

## KNX/EIB - Product database - Application description

Theben HTS KNX/EIB Product Database V3.2

















































for Theben HTS presence detectors




















- ◆ ECO-IR 360EIB-AC
- ◆ ECO-IR 180EIB-AC
- ◆ ECO-IR DUAL-EIB
- ◆ compact office EIB
- ◆ compact passage KNX
- ◆ compact passimo KNX

Application / Product	No. of lighting groups	Switching	Constant light control	Presence / HVAC	Fully / semi-automatic Push button	Page
<b>ECO-IR 180EIB-AC</b> <b>ECO-IR 360EIB-AC</b> <i>Application A V1.01</i>	1					4
<b>ECO-IR 180EIB-AC</b> <b>ECO-IR 360EIB-AC</b> <i>Application C V1.02</i>	1					4
<b>ECO-IR DUAL-EIB</b> <i>Application DUAL V1.01</i>	2					10
<b>compact office EIB</b> <i>Application V1.03</i>	1,2					14
<b>compact passage KNX</b> <i>Application V1.02</i> <b>compact passage KNX</b> <i>Application V1.03</i>	1,2					26

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The Theben HTS KNX/EIB product database V3.2 requires the use of ETS3 or later.

	A	C	DUAL	coEIB	cpKNX cpmKNX	
<b>Outputs Light</b>						
<b>Switching</b>			 	 	 	<u>Switching</u> An ON telegram is sent in the case of darkness and presence, an OFF telegram in the case of sufficient daylight or absence.
<b>Constant light control</b>				 	 	<u>Constant light control</u> Each light output adjusts the lighting to the preset desired brightness level in the case of presence and insufficient daylight.
<b>Fully automatic</b>						<u>Fully automatic</u> The detector switches or controls the lighting in fully automatic mode depending on presence and daylight.
<b>Semi-automatic</b>						<u>Semi-automatic</u> Lighting must be switched on manually; it can be switched off either manually or automatically.
<b>Push buttons</b>		 	 	 	 	<u>Push button integration</u> <b>ECO-IR:</b> push buttons are connected to the presence detector's push button input. Each telegram switches the detector status (toggle function). Push buttons or central commands that are connected directly to the actuators, bypassing the presence detector, can cause undesirable behaviour. <b>compact:</b> the detector light outputs are connected to the actuators. Push buttons are connected directly to the actuator.
<b>Brightness level</b>						<u>Brightness level</u> Defines the minimum brightness level in the room in the event of presence and is adjustable between 1.0 and 9.0 (ECO-IR) or 1.0 and 8.0 (compact). It can also be deactivated.
<b>Switch off delay time</b>	 on/off	 on/off	 on/off	 on/off	 on/off	<u>Switch off delay time light</u> Adjustable between 30 sec. and 20 min. With settings of >2 min. to <15 min. it adapts to the user behaviour (self-adaptive).
<b>Stand-by time</b>						<u>Stand-by time (only with constant light control)</u> May be set between 0 sec. and 60 min. or to on. At the end of the switch off delay time, the lighting is dimmed to a background lighting of around 10%.
<b>Disable/Enable</b>						<u>Disable light outputs</u> This is carried out with an ON or OFF telegram. When the period of disablement begins a final telegram is sent: ON, OFF or none. The detector is re-enabled with a complementary telegram. After re-enabling, the current status is sent.

	A	C	DUAL	coEIB	cpKNX cpmKNX	
<b>Output presence</b>						<i>The switching behaviour is affected only by presence. The output for presence functions irrespective of daylight</i>
<b>Switch off delay time</b>						<i>Switch off delay time for presence May be set between 30 sec. and 120 min. It is restarted on every movement.</i>
<b>Switch on delay time</b>						<i>Switch on delay time The switch on delay for presence may be adjusted between 0 sec. and 30 min.</i>
<b>Disable/Enable</b>						<i>Disable output for presence This is carried out with an ON or OFF telegram. When the period of disablement begins a final telegram is sent: ON, OFF or none. The detector is re-enabled with a complementary telegram. After re-enabling, the current status is sent.</i>
<b>Output surveillance</b> Detection type: cyclical with acknowledgement Switching						<i>Cyclical with acknowledgement On detecting a movement, the detector sends ON telegrams at regular intervals until an acknowledgement is received. Switching (On/Off) The output for surveillance sends an ON telegram when a movement is detected, an OFF telegram at the end of the surveillance delay time.</i>
<b>Sabotage, cyclical</b>						<i>Sabotage, cyclical The cyclical detector sends OFF telegrams at regular intervals in order to indicate an unauthorised removal of the detector or a bus interruption.</i>
<b>Output brightness</b>						<i>The output for brightness gives the room brightness as a 2 byte value in LUX (KNX/EIB function type EIS5). The time interval between two telegrams is adjustable between 30 sec. and 30 min. The minimum change in brightness before a telegram is sent is adjustable between 10% and 90%.</i>
<b>Output bright/dark</b>						<i>The switching behaviour is only affected by daylight. In case of darkness, an ON telegram is sent, in case of brightness, an OFF telegram. The brightness threshold serves as the switching threshold. It is adjustable between 25 and 1600 lux. (Identical with the threshold value for the switched output for light)</i>

# 1. Applications description for presence detectors ECO-IR 360EIB-AC, ECO-IR 180EIB-AC



## Product characteristics ECO-IR 180/360EIB-AC

- ◆ Passive infrared presence detectors for KNX/EIB
- ◆ Presence and daylight dependent switching of lighting systems
- ◆ Option of fully or semi-automatic operation
- ◆ Direct integration of push buttons for manual lighting control
- ◆ Output for presence for the control of HVAC
- ◆ Parallel circuit operation master-slave, master-master for uninterrupted coverage of large areas
- ◆ Remotely parameterisable via the ETS or setting with potentiometer on the unit
- ◆ Applications A V1.0 and C V1.01/1.02

## 1.1 Presence detector functions

(A) (C)

### Operation mode

*Master stand-alone: presence detector operates as an autonomous unit.*

*Master in parallel circuit operation: in order to expand the detection area, additional detectors as are connected slaves to a master in parallel circuit operation, or several masters in parallel circuit operation are connected together.*

*Slave: slaves are used to expand the detection area. Their sole role is to supply presence information to the master*



(A) (C)

### Switched output for light

*Switched output for light active: presence detector switches one lighting group in accordance with the presence of persons and natural daylight.*

*Switched output for light inactive: The presence detector is not used to control lighting.*



(A) (C)

### Switched output for HVAC/ presence

*Switched output for HVAC/presence active: presence detector switches HVAC applications in accordance with the presence of persons or supplies presence information to superordinate systems. (irrespective of brightness).*

*Switched output HVAC/presence inactive: The presence detector is not used to control HVAC applications.*



(C)

### Switched output bright/dark

*Switched output bright/dark active: Photo-electric switch is active.*

*Switched output bright/dark inactive: Photo-electric switch not required.*

(A) (C)

### Normal or test operation

*Normal operation: the detector must be in normal mode for regular operation.*

*Test mode: For the purpose of checking the detection range and the linking of objects. The switch-off delay times are reduced to 10 sec. The detector switches immediately in response to changes in brightness. The detector restarts when switched to normal.*

## 1.2 Description of the parameters



A

C

### Switched output for light

The switching behaviour is controlled by presence and daylight. In the case of darkness and presence an ON telegram is sent; in the case of brightness or absence, an OFF telegram. The telegrams can be suppressed if required.

C

### Operation mode: fully or semi-automatic

(available only when push-button inputs active)

In operation mode "**Fully automatic**", the switched output for light automatically switches the lighting ON and OFF according to presence and ambient brightness.

In operation mode "**Semi-automatic**", the lighting must always be switched on manually using a push button. The lighting is switched off automatically.

The lighting can be switched on manually, in either operation mode even if there is adequate daylight. If the room is occupied, the lighting remains on for at least 30 minutes, then switches off if the brightness level is adequate. If the room becomes unoccupied earlier, the lighting will switch off after the predetermined switch-off delay time.

The lighting can be switched off manually at any time. The light remains switched off for as long as the room remains occupied. If the room is unoccupied for a longer period (approx. 15 min.), the manual OFF status is cancelled.



A

C

### Brightness switching level:

25 - 1600Lux

The desired **brightness switching level** can be set between 25 and 1600 lux or deactivated. The true daylight measurement only detects daylight; any artificial light from fluorescent lamps and compact energy saving lamps is suppressed.



A

C

### Switch-off delay time:

30sec. - 20min.

The minimum **switch-off delay time for light** can be set between 30 sec. and 20 minutes. It is restarted after every movement. With a setting between 2 - 15 minutes, the switch-off delay time changes in a self-adaptive manner. It varies between the pre-set minimum time and 15 minutes, depending on user behaviour

Manual switching is carried out by means of external push buttons (see Manual ON/OFF and Manual ON).



A

C

### Disabling the switched output for light

The switched output for light can be disabled with either an ON- or OFF telegram. At the start of the period of disablement, the output for light can send either a final ON- or OFF telegram. No further telegrams are sent during the period of disablement. When the period of disablement is cancelled, the switched output for light sends a telegram according to the current status.



**A C**

### Switched output for presence/HVAC

The switching behaviour is only affected by presence. In the case of presence, an ON- telegram is sent; in the case of absence, an OFF- telegram. The telegrams can be suppressed if required.



30sec. - 60min.

#### Switch-off delay time for HVAC:

The desired **switch-off delay time for HVAC** can be set between 30 sec. and 60 minutes. It is restarted after every movement.



**A**

30sec.-60min.

#### Cyclical sending, switched output for HVAC

The switched output for HVAC can repeat ON telegrams at regular intervals. The cycle time can be set between 30 sec. and 60 min. The OFF telegram can either be sent once or suppressed.



**C**

### Switched output for bright/dark (Photo-electric switch)

The switching behaviour is only affected by daylight. In the case of darkness, an ON telegram is sent; in the case of brightness, an OFF telegram. The brightness switching level serves as the threshold value. It can be set between 25 and 1600 lux (identical to the threshold value for the switched output for light)

## 1.3 Important notes

**A C**

### Parallel circuit operation

(only with master in parallel circuit operation, slave)

For larger rooms, multiple detectors can be connected in parallel. This is accomplished by interconnecting the trigger inputs and outputs. In this way their combined presence detection range is increased.



Master - Slave

One master can be connected in parallel with several slaves. This is accomplished by interconnecting the trigger inputs and outputs. The slaves only supply the presence information from their own detection area. The brightness measurement and the management of all parameter settings is done by the master.



Master - Master

Parallel connection of multiple masters is also possible. In this case the presence detection is done jointly whereas the light measurement, parameter settings and lighting control are processed individually by each master. This offers multiple switched outputs for light with individual brightness measurement but a common presence detection. For example, it enables daylight-dependent switching of three separate lighting rows with three brightness switching values.

Parallel circuit operation is compatible with all Theben HTS KNX/EIB presence detectors.

