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Tebis application software

WFL501A Automatic switch

Product reference	Product designation
WKT501	1 channel automatic switch

WKT501	**Output module KNX/EIB**	**Load connected**
Motion detection		
Management luminosity		
Master/salve-modus		
Push button wiht LED configurable :		
- Auto / manu local mode		
- Communicant Mode		
Lighting control		
Roller shutter and Blind control		
Heating control		
Priority		
Sce ne		
Authorization		
Remote control		

Visualisation system
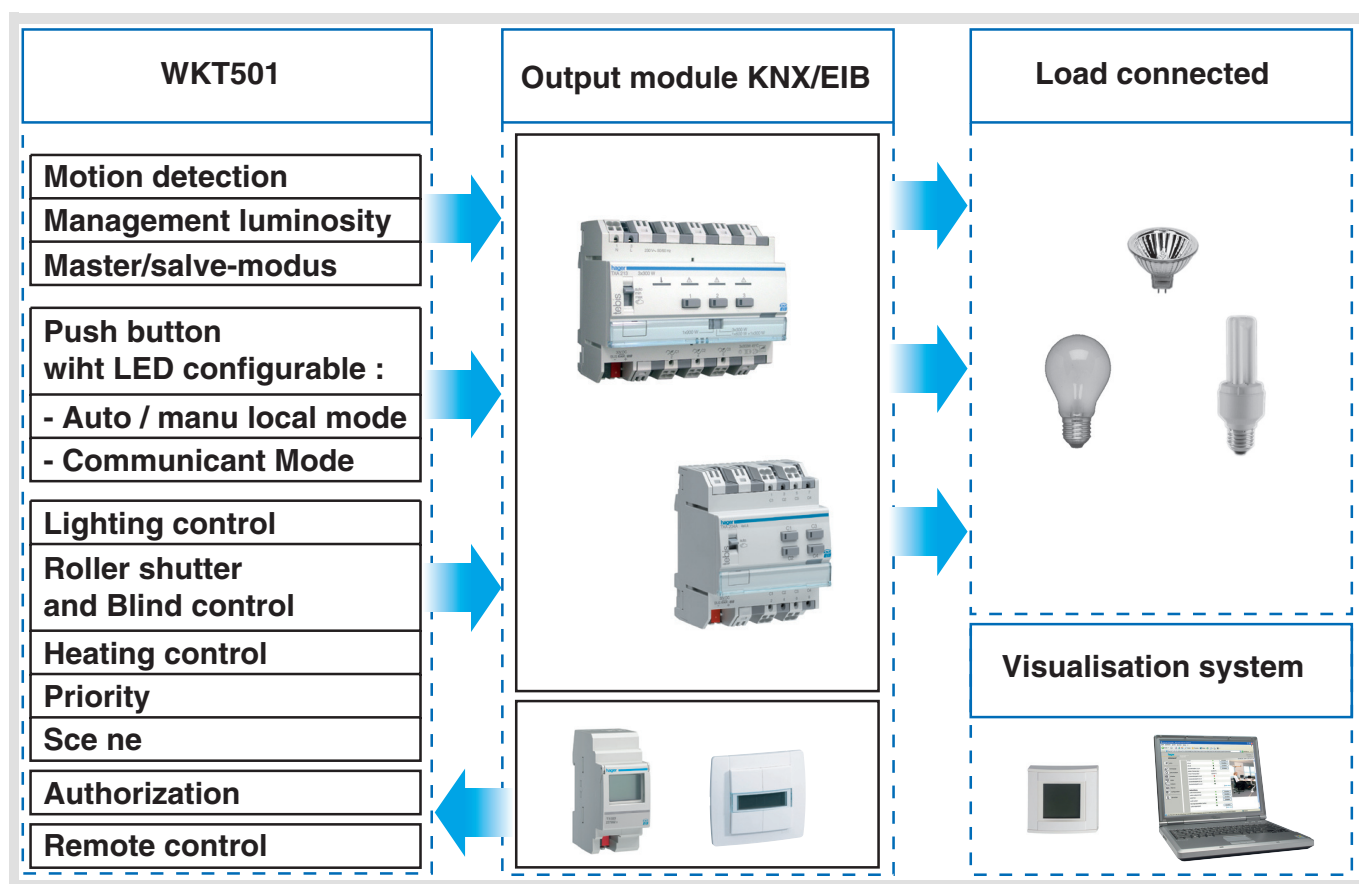
Summary

1. Description of the automatic switch and pushbutton functions for the WFL501A application

The WFL501A application software is used to configure the WKT501 automatic switch.

The main functions are the following:

■ Movement detection and brightness measurement
The WKT501 automatic switch is sensitive to infrared radiation linked to the heat given off by moving bodies. It allows lighting, priority and scenes commands to be emitted if movement is detected (presence of people).
Two knobs on the product are used to restrict the detection zone and adapt it to the environment.

■ Lighting channel
The lighting channel controls a load in case of movement detection, when the ambient brightness is below an adjustable threshold.

