Presence detector

PresenceLight 180A-KNX ..
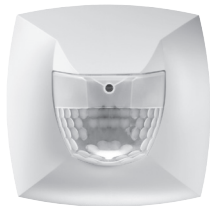
PresenceLight 360A-KNX ..

PresenceLight 180B-KNX ..

PresenceLight 360B-KNX ..

theben HTS

Operating Manual

Presence detector
PresenceLight 180A-KNX ..
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1. Safety

Familiarise yourself with the presence detecors PresenceLight 360 KNX and PresenceLight 180 KNX before assembly and startup by reading this operating instructions.

> ⚠️ **CAUTION!**
> The unit requires no maintenance. Opening the unit or inserting foreign bodies into it will invalidate the warranty.

1.1 Designated use

The presence detector is intended for indoor installation.

The presence detector is solely intended for the purpose contractually specified between the manufacturer and the user. Any other or extended use has to be regarded as not complying with the designated use. The manufacturer is not liable for any resulting damage.

2. Function and performance

The presence detectors PresenceLight 360 KNX and PresenceLight 180 KNX detect persons within a room on account of slightest movements. Simultaneously, their light sensor measures the brightness in the room and compares it to the pre-set brightness threshold.

- Mixed light measurement
- Adjustable sensitivity

- Control of one or two lighting groups
- Switching or constant light control with stand-by function
- Fully or semi-automatic function mode
- Presence channel with switch-off delay and switch-on delay time
- Channel monitoring with manipulation protection
- Channel brightness (Lux)
- Parallel circuit operation of several detectors (Master-Slave, Master-Master)
- Short presence; Reduced switch-off delay time in case of a short presence
- Suitable for fluorescent lamps, compact fluorescent lamps, halogen, incandescent lamps and LEDs.
- Management remote control SendoPro 868-A (optional)
- User remote control SendoClic (optional)

The presence detector PresenceLight 360x-KNX is intended for use in offices, schools and residential premises for comfortable and energy efficient control of lighting, HVAC and shading.

- Detection range up to 49 m^2 moving and 20 m^2 seated persons at 3.0 m installation height

PresenceLight 180x-KNX is the presence detector of choice for use in corridors, transit zones and wet zones (IP 54).

- detection Range up to 25 m^2 seated persons rectangular 7 x 3,5 m, 100 m^2 moving with 8 m radius at 2,2 m installation height

2.1 Control type

Switching

The lighting switches on in case of presence and insufficient brightness, and off in case of absence or sufficient brightness.

Constant Light Control

In Constant Light Control mode, the brightness is constantly maintained at th preset value. It can be started fully automatically or manually using the push button or remote control. Manually switching off, dimming or changing the settings stops control mode for the duration of the presence.

2.2 Installation and service support

Helpful functions are available for start up and subsequent maintenance support.

● Changing parameters using the management remote control SendoPro 868-A

The presence detector can send configuration and diagnostic information to the management remote control SendoPro 868-A via radio transmission (868MHz).

3. Location

3.1 Detection Range PresenceLight 360x-KNX

The ideal mounting height is 2,0–3,0 m. The sensitivity of the detector decreases with increasing mounting height. In order to ensure proper detection of persons, the PresenceLight 360x-KNX requires an unobstructed "view" of the persons. Office equipment, plants, suspended lamps etc. may affect the presence detection (shading).

| M'height	Seated persons		Walking persons	
2,0 m	9 m^2	3,0 m x 3,0 m	20 m^2	4,5 m x 4,5 m ± 0,5 m
2,5 m	16 m^2	4,0 m x 4,0 m	36 m^2	6,0 m x 6,0 m ± 0,5 m
3,0 m	20 m^2	4,5 m x 4,5 m	49 m^2	7,0 m x 7,0 m ± 1,0 m
3,5 m	---	---	64 m^2	8,0 m x 8,0 m ± 1,0 m

3.2 Detection Range PresenceLight 180x-KNX

The recommended mounting height is 2,2 m. Mounting the device in the height of the switches is not recommended (possible obstacles in the detection range and vandalism).
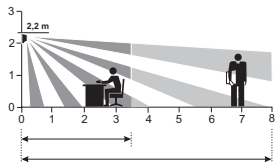
M'height	Seated persons		Walking persons	
2,2 m	25 m^2	7,0 m x 3,5 m	100 m^2	env. 8 m radial distance

