverse) valves.

– N*ormal*: Value 0 means "Valve closed".
– *Inverse*: Value 0 means "Valve open".

8.11.55 Additional cooling stage - Hysteresis (x 0.1°C)

Options:	Setting option between 3 - 255

The hysteresis of the two-point controller specifies the fluctuation range of the controller around the setpoint value. The lower switching point is located at "Setpoint value minus hysteresis" and the upper point is at "Setpoint value plus hysteresis".

Note
This parameter is only available when the "Control value type" parameter is set either on "2-point 1 Bit, Off/On" or "2-point 1 Byte, 0/100%".

8.11.56 Additional cooling stage - Control value difference for sending of cooling control value

Options:	2%
	5%
	10%

The control values of the 0 - 100% PI continuous controller are not transmitted after every calculation. Instead, they are transmitted when the calculation results in a value that is different enough to the previous sent value to make a transmission meaningful. This value difference can be entered here.

Note
This parameter is only available when "Control value type" parameter is set either on "PI continuous, 0 – 100%", "PI PWM, On/Off“ or "Fan coil".

8.11.57 Additional cooling stage - Cyclic sending of the control value (min)

Options:	Setting option between 1 - 60 minutes

The current control value used by the device can be cyclically transmitted to the bus.

Note
This parameter is only available when the "Control value type" parameter is set either on "2-point 1 Bit, Off/On", "2-point 1 Byte, 0/100%", "PI continuous, 0-100%" or "Fan coil".

8.11.58 Additional cooling stage - Maximum control value (0 - 255)

Options:	Setting option between 0 - 255

The maximum control value of the PI controller defines the maximum value outputted by the controller. If a maximum value under 255 is chosen, the value will not be exceeded, even if the controller calculates a higher control value.

Note
This parameter is only available when "Control value type" parameter is set either on "PI continuous, 0 – 100%", "PI PWM, On/Off“ or "Fan coil".

8.11.59 Additional cooling stage - Minimum control value for basic load (0 - 255)

Options:	Setting option between 0 - 255

The minimum control value of the PI controller defines the minimum value output by the controller. If a minimum value greater than zero is chosen, the controller will not output a lower value, even if it calculates a value that is lower. This parameter can be used to set a basic load, e.g. for operating surface cooling. Even if the controller calculates the control value zero, a cooling medium will flow through the cooling area to prevent the floor from heating up. Under "Settings of basic load", it is also possible to define whether this basic load will be permanently active or whether it will be switched by the "Basic load" object.

Note
This parameter is only available when "Control value type" parameter is set either on "PI continuous, 0 – 100%", "PI PWM, On/Off“ or "Fan coil".

8.11.60 Settings of basic load

Note
Only available when the "Device function" parameter is set on either "Single device" or "Master device" and the control function parameter is set on either "Heating with additional stage", "Cooling with additional stage", "Heating and cooling" or "Heating and cooling with additional stages".

8.11.61 Settings of basic load - Minimum control value for basic load > 0

Options:	Always active
	Activate via object

The function finds application when in the desired area, e.g. with floor heating, the floor is to have a basic warmth. The size of the minimum control value specifies the volume of heating medium that flows through the controlled area, even when the calculation of the control value of the controller would indicate a lower value.

– *Always active*: Here it is possible to define whether this basic load will be permanently active or whether it will be switched via the "Basic load" object.
– *Activate via object*: When this parameter is selected, the basic load function, which means the minimum control value with a value higher than zero, can be activated (1) or deactivated (2). If it is activated, then the heating medium will always be fed through the system with at least the minimum control value. If it is deactivated, the control value can be reduced to zero with the controller.

8.11.62 Combined heating and cooling modes

Note
Only available when the "Device function" parameter is set on either "Single device" or "Master device" and the control function parameter is set on either "Heating and cooling" or "Heating and cooling with additional stages".

8.11.63 Combined heating and cooling modes - Switchover of heating/cooling

Options:	Automatic
	Only via object
	On-site/via extension unit and via object

This function makes it possible to switch between the heating and cooling mode of the device.

– *Automatic*: E.g. for four-conductor systems which allow the switchover between heating and cooling at all times. The device switches automatically between heating and cooling and to the associated setpoint. "Switchover heating/cooling" is a transmitting object.

– *Only via object*: E.g. for two-conductor systems which are operated in heating mode in the winter and cooling mode in the summer. The switchover between heating and cooling and to the associated setpoint is carried out via the corresponding communication object. This function is used when a central switchover of the single room controllers is required. "Switchover heating/cooling" is a receiving object.

– *Local/ via extension unit and via object*: E.g. for four-conductor systems which allow the switchover between heating and cooling at all times. The switchover between heating and cooling and to the associated setpoint is carried out manually on the device by the user of the room or via the "Switchover heating/cooling" object via the bus. "Switchover heating/cooling" is a transmitting and receiving object.

8.11.64 Combined heating and cooling modes - Operating mode after reset

Options:	Cooling
	Heating

After a bus voltage failure, a system reset, or the attachment of a device to the bus coupler, the device starts in the parameterized "Operating mode after reset". The operating mode can be changed when the system is running using the options set under "Switchover heating/cooling".

8.11.65 Combined heating and cooling modes - Heating/cooling control value output

Options:	Via 1 object
	Via 2 objects

This parameter is used to define whether the control value is transmitted to the climate control actuator using one or two objects. If the climate control actuator has separate control value inputs for heating and cooling, or if separate actuators are used, then the option "Via 2 objects" must be selected. Select the option "Via 1 object" if a single actuator only has one object that receives both the heating and the cooling control values.

8.11.66 Combined heating and cooling modes - Additional heating/cooling stage control value output

Options:	Via 1 object
	Via 2 objects

This parameter is used to define whether the control value is transmitted to the climate control actuator using one or two objects. If the climate control actuator has separate control value inputs for heating and cooling, or if separate actuators are used, then the option "Via 2 objects" must be selected. Select the option "Via 1 object" if a single actuator only has one object that receives both the heating and the cooling control values.

Note
This parameter is only available when the "Control function" parameter is set on "Heating and cooling with additional stages".

8.11.67 Setpoint settings

Note
This parameter is only available if the "Device function" parameter is set on either "Single device" or "Master device".

8.11.68 Setpoint settings - Setpoint for heating comfort = setpoint for cooling comfort

Options:	No
	Yes

This parameter is used to configure the manner in which the setpoint adjustment functions.

– *Yes*: The device has the same setpoint for heating and cooling in the comfort mode. The system switches to heating when the temperature drops below the setpoint minus hysteresis. It switches to cooling when the temperature exceeds the setpoint plus hysteresis. The hysteresis is parameterizable.

– *No*: The function has two separate setpoints for heating and cooling in the comfort mode. The device will display the currently active setpoint value. Switching between heating and cooling occurs via the "Switchover heating/cooling" parameter setting.

Note
This parameter is only available when the "Control function" parameter is set on "Heating and cooling" or "heating and cooling with additional stages".

8.11.69 Setpoint settings - Hysteresis for switchover heating/cooling (x 0.1°C)

Options:	Setting option between 5 - 100

This parameter specifies the one-sided hysteresis for switching between heating and cooling when "Setpoint heating comfort = Setpoint cooling comfort" is active. If the room temperature exceeds the setpoint temperature value plus hysteresis, the system switches to cooling. If the room temperature falls below the setpoint temperature value minus hysteresis, the system switches to heating.

Note
This parameter is only available when the "Setpoint heating comfort = Setpoint cooling comfort" parameter is set on "Yes".

8.11.70 Setpoint settings - Setpoint temperature for heating and cooling comfort (°C)

Options:	Setting option between 10 - 40

Specifies the comfort temperature for heating and cooling when people are present.

Note
This parameter is only available when the "Control function" parameter is set on "Heating and cooling" or "heating and cooling with additional stages".

8.11.71 Setpoint settings - Setpoint temperature for heating comfort (°C)

Options:	Setting option between 10 - 40

Specifies the comfort temperature for heating when people are present.

Note
This parameter is only available when the "Control function" parameter is set on "Heating" or "Heating with additional stage".

8.11.72 Setpoint settings - Reduction for standby heating (°C)

Options:	Setting option between 10 - 40

Specifies the temperature in heating mode when nobody is present. On devices with a display, this mode is indicated by the standby icon.

Note
This parameter is only available when the "Control function" parameter is set on "Heating", "Heating with additional stage", "Heating and cooling" or "Heating and cooling with additional stages".

8.11.73 Setpoint settings - Reduction for ECO heating (°C)

Options:	Setting option between 0 - 15

Specifies the temperature in heating mode when nobody is present. On devices with a display, this mode is indicated by the eco icon.

8.11.74 Setpoint settings - Set-point temperature for frost protection (°C)

Options:	Setting option between 5 - 15

Function for protecting the building against the cold. On devices with a display, this mode is indicated by the frost protection icon. Manual operation is blocked.

Note
This parameter is only available when the "Control function" parameter is set on "Heating", "Heating with additional stage", "Heating and cooling" or "Heating and cooling with additional stages".

8.11.75 Setpoint settings - Setpoint temperature for cooling comfort (°C)

Options:	Setting option between 10 - 40

Specifies the comfort temperature for cooling when people are present.

Note
This parameter is only available when the "Control function" parameter is set on "Cooling" or "Cooling with additional stage".

8.11.76 Setpoint settings - Increase for standby cooling (°C)

Options:	Setting option between 0 - 15

Specifies the temperature in cooling mode when nobody is present. On devices with a display, this mode is indicated by the standby icon.

Note
This parameter is only available when the "Control function" parameter is set on "Cooling", "Cooling with additional stage", "Heating and cooling" or "Heating and cooling with additional stages".

8.11.77 Setpoint settings - Increase for ECO cooling (°C)

Options:	Setting option between 0 - 15

Specifies the temperature in cooling mode when nobody is present. On devices with a display, this mode is indicated by the eco icon.

Note

This parameter is only available when the "Control function" parameter is set on "Cooling", "Cooling with additional stage", "Heating and cooling" or "Heating and cooling with additional stages".

8.11.78 Setpoint settings - Set-point temperature for heat protection (°C)

Options:	Setting option between 27 - 45

Function for protecting the building against heat. On devices with a display, this mode is indicated by the heat protection icon. Manual operation is blocked.

