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ETS 3

Katalog
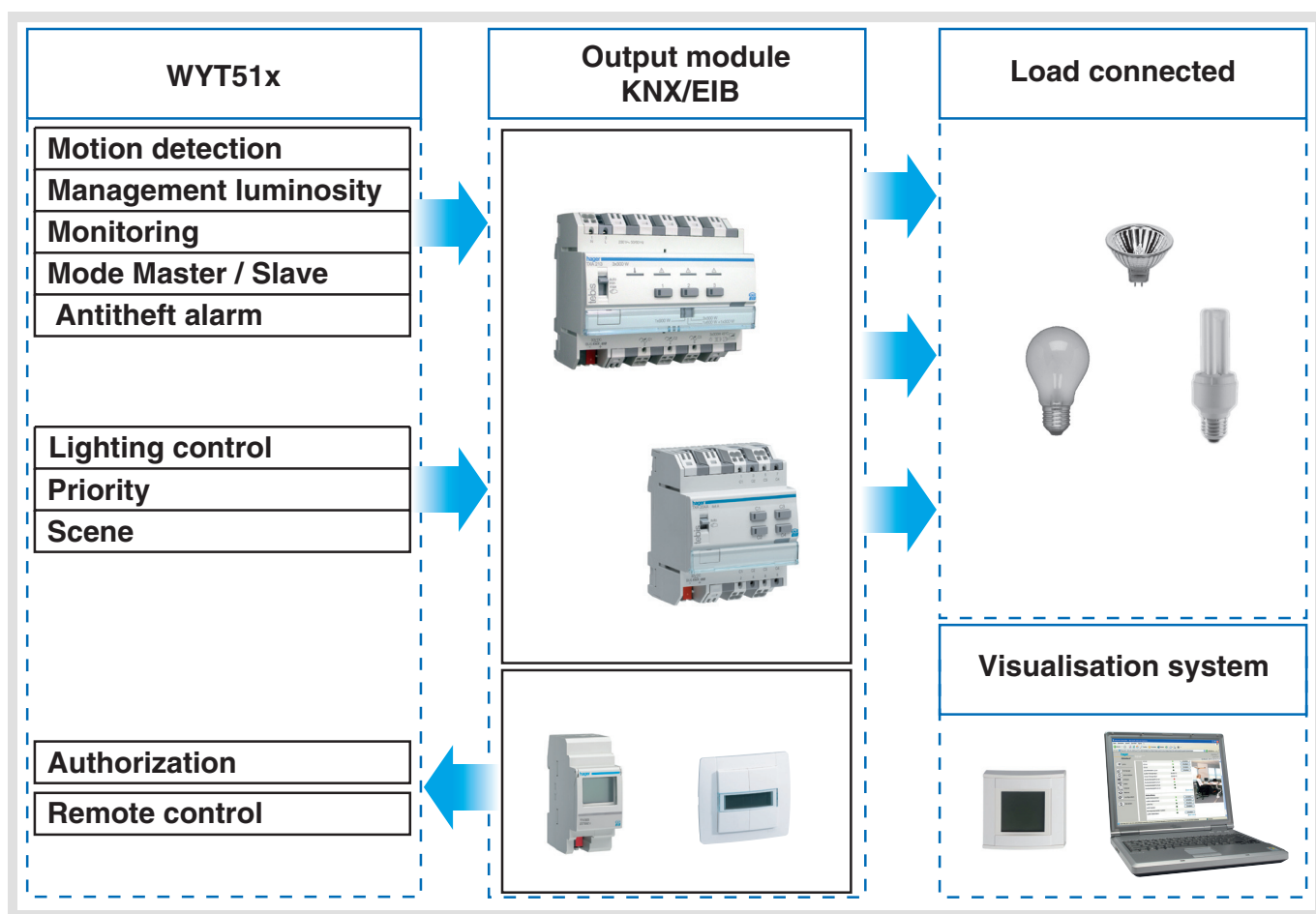Schalterprogramm
Bewegungsmelder

Tebis application software

WDL510A Tebis KNX Motion detector
Two channels motion detector
Electrical/Mechanical characteristics: see user's instructions

Product reference	Product designation
WYT51x	Motion detector

WYT51x	Output module KNX/EIB	Load connected
Motion detection		
Management luminosity		
Monitoring		
Mode Master / Slave		
Antitheft alarm		
Lighting control		
Priority		
Scene		
		Visualisation system
Authorization		
Remote control		

Summary

1. Presentation of the functions

The WDL510A application software allows configuring the 180° motion detectors WYT51x.
The main functions of the WYT510 application are the following:

■ Motion detection

The motion detector is sensitive to infrared rays associated with heat emitted by moving bodies. In case of motion detection, lighting, priority or scenes commands may be sent.
Removable shutters allow limiting the detection area to adapt the motion detector to its environment.

■ Lighting channel

The lighting channel controls a lighting circuit according to the ambient brightness and to the motion detection. A function like ON/OFF, Timer, Illumination value, Illumination value for Presence and Absence, Scene and Scene for Presence and Absence can be defined.

■ Surveillance channel

The Surveillance channel sends commands on the bus according to motion detection. The ambient brightness will not be taken into account. A function like ON/OFF, Timer, Illumination value, Illumination value for Presence and Absence, Scene and Scene for Presence and Absence can be defined.

■ Ambient brightness threshold

The ambient brightness threshold can be defined by ETS or directly on the device via a potentiometer. This threshold value defines the brightness level (darkness) from which, in case of motion detection a command is sent on the bus via the Lighting channel.

■ Switch OFF delay (Lighting channel and surveillance channel)

The Switch OFF delay is activated while switching from Absence (no movement) to Presence (movement). On the Lighting channel, the ambient brightness is also taken into account. The motion detector switches back to Absence mode (no movement) at the end of the delay. According to the function set for this channel, a telegram is sent on the bus in case of Presence and/or Absence. The switch OFF delay can be defined by the ETS or via the setting potentiometer on the device.

■ Remote control of the Lighting channel

The remote control is aimed to control the Lighting channel without taking into account the motion detection or the brightness threshold. An ON command on the Remote control object switches the motion detector in the Presence mode. An OFF command on the Remote control object switches the motion detector in the Absence mode.

■ Brightness probe locking (Lighting channel)

When the brightness probe is locked, the motion detector will send commands on the bus on the Lighting channel without taking into account the ambient brightness.

■ Lighting channel and Surveillance channel authorization

This function authorizes or inhibits motion detection on the Lighting and on the Surveillance channel.

■ Master/Slave

This function extends the motion detector's detection area by associating it with several other detectors. The slave motion detectors capture movement (without taking account of the ambient brightness) and transmit the movement information to the master detector.

■ Scene and Scene Presence/Absence functions

The Scene function allows calling a scene in case of motion detection (scene no. 1 to scene no. 32). If necessary, the ambient brightness can be taken into account.
The Scene Presence/Absence function allows switching between two scenes. A scene is then active in case of motion detection (Presence) and another scene is active in case of no motion detection (Absence). If necessary, the ambient brightness can be taken into account.

