ABB

Product manual

Busch-Watchdog®

BM/A4.1-xxx

280° KNX

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 include 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:

https://new.abb.com/en

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 (reversible) 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.

This symbol alerts to electric voltage.

2.2 Intended use

The Busch-Watchdog® are passive infrared movement detectors. They send telegrams when sources of heat move within their detection range. The device is intended for the following:

▪ Operation according to the listed technical data

▪Installation on walls of buildings

▪ Use with the connecting options available on the device

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

2.3 Improper use

Each use not listed in see chapter 2.2 "Intended use" on page 10 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

▪ Insert with an additional bus coupler

▪ Substitute for an alarm system.

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 Cyber security

The industry faces intensifying cyber security risks. In order to increase stability, safety and robustness of its solutions, ABB has formally established cyber security robustness testing as part of the product development process.

The following measures are prerequisite for the safe operation of your system. ABB accepts no liability for non-observance.

Access control and limitation

The careful isolation of the system against unauthorized access is the basis for every protective concept. Only authorized persons (fitter, caretaker, tenant) are allowed physical access to the IP network or bus system and its components. This also includes the device described in this instruction manual.

The best possible protection of the IP or network media (WLAN) and the transfer nodes must be guaranteed already during planning and installation. Sub-distributions with fieldbus devices must be lockable or be in rooms to which only authorized persons have access.

Bus cabling

- The ends of the bus cables must not be visible, i.e. they must not project out of walls or channels, either inside or outside of the building.
- Bus cables in outdoor areas or in areas with limited protection represent an increased safety risk. The physical access should be made exceptionally difficult.

Safety of user accounts

Set a strong access password during initial commissioning. Use passwords that you have received from the administrator only for the first login.

Keep passwords secret and use a password manager with two-factor login as memory aid, e.g. Keepass.

Updates

The device supports various update options. A detailed overview is available in Chapter 9 "Update" on page 37

Backup / Restoration

The user can backup / restore device settings. To perform the backup the user must enter a password. This password is used as safety key to encrypt the backup information. If the user wants to restore the device settings via a backup file, he must first enter the defined password so that the backup information can be decrypted.

2.6   Safety instructions

Danger - Electric voltage!

Electric voltage! Risk of death and fire due to electric voltage of 100 … 240 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 100 … 240 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

The Busch-Watchdog® are passive infrared movement detectors. They use telegrams via a timing element when sources of heat move within their detection range.

The Busch-Watchdog® 280° KNX is a movement detector with a detection range of 280°. It is suitable for use in private homes and for wall and ceiling mounting. Mounting is also possible on ISO switch boxes (68 mm). The device is ideally suited for larger properties and free-standing buildings.

The Busch-Watchdog® 280° KNX movement detector sends a corresponding bus telegram to one or several ABB i-bus® KNX- actuators in dependence of a detected heat source. Also bus telegrams can be sent when a certain brightness or temperature threshold value is exceeded or drops below its set value. Also the measured values of the outside temperature or ambient brightness can be evaluated.

Programming is carried out via the software application (ETS). Remote control and parametrisation can also be made via the app when the use of the app has been enabled beforehand in the ETS.

The Busch-Watchdog® do not serve as a substitute for intrusion or attack alarms.

The following list provides an overview of the most important functions.

- Integrated twilight sensor
- Ground and rear-field detection
- Brightness-independent mode for activation test
- Automatic interference suppression
- Automatic dazzle-proof
- Automatic range stabilisation (Sommer/winter operation)

4.1 Scope of supply

The scope of delivery contains the movement detector including base.

Optionally a "Square" design via Busch-Watchdog® frames 6851/DR-xxx is also available (not included in the scope of delivery).

- For additional information about the frame:
  https://new.abb.com/products/2CKA006800A3097/6851-dr-134

The corner adapter 6851/EA-xxx is available (not included in the scope of delivery) for corner mounting.

- For additional information about the corner adapter:
  https://new.abb.com/products/2CKA006800A3087/6851-ea-134

> **Notice**
> Additional information about the optional accessories is available in the electronic catalogue (https://busch-jaeger-catalogue.com).

4.2   Overview of types

Article number	Colour
BM/A4.1x-131	Brown, RAL 8017
BM/A4.1x-133	Aluminium silver, RAL 9006
BM/A4.1x-134	Studio white, RAL 9016
BM/A4.1x-135	Anthracite, RAL 7016
BM/A4.1x-136	Stainless steel

Table. 1:   Colour variations

4.3   Device overview
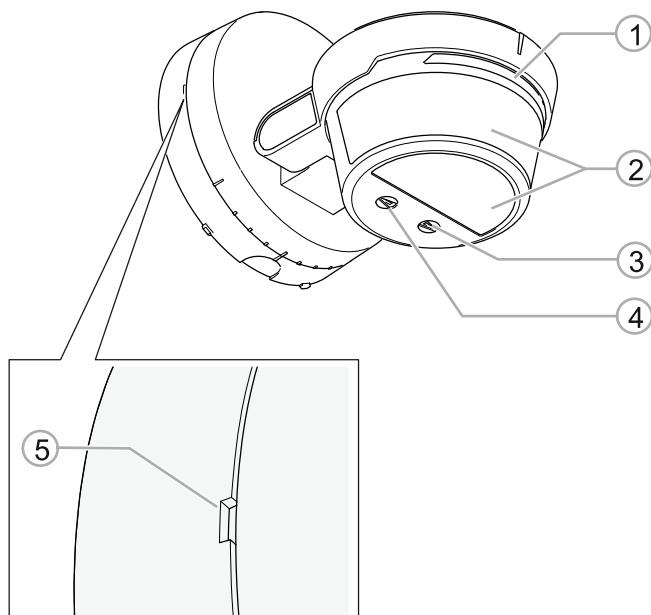
Fig. 1:   Overview of devices

[1]   LED with brightness/twilight sensor

[2]   Lens

[3]   Selector switch of programming mode / reset

[4]   Selector switch (without function)

[5]   Recess for dismantling safety

5   Technical data

Description		Value
Power supply		24 V DC (via bus line)
Bus subscribers		1 (12 mA)
Bus connection	WAGO bus connecting terminal	0.4 – 0.8 mm
	Line type	J-Y(St)Y, 2 x 2 x 0.8 mm
	Skinning length	8 mm
Front lens		280°
Horizontal detection		280°
Brightness sensor		0.5 – 100,000 lux
Temperature sensor		-25 °C - +55 °C
Maximum coverage (installed 2.5 m high)		16 m in radius
Operating temperature		-25 °C - +55 °C
Type of protection		IP55

Table:2   Technical data

5.1   Dimensional drawings
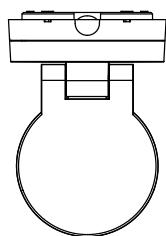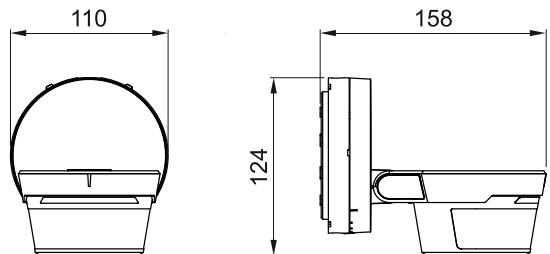
Fig. 2:   Dimensions
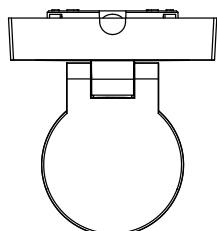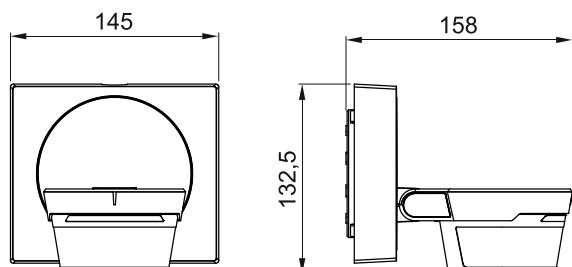
Fig. 3:   Dimensions with design styling frame (optional)

Notice
All dimensions are in mm.

5.2 Detection range
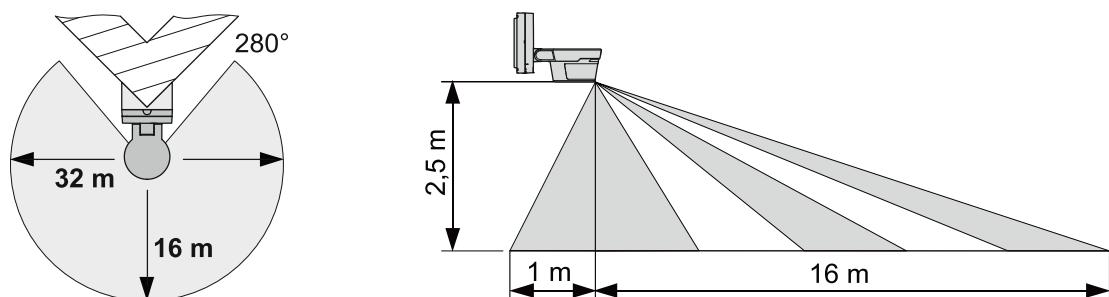
Fig. 4:   Detection range

Detection range

▪ The detection range is 280°.

▪ The maximum transmission range is 16 m in radius.

▪ The movement detector also has rear-field detection of one meter.

Wall mounting

▪ The movement detector offers optimum surveillance if mounted to the wall at a maximum height of 2.5 m.

Notice
Other mounting heights have an influence o the detection range.

Notice
The corner adapter 6851/EA-xxx is available (not included in the scope of delivery) for corner mounting.
▪ For additional information about the corner adapter: https://new.abb.com/products/2CKA006800A3087/6851-ea-134

6 Connection, installation / mounting

6.1 Safety instructions

Danger - Electric shock due to short-circuit!

Risk of death due to electrical voltage of 100 to 240 V during short-circuit in the low-voltage line.

– Low-voltage and 100 - 240 V lines must not be installed together in a flush-mounted box!

– Observe the spatial division during installation (> 10 mm) of SELV electric circuits to other electric circuits.

– If the minimum distance is insufficient, use electronic boxes and insulating tubes.

– Observe the correct polarity.

– Observe the relevant standards.

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 users 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.).

▪ Observe the correct polarity.

6.2   Circuit diagrams
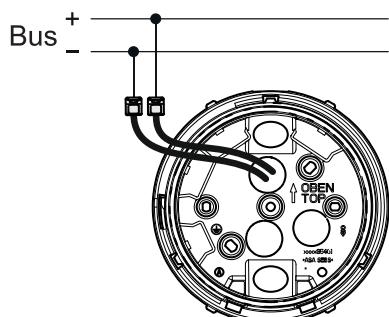
Fig. 5:   Standard connection

Terminal assignment

+   Red

−   Black
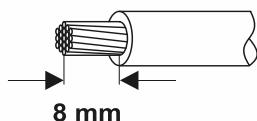
Fig. 6:   Skinning length

Skinning length: 8 mm

⚠ **Attention!**

Protection of the skinned lengths
–   Do not remove the wire end sleeves on the device cables.

⚡ **Danger - Electric shock due to short-circuit!**

Risk of death due to electrical voltage of 100 to 240 V during short-circuit in the low-voltage line.
–   Low-voltage and 100 - 240 V lines must not be installed together in a flush-mounted box!
–   Observe the spatial division during installation (> 10 mm) of SELV electric circuits to other electric circuits.
–   If the minimum distance is insufficient, use electronic boxes and insulating tubes.
–   Observe the correct polarity.
–   Observe the relevant standards.

6.3   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.

⚠ **Attention! - Risk of damaging the device**

The lens of the device is sensitive and can easily sustain damage.

–   Do not press on the lens of the device!

Mounting of the device

1.   If the cover and base are already latched, press the groove for dismantling (X) in with a screwdriver.
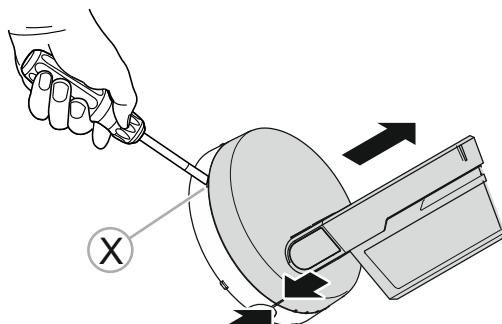
Fig. 7:   Pressing in groove for dismantling

2.   Turn the cover anticlockwise.
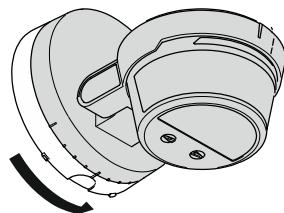
Fig. 8:   Turning the cover anticlockwise

3.   Carefully remove the cover.

4. Mount the base.

    – The bolting options [A] of the base are compatible with possibly available bores of older Busch-Watchdog®.

    – Do not use countersunk head screws for mounting the base.

    – Use screws with a head diameter of 6.5 mm - 8.5 mm.
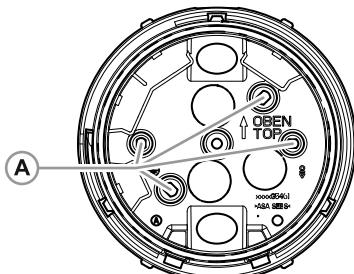
Fig. 9: Bolting options of base

5. Connect the power to the device.

    –Observe correct wiring (see chapter 6.2 "Circuit diagrams" on page 21).

    – Please pay attention to the safe seating of the stripped wire ends in the terminals.
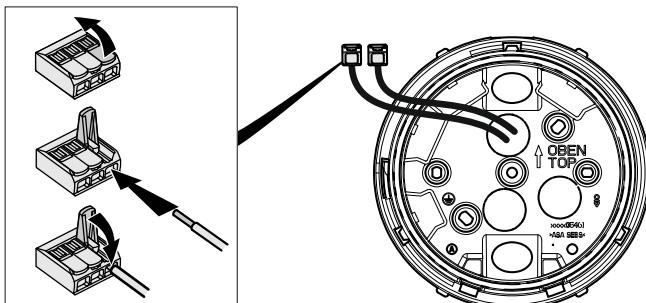
Fig. 10: Position of connecting terminals on the base

    – During wiring ensure that the venting hose [A] on the rear side of the cover does not get damaged.
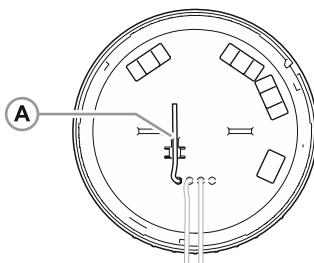
Fig. 11: Venting hose [A] on the cover

6. Latch the cover of the device onto the base.
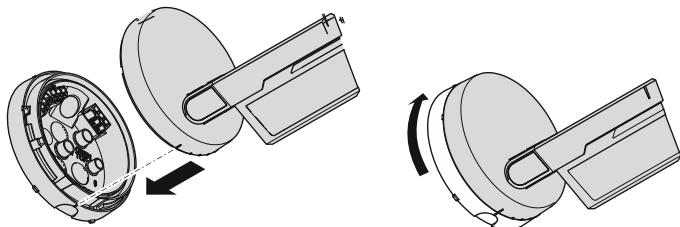
Fig. 12:   Latching front of device onto base

7. Attach the cover so that the markings are above each other.
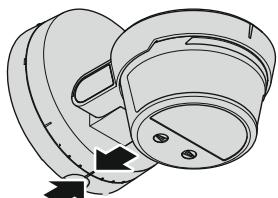
Fig. 13:   Aligning markings

8. Turn the cover clockwise until it latches with an audible click.

Mounting the design styling frame (optional)

Notice
The Busch-Watchdog® Design styling frame 6851/DR-xxx is not included in the scope of delivery and can be ordered separately.

Notice
TheBusch-Watchdog® Design styling frame 6851/DR-xxx is suitable for mounting on walls and ceilings, yet not for corner mounting.
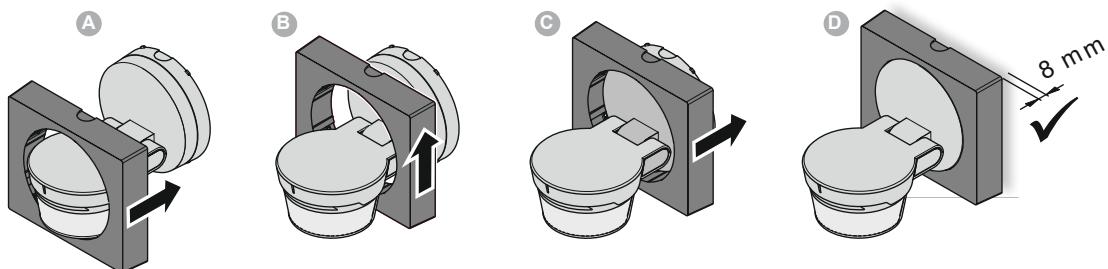
Fig. 14:   Mounting the design styling frame (optional)
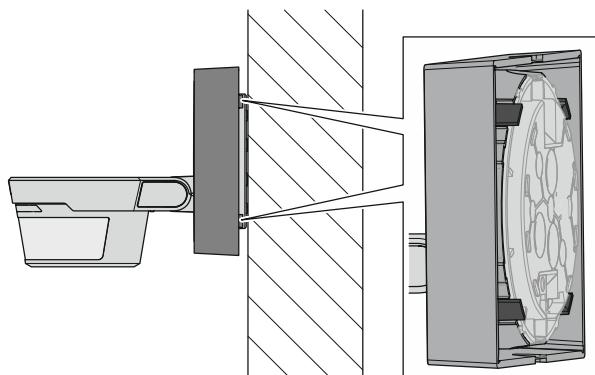
Fig. 15:   Detailed view of design styling frame

Mounting the corner adapter (optional)
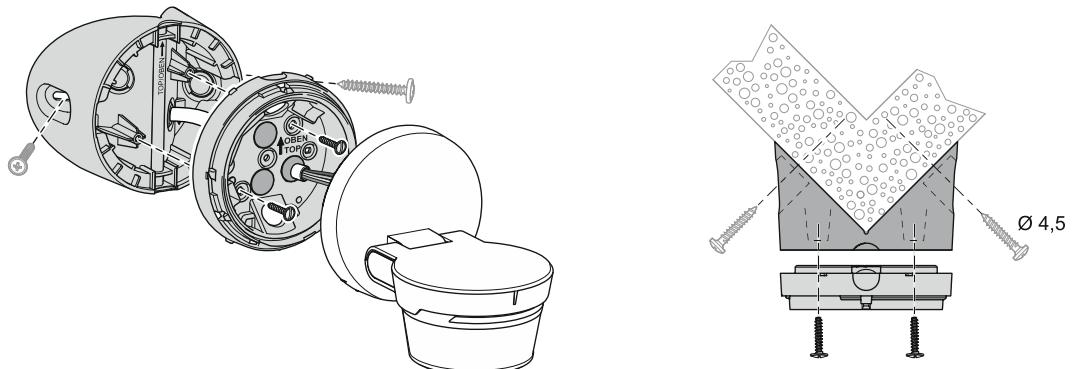
Fig. 16:   Mounting the corner adapter (optional)

Notice
The corner adapter 6851/EA-xxx is available (not included in the scope of delivery) for corner mounting.

6.4   Mounting method

There are different types of mounting methods for the movement detector. The mounting hole is compatible with all previously available models. The possible mounting methods are described in the following.

Wall mounting
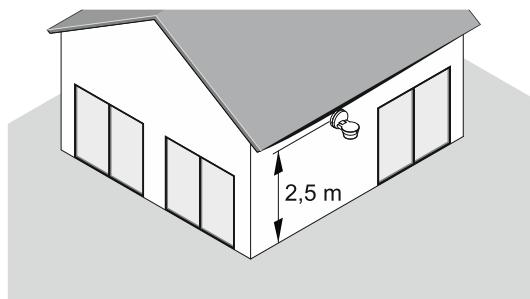
Fig. 17:   Wall mounting on free-standing one-family house

Fig. 18:   Wall mounting on free-standing one-family house with limited detection range

Wall mounting in hillside location

Wall mounting in hillside location, for example, is recommended on a building situated on a hill or with a gradient. This allows the detection ranged to be used effectively.
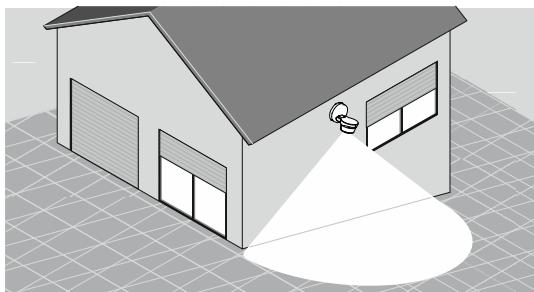
Fig. 19:   Wall mounting in hillside location

Ceiling mounting
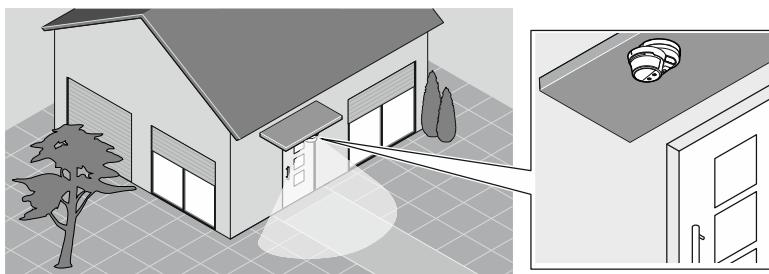
Fig. 20:   Ceiling mounting, example of canopy

Corner mounting

Corner mounting on building corners makes the surveillance of two sides of the house possible.
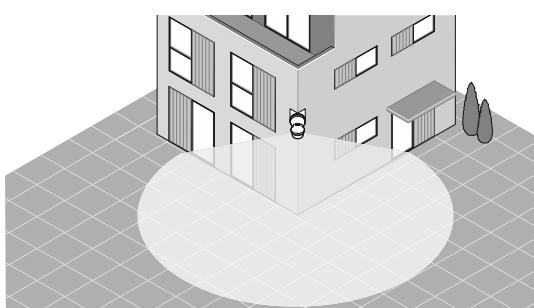
Fig. 21:   Corner mounting on building corners

Notice
The corner adapter 6851/EA-xxx is available (not included in the scope of delivery) for corner mounting.