Note

This parameter is only available when the "Control function" parameter is set on "Cooling", "Cooling with additional stage", "Heating and cooling" or "Heating and cooling with additional stages".

8.11.79 Setpoint settings - Display indicates

Options:	Current setpoint
	Relative setpoint

The display can indicate either the absolute or relative setpoint value.

– *Current setpoint*: On devices with a display, the setpoint is shown as an absolute temperature, e.g. 21.0°C.

– *Relative setpoint*: On devices with display, the setpoint is indicated as a relative value, e.g. -5°C .. + 5°C.

8.11.80 Setpoint settings - Display indicates

Options:	Current setpoint
	Relative setpoint

The display can indicate either the absolute or relative setpoint value.

– *Current setpoint*: On devices with a display, the setpoint is shown as an absolute temperature, e.g. 21.0°C.

– *Relative setpoint*: On devices with display, the setpoint is indicated as a relative value, e.g. -5°C .. + 5°C.

8.11.81 Setpoint settings - Send current setpoint

Options:	Cyclic and during change
	Only for change

The current setpoint value can be sent to the bus either cyclically and after a change, or only after a change.

8.11.82 Setpoint settings - Cyclic sending of the current set-point temperature (min)

Options:	Setting option between 5 - 240

This parameter is used to specify the amount of time that will elapse before the current setpoint value is automatically transmitted.

Note
This parameter is only available when the "Send current setpoint" is set on "Only during change".

8.11.83 Setpoint adjustment

Note
This parameter is only available if the "Device function" parameter is set on either "Single device" or "Master device".

8.11.84 Setpoint adjustment — Maximum manual increase during heating mode (0 - 15°C)

Options:	Setting option between 0 - 15

This preset can be used to limit the manual increase during heating.

Note
This parameter is only available when the "Control function" parameter is set on "Heating", "Heating with additional stage", "Heating and cooling" or "Heating and cooling with additional stages".

8.11.85 Setpoint adjustment — Maximum manual reduction during heating mode (0 - 15°C)

Options:	Setting option between 0 - 15

This preset can be used to limit the manual decrease during heating.

Note
This parameter is only available when the "Control function" parameter is set on "Heating", "Heating with additional stage", "Heating and cooling" or "Heating and cooling with additional stages".

8.11.86 Setpoint adjustment — Maximum manual increase during cooling mode (0 - 15°C)

Options:	Setting option between 0 - 15

This preset can be used to limit the manual increase during cooling.

Note
This parameter is only available when the "Control function" parameter is set on "Cooling", "Cooling with additional stage", "Heating and cooling" or "Heating and cooling with additional stages".

8.11.87 Setpoint adjustment — Maximum manual reduction during cooling mode (0 - 15°C)

Options:	Setting option between 0 - 15

This preset can be used to limit the manual decrease during cooling.

Note
This parameter is only available when the "Control function" parameter is set on "Cooling", "Cooling with additional stage", "Heating and cooling" or "Heating and cooling with additional stages".

8.11.88 Setpoint adjustment - Resetting of the manual adjustment for receipt of a basic setpoint

Options:	No
	Yes

Activating this parameter will cause the manual adjustment to be deleted and the new setpoint value to be provided when a new value is received via the "Basic setpoint" object.

If the parameter is deactivated, the manual adjustment is added to the new base setpoint value. Example: Previous base setpoint value of 21°C + manual adjustment of 1.5°C = 22.5°C. The object receives a new basic setpoint of 18°C plus the previous manual adjustment of 1.5°C for a total of 19.5°C.

8.11.89 Setpoint adjustment - Resetting the manual adjustment for change of operating mode

Options:	No
	Yes

If the device switches to a new operating mode, the manual adjustment is deleted and the parameterized setpoint temperature for the operating mode plus any change by the base setpoint value object will be applied if this parameter is activated. Example: Comfort temperature of 21°C plus manual adjustment of 1.5°C = 22.5°C. Change to Eco with programmed temperature 17°C. The device regulates the temperature to 17°C, since the manual adjustment is deleted.

If the parameter is deactivated, the manual setpoint adjustment will be added to the temperature in the new operating mode. Example: Comfort temperature of 21°C plus manual adjustment of 1.5°C = 22.5°C. If the system switches to Eco with a parameterized temperature of 17°C, the device regulates the temperature to 18.5°C, since the manual adjustment is added.

8.11.90 Setpoint adjustment - Resetting the manual adjustment via object

Options:	No
	Yes

If this parameter is activated, a separate object can be used to delete the manual adjustment at any time. Example of application: Resetting the manual adjustment on all devices located in a building using a system clock.

8.11.91 Setpoint adjustment - Permanent storage of on-site operation

Options:	No
	Yes

If this parameter is activated, the manual settings for setpoint and, where applicable, fan speed level, as well as the value of the "Basic load" object, will be stored in the device and re-activated after a reset. The same applies to the operating mode.

If the device is re-programmed, the stored setpoint values will also be deleted.

8.11.92 Temperature reading - Inputs of temperature reading

Options:	Internal measurement
	External measurement
	Weighted measurement

The room temperature can be measured at the device or fed to the device by an object via the bus. In addition, weighted measuring is also available, in which the weighted average of up to three temperature values (1 x internal, 2 x external) is calculated and used as an input value for control.

8.11.93 Temperature reading - Inputs of weighted temperature reading

Options:	Internal and external measurement
	2 x external measurement
	Internal and 2x external measurement

Specifies the temperature reading inputs for the weighted measurement, in which the calculated weighted average of the inputs is used as an input value for control

Note
This parameter is only available when the "Inputs of temperature reading" parameter is set on "Weighted measurement".

8.11.94 Temperature reading - Weighting of internal measurement (0 to 100%)

Options:	Setting option between 0 - 15

Specifies the weighting of the internal measurement at a level between 0% and 100%.

Note
This parameter is only available when the "Inputs of weighted temperature reading" parameter is set on "Internal and external measurement" or "Internal and 2x external measurement".

8.11.95 Temperature reading - Weighting of external measurement (0 to 100%)

Options:	Setting option between 0 - 15

Specifies the weighting of the external measurement at a level between 0% and 100%.

Note
This parameter is only available when the "Inputs of weighted temperature reading" parameter is set on "Internal and external measurement","2x external measurement" or "Internal and 2x external measurement".

8.11.96 Temperature reading - Weighting of external measurement 2 (0 to 100%)

Options:	Setting option between 0 - 15

Specifies the weighting of the external measurement 2 at a level between 0% and 100%. When added together with the (0%...100%) weighting of the external measurement, the result must be 100%.

Note
This parameter is only available when the "Inputs of weighted temperature reading" parameter is set on "2x external measurement" or "Internal and 2x external measurement".

8.11.97 Temperature reading - Cyclic sending of the actual temperature (min)

Options:	Setting option between 5 - 240

The current actual temperature used by the device can be cyclically transmitted to the bus.

8.11.98 Temperature reading - Difference of value for sending the actual temperature (x 0.1°C)

Options:	Setting option between 1 - 100

If the change in temperature exceeds the parameterized difference between the measured actual temperature and the previous actual temperature that was sent, the changed value will be transmitted.

8.11.99 Temperature reading - Adjustment value for internal temperature measurement (x 0.1°C)

Options:	Setting option between 1 - 100

Every installation location has different physical conditions (interior or exterior wall, lightweight or solid wall, etc.). In order to use the actual temperature at the installation location as a measured value for the device, a temperature measurement must be performed by an external equalised and / or calibrated thermometer at the installation location. The difference between the actual temperature displayed on the device and the actual temperature determined by the external measurement device must be entered in the parameter field as an "Adjustment value".

Note

- The calibration measurement should not be carried out immediately after the device has been installed. The device should first adjust to the ambient temperature before calibration is carried out. The calibration measurement should be repeated shortly before or after the room is occupied.
- This parameter is only available when the "Inputs of temperature reading" parameter is set on "Internal measurement" or "Weighted measurement".

8.11.100 Temperature reading - Monitoring time for temperature reading (0 = no monitoring) (min)

Options:	Setting option between 0 - 120

If no temperature is read within the parameterized time period, the device switches to error mode. It transmits a telegram to the bus via the "Actual temperature error" object and applies the operating mode and control value for error (0 - 255) settings.

8.11.101 Temperature reading — Operating mode for fault

Options:	Cooling
	Heating

In the event of a failure of the actual temperature measurement, the device will no longer be able to independently specify the heating/cooling operating type. As a result, the operating type best suited to protecting the building will be selected.

Note
This parameter is only available when the "Control function" parameter is set on "Heating and cooling" or "heating and cooling with additional stages".

8.11.102 Temperature reading - Control value for fault (0 - 255)

Options:	Setting option between 0 - 255

In the event of a failure of the actual temperature measurement, the device will no longer be able to independently determine the control value. In case of an error, a PWM control (1 Bit) with a fixed cycle time of 15 minutes is used automatically instead of a parameterized 2-point control (1 Bit). In this case the set parameter value is taken into consideration for the control value during an error.

8.11.103 Alarm functions

Note
This parameter is only available if the "Device function" parameter is set on either "Single device" or "Master device".

8.11.104 Alarm functions - Condensate water alarm

Options:	No
	Yes

If a fan coil is used, condensation may form during operation as a result of excessive cooling and/or humidity. The associated condensate is typically collected in a container. To protect the container against overflowing, and thus prevent potential damage to devices and/or the building, the container alerts the "Condensation alarm" object (receiving only) that the maximum fill level has been exceeded. This causes the controller to switch to a protective mode. This status is indicated by the corresponding icon on devices that have a display. Local operation is blocked. Operation is only possible again after the alarm has been deactivated.

Note
This parameter is only available when the "Control function" parameter is set either on "Cooling", "Cooling with additional stage", "Heating and cooling" or "Heating and cooling with additional stages".

8.11.105 Alarm functions — Dew point alarm

Options:	No
	Yes

When refrigerating machines are used, dew may appear on the refrigerant supply lines during operation as a result of excessive cooling and/or humidity. The dew indicator reports the dew formation via the "Dew point alarm" object (receiving only). This causes the controller to switch to a protective mode. This status is indicated by the corresponding icon on devices that have a display. Local operation is blocked. Operation is only possible again after the alarm has been deactivated.

Note

This parameter is only available when the "Control function" parameter is set either on "Cooling", "Cooling with additional stage", "Heating and cooling" or "Heating and cooling with additional stages".