■ Antitheft Alarm

A message can be sent on the bus when the motion detector is removed from the bus coupling unit.

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2.1 List of objects motion detector

Object name / Function	Not used	ON/OFF	Timer	Illumination value	Illumination value Presence / Absence	Scene	Scene Presence / Absence
ON/OFF *	X	X	X				
Status indication ON/OFF *		X	X	X			
Timer *			X				
Dim *				X			
Scene *						X	X
Remote control		X	X	X	X	X	X
Slave Input	$X_{1)}$	$X_{1)}$	$X_{1)}$	$X_{1)}$	$X_{1)}$	$X_{1)}$	$X_{1)}$
Slave Output	$X_{2)}$	$X_{2)}$	$X_{2)}$	$X_{2)}$	$X_{2)}$	$X_{2)}$	$X_{2)}$
Brightness probe locking	$X_{3)}$	$X_{3)}$	$X_{3)}$	$X_{3)}$	$X_{3)}$	$X_{3)}$	$X_{3)}$
Timer/toggle change over *	$X_{4)}$	$X_{4)}$	$X_{4)}$	$X_{4)}$	$X_{4)}$	$X_{4)}$	$X_{4)}$
8-bit antitheft alarm	$X_{5)}$	$X_{5)}$	$X_{5)}$	$X_{5)}$	$X_{5)}$	$X_{5)}$	$X_{5)}$

* These objects will be differentiated in the Lighting channel and in the Surveillance channel

1. The Slave input object is available when the Detector is used as master detector. This object allows using a slave detector in order to extend the detection area.

2. The Slave output object is available only when the Detector is used as a slave detector. This object allows sending to a master detector the Motion detected information. The slave detector is then used to extend the detection area of the master detector.

3. The Brightness probe locking object allows inhibiting the brightness measurement of the Lighting channel. The emission of the channel then only depends on the motion (and on the switch OFF delay).

4. The Timer/toggle change over object is available both for the Lighting channel and for the Surveillance channel. This object authorizes or inhibits the concerned channel.

5. The Antitheft alarm object appears when the Detector removed message is activated.

2.2 General parameters

2.2.1 Master/Slave

The detection area of the master motion detector can be extended using additional slave motion detectors. The slave motion detectors capture movement (without taking account of the ambient brightness) and transmit the movement information to the master detector.

In the Master operating mode, the motion detector sends commands/values on the bus according to the detected motion and to the ambient brightness (only Lighting channel).

In the Slave operating mode, the motion detector is used to extend the detection area of the master motion detector. To that purpose, the Slave input and Slave output objects must be linked together. When detecting a motion, the slave detector sends an ON command on the bus via the Slave output object. With this setting, the Lighting channel is not available any more.
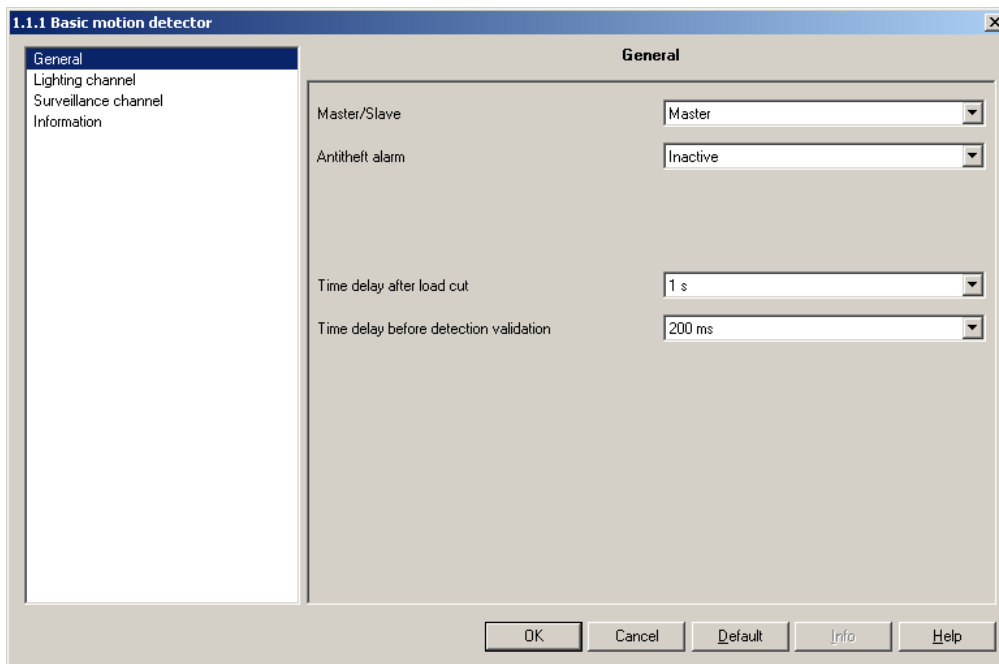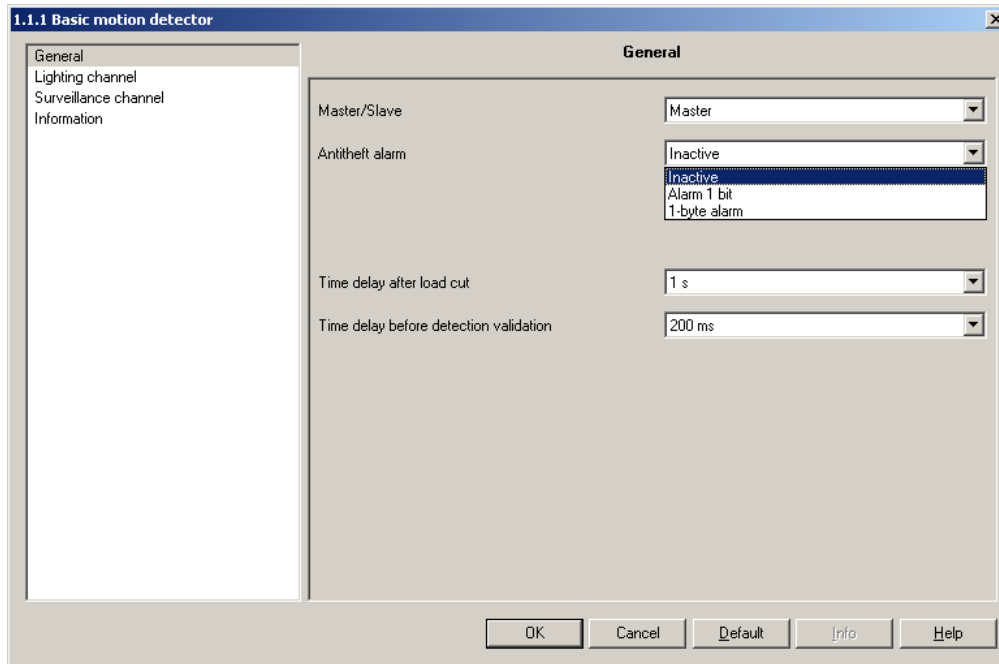

Screen 1

Designation	Description	Values
Master/Slave	This parameter defines the operating mode of the motion detector (master or slave)	Master, Slave. Default value: Master

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2.2.2 Antitheft Alarm

When the antitheft alarm is to be used, the bus coupling can send a message on the bus via the Antitheft alarm object if the detector is removed.
The information is transmitted via the 1-bit antitheft alarm object or the 8-bit antitheft alarm object.