■ Ambient brightness threshold
The ambient brightness threshold can be defined by parameterizing or on the device via a potentiometer.

■ Lighting delay
This function is used to emit a command at the end of a time delay if no movement has been detected during the delay ("absence" of people). The delay value can be set by parameterizing or on the device via a potentiometer.

■ Remote input, remote control
The remote input is used to activate the lighting channel e.g. from a pushbutton, independently of movement detection or the level of brightness.

■ Brightness probe locking
This function inhibits the brightness measurement of certain detectors when they control the same output.

■ Authorisation of the lighting channel
This function is used to authorise or forbid movement detection by the lighting channel (e.g. by a clock at certain periods).

■ Master/Slave mode
This mode is used to extend the detection zone by linking several slave detectors to a master detector. The brightness threshold is managed by the Master detector only.

■ Pushbutton with configurable indicator
The pushbutton located on the detector can be configured:
   • as a local detector control button: selection of automatic or manual mode with possibility to force outputs.
   • as a communicating button: it can then be used to carry out the same functions as a pushbutton in the equipment range (emission of lighting and priority commands, rolling shutter and blind commands, heating and scene commands).
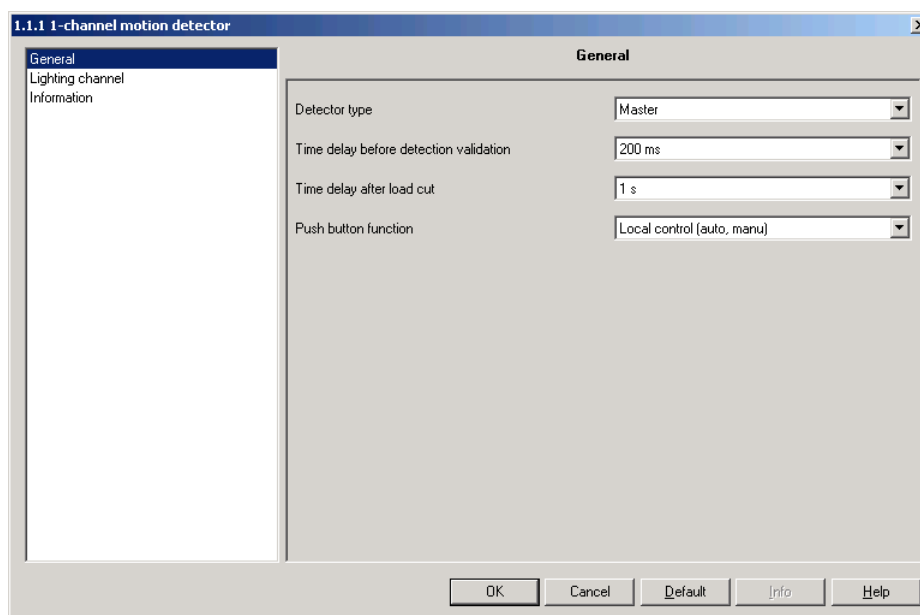
■ Scene and 2-level scene functions
The Scene function sends group controls to different kinds of outputs to create ambiences or scenarios (presence of movement scenario, absence scenario, etc.). The 2 level scene function is used to activate a scene if movement is present and another scene if no movement is present.

2. General parameters

The general configuration screen is mainly used to configure basic operation of the WKT501: type of detector (Master or Slave) and use of the pushbutton located on the product (local control or communicating pushbutton).

➜ Parameter Setting screen

Screen 1

➜ Parameters

Designation	Description	Values
Detector type	Allows configuring the detector as a Master (it measures and manages the brightness) or as a Slave (no brightness measurement).	Master, Slave. Default value: Master.
Waiting time before detection validation	Used to define immunity after each detection: if an ON/OFF information object emitted by the pilot arrives during this time delay, detection is invalidated.	Not used, 50 ms, 100 ms, 200 ms, 300 ms, 500 ms, 750 ms, 1 s. Default value: 200 ms.
Waiting time before load cut	Used to define immunity after sending an OFF command to the pilot: movement detection is inhibited during this time delay.	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. Default value: 1 s.
Use of the pushbutton*	Used to define the function of the pushbutton on the product. If the pushbutton is a communicating pushbutton, additional parameters appear*.	Local control (Auto, Manual), Communicating button, Not used. Default value: Local control (Auto, Manual).

*When configuring a communicating button, the screen displays additional parameters described in chapter 4 "Configuration of the communicating pushbutton".

3. Configuration of the automatic switch functions

This chapter deals with the automatic switch functions of the WKT501 (movement detection and brightness measurement), the pushbutton on the front being configured in local control mode. If the pushbutton is configured in Communicating button mode, the functions and configuration are described in chapter 4 "Configuration of the Communicating pushbutton functions".