**A C**

### Normal or test mode operation

The test mode enables the presence detection function to be checked. It can be selected via the ETS or locally on the sensor head. Please refer to the notes concerning the test mode in the operating manual for the detector.



C

### Manual ON/OFF via push button input

The push button input can be used to switch the switched output for light on and off manually. For this purpose, an KNX/EIB push button is connected to the push button input of the detector. Any telegram on the push button input switches over the output for light (**Change-over function**).



The further switching behaviour is defined by the operation mode fully automatic/semi-automatic.



**Note:** The presence detectors ECO-IR 360EIB-AC, ECO-IR 180EIB-AC, ECO-IR DUAL-EIB differ from the compact office EIB in the structure of the push button-presence detector-switching actuator:

- **ECO-IR 360EIB-AC, ECO-IR 180EIB-AC, ECO-IR DUAL-EIB:** Push buttons are connected to the push-button input of the presence detector, the switched output for light of the presence detector is connected to the switching actuator. Push-button or central commands that are connected directly to the actuator, bypassing the presence detectors, can cause undesirable behaviour.
- **compact office EIB, compact passage KNX:** The outputs light on the detector are connected to the actuators. Push buttons are connected directly to the actuator. The presence detector detects telegrams sent from the push button to the actuators and adapts its behaviour. The detector itself has no push-button inputs.

A

### Manual ON via trigger input

(only with master in parallel circuit operation)

An ON telegram to the trigger input simulates movement. In case of darkness the output for light is switched on. Any movement or further trigger signals re-start the delay time (staircase lighting timer with brightness influence).

The switched output for HVAC is switched on automatically, and the outputs are switched off again on conclusion of the delay times.

A

### Manual forced ON via trigger input

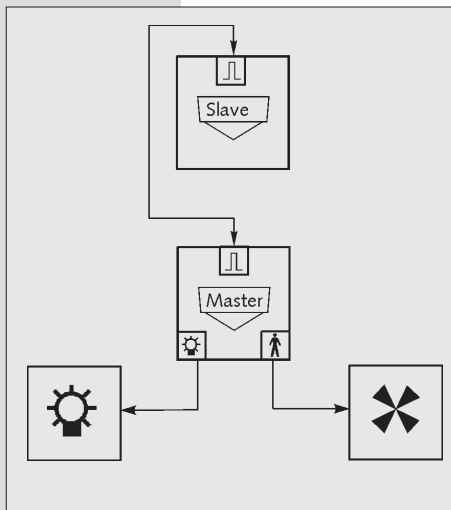
An OFF telegram to the trigger input always switches on the switched output for light, and the brightness measurement is suppressed. Any movement or further trigger signals re-start the delay time (staircase lighting timer without brightness influence).

The switched output for HVAC is switched on automatically, and the outputs are switched off again on conclusion of the delay times.

## 1.4 Application examples

### 1. Open plan office, parallel circuit operation, application "A V1.0"

A



#### Arrangement

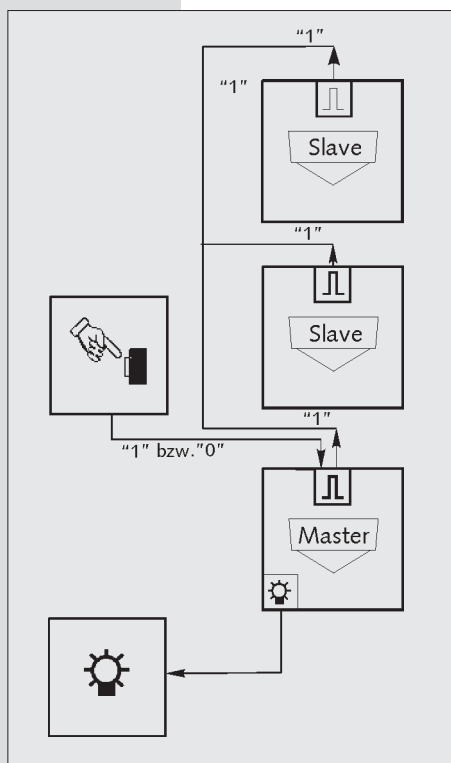
- Master in parallel circuit operation with slave (trigger inputs connected together)
- Master switches lighting and ventilation
- No push buttons

#### Function

- Master and slave detect presence
- Only the master measures brightness
- Lighting switches on in the case of presence and darkness
- Ventilation switches on in the case of presence
- No manual switching

### 2. Corridor, parallel circuit operation, application "A V1.0"

A



#### Arrangement

- Master in parallel circuit operation with two slaves
- Master controls the lighting
- EIB push button on trigger object of the master to switch on the lighting

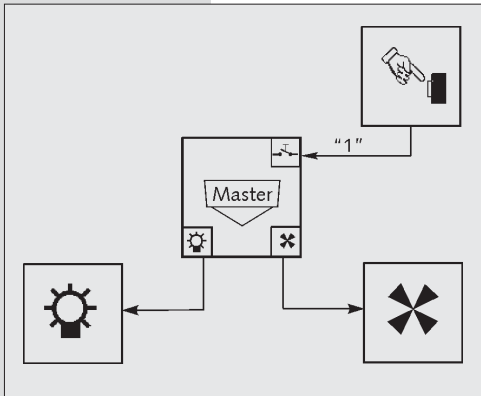
#### Function

- Common presence detection by master and slaves
- Only the master measures brightness
- Lighting switches on in the case of presence and darkness
- ON telegram with push button simulates movement, lighting switches on in the case of darkness (Manual ON), even without presence
- OFF telegram with push button simulates movement, lighting switches on even in the case of brightness in all circumstances (Manual forced ON), even without presence



3. Office, single unit operation, application "C V1.01 / 1.02"

C



**Arrangement**

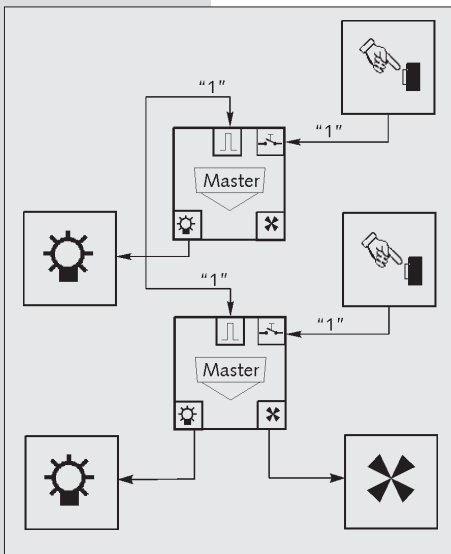
- Master in single unit operation
- Master controls 1 lighting group as well as ventilation
- 1 EIB push button for switching a lighting group on and off

**Function**

- Each master measures presence and brightness
- Lighting group switches on in the event of presence and darkness (fully automatic)
- Manual switching of the lighting is possible at all times
- Optional fully automatic operation (automatic ON/OFF) or semi-automatic (Manual ON/automatic OFF)
- The ventilation switches on in the case of presence.

4. Open-plan office, 2 lighting groups, parallel circuit operation, application "C V1.01/02"

C



**Arrangement**

- 2x master in parallel circuit operation
- Each master switches 1 lighting group
- One master also switches ventilation
- 1 EIB push button per master for switching a lighting group on and off

**Function**

- Masters detect presence jointly
- Each master measures brightness
- Each lighting group switches on in the case of presence and darkness (fully automatic)
- Manual switching of the lighting is possible at all times
- Optional fully automatic operation (automatic ON/OFF) or semi-automatic (Manual ON/automatic OFF)
- The ventilation switches on in the case of presence.

## 2. Application description for presence detector ECO-IR DUAL-EIB



### Product characteristics ECO-IR DUAL-EIB

- ◆ Passive infrared presence detector for KNX/EIB
- ◆ Presence and daylight dependent control for lighting systems with **2 lighting groups**
- ◆ 2x true daylight measurement
- ◆ Optional fully or semi-automatic
- ◆ Direct integration of push buttons for manual lighting control
- ◆ Parallel circuit operation master-slave, master-master for uninterrupted coverage of large areas
- ◆ Remotely parameterizable via ETS or setting with potentiometer on the unit
- ◆ Application DUAL V1.0 / 1.01

### 2.1 Presence detector functions

DUAL

#### Operation mode

*Master stand-alone: presence detector operates as an autonomous unit.*

*Master in parallel circuit operation: in order to expand the detection area, additional detectors are connected as slaves to a master in parallel circuit operation, or several masters in parallel circuit operation are connected together.*

*Slave: slaves are used to expand the detection area. Their sole role is to supply presence information to the master.*

DUAL

#### Normal or test operation

*Normal operation: the detector must be in normal mode for regular operation.*

*Test mode: For the purpose of checking the detection area and the linking of objects. The switch-off delay times are reduced to 10 sec. The detector switches immediately in response to changes in brightness. The detector restarts when switched to normal.*

## 2.2 Description of the parameters



DUAL

### Switched outputs for light

The switching behaviour is controlled by presence and daylight. In the case of darkness and presence an ON telegram is sent, in the case of brightness or absence, an OFF telegram. The telegrams can be suppressed if required.



#### Operation mode: fully or semi-automatic

(available only when push-button input active)

In operation mode "**Fully automatic**", the switched output for light automatically switches the lighting ON and OFF according to presence and ambient brightness.

In operation mode "**Semi-automatic**", the lighting must always be switched on manually using a push button. The lighting is switched off automatically.

The lighting can be switched on manually, in either operation mode even if there is adequate daylight. If the room is occupied, the lighting remains on for at least 30 minutes, then switches off if the brightness level is adequate. If the room becomes unoccupied earlier, the lighting will switch off automatically after the predetermined switch-off delay time.

The lighting can be switched off manually at any time. The light remains switched off for as long as the room remains occupied. If the room is unoccupied for a longer period (approx. 15 min.), the manual OFF status is cancelled.



25 - 1600lux

#### Brightness switching levels:

The desired **brightness switching level** for each lighting channel can be set between 25 and 1600 lux or deactivated. The true daylight measurement only detects daylight; any artificial light from fluorescent lamps and compact energy saving lamps is suppressed.



30sec.- 20min.

#### Switch-off delay time:

The minimum **switch-off delay time for light** can be set between 30 sec. and 20 minutes. It is restarted after every movement. With a setting between 2 - 15 minutes, the switch-off delay time changes in a self-adaptive manner. It varies between the preset minimum time and 15 minutes, depending on user behaviour.

Manual switching is carried out by means of external push buttons (see Manual ON/OFF and Manual ON).



#### Disabling the switched outputs for light

The switched outputs for light can be disabled with either an ON- or an OFF telegram. At the start of the period of disablement, the output can send either a final ON- or OFF telegram. No further telegrams are sent during the period of disablement. When the period of disablement is cancelled, the switched output for light sends a telegram according to the current status.