Screen 2

Designation	Description	Values
Antitheft Alarm	This parameter defines the type of object sent upon pushbutton removal. In case of removal of the detector,: - In 1-bit configuration, a "1" will be sent regularly. If the detector is put back in place, a "0" will be sent regularly. - In 1-byte configuration, the defined value will be sent regularly. If the detector is put back in place, no value will be sent.	Not used, 1-bit alarm, 8-bit alarm. Default value: Not used.
Alarm emission period*	This parameter defines the emission periodicity of the Antitheft alarm object.	1 min, 5 min, 10 min, 30 min. Default value: 10 min.
Message (Values 0...255)**	This parameter defines the value sent if the 8-bit alarm is active.	0 up to 255 in 1 steps. Default value: 0.

* This parameter is only visible if the Message upon detector removal parameter has the following values: 1-bit alarm or 8-bit alarm.
** This parameter is only visible if the Message upon detector removal parameter has the value: 1-byte alarm.

2.2.3 Time delay after load cut and time delay before detection validation

If the motion detector is installed **very close to** the lighting, accidental triggering may occur.

The detector interprets changes in the infrared detection range as a motion, thus as the presence of a person, and carries out actions accordingly. A "Time delay after load cut" and a "Time delay before detection validation" can be set on the detector in order to prevent it from interpreting the sudden bright-too-dark change due to the switching off of a luminaire in its detection area as a motion.
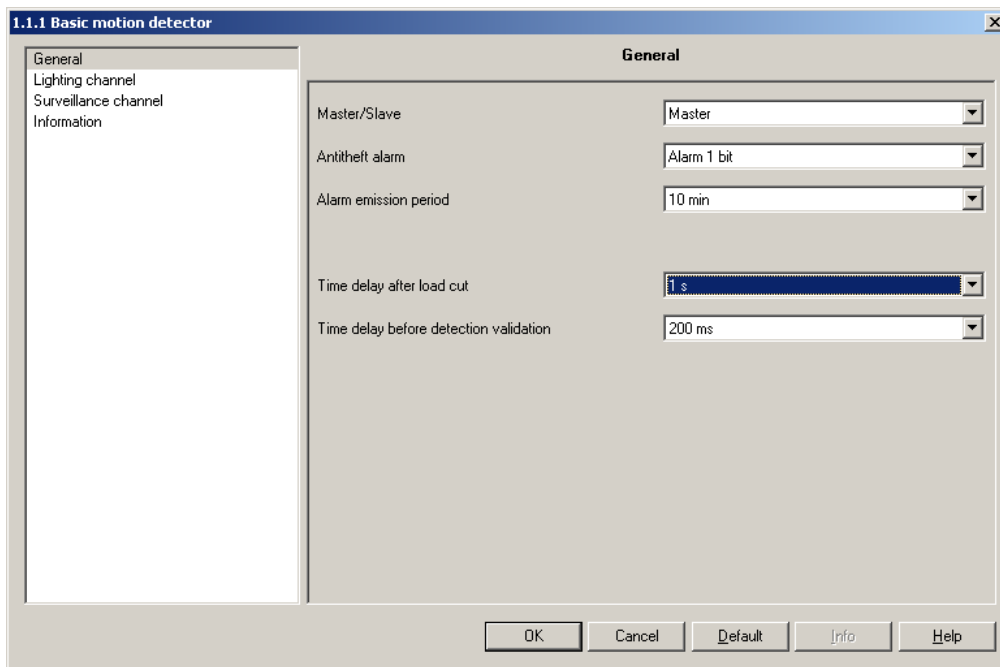
Time delay before detection validation:
When detecting a motion, the Time delay before detection validation starts. If, during this delay, the motion detector receives an OFF telegram on the Status indication ON/OFF object, the detection will not be validated.

Time delay after load cut:
When the motion detector switches OFF the lighting, the time delay starts simultaneously.
Motions are not detected during the time delay.
The time delay is also started by an OFF command on the Status indication ON/OFF object.

Screen 3

Designation	Description	Values
Time delay after load cut	The time delay is started when the motion detector sends the "Absence" command on the bus. The motion detector will not detect any motion until the time delay has elapsed. The time delay also starts when the motion detector receives a telegram with the value 0 on the Status indication ON/OFF object.	Not used, 50 ms, 100 ms, 200 ms, 300 ms, 500 ms, 750 ms, 1 s, 1.5 s, 2 s, 2.5 s, 3 s, 4 s, 5 s, 10 s. Default value: 1 s.
Time delay before detection validation	The Time delay before detection validation starts after the detection of a motion. If, within this delay, a telegram with the value 0 is received on the Status indication ON/OFF object, the detection is not validated.	Not used, 50 ms, 100 ms, 200 ms, 300 ms, 500 ms, 750 ms, 1 s. Default value: 200 s.

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2.3 Lighting channel parameters

The Slave channel is only available when the Master/Slave parameter was set to Slave (see "2.2.1 Master/Slave" Page: 5).

Sending the Lighting channel on the bus is authorized or inhibited by the Timer/toggle change over object. If the brightness measurement is locked (an ON command on the Brightness probe locking object), the motion detector will send the command telegramms on the bus without taking into account the ambient brightness. The Remote control object allows controlling the Lighting channel on the bus without taking the Presence into account. An ON command on the Remote control object switches the motion detector in the Presence mode. An OFF command on the Remote control object switches the motion detector in the Absence mode

### 2.3.1 Functions of the Lighting channel

When detecting a motion, the command for Presence is sent on the bus, taking into account the ambient brightness. If there is no more motion detection, the command for Absence is sent on the bus after the switch OFF delay has elapsed (if it was set). The Function parameter allows selecting the commands or values that are to be sent on the bus in case of Presence or Absence.

2.3.1.1 ON/OFF function

The ON/OFF function allows setting a switching output (lighting circuit) to one (ON or OFF) value in case of Presence and to another value in case of Absence, these values being preset in the parameters.

The ON/OFF function sends commands on the bus via the ON/OFF object..