8.11.106 Alarm functions - Frost alarm temperature for HVAC and RHCC status (°C)

Options:	Setting option between 0 - 15

The RHCC status and HVAC objects have a frost alarm bit. It the input temperature of the controller drops below the temperature set in this parameter, then the frost alarm bit is set in the status objects. It is reset when the temperature is exceeded.

8.11.107 Alarm functions - Heat alarm temperature for RHCC status (°C)

Options:	Setting option between 25 - 70

The RHCC status object has a heat alarm bit. If the input temperature of the controller exceeds the temperature set in this parameter, then the heat alarm bit is set in the status object. It is reset when the temperature falls below the set temperature.

8.11.108 Fan coil settings - Fan speed levels

Note

This parameter is only available if the "Device function" parameter is set on either "Single device" or "Master device" and the "Control value type" parameter is set on "Fan coil".

8.11.109 Fan coil settings - Fan speed levels Number of fan speed levels

Options:	3 levels
	5 levels

This parameter is used to specify the number of fan speed levels the actuator will use to control the fan of the fan coil.

8.11.110 Fan coil settings - Fan speed levels - Format of the level output

Options:	0..5
	0..255
	1 bit m off n
	1 bit m 1 off n

– *0 to 5*: The level values (0..3 or 0..5) are output in the 1-byte format as the counter values 0..3 or 0..5.
– *0 to 255*: The level values (0..3 or 0..5) are output as percentage values. Example 5-stage fan: The level value 1 is output as 20%, and 5 is output as 100%.
– *1 Bit m from n*: The level values (0..3 or 0..5) are output using 1-bit objects. The number of objects available is the same as the number of fan speed levels. For level 2, for example, the 1-bit fan speed level objects 1 and 2 are output as the value 1, while the other fan speed level objects use the value 0.
– *1 Bit 1 from n*: The level values (0..3 or 0..5) are output using 1-bit objects. The number of objects available is the same as the number of fan speed levels. For the level 2, for example, only the 1-bit fan speed level object 2 is output as the value 1. The other fan speed level objects use the value 0.

8.11.111 Fan coil settings - Fan speed levels - Level output

Options:	For manual operation and automatic
	Only for manual operation

This parameter is used to specify when the output of the fan speed level values will occur: either only when the fan speed levels are manually adjusted or also in automatic mode. This setting depends on the options for the fan coil actuator. If the actuator itself controls the fan speed levels in automatic mode based on a derivative of the control value, than the "Only for manual operation" option must be selected. Otherwise, the other option should be selected.

8.11.112 Fan coil settings - Fan speed levels - Lowest manually adjustable level

Options:	Level 0
	Level 1

This parameter is used to preselect the lowest fan speed level that can be set by an operation performed at the device. When level 0 is selected, the heating/cooling system will not be in operation (fan speed level and valve control 0) as long as the current operating mode and operation type are maintained. To avoid damage to the building, level 0 is deactivated after 18 hours and the device is returned to automatic mode.

8.11.113 Fan coil settings - Fan speed levels - Level status evaluation

Options:	No
	Yes

The controller obtains the current fan speed level for controlling a fan coil actuator either by calculating it from the table of level values under "Fan coil settings for heating" or "Fan coil settings for cooling", or by receiving feedback from the fan coil actuator. If the "Yes" option is selected, the "Fan coil step status" object is activated for receiving the fan speed level from the fan coil actuator.

8.11.114 Fan coil settings heating

Note

This parameter is only available if the "Device function" parameter is set on either "Single device" or "Master device" and the "Control value type" parameter is set on "Fan coil". In addition, the "Control function" parameter must be set on either "Heating", "Heating with additional stage", "Heating and cooling" or "Heating and cooling with additional stages".

8.11.115 Fan coil settings for heating - Speed level 1 to 5 up to control value (0 to 255) heating

Options:	Setting option between 0 - 255

In this parameter, the control values of the controller are assigned to fan speed levels. This assignment is used if the fan speed levels are transmitted together with the control values.

Note

- These level settings should be adjusted to match the settings in the fan coil actuator.
- Setting the "Control value type" to "Fan coil" in the control parameters is only useful for one of either the basic stage or the additional stage. Setting the basic and additional stage parameters to fan coil is not useful, since the control of only one fan coil actuator each for heating and cooling is supported.
- The "Fan speed level 4 - 5 up to control value (0 - 255) heating“ parameters are available only when the "Number of fan speed levels" is set on "5 levels".

8.11.116 Fan coil settings for heating - Fan speed level limit heating for eco mode

Options:	No
	Yes

This parameter limits the fan speed level when the system is switched to eco mode.

8.11.117 Fan coil settings for heating - Maximum speed level heating for eco mode

Options:	Setting option between 0 - 5

Specifies the maximum possible fan speed level when the system is switched to eco mode.

8.11.118 Fan coil settings for cooling

Note

This parameter is only available if the "Device function" parameter is set on either "Single device" or "Master device" and the "Control value type" parameter is set on "Fan coil". In addition, the "Control function" parameter must be set on either "Cooling", "Cooling with additional stage", "Heating and cooling" or "Heating and cooling with additional stages".

8.11.119 Fan coil settings for cooling - Speed level 1 to 5 up to control value (0 to 255) cooling

Options:	Setting option between 0 - 255

In this parameter, the control values of the controller are assigned to fan speed levels. This assignment is used if the fan speed levels are transmitted together with the control values.

Note

- These level settings should be adjusted to match the settings in the fan coil actuator.
- Setting the "Control value type" to "Fan coil" in the control parameters is only useful for one of either the basic stage or the additional stage. Setting the basic and additional stage parameters to fan coil is not useful, since the control of only one fan coil actuator each for heating and cooling is supported.
- The "Fan speed level 4 - 5 up to control value (0 - 255) cooling“ parameters are available only when the "Number of fan speed levels" is set on "5 levels".

8.11.120 Fan coil settings for cooling - Fan speed level limit cooling for eco mode

Options:	No
	Yes

This parameter limits the fan speed level when the system is switched to eco mode.

8.11.121 Fan coil settings for cooling - Maximum fan speed level cooling for eco mode

Options:	Setting option between 0 - 5

Specifies the maximum possible fan speed level when the system is switched to eco mode.

8.11.122 Summer compensation

Note
This parameter is only available if the "Device function" parameter is set on either "Single device" or "Master device".

8.11.123 Summer compensation - Summer compensation

Options:	No
	Yes

In order to save energy, and to ensure that the temperature difference occurring during entry and exit of a climate-controlled building stays within comfortable limits, the excessive reduction of room temperature should be prevented during high temperatures in the summer (Summer compensation according to DIN 1946). The room temperature is increased by adjusting the setpoint temperature for cooling.

Raising the room temperature does not, however, mean that you heat up the room. Rather, the adjustment is intended to allow the room temperature to increase to a certain setpoint without cooling. This, for example, prevents the air-conditioning system from further reducing the room temperature to 24°C with an external temperature of 35°C.

However, activation of the summer compensation requires an outside temperature sensor that transmits its measured value to the bus and can be evaluated by the room temperature controller.

The following parameters are available for summer compensation:

- "Lower outside temperature value for summer compensation",
- "Upper outside temperature value for summer compensation",
- “Lower setpoint offset for summer compensation",
- “Upper setpoint offset for summer compensation"

Above the "Upper outside temperature value", the minimum setpoint temperature for cooling is the outside temperature minus the "Upper setpoint offset". The outside temperature has no effect on the minimum setpoint temperature for cooling below the "Lower outside temperature value". Between the "Lower" and "Upper outside temperature value", the minimum setpoint temperature for cooling undergoes floating adjustment by the parameterized setpoint temperature equal to the outside temperature minus the "Lower offset" to a value equal to the outside temperature minus the "Upper setpoint offset" as a function of the outside temperature.

Typical values for summer compensation are:

- 21°C: Lower outside temperature value
- 32°C: Upper outside temperature value
- 0 K: Lower setpoint offset
- 6 K: Upper setpoint offset

This means that a continuous increase of the minimum setpoint value for cooling occurs to a value equal to the outside temperature minus a setpoint offset of 0 to 6 K if the outside temperature increases to 32°C from 21°C.

For example:

For an increasing outside temperature, the minimum setpoint value for cooling will be increased starting at an outside temperature of 21°C. The minimum setpoint temperature for cooling is 25.1°C at an outside temperature of 30°C; 25.5°C at an outside temperature of 31°C; 26°C at an outside temperature of 32°C; and 27°C at an outside temperature of 33°C.

8.11.124 Summer compensation - (Lower) Starting temperature for summer compensation (°C)

Options:	Setting option between -127 - 127

The parameter defines the lower outside temperature value up to which temperature value the setpoint correction (summer compensation) is performed based on too high an outside temperature.

Note
This parameter is only available if the "Summer compensation" parameter is set to "Yes".

8.11.125 Summer compensation - Offset of the set-point temperature for the entry into summer compensation (x 0.1°C)

Options:	Setting option between -127 - 127

The parameter is used to define how many degrees Kelvin the setpoint value will be increased by during summer compensation when the lower temperature value is reached.

Typical values for summer compensation are:

- 20°C: Lower outside temperature value
- 32°C: Upper outside temperature value
- 0 K: Lower setpoint offset
- 4 K: Upper setpoint offset

That means that a flowing setpoint increase of 0 to 4 K occurs if the outside temperature increases from 20°C to 32°C.

Note
This parameter is only available if the "Summer compensation" parameter is set to "Yes".

8.11.126 Summer compensation - (Upper) exit temperature for summer compensation (°C)

Options:	Setting option between -127 - 127

The parameter defines the upper outside temperature value up to which temperature value the setpoint correction (summer compensation) is performed based on too high an outside temperature.

Note
This parameter is only available if the "Summer compensation" parameter is set to "Yes".

8.11.127 Summer compensation - Offset of the set-point temperature for the exit from summer compensation (x 0.1°C)

Options:	Setting option between -127 - 127

The parameter is used to define how many degrees Kelvin the setpoint value will be increased by during summer compensation when the upper temperature value is reached.

Typical values for summer compensation are:

- 20°C: Lower outside temperature value
- 32°C: Upper outside temperature value
- 0 K: Lower setpoint offset
- 4 K: Upper setpoint offset

That means that a flowing setpoint increase of 0 to 4 K occurs if the outside temperature increases from 20°C to 32°C.