Due to the horizontal orientation of the PresenceLight 180x-KNX, the detection range is very large. The sensitivity decreases by increasing distance.
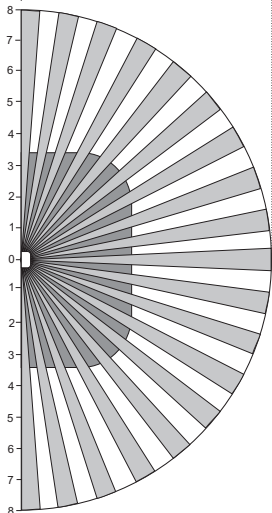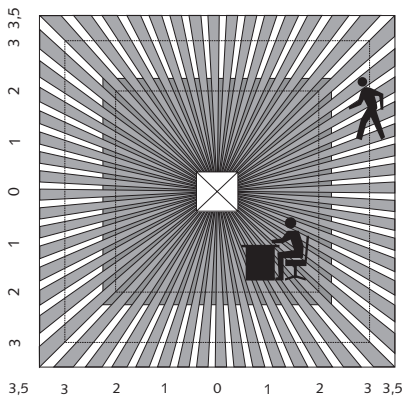
PresenceLight 360x-KNX
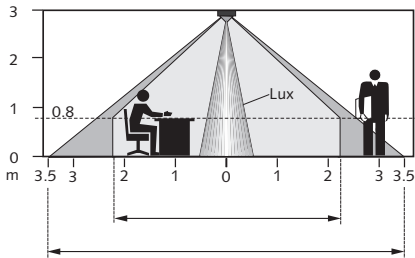
PresenceLight 180x-KNX

3.3 Light measurement

The detector measures artificial and daylight that is reflected directly below the detector (aperture $\pm$ 30°).

The surface brightness below the installation site is used as a lighting level reference.

Switching

With indirect lighting, the artificial light at the detector installation site must not exceed 2000 Lux (with brightness value >200 Lux).
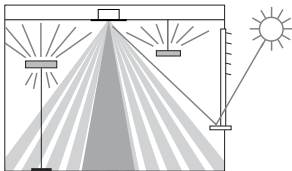
Constant light control

The detector must be positioned so that it only receives artificial light that it controls itself. Artificial light controlled by other detectors or manually operated work lights affect the brightness measurement of the detector. Direct artificial light on the detector should be avoided.

Correction factor

The room correction factor is defined as a proportion for the brightness measurements differece on the ceiling and the surface below the installation site.

4. Installation

4.1 General fitting

Flush-mounting

The presence detector will be flush mounted into a concealed housing. The enclosed set of seals is to be used for IP 54 installation.

Surface-mounting

A suitable frame for surface mounting is also available. If the surface-mounting seal set is used for surface mounting, the detector will also comply with protection class IP 54.

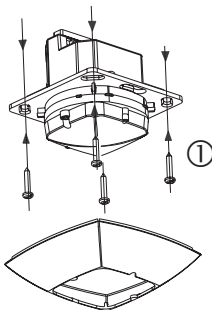### 4.2 Protection Class IP 40

Device types:

PresenceLight 180A-KNX ..
PresenceLight 360A-KNX ..

Flush-mounting IP 40

The presence detector will be flush
mounted into a concealed housing.

Surface-mounting IP 40

A suitable frame for surface mounting is also available. The surface-mounting frame is prepared for cable feed-through with metric cable glands (M16 or M20).

4.3 Protection Class IP 54

Device types: PresenceLight 180B-KNX .. ,

PresenceLight 360B-KNX ..

Flush-mounting IP 54

To ensure compliance with Protection Class IP 54 when flush mounted, the presence detector must be installed using the enclosed IP 54 seal set for flush mounting as shown in the figure alongside. If the seal set is not used, only Protection Class IP 40 will be achieved.
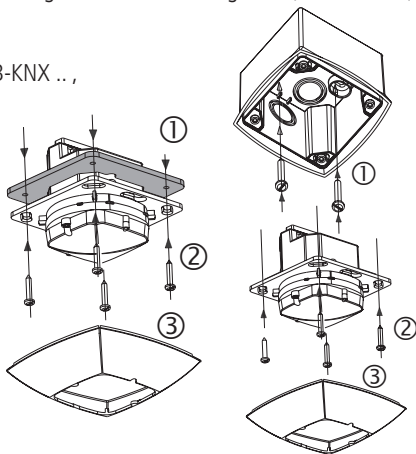
Surface-mounting IP 54

Refer to the fitting instruction PresenceLight surface-mounting frame.

