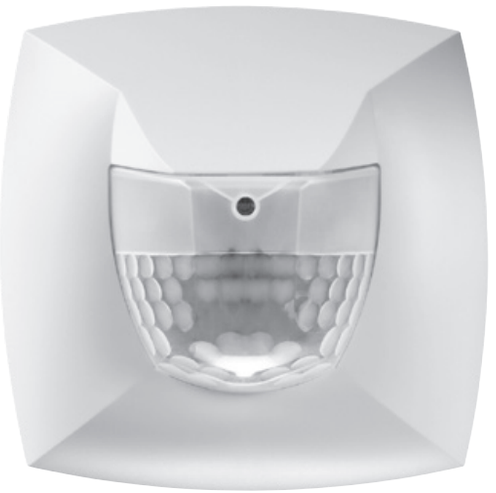
Presence detector

PresenceLight 180 PLLON

PresenceLight 360 PLLON



English

Operating Manual

Presence detector

PresenceLight 180 PLLON

PresenceLight 360 PLLON

Table of contents

Thank you for purchasing a Theben HTS presence detector and putting your trust in us.

1. Safety

Familiarise yourself with the presence detecors PresenceLight 360 PLLON and PresenceLight 180 PLLON 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 360 PLLON and PresenceLight 180 PLLON detect persons within a room on account of slightest movements. Simultaneously, their light sensor measures the brightness in the room and thus switch or regulate up to two light groups.

- Mixed light measurement
- Adjustable sensitivity
- 2x independent constant light controllers #3050 for controlling two light groups
- Switching or constant light control with stand-by function
- Fully or semi-automatic function mode
- 3x occupancy controllers #3071 for control of the constant light controller or use as presence channels
- 1x light sensor #1010
- 1x Occupancy sensor #1060
- Parallel circuit operation of several detectors (Master-Slave)
- 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.
- Plug-in for convenient adjustment of parameters and functionality
- Management remote control SendoPro 868-A (optional)

PresenceLight 360 PLLON is the presence detector of choice for use in small rooms, corridors and wet zones (IP54), but is also used in residential premises.

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

PresenceLight 180 PLLON 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 pre-set 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

3. Location

3.1 Detection Range PresenceLight 360 PLLON

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 presence detector 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

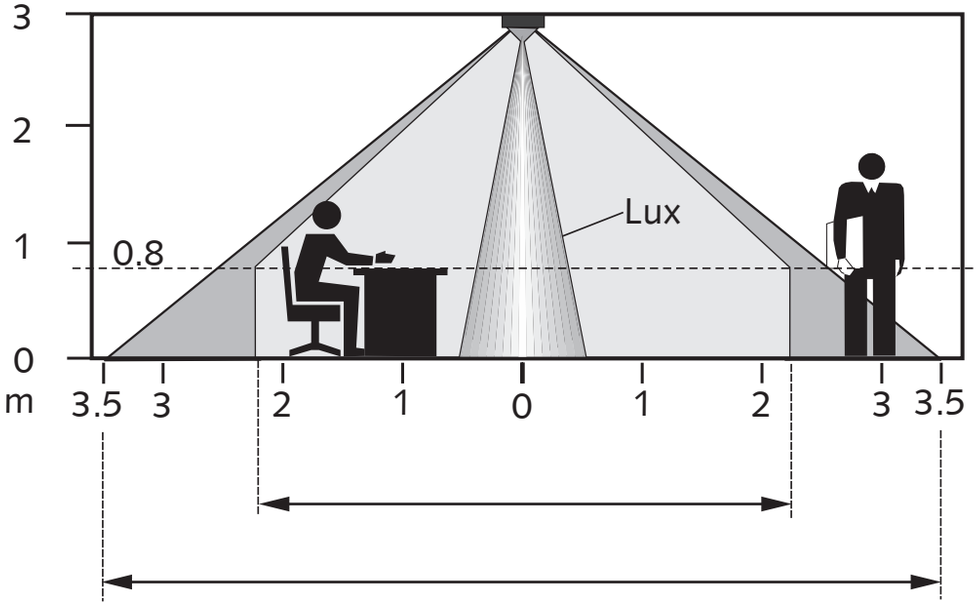
3.2 Detection Range PresenceLight 180 PLLON