Note
This parameter is only available if the "Summer compensation" parameter is set to "Yes".

8.12 Additional RTC application "Control settings"

8.12.1 General – Jump-back to the primary function

Options:	5 s
	10 s
	20 s
	30 s
	1 min.
	2 min.
	3 min.

The parameter is used to specify the time period of non-operation after which there is a jump-back to the first function of the control element.

8.12.2 Temperature display – Temperature unit

Options:	°C
	°F

This is where the temperature unit is selected for the display on the device. The parameter is used to choose between Celsius (°C) and Fahrenheit (°F).

8.12.3 General - Setting the temperature unit via object

Options:	No
	Yes

The parameter is used to define whether the temperature unit adjustment is transmitted via an object.

8.12.4 General - Setpoint display

Options:	Absolute setpoint (e.g. 21°C)
	Relative setpoint (e.g. -5°C to +5°C)

The parameter is used to define whether the absolute or the relative setpoint is displayed.

8.12.5 General - Display of actual temperature

Options:	No
	Yes

If the actual temperature is to be shown on the display, the parameter must be set on active. The device will then primarily display the actual temperature. When actuating the control element the display changes to the setpoint adjustment. After non-actuation of the control element the current actual temperature again appears in the display after the set waiting period.

8.12.6 General - Waiting period for display of actual temperature

Options:	5 s
	10 s
	20 s
	30 s
	1 min.
	2 min.
	4 min.

After non-actuation of the control element the current actual temperature again appears in the display after the set waiting period.

8.12.7 General - Display of actual temperature in eco mode

Options:	No
	Yes

If the actual temperature is to be shown in ECO mode on the display, the parameter must be set on active. The device will then primarily display the actual temperature. When actuating the control element the display changes to the setpoint adjustment. After non-actuation of the control element the current actual temperature again appears in the display after the set waiting period.

8.12.8 Brightness setting – Day/Night mode

Options:	No
	Yes

Via the activated communication object "Day/Night" the backlighting of the display is shown bright during day mode and darker during night mode.

Note
The operation only applies to the display. It does not apply to the backlighting of the buttons.

8.12.9 Brightness setting – Brightness of display backlighting

Options:	Dark
	Bright

This can be used to define the brightness of the display backlighting independent of day or night mode.

Note
This parameter is only available if the "Day/Night mode" parameter is set on "No".
The operation only applies to the display. It does not apply to the backlighting of the buttons.

8.12.10 Extended settings - Colour scheme of display backlighting

Options:	Coloured
	Black and white

The device has a preset colour scheme for the room temperature controller. This means that the display indicates the modes.

- Set-point temperature < actual temperature = orange (warmer, heating)
- Set-point temperature > actual temperature = blue (colder, cooling)
- Set-point temperature = actual temperature = white (warmer, heating)
- ECO mode = green

If the colour concept is not required, the display can be selected in black and white. The display then does not indicate the specific statuses ("Heating" / "Cooling").

NOTE

The colour scheme of the display is not available for every version of the device.
It is available for the following device versions:

- Millenium, 3,5"
- Busch-*pri**On***®
- **Busch-*Comfort**Panel*®

8.13 Communication objects - RTC

8.13.1 Heating control value

Number	Name	Object function	Data type
1	Heating control value (control value heating/cooling)	Output	1. Switching 2. Percent (0 to 100%)

Description:

1. This object is used to operate a switching actuating drive, e.g. a thermoelectric positioner, that is controlled by a switching/heating actuator.
2. This object is used to control an actuating drive with a continuous input value (0%..100%), e.g. an electromotive actuating drive.

8.13.2 Additional heating stage

Number	Name	Object function	Data type
2	Additional heating stage (additional heating/cooling stage)	Output	1. Switching 2. Percent (0 to 100%)

Description:

1. This object is used to operate a switching actuating drive, e.g. a thermoelectric positioner, that is controlled by a switching/heating actuator.
2. This object is used to control an actuating drive with a continuous input value (0%..100%), e.g. an electromotive actuating drive.

Note

The additional stage can also be used as a parallel second heating stage. To do this, set the parameter for the temperature difference to the basic stage to 0°C.

8.13.3 Cooling control value

Number	Name	Object function	Data type
3	Cooling control value	Output	1. Switching 2. Percent (0 to 100%)

Description:

1. This object is used to operate a switching actuating drive, e.g. a thermoelectric positioner, that is controlled by a switching/heating actuator.
2. This object is used to control an actuating drive with a continuous input value (0%..100%), e.g. an electromotive actuating drive.

8.13.4 Additional cooling stage

Number	Name	Object function	Data type
4	Additional cooling stage	Output	1. Switching 2. Percent (0 to 100%)

Description:

1. This object is used to operate a switching actuating drive, e.g. a thermoelectric positioner, that is controlled by a switching/heating actuator.
2. This object is used to control an actuating drive with a continuous input value (0%..100%), e.g. an electromotive actuating drive.

Note
The additional stage can also be used as a parallel second cooling stage. To do this, set the parameter for the temperature difference to the basic stage to 0°C.

8.13.5 Control On/Off

Number	Name	Object function	Data type
5	1. Control On/Off	Output	Switching
	2. Control On/Off (master)	Output	Switching
	3. Control On/Off (slave)	Output	Switching

If a 0 telegram is received, the controller switches to OFF mode and regulates the temperature to the setpoint value for frost/heat protection. When the controller is switched on again, the remaining operating mode objects are queried in order to determine the new operating mode.

NOTE
About item 2:
During active ON/OFF controller function in master/slave mode the ON/OFF (master) control object is to be linked with this object.

About item 3: During active ON/OFF controller function in master/slave mode the ON/OFF (slave) control object is to be linked with this object.

8.13.6 Actual temperature

Number	Name	Object function	Data type
6	1. Actual temperature	Output	2-byte floating point value
	2. Actual temperature weighted	Output	2-byte floating point value

1. The object outputs the measured (room) temperature, adjusted by the calibration value.
2. The object outputs the temperature value which is calculated from the recording and weighting of internal and up to two external temperatures.

Note
An external temperature measurement for room control may be practical for larger rooms and/or floor heating.

8.13.7 External actual temperature

Number	Name	Object function	Data type
7	External actual temperature	Input	2-byte floating point value

2-byte communication object for reading an external temperature value provided via the KNX bus.

8.13.8 External actual temperature 2

Number	Name	Object function	Data type
8	External actual temperature 2	Input	2-byte floating point value

2-byte communication object for reading an additional external temperature value provided via the KNX bus.

8.13.9 Fault, actual temperature

Number	Name	Object function	Data type
9	1. Fault, actual temperature	Output	Switching
	2. Fault, actual temperature (master)	Output	Switching
	3. Fault, actual temperature (slave)	Output	Switching

If one of the parameterized input temperatures is unavailable to the controller for a period longer than the monitoring time, the controller enters the error mode. The error mode is sent to the bus as the value 1.

Note

About item 2:

This object must be connected to the "Fault, actual temperature (slave)" object in order to indicate the error mode.

About item 3:

This object must be connected to the "Fault, actual temperature (slave)" object in order to indicate the error mode.

8.13.10 Local actual temperature

Number	Name	Object function	Data type
10	Local actual temperature	Output	Switching

Not visible!

8.13.11 Current setpoint

Number	Name	Object function	Data type
11	Current setpoint	Output	2-byte floating point value

The object outputs the current setpoint temperature resulting from the following: the parameterized setpoint temperature of the current operation type and operating mode, the manual setpoint temperature adjustment, a change in the base setpoint temperature via the base setpoint value object. This is purely a transmitting object.

8.13.12 Operating mode

Number	Name	Object function	Data type
12	1. Operating mode	Input / output	HVAC mode
	2. Operating mode (master)	Input / output	HVAC mode
	3. Operating mode (slave)	Input / output	HVAC mode

The "Operating mode" object receives, as a 1-byte value, the operating mode that is to be set. Here value 1 means "Comfort", value 2 "Standby", value 3 "Economy" and value 4 "Frost/heat protection".

In addition to manual setpoint adjustment and the adjustment of the basic setpoint value, the setpoint temperature of the controller can also be defined by objects "Superimposed operating mode", "Condensate ware alarm", "Dew alarm", "Window contact", "Control On/Off", "Presence detector" and "Operating mode (listed in decreasing order of priority).

Note

Item 2:

If the master/slave mode is the active operating mode, the Operating mode (slave) object must be connected to this object.

Item 3:

If the master/slave mode is the active operating mode, the operating mode (master) object must be connected to this object.

8.13.13 Superimposed operating mode

Number	Name	Object function	Data type
13	1. Superimposed operating mode	Input	HVAC mode
	2. Superimposed operating mode (master/slave)	Input	HVAC mode

The "Superimposed operating mode" object receives the operating mode that is to be set as 1-byte value. Here value 0 means "Superimposition inactive", value 1 "Comfort", value 2 "Standby", value 3 "Economy" and value 4 "Frost/heat protection".

In addition to manual setpoint adjustment and the adjustment of the basic setpoint value, the setpoint temperature of the controller can also be defined by objects "Superimposed operating mode", "Condensate ware alarm", "Dew alarm", "Window contact", "Control On/Off", "Presence detector" and "Operating mode (listed in decreasing order of priority).

Note

Item 2:

If the master/slave mode is active, the "Superimposed operating mode" object of the master and the slave must be connected to the group address of the transmitter.

8.13.14 Window contact

Number	Name	Object function	Data type
14	1. Window contact	Input	Switching
	2. Window contact (master/slave)	Input	Switching

The object uses the value 1 to signal an open window to the controller. If no other object with a higher priority is present, then the "Window contact" message causes the controller to be set to the setpoint value for frost/heat protection. In addition to manual setpoint adjustment and the adjustment of the basic setpoint value, the setpoint temperature of the controller can also be defined by objects "Superimposed operating mode", "Condensate water alarm", "Dew alarm", "Window contact", "Control On/Off", "Presence detector" and "Operating mode (listed in decreasing order of priority).

Note

Item 2:

If the master/slave mode is active, the "Window contact (master/slave)" object of the master and the slave must be connected to the group address of the transmitter.