Description: According to the setting of the parameters, when switching from Absence to Presence, an ON or an OFF command is sent on the bus via the ON/OFF object. When the Switch OFF delay has elapsed, either no command, or an OFF or ON command is sent on the bus (see "2.3.2 Switch OFF delay" Page: 12). Motion detection and ambient brightness are taken into account for presence detection (see "2.3.3 Brightness threshold" Page: 13).
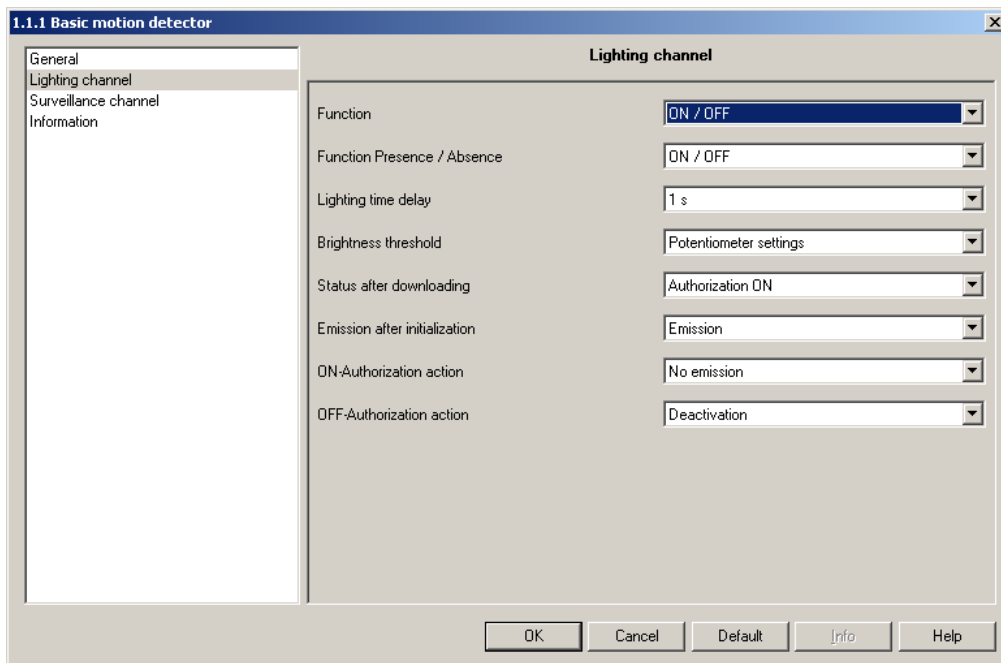
Screen 4

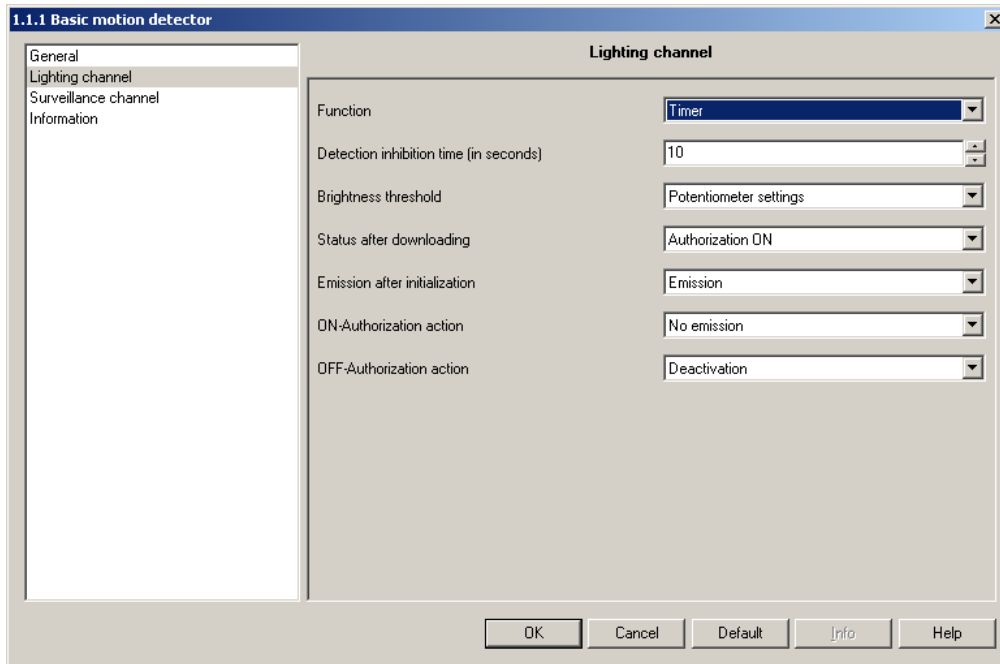| Designation	Description	Values
Function Presence/Absence	This parameter defines the command to be sent upon a Presence or Absence detection. The command for Absence will be sent after the Switch OFF delay has elapsed.	OFF, ON, OFF/ON, ON/OFF. Default value: ON/OFF.

2.3.1.2 Timer function

The Timer function allows switching ON a switching output (lighting circuit) for a time adjustable in the switching output in case of a Presence.

The Timer function sends commands via the Timer object.

Description: Upon Presence detection, the motion detector sends an ON command on the bus via the Timer object. Then, sending of commands is locked for the time set in the Detection inhibition time parameter. This means that, even in the case of Presence detection, no commands will be sent during this time. When this time has elapsed, the motion detector will send again an ON command on the bus in the case of Presence detection, and the locking time will start again. Motion detection and ambient brightness are taken into account for presence detection (see "2.3.3 Brightness threshold" Page: 13).

Caution: When using the Timer function, the locking time for output commands should imperatively be set >10s. Several ON commands on the Timer object within 10 s will increase the switch-ON time of our TXA switching outputs.
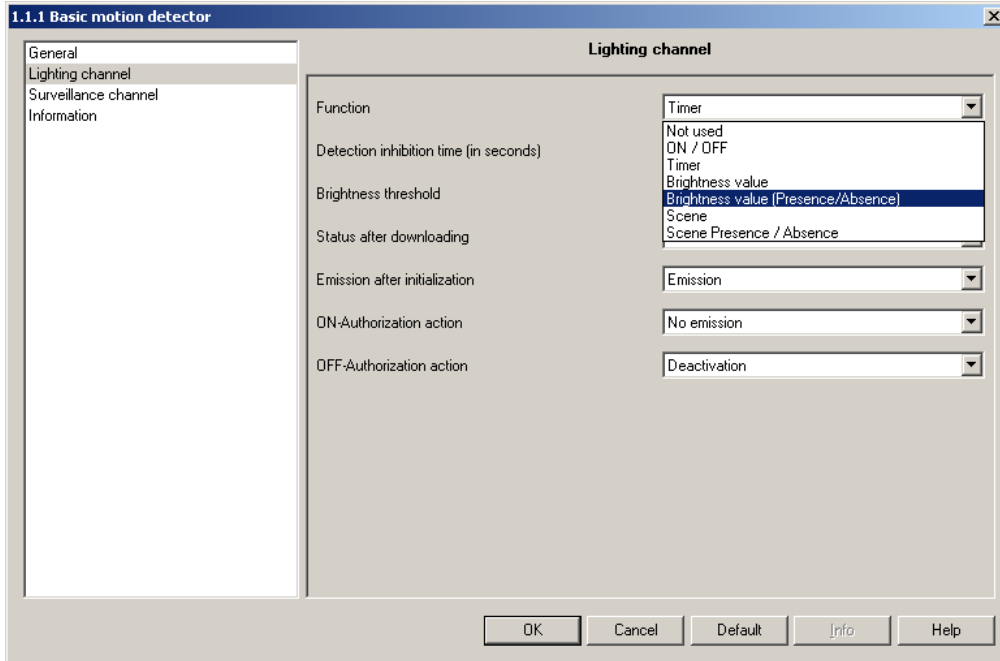
Screen 5