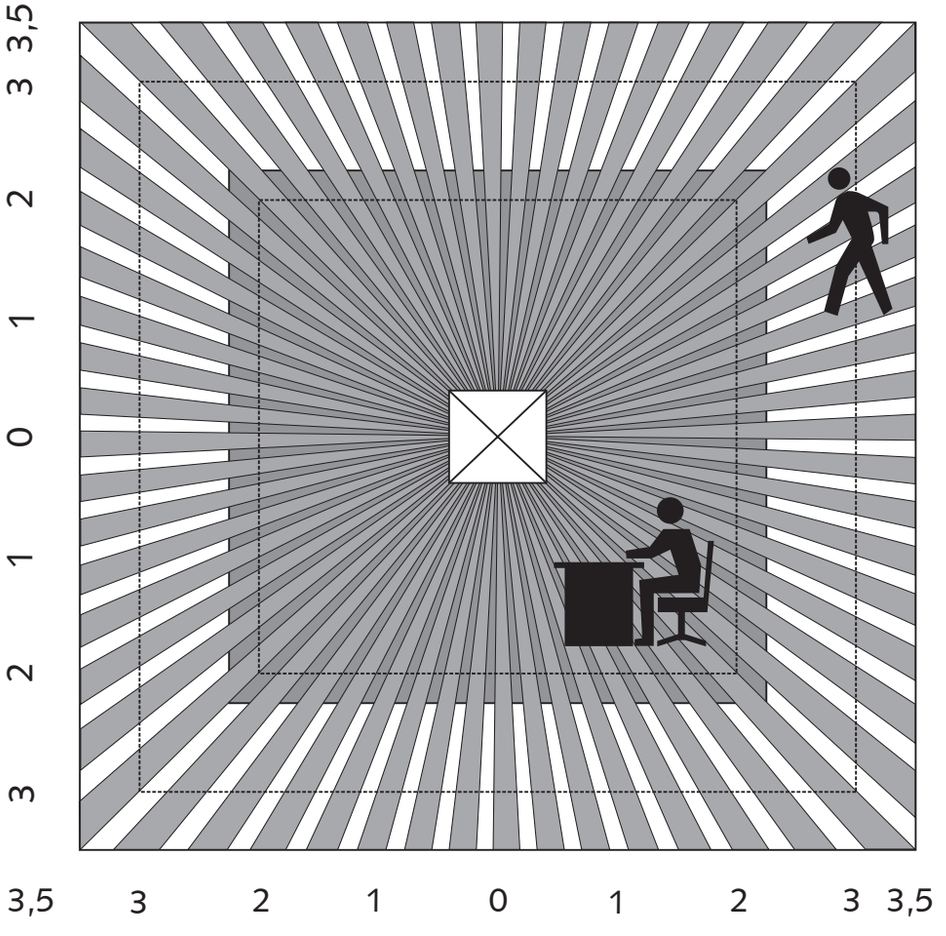
The recommended mounting height is 2,2 m. Mounting the device in the height of the switches is not recommended (possible obstacles in the detection range and vandalism).

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

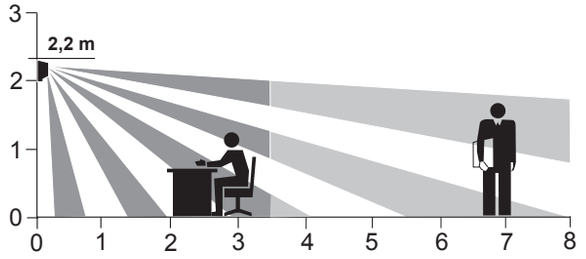
Due to the horizontal orientation of the PresenceLight 180x-KNX, the detection range is very large. The sensitivity decreases by increasing distance.