8.13.15 Presence detector

Number	Name	Object function	Data type
15	1. Presence detector	Input	Switching
	2. Presence detector (master/slave)	Input	Switching

This object transmits the value 1 to the controller to signal that there are people in the room. If not other object with a higher priority is present, then the "Presence detector" causes the controller to be set to the comfort setpoint value. In addition to manual setpoint adjustment and the adjustment of the basic setpoint value, the setpoint temperature of the controller can also be defined by objects "Superimposed operating mode", "Condensate water alarm", "Dew alarm", "Window contact", "Control On/Off", "Presence detector" and "Operating mode (listed in decreasing order of priority).

Note

Item 2:

If the master/slave mode is active, the "Presence detector (master/slave)" object of the master and the slave must be connected to the group address of the transmitter.

8.13.16 Heating status

Number	Name	Object function	Data type
16	Heating status	Output	Switching

The room temperature controller sends an ON telegram via the "Heating status" object as soon as it is active in the heating mode. If the controller is in the inactive zone between heating and cooling or is in cooling mode, the room temperature controller transmits an OFF telegram on the "Heating status" object.

8.13.17 Cooling status

Number	Name	Object function	Data type
17	Cooling status	Output	Switching

The room temperature controller sends an ON telegram via the "Cooling status" object as soon as it is active in the cooling mode. If the controller is in the inactive zone between heating and cooling or is in heating mode, the room temperature controller transmits an OFF telegram on the "Cooling status" object.

8.13.18 Basic load

Number	Name	Object function	Data type
16	Basic load	Input / output	Switching

This object uses the value 1 to activate a parameterized base load, i.e. a minimum control value greater than zero. The value 0 deactivates the base load. When the base load is deactivated, the control value can be lowered all the way to zero if necessary when the setpoint temperature is reached, despite the minimum value set in the parameter.

Note

Deactivating the basic load for a floor heating system is always useful in the summer, since it saves heating energy.

8.13.19 Switchover heating/cooling

Number	Name	Object function	Data type
17	Switchover heating/cooling	Input / output	Switching

1. Automatic: If the switchover between heating and cooling is performed automatically by the room temperature controller, then this object is used to provide information on the current heating (0) or cooling (1) status to the KNX bus. It is a transmitting object.
2. Only via object: The switchover between heating and cooling on the room temperature controller occurs solely via this 1-bit communication object. The value (0) activates the heating mode, and the value (1) activates the cooling mode. This is a receiving object.
3. Manual or via object: The switchover between heating and cooling on the room temperature controller occurs by user interaction or via the 1-bit communication object. The information on the respective heating (0) or cooling (1) status is available to the KNX bus. This is a receiving and sending object.

8.13.20 Fan coil manual

Number	Name	Object function	Data type
18	1. Fan coil manual	Output	Switching
	2. Fan coil manual (master)	Output	Switching
	3. Fan coil manual (slave)	Output	Switching

Using this 1-bit communication object, a fan coil actuator can be placed in manual fan mode or returned to automatic fan mode. In the automatic fan mode of the fan coil actuator, the fan's rotational speed is defined in the fan coil actuator using the control value. In manual fan operation, the user of the room temperature controller can set the fan's rotational speed as needed. This setting will remain active until it is reset. The fan speed level 0 is an exception: to avoid damage to the building, automatic mode is activated again 18 hours after fan speed level 0 is selected.

Note

Item 2:

If fan coil manual is active in the master/slave mode, the fan coil manual (slave) object must be connected to this object.

Item 3:

If fan coil manual is active in the master/slave mode, the fan coil manual (master) object must be connected to this object.

8.13.21 Fan coil step

Number	Name	Object function	Data type
19	1. Fan coil step	Output	2-byte floating point value
	2. Fan coil step (master)	Output	2-byte floating point value
	3. Fan coil step (slave)	Output	2-byte floating point value

The fan speed level in the fan coil actuator is selected via the 1-byte communication object. Whether the fan speed level information is transmitted in manual or also in automatic fan speed level mode can be set. The formats that can be selected for the 1-byte communication object are the fan speed level (0..5) or a percentage value (0..100%) which is calculated back to a fan speed level in the fan coil actuator.

Note

Item 2:

If fan coil step is active in the master/slave mode, the fan coil step (slave) object must be connected to this object.

Item 3:

If fan coil step is active in the master/slave mode, the fan coil step (slave) object must be connected to this object.

8.13.22 Fan coil step status

Number	Name	Object function	Data type
20	Fan coil step status	Input / output	2-byte floating point value

Using the "Fan coil step status" object, the room temperature controller receives the current fan speed level of the fan coil actuator.

8.13.23 Fan speed level 1

Number	Name	Object function	Data type
21	Fan speed level 1	Output	Switching

This 1-bit communication object is used to output the active status (1) of the fan speed level, while the other fan speed levels are deactivated (0), depending on the parameter setting. If the fan speed level is inactive, the object has a value of (0).

8.13.24 Fan speed level 2

Number	Name	Object function	Data type
22	Fan speed level 2	Output	Switching

This 1-bit communication object is used to output the active status (1) of the fan speed level, while the other fan speed levels are deactivated (0), depending on the parameter setting. If the fan speed level is inactive, the object has a value of (0).

8.13.25 Fan speed level 3

Number	Name	Object function	Data type
23	Fan speed level 3	Output	Switching

This 1-bit communication object is used to output the active status (1) of the fan speed level, while the other fan speed levels are deactivated (0), depending on the parameter setting. If the fan speed level is inactive, the object has a value of (0).

8.13.26 Fan speed level 4

Number	Name	Object function	Data type
24	Fan speed level 4	Output	Switching

This 1-bit communication object is used to output the active status (1) of the fan speed level, while the other fan speed levels are deactivated (0), depending on the parameter setting. If the fan speed level is inactive, the object has a value of (0).

8.13.27 Fan speed level 5

Number	Name	Object function	Data type
25	Fan speed level 5	Output	Switching

This 1-bit communication object is used to output the active status (1) of the fan speed level, while the other fan speed levels are deactivated (0), depending on the parameter setting. If the fan speed level is inactive, the object has a value of (0).

8.13.28 Basic setpoint

Number	Name	Object function	Data type
26	Basic setpoint	Input	2-byte floating point value

This 2-byte communication object can be used to change/adjust the parameterized basic setpoint value via the KNX bus. Parameters can be used to define whether the value received by this object is interpreted as "Setpoint heating comfort", "Setpoint cooling comfort" or an average between heating and cooling comfort.

8.13.29 Resetting manual setpoints

Number	Name	Object function	Data type
27	Resetting manual setpoints	Input	Switching

This 1-bit communication object is used to reset the manual setpoint adjustment that was set on the device.

8.13.30 Dew point alarm

Number	Name	Object function	Data type
28	Dew point alarm	Input	Switching

This 1-bit communication object is used to place the controller in the dew point alarm mode. This causes the current setpoint value to be set to the heat protection setpoint value in order to keep the structure from being damaged by dew.

Note

This protective mechanism is only active in the cooling mode. It remains in place until it is cancelled by the value (0). When an alarm is active, manual operation of the controller is blocked. This information is indicated by a corresponding icon on the control unit.

8.13.31 Condensate water alarm

Number	Name	Object function	Data type
29	1. Condensate water alarm	Input	Switching
	2. Condensate water alarm (master/slave)	Input	Switching

This 1-bit communication object is used to place the controller in the condensation alarm mode. This causes the current setpoint value to be set to the heat protection setpoint value in order to keep the structure from being damaged by an overflowing condensation container.

Note

Item 1:

This protective mechanism is only active in the cooling mode. It remains in place until it is cancelled by the value (0). When an alarm is active, manual operation of the controller is blocked. This information is indicated by a corresponding icon on the device.

Item 2:

- This protective mechanism is only active in the cooling mode. It remains in place until it is cancelled by the value (0). When an alarm is active, manual operation of the controller is blocked. This information is indicated by a corresponding icon on the device.
- When the master/slave mode is active, the condensate water alarm (master/slave) objects must be connected to the alarm transmitter.

8.13.32 Outside temperature for summer compensation

Number	Name	Object function	Data type
30	Outside temperature for summer compensation	Input	2-byte floating point value

In order to save energy, and to ensure that the temperature difference occurring during entry and exit of a climate-controlled building stays within comfortable limits, the reduction of room temperature by cooling devices should be limited as a function of the outside temperature (summer compensation). This, for example, prevents the air-conditioning system from further reducing the room temperature to 24°C with an outside temperature of 35°C.

This function can only be used with an outside temperature sensor. This 2-byte communication object must then be used to provide the controller with the current outside temperature.

8.13.33 Summer compensation active

Number	Name	Object function	Data type
31	Summer compensation active	Output	Switching

This 1-bit communication object is used to indicate via the bus whether the summer compensation is active (1) or inactive (0). If it is active, the setpoint value configured for the cooling mode is increased by the summer compensation function. A decrease of the cooling mode setpoint temperature below the value calculated by the parameterized summer compensation function is not possible. An increase of the setpoint temperature for the cooling mode is always possible.

8.13.34 Setpoint reached

Number	Name	Object function	Data type
32	Setpoint reached	Output	Switching

When the setpoint set on the device in comfort mode has been reached it is sent by means of value (1) as information to the KNX bus via the 1-bit communication object. The function is started by activating the comfort or presence mode. If the reaching of the setpoint temperature is interfered with by the preselection of a different operating mode or by adjustment to a new setpoint, value (0) is sent.

8.13.35 Fahrenheit

Number	Name	Object function	Data type
33	1. Fahrenheit	Input / output	Switching
	2. Fahrenheit (master)	Input / output	Switching
	3. Fahrenheit (slave)	Input / output	Switching

The temperature indication on the display can be changed from Celsius (°C) to Fahrenheit (°F). The conversion from Celsius to Fahrenheit always takes place in the display unit, since only Celsius values are sent over the KNX bus. The value (0) results in a temperature indication in Celsius, while the value (1) results in Fahrenheit.

NOTE

Item 2:

If the Fahrenheit object is active in the master/slave mode, the Fahrenheit (slave) object must be connected to this object.

Item 3:

If the Fahrenheit object is active in the master/slave mode, the Fahrenheit (master) object must be connected to this object.

8.13.36 Display backlighting

Number	Name	Object function	Data type
34	Display backlighting	Input / output	Switching

The display backlighting is activated with value (1) and deactivated with value (0) via the 1-bit communication object.