Designation	Description	Values
Detection inhibition time	This parameter sets the minimum possible time between two telegrams from the Timing object.	from 1 s to 30 s by steps of 1. Default value: 10 s.

2.3.1.3 Illumination value and Illumination value Presence/Absence functions

The Illumination value (presence) function sets a dimming output to a parameterizable value in the case of a presence.
The Illumination value Presence/Absence function sets a dimming output to a parameterizable value in the case of a presence and to another parameterizable value in the case of an absence.

The Illumination value and Illumination value Presence/Absence sent commands on the bus via the Brightness value object.

Description: When switching from Absence to Presence, an illumination value is sent on the bus via the Illumination value object. For the Illumination value Presence/Absence function, the illumination value sent after the Switch OFF delay has elapsed can be set in the parameters (see "2.3.2 Switch OFF delay" Page: 12). Motion detection and ambient brightness are taken into account for presence detection (see "2.3.3 Brightness threshold" Page: 13).

Screen 6

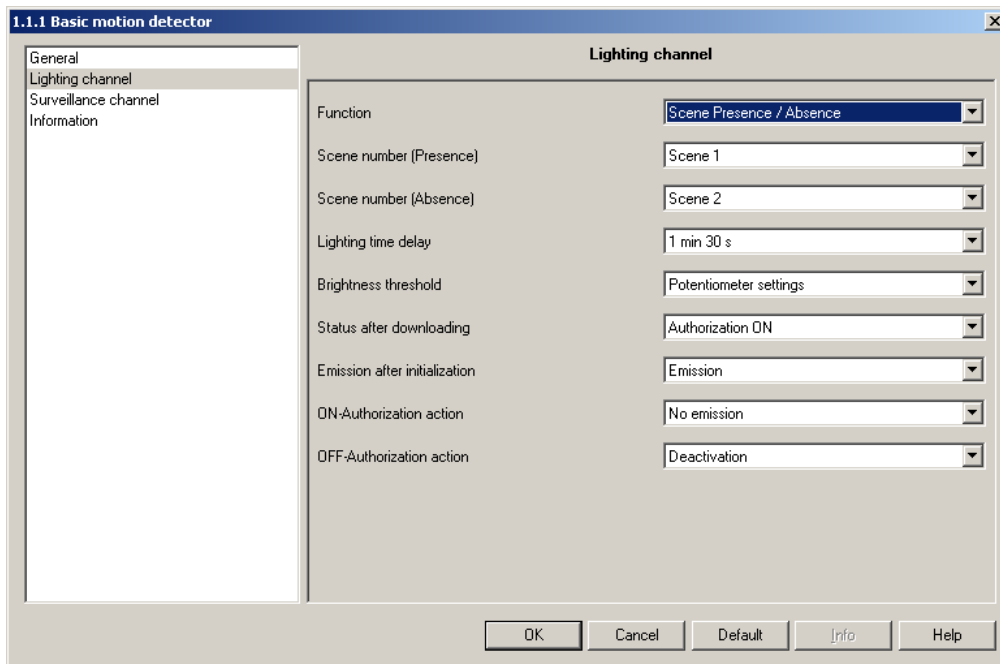| Designation	Description	Values
Illumination value (presence).	This parameter defines the illumination value in Presence mode.	0% to 100% in 1% steps. Default value: 100%.
Illumination value (absence)*.	This parameter defines the illumination value in Absence mode (after the Switch OFF delay has elapsed).	0% to 100% in 1% steps. Default value: 100%.

*This parameter is only visible when the Function has the value Illumination value Presence/Absence.

2.3.1.4 Scene and Scene Presence/Absence functions

The Scene Presence function allows calling a scene in the case of a presence (e. g. various light circuits ON, others dimmed, heating ON). The Scene Presence/Absence function allows calling one scene in the case of a presence and another scene in the case of an absence.

The Scene Absence and Scene Presence/Absence functions send, in the case of presence and absence, commands via the Scene object.

Description: When switching from Absence to Presence, a scene call is sent on the bus via the Scene object. With the Scene Presence/Absence function, when the Switch OFF delay has elapsed, another scene call is sent on the bus (see "2.3.2 Switch OFF delay" Page: 12). Motion detection and ambient brightness are taken into account for presence detection (see "2.3.3 Brightness threshold" Page: 13).
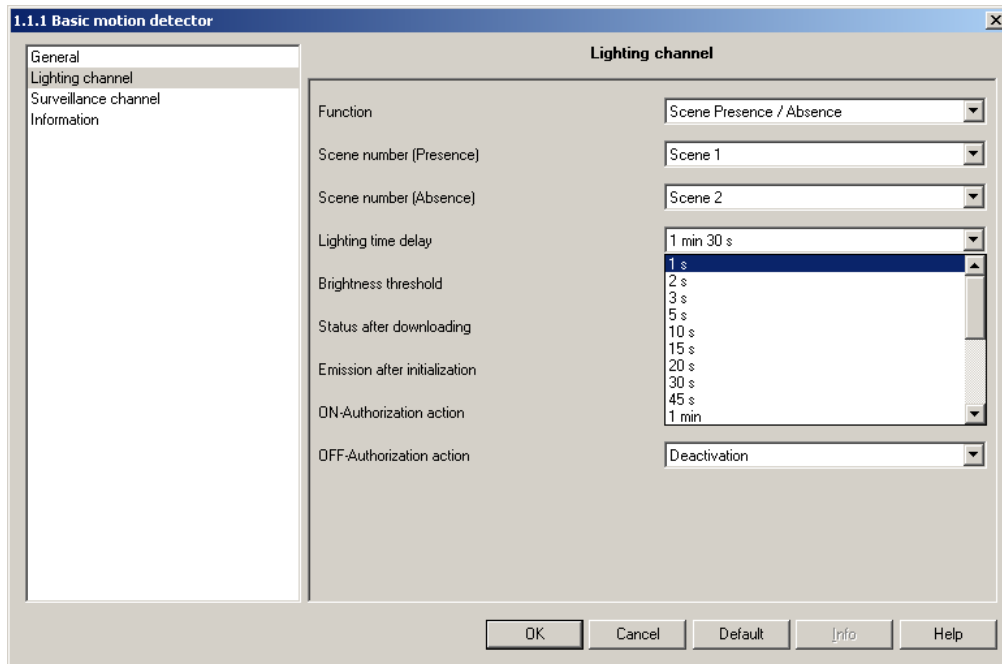

Screen 7

Designation	Description	Values
Scene number (presence).	This parameter defines the scene in Presence mode.	Scene 1 to Scene 32. Default value: Scene 1.
Scene number (absence)*.	This parameter defines the scene in Absence mode.	Scene 1 to Scene 32. Default value: Scene 2.