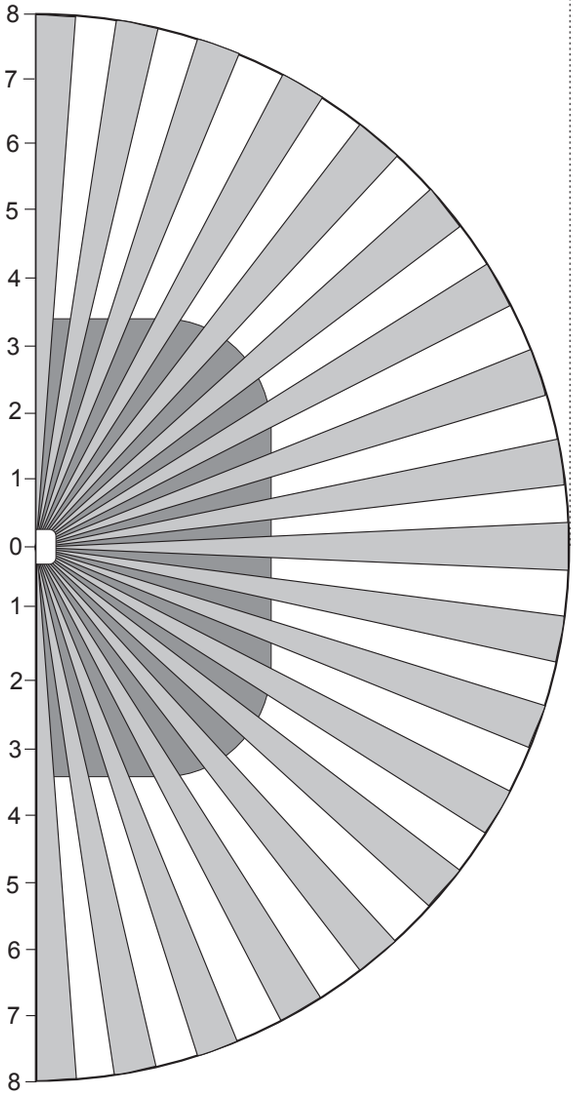
PresenceLight 360 PLLON





PresenceLight 180 PLLON





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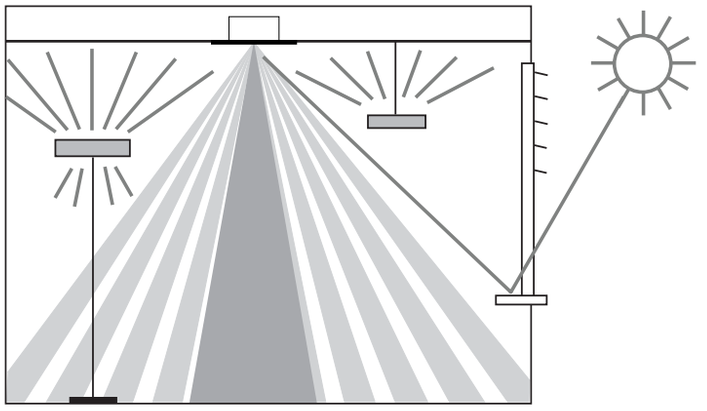
3.3 Light measurement

The detector measures artificial and daylight that is reflected directly below the detector (aperture ± 30°). The surface brightness below the installation site is used as a lighting level reference.



Switching

The placement of the floor lamps or suspended lighting directly below the detector is to be avoided.

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.