6.5   Installation site

- ▪ Ceiling mounting in narrow rooms is not recommended.
- ▪ The recommended mounting height of the device is 2.5 m.
- ▪ The distance of the movement detector to light and heat sources should be at least 1.5 m.
- ▪ The ideal mounting position of the movement detector is an arrangement that is easily offset into the direction of movement.
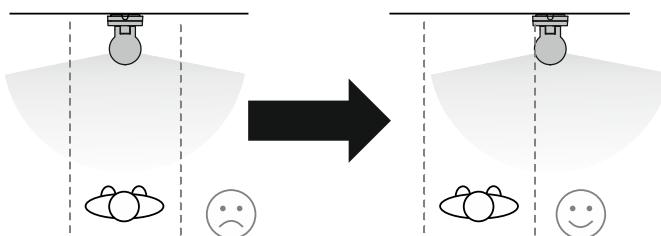
Fig. 22:   Mounting position

6.6   Adjusting the transmission range

Adjusting the transmission range as follows:

1. Adjust the transmission range by lifting or lowering the head of the device (at least 6 metres).
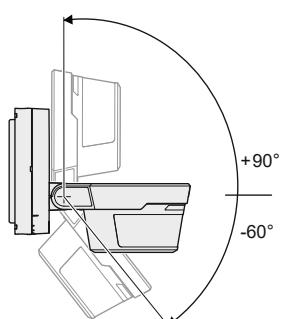
Fig. 23:   Transmission range

6.7   Mounting / dismantling

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.

7   Commissioning

7.1   KNX secure

KNX Secure encrypts the data additionally on the bus line (Twisted Pair) or via the wireless communication.

It is a method for safe communication within the KNX installation, and it includes the areas "KNX IP Secure" on the IP-network level and "KNX Data Secure" on the telegram level. Prerequisite for this are KNX Secure-capable devices.

KNX Data Secure

Access (parameter setting) and editing of KNX telegrams for users is possible only for authorized participants.

Prerequisite:

–   The project must be created and fitted with a password.
–   The KNX Secure device must have been imported.

To encrypt the data with KNX Secure, proceed as follows:
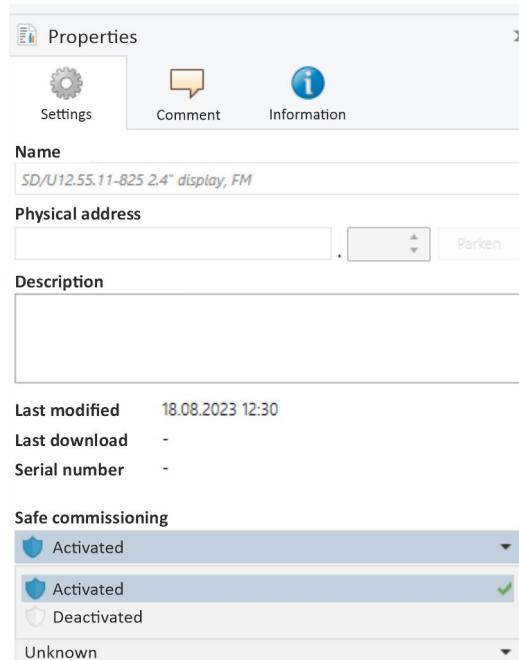
1.   In the project under "Characteristics/settings" activate "Safe commissioning".

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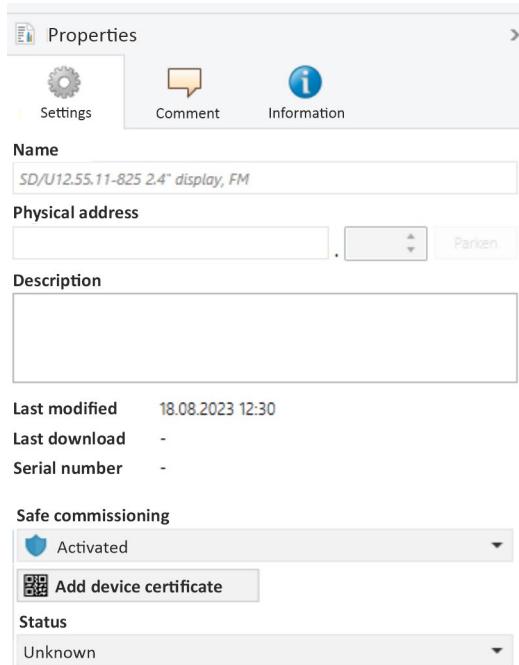
2. Click on button "Add device certificate".

    The "Add device certificate" window opens.
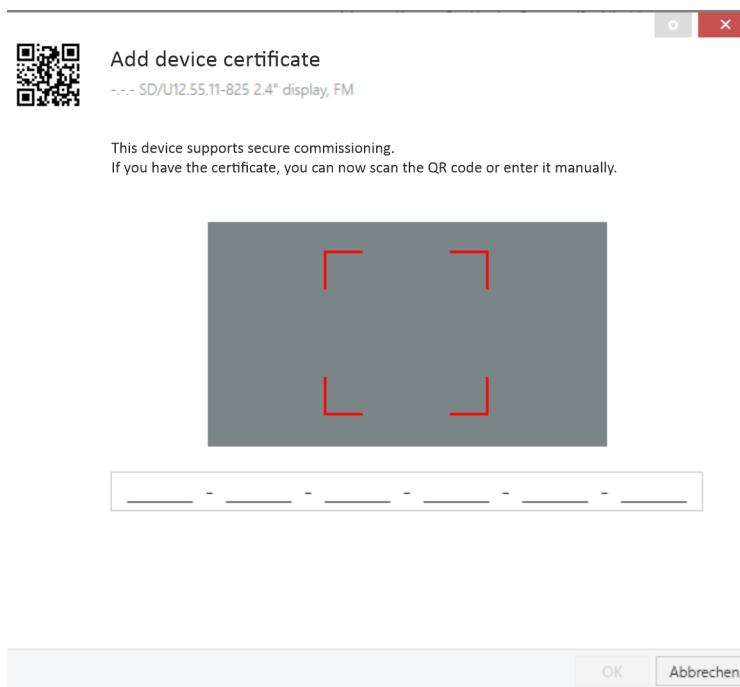
3. Add the device certificate (Factory Device Setup Key) by scanning the QR code or by entering it manually and confirm with OK.

    The device is now in safe mode and can be parameterized.

Notice
The QR code and the device-specific key (Factory Device Setup Key) are located on the rear side of the insert.

To cancel the encryption with KNX Secure, perform a master reset (see chapter 12.3 "RESET (Resetting the device)" on page 168).

7.2 Reducing the detection range

The reduction of the detection range can be made both by means of specific gluing on of the supplied foil and also via the app.

The detection range of the Busch-Watchdog® amounts to 280°. The detection range can be limited in case of special local circumstances. To do this, proceed as follows:

1. Cut the included adhesive film to the desired length.

2. Glue the shortened adhesive film from the front before the lens of your Busch-Watchdog® to the area where the detection should be blocked out.
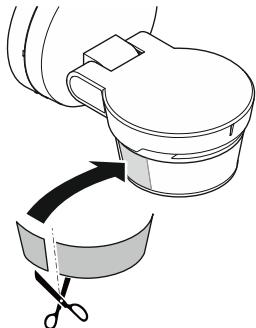
Fig. 24:   Glueing the detection range

Notice
The bottom lens can also be glued with the enclosed foils as described above.

7.3 Changing the lateral detection range

Adjust the lateral detection range as follows:

1. Adjust the lateral detection range by turning the head of the device.
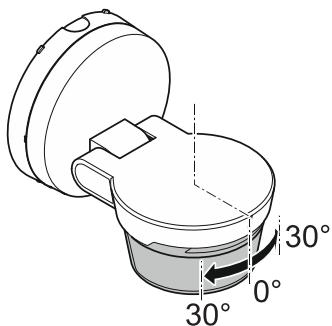
Fig. 25:   Lateral detection range

7.4   Adjusting to the hillside location

To adjust the detection range to the hillside location, proceed as follows:

1.   Adjust the level of the detection range by turning the top part of the device on the base.
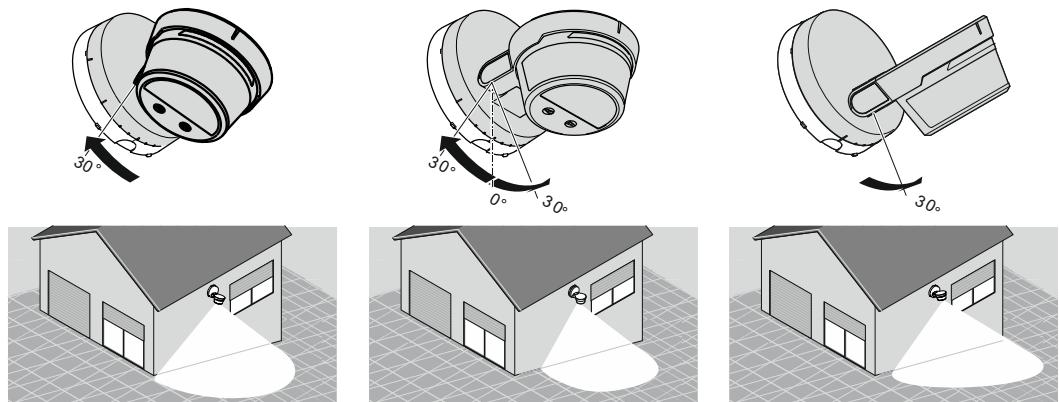
Fig. 26:   Adjusting the detection range to the hillside location

8   Commissioning via ETS

To start the device a physical address must be assigned first.

Programming is started via the software application (ETS). The physical address is assigned and the parameters are set with the Engineering Tool Software (ETS).

> **Notice**
> The devices are products of the KNX system and meet KNX policies. Detailed expert knowledge by means of KNX training sessions for a better understanding is assumed.

8.1   Integration into the KNX system (ETS)

> **Notice**
> The device meets KNX guidelines and can be used as product of the KNX system. Detailed expert knowledge for understanding by means of KNX training is assumed, especially with regard to the commissioning software ETS.

8.1.1   Prerequisites

ETS version

The minimum requirement is the use of ETS from version 5.7.7.

8.1.2   Assigning a physical address

Programming is started via the software application (ETS). For this the device must be set into the programming mode.

1. Turn the selector switch to position "Prog".

2. Now turn the selector switch out of the position

    –   The device is set into the programming mode.

    –   The red LED lights up during the process. If the device is not programmed, the programming mode is ended automatically after 15 minutes.

    –   When the programming mode has been completed it is exited automatically after 15 minutes

> **Notice**
> The device does not switch into programming mode automatically after a reset(Chapter 12.3 "RESET (Resetting the device)" on page 168). After a reset the selector switch must if necessary be set on "Prog" and turned back to enter the programming mode.

8.1.3 Assigning the group address(es)

The group addresses are assigned in connection with the ETS.

8.1.4 Selecting the application program

The device applications (*.knxprod) are loaded into the devices via the ETS and make available different functions.

The applications can be downloaded via the online catalogue (www.busch-jaeger-catalogue.com) in sector "Software downloads".

Detailed description of parameters, see chapter 10 "Description of application and parameters" on page 38.

The software (ETS) and the descriptions of the program are available in languages DE, EN, ES, FR, IT, NL, PL and RU.

8.1.5 Differentiating the application program

Various functions can be implemented via the ETS.

Detailed description of parameters, see chapter 10 "Description of application and parameters" on page 38 (only in languages DE, EN, ES, FR, IT and NL).

8.2 Downloading and installing the app

Download the ABB SmartConnect App from the respective store and install it on your smartphone.

Android

IOS

Notice

When updating the operating system of your Apple smartphone, it can happen that the coupling to the Busch-Watchdog® device is lost. If this is the case, uncouple the devices and reconnect it again.

8.3 Parametrisation/activation via app (Bluetooth)

For the use of the ABB SmartConnect App first the control via Bluetooth must be activated in the ETS by activating the corresponding checkbox (see chapter 10.2.4 "Bluetooth control for movement detector" on page 41).

If the Bluetooth control has not been activated first, the movement detector cannot be used and is not displayed in the app.

The movement detector can be parameterised and activated via the ABB SmartConnect App. After being activated, the device is automatically visible in the app for 30 minutes.

Only certain parameters or up to 10 functions can be set in the KNX system. Always use the latest version of the app.

The device must be parameterised via the software application (ETS) for the use of additional functions.

9 Update

Updating via ETS

A Firmware update is made via Long-Frame interfaces (e.g. USB/S 1.2 or IPR/x). Please note that the update via Long-Frame interfaces can take up to 40 minutes. You additionally require the ETS app "ABB Firmware update 2.0" from ABB Stotz-Kontakt GmbH.

The app is made available free of charge in the KNX online shop. There, only licensing with the available ETS license is required.

The app makes it possible to update the operating systems of the different KNX devices with changing the hardware. The latest firmware files can be downloaded automatically from the Internet via the ETS.

The ETS can be used to check the firmware that is available in the device. The respective firmware status can be read from the device under menu item "Device info".

> **Notice**
> The latest firmware can also be downloaded via the online catalogue (www.busch-jaeger-catalogue.com). It is stored on the device page under category "Software".

To perform the Firmware update, proceed as follows:

1. Ensure that your computer is connected with the ETS software via the Long-Frame-interface with the KNX bus.
2. Select the device to be updated in the ETS.
3. Use the function integrated in the ETS for the Firmware update. The software automatically recognises whether the device supports Long-Frame interfaces, and use uses them for more efficient data transmission.

Updating via ABB SmartConnect App

The Firmware of the movement detector can be updated via the app. The update takes approx. 30 seconds.

However, for this the updating of the Firmware must have been enabled in the device settings beforehand by the fitter. When Bluetooth has been additionally activated or deactivated, this influences the availability of the updating options within the app.

If updating has been activated in the ETS, the customer has the option for 24 hours to update the device in the app.

> **Notice**
> If the movement detector was deactivated beforehand and is then activated again, the movement detector can also be updated via the app.

10 Description of application and parameters

10.1 Overview of applications

The application program of the devices contains the KNX applications listed in the following:

- Movement detector
- Status LED
- Brightness-/twilight sensor
- Temperature sensor
- Bluetooth control
  - Bluetooth control for movement detector
  - Bluetooth functions (inactive, switch, dimming, blind/roller blind, scenes, value)
- General functions

10.2 Device configuration

10.2.1 General

In this chapter the basic functions are parameterised. These functions override the control and application functions.

On the device configuration page you have the option to specify the functions that are to be activated and the functions that are to be available in the device.

Movement detector

	Function	EXT	Description
Movement detector 1	Active ▼	☑	
Movement detector 2	Active ▼	☐	
Movement detector 3	Inactive ▼		
Movement detector 4	Inactive ▼		

ⓘ EXT = enables advanced parameters

Fig. 27: Device configuration - movement detector

In the "Function" column you can activate or deactivate a channel of the device. In addition, you can specify the channel function (active, inactive, extension unit).

As standard the application only indicates the standard parameters "Standard parameters" and "Detection ranges". The main parameters under "General parameters" include especially "Switch-off delay" and "Internal brightness threshold". If additional functions are required, the checkbox "EXT" must be activated next to the respective channel. This activates the extended parameters of the channel (extra parameters, brightness parameters, button parameters, enable).

In the description area you can assign a user-friendly name to each channel. This name is displayed at the channel parameter set and each communication object that is connected with this channel.

10.2.2 Movement detector

10.2.2.1 Description

Options:	<Name>

The parameter is used to assign a name to the channel. The description text is taken over in the object description.

10.2.2.2 Movement detector x: Function

Options:	Inactive
	Active
	Extension unit

The parameter is used to specify the function of the individual movement detector channel.

- Inactive:
  - The movement detector is inactive.
- Active:
  - With the selection of "Active" the respective movement detector channel is activated and the associated parameters are displayed. Individual parameter settings can be made for each activated movement detector.
- Extension unit:
  - When "Extension unit" is selected, the movement detector communicates exclusively with the main device. The communication with the actuator is carried out via the main device.

10.2.2.3 Movement detector x: EXT

Options:	Active
	Inactive

This parameter is available when the function of the movement detector is set on "Active". This parameter is not available for the "Extension unit" function.

Additional parameters are activated via the parameter:

- Extra parameters
- Brightness parameters
- Button parameters
- Detection ranges
- Enable

10.2.3   Additional functions

Options:	Status LED
	Brightness sensor
	Temperature sensor
	Bluetooth control

The parameter is used to specify the additional functions that are available.

The additional functions are activated / deactivated via the checkbox. Additional parameters are available when selected.

10.2.4 Bluetooth control for movement detector

The following parameters are available when at least one of the movement detector channels has been activated. Special settings for Bluetooth can be made for each activated movement detector channel.

The parameters can be enabled by the fitter for the end customer for use in the app.

10.2.4.1 Continuous operation On/Off (max. 24 h)

Options:	Yes
	<u>No</u>

The light remains on at activation. Tthe light remains off at deactivation. After 24 hours the movement detector changes back automatically into automatic mode.

- Yes:
  - The lighting can be switched on and off permanently via Bluetooth and so overrides the automatic mode for a maximum of 24 hours. After this the movement detector changes back into automatic mode.
- No:
  - The lighting cannot be switched permanently on and off via Bluetooth. Overriding of automatic mode is not possible.

10.2.4.2 Adjusting brightness threshold

Options:	Yes
	<u>No</u>

When activated the value of the brightness threshold can be adjusted individually via Bluetooth for the respective movement detector channel.

10.2.4.3 Setting switch-off delay

Options:	Yes
	<u>No</u>

When activated, the switch-off delay of the movement detector can be set.

10.2.5   Bluetooth functions

The following parameters are available when at least one of the movement detector channels has function "Active".

Here up to 10 Bluetooth functions can be created. The following types of functions are available for selection:

Options:	Inactive
	Switch
	Dimming
	Blinds/roller shutters
	Scenes
	Value

- ▪ Inactive:
    - –   The Bluetooth function is inactive.
- ▪ Switches:
    - –   A switching function takes place via Bluetooth.
- ▪ Dimming:
    - –   A switching function takes place via Bluetooth.
- ▪ Blinds/roller blinds:
    - –   A blind-/roller blind function takes place via Bluetooth.
- ▪ Scenes:
    - –   A scene function takes place via Bluetooth.
- ▪ Value:
    - –   A value function takes place via Bluetooth.

10.2.6   General Functions

The activation of the general functions is possible via the device configuration.

10.2.6.1   Function x

Options:	Inactive
	Telegram cyclical
	Priority
	Logic functions
	Gate
	Staircase lighting
	Delay
	Min/max
	Scene actuator
	Sequence

The parameter is used to specify the general functions that are available.

The functions are selected via a drop-down menu. Additional parameters are available when selected.

A detailed description of the individual functions is available in Chapter 10.9 "Functions" on page 130.

10.3   Device settings

10.3.1   General parameters

▪   Activate communication object "In operation"

Options:	No
	Yes, send value 0 cyclic
	Yes, send value 1 cyclic

The parameter specifies the value with which the telegrams of communication object "In operation"are sent cyclic to the bus (0 or 1).

▪   Sending cycle

Options:	00:00:01 ... 00:10:00 ... 18:12:15 hh:mm:ss

Here the time is set that describes the space of time between the sending of two telegrams.

This function is only visible if communication object "In operation" has been activated beforehand.

▪   Activate Bluetooth software update (remains active for 24 hours after the return of voltage)

Options:	No
	Yes

The parameter specifies whether the option of a software update via Bluetooth is available. When activated, the update option is available in the app for a maximum of 24 hours after the return of voltage.

> **Notice**
> This function is only visible if Bluetooth is activated.

10.4   Movement detector

10.4.1   General parameters

10.4.1.1   Extension Unit Input

Options:	No
	Yes

When activated, the selected movement detector functions as main unit for an extension unit.

▪ No:

– Telegrams sent from an extension unit cannot be received.

▪ Yes:

– A 1-bit communication object (input) "Extension unit input" is activated. Via this input the master movement detector receives the (On) telegrams of the connected extension unit or of a push-button. The On telegram of an extension unit is comparable with a detected movement.

10.4.1.2   Output is of type

Options:	1 bit
	1 byte 0 - 100%
	1 byte 0 - 255
	Scene number 1 - 64
	RTC operating mode [1 byte]
	Forced operation

The parameter us used to specify the type of the output telegram. Depending on the setting made, the setting value of the parameter "Value for switching on" and "Value for switching off" changes.

▪ 1 Bit:

– The telegram is sent as 1-bit telegram.

▪ 1-byte 0 - 100%:

– The telegram is sent as 1-bit telegram in a range from 0 to 100%. Data type: DPT 5,001 (0 - 100%)

▪ 1 byte 0 - 255:

– The telegram is sent as 1-byte telegram in a numerical range from 0 to 255. Data type: DPT 5.010 counting pulses (0 - 255)

▪ Scene number 1 - 64:

– The telegram is sent in the form of a scene number between 1 to 64. Data type: DPT 18,001 scene control

- RTC operating mode switchover [1 byte]:
    – The telegram is sent as 1-byte telegram and serves for the switchover of the RTC operating mode. The option serves for the direct switching of room temperature controllers in a specific operating mode. Data type: DPT 20.102 HVAC mode
        – Auto
        – Comfort
        – Standby
        – ECO
        – Frost/heat protection
- Forced operation [2 bit]:
    – For setting of actuators with a defined status that cannot be superimposed by other telegrams.
    – ON, forced operation active
      In this case the actuator is switched on by forced method.
    – OFF, forced operation active
      In this case the actuator is switched off by forced method.
    – Activate forced operation
      In this case forced operation is deactivated and the actuator can be switched again via the normal objects.