> (i) IP 54 mounting with gasket set IP 54 only!

5. Start-up

5.1 Settings

All settings are adjusted using ETS. See 'KNX handbook PresenceLight 180 KNX / PresenceLight 360 KNX' document (application description).

The management remote control SendoPro 868-A is optionally available for support during the installation. The SendoPro 868-A can be used to adjust and optimise parameters. In this respect, the SendoPro 868-A helps with setting up. A range of alterable parameters is available for adjustment with the SendoPro 868-A (see chapter 6 page 73). By means of control commands, the behaviour during installation can be changed via the SendoPro 868-A (see chapter 8 page 79).

5.2 Correction factor

The presence detector›s brightness actual values is adjusted to the room properties with the room correction factor and thus, the area under the presence detector can be compared to the measured lux meter value.

See KNX handbook, application description

5.3 Programming mode

The programming mode can be set using the program button on the back of the presence detector or via the management remote control SendoPro 868-A without dismantling the presence detector.

5.4 Set device to original condition

The presence detector is supplied with a factory setting. This factory setting can be restored as desired.

Activation	Description
Powerup	Press and hold the program button while switching on the bus voltage.

5.5 Operation mode

The PresenceLight 180x-KNX and PresenceLightx-360 KNX have 3 operation modes:

- Normal
- Test presence (page 75)
- Test light (page 77)

5.6 Switch-on behaviour

After every time the bus voltage is switched or the parameters are downloaded by ETS, the detector runs through its start-up phase (indicated by LED).

1. Start-up phase (30 seconds)

- LED blinks once per second
- Switching: outlet light receives an ON telegram irrespective of brightness
- Constant light control: control is inactive, lighting is maximum dimmed (Value telegram 100 %).
- If there is no presence or sufficient brightness, an OFF telegram is sent after 30 sec. (Light off).

2. Operation mode normal

- The detector is ready for use (LED off)

3. Event of malfunction

- LED flashes rapidly
- Troubleshooting see page 80

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6. Alterable parameters via remote control

The following parameters can be adjusted and optimised via the management remote control SendoPro 868-A for support during installation as well as servicing.

> (i) This adjustment of parameters does not change the settings in ETS.

Parameter		Chapter / Page
Brightness level channel A light	Level increase/decrease	6.2 / 74
Alternativ brightness level channel A light	Level increase/decrease	6.3 / 74

6.1 Adjustment with the remote control

Parameters are sent to the presence detector via infrared with the SendoPro 868-A. Changed parameters are immediately accepted and applied by the detector.

LED	Description
Flickering during 3 sec	After pressing the send function on the management remote control, the presence detector displays correct receiving by flickering for 3 sec.
Lights up shortly	The command/parameter sent from the management remote control via infrared is rejected by the presence detector. The command is not valid. Check the selected detector type and the sent parameters.

6.2 Brightness level channel A light

Brightness level define the minimum brightness required. Current prevalent brightness is measured below the presence detector. If the prevalent brightness is below the setpoint value, the light will switch on as long as presence is detected (with function mode fully-automatic).

Value range

The actual brightness level can be increase or decrease in 5 %-steps. The actual brightness level setting can be read-out via KNX communication object. Lux value	5 %-steps
The current measured brightness level can be adopted by the SendoPro command Teach-in.	5–2000 Lux

If setting values for brightness <= 2.5 AND switch-off delay time light <= 2 min: faster response to changes in actual brightness when in operating mode switching of one lighting row.

6.3 Alternativ brightness level channel A light

The alternative brightness level value can be used to set a second different brightness set point value. For example, a day and night mode with two different brightness levels can be set up in combination with the brightness set point value channel A light. The alternative brightness set point value is activated or changed via a bus object.

Value range

The actual brightness level can be increase or decrease in 5 %-steps. The actual brightness level setting can be read-out via KNX communication object. Lux value	5 %-steps
The current measured brightness level can be adopted by the SendoPro command Teach-in.	5–2000 Lux

If setting values for brightness <= 2.5 AND switch-off delay time light <= 2 min: faster response to changes in actual brightness when in operating mode switching of one lighting row.