*This parameter is only visible when the Function has the value Illumination value Presence/Absence.

2.3.2 Switch OFF delay

The Switch OFF delay is activated while switching from Absence (no movement) to Presence (movement). On the Lighting channel, the ambient brightness is also taken into account (see "2.3.3 Brightness threshold" Page: 13). The motion detector switches back to Absence mode (no movement) at the end of the delay. According to the function set for this channel, a telegram is sent on the bus in case of Presence and/or Absence. The time can be set by the ETS or via the setting potentiometer on the device.
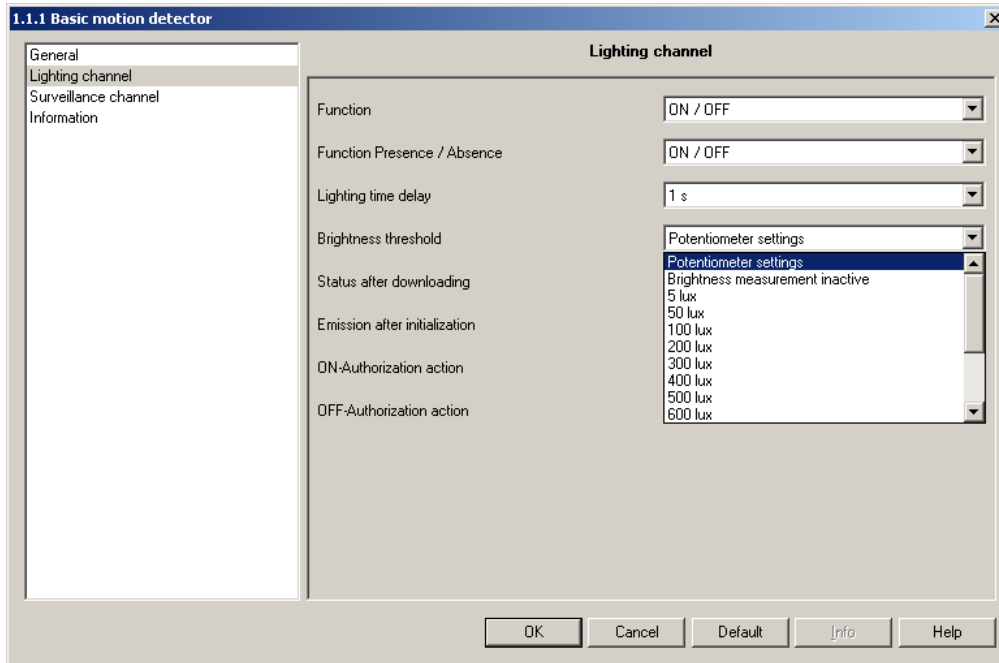

Screen 8

Designation	Description	Values
Switch OFF delay	This parameter defines the duration of the switch OFF delay.	Local settings, 1 s, 2 s, 3 s, 5 s, 10 s, 15 s, 20 s, 30 s, 45 s, 1 min, 1 min 15 s, 1 min 30 s, 2 min, 2 min 30 s, 3 min, 5 min, 10 min, 15 min, 20 min, 30 min. Default value: Local settings.

2.3.3 Brightness threshold

The brightness threshold defines as from which brightness (darkness) a motion detection will lead to the Presence status on the Lighting channel.
The Brightness probe locking object allows locking the brightness measurement. In this case, the Presence status does not take any more the ambient brightness into account.

The brightness threshold can be set by the ETS or via the setting potentiometer on the device.

Screen 9

Designation	Description	Values
Brightness threshold (Value in Lux).	This parameter defines a brightness threshold as from which a motion does not lead any more to a switching command.	Local settings, Brightness measurement inactive, 5 lux, 50 lux, 100 lux, 200 lux, 300 lux, 400 lux, 500 lux, 600 lux, 700 lux, 800 lux, 900 lux, 1000 lux, 1100 lux, 1200 lux. Default value: Local settings.

2.3.4 Status after downloading or bus return-Lighting channel

The Status after downloading and Mode when power ON parameters define the starting behaviour of the motion detector for the Lighting channel.
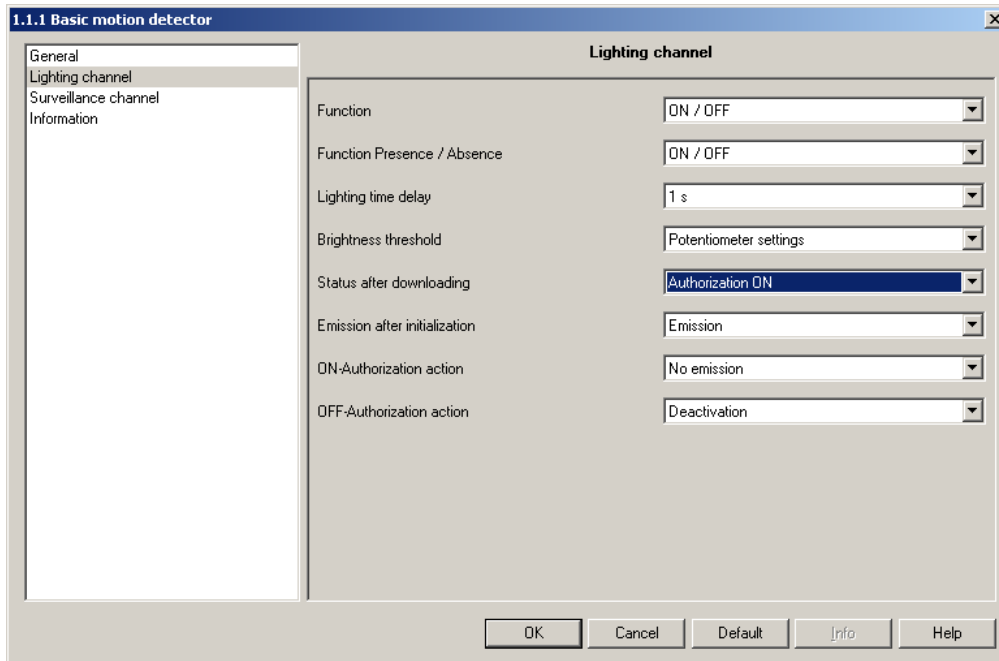
Status after downloading:
If the status of the Lighting channel after downloading is Authorization ON (authorized), telegrams are sent on the bus according to motion and ambient brightness.
If the status of the motion detector after downloading is Authorization OFF (inhibited), the motion detector will not send any telegrams on the bus according to motion and ambient brightness until the Lighting channel Timer/toggle change over object authorizes this again.