Notice
When the output type is changed, also the available parameter options change.
- Value for switching on
- Value for switching off
In this manual only settings for the 1-bit setting are described.

10.4.1.3   Output object sends at

Options:	Switch-on / switch-off
	Only switching on
	Switch only off

The parameter is used to specify the switching process at which the output object is to send a telegram.

- Switch-on / switch-off:

    – A telegram is sent at the detection of movement and an off telegram after the switch-off delay has expired.

- Only switching on:

    – The telegram is only sent at the detection of movement.

- Switch only off:

    – A telegram is sent only at the end of movement and expiry of the switch-off delay.

> **Notice**
> If "Switch on/switch off" or "Switch only on" has been selected, the following parameters are displayed:
> - Value for switching on
> - Send switch-on value cyclic
>
> If only "Switch on/switch off" or Switch only off" has been selected, the following parameters are not displayed:
> - Value for switching off
> - Send switch-off value cyclic

10.4.1.4   Value for switching on

Options:	Off
	On

The parameter is used to specify the value for switching the device on.

- Off:

    – When the movement detector detects movement, value 0 is sent via the bus.

- On:

    – When the movement detector detects movement, value 1 is sent via the bus.

10.4.1.5   Send switch-on value cyclic

Options:	No
	Yes

- No:

    – The current value is sent only once via the bus.

- Yes:

    – The current value is sent cyclic via the bus. Parameter "Cyclic repeat time" is also displayed.

10.4.1.6   Value for switching off

Options:	On
	Off

- Off:
    – If the movement detector no longer detects movement and the switch-off delay has expired, value 0 is sent via the bus.

- On:
    – If the movement detector no longer detects movement and the switch-off delay has expired, value 1 is sent via the bus.

10.4.1.7   Send switch-off value cyclic

Options:	Yes
	No

- No:
    – The current value is sent only once via the bus.

- Yes:
    – The current value is sent cyclic via the bus. Parameter "Cyclic repeat time" is also displayed.

10.4.1.8   Cyclic repeat time (hh:mm:ss)

Options:	00:00:10 ... 00:00:30 ... 18:12:15

Here the time is set that describes the space of time between the repeats of the telegrams. This function is only visible if the checkbox for cyclic sending has been set beforehand.

10.4.1.9   Switch-off delay (hh:mm:ss)

Options:	00:00:10 ... 00:03:00 ... 18:12:15

The switch-off delay is the time period after the last movement detected and the sending of the telegram "Value for switch-off". If movement is detected again within this period, the switch-off delay is started again.

10.4.1.10   Use internal brightness threshold

Options:	Yes
	No

By setting the checkbox the internal brightness threshold is activated in the activated channel. If the checkbox is not set, the movement detector channel operates independent of brightness.

Notice

This function is only active when under "Device configuration" in section "Movement detector" the **checkbox "EXT" has NOT** been set for the corresponding channel.

In addition, the visibility of the function also depends on other settings in the extra parameters, e.g. switch-off automatic and monitoring.

10.4.1.11   Brightness threshold internal (lux)

Options:	0.5 ... 5 ... 100,000

The brightness threshold is used to specify the lux value at which the movement detector is to respond. If the measured value is above the parameterised switching threshold, no telegram is sent.

Notice

The function is not visible when the operating mode has been parameterised to "Switch-off automatic" or "Monitoring" under "Movement detector" > "Extra parameters".

10.4.2 Extra parameters

Notice

The following parameters are available only when the checkbox "EXT" is activated under "Device configuration - movement detector".

10.4.2.1 Operating mode

Options:	Automatic mode
	Automatic switch-off
	Automatic switch-on
	Monitoring

- Automatic:

    – Automatic switch-on and switch-off.
      The detector switches on automatically when detecting a movement. In automatic mode the movement detector switches on automatically when it detects movement. A switch-off takes place only when after the last detection of movement the switch-off delay has expired .

- Automatic switch-off:

    – Manual switch-on and automatic switch-off. With the switch-off automatic the movement detector is triggered and switched on with an ON telegram via object "External push-button". The switch-off is carried out automatically after the switch-off delay has expired after the last detection of movement.
      The object "External push-button" is created automatically.
      In this operating mode the parameter "Internal brightness threshold" cannot be used.

- Automatic switch-on:

    – Automatic switch-on and manual switch-off. With the switch-on automatic the movement detector switches on automatically when detecting a movement. The movement detector switches off automatically after 6 hours if it has not received an "Off" on object "External push-button" during this period.
      The object "External push-button" is created automatically.

- Monitoring:

    – In "Monitoring" mode, the movement detector switches on brightness-dependent if movement was detected within the specified time. The switch-off occurs 2 seconds after the switch-on and the last detection of movement. In this operating mode the parameter "Internal brightness threshold" cannot be used.

Notice

Manual switch-on and switch-off is possible in operating modes "Automatic switch-on and "Automatic switch-off". The "External push-button" object is activated automatically with the corresponding function. After manual switch-off the detection of movement is suppressed for the pause time. But it can also be overridden manually with the external push-button. The pause time serves to prevent an immediate switch-on.

For example:
A person switches the light off manually when leaving the room. Without the pause time the detected movement would cause a renewed switch-on during exiting.

The following two parameters relate to the "Monitoring" operating mode.

Notice
- The operating mode "Monitoring" can be set under the extended parameters "Extra parameters" of the respective movement detector channel, if the checkbox "EXT" has been activated under "Device configuration - Movement detector".

10.4.2.2   Monitoring time window [mm:ss]

Options:	00:00:01... 00:00:30 ... 00:10:00

In the monitoring time window a minimum activity of x % must take place in total so that a corresponding telegram is sent. No telegram is sent when the minimum activity is not reached.

For example:
- Monitoring time window = 30 seconds
- Minimum activity in the monitoring time window = 50%

If someone moves for 30 seconds within the 15 seconds, the value for switch-on is sent to the bus.

10.4.2.3   Minimum activity in the monitoring time window

Options:	10% ... 50% ... 100%

The parameter is used to set the percentage of the total time movement is to be detected before a movement is reported.

10.4.2.4   Extra functions

○
∏

Notice

This parameter is only displayed when parameter "Output is of type" is set on 1 byte 0 - 100% or 1 byte 0 - 255 under "Movement detector" > "General parameters". In addition, under "Extra parameters" the operating mode must parameterised on "Automatic" or "Automatic switch-off".

Options:	None
	Day/Night mode
	Two-stage switch-off

- None:
  - After the expiry of the switch-off delay the detector sends what has been set under the "Value for switch-off" parameter.
- Day/Night mode:
  - Offers the option to parametrise two different values and two different switch-off delays. Day and night mode is switched over via a separate 1-bit object.
- Two-stage switch-off:
  - After the expiry of the switch-off delay of the 1st stage the detector switches to the reduced brightness. Then the general switch-off delay is started. If this is expired, the "Value for switch-off" is sent according.

Example for two-stage switch-off:

Switch-off delay = 5 minutes

- Value for switch-off = 0%
  (Settings under "General parameters" of the movement detector)
- Value for reduced brightness = 20%
  (Settings under "Extra parameters" value for 2nd stage)
- Brightness reduced after switch-off delay = 3 minutes
  (Settings under "Extra parameters" value for 2nd stage)

If movement is no longer detected, the light is dimmed to 20% after 5 minutes and then to 0% after a further 3 minutes (switch-off).

The following parameters refer to the additional function "Day-/night mode"

10.4.2.5 Switch-on value day

Options:	0 ... <u>100%</u>
	0 ... <u>255</u>

The value ranges apply, depending on DPT, to:

▪ Output is of type 1-byte 0 - 100%

▪ Output is of type 1-byte 0 - 255

This value is the value that is sent in day mode and at detection of movement.

10.4.2.6 Switch-off value day

Options:	<u>0</u> ... 100%
	<u>0</u> ... 255

The value ranges apply, depending on DPT, to:

▪ Output is of type 1-byte 0 - 100%

▪ Output is of type 1-byte 0 - 255

This value is the value that is sent in day mode and at the end of the switch-off delay.

10.4.2.7 Switch-off delay for day [hh:mm:ss]

Options:	00:00:10 ... <u>00:03:00</u> ... 18:12:15

Switch-off delay time for day mode.

10.4.2.8 Brightness threshold day

Options:	<u>1000</u> ... 100,000 Lux

Here the brightness threshold for activating the device in day mode can be set.

Notice
The day mode is activated with value "0" and deactivated with a "1". This means that "Day mode" is the default setting.
The night mode is set under "General parameters".

The following parameters refer to the additional function "Two-stage switch-off"

10.4.2.9 **Value for 2. Stage**

Options:	0 ... <u>20</u> ... 100%
	0 ... <u>51</u> ... 255

The value ranges are depending on DPT for:

▪ Output is of type 1-byte 0 - 100%

▪ Output is of type 1-byte 0 - 255

Here the value for the reduced brightness is set. After expiry of the switch-off delay the value is set to this value.

10.4.2.10 **Switch-off delay for the 2nd stage [hh:mm:ss]**

Options:	00:00:10 ...<u>00:05:00</u> ... 18:12:15

Here the value for the switch-off delay of the 2nd stage is set. The switch-off delay then is comprised of the total of the general switch-off delay and switch-off delay for the 2nd stage.

10.4.2.11 **Using object switch-off delay for 2nd stage**

Options:	<u>No</u>
	Yes

▪ <u>No</u>:
  – The switch-off delay can be changed exclusively via the parameter setting "Switch-off delay for the 2nd stage".

▪ Yes:
  – To change the switch-off delay of the second stage of the movement detector there is a separate 2-byte object (input) "Switch-off delay" for the 2nd stage". The entry is made in seconds. A switch-off delay of 4 minutes, for example, has a value of 240 seconds.

Notice
The values can be between 10 and 65535 seconds. If a value is sent that is to small or large, the value is adjusted automatically the limit value:
▪ Value < 10 -> Value = 10
▪ Value < 65535 -> Value = 65535

The following parameters relate to the total movement detector

10.4.2.12 Use forced switch-off

Options:	No
	Yes

The parameter is only adjustable if the "Operating mode" parameter is set on "Automatic" or "Automatic switch-off".

- No:
  - The device does not switch off after a specified time to carry out a new brightness measurement.
- Yes:
  - At detected movement the light can be switched on, although the brightness for switching off has already been exceeded. This effect can be prevented by activating this parameter. The movement detector switches off after 3x switch-off delay or at a minimum of 90 minutes or a maximum of 24 hours to carry out a new brightness measurement.

If the movement detector is switched on and continues to detect movement, it first operates brightness-independent.

Notice
At detected movement the light remains switched on, although the brightness can be sufficient. This effect can be prevented by activating this parameter.

10.4.2.13 Use object for switch-off delay

Options:	No
	Yes

The parameter is only adjustable if the "Operating mode" parameter is set on "Automatic" or "Automatic switch-off".

- No:
  - There is the option to change the switch-off delay via the "Switch-off delay" parameter setting.
- Yes:
  - To change the switch-off delay of the movement detector there is a separate 2-byte object "Switch-off delay" (Input) available. The entry is made in seconds. A switch-off delay of 4 minutes, for example, has a value of 240 seconds.

Notice
The values to be sent can be between 10 and 65535 seconds. If a value is sent that is to small or large, the value is adjusted automatically the limit value:
- Value < 10 -> Value = 10
- Value < 65535 -> Value = 65535

10.4.2.14 **Use object for test mode**

Options:	No
	Yes

The parameter is only adjustable when under "Extra parameters" the "Operating mode" parameter is set on "Automatic", "Automatic switch-on" or "Automatic switch-off".

▪ No:

 – There is no possibility to set the detector to test mode via a separate object to test the detection range.

▪ Yes:

 – There is a separate 1-bit object "Activate test mode" (input) for activating the test mode with a 1. This function is ended with the receipt of a 0 on this object or automatically after 10 minutes. The LED flashes red during test mode as long as the sensor is triggered and the switch-off time of 3 seconds has not yet expired.

10.4.2.15 **Use object actuator status**

Options:	No
	Yes

The parameter is only adjustable when under "Extra parameters" the "Operating mode" parameter is set on "Automatic", "Automatic switch-on" or "Automatic switch-off".

▪ No:

 – There is no separate actuator status object for connecting with the status of an actuator.

▪ Yes:

 – A 1-bit communication object (input) "Actuator status" is activated. This, for example, is linked with the status of a switch actuator. When this actuator is switched off via a central command, the detector is informed and is ready again for switch-on after the pause time.

10.4.2.16 **Use object status manual operation**

Options:	No
	Yes

The parameter is only adjustable when under "Extra parameters" the "Operating mode" parameter is set on "Automatic switch-on" or "Automatic switch-off".

▪ No:

 – There is no separate object "Manual operating status" for monitoring the status of the control.

▪ Yes:

 – A 1-bit communication object (output) "Manual operating status" is activated. This object sends an 1-telegram when the movement detector is deactivated and only one manual operation is possible via the external push-button input. If this object sends an 0-telegram, the movement detector switches back to automatic mode.

10.4.2.17	**Pause time [ss.fff]**
Options:	00.100 ... <u>01,250</u> ... 59,999

The set pause time is started after the detector has been switched off due to expiry of the switch-off delay or when a switch-off telegram is received on communication objects "External push-button" or "Actuator status".

If movement is detected during this time, the detector is not switched on immediately. The pause time is first extended by 7 seconds. If there is still movement after these 7 seconds, the detector switches back on again.

If no movement is detected during the pause time, the detector is ready for activation again after the pause time.

This behaviour can, for example, be important when the lamp cools down drastically and is located within the detection range of the detector. Without a blockage there would be an unintentional switch-on. The purpose of pause time is to prevent an immediate re-activation.

For example:

A person switches the light off manually when leaving the room. Without the pause time the detected movement would cause a renewed switch-on during exiting.

Notice

The "External push-button" communication object is activated under the "Push-button parameter". The "Actuator status" object is activated under "Extra parameters".

10.4.2.18	**"Extension unit input" takes the switch-on delay time into consideration**

Notice

This parameter is only displayed when the "Extension unit input" has been activated under "General parameters".

Options:	<u>Yes</u>
	No

In operating mode "Automatic" the option "Extension unit input" takes "Switch-on delay time" into consideration can be activated. This determines how fast the main detector responds when a telegram of the extension unit detector is received via the "Extension unit input" object.

- <u>Yes</u>:
  – If the main detector was deactivated briefly before the receipt of the telegram of the extension unit detector and the set pause time is active, the pause time is continue to be adhered to before the main detector switches on again.
- No:
  – The main detector responds immediately to the telegram of the extension unit detector and switches on, also when it was deactivated shortly beforehand and the set pause time is still active.

10.4.2.19 Overwrite settings at download

Options:	Yes
	No

- <u>Yes</u>:
    - During a download of the application into the detector, the values changed via the object are overwritten with the parameterised values of the ETS application.
- No:
    - When the application is downloaded again into the movement detector, the values changed via the object are not overwritten with the parameterised values of the ETS application.

Adjustable values:

- Switch-off delay
- Internal brightness threshold

10.4.3 Brightness parameters

Notice

▪ The following parameters are available only when the checkbox "EXT" is activated under "Device configuration - movement detector".

▪ In addition, either "Automatic", "Switch-on automatic" or "Monitoring" must be parameterised under "Extra parameters".

10.4.3.1 Used brightness

Options:	Brightness-independent
	<u>Internal only</u>
	External only
	Internal or external

▪ Brightness-independent:

– The detector functions independent of brightness and will switch during each movement.

▪ <u>Only internal:</u>

– The detector decides on the basis of a measured brightness and brightness value threshold whether it switches on at movement.

▪ External only:

– The detector uses this externally measured brightness (e.g., through an external brightness sensor) and parameter "External brightness value threshold" (lux) to decide whether to switch on during movement.

▪ Internal or external:

– The detector is activated only when the internally measured brightness drops below the internal brightness-value threshold OR the externally measured brightness drops below the external brightness-value threshold.
Since this is an OR condition, discrepancies can occur during the activation.

10.4.3.2 Extension unit input takes over the brightness

Options:	<u>DO NOT take into consideration</u>
	Take into consideration

▪ <u>DO NOT take into consideration:</u>

– The extension unit does not use the brightness measurement of the main unit. Incoming values to the extension unit have a direct effect on the movement detector.

▪ Take into consideration:

– The extension unit uses the brightness measurement of the main unit. The switching, for example, of lighting is made on the basis of the brightness measured by the main unit.

10.4.3.3 Use object for brightness-independent detection

Options:	No
	Yes

- <u>No</u>:
  - There is no separate object for the brightness-independent detection.
- Yes:
  - A 1-bit communication object "Brightness-independent detection" (input) is being enabled. This object makes possible the brightness-independent operation of the detector.

10.4.3.4 Brightness-independent detection activation with

Options:	On telegram
	Off telegram

The parameter is available only when "Use object for brightness-independent detection" is activated.

- <u>On telegram</u>:
  - The brightness-independent detection is activated with a 1-telegram and deactivated with a 0-telegram.
- Off telegram:
  - The brightness-independent detection is activated with a 0-telegram and deactivated with a 1-telegram.

10.4.3.5 Brightness independent detection after bus voltage return

Options:	No
	Yes

The parameter is available only when "Use object for brightness-independent detection" is activated.

- <u>No</u>:
  - Detection independent of brightness is deactivated after a bus voltage recovery, reprogramming or a reset.
- Yes:
  - Detection independent of brightness is activated after a bus voltage recovery, reprogramming or a reset.

10.4.3.6 The device uses the anti-glare

Options:	In use
	Not used

- In use:
    - When the measured brightness changes quickly, this has no effect on the brightness measurement and the detector switches on anyway.
- Not used:
    - When the measured brightness changes quickly, the detector still uses the normal threshold value to decide whether it is to respond or not.

10.4.3.7 Use object for internal brightness threshold

Options:	No
	Yes

- No:
    - There is no separate "Internal brightness threshold" object.
- Yes:
    - A 2-bit communication object (input) "Internal brightness threshold" is activated. This can be used to change the switching threshold at which the detector is activated. The value is sent to this object in lux.

Notice
The range of values lies between 0.5 – 100,000 lux.

10.4.3.8 Use object for external brightness threshold

Options:	No
	Yes

- No:
    - There is no separate "External brightness threshold" object.
- Yes:
    - A 2-bit communication object (input) "External brightness threshold" is activated. This can be used to change the switching threshold at which the detector is activated. The value is sent to this object in lux.

Notice
The range of values lies between 0.5 – 100,000 lux.

10.4.3.9   Brightness threshold external (lux)

Options:	0.5 ... <u>5</u> ... 100,000

The brightness threshold is used to specify the lux value at which the detector is to respond. If the detector does not switch on and the measured brightness lies above the set threshold, no telegram is sent during movement. The threshold applies only to the external brightness received.

10.4.4   Button parameters

○
┬   **Notice**
│   The following parameters are available only when the checkbox "EXT" is
│   activated under "Device configuration - movement detector".

10.4.4.1   Use object external push-button

Options:	No
	Yes

- No:
    - There is no separate "External push-button" object.
- Yes:
    - A 1-bit communication object (input) "External push-button" is enabled. Via this object it is possible to manually change the (output) status of the detector with the aid of a 1-bit telegram. It is used especially in operating mode "Automatic switch-on" to switch off and to switch on in operating mode "Automatic switch-off".

10.4.4.2   External button switches on with

Options:	On telegram
	Off telegram

- On telegram:
    - The detector is activated with a 1 telegram and deactivated with a 0 telegram.
- Off telegram:
    - The detector is activated with a 0 telegram and deactivated with a 1 telegram.

10.4.4.3   Use object manual operation

Options:	No
	Yes

- No:
    - There is no separate "Switchover to manual mode" object.
- Yes:
    - A 1-bit communication object (input) "Switchover to manual mode" is activated. With this function the automatic function of the detector can be disabled. In this case, the lighting can only be switched via the external push-button input.

10.4.4.4   Manual mode is activated with

Options:	On telegram
	Off telegram

The parameter is available only when "Use object for manual operation" is activated.

▪ On telegram:

  ‐ The detector is deactivated with a 1 telegram and activated with a 0 telegram.

▪ Off telegram:

  ‐ The detector is deactivated with a 0 telegram and activated with a 1 telegram.

10.4.4.5   Use object for continuous On operation [max. 24 h]

Options:	No
	Yes

▪ No:

  ‐ There is no separate "Continuous On [max. 24h]" object.

▪ Yes:

  ‐ A 1-bit communication object (input) "Continuous on [max. 24h"] is activated. The detector can be deactivated via the option and the value for switching on can be sent. In this case only manual operation is possible via the "External push-button" object. The detector resets itself after 24 hours automatically into the status before the activation of the continuous On status.

10.4.4.6   Continuous On mode is activated with

Options:	On telegram
	Off telegram

The parameter is available only when "Use object for continuous On [max. 24h]" is activated.

▪ On telegram:

  ‐ This mode is activated with a 1 telegram and deactivated with a 0 telegram.

▪ Off telegram:

  ‐ The mode is activated with a 0 telegram and deactivated with a 1 telegram.

Notice
"Continuous operation OFF [max.24h]" and "Continuous operation ON [max. 24h]" are two functions independent of each other and are illustrated via separate objects.

10.4.4.7   Use object for continuous off operation [max. 24 h]

Options:	No
	Yes

▪ No:
   - There is no separate "Continuous off [max. 24h]" object.

▪ Yes:
   - A 1-bit "Continuous Off [max. 24h] communication object (input) is activated. The detector can be deactivated via the option and the value for switching Off can be sent. In this case only manual operation is possible via the "External push-button" object. The detector resets itself after 24 hours automatically into the status before the activation of the continuous Off status.