7. Test-Mode

The PresenceLight has two test modes.

- Test presence, page 75
- Test lighting, page 77

The test mode can only be started with voltage.

7.1 Test presence

The test presence serves to test presence detection and parallel switching.

Activate	- "Test presence on" with the management remote control SendoPro 868-A - via bus object (33) The test mode presence can always be activated.
Terminate	With subsequent restart: - Command "Test presence off" with the management remote control SendoPro 868-A - Loss of bus voltage - Automatically according to the time set with the ETS Without restart: - Activation of test lighting with the management remote control SendoPro 868-A

LED display channel status	Description
On	With movement (LED on) close channels A lighting and H presence.

LED display channel status	Description
Off	With absence (LED off) open both channels after 15 sec.

Test response

- Deactivate brightness measurement, light output does not react to brightness
- Detector does not respond as in fully-automatic function mode, also if semi-automatic is set.
- The control type changes to switching if the control type is set to constant light control. The light is not controlled.
- Light «On» with movement; light «Off» with absence or no movement
- Channel A lighting and H presence have a fixed switch-off delay time of 15 sec.
- Room monitoring responds normally as in normal mode.
- Switch-on delay time channel H and J presence is set fixed to 0 sec.

Commands and adjustable parameters

During test mode the following commands are possible with the management remote control SendoPro 868-A:
- Terminate test presence
- Activate test lighting

The presence detector resets after test mode has terminated.

7.2 Test lighting

The test mode test light serves to monitor the brightness set point value (brightness threshold).

Activate	- Test lighting «On» with the management remote control SendoPro 868-A - via bus object (34) The test lighting can always be activated.
Terminate	With subsequent restart: - Test lighting «Off» with the management remote control SendoPro 868-A - Loss of bus voltage - Automatically according to the time set with the ETS Without restart: - Activation of test presence with management remote control SendoPro 868-A

LED display	Description
Blinking, 3 sec On 0.3 sec Off	The LED blinks, as long as the test lighting is active.

Test response

The presence detector behaves 100% as in normal operation, only the reaction to light/dark is faster. Thus the brightness threshold and the adaptive response is tested.

All selected functions and parameters remain unchanged.

Commands and adjustable parameters

During test mode the following commands are possible with the management

remote control SendoPro 868-A:
- Terminate test lighting
- Change alternative brightness level A
- Change brightness set point channel A light
- Activate test presence

The presence detector resets after the test mode has terminated.

<table>
<tr><td>

⚠️

</td><td>

<u>Do not</u> get the presence detector to switch by means of a flash light. The presence detector will learn this and thus falsify the adaptive threshold settings and and the hysteresis.
In order to simulate this response, it is ideal to light the area below the presence detector or open the blinds. Reactivate test brightness for a new test.

</td></tr>
</table>

8. Control commands

The following control commands are available with the management remote control SendoPro 868-A:

Programming mode	Activating the programming mode
Teach-in channel A	The actual measured brightness value is applied to the brightness level channel A. Transfer is made to current active brightness set point value. That is, if the alternative brightness set point value is switched to, the current measured brightness value [lux] is transferred to the alternative brightness set point value via the teach-in command. The value transfer is not carried out if the measured brightness value is outside the value range of the brightness set point value (displayed via LED).
Master/Slave?	The operating mode master or slave can be determined using the remote control. Is the request consistent with the setting in the presence detector, does the detector confirm this with a flicker for 3 s. Is the request not consistent, the LED lights up briefly.
Switching light	The switching output light can be switched on and off. Select <On> or <Off> with the function keys.
Test presence	See chapter 7.1 page 75
Test lighting	See chapter 7.2 page 77
Restart	The detector restarts. Setting values are retained.

9. Troubleshooting

Fault	Cause
Light does not switch on and/or off when presence and darkness	Lux value is set too low; detector set on semi-automatic; light was switched off manually via push-buttonor or with SendoClic; person not within detection range; obstruction(s) interrupting detection; switch-off delay time set too short
Light stays on with presence even though it is bright enough	Lux value is set too high; light was switched off manually via push-button or with SendoClic (wait 30 min.); detector is in testing mode
Light does not switch off and/or light switches spontaneously on when no one is present	Wait for the switch-off delay time (self-learning); thermal interruption source in the detection range: Fan heater, incandescent lamps / halogen spotlight, moving objects (e.g. curtains hanging in an open window); Start up does not run smoothly.
Malfunction blinking (4x per second)	Malfunction during start-up phase or during operation; device is not fully functional!