Mode when power ON:
The Mode when power ON parameter defines whether the motion detector will send the current status (according to the function set: ON/OFF, Scene number or Illumination value) via the Lighting channel after power restoration or not. Sending the status can e. g. be helpful when synchronizing a visualization.

Screen 10

Designation	Description	Values
Status after downloading	This parameter defines the authorization status after an ETS downloading.	Authorization OFF, Authorization ON. Default value: Authorization ON.
Mode when power ON	This parameter defines whether the current status must be sent or not after a bus failure.	No emission, Emission. Default value: Emission.

2.3.5 ON and OFF Authorization actions-Lighting channel

The ON Authorization action and OFF Authorization action parameters define the behaviour of the motion detector on the Lighting channel after the authorization (ON authorization) and after the inhibition (OFF authorization).

Activate:
When Activation is selected, the motion detector sends, after having received the authorization command (authorization or inhibition) the command for motion (Presence) on the bus.
The sent command depends on the function set.
Examples:
1. The selected function is ON/OFF and the command for Presence/Absence is ON/OFF.
   In this case, the motion detector sends an ON command on the bus via the ON/OFF object after having received the authorization command (Timer/toggle change over object).
2. The selected function is Scene Presence/Absence and the scene number for Presence is scene 1.
   In this case, the motion detector sends the call for scene 1 on the bus via the Scene object after having received the authorization command (Timer/toggle change over object).

Deactivation:
When Deactivation is selected, the motion detector sends, after having received the authorization command (authorization or inhibition) the command for no motion (Absence) on the bus.
The sent command depends on the function set.
Examples:
1. The selected function is ON/OFF and the command for Presence/Absence is ON/OFF.
   In this case, the motion detector sends an OFF command on the bus via the ON/OFF object after having received the authorization command (Timer/toggle change over object).
2. The selected function is Scene Presence/Absence and the scene number for Presence is scene 2.
   In this case, the motion detector sends the call for scene 2 on the bus via the Scene object after having received the authorization command (Timer/toggle change over object).

No emission:
When No emission is selected, the motion detector sends, after having received the authorization command (authorization or inhibition), neither the command for motion (Presence), neither the command for no motion (Absence) on the bus.

Parameter Setting screen:
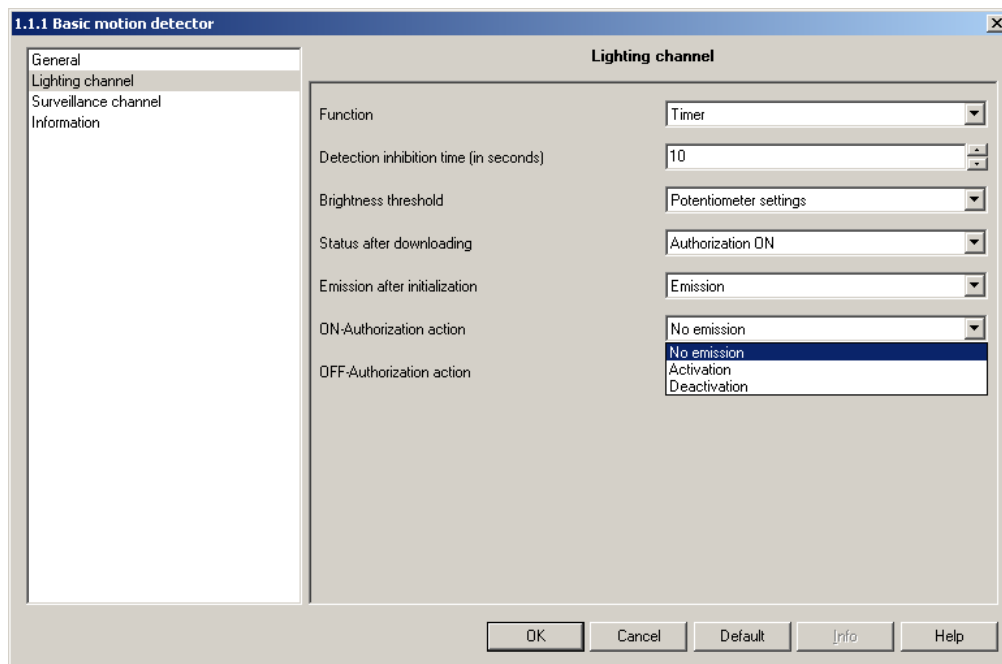
Screen 11

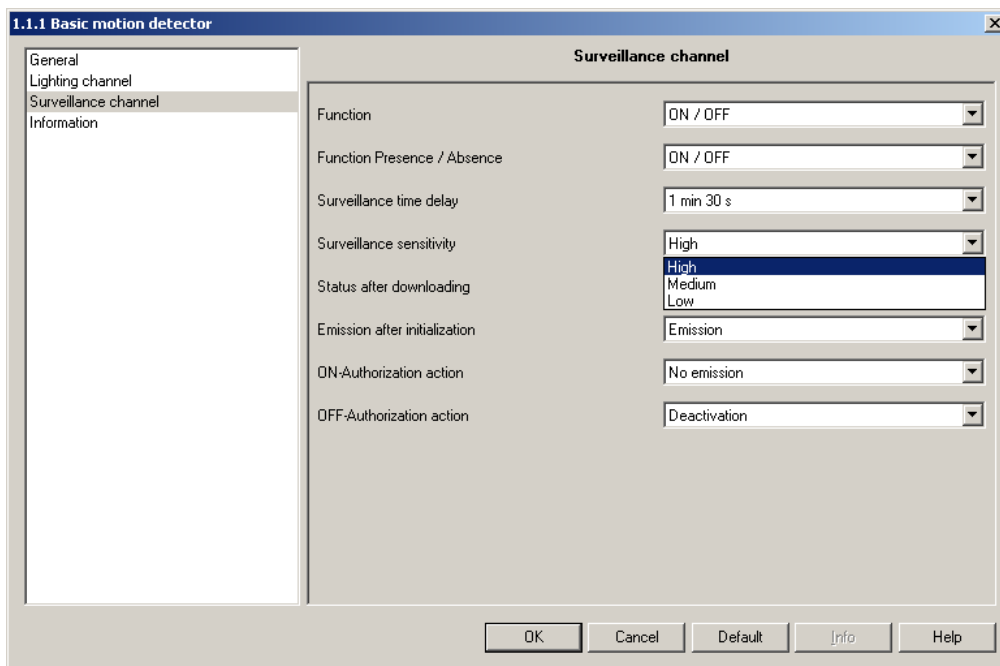| Designation	Description	Values
ON-Authorization action	This parameter defines the behaviour of the motion detector after having received the Authorization ON (authorization) command.	No emission, Activate, Deactivation. Default value: No emission.
OFF-Authorization action	This parameter defines the behaviour of the motion detector after having received the Authorization OFF (inhibition) command.	No emission, Activate, Deactivation. Default value: Deactivation.