10.4.4.8   Continuous Off is activated with

Options:	On telegram
	Off telegram

The parameter is available only when "Use object for continuous Off [max. 24h]" is activated.

▪ On telegram:
   - This mode is activated with a 1 telegram and deactivated with a 0 telegram.

▪ Off telegram:
   - The mode is activated with a 0 telegram and deactivated with a 1 telegram.

Notice
"Continuous operation OFF [max.24h]" and "Continuous operation ON [max. 24h]" are two functions independent of each other and are illustrated via separate objects.

10.4.4.9   Use object status continuous on/off

Options:	Yes
	No

The parameter is available only when "Use object for continuous On [max. 24h]" and/or "Use object for continuous Off [max. 24 h]" is activated.

▪ Yes:
   - A separate object for each activated continuous operation is available that sends an On telegram when the function is activated and an Off telegram when the function is deactivated.

▪ No:
   - There are no separate status objects for the different continuous operations.

10.4.5 Detection ranges

Detection zones

Fig. 28:   Detection ranges

Detection ranges "Left", "Middle" and "Right" include approximately 90° respectively.

Notice
The designation of the sensors is aimed at the view from the front as visible in the illustration.

10.4.5.1 Activate

Options:	Yes
	No

- ▪ X (L, M, R, D):
  - – Stands for "Sensor left" / "Sensor middle" / "Sensor right" / "Sensor down".
- ▪ Yes:
  - – The sensor is used for the movement detection in this application.
- ▪ No:
  - – The sensor is switched off.

10.4.5.2   Sensor sensitivity x

Options:	Low
	<u>Middle</u>
	Up
	Maximum

▪ Low:

  – Recommended sensitivity for larger heat sources in the visual area of the sensor.

▪ <u>Middle</u>:

  – Standard sensitivity for the use in outdoor area.

▪ High:

  – Increased sensitivity.

▪ Maximum:

  – Highest sensitivity. Setting at coverage increase.

Notice
The coverage can be changed via the sensitivity. The sensitivity can be set separately for each sensor.

10.4.6   Enable

> **Notice**
> The following parameters are available only when the checkbox "EXT" is
> activated under "Movement detector"

10.4.6.1   Using activate detector object

Options:	No
	Yes

- No:
    - There is no object with which the detector can be blocked or enabled.
- Yes:
    - A 1-bit communication object (input) "Activate detection" is enabled. Via this object the detector can be enabled or blocked. No telegrams are sent from the detector during the blockage.

10.4.6.2   Enable with

Options:	On telegram
	Off telegram

- On telegram:
    - With the receipt of value 1 on the "Enable movement (input)" object, the detector is enabled and blocked with value 0.
- Off telegram:
    - With the receipt of value 0 on the "Enable movement (input)" object, the detector is enabled and blocked with value 1.

10.4.6.3   After bus voltage recovery detector is

Options:	Enabled
	Deactivated

- Enabled:
    - At a bus voltage deactivation or reprogramming of the device and after a reset, the detector is ready for operation.
- Deactivated:
    - At a bus voltage deactivation or reprogramming of the device and after a reset, the detector is deactivated and must be activated for the enabling of "Use activate detector object".

10.4.6.4 Output sends at enable

Options:	No telegram
	<u>Current status</u>
	Single value for switching on
	Single value for switching off

- No telegram:
    - No telegram is sent at enable.
- <u>Current status</u>:
    - During enable, the detector checks whether a movement has occurred and the brightness is below the brightness-value threshold. If yes, the single value for switch-on is sent. Otherwise the single value for switch-off is sent.
- Single value for switching on:
    - At an enable, the single value that has been set via parameter "Value for switching on" is sent.
- Single value for switching off:
    - At an enable, the single value that has been set via parameter "Value for switching off" is sent.

10.4.6.5 Output sends at blockage

Options:	<u>No telegram</u>
	Switch-off value after expiry of switch-off delay
	Single value for switching on
	Single value for switching off

- <u>No telegram</u>:
    - No telegram is sent at blockage.
- Switch-off after expiry of switch-off delay:
    - During blockage the switch-off delay is started anew and the detector sends the value that is parameterised under the "Value for switching off" parameter only after this time has expired.
- Single value for switching on:
    - During blockage, the single value that has been set via parameter "Value for switching on" is sent.
- Single value for switching off:
    - During blockage, the single value that has been set via parameter "Value for switching off" is sent.

10.5 Status LED

The LED parameter can be used to specify how different independent statuses are to be illustrated via the RGB-LED in the head of the movement detector.

▪ LED1 always has the highest priority

▪ LED1 overrides all other LEDs

▪ LEDs can superimpose each other:

    – If a time of 1 second has been defined for LED1 under "Switch-off delay for LED" and for LED2 10 seconds for example, at simultaneous activation LED1 is switched first and then LED2 for the remaining 9 seconds.

For example:

When exiting the house and the movement detector still flashes in a certain colour specified beforehand, then, for example, a window is till open or the alarm system is armed. This can be specified with the colour of the movement detector LED.

10.5.1 General parameters

10.5.1.1 Number of ED functions

Options:	0 ... <u>1</u> ... 5

The parameter is used to specify the number of LED functions.

The parameter is only available when parameter "Additional functions - status LED" has been activated beforehand.

10.5.2 LED x

10.5.2.1 Name of LED x

Options:	<Name>

This parameter can be used to assign a name for the LED. This will then be added to the name of the communication object.

10.5.2.2 LED function x

Options:	<u>Switch</u>
	Forced operation
	1-byte value [0-100%]
	1-byte value [0-255]
	Scene number
	RTC operating mode

This parameter can be used to specify the LED function. The function of the LED influences the available settings of parameter "Value for activation".

- <u>Switch:</u>
    – The LED function is that of a switch.
- Forced operation:
    – The LED function takes place in forced operation.
- 1-byte value [0-100%]:
    – The LED function is activated via an adjustable percentage value.
- 1-byte value [0-255]:
    – The LED function is activated via an adjustable numeric value.
- Scene number:
    – The LED function is activated via an adjustable scene value.
- RTC operating mode:
    – The LED function is activated via an adjustable RTC mode.

10.5.2.3   **Value for activation**

This parameter is used to set the value at which the LED function is activated. The activation behaviour depends on the function of the LED. The functions with the dependent activation values are described in the following:

Function: Switch

▪ Value for activation

Options:	0
	1

▪ 0:
  – This LED function is activated when an Off telegram is received.
▪ 1:
  – This LED function is activated when an On telegram is received.

Function: Forced operation

▪ Value for activation

Options:	ON, forced operation active
	OFF, forced operation active
	Forced operation deactivated

▪ ON, forced operation active:
  – This LED function is activated when a forced operation telegram with value "ON, forced operation active" is received.
▪ OFF, forced operation active:
  – This LED function is activated when a forced operation telegram with value "OFF, forced operation active" is received.
▪ Forced operation deactivated
  – This LED function is activated when a forced operation telegram with value "Forced operation deactivated" is received.

Function: 1-byte value [0 - 100%]

▪ Value for activation

Options:	0 ... <u>100</u>

 ▪ 0 ... <u>100</u>:

  – This LED function is activated when a telegram with the set value (between 0 and 100) is received.

Function: 1-byte value [0 - 255]

▪ Value for activation

Options:	0 ... <u>255</u>

 ▪ 0 ... <u>255</u>:

  – This LED function is activated when a telegram with the set value (between 0 and 255) is received.

Function: Scene number

▪ Value for activation

Options:	<u>1</u> ... 64

 ▪ <u>1</u> ... 64:

  – This LED function is activated when a scene telegram with the set value (between 1 and 64) is received.

Function: RTC operating mode

▪ Value for activation

Options:	Auto
	<u>Comfort</u>
	Standby
	ECO
	Frost/heat protection

- ▪ Auto:
    - – This LED function is activated when an operating mode telegram with mode "Auto" is received.
- ▪ <u>Comfort</u>:
    - – This LED function is activated when an operating mode telegram with "Comfort" mode is received.
- ▪ Standby:
    - – This LED function is activated when an operating mode telegram with "Standby" mode is received.
- ▪ ECO:
    - – This LED function is activated when an operating mode telegram with "ECO" mode is received.
- ▪ Frost/heat protection:
    - – This LED function is activated when an operating mode telegram with "Frost/heat protection" mode is received.

10.5.2.4 Colour for LED function x

Options:	Yellow
	<u>Blue</u>
	Orange
	Magenta
	Red
	Green
	White

The parameter is used to specify the colour of the LED function.

10.5.2.5 Activate flashing of the ED

Options:	Yes
	<u>No</u>

Activating the checkbox activates the flashing of the LED.

10.5.2.6   Switch-off delay for LED

Options:	1 s
	2 s
	<u>5 s</u>
	10 s
	20 s
	30 s
	1 min
	2 min

The parameter is used to set the time that is to pass up to the switch-off of the LED.

The parameter is only available if the parameter "Activate flashing of the LED" is deactivated.

10.5.2.7   Number of flashing pulses

Options:	1
	2
	<u>3</u>
	4
	5
	10
	15

The parameter is used to specify the number of flashing pulses of the LED.

The parameter is only available if the parameter "Activate flashing of the LED" is activated.

10.6   Brightness-/twilight sensor

10.6.1   General parameters

The application is available when the "Brightness sensor" was activated under "Device configuration - additional functions".

10.6.1.1   Use of object output ambient light [lux]

Options:	No
	Yes

▪   No:

–   Communication object "BRI" - twilight/brightness - output natural ambient brightness [lux]" is not enabled.

▪   Yes:

–   Communication object "BRI" - twilight/brightness - output natural ambient brightness [lux]" is enabled.

Via the parameter the 2-byte communication object "BRI - twilight/brightness - output natural ambient brightness [lux]" (output) is enabled. This object is used to send the calculated ambient brightness, which is calculated from the measured brightness minus the brightness change via a lamp that is switched on or off in the detection range of the detector.

10.6.1.2   Send ambient brightness

Options:	On change
	Cyclic
	On change and cyclic

The parameter is only available when parameter "Use of object output ambient light [lux]" has been parameterised on "Yes".

▪   In case of change:

–   The ambient brightness is only sent at the change of the value.

The ambient brightness is sent when the change is larger than [and min. 3 lux]

Options:	1 ... 10 ... 100%

▪   Cyclic:

–   The ambient brightness is sent cyclic.

Send ambient brightness all

Options:	5 s
	10 s
	30 s
	1 min
	5 min
	10 min
	30 min

- In case of change and cyclic:
  - The ambient brightness is sent at the change of the value and cyclic.

The ambient brightness is sent when the change is larger than [and min. 3 lux]

Options:	1 ... <u>10</u> ... 100%

Send ambient brightness all

Options:	5 s
	10 s
	30 s
	<u>1 min</u>
	5 min
	10 min
	30 min

10.6.1.3 Brightness detection

Options:	<u>Internal</u>
	External

The parameter is used to specify how the brightness detection is to take place.

- <u>Internal</u>:
  - The brightness detection is made via the internal sensor.
- External:
  - The brightness detection is made via an external sensor.
  - When the parameter is set on "external", the communication object "BRI - twilight/brightness - input external brightness [lux] is enabled.

10.6.1.4 Number of brightness/twilight thresholds

Options:	<u>0</u> ... 3

The parameter is used to specify the number of the brightness or twilight thresholds. Up to three independent thresholds can be defined, which can be used for different applications. Each threshold has its own communication object.

By specifying a number of brightness/twilight thresholds > 0 the parameter pages "Parameter threshold x" are enabled.

10.6.1.5 **Lamp in the detection range**

Options:	Yes
	<u>No</u>

The parameter specifies whether a lamp is located in the detection range. By defining the lamps in the detection range, the additionally generated brightness can be calculated from the measured brightness during the switching of such a lamp.

When activating the parameter, the sub-parameter "Number of actuator inputs" is enabled.

- Yes

    – A lamp is located in the detection range.

- <u>No</u>

    – There is no lamp in the detection range.

Number of actuator status inputs

Options:	<u>0</u> ... 8

The parameter specifies the number of actuator inputs. Each actuator input represents a lamp that is located in the detection range of the movement detector. If the detector detects that an actuator switches a lamp on, it can calculate the additionally generated brightness from the total value - also when the lamp is switched off again. Each actuator input can be parameterised separately via parameter page "Actuator input parameter".

10.6.1.6 **Overwrite settings during download**

Options:	<u>Yes</u>
	No

The parameter is only available if the "Lamp in detection range" parameter is set on "Yes" and the number of the actuator inputs is set on > 0.

- <u>Yes</u>:

    – When the application is reloaded into the detector again, the values changed via the object are overwritten with the parameterised values of the ETS application.

- No:

    – When the application is downloaded again into the movement detector, the values changed via the object are not overwritten with the parameterised values of the ETS application.

10.6.2   Parameter threshold x

This parameter page is available when beforehand parameter "Number of brightness/twilight threshold" is set on at least 1.

10.6.2.1   Function

Options:	Brightness switch
	Twilight switch

The parameter us used to specify the switching function of the brightness/twilight sensor.

▪ Brightness switch:

– The sensor functions as brightness switch.

▪ Twilight switch:

– The sensor functions as twilight switch.

Brightness threshold [lux]

Options:	1000 ... 20000 ... 100000

The parameter specifies the brightness threshold value.

Twilight threshold [lux]

Options:	1 ... 5 ... 1000

The parameter specifies the brightness threshold value.

10.6.2.2   Name for threshold x

Options:	<Name>

The parameter can be used to assign a name for the threshold. This will then be added to the name of the communication object.

10.6.2.3   Hysteresis [%]

Options:	5 ... 20 ... 50

The output telegram is only sent when the measured twilight-/brightness value is below or above the specified twilight-/brightness threshold plus hysteresis.

For example:

At a threshold of 1000 lux a telegram is only created when the value of 20% is below or above the specified value.

10.6.2.4 Use enable object

Options:	Yes
	<u>No</u>

The parameter can be used to activate threshold x. When activated, additional parameters for parametrising the behaviour of the output are enabled.

Enable with

Options:	<u>ON telegram</u>
	OFF telegram

The parameter is used to specify whether the enabling of the object is to take place via an ON or OFF telegram.

▪ <u>ON telegram</u>:

– The enabling takes place via an ON telegram.

▪ OFF telegram:

– The enabling takes place via an OFF telegram

After bus voltage recovery, threshold x is active

Options:	<u>Yes</u>
	No

Via option "Yes" the behaviour after return of bus voltage can be specified, i.e. whether the function in threshold x is active or not.

Output sends at enable

Options:	<u>No telegram</u>
	Value for the current status

The parameter is used to specify the behaviour of the output when the object enable is activated.

▪ <u>No telegram</u>:

– No telegram is sent at the activation of enable of the object.

▪ Value for the current status:

– The current value of threshold x is sent when object enable is activated.

Output sends at deactivation

Options:	No telegram
	Value for overshooting
	Value for undershooting

The parameter is used to specify the behaviour of the output when the object enable is deactivated.

- No telegram:
    - No telegram is sent at the deactivation of enable of the object.
- Value for overshooting:
    - When object enable is deactivated, the value that is set in parameter "Value for overshooting threshold x" is sent.
- Value for undershooting:
    - When object enable is deactivated, the value that is set in parameter "Value for undershooting threshold x" is sent.

10.6.2.5 Using object input threshold x [2 byte floating point]

Options:	Yes
	No

When activating this parameter the communication object "Input value threshold x" is enabled, over which the twilight-/brightness threshold, to which the channel is to respond, can be changed via the bus.

10.6.2.6 Using object threshold x programming [1 bit]

Options:	Yes
	No

When activating the parameter, the communication object "Programming threshold x" is enabled. With a 1-bit telegram the currently measured twilight-/brightness value can be taken over as new threshold, to which the channel is to respond.

10.6.2.7   Object type threshold x

Options:	Switch
	Forced operation
	1-byte value [0% - 100%]
	1-byte value [0-255]
	Scene number
	RTC operating mode

Parameter "Object type threshold x" is used to specify which KNX data type is sent when the threshold drops below or exceeds the set value. This makes it possible to implement different applications - such as lowering the shading when the sunlight is too intense.

The parameter is used to parametrise the object type of the selected threshold value.

▪ Switch:

– The object type is defined as switch.

▪ Forced operation:

– The object type is defined as forced operation.

▪ 1-byte value [0% - 100%]:

– The object type is defined as 1-byte percentage value.

▪ 1-byte value [0-255]:

– The object type is defined as numerical 1-byte value.

▪ Scene number:

– The object type is defined as scene number.

▪ RTC operating mode:

– The object type is defined as RTC operating mode.

10.6.2.8   Switch object threshold x sends

Options:	In case of change
	Cyclic
	In case of change and cyclic

The parameter is used to specify when the value of communication object "Output threshold x" is sent on the bus.

▪ In case of change:

– The value is only sent to the bus when there is a change in status.

▪ Cyclic:

– The value is sent only cyclic to the bus.

▪ In case of change and cyclic:

– The value is sent on the bus both at a change in status and also cyclic.

10.6.2.9   Output object sends at

Options:	Undershooting and overshooting
	Overshoot
	Undershoot

The parameter is used to specify at which behaviour of the threshold value the output object is to send a telegram.

- Undershooting and overshooting:
    - The output object sends a telegram at undershooting and overshooting of the threshold value.
- Overshooting:
    - The output object sends a telegram only at overshooting of the threshold value.
- Undershooting:
    - The output object sends a telegram only at undershooting of the threshold value.

10.6.2.10   Value for undershooting the threshold x

The parameter is used to specify which value is sent to the bus at undershooting of the threshold value plus hysteresis and after expiry of the "Minimum duration of undershooting" via object "Output threshold x".

The available values are dependent on the configuration of parameter "Object type threshold value x". The following versions can be configured:

Switch

Options:	0
	<u>1</u>

Forced operation

Options:	<u>ON, forced operation active</u>
	OFF, forced operation active
	Forced operation deactivated

1-byte value [0% - 100%]

Options:	0-<u>100</u>

1-byte-value [0.255]

Options:	0-<u>255</u>

Scene number

Options:	<u>1</u>-64

RTC operating mode

Options:	Auto
	<u>Comfort</u>
	Standby
	ECO
	Frost/heat protection

10.6.2.11   Value for overershooting the threshold x

The parameter is used to specify which value is sent to the bus at overshooting of the threshold value plus hysteresis and after expiry of the "Minimum duration of overshooting" via object "Output threshold x".

The available values are dependent on the configuration of parameter of the "Object type for output" parameter "Object type threshold value x".

Switch

Options:	<u>0</u>
	1

Forced operation

Options:	ON, forced operation active
	<u>OFF, forced operation active</u>
	Forced operation deactivated

1-byte value [0% - 100%]

Options:	<u>0</u>-100

1-byte-value [0.255]

Options:	<u>0</u>-255

Scene number

Options:	1..<u>2</u>..64

RTC operating mode

Options:	Auto
	Comfort
	Standby
	<u>ECO</u>
	Frost/heat protection

10.6.2.12 Minimum duration of undershoot

Options:	None
	5 s
	<u>10 s</u>
	30 s
	1 min
	5 min
	10 min
	30 min

The parameter is used to specify the minimum duration of undershooting so that the object does not send immediately after a small brightness change, but only after a specific time.

This parameter is available when parameter "Output object sends at" has been set on "Undershooting and overshooting" or only on "Undershooting".

10.6.2.13 Minimum duration of overshoot

Options:	None
	5 s
	<u>10 s</u>
	30 s
	1 min
	5 min
	10 min
	30 min

The parameter is used to specify the minimum duration of overshooting so that the object does not send immediately after a small brightness change, but only after a specific time.

The parameter is only available if parameter "Output object sends at" has been set on "Undershooting and overshooting" or only on "Overshooting".

10.6.2.14 Heat-up time of the lamp

Options:	<u>2s (LED / halogen)</u>
	150s (energy-saving lamp)
	300s (fluorescent lamp)

The parameter is used to specify the heat-up time of the lamp in dependence of its respective type. Remeasurement takes place only after the expiry of this time, to then calculate the part of the artificial light from the measured value.

- <u>2s (LED / halogen)</u>:
  – The heat-up time for LED and halogen amounts approximately to 2 seconds.
- 150s (energy-saving lamp):
  – The heat-up time for energy-saving lamps amounts to approximately 150 seconds.
- 300s (fluorescent lamp):
  – The heat-up time for fluorescent lamp amounts to approximately 300 seconds.

10.6.3   Parameter actuator status inputs

The parameter page is available only when the "Brightness sensor" function has been activated in the "Device configuration - additional functions". Additionally, in the general parameters of the brightness-/twilight sensor the parameter "Lamp in detection range" must be activated.

10.6.3.1   Actuator x: Heat-up time of the lamp

Options:	2s (LED / halogen)
	150s (energy-saving lamp)
	300s (fluorescent lamp)

- 2s (LED / halogen):
    - For the selected actuator the heat-up time of the lamp for the use of LED/halogen amounts to 2 seconds.
- 150s (energy-saving lamp):
    - For the selected actuator the heat-up time of the lamp for the use of energy-saving lamps amounts to 150 seconds.
- 300s (fluorescent lamp):
    - For the selected actuator the heat-up time of the lamp for the use of fluorescent lamps amounts to 300 seconds.

10.7   Temperature sensor

10.7.1   General parameters

The application is available when the function "Temperature sensor" was activated under "Device configuration - additional functions".

10.7.1.1   Using object output temperature

Options:	Yes
	No

The parameter is used to specify whether an object output "Output temperature [°C]" is made available for the determination of the measured temperature.

▪ Yes:

– An object output for the temperature is not made available.

▪ No:

– An object output for the temperature is made available.

10.7.1.2   Send temperature

Options:	On change
	Cyclic
	On change and cyclic

The parameter is only available when parameter "Use of object output temperature [°C]" has been parameterised on "Yes".

▪ In case of change:

– The temperature is only sent at the change of the value.