3.1 Objects List

Object name \ Function	None	ON/OFF	Toggle	Timer	Illumination value	Value of presence/absence lighting	Priority	Scene	Scene Presence / Absence	General functions
ON/OFF	X	X	X		X	X	X			
ON/OFF Info			X	X	X	X				
Timer				X						
Absolute dimming					X	X				
Priority							X			
Scene								X	X	
Authorization										X
Remote control (lighting channel only)	X	X	X	X	X	X	X	X	X	X
Probe locking (lighting channel only)										X
Slave input										X

3.2 Configuration of the automatic switch functions

If the WKT501 is configured as Master, the configuration screen displays the lighting channel.
If the detector is configured in Slave, the lighting channel is replaced by the slave channel (See "Slave channel").

■ Lighting channel functions (Master detector)

The Function parameter is used to select the command emitted after a valid movement detection ("presence" of people) and if applicable, the command emitted at the end of the lighting time delay ("absence" of people).
  • Valid movement detection:
        - For the Lighting channel: detection of movement and ambient brightness below the adjustable brightness threshold.
  • Time delay:
        - For the Lighting channel: adjustable by configuration or by potentiometer on the product.

➜ Parameter Setting screen

Screen 2 : Lighting channel
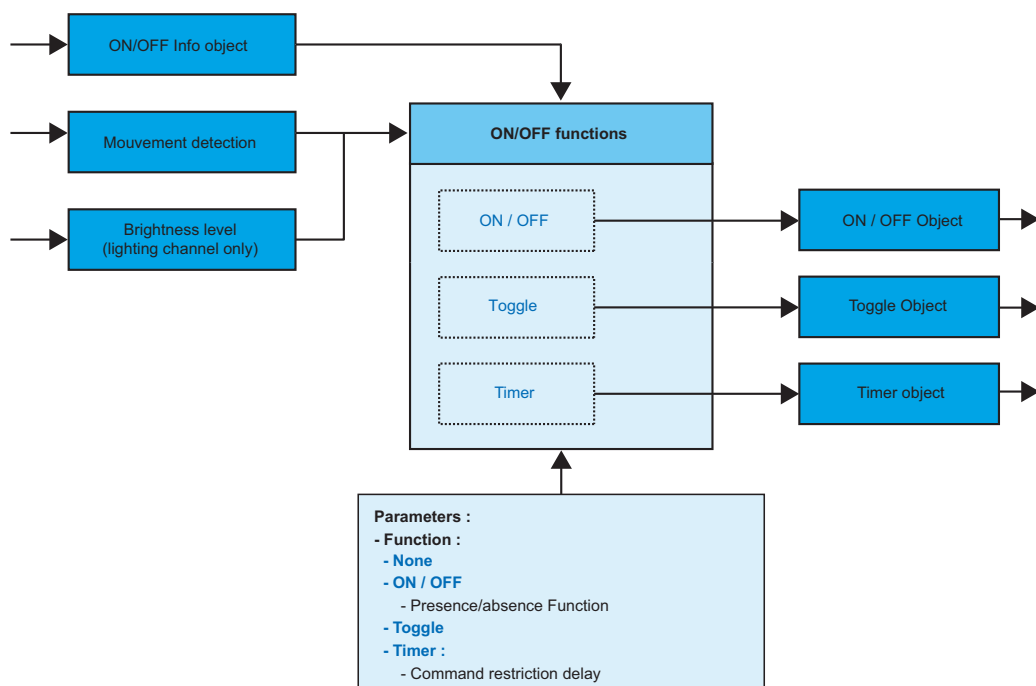
A. ON/OFF, Toggle and Timer functions

These functions allow switching ON or OFF a lighting circuit or any other load.
The ON/OFF function is performed by sending the ON/OFF object.
The Toggle function is performed by sending the Toggle object.
The Timer function is performed by sending the Timer object.
The status of the controlled output is received on the Info ON/OFF object, which can condition the initial command.

→ Parameter Setting screen: See "Screen 2 : Lighting channel".

→ Parameters

Designation	Description	Values
Presence/absence function	This parameter defines the command sent after a valid movement detection*1 and if applicable the command sent at the end of the time delay*2.	OFF, ON, OFF/ON, ON/OFF. Command sent after a detection/Command sent at the end of the time delay. In the absence of /-, there is no action at the end of the time delay. Default value: ON/OFF.
Command limitation time delay***	In the case of a timer, the time delay for switching on the light is managed by the output pilot. This parameter is used to reduce the emission of restart commands during the timer delay: no command will be sent before the end of the command limitation time delay.	from 1 s to 30 s by steps of 1 s. Default value: 10 s.

*Valid movement detection (presence):
- For the Lighting channel: movement detected and ambient brightness below the threshold.
**Time delay (See "Lighting time delay and brightness threshold on the lighting channel"
- For the Lighting channel: adjustable by configuration or by potentiometer on the product.
***This parameter only appears for the Timer function.

B. Priority function

The priority function sends priority-start or priority-stop commands.
The Priority action depends on the type of application controlled: lighting, Roller shutters, Heating, etc.
The Priority function transmits the Priority object.
The status of the controlled output is received on the Onfo ON/OFF object.