## 2.3 Important notes

**DUAL**

### Parallel circuit operation



Master - Slave



Master - Master

For larger rooms, multiple detectors can be connected in parallel. This is accomplished by interconnecting the trigger inputs and outputs. In this way their combined presence detection range is increased.

One master can be connected in parallel with several slaves. This is accomplished by interconnecting the trigger inputs and outputs. The slaves only supply the presence information from their own detection area. The brightness measurement and the management of all parameter settings is done by the master

Parallel connection of multiple masters is also possible. In this case the presence detection is done jointly whereas the light measurement, parameter settings and lighting control are processed individually by each master. This offers multiple switched outputs for light with individual brightness measurement but a common presence detection. For example, it enables daylight-dependent switching of three separate lighting rows with three brightness switching values.

Parallel circuit operation is compatible with all Theben HTS KNX/EIB presence detectors.

**DUAL**

### Normal or test operation

The test mode enables the presence detection function to be checked. It can be selected via the ETS or locally on the sensor head. Please refer to the notes concerning the test mode in the operating manual for the detector.



**DUAL**

### Manual ON/OFF via push button input



The push button input can be used to switch the switched output for light on and off manually. For this purpose, an KNX/EIB push button is connected to the push button input of the detector. Any telegram on the push button input switches over the output for light (**Change-over function**).

The further switching behaviour is defined by the operation mode fully automatic/semi-automatic.

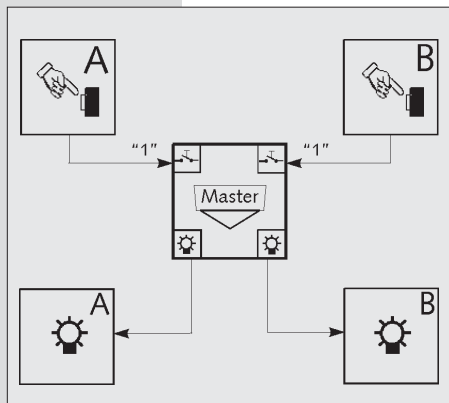


**Note:** The presence detectors ECO-IR DUAL-EIB, ECO-IR 360EIB-AC, ECO-IR 180EIB-AC differ from the compact office EIB in the structure push button-presence detector-switching actuator:

- **ECO-IR DUAL-EIB, ECO-IR 360EIB-AC, ECO-IR 180EIB-AC:** Push buttons are connected to the push-button input of the presence detector, the switched output for light of the presence detector is connected to the switching actuator. Push-button or central commands that are connected directly to the actuator, bypassing the presence detector, can cause undesirable behaviour.
- **compact office EIB, compact passage KNX:** The outputs for light on the detector are connected to the actuators. Push buttons are connected directly to the actuator. The presence detector detects telegrams sent from the push button to the actuator and adapts its behaviour. The detector itself has no push-button inputs.

## 2.4 Application examples

### 1. Office, single unit operation, application "DUAL V1.0 / 1.01"



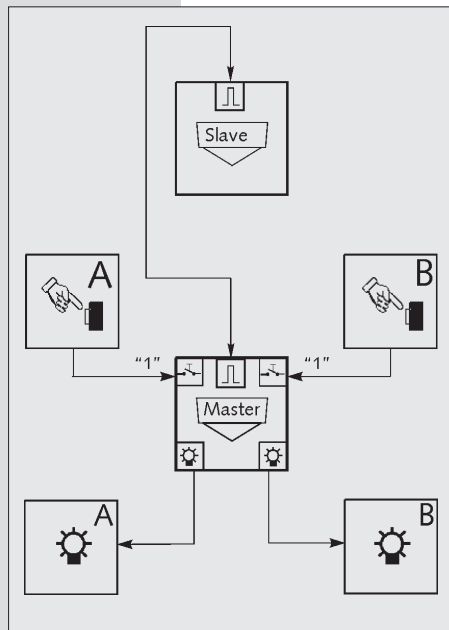
#### Arrangement

- Master in single unit operation
- Master switches 2 lighting groups
- 2 EIB push buttons on push-button inputs for switching two lighting groups on and off.

#### Function

- Master detects presence and 2x brightness
- Each lighting group switches on in the case of presence and darkness (fully automatic)
- Manual switching of the lighting groups is possible at all times
- Optional fully automatic operation (automatic ON/OFF) or semi-automatic (Manual ON/automatic OFF)

### 2. Classroom, parallel circuit operation, application "DUAL V1.0 / 1.01"



#### Arrangement

- Master in parallel circuit operation
- Master switches 2 lighting groups
- 2 EIB push buttons on push-button inputs for switching two lighting groups on and off

#### Function

- Master detects presence and 2x brightness
- Slave detects presence
- Each lighting group switches on in the case of presence and darkness (fully automatic)
- Manual switching of the lighting groups is possible at all times
- Optional fully automatic operation (automatic ON/OFF) or semi-automatic (Manual ON/automatic OFF)

### 3. Application description for presence detector compact office EIB



#### Product characteristics compact office EIB

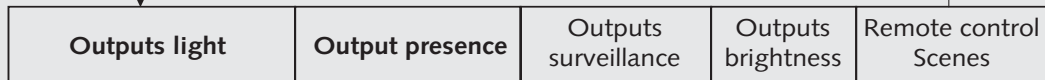
- ◆ Option of one or two outputs for light
- ◆ Switching or constant light control
- ◆ Output presence for control of HVAC
- ◆ Output surveillance with cyclical detector points
- ◆ Output brightness with cyclical output of brightness value in lux
- ◆ Parallel circuit operation master-slave, master-master for uninterrupted coverage of large areas
- ◆ Separate disabling function for light and presence
- ◆ Scene control with two scenes per lighting group
- ◆ User remote control clic (optional)
- ◆ Service remote control QuickSet plus (optional)
- ◆ Management remote control SendoPro 868-A (optional)

#### 3.1 Overview

Structure of the compact office EIB application at the functions (outputs), parameter and object levels

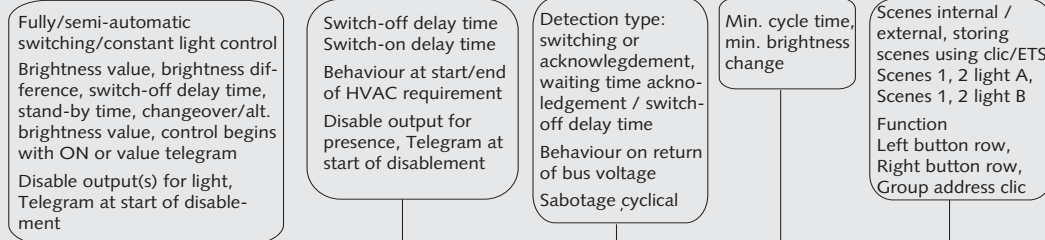
Functions

(Section 3.2)



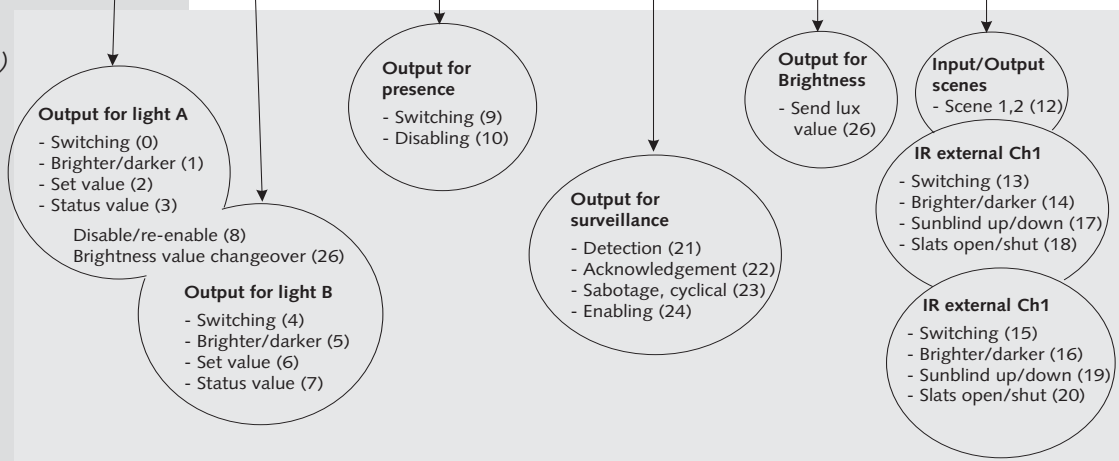
Parameters

(Section 3.3)



Objects

(Section 3.5)



## 3.2 Functions of the presence detector

### Operation mode

Master stand-alone
Master in parallel
Slave



*Master stand-alone: presence detector operates as an autonomous unit.*

*Master in parallel circuit operation: in order to expand the detection area, additional detectors are connected as slaves to a master in parallel circuit operation, or several masters in parallel circuit operation are connected together as required. (see Section 3.4 Important information)*

*Slave: slaves are used to expand the detection area. Their sole role is to supply presence information to the master.*

**Note:** Please also read the information on cycle time for parallel circuit operation in Section 3.4

### Outputs light (Section 3.3.1)

Output light A active
Outputs light A,B active
inactive

*Output for light A active: presence detector switches or controls one lighting group in accordance with the presence of persons and natural daylight.*

*Outputs for light A,B active: The presence detector switches or controls two lighting groups in accordance with the presence of persons and natural daylight. A desired brightness value is defined for this purpose, the second lighting group is switched in or controlled with a difference in brightness.*

*Outputs for light inactive: The presence detector is not used for controlling lighting.*

### Output presence (Section 3.3.2)

Output presence active
inactive

*Switched output for presence active: detector switches HVAC applications in accordance with the presence of persons or supplies presence information to superordinate systems. (irrespective of brightness).*

*Output for presence inactive: The presence detector is not used to control HVAC applications.*

### Output Surveillance (Section 3.3.3)

Output surveillance active
inactive

*Output for surveillance active: The presence detector supplies a presence signal with reduced sensitivity for room surveillance.*

*Output for surveillance inactive: The presence detector is not used for room surveillance.*

### Output brightness (Section 3.3.4)

Output brightness active
inactive

*Output for brightness active: presence detector sends the measured room brightness (ignoring the reflection factor).*

*Output for brightness inactive: The presence detector is not used as a brightness sensor.*

### Normal or test operation

Normal operation
Test mode

*Normal operation: the detector must be in normal mode for regular operation.*

*Test mode: The detector may be set to test mode for the purpose of checking the detection area and the linking of objects. The switch-off delay times are reduced to 10 sec. The detector switches irrespective of daylight. The detector restarts when switched to normal.*

\*) The fields with a dark background are default settings

### 3.3 Description of the parameters



#### 3.3.1 Outputs light A, B

Switching (on/off)

Constant light control

##### Switching or constant light control : Switching (on/off)

On detection of movement and inadequate brightness the output light sends an ON telegram. At the end of the switch-off delay time or in the case of adequate brightness, an OFF telegram is sent.