Temperature values are sent when the value change is larger than [K]

Options:	0.5
	1
	1.5
	2
	2.5
	3
	3.5
	4

- Cyclic:
  – The temperature is sent cyclic.

Send temperature every

Options:	5 s
	10 s
	30 s
	<u>1 min</u>
	5 min
	10 min
	30 min

- In case of change and cyclic:
  – The temperature is sent at the change of the value and cyclic.

Temperature values are sent when the value change is larger than [K]

Options:	<u>0.5</u>
	1
	1.5
	2
	2.5
	3
	3.5
	4

Send temperature every

Options:	5 s
	10 s
	30 s
	<u>1 min</u>
	5 min
	10 min
	30 min

10.7.1.3 Temperature Measurement

Options:	<u>Internal</u>
	External

The parameter specifies via which sensor the temperature is to be determined.

- Internal
  – The temperature measurement is made via the internal sensor of the movement detector.
- External
  – The temperature measurement is made via an external sensor.

10.7.1.4   Temperature value correction [x 0.1K]

Options:	-100 ... <u>0</u> ... 100

The parameter specifies the value for the correction of the temperature. This function can be used when the temperature measured at the mounting location deviates from the actual temperature. The correction of the temperature value ensures more precise measuring values.

10.7.1.5   Number of temperature thresholds

Options:	<u>0</u> ... 3

The parameter is used to specify the number of temperature thresholds. Up to three independent thresholds can be defined. The thresholds can be used for different applications. Each threshold has its own communication object.

By specifying a number of temperature thresholds > 0 the parameter "Parameter threshold x" is enabled.

10.7.1.6   Overwrite settings at download

Options:	<u>Yes</u>
	No

The parameter is only available if the "Number of temperature thresholds" parameter is set on > 0.

▪ <u>Yes</u>:

– When the application is reloaded into the detector again, the values changed via the object are overwritten with the parameterised values of the ETS application.

▪ No:

– When the application is downloaded again into the movement detector, the values changed via the object are not overwritten with the parameterised values of the ETS application.

10.7.2   Parameter threshold x

This sub-parameter group is available when beforehand parameter "Number of temperature thresholds" is set on at least 1.

10.7.2.1   Name for threshold x

Options:	<Name>

The parameter can be used to assign a name for the threshold. This will then be added to the name of the communication object.

10.7.2.2   Temperature threshold

Options:	-25 ... 0 ... 55°C

The parameter specifies the temperature threshold value. Together with the hysteresis it determines the value range in which the threshold is active.

10.7.2.3   Hysteresis [x0,1K]

Options:	1 ... 10 ... 200

The output telegram is only sent when the measured temperature value is below or above the specified temperature threshold plus hysteresis.

For example:

At a threshold of 5°C a telegram is only created when the value of 1°C is below or above the specified value.

10.7.2.4   Use enable object

Options:	Yes
	No

The parameter can be used to activate the enabling of the object. When activated, additional parameters for parametrising the behaviour of the output are enabled.

Enable with

Options:	ON telegram
	OFF telegram

The parameter is used to specify whether the enabling of the object is to take place via an ON or OFF telegram.

- ON telegram:
  - The enabling takes place via an ON telegram.
- OFF telegram:
  - The enabling takes place via an OFF telegram

After bus voltage recovery, threshold x is active

Options:	<u>Yes</u>
	No

When activated, the parameter specifies that after a bus voltage recovery the parametrised threshold value is automatically activated.

Output sends at enable

Options:	<u>No telegram</u>
	Value for the current status

The parameter is used to specify the behaviour of the output when the object enable is activated.

▪ <u>No telegram</u>:

   – No telegram is sent at the activation of enable of the object.

▪ Value for the current status:

   – The current value is sent at the activation of the enable of the object.

Output sends at deactivation

Options:	<u>No telegram</u>
	Value for overshooting
	Value for undershooting

The parameter is used to specify the behaviour of the output when the object enable is deactivated.

▪ <u>No telegram</u>:

   – No telegram is sent at the deactivation of enable of the object.

▪ Value for overshooting:

   – When object enable is deactivated, the value that is set in parameter "Value for overshooting threshold x" is sent.

▪ Value for undershooting:

   – When object enable is deactivated, the value that is set in parameter "Value for undershooting threshold x" is sent.

10.7.2.5 Using object input threshold x [2 byte floating point]

Options:	Yes
	<u>No</u>

When activating this parameter the communication object "Input value" is enabled, over which the temperature threshold, to which the channel is to respond, can be changed via the bus.

10.7.2.6 Using object threshold x programming [1 bit]

Options:	Yes
	No

When activating the parameter, the communication object "Programming threshold x" is enabled. With a 1-bit telegram the currently measured temperature value can be taken over as new threshold, to which the channel is to respond.

10.7.2.7 Object type threshold x

Options:	Switch
	Forced operation
	1-byte value [0% - 100%]
	1-byte value [0-255]
	Scene number
	RTC operating mode

Parameter "Object type threshold x" is used to specify which KNX data type is sent when the threshold drops below or exceeds the set value. This makes it possible to implement different applications - such as switching the lawn irrigation off when the outdoor temperature drops below 2°C.

The parameter is used to parametrise the object type of the selected threshold value.

- Switch:
    – The object type is defined as switch.
- Forced operation:
    – The object type is defined as forced operation.
- 1-byte value [0% - 100%]:
    – The object type is defined as 1-byte percentage value.
- 1-byte value [0-255]:
    – The object type is defined as numerical 1-byte value.
- Scene number:
    – The object type is defined as scene number.
- RTC operating mode:
    – The object type is defined as RTC operating mode.

10.7.2.8   Switch object threshold x sends

Options:	In case of change
	Cyclic
	In case of change and cyclic

The parameter is used to specify when the value of communication object "Output" is sent on the bus.

▪ In case of change:

– The value is only sent to the bus when there is a change in status.

▪ Cyclic:

– The value is sent only cyclic to the bus.

▪ In case of change and cyclic:

– The value is sent on the bus both at a change in status and also cyclic.

10.7.2.9   Output object sends at

Options:	Undershooting and overshooting
	Overshoot
	Undershoot

The parameter is used to specify at which behaviour of the threshold value the output object is to send a telegram.

▪ Undershooting and overshooting:

– The output object sends a telegram at undershooting and overshooting of the threshold value.

▪ Overshooting:

– The output object sends a telegram only at overshooting of the threshold value.

▪ Undershooting:

– The output object sends a telegram only at undershooting of the threshold value.

10.7.2.10   **Value for undershooting the threshold x**

The parameter is used to specify which value is sent to the bus at undershooting of the threshold value plus hysteresis and after expiry of the "Minimum duration of undershooting" via object "TMP - temperature sensor: Threshold x - output threshold x".

The available values are dependent on the configuration of parameter "Object type threshold value x". The following versions can be configured:

Switch

Options:	0
	<u>1</u>

Forced operation

Options:	<u>ON, forced operation active</u>
	OFF, forced operation active
	Forced operation deactivated

1-byte value [0% - 100%]

Options:	0-<u>100</u>

1-byte value [0 - 255]

Options:	0-<u>255</u>

Scene number

Options:	<u>1</u>-64

RTC operating mode

Options:	Auto
	<u>Comfort</u>
	Standby
	ECO
	Frost/heat protection

10.7.2.11   Value for overshooting the threshold x

The parameter is used to specify which value is sent to the bus at overshooting of the threshold value plus hysteresis and after expiry of the "Minimum duration of overshooting" via object "TMP - temperature sensor: Threshold x - output threshold x".

The available values are dependent on the configuration of parameter "Object type threshold value x".

Switch

Options:	<u>0</u>
	1

Forced operation

Options:	ON, forced operation active
	<u>OFF, forced operation active</u>
	Forced operation deactivated

1-byte value [0% - 100%]

Options:	<u>0</u>-100

1-byte-value [0.255]

Options:	<u>0</u>-255

Scene number

Options:	1..<u>2</u>..64

RTC operating mode

Options:	Auto
	Comfort
	Standby
	<u>ECO</u>
	Frost/heat protection

10.7.2.12   Minimum duration of undershoot

Options:	None
	5 s
	<u>10 s</u>
	30 s
	1 min
	5 min
	10 min
	30 min

The parameter is used to specify the minimum duration of undershooting so that the object does not send immediately after a small temperature change, but only after a specific time.

This parameter is available when parameter "Output object sends at" has been set on "Undershooting and overshooting" or only on "Undershooting"

10.7.2.13   Minimum duration of overshoot

Options:	None
	5 s
	<u>10 s</u>
	30 s
	1 min
	5 min
	10 min
	30 min

The parameter is used to specify the minimum duration of overshooting so that the object does not send immediately after a small temperature change, but only after a specific time.

The parameter is only available if parameter "Output object sends at" has been set on "Undershooting and overshooting" or only on "Overshooting".

10.8   BT-function x

The application is available when the function "Bluetooth operation" was activated under "Device configuration - additional functions" and the individual Bluetooth function applications have been assigned.

This Bluetooth application can be used as remote control for a KNX system. A total of 10 freely definable functions are available that can be controlled via the iOS or Android app "Smart Connect".

The app additionally offers (as far as enabled in the ETS) the option to adjust certain parameters or to activate the test mode.

The available KNX control elements for the remote control are as follows:

▪   Switch (easy switchover between on and off)

▪   Dimmer (a button and a 1-byte slider from 0 - 100%)

▪   Blind/roller blind (several usable communication objects - of 1-bit movement commands up to status objects and optional wind alarm)

▪   Scene (for sending a scene number or a command for saving a scene)

▪   Value (makes multiple control concepts possible, e.g. brief/long actuation or different telegrams for pressing and releasing)

10.8.1   Switch

10.8.1.1   Status icon

Options:	Light
	Socket outlet
	Switch
	Scene

The parameter is used to specify the icon in the app that is displayed for this control element.

10.8.1.2   Description

Options:	<Text>

On parameter page "Device configuration" a description can be specified behind each Bluetooth function. This description is shown in the app as function name.

The description entered on the device configuration page is again displayed here, but cannot be edited at this point.

10.8.2 Dimming

10.8.2.1 Status icon

Options:	Light
	Socket outlet
	Switch
	Scene

The parameter is used to specify the icon in the app that is displayed for this control element.

10.8.2.2 Description

Options:	<Text>

On parameter page "Device configuration" a description can be specified behind each Bluetooth function. This description is shown in the app as function name.

The description entered on the device configuration page is again displayed here, but cannot be edited at this point.

10.8.3 Blinds/roller blinds

10.8.3.1 Description

Options:	<Text>

On parameter page "Device configuration" a description can be specified behind each Bluetooth function. This description is shown in the app as function name.

The description entered on the device configuration page is again displayed here, but cannot be edited at this point.

10.8.3.2 Operating mode

Options:	Blind
	Roller blind

The parameter is used to specify in dependence of the operating mode whether the function is a blind or roller blind. The operating mode defines whether the shading option is an option with adjustable slats (blind).

The difference between blind and roller blind is relevant for the illustration in the app. The difference is made functionally by the actuator.

10.8.4   Scenes

10.8.4.1   Status icon

Options:	Light
	Socket outlet
	Switch
	<u>Scene</u>

The parameter is used to specify the icon in the app that is displayed for this control element.

10.8.4.2   Description

Options:	<Text>

On parameter page "Device configuration" a description can be specified behind each Bluetooth function. This description is shown in the app as function name.

The description entered on the device configuration page is again displayed here, but cannot be edited at this point.

10.8.4.3 **Differentiating between brief and long operation**

Options:	Activated
	Deactivated

By activating the parameter, the scene function differentiates between brief and long operation.

▪ The following parameters are only available when parameter "Differentiation between brief and long operation" is activated.

At brief operation: Scene number

Options:	1 ... 64

The parameter specifies the scene number for the short-time operation.

Reaction on long operation

Options:	Call up further scene
	Save scene

The parameter specifies the response behaviour for the long-time operation.

At long actuation: Scene number

Options:	1 ... 64

This parameter is only available if the "Reaction at long operation" parameter was parameterised on "Call up additional scene".

▪ The following parameters are only available when parameter "Differentiation between brief and long operation" is deactivated.

Scene number

Options:	1 ... 64

The parameter specifies the scene number.

Scene

Options:	Send
	Save

The parameter specifies the behaviour at the call-up of a scene.

10.8.5 Send value

10.8.5.1 Status icon

Options:	Light
	Socket outlet
	<u>Switch</u>
	Scene

The parameter is used to specify the icon in the app that is displayed for this control element.

10.8.5.2 Description

Options:	<Text>

On parameter page "Device configuration" a description can be specified behind each Bluetooth function. This description is shown in the app as function name.

The description entered on the device configuration page is again displayed here, but cannot be edited at this point.

10.8.5.3 Send value on

Options:	<u>Single actuation</u>
	Short/long operation

The parameter is used to specify how the communication and the sending of values is to take place in dependence of the operating mode.

- <u>Single actuation</u>:
    – At actuation of the function the value "On" is sent directly to the bus. There is no differentiation between short and long actuation.

- Short/long operation:
    – At actuation of the function there is a differentiation between short and long operation. The icon or the status always depend on value 1.
    – At short operation the value "On" is sent to the bus and, for example, the light is switched on and off.
    – At long operation an "Everything off" is sent - then in contrast to short-time operation, there is no icon.

Send value at single operation

The parameter can only be set when parameter "Send value on" is set on "single actuation".

▪ Toggle value

Options:	No
	Yes

The parameter is used to specify the switchover of the respective value under value 1 and value 2.

The following parameters Value 1 / value 2 are used to specify when the value is sent and which value is assigned to the respective data point.

▪ Value 1 / value 2 - Switching [DPT 1.001]

	Send at	DPT	Value
Value 1	Close	Switching [DPT 1.001]	On Off Switchover
Value 2	No reaction	-	-

	Send at	DPT	Value
Value 1	Close	Switching [DPT 1.001]	On Off Switchover
Value 2	Open	-	On Off Switchover

	Send at	DPT	Value
Value 1	Open	Switching [DPT 1.001]	On Off ☐Switchover
Value 2	Close	-	On Off Switchover

	Send at	DPT	Value
Value 1	Open	Switching [DPT 1.001]	On Off Switchover
Value 2	No reaction	-	-

▪ Value 1 / value 2 - Forced operation [DPT 2.001]

	Send at	DPT	Value
Value 1	<u>Close</u>	Forced operation [DPT 2.001]	No forced operation Forced operation, value 0 <u>Forced operation, value 1</u>
Value 2	<u>No reaction</u>	-	-

	Send at	DPT	Value
Value 1	<u>Close</u>	Forced operation [DPT 2.001]	No forced operation Forced operation, value 0 <u>Forced operation, value 1</u>
Value 2	Open	-	No forced operation <u>Forced operation, value 0</u> Forced operation, value 1

	Send at	DPT	Value
Value 1	Open	Forced operation [DPT 2.001]	No forced operation Forced operation, value 0 <u>Forced operation, value 1</u>
Value 2	<u>No reaction</u>	-	-

	Send at	DPT	Value
Value 1	Open	Forced operation [DPT 2.001]	No forced operation Forced operation, value 0 <u>Forced operation, value 1</u>
Value 2	Close	-	No forced operation <u>Forced operation, value 0</u> Forced operation, value 1

	Send at	DPT	Value
Value 1	˜Switchover	Forced operation [DPT 2.001]	No forced operation Forced operation, value 0 <u>Forced operation, value 1</u>
Value 2	˜Switchover	-	No forced operation <u>Forced operation, value 0</u> Forced operation, value 1

▪ Value 1 / value 2 - Percent [DPT 5.001]

	Send at	DPT	Value
Value 1	<u>Close</u>	Percent [DPT 5.001]	<u>0</u> - 100%
Value 2	No reaction	-	-

	Send at	DPT	Value
Value 1	<u>Close</u>	Percent [DPT 5.001]	<u>0</u> - 100%
Value 2	Open	-	<u>0</u> - 100%

	Send at	DPT	Value
Value 1	Open	Percent [DPT 5.001]	<u>0</u> - 100%
Value 2	No reaction	-	-

	Send at	DPT	Value
Value 1	Open	Percent [DPT 5.001]	<u>0</u> - 100%
Value 2	Close	-	<u>0</u> - 100%

	Send at	DPT	Value
Value 1	˜Switchover	Percent [DPT 5.001]	<u>0</u> - 100%
Value 2	<u>˜Switchover</u>	-	<u>0</u> - 100%

▪ Value 1 / value 2 - 1 byte without a sign [DPT 5.001]

	Send at	DPT	Value
Value 1	<u>Close</u>	1 byte [DPT 5.001]	<u>0</u> - 255
Value 2	No reaction	-	-

	Send at	DPT	Value
Value 1	<u>Close</u>	1 byte [DPT 5.001]	<u>0</u> - 255
Value 2	Open	-	<u>0</u> - 255

	Send at	DPT	Value
Value 1	Open	1 byte [DPT 5.001]	<u>0</u> - 255
Value 2	No reaction	-	-

	Send at	DPT	Value
Value 1	Open	1 byte [DPT 5.001]	<u>0</u> - 255
Value 2	Close	-	0 - 255

	Send at	DPT	Value
Value 1	˜Switchover	1 byte [DPT 5.001]	<u>0</u> - 255
Value 2	<u>˜Switchover</u>	-	<u>0</u> - 255

- Value 1 / value 2 - 1 byte with a sign [DPT 6.010]

	Send at	DPT	Value
Value 1	<u>Close</u>	1 byte with a sign [DPT 6.010]	-128 - <u>0</u> - 127
Value 2	No reaction	-	-

	Send at	DPT	Value
Value 1	<u>Close</u>	1 byte with a sign [DPT 6.010]	-128 - <u>0</u> - 127
Value 2	Open	-	-128 - <u>0</u> - 127

	Send at	DPT	Value
Value 1	Open	1 byte with a sign [DPT 6.010]	-128 - <u>0</u> - 127
Value 2	No reaction	-	-

	Send at	DPT	Value
Value 1	Open	1 byte with a sign [DPT 6.010]	-128 - <u>0</u> - 127
Value 2	Close	-	-128 - <u>0</u> - 127

	Send at	DPT	Value
Value 1	˜Switchover	1 byte with a sign [DPT 6.010]	-128 - <u>0</u> - 127
Value 2	<u>˜Switchover</u>	-	-128 - <u>0</u> - 127

▪ Value 1 / value 2 - 2 byte without a sign [DPT 7.001]

	Send at	DPT	Value
Value 1	<u>Close</u>	2 byte [DPT 7.001]	<u>0</u> - 65535
Value 2	No reaction	-	-

	Send at	DPT	Value
Value 1	<u>Close</u>	2 byte [DPT 7.001]	<u>0</u> - 65535
Value 2	Open	-	<u>0</u> - 65535

	Send at	DPT	Value
Value 1	Open	2 byte [DPT 7.001]	<u>0</u> - 65535
Value 2	No reaction	-	-

	Send at	DPT	Value
Value 1	Open	2 byte [DPT 7.001]	<u>0</u> - 65535
Value 2	Close	-	<u>0</u> - 65535

	Send at	DPT	Value
Value 1	˜Switchover	2 byte [DPT 7.001]	<u>0</u> - 65535
Value 2	<u>˜Switchover</u>	-	<u>0</u> - 65535

- Value 1 / value 2 - 2 byte with a sign [DPT 8.001]

	Send at	DPT	Value
Value 1	<u>Close</u>	2 byte with a sign [DPT 8.001]	-32768 - <u>0</u> - 32767
Value 2	No reaction	-	-

	Send at	DPT	Value
Value 1	<u>Close</u>	2 byte with a sign [DPT 8.001]	-32768 - <u>0</u> - 32767
Value 2	Open	-	-32768 - <u>0</u> - 32767

	Send at	DPT	Value
Value 1	Open	2 byte with a sign [DPT 8.001]	-32768 - <u>0</u> - 32767
Value 2	No reaction	-	-

	Send at	DPT	Value
Value 1	Open	2 byte with a sign [DPT 8.001]	-32768 - <u>0</u> - 32767
Value 2	Close	-	-32768 - <u>0</u> - 32767

	Send at	DPT	Value
Value 1	˜Switchover	2 byte with a sign [DPT 8.001]	-32768 - <u>0</u> - 32767
Value 2	<u>˜Switchover</u>	-	-32768 - <u>0</u> - 32767

▪ Value 1 / value 2 - 4 byte without a sign [DPT 12.001]

	Send at	DPT	Value
Value 1	<u>Close</u>	4 byte [DPT 12.001]	<u>0</u> - 4294967295
Value 2	No reaction	-	-

	Send at	DPT	Value
Value 1	<u>Close</u>	4 byte [DPT 12.001]	<u>0</u> - 4294967295
Value 2	Open	-	<u>0</u> - 4294967295

	Send at	DPT	Value
Value 1	Open	4 byte [DPT 12.001]	<u>0</u> - 4294967295
Value 2	No reaction	-	-

	Send at	DPT	Value
Value 1	Open	4 byte [DPT 12.001]	<u>0</u> - 4294967295
Value 2	Close	-	<u>0</u> - 4294967295

	Send at	DPT	Value
Value 1	˜Switchover	4 byte [DPT 12.001]	<u>0</u> - 4294967295
Value 2	<u>˜Switchover</u>	-	<u>0</u> - 4294967295

- ▪ Value 1 / value 2 - Temperature [DPT 9.001]

	Send at	DPT	Value
Value 1	<u>Close</u>	Temperature [DPT 9.001]	-100 - <u>20</u> - 250°C
Value 2	No reaction	-	-

	Send at	DPT	Value
Value 1	<u>Close</u>	Temperature [DPT 9.001]	-100 - <u>20</u> - 250°C
Value 2	Open	-	-100 - <u>20</u> - 250°C

	Send at	DPT	Value
Value 1	Open	Temperature [DPT 9.001]	-100 - <u>20</u> - 250°C
Value 2	No reaction	-	-

	Send at	DPT	Value
Value 1	Open	Temperature [DPT 9.001]	-100 - <u>20</u> - 250°C
Value 2	Close	-	-100 - <u>20</u> - 250°C