NOTE
This function is mainly used in rooms where backlighting during the night is considered to be a disturbing factor, such as in hotel rooms and bedrooms.

8.13.37 On/Off request

Number	Name	Object function	Data type
35	1. On/off request (master)	Input	Switching
	2. On/off request (slave)	Input	Switching

This 1-bit communication object must be connected to the respective slave communication object in order to synchronise the devices in the master/slave configuration.

8.13.38 Setpoint display

Number	Name	Object function	Data type
36	1. Set value display (master)	Input / output	2-byte floating point value
	2. Set value display (slave)	Input / output	2-byte floating point value

This 2-byte communication object must be connected to the respective slave communication object in order to synchronise the devices in the master/slave configuration.

8.13.39 Request setpoint

Number	Name	Object function	Data type
37	1. Request set value (master)	Input	Percent (0 - 100%)
	2. Request set value (slave)	Input	Percent (0 - 100%)

This 1-byte communication object must be connected to the respective slave communication object in order to synchronise the devices in the master/slave configuration.

8.13.40 Confirm setpoint

Number	Name	Object function	Data type
38	1. Confirm set value (master)	Input / output	Percent (0 - 100%)
	2. Confirm set value (slave)	Input / output	Percent (0..100%)

This 1-byte communication object must be connected to the respective slave communication object in order to synchronise the devices in the master/slave configuration.

8.13.41 Heating/cooling request

Number	Name	Object function	Data type
39	1. Heating/cooling request (master)	Input	Switching
	2. Heating/cooling request (slave)	Input	Switching

This 1-bit communication object must be connected to the respective slave communication object in order to synchronise the devices in the master/slave configuration.

8.13.42 Request fan speed level manually

Number	Name	Object function	Data type
40	1. Request fan speed level manually (master)	Input	Switching
	2. Request fan speed level manually (slave)	Input	Switching

This 1-bit communication object must be connected to the respective slave communication object in order to synchronise the devices in the master/slave configuration.

8.13.43 Request fan speed level

Number	Name	Object function	Data type
41	1. Request fan speed level (master)	Input	Percent (0..100%)
	2. Request fan speed level (slave)	Input	Percent (0..100%)

This 1-byte communication object must be connected to the respective slave communication object in order to synchronise the devices in the master/slave configuration.

8.13.44 Confirm fan speed level

Number	Name	Object function	Data type
42	1. Confirm fan speed level (master)	Input / output	Percent (0..100%)
	2. Confirm fan speed level (slave)	Input / output	Percent (0..100%)

This 1-byte communication object must be connected to the respective slave communication object in order to synchronise the devices in the master/slave configuration.

8.13.45 Controller status RHCC

Number	Name	Object function	Data type
43	Controller status RHCC	Output	2-byte floating point value

This communication object outputs the heating/cooling operation type, active/inactive operation, the frost and heat alarm, and the error (actual temperature reading failure) in accordance with the specification for the RHCC (Room Heating Cooling Controller) status.

8.13.46 Controller status HVAC

Number	Name	Object function	Data type
44	1. Controller status HVAC	Output	Percent (0..100%)
	2. Controller status HVAC (master)	Output	Percent (0..100%)
	3. Controller status HVAC (slave)	Output	Percent (0..100%)

This communication object outputs the current operating mode, the heating/cooling mode, active/inactive mode, the frost alarm and the dew point alarm in accordance with the specification for the HVAC (Heating Ventilation Air Conditioning) status.

Note

Item 2:

If the master/slave mode is active, the HVAC status (slave) object must be connected to this object.

Item 3:

If the master/slave mode is active, the HVAC status (master) object must be connected to this object.

8.13.47 Commissioned

Number	Name	Object function	Data type
45	Commissioned	Output	Switching

The controller uses this 1-bit communication object to send a cyclical "sign of life". This signal can be used to monitor the device, e.g. by means of a visualisation.

8.14 Additional RTC communication objects "Control settings"

8.14.1 Day/Night mode

Number	Name	Object function	Data type
47	Day/Night mode	–	Switching

Description:

Via the activated communication object "Day/Night" the backlighting of the display is shown bright during day mode and darker during night mode.

Note: The operation only applies to the display. It does not apply to the backlighting of the buttons.

8.15 Communication objects

8.15.1 Switching, rocker total

No.	Object name	Data type	Flags
0	Switching	1 bit EIS1 / DPT 1.001	C, W ,T ,U

With the "Switching, rocker total" application, an operation of the right or left side of the rocker sends out a switching telegram.

The "Switching, rocker total" application differentiates here between whether the rocker is operated on the left or right side.

8.15.2 Switching, rocker left/right

No.	Object name	Data type	Flags
0	Switching	1 bit EIS1 / DPT 1.001	C, W ,T ,U

With the application "Switching, rocker left/right" a switching telegram is sent when the rocker is actuated and/or released. "Rocker left/right" does not differentiate whether the rocker is actuated on the right or the left side. In each case, the application makes a separate set of parameters and communication objects available for the right and left side of the rocker.

The application enables realising a switching function via one rocker side while the other rocker side can be assigned with an additional "button-oriented" function.

8.15.3 Dimming, rocker total

No.	Object name	Data type	Flags
0	Switching	1 bit EIS2 / DPT 1.001	C, W ,T ,U
1	Relative dimming	4 bit EIS2 / DPT 3.007	C, T

With the "Dimming, rocker total" application, a rocker has communication objects for switching and for dimming. A distinction is made a between short and long press of the button.

The "Dimming, rocker total" application differentiates between whether the rocker is operated on the left or right side. The "Principle of operation of the rocker for …" parameter allows adjustment of whether the left or right side switches on or off or whether it is dimmed brighter or darker.

8.15.4 Dimming, rocker left/right

No.	Object name	Data type	Flags
0	Switching	1 bit EIS2 / DPT 1.001	C, W ,T ,U
1	Relative dimming	4 bit EIS2 / DPT 3.007	C, T

With the "Dimming, rocker left/right" application, a rocker has communication objects for switching and for dimming. A distinction is made between a short (switching) and long (dimming) press of the button.

The "Dimming, rocker left/right" application does not differentiate between whether the rocker is operated on the left or right side. In each case, the application makes a separate set of parameters and communication objects available for the right and left side of the rocker.

The application facilitates assigning different functions to each side of the rocker switch i.e. one side of the rocker switch for dimming and the other for a "button orientated" function.

8.15.5 Blind, rocker total

No.	Object name	Data type	Flags
0	Adjust (1 bit)	1 bit EIS7 / DPT 1.008	C, T
0	Adjust (1 byte)	1 byte EIS6 / DPT 5.001	C, T
1	Travel (1 bit)	1 bit EIS7 / DPT 1.007	C, T
1	Travel (1 byte)	1 byte EIS6 / DPT 5.001	C, T

Via the application "Blind, rocker total", blind movement and/or slats adjustment commands can be sent to connected blind actuators via a short or long operation of the rocker. A short button press always triggers a slats adjustment or stop command and a long button press always triggers a travel command.

The control always remembers the last action performed on the side of the rocker that is assigned with the "Blind, rocker total" application. For example: If a blind was lowered and halted at half height via a short button contact, then a renewed long button contact will raise the blind.

8.15.6 Blind, rocker left/right

No.	Object name	Data type	Flags
0	Adjust (1 bit)	1 bit EIS7 / DPT 1.007	C, W ,T ,U
0	Adjust (1 byte)	1 byte EIS6 / DPT 5.001	C, W ,T ,U
1	Travel (1 bit)	1 bit EIS7 / DPT 1.008	C, W ,T ,U
1	Travel (1 byte)	1 byte EIS6 / DPT 5.001	C, W ,T ,U

Via the application "Blind, rocker left/right", blind movement and/or slats adjustment commands can be sent to connected blind actuators with a short or long actuation of the rocker. A short button press always triggers a travel command and a long button press always triggers a slats adjustment or stop command.

The application "Blind, rocker left/right" makes a separate set of parameters and communication objects available in each case for the right or left side of the rocker. This facilitates control of a blind with one side of the rocker and assigning an additional "Rocker, left/right" function to the other side of the rocker.

The control always remembers the last action performed on the side of the rocker that is assigned with the "Blind, rocker left/right" application. For example: If a blind was lowered and halted at half height via a long press of the button, then a renewed short press of the button will raise the blind.

8.15.7 Value transmitter, rocker total

No.	Object name	Data type	Flags
0	Switching value (1 bit)	1 bit EIS1 / DPT 1.001	C, W ,T ,U
0	Switching value (1 byte 0 - 100%)	1 byte EIS6 / DPT 5.001	C, W ,T ,U
0	Switching value (1 byte 0 - 255)	1 byte EIS14 / DPT 5.010	C, W ,T ,U
0	Switching value (2-byte float)	2 byte EIS5 / DPT 9.xxx	C, W ,T ,U
0	Switching value (2-byte signed)	2 byte EIS10 / DPT 7.001	C, W ,T ,U
0	Switching value (2-byte unsigned)	2 byte EIS10 / DPT 8.001	C, W ,T ,U
0	Switching value (4-byte float)	4 byte EIS9 / DPT 14.xxx	C, W ,T ,U
0	Switching value (4-byte signed)	4 byte EIS11 / DPT 13.001	C, W ,T ,U
0	Switching value (4-byte unsigned)	4 byte EIS11 / DPT 12.001	C, W ,T ,U

With the "Value transmitter, rocker total" application, a telegram with the predefined value is sent out for an operation of the right or left side of the rocker.

The "Value transmitter, rocker total" application differentiates here between whether the rocker is operated on the left or right side.

8.15.8 Value transmitter, rocker left/right

No.	Object name	Data type	Flags
0	Switching (1 bit)	1 bit EIS1 / DPT 1.001	C, W ,T ,U
0	Switching (1 byte 0 - 100%)	1 byte EIS6 / DPT 5.001	C, W ,T ,U
0	Switching (1 byte 0 - 255)	1 byte EIS14 / DPT 5.010	C, W ,T ,U
0	Switching (2-byte float)	2 byte EIS5 / DPT 9.xxx	C, W ,T ,U
0	Switching (2-byte signed)	2 byte EIS10 / DPT 8.001	C, W ,T ,U
0	Switching (2-byte unsigned)	2 byte EIS10 / DPT 7.001	C, W ,T ,U
0	Switching (4-byte float)	4 byte EIS9 / DPT 14.xxx	C, W ,T ,U
0	Switching (4-byte signed)	4 byte EIS11 / DPT 13.001	C, W ,T ,U
0	Switching (4-byte unsigned)	4 byte EIS11 / DPT 12.001	C, W ,T ,U

With the "Value transmitter, rocker left/right" application, a telegram with the predefined value is sent out for an operation and/or upon release of the rocker.