##### Switching or constant light control : constant light control

On detection of movement and inadequate brightness the output light controls the lighting to the predetermined desired brightness level and keeps it constant during fluctuations in daylight. At the end of the switch-off delay time (or in case of adequate brightness, when the lighting has already been dimmed to the minimum level) the lighting is switched off. A second output for light can also be controlled with a different brightness.

**Note:** If two outputs for light A, B are active, both outputs will be in control or switching mode. A combination of control and switching mode is not possible.



##### Fully or semi-automatic: fully automatic

In "Fully automatic" operation mode, the output light switches or controls the lighting automatically according to presence and ambient brightness. Switch off occurs automatically.

fully automatic

semi-automatic

##### Fully or semi-automatic: semi-automatic

In "Semi-automatic" operation mode, the lighting must always be switched on manually by push button or remote control. Switch off occurs automatically.

**Note:** Lighting can be switched on manually, at any time, in both operating modes even with adequate daylight. The lights stay on for at least 30 minutes if people are present in the room. After that, the sensor checks the light requirement based on the brightness level and turns off the light if there is sufficient brightness. The light goes off after a preset run-on time if the room is vacated. (See section 3.4, Push buttons for switch on response).



- Switching (on/off): The sensor switches the lighting on.
- Constant light control: The sensor controls according to the set brightness level.



1.0 to 8.0

##### Brightness value

The brightness value can be set between 1.0 and 8.0. The factory default value is 4.0, which corresponds to a brightness of approx. 400 lux, depending on the reflective properties of the room. (Guide values, dependent on the room: 2~100 lux, 3~200 lux, 4~400 lux, 5~800 lux, 6~1600 lux). In switching mode, the brightness value can be deactivated by means of the setting "none, solely dependent on presence". The service remote control QuickSet aids in setting the brightness value, taking into account the reflection factor (see detector operating manual).

##### Brightness difference

(This setting is only possible if two lighting groups are active)

The brightness difference adjusts the different light requirement of lighting group B in comparison to lighting group A:

- A positive value indicates a lower daylight level in the area of lighting group B (more artificial light needed).
- Synchronous indicates that both lighting groups are being switched or controlled uniformly.
- A negative value indicates a higher daylight level in the area of lighting group B (less artificial light needed).

**Example:** Two lighting groups are installed in an office with good natural light. Lighting group A is close to the windows, lighting group B is in the interior of the room. Sensible settings are +20% or +40%.

-60% to +120%





30s to 20min



0s to 60min



Disable inactive
Disable active

inactive
active



### Switch-off delay time

The switch-off delay time can be set between 30 sec. and 20 min. It adapts itself to user behaviour. It can increase itself automatically to a max. of 15 min. or reduce itself to the pre-set minimum time. If set to less than 2 min. or more than 15 min. the switch-off delay time does not change in a self-adaptive manner. The switch-off delay time applies equally to both outputs for light.

### Stand-by time

(This setting is only possible if constant light control is active)

In control mode, an activated stand-by time results in both lighting groups being dimmed to a minimum value at the end of the switch-off delay time. The stand-by time can be set between 0 sec. and 60 min.

With Stand-by **ON**, the lighting remains continuously on stand-by. If the room brightness rises above the desired value, the lighting switches off. If the room brightness falls below the desired value, the lighting switches automatically to stand-by, even if no one is present. In this way a minimum level of lighting is guaranteed even during the hours of darkness.

### Disabling outputs for light

The two outputs for light are both disabled with either an ON or an OFF telegram. At the start of the period of disablement the outputs for light can send one of the following final telegrams as desired: ON, OFF, or no telegram. All telegrams are suppressed for the duration of the disablement. The outputs for light are re-enabled by means of an ON or OFF telegram, complementary to the telegram at the time of disablement. When the period of disablement is cancelled the detector sends the current status or continues the constant light control.

The output for presence is unaffected by the disablement of the outputs for light. It has its own disabling function. The outputs for surveillance and brightness are unaffected by the disablement of the outputs for light.

### Brightness value changeover

When brightness value changeover is activated, it is possible to switch between two desired brightness values by means of a telegram in the current mode. An ON telegram to the object concerned switches to the alternative desired brightness value, an OFF telegram switches back to the original value. This applies both to switching and to constant light control. In this way it is possible to realise day and night modes with two different levels of brightness, for example.

### Behaviour at the start of control

(Only with activated constant light control )

Depending on the configuration of the switching/dimming actuator, the constant light control can be started with a value telegram or an ON telegram. Normally it is started with a value telegram, the lighting dims to the desired brightness value in the time set in the actuator.

If the control is started with an ON telegram, the actuator jumps (dims) to its pre-defined switch-on value and begins controlling from this value.

**Note:** Please read Section 3.6 Configuration of the switching/dimming actuators.



### 3.3.2 Output presence

The switching behaviour is only affected by presence. The output for presence functions irrespective of daylight.

In the case of presence, either an ON or OFF telegram or no telegram is sent. At the end of the switch-off delay time, either an ON or OFF telegram or no telegram is sent.



30s to 120min

#### Switch-off delay time

The switch-off delay time for presence can be set between 30 sec. and 120 min. It is restarted after every movement.

0s to 30min

#### Switch on delay time

The switch on delay time for presence can be set between 0 sec. and 30 min.



Disable inactive

Disable active

#### Disabling the output for presence

The output for presence can be disabled with either an ON or OFF telegram. At the start of the period of disablement the output for presence can send one of the following final telegrams as desired: ON, OFF, or no telegram. All telegrams are suppressed for the duration of the disablement. The output for presence is re-enabled by means of an ON or OFF telegram, complementary to the telegram at the time of disablement. When the period of disablement is cancelled the detector sends the current status.

The outputs for light, surveillance and brightness are unaffected by the disablement of the output for presence.



### 3.3.3 Output surveillance

The switching behaviour is only affected by presence and reliably detects the presence of persons. The output for surveillance functions irrespective of daylight.

30s to 30min

#### Report type: cyclic with confirmation

On detecting movement, the output for surveillance sends an ON telegram. If it receives no confirmation, it repeats the ON telegram at regular intervals. (Waiting time for acknowledgement).

30s to 30min

#### Report type: switching (on/off)

On detecting movement, the output for surveillance sends an ON telegram; at the end of the switch-off delay time for surveillance, an OFF telegram. The OFF telegram can optionally be suppressed.

#### Behaviour on return of bus voltage

The behaviour on return of bus voltage defines whether the output for surveillance is to be enabled or disabled during a restart following a loss of bus voltage.

30s to 30min

#### Sabotage, cyclical

The cyclical detection point sends OFF telegrams at regular intervals in order to indicate unauthorised removal of the detector or a bus interruption.

**Note:** Trigger telegrams from the master-slave parallel circuit operation do not trigger the output for surveillance.





### 3.3.4 Output brightness

30s to 30min

0% to 50%



The brightness value object gives the room brightness (measured value without taking a reflection factor into account) as a 2-byte value in lux in accordance with EIS5.

The maximum time interval between two telegrams can be set between 30 sec. and 30 min. The minimum time interval is 15 sec.

The minimum brightness change before a telegram is sent can be set between 10% and 90%.

**Note:** The lux value provided by the output for brightness is not suitable for an external control. The constant light control from the outputs for light should be used for this purpose.

### 3.3.5 Scenes

Internal scenes

External scenes

#### Internal scenes

The value to which each lighting group will dim on choice of scene 1 or scene 2 can be determined separately.

In addition, the scenes can be called up by means of the user remote control clic (optional). The scenes can be saved via the ETS or with the clic.

#### External scenes

It is possible to control an external scene component in place of the internal scene component. The remote control clic (optional) is required for this purpose. Pressing on scene button 1 on the clic sends an OFF telegram, pressing on scene button 2 sends an ON telegram.



### 3.3.6 User remote control clic (optional)

Switching/dimming int.

Switching/dimming ext.

Sun blind external

No function

**Switching/dimming internal:** Pressing longer on the left-hand row of ▲/▼ buttons on the clic switches the output for light A on or off. Briefly button pressure dims the lighting while the button is depressed. If both outputs for light A,B are active, the right-hand row of ▲/▼ buttons controls output for light B in like manner.

**Switching/dimming external:** Pressing briefly on the relevant row of ▲/▼ buttons on the clic switches an external consumer on or off (channel 1 or 2). Longer button pressure dims the external consumer while the button is depressed.

**External sunblind:** Pressing briefly on the relevant row of ▲/▼ buttons of the clic raises or lowers a sunblind. Longer button pressure opens or closes the slats.

#### Group address remote control clic

The choice of group address (position of the channel selector switch on the remote control clic) allows adjacent detectors that are controlled with the user remote control clic to be separated from one another. For further information, please also see the operating manual for the user remote control clic.

### 3.4 Important information

#### Parallel circuit operation



Master - Slave



Master - Master

For larger rooms, multiple detectors can be connected in parallel. In this way their combined presence detection area is increased.

One "master" can be connected in parallel with several "slaves". This is accomplished by interconnecting the trigger inputs and outputs. The slaves only supply the presence information from their own detection area. Brightness measurement and management of all parameter settings is done by the master.

Parallel connection of multiple masters is also possible. In this case the presence detection is done jointly whereas the light measurement, parameter settings and lighting control are individually processed by each master. This offers multiple outputs for light with individual brightness measurement but a common presence detection.

In parallel circuit operation, each master in parallel circuit operation and each slave sends two telegrams per minute for as long as someone is present in the detection area. The interval between two telegrams can be extended up to 4 min. Parallel circuit operation is compatible with all Theben HTS KNX/EIB presence detectors.



#### Normal or test operation

The test mode enables the presence detection function to be checked. It can be selected via the ETS or also using the service remote control QuickSet plus. When selected with the QuickSet plus, the test mode ends automatically after 10 min. Please refer to the notes concerning the test mode in the operating manual for the detector.



#### Push buttons

The detector responds to telegrams sent directly to the actuators by push buttons or superordinate functions:

**Switching (On/Off):** If the detector receives an ON telegram intended for the switching actuator, the lighting remains switched on for 30 minutes in the case of presence. At the end of the 30 minutes, the light measurement is reactivated. If the brightness is adequate, an OFF telegram is sent.

**Constant light control:** If the detector receives an ON telegram intended for the actuator, the constant light control is active. If the detector receives a value or dimming telegram intended for the actuator, control is suspended for the duration of the presence. Once the room becomes unoccupied and the switch-off delay time has expired, the detector returns to control mode.

**In both cases:** If the detector receives an OFF telegram intended for the actuator, it remains switched off for the duration of presence. Once the room becomes unoccupied and the switch-off delay time has expired, the detector returns to switching or control mode.

The function of the outputs for presence, surveillance and brightness remain unaffected.

**Note:** A discrete KNX push button with discrete group address for every lighting channel has to be used for manual override of two lighting groups A, B.