9.1 LED display

LED	Description
Blinking in 1 second tact	The presence detector is in the start-up phase. See page 72.
Flickering during 3 sec	The command sent from the management remote via infrared is rejected by the presence detector. Is the request consistent with the setting in the presence detector, the detector confirms.
Lights up shortly	The command sent from the management remote via infrared is rejected by the presence detector. The command is not valid. Check the detector type selected in the SendoPro 868-A. Is the request not consistent with the setting in the presence detector, the detector responds accordingly.
Fast blinking	Error blinking; The presence detector has found an error. See page 80
Blinking, 3 sec On 0.3 sec Off	The presence detector is in test lighting. See page 77
Lights or flickers irregularly	The presence detector is in test presence see page 75. The LED displays detection of movement.

10. Technical data

PresenceLight 360x-KNX	
Detection range horizontal vertical	360º 120º
Recommended mounting height	2.0 m–3 m
Maximum range	6 x 6 m (Mh 2.5 m) 8 x 8 m (Mh 3.5 m)

PresenceLight 180x-KNX	
Detection range horizontal	180º
Recommended mounting height	approx. 1.6 m–2.2 m
Maximum range	< 10 m radius

PresenceLight 360x-KNX, PresenceLight 180x-KNX	
All settings can be set remotely	see KNX handbook Presence-Light 180 KNX / PresenceLight 360 KNX
Light measurement	Mixed light
Brightness range Light measurement deactivated	approx. 5–2000 Lux Measurement off
Light switch-off delay time	30 s–60 min
Presence switch-off delay time	10 s–120 min
Presence switch-on delay	10 s–30 min/inaktiv
Terminals	KNX
Power consumption	13 mA
Mounting	
Mounting depth Mounting diameter Mounting plate (integrated)	40 mm 50 mm 70 x 70 mm
Size of concealed housing	Size 1, (NIS, PMI)
Ambient temperature	–20 °C – +50 °C
Protection rating	IP 40
Degree of protection through installation with gasket set	IP 54

Article numbers		
PresenceLight 180A-KNX WH, IP 40, white	IP 40	200 9 051
PresenceLight 180A-KNX BK, IP 40, black	IP 40	200 9 821
PresenceLight 180A-KNX SR, IP 40, silver	IP 40	200 9 822
PresenceLight 180B-KNX WH, IP 54, white	IP 54	200 9 050
PresenceLight 180B-KNX BK, IP 54, black	IP 54	200 9 815
PresenceLight 180B-KNX SR, IP 54, silver	IP 54	200 9 816
PresenceLight 360A-KNX WH, IP 40, white	IP 40	200 9 001
PresenceLight 360A-KNX BK, IP 40, black	IP 40	200 9 818
PresenceLight 360A-KNX SR, IP 40, silver	IP 40	200 9 819
PresenceLight 360B-KNX WH, IP 54, white	IP 54	200 9 000
PresenceLight 360B-KNX BK, IP 54, black	IP 54	200 9 812
PresenceLight 360B-KNX SR, IP 54, silver	IP 54	200 9 813

Article numbers	
Surface frame PresenceLight 40WH, IP 40, white	907 0 606
Surface frame PresenceLight 40BK, IP 40, black	907 0 607
Surface frame PresenceLight 40SR, IP 40, silver	907 0 608
Surface frame PresenceLight, incl. gasket set IP 54, white	907 0 513
Surface frame PresenceLight BK, incl. gasket set IP 54, black	907 0 634
Surface frame PresenceLight SR, incl. gasket set IP 54, silver	907 0 635
Gasket set IP 54 for flush-mounting spare part	907 0 570
Gasket set IP 54 for surface frame spare part	907 0 520
Management Remote control SendoPro 868-A	907 0 675
SendoClic, user remote control	907 0 690

11. Warranty declaration

Theben HTS presence detectors are manufactured and tested for quality with greatest of care and most modern technology. Theben HTS AG thus guarantees smooth function with correct use. Should a malfunction appear, Theben HTS AG guarantees within the scope of the General Terms and Conditions:

Please notice specifically:

- that the warranty is valid for 24 months from date of manufacture.
- that the warranty becomes void if you or a third party makes modifications or repairs to the devices.
- that, as long as the presence detector is connected to a software controlled system, the warranty for this connection is only valid if the interface specifications are adhered to.