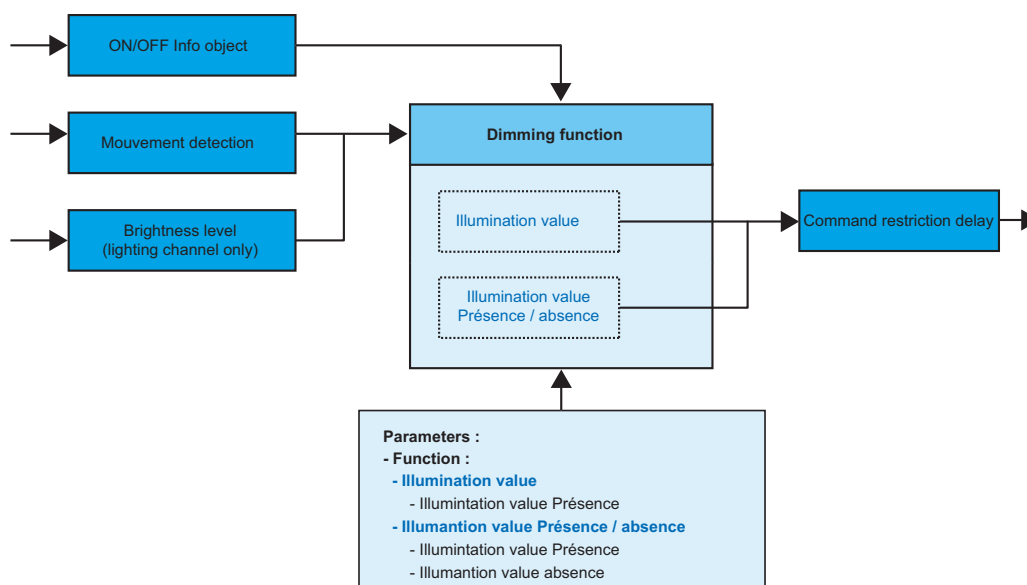➜ Parameter Setting screen: See "Screen 2 : Lighting channel"

➜ Parameter

Designation	Description	Values
Priority type	This parameter selects a Priority type. It depends on the type of application.	Priority ON, Priority OFF. Default value: Priority ON.

C. Lighting value functions, Value of presence/absence lighting
These functions allow lighting dimmer commands to be sent on 1 or 2 levels: one value after movement is detected and another value at the end of the lighting time delay.
The lighting value functions send the absolute Dimmer object.
The status of the controlled output is received on the Onfo ON/OFF object.

➜ Parameter Setting screen: See "Screen 2 : Lighting channel".

➜ Parameters

Designation	Description	Values
Illumination value (presence)	Defines the absolute dimmer level of the output after a valid movement detection.	0% to 100% in 1% steps. Default value: 100%.
Illumination value (absence)	Defines the absolute dimmer level of the output at the end of the time delay.	0% to 100% in 1% steps. Default value: 0%.

D. Scene and Scene Presence/Absence functions

The Scene function sends group controls to different kinds of outputs to create ambiences or scenarios (leaving home scenario, reading ambience, etc.).

The Scene function transmits a Scene object.

➜ Parameter Setting screen: See "Screen 2 : Lighting channel".

➜ Parameters

Designation	Description	Values
Scene number (presence)	This parameter defines the number of the scene after a valid movement detection.	Scene 1 to Scene 32. Default value: Scene 1.
Scene number (absence)	This parameter defines the number of the scene at the end of the time delay.	Scene 1 to Scene 32. Default value: Scene 2.

■ Lighting time delay and brightness threshold on the lighting channel

The output controlled by the lighting channel is only activated if a movement is detected and if the brightness is below a configurable threshold (darkness condition).

➜ Parameters

Designation	Description	Values
Lighting time delay	Used to define the length of time during which the output switches to ON after a valid movement detection (brightness below the threshold). If another movement is detected before the end of the time delay, it is restarted.	Potentiometer 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: Potentiometer settings.
Brightness threshold	This parameter defines a brightness threshold as from which a motion does not lead any more to a switching command (darkness condition). Also used to authorise local adjustment by potentiometer.	Potentiometer 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: Potentiometer settings.

■ Other parameters and functions of the lighting channel

Detection of movement by the lighting channel can be activated or deactivated according to reception of the Authorisation object which takes the value ON or OFF.