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2.4 Surveillance channel parameters

Depending on the detection of a motion (Presence) and on the switch OFF delay, the Surveillance channel sends commands on the bus, according to the selected function (ON/OFF, Timer, Illumination value, Illumination value Presence/Absence, Scene, Scene Presence/Absence). The emission of commands on the bus by the Surveillance channel depends on motion detection. Unlike the Lighting channel, the ambient brightness is not taken into account.

The emission by the Surveillance channel on the bus is authorized or inhibited by the Timer/toggle change over object.

2.4.1 Functions of the Surveillance channel

The same functions can be set for the Surveillance channel as for the Lighting channel. Refer to the explanations 2.3.1.1 to 2.3.1.4.

2.4.2 Surveillance sensitivity-Surveillance channel

Screen 12

Designation	Description	Values

Surveillance sensitivity	High:
	    A motion must be detected to detect a presence.
	Medium:
	    At least one motion must be detected all 2 s over a period of time of 6 s to detect a presence.
	Low:
	    At least one motion must be detected all 3 s over a period of time of 9 s to detect a presence.
		High (1 detection),
		Medium (3 triggerings in 6 sec),
		Low (3 triggerings in 9 sec).
		
		Default value: High (1 detection).

2.4.3 Status after downloading or bus return-Surveillance channel

The Status after downloading and Mode when power ON parameters define the starting behaviour of the motion detector for the Lighting channel.

Status after downloading:
If the status of the Surveillance channel after downloading is Authorization ON (authorized), telegrams are sent on the bus according to motion.
If the status of the motion detector after downloading is Authorization OFF (inhibited), the motion detector will not send any telegrams on the bus according to motion until the Surveillance channel Timer/toggle change over object authorizes this again.

Mode when power ON:
The Mode when power ON parameter defines whether the motion detector will send the current status (according to the function set: ON/OFF, Scene number or Brightness value) via the Surveillance channel after power restoration or not. Sending the status can e. g. be helpful when synchronizing a visualization.

The operating mode corresponds to that of the Lighting channel (see "2.3.4 Status after downloading or bus return-Lighting channel" Page: 14).

2.4.4 ON and OFF Authorization actions-Surveillance channel

The ON Authorization action and OFF Authorization action parameters define the behaviour of the motion detector on the Surveillance channel after the authorization (ON authorization) and after the inhibition (OFF authorization) of the motion detector.

The operating mode corresponds to that of the Lighting channel (see "2.3.5 ON and OFF Authorization actions-Lighting channel" Page: 15).

2.5 Slave channel parameters

The Slave channel is only available when the Master/Slave parameter was set to Slave (see "2.2.1 Master/Slave" Page: 5).

It allows extending the detection area of a master motion detector using additional motion detectors. The slave motion detectors detect motions, but they do not take the ambient brightness into account. The Motion present information is then transmitted to the master detectors. To that purpose, the Slave output object of the slave detector must be linked with the Slave input object of the master detector(s).
Sending the slave channel on the bus is authorized or inhibited by the Timer/toggle change over object.

Detection inhibition time:
It is possible, in order to reduce the bus load, to inhibit any new emission for an adjustable duration after the detection of a motion, using the Detection inhibition parameter.

Description: After the detection of a motion by the slave detector, the latter sends an ON command on the bus via the Slave output object. Then, sending of commands via the Slave output object is locked for the time set. This means that, even in the case of motiondetection, no commands will be sent during this time. When this time has elapsed, the motion detector will send again an ON command on the bus in the case of Presence detection, and the locking time will start again.
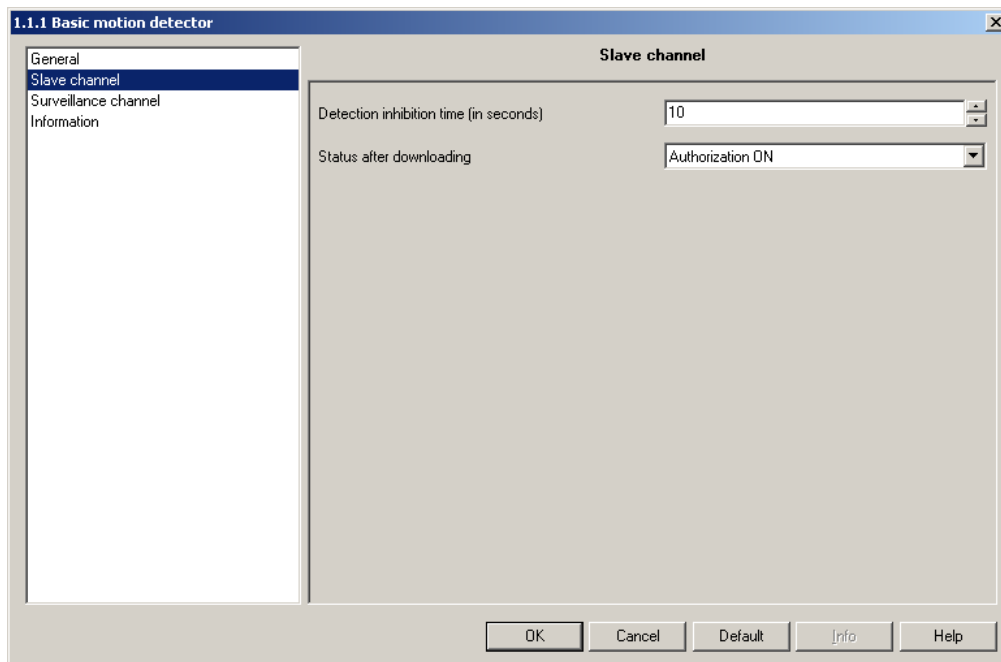
Screen 13

Designation	Description	Values
Detection inhibition time	This parameter sets the minimum possible time between two telegrams from the Slave output object.	from 1 s to 30 s by steps of 1 s. Default value: 10 s.
Status after downloading	This parameter defines whether the sending of telegrams via the Slave channel is authorized (ON authorization) or inhibited (OFF authorization) after downloading.	Authorization OFF, Authorization ON. Default value: Authorization ON.

3. Main characteristics

Max. number of group addresses	252
Max. number of links	254
Objects	30

4. Physical addressing

To perform physical addressing or to check for the presence of the bus, press the pushbutton located on the mechanism:

indicator ON = Bus presence and physical addressing active.

Caution: Press the pushbutton again and the indicator will turn off. This is essential in order to be able to select the product's function.