The "Value transmitter, rocker left/right" application does not differentiate between whether the rocker is operated on the left or right side. In each case, the application makes a separate set of parameters and communication objects available for the right and left side of the rocker.

The application enables realising a switching function via a rocker switch side while the other rocker switch side can be assigned with an additional "button orientated" function.

8.15.9 Value transmitter, 2 objects, rocker left/right

No.	Object name	Data type	Flags
0	Switching (rising edge) (1 bit)	1 bit EIS1 / DPT 1.001	C, W ,T ,U
0	Switching (rising edge) (1-byte 0 - 100%)	1 byte EIS6 / DPT 5.001	C, W ,T ,U
0	Switching (rising edge) (1 byte 0 - 255)	1 byte EIS14 / DPT 5.010	C, W ,T ,U
0	Switching (rising edge) (2-byte float)	2 byte EIS5 / DPT 1.xxx	C, W ,T ,U
0	Switching (rising edge) (2-byte signed)	2 byte EIS10 / DPT 8.001	C, W ,T ,U
0	Switching (rising edge) (2-byte unsigned)	2 byte EIS10 / DPT 7.001	C, W ,T ,U
0	Switching (rising edge) (4-byte float)	4 byte EIS9 / DPT 14.xxx	C, W ,T ,U
0	Switching (rising edge) (4-byte signed)	4 byte EIS11 / DPT 13.001	C, W ,T ,U
0	Switching (rising edge) (4-byte unsigned)	4 byte EIS11 / DPT 12.001	C, W ,T ,U
1	Switching (falling edge) (1 bit)	1 bit EIS1 / DPT 1.001	C, W ,T ,U
1	Switching (falling edge) (1 byte 0 - 100%)	1 byte EIS6 / DPT 5.001	C, W ,T ,U
1	Switching (falling edge) (1 byte 0 - 255)	1 byte EIS14 / DPT 5.010	C, W ,T ,U
1	Switching (falling edge) (2-byte float)	2 byte EIS5 / DPT 9.xxx	C, W ,T ,U
1	Switching (falling edge) (2-byte signed)	2 byte EIS10 / DPT 7.001	C, W ,T ,U
1	Switching (falling edge) (2-byte unsigned)	2 byte EIS10 / DPT 8.001	C, W ,T ,U
1	Switching (falling edge) (4-byte float)	4 byte EIS9 / DPT 14.xxx	C, W ,T ,U
1	Switching (falling edge) (4-byte signed)	4 byte EIS11 / DPT 13.001	C, W ,T ,U
1	Switching (falling edge) (4-byte unsigned)	4 byte EIS11 / DPT 12.001	C, W ,T ,U

With the "Value transmitter, 2 objects, rocker left/right" application, two telegrams with predefined values from two different communication objects can be sent out for an operation and/or upon release of the rocker.

In each case, the application "Value transmitter, 2 objects, rocker left/right" makes a separate set of parameters and communication objects available in each case for the right and left side of the rocker.

The application facilitates, for example, the sending out a switching function and a floating point value via operation of one rocker switch side and assigning an additional "button orientated" function to the other side of the rocker switch.

8.15.10 Value dimming sensor, rocker total

No.	Object name	Data type	Flags
0	Value	1 byte / EIS6/14 / DPT 5.001 / DPT 5.010	C, W ,T ,U

With the application "Value dimming sensor, rocker total", it is possible to send 1-byte value telegrams via an operation of the rocker.

Each operation of the left or right side of the rocker will increase or reduce a 1-byte value (percent or value from 0 to 255). The 1-byte value can be connected with 1-byte brightness value objects of dimming actuators. This allows a dimming actuator to be dimmed brighter or darker with the rocker via value telegrams.

8.15.11 Light scene extension unit with memory function

No.	Object name	Data type	Flags
0	Switching	1 byte EIS1 / DPT 1.001	C, W ,T ,U

Via the application "Light scene extension unit with storage function", a predefined light scene number is called when the rocker switch is operated.

The application "Light scene extension unit with memory function" makes a separate set of parameters and communication objects available in each case for the right or left side of the rocker.

The application facilitates calling up a light scene via a rocker side while the other rocker side can be assigned an additional "button orientated" function.

The user has the option to trigger a light scene memory command with a long press of the button.

8.15.12 Step switch, rocker total

No.	Object name	Data type	Flags
0	Switching step 1	1 bit EIS1 / DPT 1.001	C, W, T
1	Switching step 2	1 bit EIS1 / DPT 1.001	C, W, T
2	Switching step 3	1 bit EIS1 / DPT 1.001	C, W, T
3	Switching step 4	1 bit EIS1 / DPT 1.001	C, W, T
4	Switching step 5	1 bit EIS1 / DPT 1.001	C, W, T

The application "Step switch, rocker total" facilitates step-type switching. This means that the user can trigger different switching processes with each new actuation of the left or right side of the rocker.

For example:

– First operation (right rocker switch side) switches lamp 1 on.
– Second operation (right rocker switch side) switches lamp 1 off and lamp 2 on.
– Third operation (right rocker switch side) switches lamp 2 off and lamp 3 on.
– Fourth operation (left rocker switch side) switches lamp 3 off and lamp 2 on.
– Fifth operation (left rocker switch side) switches lamp 2 off and lamp 1 on.
– etc.

The application differentiates between whether the left or right side of the rocker was operated. Depending on the setting, one lower or one higher level can be switched to.

Up to five switching levels can be activated.

8.15.13 Step switch, rocker left/right

No.	Object name	Data type	Flags
0	Switching step 1	1 bit EIS1 / DPT 1.001	C, W, T
1	Switching step 2	1 bit EIS1 / DPT 1.001	C, W, T
2	Switching step 3	1 bit EIS1 / DPT 1.001	C, W, T
3	Switching step 4	1 bit EIS1 / DPT 1.001	C, W, T
4	Switching step 5	1 bit EIS1 / DPT 1.001	C, W, T

The application "Step switch, rocker left/right" facilitates step-type switching. This means that the user can trigger different switching processes with each new actuation of the rocker.

Example:

– First operation switches lamp 1 on.
– Second operation switches lamp 1 off and lamp 2 on.
– Third operation switches lamp 2 off and lamp 3 on.
– Fourth operation switches lamp 3 off and lamp 1 on.
– etc.

Up to five switching levels can be activated.

In each case, the application "Step switch, button-oriented" makes a separate set of parameters and communication objects available for the right or left side of the rocker.

The application enables implementing switching functions via one rocker side while the other rocker side can be assigned with an additional "button oriented" function.

8.15.14 Multiple actuation, rocker left/right

No.	Object name	Data type	Flags
0	Switching 1 multiple operation (1 bit)	1 bit EIS1 / DPT 1.001	C, W, T
0	Switching 1 multiple operation (1 byte 0 - 100%)	1 byte EIS6 / DPT 5.001	C, W, T
0	Switching 1 multiple operation (1 byte 0 - 255)	1 byte EIS14 / DPT 5.010	C, W, T
0	Switching 1 multiple operation (2-byte float)	2 byte EIS5 / DPT 9.xxx	C, W, T
0	Switching 1 multiple operation (2-byte signed)	2 byte EIS10 / DPT 8.001	C, W, T
0	Switching 1 multiple operation (2-byte unsigned)	2 byte EIS10 / DPT 7.001	C, W, T
0	Switching 1 multiple operation (4-byte float)	4 byte EIS9 / DPT 14.xxx	C, W, T
0	Switching 1 multiple operation (4-byte signed)	4 byte EIS11 / DPT 13.001	C, W, T
0	Switching 1 multiple operation (4-byte unsigned)	4 byte EIS11 / DPT 12.001	C, W, T
1	Switching 2 multiple operation (1 bit)	1 bit EIS1 / DPT 1.001	C, W, T
1	Switching 2 multiple operation (1 byte 0 - 100%)	1 byte EIS6 / DPT 5.001	C, W, T
1	Switching 2 multiple operation (1 byte 0 - 255)	1 byte EIS14 / DPT 5.010	C, W, T
1	Switching 2 multiple operation (2-byte float)	2 byte EIS5 / DPT 9.xxx	C, W, T
1	Switching 2 multiple operation (2-byte signed)	2 byte EIS10 / DPT 8.001	C, W, T
1	Switching 2 multiple operation (2-byte unsigned)	2 byte EIS10 / DPT 7.001	C, W, T
1	Switching 2 multiple operation (4-byte float)	4 byte EIS9 / DPT 14.xxx	C, W, T
1	Switching 2 multiple operation (4-byte signed)	4 byte EIS11 / DPT 13.001	C, W, T
1	Switching 2 multiple operation (4-byte unsigned)	4 byte EIS11 / DPT 12.001	C, W, T
2	Switching 3 multiple operation (1 bit)	1 bit EIS1 / DPT 1.001	C, W, T
2	Switching 3 multiple operation (1 byte 0 - 100%)	1 byte EIS6 / DPT 5.001	C, W, T
2	Switching 3 multiple operation (1 byte 0 - 255)	1 byte EIS14 / DPT 5.010	C, W, T
2	Switching 3 multiple operation (2-byte float)	2 byte EIS5 / DPT 9.xxx	C, W, T
2	Switching 3 multiple operation (2-byte signed)	2 byte EIS10 / DPT 8.001	C, W, T
2	Switching 3 multiple operation (2-byte unsigned)	2 byte EIS10 / DPT 7.001	C, W, T
2	Switching 3 multiple operation (4-byte float)	4 byte EIS9 / DPT 14.xxx	C, W, T
2	Switching 3 multiple operation (4-byte signed)	4 byte EIS11 / DPT 13.001	C, W, T
2	Switching 3 multiple operation (4-byte unsigned)	4 byte EIS11 / DPT 12.001	C, W, T
3	Switching 4 multiple operation (1 bit)	1 bit EIS1 / DPT 1.001	C, W, T
3	Switching 4 multiple operation (1 byte 0 - 100%)	1 byte EIS6 / DPT 5.001	C, W, T
3	Switching 4 multiple operation (1 byte 0 - 255)	1 byte EIS14 / DPT 5.010	C, W, T