➜ Parameter Setting screen: See "Screen 2 : Lighting channel"
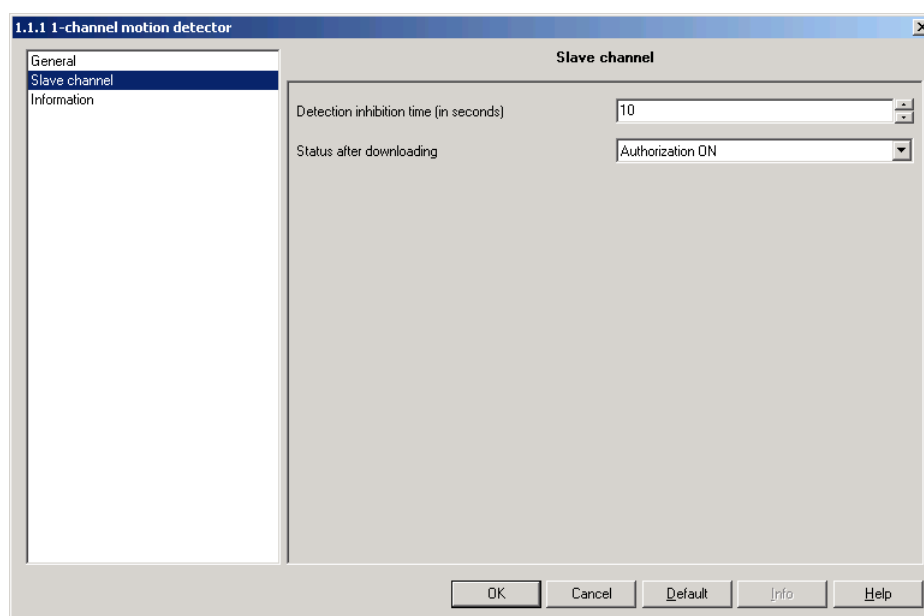
➜ Parameters

Designation	Description	Values
Status after download	Allows initializing the type of authorization after a download.	Authorization ON, Authorization OFF. Default value: Authorization ON.
Emission after initialization	Defines behaviour after a bus failure, a download or an application reboot. Allows avoiding to switch the light off by inhibiting the output of an OFF command after the initialization.	Emission, No emission. Default value: Emission.
Action following ON authorisation	Used to activate or deactivate movement detection or to inhibit emission of the command.	No emission, Activation, Deactivation. Default value: No emission.
Action following OFF authorisation	Used to activate or deactivate movement detection or to inhibit emission of the command.	No emission, Activation, Deactivation. Default value: Deactivation.

■ Slave channel

If the detector is configured in Slave, the lighting channel is replaced by the slave channel. The brightness threshold is managed by the Master detector only.
The slave detector sends the Slave output object.

➜ Parameters

Screen 3

Designation	Description	Values
Command limitation time delay	This parameter is used to avoid sending movement detection commands for no useful purpose: after a movement is detected, no other command will be sent to the master during the command limitation time delay.	from 1 s to 30 s by steps of 1 s. Default value: 10 s.
Status after download	Allows initializing the type of authorization after a download.	Authorization ON, Authorization OFF. Default value: Authorization ON.

4. Configuration of the Communicating pushbutton functions

This chapter explains the functions and configuration of the pushbutton located on the front when it is configured as a communicating button (See "Screen 1").

4.1 Objects List

Object name \ Function	ON/OFF	Toggle	Time-limited toggle switch	Timer	1-button dimmer	1-button shutters/blinds	Heating	Priority	Scene	Value	2-channel mode, ON/OFF (ON or OFF)	2-channel mode, ON/OFF (Toggle)	General functions
ON/OFF	X	X			X								
Status display		X	X		X	X							
Time-limited toggle switch			X										
Timer				X									
Dim					X								
Stop/Angle						X							
Shutters/Blinds						X							
Setpoint selection							X						
Priority								X					
Scene									X				
Value										X			
ON/OFF Channel A											X	X	
ON/OFF Channel B											X	X	
Status indication, channel A												X	
Status indication, channel B												X	
Jamming	X	X	X	X	X	X	X	X	X	X	X	X	X
Signalling													X

4.2 General parameters

The general configuration screen displays the specific parameters for the communicating pushbutton.

➜ Parameter Setting screen

Screen 4

➜ Parameters

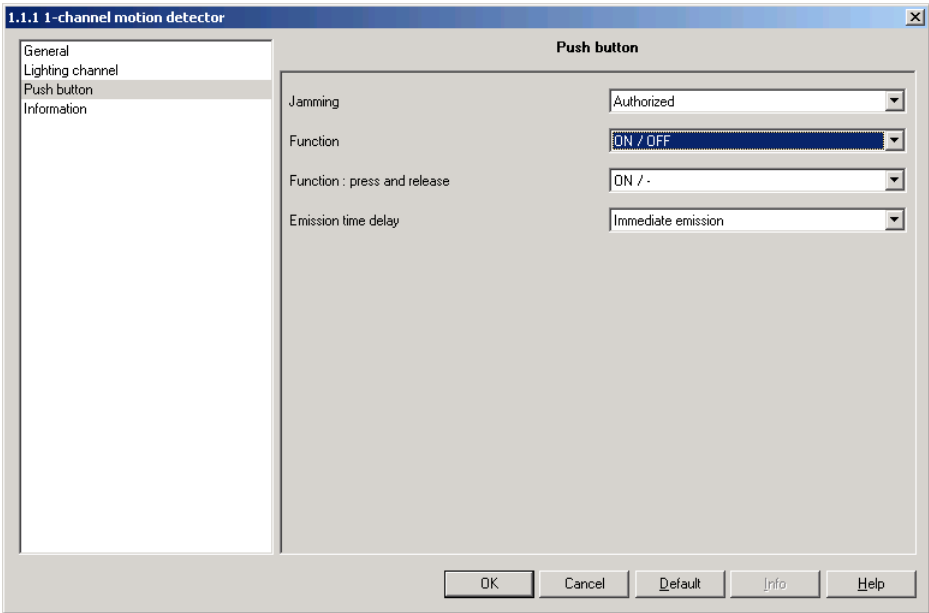| Designation	Description	Values
Jamming polarity	The Jamming function authorizes product locking. Jamming forbids sending commands. This parameter defines the level at which jamming is active.	Jamming on 1, Jamming on 0. Default value: Jamming on 1.
Duration of long key-press Dim, Blinds / shutters	This parameter defines for the dimmer and shutters/blinds function the detection time of a hold down pressure.	400 ms, 500 ms, 600 ms, 700 ms, 800 ms, 900 ms, 1 s. Default value: 500 ms.
Duration of long key-press 2-channel mode	This parameter defines the detection time of a long press to activate 2 channel mode.	500 ms, 1 s, 2 s, 3 s, 4 s, 5 s, 6 s, 7 s, 8 s, 9 s, 10 s. Default value: 5 s.