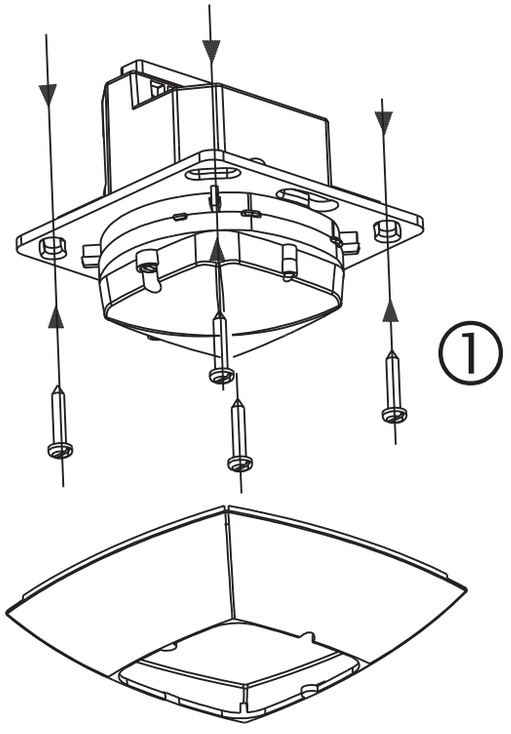
4. Installation

Flush-mounting

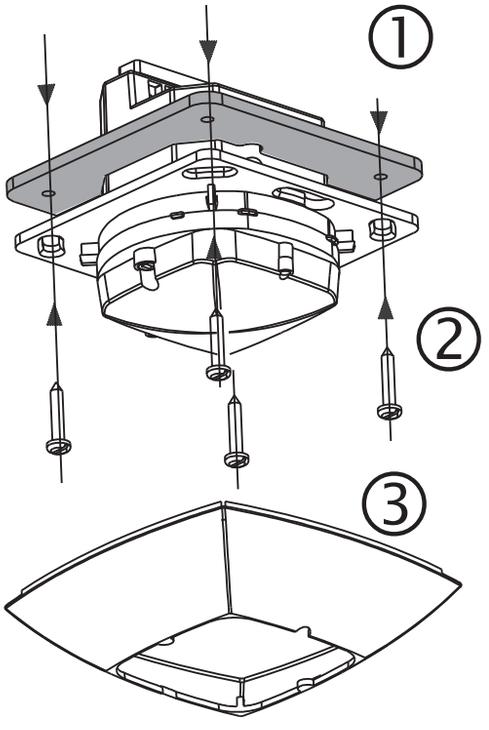
The presence detector will be flush mounted into a concealed housing. The optionally available set of seals is to be used for IP 54 installation.

Surface-mounting

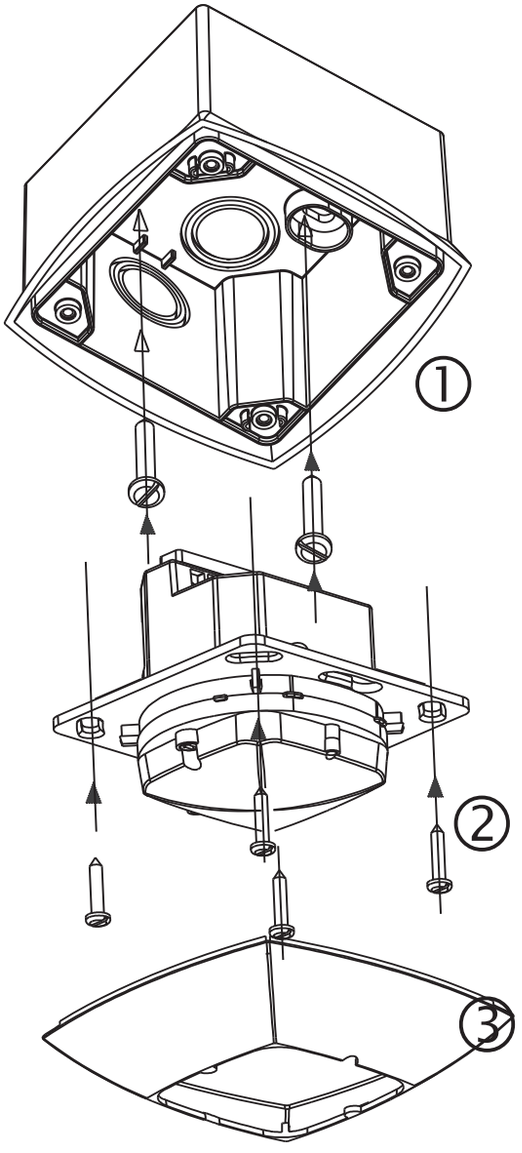
A suitable frame for surface mounting is also available. The surface-mounting frame is prepared for cable feed-through with metric cable glands (M16 or M20). If the optionally available surface-mounting seal set is used for surface mounting, the detector will also comply with protection class IP 54.