No.	Object name	Data type	Flags
3	Switching 4 multiple operation (2-byte float)	2 byte EIS5 / DPT 9.xxx	C, W, T
3	Switching 4 multiple operation (2-byte signed)	2 byte EIS10 / DPT 8.001	C, W, T
3	Switching 4 multiple operation (2-byte unsigned)	2 byte EIS10 / DPT 7.001	C, W, T
3	Switching 4 multiple operation (4-byte float)	4 byte EIS9 / DPT 14.xxx	C, W, T
3	Switching 4 multiple operation (4-byte signed)	4 byte EIS11 / DPT 13.001	C, W, T
3	Switching 4 multiple operation (4-byte unsigned)	4 byte EIS11 / DPT 12.001	C, W, T
4	Switching 5 multiple operation (1 bit)	1 bit EIS1 / DPT 1.001	C, W, T
4	Switching 5 multiple operation (1 byte 0 - 100%)	1 byte EIS6 / DPT 5.001	C, W, T
4	Switching 5 multiple operation (1 byte 0 - 255)	1 byte EIS14 / DPT 5.010	C, W, T
4	Switching 5 multiple operation (2-byte float)	2 byte EIS5 / DPT 9.xxx	C, W, T
4	Switching 5 multiple operation (2-byte signed)	2 byte EIS10 / DPT 8.001	C, W, T
4	Switching 5 multiple operation (2-byte unsigned)	2 byte EIS10 / DPT 7.001	C, W, T
4	Switching 5 multiple operation (4-byte float)	4 byte EIS9 / DPT 14.xxx	C, W, T
4	Switching 5 multiple operation (4-byte signed)	4 byte EIS11 / DPT 13.001	C, W, T
4	Switching 5 multiple operation (4-byte unsigned)	4 byte EIS11 / DPT 12.001	C, W, T

With the "Multiple operation, rocker left/right" application, a differentiation can be made between a single, double, triple, quadruple or quintuple operation of the rocker. For each actuation, single, double, triple, quadruple, or quintuple, different values can be sent out.

In each case, the application "Multiple operation, rocker left/right" makes a separate set of parameters and communication objects available in each case for the right or left side of the rocker. It is therefore possible to implement a multiple operation via one side of the rocker and assigning a "button-orientated" function to the other side of the rocker.

8.15.15 Short/long operation, rocker left/right

No.	Object name	Data type	Flags
0	Adjust (1 bit)	1 bit EIS7 / DPT 1.007	C, W ,T ,U
0	Adjust (1 byte)	1 byte EIS6 / DPT 5.001	C, W ,T ,U
1	Travel (1 bit)	1 bit EIS7 / DPT 1.008	C, W ,T ,U
1	Travel (1 byte)	1 byte EIS6 / DPT 5.001	C, W ,T ,U

Via the application "Short-long operation, rocker left/right", different values can be sent out for a short and/or long operation of the rocker.

The "Short-long operation, rocker left/right" application does not differentiate between whether the rocker is operated on the left or right side. In each case, the application makes a separate set of parameters and communication objects available for the right and left side of the rocker.

The application facilitates making two separate functions available on one side of the rocker switch that can be called via a short or long button press and assigning the other side of the rocker switch with an additional "button orientated" function.

8.15.16 Setting the RTC operating mode

No.	Object name	Data type	Flags
0	Enable	1 bit EIS1 / DPT 1.001	C, W, U
1	Comfort operating mode (1 bit)	1 bit EIS1 / DPT 1.001	C, T
2	Night operating mode (1 bit)	1 bit EIS1 / DPT 1.001	C, T
3	Frost operating mode (1 bit)	1 bit EIS1 / DPT 1.001	C, T
4	Operating mode (1 byte)	1 byte / DPT 20.102	C, T

With the "Setting the RTC operating mode" application, an operating mode switchover for connected room temperature controllers can be carried out with an operation of a rocker side.

Depending on the setting of the "Object type for output" parameter, the application offers either three 1-bit communication objects "Operating mode comfort", "Operating mode night", and "Operating mode frost" or a 1-byte communication object "Operating mode".

The selection "1 bit" is used for activating room temperature controllers that have 1-bit communication objects for operating mode switchover. The "1-byte" selection is used for activating room temperature controllers that have a 1-byte communication object for operating mode switchover to KNX. In this case, the values mean

0 = auto

1 = comfort

2 = standby

3 = night

4 = frost/heat protection

The function can be temporarily blocked via a 1-bit "Enable" communication object.

8.15.17 General

No.	Function	Object name	Data type	Flags
0	Commissioned	General	1 bit EIS1 / DPT 1.001	C, T
1	Device On/Off	Operating mode	1 bit EIS1 / DPT 1.001	C, W, T, R
2	Switching display unit °C/°F	General	1 bit EIS1 / DPT 1.001	C, W, R
3	Switching on/off	General	1 bit EIS1 / DPT 1.001	C, W, T, R

8.15.18 Controller, general

No.	Function	Object name	Data type	Flags
4	Frost/heat protection	Control system	1 bit EIS1 / DPT 1.001	C, W, R
5	Activate night mode	Control system	1 bit EIS1 / DPT 1.001	C, W, R
6	User absent	Control system	1 bit EIS1 / DPT 1.001	C, T, W, R
7	Operating mode switchover	Control system	1 byte DPT_HV AC mode	C, W, T, R
8	Operating mode switchover OMO	Control system	1 byte DPT_HV AC mode	C, T, W, R
9	Transmit actual value	Temperature sensor	2 byte	C, T, R
10	External actual temperature input	Temperature reading	2 byte	C, W
11	Outside temperature input	Temperature reading	2 byte	C, W

8.15.19 Setpoint, general

No.	Function	Object name	Data type	Flags
12	Current setpoint for cooling	Control system	2 byte	C, T, W, R
13	Current setpoint for heating	Control system	2 byte	C, T, W, R
14	Basic setpoint	Control system	2 byte	C, T, W, R
15	Setpoint for heating comfort	Control system	2 byte	C, W, T, R
16	Setpoint for heating standby	Control system	2 byte	C, W, T, R
17	Setpoint for heating night mode	Control system	2 byte	C, W, T, R
18	Setpoint for frost protection	Control system	2 byte	C, W, T, R
19	Setpoint for cooling comfort	Control system	2 byte	C, W, T, R
20	Setpoint for cooling standby	Control system	2 byte	C, W, T, R
21	Setpoint for cooling night mode	Control system	2 byte	C, W, T, R
22	Setpoint for heat protection	Control system	2 byte	C, W, T, R
23	Resetting local control	Control system	1 bit EIS1 DPT1.001	C, W, T, R

8.15.20 Control value

No.	Function	Object name	Data type	Flags
24	Send heating control value	Control value	1 byte / 1 bit	C, T, R
25	Cooling control value 4-pipe	Control value	1 byte / 1 bit	C, T, R
26	Sending control value for additional heating stage	Control value	1 byte / 1 bit	C, T, R
27	Sending control value for additional cooling stage	Control value	1 byte / 1 bit	C, T, R
28	Heating status display	Control value	1 bit	C, W, T, R
29	Cooling status display	Control value	1 bit	C, W, T, R

8.15.21 Heating / cooling

No.	Function	Object name	Data type	Flags
24	Heating and cooling control value	Control value	1 byte / 1 bit	C, T, R
30	Switchover heating/cooling	Heating/cooling	1 bit EIS1 DPT1.001	C, W, T, R

8.15.22 Fan coil, general

No.	Function	Object name	Data type	Flags
31	Automatic On/Off	Fan, automatic / manual	1 bit EIS1 DPT1.001	C, W, T, R
31	Manual On/Off	Fan, automatic / manual	1 bit	C, W, T, R
32	Fan speed level manual 1 byte	Fan, manual	1 byte	C, W, T, R
33	Status, fan coil operating mode	Status, fan coil operation	1 byte	C, W
34	Switching, fan coil stage 1	Fan, manual	1 bit EIS1 DPT1.001	C, W, T, R
35	Switching, fan coil stage 2	Fan, manual	1 bit EIS1 DPT1.001	C, W, T, R
36	Switching, fan coil stage 3	Fan, manual	1 bit EIS1 DPT1.001	C, W, T, R

8.15.23 Surveillance

No.	Function	Object name	Data type	Flags
37	Received during operation	Actuator monitoring	1 bit	C, W
39	Dew point message	Dew-point monitoring	1 bit EIS1 DPT1.001	C, W
40	Condensate tank message	Monitoring of condensate tank	1 bit EIS1 DPT1.001	C, W

8.15.24 Alarm temperature

No.	Function	Object name	Data type	Flags
41	Message, failure of actual temperature detection	Alarm temperature	1 bit EIS1 DPT1.001	C, T, R
42	Message, failure of exterior temperature detection	Alarm temperature	1 bit EIS1 DPT1.001	C, T, R

8.15.25 Status byte

No.	Function	Object name	Data type	Flags
44	Status byte, HVACStatus	Status byte	1 byte DPT_HVACStatus	C, T, R

8.15.26 Compensation

No.	Function	Object name	Data type	Flags
45	Summer compensation active	Control system	1 bit	C, W, T, R
46	Winter compensation active	Control system	1 bit	C, W, T, R

8.15.27 Fan speed level – status

No.	Function	Object name	Data type	Flags
47	Status, stage 1	Status, fan coil operation	1 bit EIS1 DPT1.001	C, W
48	Status, stage 2	Status, fan coil operation	1 bit EIS1 DPT1.001	C, W
49	Status, stage 3	Status, fan coil operation	1 bit EIS1 DPT1.001	C, W

9 Index

D

E

F

G

T

V

W

A member of the ABB Group

Busch-Jaeger Elektro GmbH
PO box
58505 Lüdenscheid

Freisenbergstraße 2
58513 Lüdenscheid

www.BUSCH-JAEGER.com
info.bje@de.abb.com

Central sales service:
Tel.: +49 2351 956-1600
Fax: +49 2351 956-1700

KNX Technical Reference Manual 1473-1-8838 / 2CKA001473B8838