	Send at	DPT	Value
Value 1	˜Switchover	Temperature [DPT 9.001]	-100 - <u>20</u> - 250°C
Value 2	<u>˜Switchover</u>	-	-100 - <u>20</u> - 250°C

▪ Value 1 / value 2 - Brightness [DPT 7.013]

	Send at	DPT	Value
Value 1	Close	Brightness [DPT 7.013]	0 - 400 - 65535 lux
Value 2	No reaction	-	-

	Send at	DPT	Value
Value 1	Close	Brightness [DPT 7.013]	0 - 400 - 65535 lux
Value 2	Open	-	0 - 400- 65535 lux

	Send at	DPT	Value
Value 1	Open	Brightness [DPT 7.013]	0 - 400 - 65535 lux
Value 2	No reaction	-	-

	Send at	DPT	Value
Value 1	Open	Brightness [DPT 7.013]	0 - 400 - 65535 lux
Value 2	Close	-	0 - 400- 65535 lux

	Send at	DPT	Value
Value 1	˜Switchover	Brightness [DPT 7.013]	0 - 400 - 65535 lux
Value 2	˜Switchover	-	0 - 400- 65535 lux

- Value 1 / value 2 - Colour [DPT 232.600]

	Send at	DPT	Value
Value 1	Close	Colour [DPT 232.600]	#000000 … #FFFFFF
Value 2	No reaction	-	-

	Send at	DPT	Value
Value 1	Close	Colour [DPT 232.600]	#000000 … #FFFFFF
Value 2	Open	-	#000000 … #FFFFFF

	Send at	DPT	Value
Value 1	Open	Colour [DPT 232.600]	#000000 … #FFFFFF
Value 2	No reaction	-	-

	Send at	DPT	Value
Value 1	Open	Colour [DPT 232.600]	#000000 … #FFFFFF
Value 2	Close	-	#000000 … #FFFFFF

	Send at	DPT	Value
Value 1	˜Switchover	Colour [DPT 232.600]	#000000 … #FFFFFF
Value 2	˜Switchover	-	#000000 … #FFFFFF

▪ Value 1 / value 2 - HVAC mode [DPT 20.102]

	Send at	DPT	Value
Value 1	<u>Close</u>	HVAC mode [DPT 20.102]	<u>Automatic mode</u> Comfort Standby Economy Building protection
Value 2	No reaction	-	-

	Send at	DPT	Value
Value 1	<u>Close</u>	HVAC mode [DPT 20.102]	<u>Automatic mode</u> Comfort Standby Economy Building protection
Value 2	Open	-	<u>Automatic mode</u> Comfort Standby Economy Building protection

	Send at	DPT	Value
Value 1	Open	HVAC mode [DPT 20.102]	<u>Automatic mode</u> Comfort Standby Economy Building protection
Value 2	No reaction	-	-

	Send at	DPT	Value
Value 1	Open	HVAC mode [DPT 20.102]	<u>Automatic mode</u> Comfort Standby Economy Building protection
Value 2	Close	-	<u>Automatic mode</u> Comfort Standby Economy Building protection

	Send at	DPT	Value
Value 1	˜Switchover	HVAC mode [DPT 20.102]	<u>Automatic mode</u> Comfort Standby Economy Building protection
Value 2	<u>˜Switchover</u>	-	<u>Automatic mode</u> Comfort Standby Economy Building protection

Send value at short/long actuation

The parameter can only be set when parameter "Send value on" is set on "Short-/long operation".

Via this application, different values can be sent out with a short and/or long operation.

▪ Toggle value

Options:	No
	Yes

The parameter is used to specify the switchover of the respective value under value 1 and value2.

▪ Value 1 (short operation)

The following parameter is used to specify when the value is sent and which value is assigned to the respective data point.

	Send at	DPT	Value
Value 1	Short actuation	Switching [DPT 1.001]	On Off ˜Switchover
		Forced operation [DPT 2.001]	No forced operation Forced operation, value 0 Forced operation, value 1
		Percent [DPT 5.001]	0 - 100%
		1 byte without a sign [DPT 5.001]	0 - 255
		1 byte with a sign [DPT 6.010]	-128 - 0 - 127
		2 byte without a sign [DPT 7.001]	0 - 65535
		2 byte with a sign [DPT 8.001]	-32768 - 0 - 32767
		4 byte without a sign [DPT 12.001]	0 - 4294967295
		Temperature [DPT 9.001]	-100 - 20 - 250°C
		Brightness [DPT 7.013]	0 - 400 - 65535 lux
		Colour [DPT 232.600]	#000000 - #FFFFFF
		HVAC mode [DPT 20.102]	Automatic mode Comfort Standby Economy Building protection
		Deactivated	-

▪ Value 2 (long operation)

The following parameter is used to specify when the value is sent and which value is assigned to the respective data point.

	Send at	DPT	Value
Value 2	Long actuation	Switching [DPT 1.001]	On Off ˜Switchover
		Forced operation [DPT 2.001]	No forced operation Forced operation, value 0 Forced operation, value 1
		Percent [DPT 5.001]	0 - 100%
		1 byte without a sign [DPT 5.001]	0 - 255
		1 byte with a sign [DPT 6.010]	-128 - 0 - 127
		2 byte without a sign [DPT 7.001]	0 - 65535
		2 byte with a sign [DPT 8.001]	-32768 - 0 - 32767
		4 byte without a sign [DPT 12.001]	0 - 4294967295
		Temperature [DPT 9.001]	-100 - 20 - 250°C
		Brightness [DPT 7.013]	0 - 400 - 65535 lux
		Colour [DPT 232.600]	#000000 - #FFFFFF
		HVAC mode [DPT 20.102]	Automatic mode Comfort Standby Economy Building protection
		Deactivated	-

10.8.5.4 Send input status after ETS download or KNX voltage recovery

Options:	Activated
	Deactivated

The parameter is used to specify whether the input status is sent at a corresponding event.

The parameter can only be set when parameter "Send input status after ETS download or KNX voltage recovery" is activated.

The following parameters Value 1 / value 2 are used to specify when the value is sent and which value is assigned to the respective data point.

▪ Value 1 / value 2 - Switching [DPT 1.001]

	Send on	Data type	Value
Value 1	<u>Close</u>	<u>Switching [DPT 1.001]</u>	Off <u>On</u>
Value 2	<u>No reaction</u>	-	-

	Send on	Data type	Value
Value 1	<u>Close</u>	<u>Switching [DPT 1.001]</u>	Off <u>On</u>
Value 2	<u>Open</u>	-	<u>Off</u> On

	Send on	Data type	Value
Value 1	<u>Open</u>	<u>Switching [DPT 1.001]</u>	<u>On</u> Off
Value 2	<u>Close</u>	-	On <u>Off</u>

▪ Value 1 / value 2 - Forced operation [DPT 2.001]

	Send on	Data point	Value
Value 1	<u>Close</u>	Forced operation [DPT 2.001]	No forced operation Forced operation, value 0 <u>Forced operation, value 1</u>
Value 2	<u>No reaction</u>	-	-

	Send on	Data type	Value
Value 1	<u>Close</u>	Forced operation [DPT 2.001]	No forced operation Forced operation, value 0 <u>Forced operation, value 1</u>
Value 2	Open	-	No forced operation <u>Forced operation, value 0</u> Forced operation, value 1

	Send on	Data type	Value
Value 1	Open	Forced operation [DPT 2.001]	No forced operation Forced operation, value 0 <u>Forced operation, value 1</u>
Value 2	<u>No reaction</u>	-	-

	Send on	Data type	Value
Value 1	<u>Open</u>	Forced operation [DPT 2.001]	No forced operation Forced operation, value 0 Forced operation<u>, value 1</u>
Value 2	Close	-	No forced operation <u>Forced operation, value 0</u> Forced operation, value 1

▪ Value 1 / value 2 - Percent [DPT 5.001]

	Send on	Data type	Value
Value 1	<u>Close</u>	Percent [DPT 5.001]	<u>0</u> - 100%
Value 2	No reaction	-	-

	Send on	Data type	Value
Value 1	<u>Close</u>	Percent [DPT 5.001]	<u>0</u> - 100%
Value 2	Open	-	<u>0</u> - 100%

	Send on	Data type	Value
Value 1	<u>Open</u>	Percent [DPT 5.001]	<u>0</u> - 100%
Value 2	No reaction	-	-

	Send on	Data type	Value
Value 1	<u>Open</u>	Percent [DPT 5.001]	<u>0</u> - 100%
Value 2	Close	-	<u>0</u> - 100%

- Value 1 / value 2 - 1 byte without a sign [DPT 5.010]

	Send on	Data type	Value
Value 1	<u>Close</u>	1 byte [DPT 5.010]	<u>0</u> - 255
Value 2	No reaction	-	-

	Send on	Data type	Value
Value 1	<u>Close</u>	1 byte [DPT 5.010]	<u>0</u> - 255
Value 2	Open	-	<u>0</u> - 255

	Send on	Data type	Value
Value 1	Open	1 byte [DPT 5.010]	<u>0</u> - 255
Value 2	No reaction	-	-

	Send on	Data type	Value
Value 1	Open	1 byte [DPT 5.010]	<u>0</u> - 255
Value 2	Close	-	0 - 255

▪ Value 1 / value 2 - 1 byte with a sign [DPT 6.010]

	Send on	Data type	Value
Value 1	<u>Close</u>	1 byte with a sign [DPT 6.010]	-128 - <u>0</u> - 127
Value 2	No reaction	-	-

	Send on	Data type	Value
Value 1	<u>Close</u>	1 byte with a sign [DPT 6.010]	-128 - <u>0</u> - 127
Value 2	Open	-	-128 - <u>0</u> - 127

	Send on	Data type	Value
Value 1	Open	1 byte with a sign [DPT 6.010]	-128 - <u>0</u> - 127
Value 2	No reaction	-	-

	Send on	Data type	Value
Value 1	Open	1 byte with a sign [DPT 6.010]	-128 - <u>0</u> - 127
Value 2	Close	-	-128 - <u>0</u> - 127

▪ Value 1 / value 2 - 2 byte without a sign [DPT 7.001]

	Send on	Data type	Value
Value 1	<u>Close</u>	2 byte [DPT 7.001]	<u>0</u> - 65535
Value 2	No reaction	-	-

	Send on	Data type	Value
Value 1	<u>Close</u>	2 byte [DPT 7.001]	<u>0</u> - 65535
Value 2	Open	-	<u>0</u> - 65535

	Send on	Data type	Value
Value 1	Open	2 byte [DPT 7.001]	<u>0</u> - 65535
Value 2	No reaction	-	-

	Send on	Data type	Value
Value 1	Open	2 byte [DPT 7.001]	<u>0</u> - 65535
Value 2	Close	-	<u>0</u> - 65535

▪ Value 1 / value 2 - 2 byte with a sign [DPT 8.001]

	Send on	Data type	Value
Value 1	<u>Close</u>	2 byte with a sign [DPT 8.001]	-32768 - <u>0</u> - 32767
Value 2	No reaction	-	-

	Send on	Data type	Value
Value 1	<u>Close</u>	2 byte with a sign [DPT 8.001]	-32768 - <u>0</u> - 32767
Value 2	Open	-	-32768 - <u>0</u> - 32767

	Send on	Data type	Value
Value 1	Open	2 byte with a sign [DPT 8.001]	-32768 - <u>0</u> - 32767
Value 2	No reaction	-	-

	Send on	Data type	Value
Value 1	Open	2 byte with a sign [DPT 8.001]	-32768 - <u>0</u> - 32767
Value 2	Close	-	-32768 - <u>0</u> - 32767

- Value 1 / value 2 - 4 byte without a sign [DPT 12.001]

	Send on	Data type	Value
Value 1	<u>Close</u>	4 byte [DPT 12.001]	<u>0</u> - 4294967295
Value 2	No reaction	-	-

	Send on	Data type	Value
Value 1	<u>Close</u>	4 byte [DPT 12.001]	<u>0</u> - 4294967295
Value 2	Open	-	<u>0</u> - 4294967295

	Send on	Data type	Value
Value 1	Open	4 byte [DPT 12.001]	<u>0</u> - 4294967295
Value 2	No reaction	-	-

	Send on	Data type	Value
Value 1	Open	4 byte [DPT 12.001]	<u>0</u> - 4294967295
Value 2	Close	-	<u>0</u> - 4294967295

▪ Value 1 / value 2 - Temperature [DPT 9.001]

	Send on	Data type	Value
Value 1	<u>Close</u>	Temperature [DPT 9.001]	-100 - <u>20</u> - 250°C
Value 2	No reaction	-	-

	Send on	Data type	Value
Value 1	<u>Close</u>	Temperature [DPT 9.001]	-100 - <u>20</u> - 250°C
Value 2	Open	-	-100 - <u>20</u> - 250°C

	Send on	Data type	Value
Value 1	Open	Temperature [DPT 9.001]	-100 - <u>20</u> - 250°C
Value 2	No reaction	-	-

	Send on	Data type	Value
Value 1	Open	Temperature [DPT 9.001]	-100 - <u>20</u> - 250°C
Value 2	Close	-	-100 - <u>20</u> - 250°C

▪ Value 1 / value 2 - Brightness value [DPT 7.013]

	Send on	Data type	Value
Value 1	<u>Close</u>	Brightness value [DPT 7.013]	0 - <u>400</u> - 65535 lux
Value 2	No reaction	-	-

	Send on	Data type	Value
Value 1	<u>Close</u>	Brightness value [DPT 7.013]	0 - <u>400</u> - 65535 lux
Value 2	Open	-	0 - <u>400</u>- 65535 lux

	Send on	Data type	Value
Value 1	Open	Brightness value [DPT 7.013]	0 - <u>400</u> - 65535 lux
Value 2	No reaction	-	-

	Send on	Data type	Value
Value 1	Open	Brightness value [DPT 7.013]	0 - <u>400</u> - 65535 lux
Value 2	Close	-	0 - <u>400</u>- 65535 lux

▪ Value 1 / value 2 - Colour [DPT 232.600]

	Send on	Data type	Value
Value 1	<u>Close</u>	Colour [DPT 232.600]	#000000 … #FFFFFF
Value 2	No reaction	-	-

	Send on	Data type	Value
Value 1	<u>Close</u>	Colour [DPT 232.600]	#000000 … #FFFFFF
Value 2	Open	-	#000000 … #FFFFFF

	Send on	Data type	Value
Value 1	Open	Colour [DPT 232.600]	#000000 … #FFFFFF
Value 2	No reaction	-	-

	Send on	Data type	Value
Value 1	Open	Colour [DPT 232.600]	#000000 … #FFFFFF
Value 2	Close	-	#000000 … #FFFFFF

Notice
The colour value can be set by selecting the coloured button and then via colour field or via the sliding controllers.

▪ Value 1 / value 2 - HVAC mode [DPT 20.102]

	Send on	Data type	Value
Value 1	<u>Close</u>	HVAC mode [DPT 20.102]	<u>Automatic mode</u> Comfort Standby Economy Building protection
Value 2	No reaction	-	-

	Send on	Data type	Value
Value 1	<u>Close</u>	HVAC mode [DPT 20.102]	<u>Automatic mode</u> Comfort Standby Economy Building protection
Value 2	Open	-	<u>Automatic mode</u> Comfort Standby Economy Building protection

	Send on	Data type	Value
Value 1	Open	HVAC mode [DPT 20.102]	<u>Automatic mode</u> Comfort Standby Economy Building protection
Value 2	No reaction	-	-

	Send on	DP data type T	Value
Value 1	Open	HVAC mode [DPT 20.102]	<u>Automatic mode</u> Comfort Standby Economy Building protection
Value 2	Close	-	<u>Automatic mode</u> Comfort Standby Economy Building protection

10.9   Functions

The application for the respective function 1 - 5 is assigned under application "Device configuration - General functions".

> **Notice**
> The following parameters can only be set when an application has been selected under "Device configuration - General functions"

The applications listed in the following are available.

▪   Inactive:

    –   The application is not active. No parameters are available.

▪   Telegram cyclical:

    –   After the receipt of a telegram on object "GFx: input", a telegram with the same content is sent cyclic via object "GFx: Output". .

▪   Priority

    –   The application can be used to specify the urgency with which telegrams are sent to the bus.

▪   Logic functions:

    –   The application can be used to link up to ten input values with each other.

▪   Gate:

    –   The application can be used to filter certain signals and to block the flow of signals temporarily.

▪   Staircase lighting:

    –   The application can be used to supply switching telegrams or value telegrams with a switch-off delay.

▪   Delay:

    –   Telegrams can be received via the "GFx: input" object.

▪   Min/max:

    –   Up to eight input values can be compared with each other with the application.

▪   Scene actuator:

    –   With the application it is possible to call up scenes that are stored in the device via the receipt of a scene number on the 1-byte communication object "Scene call-up".

▪   Sequence:

    –   Via the parameter it is possible to send out multiple telegrams with different values in a predefined sequence consecutively via the same object.

10.9.1 Cyclic telegram

Via the "Cyclic telegram" application and after receipt of a telegram on the "Input" object, a telegram with the same content is cyclically sent out on the cyclic "Output" object.

▪ Data type

Options:	Switching [DPT 1.001]
	Alarm [DPT 1.005]
	Percent [DPT 5.001]
	1 byte without a sign [DPT 5.001]
	2-byte float [DPT 9,001]
	2 bytes with a sign [DPT 8.001]
	2 bytes without a sign [DPT 7.001]
	Temperature [DPT 9.001]
	4-byte float [DPT 14,001]
	4 bytes with a sign [DPT 13.001]
	4 bytes without a sign [DPT 12.001]

▪ Extended settings

Options:	Activated
	disabled

The parameter is used to specify whether additional settings are available.

▪ Activate communication object "Block"

Options:	Activated
	disabled

The parameter is used to specify whether the communication object "Block" is to be enabled.

▪ Block at value

Options:	0
	1

The parameter is used to specify the value at which the blockage is made.

▪ Send status after ETS download or bus voltage recovery

Options:	Blocked
	Enabled

The parameter is used to specify whether the input status is sent at a corresponding event.

The parameter can only be set when parameter "Extended settings" and its subordinate parameter "Block" "Activate" communication object" is activated.

▪ Cyclical sending

Options:	Always activated
	<u>Activated at a specified value</u>
	Activated except at a specified value

The parameter is used to specify the conditions under which telegrams are sent.

▪ Always activated:
Telegrams that are received on object "Gfx: input", are transferred directly to object "GFx: Output" and are there sent cyclic.

▪ <u>Activated at a specified value:</u>
This value is sent via object "GFx: output" only at the receipt of a specific, set value. If a different value is received on object "GFx: Input", this value is sent via the object, but not repeated cyclic.

▪ Activated except at a specified value:
This deviating value is sent cyclic via object "GFx: output" only at the receipt of a value deviating from the set value.

10.9.2 Logic functions

▪ Function

Options:	AND
	OR
	XOR
	XNOR
	NAND
	NOR
	NOT

The parameter is used to specify the logic gate the communication objects are to be linked with.

▪ Number of inputs

Options:	2 - 10

The parameter is used to set the number of inputs that are to be linked in the logic function.

	DPT	Initial value	Inverting an input
Input x	Switching [DPT 1.001]	0	Deactivated
	1 byte without a sign [DPT 5.010]	1	Activated

The parameter is used to assign the data point types and the initial value depending on the number of selected inputs (2 - 10) for each input separately. The inputs can be individually inverted.

▪ Object type output

Options:	Switching [DPT 1.001]
	1 byte without a sign [DPT 5.010]

Each logical function has an output object. The result determined from the inputs is sent on the bus via the output object.

The parameter is used to specify the bit size for the output object.

- Send output value On

Options:	Each input telegram
	Value change

- Each input telegram:
    - When a telegram is received via the input object, the communication object always sends the value of the output object on the bus. This also happens if the value of the output object has not changed.
- Value change:
    - The communication object only sends a telegram when the value of the output object has changed.

The parameter is used to specify whether a telegram is sent via communication object "GFx: Output" at each receipt of a telegram or only at a change of the change of the output object.

- Output value for "true"

Options:	1
	Determined by the user

- 1:
    - As soon as the condition is fulfilled, a logical "1" is present on the output. This equally applies when the "Object type output" parameter is set on "1 byte".
- Determined by the user:
    - The value that is present on the output when the condition has been met, can be set via parameter "Value".

The parameter is used to specify the value of the output object in the logic status "True".

- Value

Options:	0
	1

- True = 0: When the condition has been met, value "0" is present at communication object "GFx: Output ".
- True = 1: When the condition has been met, value "1" is present at communication object "GFx: Output ".

The parameter is used to specify which value is sent via communication object "GFx: Output" at a fulfilled (true) condition.

This parameter is only adjustable if the parameter "Output value" for "true" is set on "As defined below".

▪   Output value for "false"

Options:	0
	Determined by the user

▪   0:
  –   As soon as the condition is fulfilled, a logical "0" is present on the output.
▪   Determined by the user:
  –   The value that is present on the output when the condition has been met, can be set via parameter "Value".

The parameter is used to specify which value is sent via object "GFx: Output" at a non-fulfilled (false) condition.

▪   Value

Options:	0
	1

▪   False = 0:
  –   When the condition has been met, value "0" is present at communication object "GFx: Output".
▪   False = 1:
  –   When the condition has been met, value "1" is present at communication object "GFx: Output".

The parameter is used to set which value is sent via communication object "GFx: Output" at a non-fulfilled (false) condition.

This parameter is only adjustable if the parameter "Output value" for "false" is set on "As defined below".