**Note:** The compact office EIB differs from the Theben HTS ECO-IR presence detectors in the structure push button-presence detector-switching actuator:

- **compact office EIB, compact passage KNX:** The outputs for light on the detector are connected to the actuators. Push buttons are connected directly to the actuators. The presence detector detects telegrams sent from the push button to the actuators and adapts its behaviour. The detector itself has no push-button inputs.
- **ECO-IR 360EIB-AC, ECO-IR 180EIB-AC, ECO-IR DUAL-EIB:** Push buttons are connected to the push-button input of the presence detector, the switched output for light of the presence detectors is connected to the switching actuator. Push buttons or central commands that are connected directly to the actuators, bypassing the presence detector, can cause undesirable behaviour.



### 3.5 Description of the communications objects



- 0: Output light A: Switching
- 1: Output light A: Brighter/darker
- 2: Output light A: Set value
- 3: Output light A: Status value



- 4: Output light B: Switching
- 5: Output light B: Brighter/darker
- 6: Output light B: Set value
- 7: Output light B: Status value



- 8: Enable outputs light A,B:  
Disable / enable



- 9: Output presence: Switching



- 10: Output presence:  
Disable / enable



- 11: Parallel circuit operation:  
Trigger input/output



**Switching (ON/OFF):** On detection of movement and inadequate brightness each output light sends an ON telegram. At the end of the switch-off delay time or in the case of adequate brightness, an OFF telegram is sent.

**Constant light control:** On detection of movement and inadequate brightness each output light begins to send value telegrams (→ control begins with a value telegram) or an ON telegram (→ control begins with an ON telegram). At the end of the switch-off delay time or in the case of adequate brightness (controller already at the minimum) an OFF telegram is sent.

The two outputs for light are both disabled with an ON or OFF telegram. At the start of the period of disablement, the outputs for light can send one of the following final telegrams: ON, OFF, or no telegram. The outputs for light are re-enabled by means of an ON or OFF telegram, complementary to the telegram at the time of disablement. When the period of disablement is cancelled the detector always sends the current status or continues the constant light control.

In the case of presence, the output for presence sends an ON or OFF telegram or no telegram (independent of daylight, subject to possible delay caused by predefined switch-on delay). At the end of the switch-off delay time, an ON or OFF telegram or no telegram is sent.

The output for presence is disabled by means of an ON or OFF telegram. At the start of the period of disablement, the output for presence can optionally send one of the following final telegrams: ON, OFF, or no telegram. The output for presence is re-enabled by means of an ON or OFF telegram, complementary to the telegram at the time of disablement. On re-enabling, the detector sends its current status.

(master in parallel circuit operation or slave only)

The trigger input/output is required for parallel circuit operation of multiple presence detectors (see Section 3.4)

Each detector send a maximum of two ON telegrams a minute as trigger signals which are evaluated by the masters. The interval between two telegrams can be set to a maximum of 4 min.

**Note:** The interval between two trigger telegrams must always be set to a smaller value than the switch-off delay times.

**Internal scenes:** an OFF telegram to the scene output object calls up scene 1, an ON telegram calls up scene 2.

12: Input/output scene: scene 1/2



13: IR ext. channel 1: switching  
14: IR ext. ch. 1: brighter/darker  
15: IR ext. channel 2: switching  
16: IR ext. ch. 2: brighter/darker



17: IR ext. ch. 1: sunblind up/down  
18: IR ext. channel 1: slats open/shut  
19: IR ext. ch. 2: sunblind up/down  
20: IR ext. channel 2: slats open/shut



21: O/P. surveillance: report  
22: O/P. surveillance: confirmation

23: O/P. surveillance: Sabotage cycl.

24: O/P. surveillance: enable



25: Output brightness: sending lux value

26: Outputs light A,B: Brightness value changeover

**Control of the scene component:** pressing scene button 1 on the user remote control clic sends an OFF telegram to the scene output object, pressing scene button 2 sends an ON telegram.

**Switching/dimming external:** pressing the ▲/▼ buttons briefly causes an ON or OFF telegram to be sent via the object 'switching'. Sustained pressure on the ▲ button calls for the light intensity to be increased, releasing the button stops this process. Sustained pressure on the ▼ button calls for the light intensity to be decreased, releasing the button stops this process. Channels 1 and 2 of the remote control must each be set separately.

**Sunblind, external:** pressing the ▲/▼ buttons briefly causes an ON or OFF telegram to be sent via the object 'slats open/shut'. Sustained pressure on the ▲/▼ buttons causes an ON or OFF telegram to be sent via the object 'sunblind up/down'. Channels 1 and 2 of the remote control must each be set separately.

The optional user remote control clic is required for this procedure.

**Report type: cyclical with confirmation:** On detecting movement, the output for surveillance sends an ON telegram. If the detector receives no acknowledgement to the telegram within the predefined waiting time, it repeats the ON telegram. This process is repeated until an ON or OFF telegram is received at the object confirmation.

**Report type: Switching (on/off):** On detecting movement, the output for surveillance sends an ON telegram; at the end of the switch-off delay time for surveillance, an OFF telegram.

In order to identify removal of the detector, the object 'sabotage cyclical' sends OFF telegrams at regular intervals whenever the detector is in operation.

In both detection types the output for surveillance can be enabled or disabled during operation with an ON telegram or an OFF telegram respectively.

**Send lux value:** The output for brightness sends the current brightness value in the form of an EIS5 telegram without allowance for a reflection factor. The telegram frequency depends on the maximum cycle time and the minimum brightness change.

**Brightness value changeover:** An ON telegram switches to the alternative brightness value, an OFF telegram uses the original brightness value as desired value.

### 3.6 Configuration of the switching- /dimming actuators

#### Recommended configuration

Duration for the dimming process 0%-100%)	10 secondss
Immediate or progressive dimming	Progressive
Adopt dimming values immediately	Immediately
Switching off by dimming possible	No
Switching on by dimming possible	Yes
Lower dimming limit	Minimum
Upper dimming limit	Maximum
Switch-off behaviour: switch off or dim to off	Switch off
Brightness level at switch on (optional)	According to preference, approx. 50%
Send status value of dimming value	Only by means of reading request



**Note:** the parameter designations may differ according to the dimming actuator or switching/dimming actuator model.

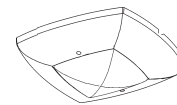
It is unnecessary for automatic status messages to be generated by the actuator. The detector collects this information itself.

#### Actuators without a separate object for status acknowledgement (value)



Group adress actuator

			K	L	S	U	Akt	
x	ON/OFF	↔	10/0/1					Retain default
x	Dimming	↔	10/0/2					
x	Set value	↔	*10/0/7	10/0/3			**	



Group adress compact office EIB

0	ON/OFF	↔	10/0/1
1	Brighter/Darker	↔	10/0/2
2	Set value	↔	10/0/3
3	Status value	↔	10/0/7

\*) set sending

\*\*) with certain actuators, the read flag must be set manually

x) object according the applied product



**Note:** If several actuators are connected to a single detector light output, care should be taken to ensure identical parameterisation of the actuators.

**Exception:** The read flag may only be set for one of the actuators for each lighting group

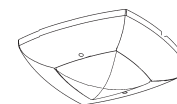
#### Actuators with a separate object for status acknowledgement (value)

e.g. Theben DMG 2 / DME 2 Universal Dimming Actuator  
e.g. Theben SMG 2 / SME 2 Switching-/ Dimming Actuator



Group adress actuator

			K	L	S	U	Akt
0	ON/OFF	↔	10/0/1				
1	Dimming	↔	10/0/2				Retain default
2	Set value	↔	10/0/3				
5	Status (value)	↔	10/0/7				



Group adress compact office EIB

0	ON/OFF	↔	10/0/1
1	Brighter/Darker	↔	10/0/2
2	Set value	↔	10/0/3
3	Status value	↔	10/0/7

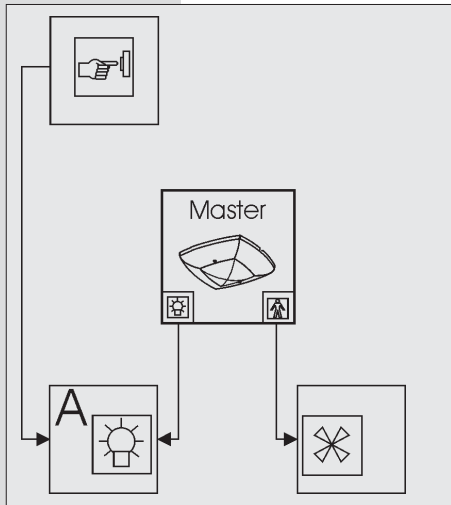


**Note:** If several actuators are connected to a single detector light output, care should be taken to ensure identical parameterisation of the actuators.

**Exception:** The status value object may only be linked with one of the actuators for each lighting group

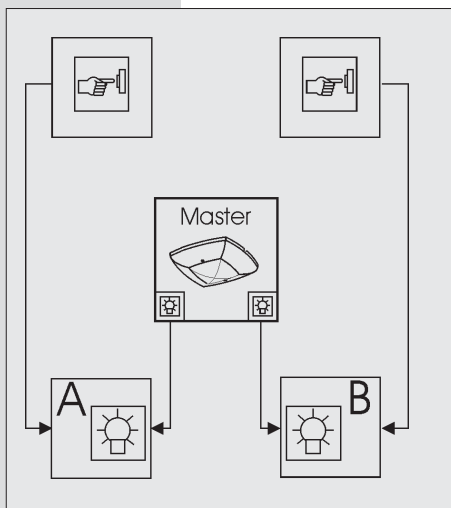
### 3.7 Examples

#### Example 1: Individual office with one lighting group



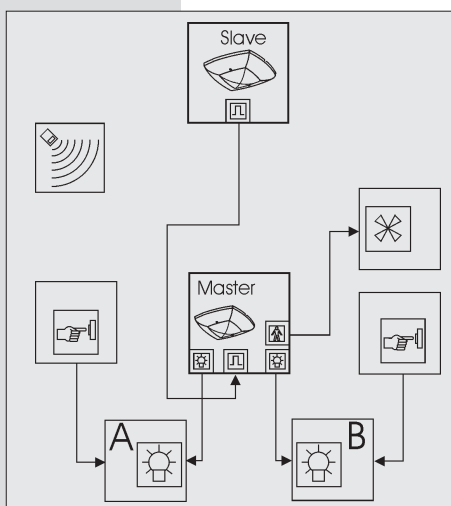
- Master in single unit operation
- Master switches or controls one lighting group
- Mode: either switching or constant light control
- Lighting group A active
- The output for presence is used to control an HVAC consumer
- Push buttons are connected directly to the switching actuator or switching / dimming actuator.
- Output for light A of the detector, push button and the actuator's switched input have the same group address
- Switch-off delay time: approx. 12 minutes
- Brightness value: approx. 4 to 5