4.3 Configuration of the communicating pushbutton functions

■ Jamming

The Jamming function allows enabling the locking of a pushbutton. Jamming forbids sending commands.
This function is started by the Jamming object.
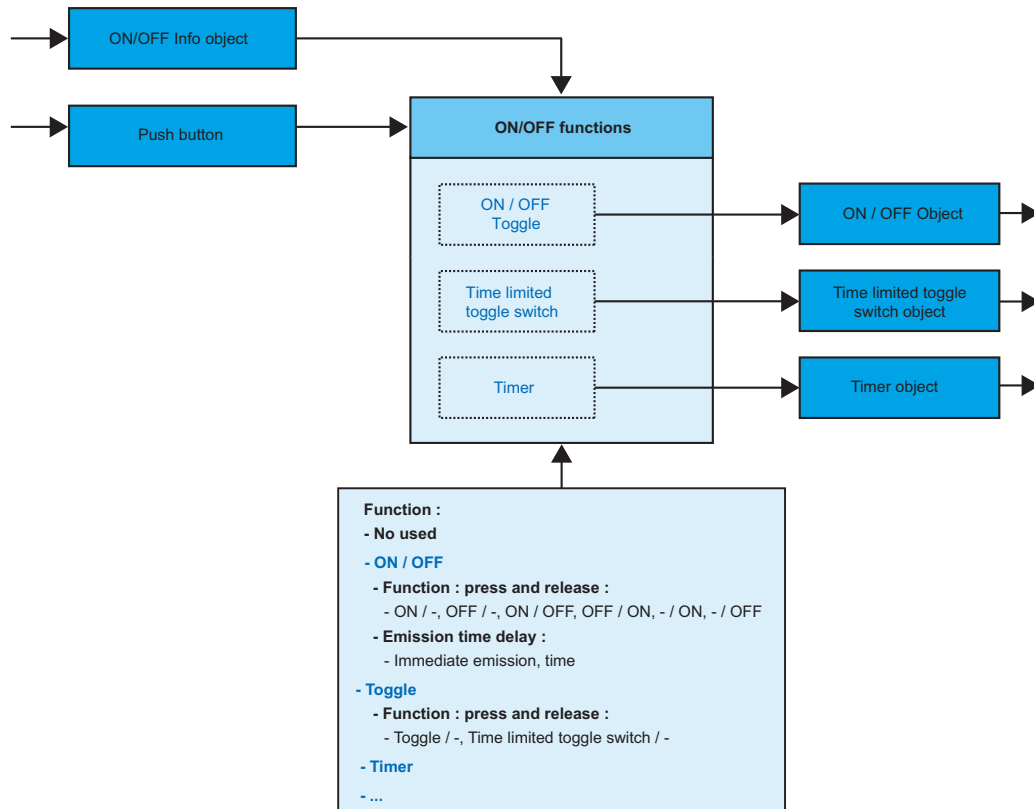
➜ Parameter Setting screen

Screen 5

➜ Parameter

Designation	Description	Values
Jamming	This parameter allows blocking the use of the pushbutton.	Not authorized, Authorized. Default value: Not authorized.

■ Function

The Function parameter allows selecting the type of the function associated with a pushbutton.

A. ON/OFF functions: ON/OFF, Toggle, Timer.

These functions allow switching ON or OFF a lighting circuit or any other load.
The ON/OFF and pushbutton functions are performed by sending the ON/OFF object.
The time delayed remote switch function is performed by sending the time delayed switch object.
The Timer function is performed by sending the Timer object.
The status of the controlled output is received on the Status indication object.
The available functions depend on the value of the parameters.