10.9.3   Gate

▪   Data type

Options:	Switching [DPT 1.001]
	Down/up [DPT 1.008]
	Slat adjustment/stop [DPT 1.0007]
	Forced operation [DPT 2.001]
	Relative Dimming [DPT 3.007]
	Percent [DPT 5.001]
	1 byte without a sign [DPT 5.001]
	2-byte float [DPT 9,001]
	2 bytes with a sign [DPT 8.001]
	2 bytes without a sign [DPT 7.001]
	Time [DPT 10.001]
	Date [DPT 11.001]
	4-byte float [DPT 14,001]
	4 bytes with a sign [DPT 13.001]
	4 bytes without a sign [DPT 12.001]

The parameter is used to specify the data type that is to be used.

▪   Filter function

Options:	Deactivated
	Filter out "On"
	"Off" filter out

The parameter can be used to filter On or Off telegrams (1 bit) out. The function is used, for example, when only the On telegram is needed and the sensor does not offer any filter function in its application program.

▪   Deactivated: No telegrams are filtered out.

▪   "On" filter out: On telegrams are filtered out.

▪   "Off" filter out: Off telegrams are filtered out.

▪   Data flow direction

Options:	From input to output
	Output to input
	In both directions

The parameter is used to specify the direction in which the signal is to be transferred.

–   From input to output: Telegrams are transferred from object "GFx: Input" to object "GFx: Output".

–   Output to input: Telegrams are transferred from object "GFx: Output" to object "Gfx: Input".

–   In both directions: Telegrams are transferred in both directions.

▪   Value output

Options:	Normal
	Inverse

The parameter is used to specify the form in which the value is output.

▪   Activate communication object "Block"

Options:	Activated
	disabled

The parameter is used to specify whether the group object is to be enabled.

▪   Block at value

Options:	0
	1

The parameter is used to specify the value at which the blockage is made.

▪   Send status after ETS download or bus voltage recovery

Options:	Blocked
	Enabled

The parameter is used to specify whether the input status is sent at a corresponding event.

The parameter can only be set when parameter "Send input status after ETS download or KNX voltage recovery" is activated.

▪   Save input signal

Options:	Activated
	disabled

The parameter is used to specify whether the input signal is saved.

10.9.4   Staircase lighting

▪   Data type

Options:	Combined communication object switching [DPT 1.001]
	Separate communication objects switching [DPT 1.001]
	Separate communication objects percent [DPT 5.001]

The parameter is used to specify the data type that is to be used.

▪   Switch-off delay

Options:	00:00:10 ... 00:03:00 ... 01:30:00 hh:mm:ss

The parameter is used to specify the duration the light is switched on.

▪   Re-triggering

Options:	Activated
	disabled

The parameter is used to specify whether a renewed switch-on of the light is possible.

▪   Switch-off pre-warning

Options:	Activated
	disabled

The parameter is used to specify whether the switch-off pre-warning is activated.

▪   Duration

Options:	1 ... 5 ... 5400 s

The parameter is used to specify the duration the switch-off pre-warning is active.

The parameter is available only when parameter "Switch-off pre-warning is activated.

▪   Overwrite switch-off duration and pre-warning time at download

Options:	Activated
	disabled

The parameter is used to specify whether the two parameters are overwritten at download.

10.9.5 Delay

Telegrams can be received via the "Input" object using the "Delay" application. The telegrams received are sent out on the "Output" object with a set delay time.

▪ Data type

Options:	Switching [DPT 1.001]
	Down/up [DPT 1.008]
	Slat adjustment/stop [DPT 1,007]
	Percent [DPT 5.001]
	1 byte without a sign [DPT 5.010]
	2-byte float [DPT 9,001]
	2 bytes with a sign [DPT 8.001]
	2 bytes without a sign [DPT 7.001]
	4-byte float [DPT 14,001]
	4 bytes with a sign [DPT 13.001]
	4 bytes without a sign [DPT 12.001]

The parameter is used to specify the data type that is to be used.

▪ Delay time

Options:	00:00:01.000 - 01:00:00.000 hh:mm:ss.fff

The parameter is used to specify the evaluation period in seconds.

▪ Re-triggering

Options:	Deactivated
	Activated

▪ Deactivated:
  – The set switch-off delay always runs to its end, so that a telegram is always sent via object "GFx: Output" after the expiry of the delay time.
▪ Activated:
  – The switch-off delay is always restarted when a telegram is received via the "GFx: Input" object.

The parameter is used to specify whether the switch-off delay is restarted when a further telegram is received via the "GFx: Input" object. This behaviour is called retriggering.

For example, retriggering makes sense for a light-on time of movement detectors. This ensures that the on-time continues to be reset as long as there is movement detected.

▪ Filter active

Options:	Deactivated
	Activated

▪ Deactivated:

– Filter is not active.

▪ Activated:

– Filter is active. Filter function and filter value can be set.

The parameter is used to specify whether a filter is used for the delay of telegrams.

▪ Filter function

Options:	Filter value is delayed, other values are sent directly
	Filter value is delayed, other values are suppressed
	Filter value is sent directly, other values are delayed
	Filter value is suppressed, other values are delayed

▪ Filter value is delayed, other values are sent directly:

– Only the filter value is sent delayed. All other values are sent directly.

▪ Filter value is delayed, others are suppressed:

– Only the filter value is sent delayed. All other values are blocked.

▪ Filter value is sent directly, others are delayed:

– Only the filter value is sent direct. All other values are sent delayed.

▪ Filter value is suppressed, others are delayed:

– Only the filter value is blocked. All other values are sent delayed.

The parameter can be used to specify a condition for the sending of filter values compared to all other values.

This parameter can only be set when Parameter "Filter active" has been activated.

▪ Filter value

<u>Off</u> - on	
<u>Up</u> - down	
<u>0</u> - 100%	
<u>0</u> - 255	
-671088.64 - <u>0</u> - 670760.96	
-32768 - <u>0</u> - 32767	
<u>0</u> - 65535	
-4000000 - <u>0</u> - 4000000	
-2147483648 - <u>0</u> - 2147483647	
<u>0</u> - 4294967295	

The parameter is used to specify the filter value. The data type or the size depends on parameter "Data type".

The connected "Filter function" parameter fixes a condition for the sending of the filter value.

This parameter can only be set when Parameter "Filter active" has been activated.

▪ Overwrite delay time at download

Options:	Deactivated
	<u>Activated</u>

The parameter is used to specify whether the delay time is to be overwritten during the download.

10.9.6 Min/Max

Up to eight input values can be compared with each other with the "Min/max application. The application can output the highest input value, the smallest input value or the average of all input values on the output.

▪ Data type

Options:	Percent [DPT 5.001]
	1 byte without a sign [DPT 5.010]
	2-byte float [DPT 9,001]
	2 bytes with a sign [DPT 8.001]
	2 bytes without a sign [DPT 7.001]
	4-byte float [DPT 14,001]
	4 bytes with a sign [DPT 13.001]
	4 bytes without a sign [DPT 12.001]

The parameter is used to specify the data type that is to be used.

▪ Number of inputs

Options:	1 - 8

The parameter is used to set the number of input telegrams to be compared with each other.

▪ Output sends at

Options:	Input assignment
	Value change

▪ Input assignment:
  – When a telegram is received on one of the input objects, a telegram is always sent via the output object.
▪ Value change:
  – An output telegram is only sent when the value of the output object changes.

The parameter is used to specify the conditions under which a telegram is sent.

For the setting "Input assignment" an output telegram is sent at every receipt of a telegram on one of the inputs. In this case, also an output telegram is sent if the value of the output does not change.

- Output value is equal

Options:	Maximum input value
	Minimum input value
	Average input value

- Maximum input value:

  – The largest value of all input telegrams is sent via the output object.

- Minimum input value:

  – The smallest value of all input telegrams is sent via the output object.

- Average input value:

  – The average value of the input telegrams is sent via the output object.

The "Min/max" application compares the values that are present on the input objects.

The parameter is used to specify whether the largest, smallest or average of all input values is sent. If the average value is sent, the application calculates the arithmetic mean of the inputs. Decimal points are rounded up or down.

For example:

- Object type: "2 byte signed", 2 input objects
- Input 1: Value "4"
- Input 2: Value "5"

(Input 1 + input 2) / 2 = arithmetic mean; (4 + 5) / 2 = 4.5

Sent average value: 5

10.9.7   Scene actuator

With the "Light scene actuator" application it is possible to call up scenes that are stored in the device via the receipt of a scene number. A maximum of eight scenes with up to eight actuator objects can be created.

▪   Number of scenes

Options:	<u>1</u> - 8

The parameter is used to select up to eight scenes.

▪   Number of actuator groups

Options:	<u>1</u> - 8

The parameter is used to configure up to eight actuator groups for the light scene actuator.

At a call up of a scene, telegrams are sent consecutively via communication object "GFx: Actuator group x". If, for example, four lamp groups, a blind and an absolute temperature value are to be sent at the call-up of a scene, the parameter must be set on "6" actuator groups.

▪   Telegram delay between the outputs

Options:	00.100 … <u>01.000</u> … 10.000 ss.fff s

The parameter is used to set the delay time between the individual telegrams.

At a call up of a scene, telegrams are sent consecutively via communication object "GFx: Actuator group x". The sequence is strictly specified. First the telegram of actuator group A is sent out, then the telegram of actuator group B, etc.

▪   Overwrite scenes at download

Options:	Deactivated
	<u>Activated</u>

▪   Deactivated:
   –   The scene values saved by the user remain in the device.
▪   <u>Activated</u>:
   –   When reprogramming the device, the values saved by the user are overwritten with the preset values in the parameterisation software.

A scene storage can be triggered with a long press of the button on the device. The communication objects "GFx: Actuator groups x" send read requests to the connected actuators. If the L-flag is set for the objects of the linked actuators, the actuators send an answer telegram to the device with their current values.

If the parameter is activated, the current scene values are saved and at the same time overwrite the previous values.

Configuration of the actuator objects

▪ Data type actuator group X

Options:	Percent [DPT 5.001]
	Scene [DPT 18.001]
	Switching [DPT 1.001]
	Up/down [DPT 1.008]
	Temperature [DPT 9.001]

Via the parameter the data type of the communication object "GFx: Actuator group x" is set for different applications.

10.9.7.1   Configuration of scene x

Communication object	Scene 1 … 8
Scene number	1 - 64
Scene can be saved	Deactivated Activated
Actuator group X	Deactivated Activated
Value	1 - 0 - 100%
	1 - 64
	Off On
	Up Down
	-33.5 - 20 - 93.5°C

The parameter is used to specify the configuration of the scene.

Description of application and parameters

Functions

10.9.8   Sequence

With the "Sequence " application it is possible to send out multiple telegrams with different values in a predefined sequence consecutively over the same object.

In contrast to the scene, the "Sequence" application has only one communication object on which up to twelve individual values are consecutively sent in twelve firmly set times. The times can be freely set from 1 s to 12 h. The "Sequence" application lends itself to controlling showrooms for example.

The function can be temporarily blocked via an enable object.

- Data type

Options:	Switching [DPT 1.001]
	Percent [DPT 5.001]
	1 byte without a sign [DPT 5.010]
	Scene [DPT 18.001]
	2-byte floating point value [DPT 9.***]
	2 bytes without a sign [DPT 7.001]

The parameter is used to specify the data type that is to be used.

- Activate communication object "Status sequence"

Options:	Deactivated
	Activated

The parameter is used to enable the "Disable" communication object.

When parameter "Enable communication object "Status sequence" is activated, additional parameters are available.

- Value when active

Options:	1
	0

The parameter is used to specify the value for communication object "Status sequence".

- Activate communication object "Block"

Options:	Deactivated
	Activated

The parameter is used to enable the "Block" communication object.

When parameter "Enable "Disable" communication object is activated, additional parameters are available.

- Block at value

Options:	0
	1

The parameter is used to specify the value with which the function can be disabled.

- Behaviour at blockage

Options:	Process sequence to end
	Abort sequence

The parameter is used to specify the disabling behaviour.

- Behaviour after return of bus voltage

Options:	Do not start sequence
	Start sequence

The parameter is used to specify the behaviour after the bus voltage is restored.

- Start sequence with

Options:	1
	0

The parameter is used to specify the value for the start of the sequence.

- Infinite loop

Options:	Deactivated
	Activated

The parameter is used to specify whether the sequence is repeated in an infinite loop.

▪ Step number

Options:	1 - 12

The parameter is used to specify the number of steps.

▪ Value at the end of the sequence

Options:	Off
	On
	0 - 100%
	0 - 255
	1 - 64
	-671088.64 - 0 - 670760.96
	0 - 0 - 65535

The parameter is used to specify the value after the end of the sequence.

10.9.8.1 **Level setting**

Step 1 - 12	Value	Duration
Step x	Off / On	1 - 7200 s

The parameter is used to configure individual steps.

11   Communication objects

11.1   Communication objects - device

11.1.1   DEV: Device Settings

Number	Name	Object function	Data type	Flags
1	DEV: Device Settings	In operation	1:00 Boolean	C, W ,T ,U

This object is sent when the device goes into operation.

11.2   Communication objects - Movement detector

11.2.1   MDx: Monitoring

Number	Name	Object function	Data type	Flags
4	MDx: Monitoring	Output	1.001 Switching	C, T

This object sends a telegram to the bus when the conditions for a surveillance message have been met.

11.2.2   MDx: Movement (main device)

Number	Name	Object function	Data type	Flags
2 | 23 | 44 | 65	MDx: Movement (main device)	Output	1.001 Switching	C, T
2 | 23 | 44 | 65	MDx: Movement (main device)	Output	5.001 Percent	C, T
2 | 23 | 44 | 65	MDx: Movement (main device)	Output	5.010 counting pulses	C, T
2 | 23 | 44 | 65	MDx: Movement (main device)	Output	18.001 scene control	C, T
2 | 23 | 44 | 65	MDx: Movement (main device)	Output	20.102 HVAC mode	C, T
2 | 23 | 44 | 65	MDx: Movement (main device)	Output	2.001 priority Switching	C, T

11.2.3   MDx: Movement (extension unit)

Number	Name	Object function	Data type	Flags
3 | 24 | 45 | 66	MDx: Movement (extension unit)	Input/output	1.001 Switching	C, W ,T ,U

To trigger the master, this object (default: brightness-independent) sends a 1 telegram.

11.2.4 MDx: Input Extension Unit

Number	Name	Object function	Data type	Flags
6 | 27 | 48 | 69	MDx: Input Extension Unit	Input	1.001 Switching	C, W, U

This object is linked with the output of one or several extension unit devices so that the detector is re-triggered by the respective sub device.

11.2.5 MDx: Activate detection

Number	Name	Object function	Data type	Flags
5 | 26 | 47 | 68	MDx: Activate detection	Input	1.001 Switching	C, W, U

The movement detector can be blocked or enabled via the object. Enabling has priority over all other objects.

11.2.6 MDx: External push-button

Number	Name	Object function	Data type	Flags
15 | 36 | 57 | 78	MDx: External push-button	Input	1.001 Switching	C, W, U

The external push-button input makes it possible to give the detector either a movement trigger or a switch-off trigger. Depending on the operating mode of the detector, the push-button is used in different ways:

▪ Automatic mode: The push-button can give the detector either a movement trigger or a switch-off trigger.

▪ Automatic switch-on: The push-button must send a switch-off trigger to turn off the light.

▪ Automatic switch-off: The push-button must send a movement trigger to turn on the light.

▪ Manual mode: The push-button must send both a movement trigger and a switch-off trigger to turn the light on or off.

11.2.7 MDx: Switchover of manual operation

Number	Name	Object function	Data type	Flags
16 | 37 | 58 | 79	MDx: Switchover of manual operation	Input	1.001 Switching	C, W, U

With this object a switchover is made from automatic mode to manual mode (default: 0 = automatic, 1 = manual).

Notice
In manual mode the movement detector is inactive and can only be switched on or off via the external push-button.

11.2.8 MDx: Continuous mode On [max. 24h]

Number	Name	Object function	Data type	Flags
18	39	60	81	MDx: Continuous mode On [max. 24]	Input	1.001 Switching	C, W, U

Via this object the movement detector is permanently switched on for a maximum of 24 hours (Standard: 0 = off, 1 = on).

11.2.9 MDx: Continuous mode Off [max. 24h]

Number	Name	Object function	Data type	Flags
19	40	61	82	MDx: Continuous mode Off [max. 24]	Input	1.001 Switching	C, W, U

Via this object the movement detector is permanently switched off for a maximum of 24 hours (Standard: 0 = off, 1 = on).

11.2.10 MDx: Continuous mode On status

Number	Name	Object function	Data type	Flags
20	41	62	83	MDx: Continuous mode On status	Output	1.001 Switching	C, T

Via this object the status of "Continuous operation on" is sent (1 = active, 0 = inactive).

11.2.11 MDx: Continuous mode Off status

Number	Name	Object function	Data type	Flags
21	42	63	84	MDx: Continuous mode Off status	Output	1.001 Switching	C, T

Via this object the status of "Continuous operation off" is sent (1 = active, 0 = inactive).

11.2.12 MDx: Manual operating status

Number	Name	Object function	Data type	Flags
17	38	59	80	MDx: Manual operating status	Output	1.001 Switching	C, T

The status of "Manual operation" is sent via this object (1 = active, 0 = inactive).

11.2.13   MDx: Actuator status

Number	Name	Object function	Data type	Flags
8 | 29 | 50 | 71	MDx: Actuator status	Input	1.001 Switching	C, W, U

Actuators controlled by the detector can send their status to this input (1 bit). Upon the receipt of an Off telegram on the object the detection of movement is suppressed for the specified pause time and the switch-off delay is reset.

11.2.14   MDx: Switch-off delay

Number	Name	Object function	Data type	Flags
9 | 30 | 51 | 72	MDx: Switch-off delay	Input	7.005 Time (s)	C, W, U

If the detector no longer detects movement, the switch-off delay is started. After the expiry of the switch-off delay, the "Switch-off" telegram is sent to the bus. With this object the switch-off delay can be changed any time with via the bus. The value must be sent in seconds.

If this value is not to be overwritten during a download, the parameter "Overwrite setting during download" is to be set on "No".

11.2.15   MDx: Switch-off delay for 2nd stage

Number	Name	Object function	Data type	Flags
10 | 31 | 52 | 73	MDx: Switch-off delay for 2nd stage	Input	7.005 time (s)	C, W, U

With this object the switch-off delay for the second stage (at a two-stage switch-off) can be changed any time with via the bus. The value must be sent in seconds.

If this value is not to be overwritten during a download, the parameter "Overwrite setting during download" is to be set on "No".

11.2.16   MDx: Internal brightness threshold

Number	Name	Object function	Data type	Flags
11 | 32 | 53 | 74	MDx: Internal brightness threshold	Input	9.004 lux (lux)	C, W, U

The brightness threshold is received via this object. The internal brightness-value threshold can be adjusted via this object.

If this value is not to be overwritten during a download, the parameter "Overwrite setting during download" is to be set on "No".

11.2.17 MDx: External brightness threshold

Number	Name	Object function	Data type	Flags
14 | 35 | 56 | 77	MDx: External brightness threshold	Input	9.004 lux (lux)	C, W, U

The brightness threshold is received via this object. The external brightness threshold value can be adjusted via this object.

If this value is not to be overwritten during a download, the parameter "Overwrite setting during download" is to be set on "No".

11.2.18 MDx: Detection independent of brightness

Number	Name	Object function	Data type	Flags
12 | 33 | 54 | 75	MDx: Detection independent of brightness	Input	1.001 Switching	C, W, U

Via this object the detector can be switched independent of brightness. This means that the detector switches at every detected movement - independent of whether the brightness is below the set threshold or not.

If a 1 is received on this object, the detector switches at every movement independent of brightness. However, if a 0 is received, the detector switches on only when the brightness drops below the programmed brightness threshold and during movement.

11.2.19 MDx: External brightness

Number	Name	Object function	Data type	Flags
13 | 34 | 55 | 76	MDx: External brightness	Input	9.004 lux (lux)	C, W, U

The brightness value of an external brightness sensor is sent to this object.

11.2.20 MDx: Activate test mode

Number	Name	Object function	Data type	Flags
22 | 43 | 64 | 85	MDx: Activate test mode	Input	1.001 Switching	C, W, U

The test mode is activated via this object (1 = activated, 0 = deactivated). It is activated again automatically after 10 minutes.

11.3 Communication objects - Brightness detection

11.3.1 BRI: Twilight/brightness

Number	Name	Object function	Data type	Flags
91	BRI: Twilight/brightness	Output natural ambient brightness [lux]	9.004 lux (lux)	C, R, T
92	BRI: Twilight/brightness	External brightness input [lux]	9.004 lux (lux)	C, R, W, T, U
105 | 106 | 107 | 108 | 109 | 110 | 111 | 112	BRI: Twilight/brightness	Input actuator status x	1.001 Switching	C, W, U
114	BRI: Twilight/brightness	Output total brightness [lux]	9.004 lux (lux)	C, R, T

- Output natural ambient brightness [lux]:
  - This object sends either the measured or the calculated brightness - independent of whether there are switched lamps in the detection range that are integrated via actuator status objects.
- External brightness input [lux]:
  - The brightness value of an external brightness sensor is sent to this object.
- Input actuator status x
  - These objects should be connected with actuators of lamps that are located in the detection range of the detector. This enables the detector to recognise when such an actuator is switched on or off, and to calculate the resulting brightness change correspondingly in or out.
- Output total brightness [lux]
  - This object sends the total brightness without certain other switched lamps being calculated out.

11.3.2 BRI: Twilight/brightness: Threshold x

Number	Name	Object function	Data type	Flags
93 | 94 | 95	BRI: Twilight/brightness: Threshold x	Activate threshold x	1.001 Switching	C, W, U
96 | 97 | 98	BRIx: Output threshold x [bit]	Output	1.001 Switching	C, R, T
96 | 97 | 98	BRIx: Output threshold x [1 byte]	Output	5.001 Percent	C, R, T
96 | 97 | 98	BRIx: Output threshold x [1 byte]	Output	5.010 counting pulses	C, R, T
96 | 97 | 98	BRIx: Output threshold x [scene number]	Output	18.001 scene control	C, R, T
96 | 97 | 98	BRIx: Output threshold x [RTC mode]	Output	20.102 HVAC mode	C, R, T
96 | 97 | 98	BRIx: Output threshold x [2 bit]	Output	2.001 priority Switching	C, R, T
99 | 100 | 101	BRI: Twilight/brightness: Threshold x	Input value threshold x	9.004 lux (lux)	C, R, W, T, U
102 | 103 | 104	BRI: Twilight/brightness: Threshold x	Programming threshold x	1.001 Switching	C, W

▪ BRI: Twilight/brightness: Threshold x - Activate threshold x

– Via this object the respective threshold can be enabled or blocked.