#### Example 2: Individual office with two lighting groups



- Master in single unit operation
- Master switches or controls two lighting groups
- Mode: either switching or constant light control
- Lighting groups A, B active
- Push buttons are connected directly to the switching actuator or switching / dimming actuator
- Switch-off delay time: approx.. 12 minutes
- Brightness value: approx. 4 to 5
- Brightness difference: approx. +20% (Requirement: lighting group A: next to windows)

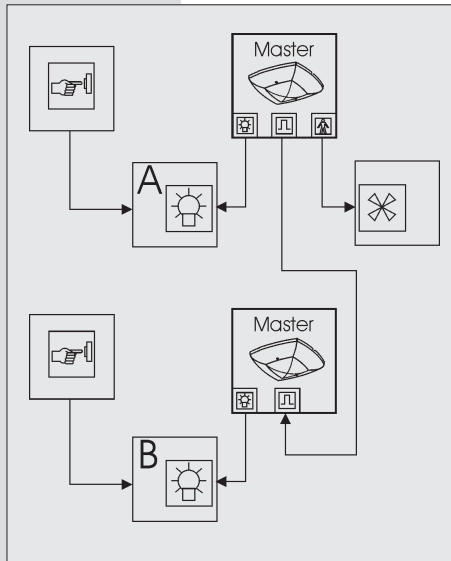
#### Example 3: Office with two lighting groups, HVAC control and additional functions



- Master in parallel circuit operation
- Master switches or controls one lighting group
- Slave serves to expand the detection area  
Mode: either switching or constant light control
- Lighting groups A, B active
- The output for presence is used to control an HVAC consumer
- The user remote control clic can be used to switch/ dim the lighting and to call up scenes. Group address clic: A+B; channel 1: switching / dimming internal; channel 2: switching/dimming internal
- Push buttons are connected directly to the switching actuator or switching / dimming actuator
- Switch-off delay time: approx. 12 minutes
- Brightness value: approx. 4 to 5

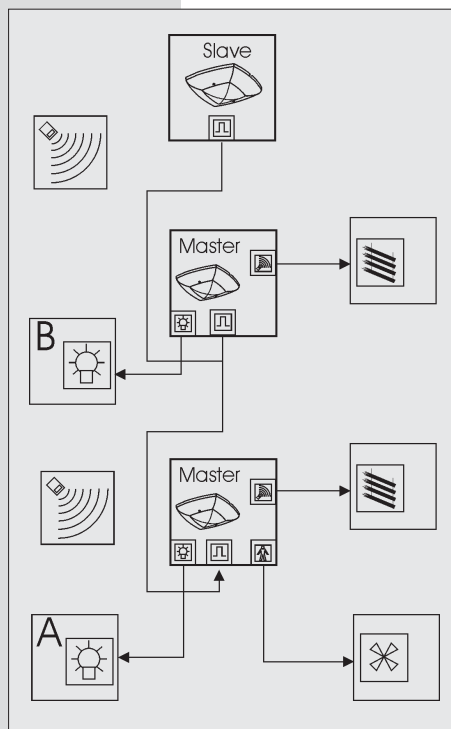


**Example 4: Open plan office with two lighting groups, HVAC**



- Master in parallel circuit operation
- Both masters switch or control one lighting group each  
Mode: either switching or constant light control
- Lighting group A active
- If necessary, several slaves can be connected to expand the detection area via the parallel circuit operation object.
- The output for presence is used to control an HVAC consumer
- Push buttons are connected directly to the switching actuator or switching / dimming actuator
- Switch-off delay time: approx. 12 minutes
- Brightness value: approx. 4 to 5

**Example 5: Open plan office with two lighting groups, HVAC control and additional functions**



- Master in parallel circuit operation
- Both masters switch or control one lighting group each  
Mode: either switching or constant light control
- Slave serves to expand the detection area  
Master: lighting group A active
- The output for presence is used to control an HVAC consumer
- The user remote control clic can be used to switch/dim the lighting and to call up scenes as well as to operate a sun blind.
- Each master has its own remote control clic.
- Master 1: Group address clic: A+B; channel 1: switching / dimming internal; channel 2: sun blind external
- Master 2: Group address clic: C+D; channel 1: switching / dimming internal; channel 2: sun blind external
- Switch-off delay time: approx. 12 minutes
- Brightness value: approx. 4 to 5

## 4. Application description for presence detector compact passage KNX, compact passimo KNX



### Product characteristics

#### compact passage KNX, compact passimo KNX

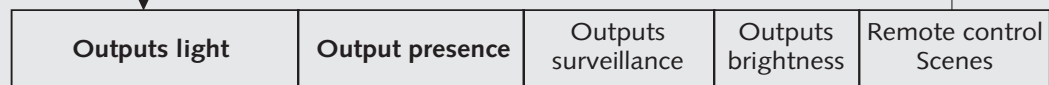
- ◆ Option of one or two outputs for light
- ◆ Switching or constant light control
- ◆ Output presence for control of HVAC
- ◆ Output surveillance with cyclical detector points
- ◆ Output brightness with cyclical output of brightness value in lux
- ◆ Parallel circuit operation master-slave, master-master for uninterrupted coverage of large areas
- ◆ Separate disabling function for light and presence
- ◆ Scene control with two scenes per lighting group
- ◆ User remote control clic (optional)
- ◆ Service remote control QuickSet plus (optional)
- ◆ Management remote control SendoPro 868-A (optional)

### 4.1 Overview

Structure of the compact passage KNX and compact passimo KNX application at the functions (outputs), parameter and object levels

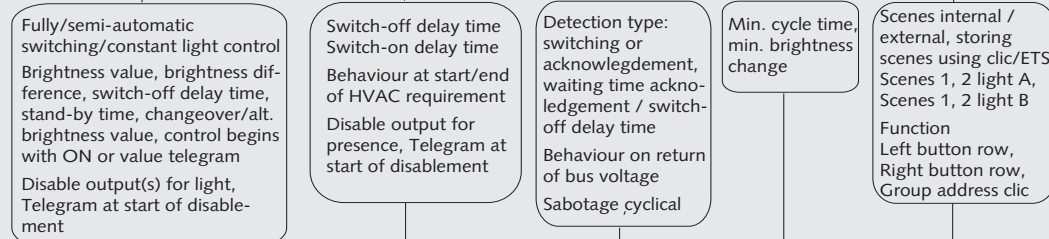
#### Functions

(Section 4.2)



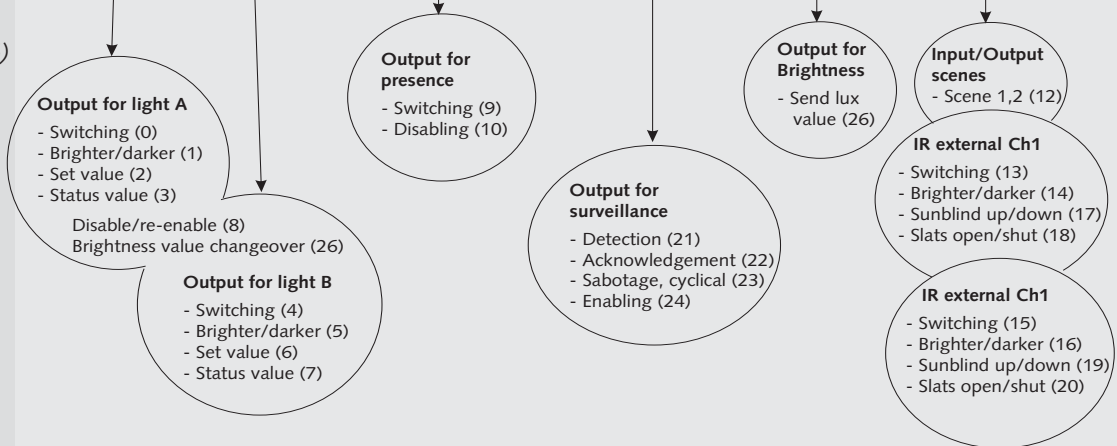
#### Parameters

(Section 4.3)



#### Objects

(Section 4.5)



## 4.2 Functions of the presence detector

### Operation mode

Master stand-alone
Master in parallel
Slave



*Master stand-alone: presence detector operates as an autonomous unit.*

*Master in parallel circuit operation: in order to expand the detection area, additional detectors are connected as slaves to a master in parallel circuit operation, or several masters in parallel circuit operation are connected together as required. (see Section 4.4 Important information)*

*Slave: slaves are used to expand the detection area. Their sole role is to supply presence information to the master.*

**Note:** Please also read the information on cycle time for parallel circuit operation in Section 4.4

### Outputs light (Section 4.3.1)

Output light A active
Outputs light A,B active
inactive

*Output for light A active: presence detector switches or controls one lighting group in accordance with the presence of persons and natural daylight.*

*Outputs for light A,B active: The presence detector switches or controls two lighting groups in accordance with the presence of persons and natural daylight. A desired brightness value is defined for this purpose, the second lighting group is switched in or controlled with a difference in brightness.*

*Outputs for light inactive: The presence detector is not used for controlling lighting.*

### Output presence (Section 4.3.2)

Output presence active
inactive

*Switched output for presence active: detector switches HVAC applications in accordance with the presence of persons or supplies presence information to superordinate systems. (irrespective of brightness).*

*Output for presence inactive: The presence detector is not used to control HVAC applications.*

### Output Surveillance (Section 4.3.3)

Output surveillance active
inactive

*Output for surveillance active: The presence detector supplies a presence signal with reduced sensitivity for room surveillance.*

*Output for surveillance inactive: The presence detector is not used for room surveillance.*

### Output brightness (Section 4.3.4)

Output brightness active
inactive

*Output for brightness active: presence detector sends the measured room brightness (ignoring the reflection factor).*

*Output for brightness inactive: The presence detector is not used as a brightness sensor.*

### Normal or test operation

Normal operation
Test mode

*Normal operation: the detector must be in normal mode for regular operation.*

*Test mode: The detector may be set to test mode for the purpose of checking the detection area and the linking of objects. The switch-off delay times are reduced to 10 sec. The detector switches irrespective of daylight. The detector restarts when switched to normal.*

\*) The fields with a dark background are default settings

## 4.3 Description of the parameters



### 4.3.1 Outputs light A, B

Switching (on/off)

Constant light control

#### Switching or constant light control : Switching (on/off)

On detection of movement and inadequate brightness the output light sends an ON telegram. At the end of the switch-off delay time or in the case of adequate brightness, an OFF telegram is sent.

#### Switching or constant light control : constant light control

On detection of movement and inadequate brightness the output light controls the lighting to the predetermined desired brightness level and keeps it constant during fluctuations in daylight. At the end of the switch-off delay time (or in case of adequate brightness, when the lighting has already been dimmed to the minimum level) the lighting is switched off. A second output for light can also be controlled with a different brightness.

**Note:** If two outputs for light A, B are active, both outputs will be in control or switching mode. A combination of control and switching mode is not possible.