➜ Parameter Setting screen: See "Screen 5"

➜ Parameters

• ON/OFF

Designation	Description	Values
Function : press and release	This parameter defines the commands sent when the push button is pressed and released.	ON/-, OFF/-, ON/OFF, OFF/ON, -/ON, -/OFF. Default value: ON/-. Command when pressing / Command when releasing (" - " = No action).
Emission time delay	This parameter sends commands with a set delay in relation to pressing or releasing.	Immediate emission, 1 s, 2 s, 3 s, 5 s, 10 s, 15 s, 20 s, 25 s, 30 s, 40 s, 50 s, 1 min, 1 min 30 s, 2 min, 2 min 30 s, 3 min, 3 min 30 s, 4 min, 4 min 30 s, 5 min. Default value: Immediate emission.

• Toggle

Designation	Description	Values
Function : press and release	This parameter defines the commands sent when the push button is pressed and released.	Toggle / -, Time delayed remote switch / -, -/Toggle. Default value: Toggle / -. Command when pressing / Command when releasing (" - " = No action).

B. Dimming function

This function is used to dim a light.
The ON/OFF function is performed by sending the ON/OFF object (press briefly).
The Dimming function emits the Dimming object (press for a long time).

➜ Parameter Setting screen: See "Screen 5"

➜ Parameters

Designation	Description	Values
Choice of function	This parameter selects the utilization mode: 1-button dimmer or 2-button dimmer.	1-button dimmer, 2-button dimmer. Default value: 1-button dimmer.
Dimming direction*	This parameter defines the direction of dimming.	Increase, Decrease. Default value: Increase.

* This parameter is only visible if the parameter "Function" has the value: 2-button dimmer.

C. Roller shutters / Blinds function

This function is used to control a rolling shutter or blind.
The Up/Down function transmits the Up/Down object (press for a long time).
The Stop/Angle function transmits the Stop/Angle object (press briefly).

➜ Parameter Setting screen: See "Screen 5"

➜ Parameters

Designation	Description	Values
Choice of function	This parameter selects the utilization mode: 1 button, 2 buttons, 2 buttons Safety.	1-button shutters/blinds, 2-button shutters/blinds, 2-buttons Safety Shutters / Blinds. Default value: 1-button shutters/blinds.
Control type*	This parameter defines the movement direction associated to the button.	Up, Down. Default value: Up.

* This parameter is only visible if the parameter "Function" has the value: 2-button shutters/blinds or 2-buttons Safety Shutters / Blinds.

D. Heating functions

This function is used to select a heating or air conditioning setpoint.
The Heating function transmits the Set-point selection object.

➜ Parameter Setting screen: See "Screen 5"

➜ Parameters

Designation	Description	Values
Choice of function	This parameter selects the setpoint associated to the button.	Comfort, Economy, Frost protection, Auto, Absence. Default value: Comfort.

E. Priority function

The priority function sends priority-start or priority-stop commands.
The Priority action depends on the type of application controlled: lighting, Roller shutters, Heating, etc.
The Priority function transmits the Priority object.

➜ Parameter Setting screen: See "Screen 5"

➜ Parameters

Designation	Description	Values
Priority type	This parameter selects a Priority type. It depends on the type of application.	Priority ON - Down - Comfort, Priority OFF - Up - Frost protection. Default value: Priority ON - Down - Comfort.

F. Scene function

The Scene function sends group controls to different kinds of outputs to create ambiences or scenarios (leaving home scenario, reading ambience, etc.).
The Scene function transmits a Scene object.

➜ Parameter Setting screen: See "Screen 5"

➜ Parameters

Designation	Description	Values
Scene number	This parameter defines the scene number.	Scene 1 to Scene 32. Default value: Scene 1.
Emission time delay	This parameter allows sending the commands with a parameterisable delay in relation to the key-press.	Immediate emission, 1 s, 2 s, 3 s, 5 s, 10 s, 15 s, 20 s, 25 s, 30 s, 40 s, 50 s, 1 min, 1 min 30 s, 2 min, 2 min 30 s, 3 min, 3 min 30 s, 4 min, 4 min 30 s, 5 min. Default value: Immediate emission.
Scenes modification via long key-press	This parameter authorizes or forbids scene storing.	Authorized, Forbidden. Default value: Authorized.

G. Value function

The Value function allows the command of a luminosity level, a temperature, an illumination value, etc.
The Value function transmits a Value object.

→ Parameter Setting screen: See "Screen 5"

→ Parameters

Designation	Description	Values
Value type	This parameter defines the type of value sent.	Value in %, Temperature, Brightness level, Illumination value, 2-octet value. Default value: Value in %.
Value	This parameter defines the value to be sent to the bus.	Possible values: Value in % 0% to 100% in 1% steps. Default value: 0%. Temperature 0°C to 40°C in 0.5°C steps. Default value: 20°C. Brightness level 0 lux to 1000 lux in 50 lux steps. Default value: 300 lux. Illumination value 0% to 100% in 1% steps. Default value: 0%. 2-octet value 0 to 65535 in 1 steps. Default value: 0.