IP 40



IP 54



IP 40 with surface frame

5. Start-up

5.1 Settings

All settings are adjusted using a LON integration tool. See 'LON handbook PresenceLight 180/360 PLLON' 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 68).

By means of control commands, the behaviour during installation can be changed via the SendoPro 868-A (see chapter 8 page 73).

5.2 Identification

The presence detector will be identified during commissioning with the service button on the back of the presence detector or without dismantling the presence detector via the SendoPro 868-A management remote control. A network management message with the Neuron ID of the presence detector will be sent.

5.3 Set device to original condition

The presence detector can be reset to its factory settings by pressing the service button for 10 seconds. This puts the device in the «unconfigured» state.

5.4 Operation mode

The PresenceLight 180 / 360 PLLON have 2 operation modes:

- Normal
- Test presence (page 71)

5.5 Switch-on behaviour

After every time the bus voltage is switched or a restart occurs, the detector runs through its start-up phase (indicated by LED).

1. Start-up phase (30 seconds)

- LED blinks once per second
- The outputs of the constant light controller #3050 will be set to 100%/1 regardless of brightness. Any constant light control that has been set is inactive.
- 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 or LED shows movement)

3. Event of malfunction

- LED flashes rapidly
- Troubleshooting see page 74

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.

Values changed with the remote control are only visible in the LON integration tool if the values are read from the detector.

Parameter		Chapter / Page
Brightness level Constant Light Controller 1, 2	Value range in lux	6.2 / 69
Room correction factor Light Sensor	Value range	6.3 / 69
Time delay 1 Occupancy Controller 1, 2, 3	Value range	
Detection sensitivity (PIR)	Value range in increments	6.4 / 71

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 Constant Light Controller 1, 2

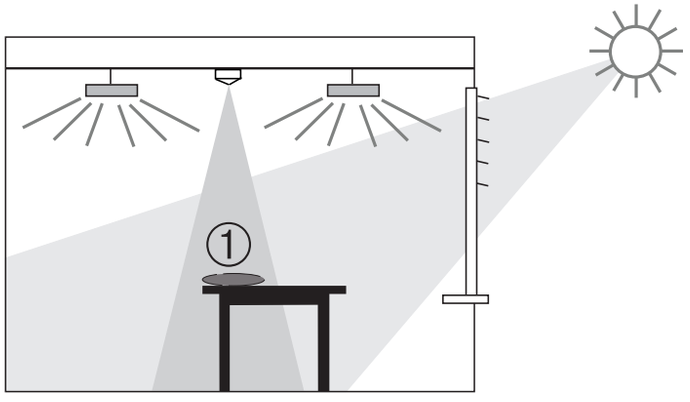
Brightness level define the minimum brightness required. Current prevalent brightness is measured below the presence detector. If the prevalent brightness is below the setpoint value, the light will switch on as long as presence is detected (with function mode fully-automatic).

Value range

Lux value (The current measured brightness level can be adopted by the SendoPro command Teach-in)	5 - 2000 Lux

6.3 Room correction factor Light Sensor

The room correction factor is a measurement for various brightness measurements on the ceiling and the work area.



The brightness measured value on the ceiling is influenced by the installation point, light reception, position of the sun, weather conditions, the reflection properties of the room and furniture.

The brightness value of each light sensor is adjusted to the room properties according to the room correction factor and thus, the area under the presence detector can be ① compared to the measured lux meter value.

$$\text{Room correction factor} = \frac{\text{Brightness value on the ceiling}}{\text{Brightness value on the work surface}}$$

Please note the instructions in the LON manual PresenceLight 180/360 PLLON concerning the calibration of light measurements or setting the room correction factor.

1. The Lux meter is placed on the work surface below the sensor and the measured lux value is entered in the plug-in, SendoPro or in the configuration variable.
2. The reflexion factor cpReflection is calculated automatically from this. Values between 0.05 and 2.0 are permitted. Calculated or entered values outside the permitted range will be automatically set to the appropriate limit value.
3. The calculated room correction factor will be applied directly.