#### Fully or semi-automatic: fully automatic

In "Fully automatic" operation mode, the output light switches or controls the lighting automatically according to presence and ambient brightness. Switch off occurs automatically.

fully automatic

semi-automatic

#### Fully or semi-automatic: semi-automatic

In "Semi-automatic" operation mode, the lighting must always be switched on manually by push button or remote control. Switch off occurs automatically.

**Note:** Lighting can be switched on manually, at any time, in both operating modes even with adequate daylight. The lights stay on for at least 30 minutes if people are present in the room. After that, the sensor checks the light requirement based on the brightness level and turns off the light if there is sufficient brightness. The light goes off after a preset run-on time if the room is vacated. (See section 4.4, Push buttons for switch on response).



- Switching (on/off): The sensor switches the lighting on.
- Constant light control: The sensor controls according to the set brightness level.



1.0 to 8.0

#### Brightness value

The brightness value can be set between 1.0 and 8.0. The factory default value is 4.0, which corresponds to a brightness of approx. 400 lux, depending on the reflective properties of the room. (Guide values, dependent on the room: 2~100 lux, 3~200 lux, 4~400 lux, 5~800 lux, 6~1600 lux). In switching mode, the brightness value can be deactivated by means of the setting "none, solely dependent on presence". The service remote control QuickSet aids in setting the brightness value, taking into account the reflection factor (see detector operating manual).

-60% to +120%

#### Brightness difference

(This setting is only possible if two lighting groups are active)

The brightness difference adjusts the different light requirement of lighting group B in comparison to lighting group A:

- A positive value indicates a lower daylight level in the area of lighting group B (more artificial light needed).
- Synchronous indicates that both lighting groups are being switched or controlled uniformly.
- A negative value indicates a higher daylight level in the area of lighting group B (less artificial light needed).

**Example:** Two lighting groups are installed in an office with good natural light. Lighting group A is close to the windows, lighting group B is in the interior of the room. Sensible settings are +20% or +40%.



30s to 20min



0s to 60min



Disable inactive  
Disable active

inactive  
active



### Switch-off delay time

The switch-off delay time can be set between 30 sec. and 20 min. It adapts itself to user behaviour. It can increase itself automatically to a max. of 15 min. or reduce itself to the pre-set minimum time. If set to less than 2 min. or more than 15 min. the switch-off delay time does not change in a self-adaptive manner. The switch-off delay time applies equally to both outputs for light.

### Stand-by time

(This setting is only possible if constant light control is active)

In control mode, an activated stand-by time results in both lighting groups being dimmed to a minimum value at the end of the switch-off delay time. The stand-by time can be set between 0 sec. and 60 min.

With Stand-by **ON**, the lighting remains continuously on stand-by. If the room brightness rises above the desired value, the lighting switches off. If the room brightness falls below the desired value, the lighting switches automatically to stand-by, even if no one is present. In this way a minimum level of lighting is guaranteed even during the hours of darkness.

### Disabling outputs for light

The two outputs for light are both disabled with either an ON or an OFF telegram. At the start of the period of disablement the outputs for light can send one of the following final telegrams as desired: ON, OFF, or no telegram. All telegrams are suppressed for the duration of the disablement. The outputs for light are re-enabled by means of an ON or OFF telegram, complementary to the telegram at the time of disablement. When the period of disablement is cancelled the detector sends the current status or continues the constant light control.

The output for presence is unaffected by the disablement of the outputs for light. It has its own disabling function. The outputs for surveillance and brightness are unaffected by the disablement of the outputs for light.

### Brightness value changeover

When brightness value changeover is activated, it is possible to switch between two desired brightness values by means of a telegram in the current mode. An ON telegram to the object concerned switches to the alternative desired brightness value, an OFF telegram switches back to the original value. This applies both to switching and to constant light control. In this way it is possible to realise day and night modes with two different levels of brightness, for example.

### Behaviour at the start of control

(Only with activated constant light control )

Depending on the configuration of the switching/dimming actuator, the constant light control can be started with a value telegram or an ON telegram. Normally it is started with a value telegram, the lighting dims to the desired brightness value in the time set in the actuator.

If the control is started with an ON telegram, the actuator jumps (dims) to its pre-defined switch-on value and begins controlling from this value.

**Note:** Please read Section 4.6 Configuration of the switching/dimming actuators.



### 4.3.2 Output presence

The switching behaviour is only affected by presence. The output for presence functions irrespective of daylight.

In the case of presence, either an ON or OFF telegram or no telegram is sent. At the end of the switch-off delay time, either an ON or OFF telegram or no telegram is sent.



30s to 120min

#### Switch-off delay time

The switch-off delay time for presence can be set between 30 sec. and 120 min. It is restarted after every movement.

0s to 30min

#### Switch on delay time

The switch on delay time for presence can be set between 0 sec. and 30 min.



Disable inactive

Disable active

#### Disabling the output for presence

The output for presence can be disabled with either an ON or OFF telegram. At the start of the period of disablement the output for presence can send one of the following final telegrams as desired: ON, OFF, or no telegram. All telegrams are suppressed for the duration of the disablement. The output for presence is re-enabled by means of an ON or OFF telegram, complementary to the telegram at the time of disablement. When the period of disablement is cancelled the detector sends the current status.

The outputs for light, surveillance and brightness are unaffected by the disablement of the output for presence.



### 4.3.3 Output surveillance

The switching behaviour is only affected by presence and reliably detects the presence of persons. The output for surveillance functions irrespective of daylight.

30s to 30min

#### Report type: cyclic with confirmation

On detecting movement, the output for surveillance sends an ON telegram. If it receives no confirmation, it repeats the ON telegram at regular intervals. (Waiting time for acknowledgement).

30s to 30min

#### Report type: switching (on/off)

On detecting movement, the output for surveillance sends an ON telegram; at the end of the switch-off delay time for surveillance, an OFF telegram. The OFF telegram can optionally be suppressed.

#### Behaviour on return of bus voltage

The behaviour on return of bus voltage defines whether the output for surveillance is to be enabled or disabled during a restart following a loss of bus voltage.

30s to 30min

#### Sabotage, cyclical

The cyclical detection point sends OFF telegrams at regular intervals in order to indicate unauthorised removal of the detector or a bus interruption.

**Note:** Trigger telegrams from the master-slave parallel circuit operation do not trigger the output for surveillance.





#### 4.3.4 Output brightness

30s to 30min

0% to 50%



The brightness value object gives the room brightness (measured value without taking a reflection factor into account) as a 2-byte value in lux in accordance with EIS5.

The maximum time interval between two telegrams can be set between 30 sec. and 30 min. The minimum time interval is 15 sec.

The minimum brightness change before a telegram is sent can be set between 10% and 90%.

**Note:** The lux value provided by the output for brightness is not suitable for an external control. The constant light control from the outputs for light should be used for this purpose.

#### 4.3.5 Scenes

Internal scenes

External scenes

##### Internal scenes

The value to which each lighting group will dim on choice of scene 1 or scene 2 can be determined separately.

In addition, the scenes can be called up by means of the user remote control clic (optional). The scenes can be saved via the ETS or with the clic.

##### External scenes

It is possible to control an external scene component in place of the internal scene component. The remote control clic (optional) is required for this purpose. Pressing on scene button 1 on the clic sends an OFF telegram, pressing on scene button 2 sends an ON telegram.



#### 4.3.6 User remote control clic (optional)

Switching/dimming int.

Switching/dimming ext.

Sun blind external

No function

**Switching/dimming internal:** Pressing longer on the left-hand row of ▲/▼ buttons on the clic switches the output for light A on or off. Briefly button pressure dims the lighting while the button is depressed. If both outputs for light A,B are active, the right-hand row of ▲/▼ buttons controls output for light B in like manner.

**Switching/dimming external:** Pressing briefly on the relevant row of ▲/▼ buttons on the clic switches an external consumer on or off (channel 1 or 2). Longer button pressure dims the external consumer while the button is depressed.

**External sunblind:** Pressing briefly on the relevant row of ▲/▼ buttons of the clic raises or lowers a sunblind. Longer button pressure opens or closes the slats.

##### Group address remote control clic

The choice of group address (position of the channel selector switch on the remote control clic) allows adjacent detectors that are controlled with the user remote control clic to be separated from one another. For further information, please also see the operating manual for the user remote control clic.

## 4.4 Important information

### Parallel circuit operation



Master - Slave



Master - Master

For larger rooms, multiple detectors can be connected in parallel. In this way their combined presence detection area is increased.

One "master" can be connected in parallel with several "slaves". This is accomplished by interconnecting the trigger inputs and outputs. The slaves only supply the presence information from their own detection area. Brightness measurement and management of all parameter settings is done by the master.

Parallel connection of multiple masters is also possible. In this case the presence detection is done jointly whereas the light measurement, parameter settings and lighting control are individually processed by each master. This offers multiple outputs for light with individual brightness measurement but a common presence detection.

In parallel circuit operation, each master in parallel circuit operation and each slave sends two telegrams per minute for as long as someone is present in the detection area. The interval between two telegrams can be extended up to 4 min. Parallel circuit operation is compatible with all Theben HTS KNX/EIB presence detectors.



### Normal or test operation

The test mode enables the presence detection function to be checked. It can be selected via the ETS or also using the service remote control QuickSet plus. When selected with the QuickSet plus, the test mode ends automatically after 10 min. Please refer to the notes concerning the test mode in the operating manual for the detector.



### Push buttons

The detector responds to telegrams sent directly to the actuators by push buttons or superordinate functions:

**Switching (On/Off):** If the detector receives an ON telegram intended for the switching actuator, the lighting remains switched on for 30 minutes in the case of presence. At the end of the 30 minutes, the light measurement is reactivated. If the brightness is adequate, an OFF telegram is sent.

**Constant light control:** If the detector receives an ON telegram intended for the actuator, the constant light control is active. If the detector receives a value or dimming telegram intended for the actuator, control is suspended for the duration of the presence. Once the room becomes unoccupied and the switch-off delay time has expired, the detector returns to control mode.

**In both cases:** If the detector receives an OFF telegram intended for the actuator, it remains switched off for the duration of presence. Once the room becomes unoccupied and the switch-off delay time has expired, the detector returns to switching or control mode.

The function of the outputs for presence, surveillance and brightness remain unaffected.



**Note:** A discrete KNX push button with discrete group address for every lighting channel has to be used for manual override of two lighting groups A, B.



**Note:** The compact passage KNX differs from the Theben HTS ECO-IR presence detectors in the structure push button-presence detector-switching actuator:

- **compact passage KNX, compact passimo KNX:** The outputs for light on the detector are connected to the actuators. Push buttons are connected directly to the actuators. The presence detector detects telegrams sent from the push button to the actuators and adapts its behaviour. The detector itself has no push-button inputs.
- **ECO-IR 360EIB-AC, ECO-IR 180EIB-AC, ECO-IR DUAL-EIB:** Push buttons are connected to the push-button input of the presence detector, the switched output for light of the presence detectors is connected to the switching actuator. Push buttons or central commands that are connected directly to the actuators, bypassing the presence detector, can cause undesirable behaviour.