▪ BRIx: Output threshold x - output

– This object sends a telegram to the bus when the set threshold value drops below or exceeds the set value.

▪ BRI: Twilight/brightness: Threshold x - input value threshold x

– With this object a new value can be set for this threshold via the bus. If this value is not to be overwritten during a download, the parameter "Overwrite setting during download" is to be set on "No".

▪ BRI: Twilight/brightness: Threshold x - programming threshold x

– By sending an On telegram to this object via the bus, the currently measured brightness is taken over as new threshold value.

11.4   Communication objects - LED

11.4.1   LED: LED x

Number	Name	Object function	Data type	Flags
86 | 87 | 88 | 89	LEDx: LED function x	Input	1.001 Switching	C, W, U
86 | 87 | 88 | 89	LEDx: LED function x	Input	2.001 priority Switching	C, W, U
86 | 87 | 88 | 89	LEDx: LED function x	Input	5.001 Percent	C, W, U
86 | 87 | 88 | 89	LEDx: LED function x	Input	5.010 counting pulses	C, W, U
86 | 87 | 88 | 89	LEDx: LED function x	Input	18.001 scene control	C, W, U
86 | 87 | 88 | 89	LEDx: LED function x	Input	20.102 HVAC mode	C, W, U

Via this object the respective LED status function can be activated.

11.5 Communication objects - Temperature sensor

11.5.1 TMP: Temperature sensor

Number	Name	Object function	Data type	Flags
115	TMP: Temperature sensor	Output temperature [°C]	9.001 Temperature (°C)	C, W ,T ,U

This object sends the currently measured temperature to the bus.

11.5.2 TMP: Threshold x - enable

Number	Name	Object function	Data type	Flags
117 | 118 | 119	TMP: Threshold x - enable	Input	1.001 Switching	C, W, U

Via this object the respective threshold can be enabled or blocked.

11.5.3 TMPx: Output threshold x

Number	Name	Object function	Data type	Flags
120 | 121 | 122	TMPx: Output threshold x [1 bit]	Output	1.001 Switching	C, R, T
120 | 121 | 122	TMPx: Output threshold x [2 bit]	Output	2.001 priority Switching	C, R, T
120 | 121 | 122	TMPx: Output threshold x [1 byte]	Output	5.001 Percent	C, R, T
120 | 121 | 122	TMPx: Output threshold x [1 byte]	Output	5.010 counting pulses	C, R, T
120 | 121 | 122	TMPx: Output threshold x [scene number]	Output	18.001 scene control	C, R, T
120 | 121 | 122	TMPx: Output threshold x [RTC operating mode]	Output	20.102 HVAC mode	C, R, T

This object sends a telegram to the bus when the set threshold value drops below or exceeds the set value.

11.5.4 TMP: Threshold x - input value

Number	Name	Object function	Data type	Flags
123 | 124 | 125	TMP: Threshold x - input value	Input	9.001 Temperature (°C)	C, R, W, T, U

With this object a new value can be set for this threshold via the bus.

If this value is not to be overwritten during a download, the parameter "Overwrite settings during download" is to be set on "No".

11.5.5 TMP: Threshold x - Learning

Number	Name	Object function	Data type	Flags
126 | 127 | 128	TMP: Threshold x - Learning	Input	1.001 Switching	C, W

By sending an On telegram to this object via the bus, the currently measured temperature is taken over as new threshold value.

11.6 Communication objects - Bluetooth function

11.6.1 BTF x: Switch

Number	Name	Object function	Data type	Flags
129 | 139 | 149 | 159 | 169 | 179 | 189 | 199 | 209 | 219	BTF x: Switch	Switch	1.001 Switching	C, W ,T ,U

The Bluetooth control element is set switch.

11.6.2 BTF x: Switching/dimming

Number	Name	Object function	Data type	Flags
129 | 139 | 149 | 159 | 169 | 179 | 189 | 199 | 209 | 219	BTF switching / dimming: Switching	Switch	1.001 Switching	C, W ,T ,U
130 | 140 | 150 | 160 | 170 | 180 | 190 | 200 | 210 | 220	BTF switching / dimming: Dimming value	Dimming value	5.001 Percent	C, W ,T ,U

The Bluetooth control element is configured as 1-byte dimmer.

11.6.3 BTF x: Blinds/roller shutters

Number	Name	Object function	Data type	Flags
129 | 139 | 149 | 159 | 169 | 179 | 189 | 199 | 209 | 219	BTF blinds/roller blinds: Moving	Moving	1.008 Up/Down	C, T
130 | 140 | 150 | 160 | 170 | 180 | 190 | 200 | 210 | 220	BTF blinds/roller blinds: Adjust / stop	Adjust / stop	1.007 Step	C, T
131 | 141 | 151 | 161 | 171 | 181 | 191 | 201 | 211 | 221	BTF blinds/roller blinds: Move to height	Move to height	5.001 Percent (0..100%)	C, T
132 | 142 | 152 | 162 | 175 | 182 | 192 | 202 | 212 | 222	BTF blinds/roller blinds: Move slats	Move slats	5.001 Percent (0..100%)	C, T
133 | 143 | 153 | 163 | 173 | 183 | 193 | 203 | 213 | 223	BTF blinds/roller blinds: Height status	Height status	5.001 Percent (0..100%)	C, W, U
134 | 144 | 154 | 164 | 174 | 184 | 194 | 204 | 214 | 224	BTF blinds/roller blinds: Slat status	Slat status	5.001 Percent (0..100%)	C, W, U
135 | 145 | 155 | 165 | 175 | 185 | 195 | 205 | 215 | 225	BTF blinds/roller blinds: Move status up/down	Move status up/down	1.002 Boolean	C, W, U
136 | 146 | 156 | 166 | 176 | 186 | 196 | 206 | 216 | 226	BTF blinds/roller blinds: Upper end position status	Upper end position status	1.011 status	C, W, U
137 | 147 | 157 | 167 | 177 | 187 | 197 | 207 | 217 | 227	BTF blinds/roller blinds: Bottom end position status	Bottom end position status	1.011 status	C, W, U
136 | 148 | 158 | 168 | 178 | 188 | 198 | 208 | 218 | 228	BTF blinds/roller blinds: Alarm	Alarm	1.001 Switching	C, W, U

The Bluetooth control element is configured as blind or roller shutter control. For a correct function, all objects should be connected with a group address.

11.6.4 BTF x: Scene

Number	Name	Object function	Data type	Flags
159	BTF scene: Scene 1 - 64	Scene	18.001 scene control	C, W ,T ,U

The Bluetooth control element is configured as scene control.

11.6.5   BTF x: Send value

Number	Name	Object function	Data type	Flags
129 | 139 | 149 | 159 | 169 | 179 | 189 | 199 | 209 | 219	BTF send value: Value 1: Switching	Output	1.001 Switching	C, W ,T ,U
129 | 139 | 149 | 159 | 169 | 179 | 189 | 199 | 209 | 219	BTF send value: Value 1: Forced operation	Output	2.001 priority Switching	C, R, W, T
129 | 139 | 149 | 159 | 169 | 179 | 189 | 199 | 209 | 219	BTF send value: Value 1: Percent	Output	5.001 Percent	C, W ,T ,U
129 | 139 | 149 | 159 | 169 | 179 | 189 | 199 | 209 | 219	BTF send value: Value 1: 1 byte with a sign	Output	5.010 counting pulses	C, W ,T ,U
129 | 139 | 149 | 159 | 169 | 179 | 189 | 199 | 209 | 219	BTF send value: Value 1: 2 bytes	Output	6.010 counting pulses (-128 - 127)	C, W ,T ,U
129 | 139 | 149 | 159 | 169 | 179 | 189 | 199 | 209 | 219	BTF send value: Value 1: 4 bytes	Output	7.001 Pulses	C, W ,T ,U
129 | 139 | 149 | 159 | 169 | 179 | 189 | 199 | 209 | 219	BTF send value: Value 1: Temperature	Output	8.001 Pulse difference	C, W ,T ,U
129 | 139 | 149 | 159 | 169 | 179 | 189 | 199 | 209 | 219	BTF send value: Value 1: Brightness	Output	12.001 Counting pulses (unsigned)	C, W ,T ,U
129 | 139 | 149 | 159 | 169 | 179 | 189 | 199 | 209 | 219	BTF send value: Value 1: RTC operating mode	Output	9.001 Temperature (°C)	C, W ,T ,U
129 | 139 | 149 | 159 | 169 | 179 | 189 | 199 | 209 | 219	BTF send value: Value 1: Switching	Output	7.013 Brightness (lux)	C, W ,T ,U
129 | 139 | 149 | 159 | 169 | 179 | 189 | 199 | 209 | 219	BTF send value: Value 1: Switching	Output	232.600 RGB value 3x (0 - 255)	C, W ,T ,U
129 | 139 | 149 | 159 | 169 | 179 | 189 | 199 | 209 | 219	BTF send value: Value 1: Switching	Output	20.102 HVAC mode	C, W ,T ,U

Number	Name	Object function	Data type	Flags
130 | 140 | 150 | 160 | 170 | 180 | 190 | 200 | 210 | 220	BTF send value: Value 2: Switching	Output	1.001 Switching	C, W ,T ,U
130 | 140 | 150 | 160 | 170 | 180 | 190 | 200 | 210 | 220	BTF send value: Value 2: Forced operation	Output	2.001 priority Switching	C, R, W, T
130 | 140 | 150 | 160 | 170 | 180 | 190 | 200 | 210 | 220	BTF send value: Value 2: Percent	Output	5.001 Percent	C, W ,T ,U
130 | 140 | 150 | 160 | 170 | 180 | 190 | 200 | 210 | 220	BTF send value: Value 2: 1 byte with a sign	Output	5.010 counting pulses	C, W ,T ,U
130 | 140 | 150 | 160 | 170 | 180 | 190 | 200 | 210 | 220	BTF send value: Value 2: 2 bytes	Output	6.010 counting pulses (-128 - 127)	C, W ,T ,U
130 | 140 | 150 | 160 | 170 | 180 | 190 | 200 | 210 | 220	BTF send value: Value 2: 4 bytes	Output	7.001 Pulses	C, W ,T ,U
130 | 140 | 150 | 160 | 170 | 180 | 190 | 200 | 210 | 220	BTF send value: Value 2: Temperature	Output	8.001 Pulse difference	C, W ,T ,U
130 | 140 | 150 | 160 | 170 | 180 | 190 | 200 | 210 | 220	BTF send value: Value 2: Brightness	Output	12.001 Counting pulses (unsigned)	C, W ,T ,U
130 | 140 | 150 | 160 | 170 | 180 | 190 | 200 | 210 | 220	BTF send value: Value 2: RTC operating mode	Output	9.001 Temperature (°C)	C, W ,T ,U
130 | 140 | 150 | 160 | 170 | 180 | 190 | 200 | 210 | 220	BTF send value: Value 2: Switching	Output	7.013 Brightness (lux)	C, W ,T ,U
130 | 140 | 150 | 160 | 170 | 180 | 190 | 200 | 210 | 220	BTF send value: Value 2: Switching	Output	232.600 RGB value 3x (0 - 255)	C, W ,T ,U
130 | 140 | 150 | 160 | 170 | 180 | 190 | 200 | 210 | 220	BTF send value: Value 2: Switching	Output	20.102 HVAC mode	C, W ,T ,U

The Bluetooth control element is configured as value transmitter.

11.7   Communication objects - Function

11.7.1   Function x: Telegram cyclical

Number	Name	Object function	Data type	Flags
229	Function x: Telegram cyclical	Input	1.001 Switching	C, W
230	Function x: Telegram cyclical	Output	1.001 Switching	C, T
231	Function x: Telegram cyclical	Block	1.003 enable	C, W

The device sends / receives / blocks cyclic telegrams.

11.7.2   Function x: Priority

Number	Name	Object function	Data type	Flags
240	Function x: Priority	Switching	1.001 Switching	C, W
241	Function x: Priority	Priority	2.001 priority Switching	C, W
242	Function x: Priority	Output	1.001 Switching	C, T

The object is used for switching of priority functions and serves as switching output.

11.7.3   Function x: Logic functions

Number	Name	Object function	Data type	Flags
229	Function x: Logic functions	Output	1.001 Switching	C, R, T
230 | 231 | 232 | 233 | 234 | 235 | 236 | 237 | 238 | 239	Function x: Logic functions	Input x	1.001 Switching	C, W, U

The object is used for logic functions either as output or input telegram.

11.7.4 Function x: Gate

Number	Name	Object function	Data type	Flags
262	Function x: Gate	Input	1.001 Switching	C, W
262	Function x: Gate	Input	1.008 down/up	C, W
262	Function x: Gate	Input	1.007 Step	C, W
262	Function x: Gate	Input	2.001 Forced operation	C, W
262	Function x: Gate	Input	3.007 dimming control	C, W
262	Function x: Gate	Input	5.001 Percent	C, W
262	Function x: Gate	Input	5.010 byte without a sign	C, W
262	Function x: Gate	Input	9.*** 2-byte float	C, W
262	Function x: Gate	Input	8.001 pulse width	C, W
262	Function x: Gate	Input	7.001 pulse	C, W
262	Function x: Gate	Input	10.001 time	C, W
262	Function x: Gate	Input	11.001 Date	C, W
262	Function x: Gate	Input	14.*** 4-byte float	C, W
262	Function x: Gate	Input	13.001 4 bytes with a sign	C, W
262	Function x: Gate	Input	12.001 4 bytes with a sign	C, W
263	Function x: Gate	Output	1.001 Switching	C, T
263	Function x: Gate	Output	1.008 down/up	C, T
263	Function x: Gate	Output	1.007 Step	C, T
263	Function x: Gate	Output	2.001 Forced operation	C, T
263	Function x: Gate	Output	3.007 dimming operation	C, T
263	Function x: Gate	Output	5.001 Percent	C, T
263	Function x: Gate	Output	5.010 byte without a sign	C, T
263	Function x: Gate	Output	9.*** 2-byte float	C, T
263	Function x: Gate	Output	8.001 pulse width	C, T
263	Function x: Gate	Output	7.001 Pulses	C, T
263	Function x: Gate	Output	10.001 time	C, T
263	Function x: Gate	Output	11.001 Date	C, T
263	Function x: Gate	Output	14.*** 4-byte float	C, T
263	Function x: Gate	Output	13.001 4 bytes with a sign	C, T
263	Function x: Gate	Output	12.001 4 bytes with a sign	C, T

The type of this object depends on the settings of the respective parameters. It can be either an input or output telegram.

11.7.5 Function x: Staircase lighting

Number	Name	Object function	Data type	Flags
271	Function x: Staircase lighting	Input	1.001 Switching	C, W
272	Function x: Staircase lighting	Output	1.001 Switching	C, W
273	Function x: Staircase lighting	Input / output	1.001 Switching	C, W, T
274	Function x: Staircase lighting	Switch-off delay	7.005 Time (s)	C, W, U
275	Function x: Staircase lighting	Switch-off prewarning time	7.005 Time (s)	C, W, U

The object is sent when the selected function influences the options for the staircase lighting. The object can be either an input or output telegram. It can also be sent for the switch-on time and the switch-off pre-warning time, depending on the parametrisation.

11.7.6 Function x: Delay

Number	Name	Object function	Data type	Flags
229	Function x: Delay	Input	1.001 Switching	C, W
230	Function x: Delay	Output	1.001 Switching	K, W

The object is sent for active delay functions. It can be either an input object or an output object that is used for switching delay functions.

11.7.7 Function x: Delay time

Number	Name	Object function	Data type	Flags
232	Function x: Delay time	Input	7.005 Time (s)	C, W, U

The object serves for sending a telegram with delay time.

11.7.8 Function x: Min/max

Number	Name	Object function	Data type	Flags
240	Function x: Min/max	Output	5.001 Percent (0..100%)	K, W
241 | 242 | 243 | 244 | 245 | 246 | 247 | 248	Function x: Min/max	Input x	5.001 Percent (0..100%)	C, W

The object serves as object for min/max functions. It can be either an input object or an output object that is used for switching delay functions.

11.7.9   Function x: Scene number

Number	Name	Object function	Data type	Flags
251	Function x: Scene number	Input	18.001 scene control	C, W

The object is a scene control object. It sends an input telegram that serves for reporting the scene number.

11.7.10   Function x: Scene actuator

Number	Name	Object function	Data type	Flags
252	Function x: Scene actuator	Actuator group A	5.001 Percent (0..100%)	C, W ,T ,U

The object serves as scene actuator. It sends a telegram with information about the actuator status in percent.

11.7.11   Function x: Sequence

Number	Name	Object function	Data type	Flags
262	Function x: Sequence	Value sequence	1.001 Switching	C, W ,T ,U
263	Function x: Sequence	Sequence start	1.001 Switching	C, W ,T ,U

The object is sent to either provide information about a value sequence or to start or stop a sequence.

12 Operation

The devices respond to moving heat sources and switch on the lights for example.

Action by the user is not necessary.

12.1 LED status display
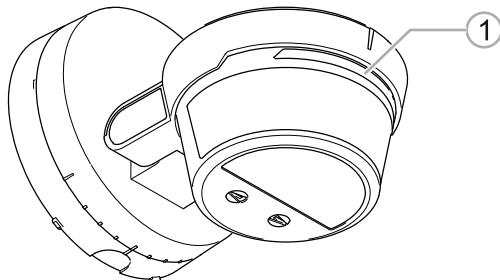
Fig. 29:   Position of the LED

[1] LED

Display	Function
▪ Red LED - flashes once	Starting the device when it has already been programmed via ETS
▪ Blue LED - flashes once	Starting the device when in factory status
▪ Blue LED	During the connection process with Bluetooth
▪ Red LED flashes fast (5 Hz)	Movement detection in test mode
▪ Red LED lights up permanently	Programming mode
▪ Red LED flashes slowly for 5 s (1 Hz) and then the LED flashes fast for 30 s (5 Hz)	Master reset
▪ Violet LED - flashes 20 s at the end of the update	Firmware update

Table:3   LED status display

12.2 Individual operating functions

Test mode / Activation test

The activation test serves for checking the detection range via pacing off. During the activation test a switch-off delay is activated for seven seconds, and the device operates independent of brightness.

Activating the activation test

The test mode is activated in the first minutes after commissioning (10 minutes). This also applies when the device is not yet configured (no specification of stages for the individual sensors). At a detection of movement in test mode the red status LED flashes fast (5 Hz). After expiry the movement detector must be activated via app or ETS or via a master reset.

- When the standard settings for your activation test are suitable, you can perform the activation test and do not need to make any adjustments.

- The movement detector operates during the activation test brightness-independent. The switch-off delay at a trigger amounts to seven seconds.

- When the device has already been configured, only configured movement is detected during the activation test. Otherwise all sensors are considered regarding maximum sensitivity.

- When the activation test is manually ended before the expiry of 10 minutes (via object or app), the device no longer starts in test mode.

The test mode can be activated at a later point in time via the app or in the ETS.

Performing the activation test

1. Pace off the detection range.

   – Each detection is indicated by the status LED flashing quickly.

2. Adjust the detection range according to your needs and test the adjustment by means of renewed pacing off.

12.3   RESET (Resetting the device)

Master reset via selector switch

1. Disconnect the device from power for 10 seconds.

2. Switch on the voltage again.

    –   A master reset can be carried out within the next 5 minutes.

3. Set the selector switch to position "Reset".

    –   The red LED flashes slowly for 5 seconds (1 Hz).

    –   The red LED then flashes fast for 25 s (5 Hz).

4. Turn the selector switch out of position "Reset" within these 30 seconds.

    –   Then the reset is carried out.
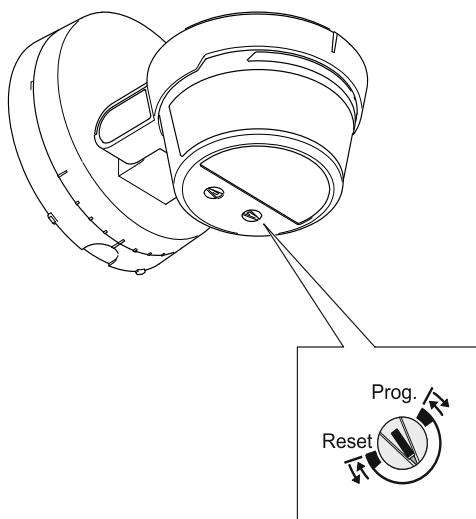
Fig. 30:   Selector switch reset

> **Notice**
> A master reset resets both the settings in the application and the Bluetooth connections.

13 Maintenance

Check the device from time to time for software updates to guarantee the stability and the compatibility of the system.

In addition, the device is maintenance-free. In case of damage, e.g. during transport or storage, do not perform repairs. Once the device is opened, the warranty is void.

Access to the device must be guaranteed for operation, testing, inspection, maintenance and repairs (according to DIN VDE 0100-520).

13.1 Cleaning

Caution! - Risk of damaging the device!

▪ When spraying on cleaning agents, these can enter the device through crevices.
  – Do not spray cleaning agents directly onto the device.
▪ Aggressive cleaning agents can damage the surface of the device.
  – Never use caustic agents, abrasive agents or solvents.

Clean dirty devices with a soft dry cloth.

– If this is insufficient, the cloth can be moistened slightly with a soap solution.

14   Notes

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ABB

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