H. 2-channels ON/OFF mode function

The 2-channel mode function allows controlling, with the same pushbutton, two independent circuits having different functions.
The 2-channel mode function transmits the ON/OFF channel A and ON/OFF channel B objects.

→ Parameter Setting screen: See "Screen 5"

→ Parameters

Designation	Description	Values
Channel A function (press briefly)	This parameter defines the command sent by a short key-press.	ON, OFF, Toggle. Default value: ON.
Channel B function (press for a long time)	This parameter defines the command sent by a long key-press.	ON, OFF, Toggle. Default value: ON.

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5. Main characteristics

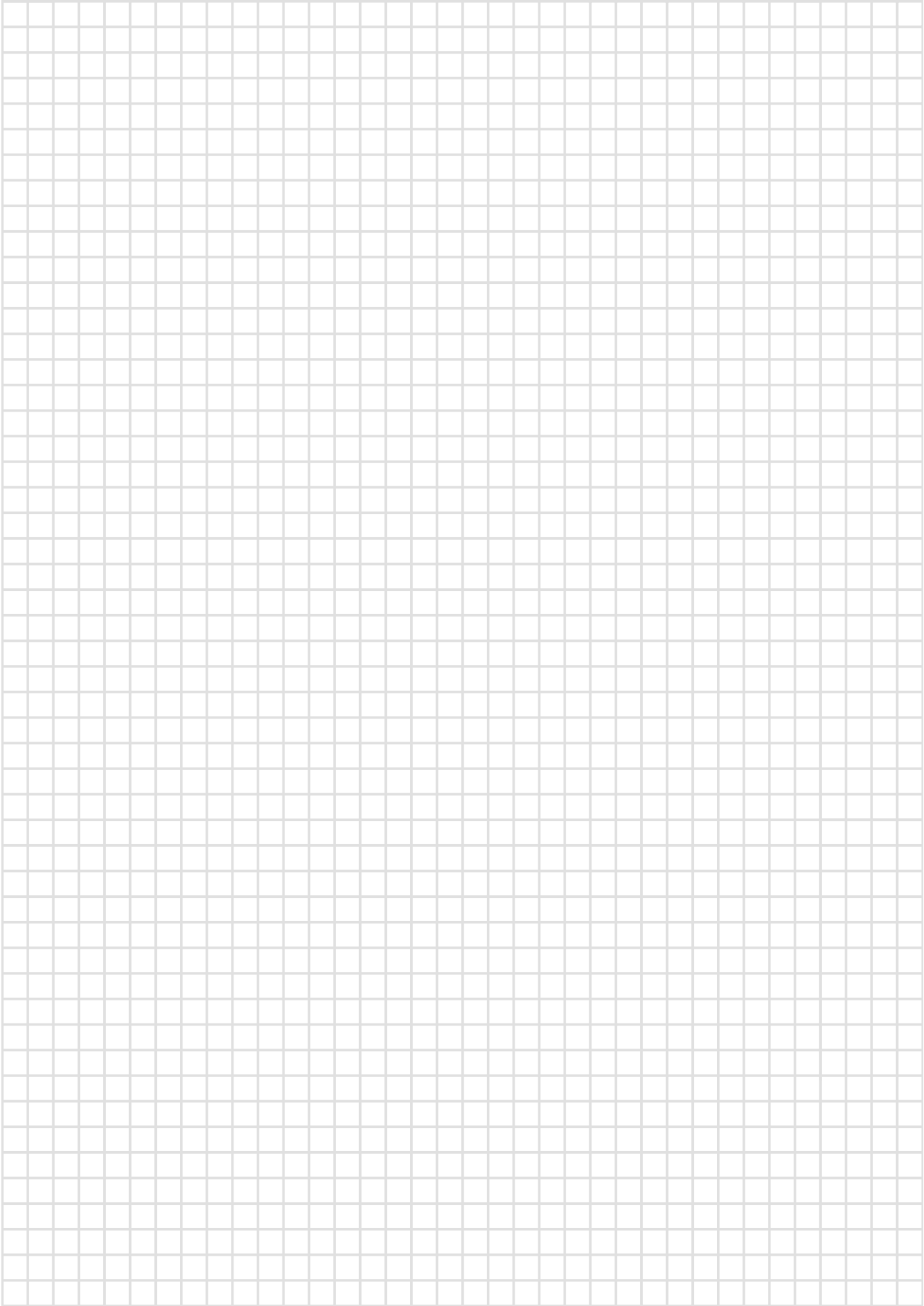| Max. number of group addresses	254
Max. number of links	255
Parameters	26
Objects	24

6. Physical addressing

To carry out physical addressing or to check the presence of the bus, turn the time delay adjustment potentiometer as far as it will go ("adr" position) and press the product's pushbutton.
-3 indicators lighted = bus presence and product in physical addressing.
The product remains in physical addressing until the physical address has been transmitted by ETS.
To exit this mode, turn the potentiometer to a position other than "adr".

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