## 4.5 Description of the communications objects



- 0: Output light A: Switching
- 1: Output light A: Brighter/darker
- 2: Output light A: Set value
- 3: Output light A: Status value



- 4: Output light B: Switching
- 5: Output light B: Brighter/darker
- 6: Output light B: Set value
- 7: Output light B: Status value



- 8: Enable outputs light A,B:  
Disable / enable



- 9: Output presence: Switching



- 10: Output presence:  
Disable / enable



- 11: Parallel circuit operation:  
Trigger input/output



**Switching (ON/OFF):** On detection of movement and inadequate brightness each output light sends an ON telegram. At the end of the switch-off delay time or in the case of adequate brightness, an OFF telegram is sent.

**Constant light control:** On detection of movement and inadequate brightness each output light begins to send value telegrams (→ control begins with a value telegram) or an ON telegram (→ control begins with an ON telegram). At the end of the switch-off delay time or in the case of adequate brightness (controller already at the minimum) an OFF telegram is sent.

The two outputs for light are both disabled with an ON or OFF telegram. At the start of the period of disablement, the outputs for light can send one of the following final telegrams: ON, OFF, or no telegram. The outputs for light are re-enabled by means of an ON or OFF telegram, complementary to the telegram at the time of disablement. When the period of disablement is cancelled the detector always sends the current status or continues the constant light control.

In the case of presence, the output for presence sends an ON or OFF telegram or no telegram (independent of daylight, subject to possible delay caused by predefined switch-on delay). At the end of the switch-off delay time, an ON or OFF telegram or no telegram is sent.

The output for presence is disabled by means of an ON or OFF telegram. At the start of the period of disablement, the output for presence can optionally send one of the following final telegrams: ON, OFF, or no telegram. The output for presence is re-enabled by means of an ON or OFF telegram, complementary to the telegram at the time of disablement. On re-enabling, the detector sends its current status.

(master in parallel circuit operation or slave only)

The trigger input/output is required for parallel circuit operation of multiple presence detectors (see Section 4.4)

Each detector send a maximum of two ON telegrams a minute as trigger signals which are evaluated by the masters. The interval between two telegrams can be set to a maximum of 4 min.

**Note:** The interval between two trigger telegrams must always be set to a smaller value than the switch-off delay times.

**Internal scenes:** an OFF telegram to the scene output object calls up scene 1, an ON telegram calls up scene 2.

12: Input/output scene: scene 1/2

**Control of the scene component:** pressing scene button 1 on the user remote control clic sends an OFF telegram to the scene output object, pressing scene button 2 sends an ON telegram.



13: IR ext. channel 1: switching  
14: IR ext. ch. 1: brighter/darker  
15: IR ext. channel 2: switching  
16: IR ext. ch. 2: brighter/darker

**Switching/dimming external:** pressing the ▲/▼ buttons briefly causes an ON or OFF telegram to be sent via the object 'switching'. Sustained pressure on the ▲ button calls for the light intensity to be increased, releasing the button stops this process. Sustained pressure on the ▼ button calls for the light intensity to be decreased, releasing the button stops this process. Channels 1 and 2 of the remote control must each be set separately.



17: IR ext. ch. 1: sunblind up/down  
18: IR ext. channel 1: slats open/shut  
19: IR ext. ch. 2: sunblind up/down  
20: IR ext. channel 2: slats open/shut

**Sunblind, external:** pressing the ▲/▼ buttons briefly causes an ON or OFF telegram to be sent via the object 'slats open/shut'. Sustained pressure on the ▲/▼ buttons causes an ON or OFF telegram to be sent via the object 'sunblind up/down'. Channels 1 and 2 of the remote control must each be set separately.

The optional user remote control clic is required for this procedure.



21: O/P. surveillance: report  
22: O/P. surveillance: confirmation

**Report type: cyclical with confirmation:** On detecting movement, the output for surveillance sends an ON telegram. If the detector receives no acknowledgement to the telegram within the predefined waiting time, it repeats the ON telegram. This process is repeated until an ON or OFF telegram is received at the object confirmation.

**Report type: Switching (on/off):** On detecting movement, the output for surveillance sends an ON telegram; at the end of the switch-off delay time for surveillance, an OFF telegram.

23: O/P. surveillance: Sabotage cycl.

In order to identify removal of the detector, the object 'sabotage cyclical' sends OFF telegrams at regular intervals whenever the detector is in operation.

24: O/P. surveillance: enable

In both detection types the output for surveillance can be enabled or disabled during operation with an ON telegram or an OFF telegram respectively.



25: Output brightness: sending lux value

**Send lux value:** The output for brightness sends the current brightness value in the form of an EIS5 telegram without allowance for a reflection factor. The telegram frequency depends on the maximum cycle time and the minimum brightness change.

26: Outputs light A,B: Brightness value changeover

**Brightness value changeover:** An ON telegram switches to the alternative brightness value, an OFF telegram uses the original brightness value as desired value.

### 3.6 Configuration of the switching- /dimming actuators

#### Recommended configuration

Duration for the dimming process (0%-100%)	10 seconds
Immediate or progressive dimming	Progressive
Adopt dimming values immediately	Immediately
Switching off by dimming possible	No
Switching on by dimming possible	Yes
Lower dimming limit	Minimum
Upper dimming limit	Maximum
Switch-off behaviour: switch off or dim to off	Switch off
Brightness level at switch on (optional)	According to preference, approx. 50%
Send status value of dimming value	Only by means of reading request



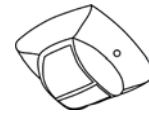
**Note:** the parameter designations may differ according to the dimming actuator or switching/dimming actuator model.

It is unnecessary for automatic status messages to be generated by the actuator. The detector collects this information itself.

#### Actuators without a separate object for status acknowledgement (value)



Group addresses actuator			K	L	S	U	Akt
x	ON/OFF	↔ 10/0/1	✓		✓		Retain default
x	Dimming	↔ 10/0/2			✓		
x	Set value	↔ *10/0/7 10/0/3	✓	**	✓		



Group addresses  
compact passage KNX  
compact passimo KNX

0	ON/OFF	↔	10/0/1
1	Brighter/Darker	↔	10/0/2
2	Set value	↔	10/0/3
3	Status value	↔	10/0/7

\*) set sending

\*\*) with certain actuators, the read flag must be set manually

x) object according the applied product

**Note:** If several actuators are connected to a single detector light output, care should be taken to ensure identical parameterisation of the actuators.

**Exception:** The read flag may only be set for one of the actuators for each lighting group

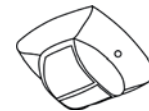


#### Actuators with a separate object for status acknowledgement (value)

e.g. Theben DMG 2 / DME 2 Universal Dimming Actuator  
e.g. Theben SMG 2 / SME 2 Switching- / Dimming Actuator



Group addresses actuator			K	L	S	U	Akt
0	ON/OFF	↔ 10/0/1	✓		✓		Retain default
1	Dimming	↔ 10/0/2	✓		✓		
2	Set value	↔ 10/0/3	✓		✓		
5	Status (value)	↔ 10/0/7	✓	✓			



Group addresses  
compact passage KNX  
compact passimo KNX

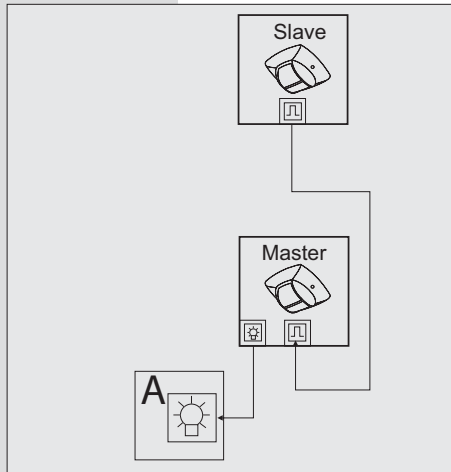
0	ON/OFF	↔	10/0/1
1	Brighter/Darker	↔	10/0/2
2	Set value	↔	10/0/3
3	Status value	↔	10/0/7

**Note:** If several actuators are connected to a single detector light output, care should be taken to ensure identical parameterisation of the actuators.

**Exception:** The status value object may only be linked with one of the actuators for each lighting group

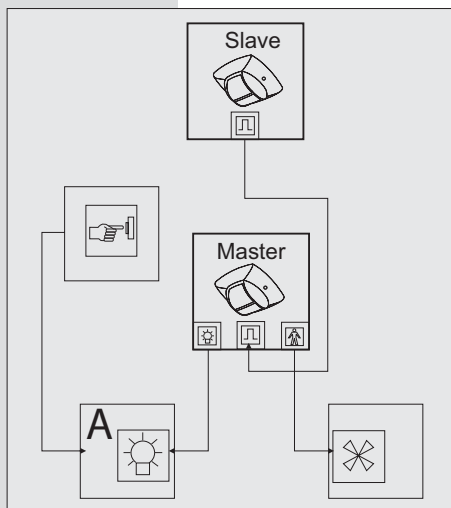


## Example 6: Corridor



- Master in parallel circuit operation
- Recommended mode: switching
- The detection area is expanded with the necessary number of slaves to provide uninterrupted coverage of the corridor
- Switch-off delay time: approx. 5 minutes
- Brightness switching value: approx. 3 to 4

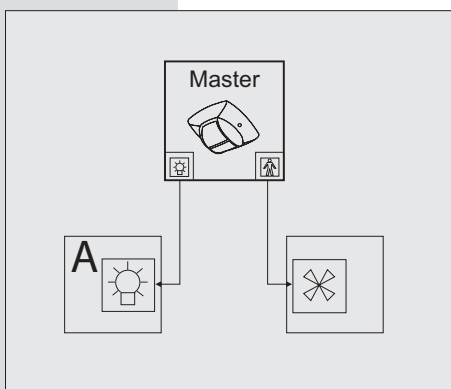
## Example 7: Corridor with permanent minimum brightness level



- Master in parallel circuit operation
- Recommended mode: constant light control
- The detection area is expanded with the necessary number of slaves to provide uninterrupted coverage of the corridor
- Switch-off delay time: approx. 5 minutes
- Brightness switching value: approx. 3 to 4
- Stand-by time: on

With the stand-by time on the lighting dims to a minimum brightness at the end of the switch-off delay time. During the day, should the brightness be above the desired level, the lighting switches off completely; if the brightness falls below the desired level, the lighting switches once again to a minimum level of brightness, irrespective of presence. This mode is suitable for use in locations such as hospitals, care homes and for the illumination of cash dispenser lobbies.

## Example 8: Toilet with ventilation control



- Master in single unit operation
- Recommended mode: switching
- Lighting group A active
- The output for presence is used to control an HVAC consumer
- Switch-off delay time for light: approx. 7 minutes  
Brightness value: on
- Switch-off delay time for presence: approx. 10 minutes
- Switch on delay time for presence: approx. 5 minutes