We are obligated to improve or replace as quickly as possible all damaged or unusable parts within the scope of delivery, proven insufficient materials, faulty construction or lacking models up to the end of the guarantee period.

Dispatching

For cases covered by the guarantee, send the device, together with the shipping order and a short description of the problem to the responsible specialised dealer.
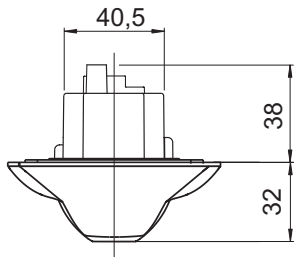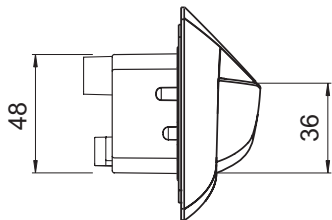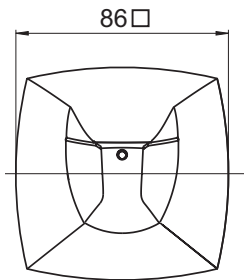
Industrial property rights

Concept, as well as hard and software of this device are copyrighted.
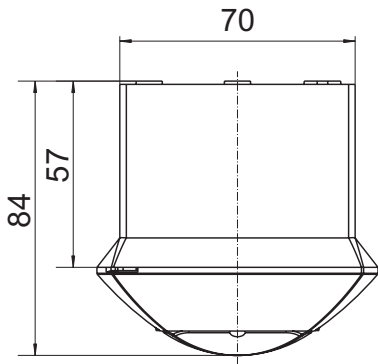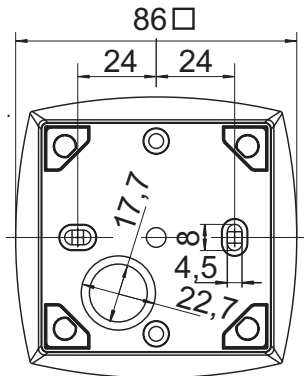
Dimensions PresenceLight 360x-KNX

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56

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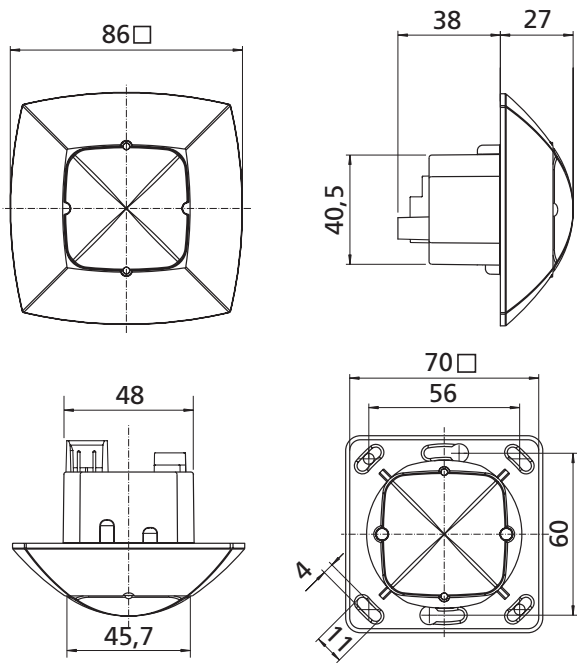
Dimensions PresenceLight 180x-KNX
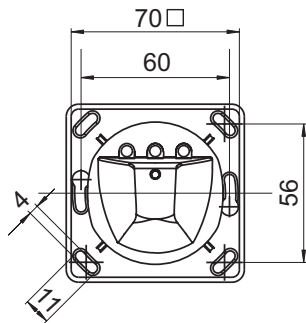
Dimensions surface Frame for PresenceLight 360x-KNX, PresenceLight 180x-KNX

CE declaration of conformity

This device complies with the protection regulations of the EMC directive 2004/108/EC

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Subject to alteration and printing errors.

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