The standard value is 0.3 and is suitable for most applications.

Changes only make sense in sharply varying situations.

Value range

Adjustable values	0.05 - 2
Standard value, suitable for most applications.	0.3

6.4 Detection sensitivity

The detector has 5 sensitivity levels. The basic setting is the middle level (3). Sensitivity also applies during the test-modes.

By selecting the operation mode test presence, the set sensitivity level is not changed. The parameter can be changed during test presence.

Level	Sensitivity
1	less sensitive
2	Interim value
3	Standard
4	Interim value
5	very sensitive

7. Test-Mode 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 plug-in or configuration variable nciTestMode
Terminate	With subsequent restart: - Command "Test presence off" with the management remote control SendoPro 868-A - Power outage and thus power up - via plug-in or configuration variable nciTestMode - the test-mode presence will be terminated after 10 mins

Test response

The presence test mode only works correctly when the internal bindings are present. Please note the instructions in the LON manual PresenceLight 180/360 PLLON.

- The LED shows the movement signal immediately without switch-off delay time.
- Every occupancy controller must be set to the presence test mode separately.
- The configuration parameters will be set specifically for the duration of the test mode regardless of the bindings.
- The constant light controllers are not affected by the test mode. They continue to work normally.
- The presence detector resets after test mode has terminated.

Status	LED	nvoOccup	nvoOccupLampVal	Description
Movement detected	ON when movement recognised	Occupied	100% / 1	When there is movement every occupancy controller without time delay switches directly because of nviOccup to 100% / 1
No movement	OFF	UnOccupied	0% / 0	When absent every occupancy controller without time delay switches directly because of nviOccup to 0% / 0

Commands and adjustable parameters

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

- Terminate test presence
- Reset / New start of the detector
- Change detection sensitivity

The selected detection sensitivity is not changed with the test presence activation. Sensitivity can be adjusted during the test.

8. Control commands

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

Teach-in Constant light controller 1 **Teach-in Constant light controller 2** **Teach-in Constant light controller 1+2**	The actual measured brightness value is applied to the brightness level for the particular controller. Please note the instructions in the LON manual.
Switching light	Both outputs Remote Control 1 and Remote Control 2 will be set together according to their configuration. Please note the instructions in the LON manual.
Test presence	See chapter 7 page 71.
Restart	The detector restarts. Setting values are retained.
Service button LON	Has the same effect as pressing the service button on the back of the presence detector.

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 theSenda S; 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 theSenda S (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! The plug-in indicates the operating status. Details on the status of the detector are available via the device status. Please note the instructions in the LON manual.
Service LED flashes	Node is not configured (not commissioned)

9.1 LED display

LED	Description
Blinking in 1 second tact	The presence detector is in the start-up phase. See page 67.
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 74
Lights or flickers irregularly	The presence detector is in test presence or the configuration parameter cpLedIndicator was set to "active". The LED displays detection of movement.

10. Technical data

PresenceLight 360 PLLON		
Detection range	horizontal vertical	360° 120°
Recommended mounting height		2.0 m–3.0 m (minimal height > 1.7 m)
Maximum range		6 x 6 m (Mh 2.5 m) 8 x 8 m (Mh 3.5 m)

PresenceLight 180 PLLON		
Detection range	horizontal	180°
Recommended mounting height		approx. 1.7 m–2.2 m (minimal height > 1.7 m)
Maximum range		< 10 m radius

PresenceLight 360 PLLON, PresenceLight 180 PLLON	
Topology	LON FTT
All settings can be set remotely	see LON handbook PresenceLight PLLON
Light measurement	Mixed light
Brightness range Light measurement deactivated	approx. 5–2000 Lux Measurement off
Switch-off delay time	10 s–100 min
Switch-on delay time	10 s–30 min/inaktiv
Terminals	WAGO 243 Screwless terminals
Supply voltage	24 V AC +10%/-20%, 24 V DC +/- 20%
Power consumption	~30 mA
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	–10 °C – +50 °C
Protection rating	IP 20 (IP40 when fitted)
Degree of protection through installation with gasket set	IP 54

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

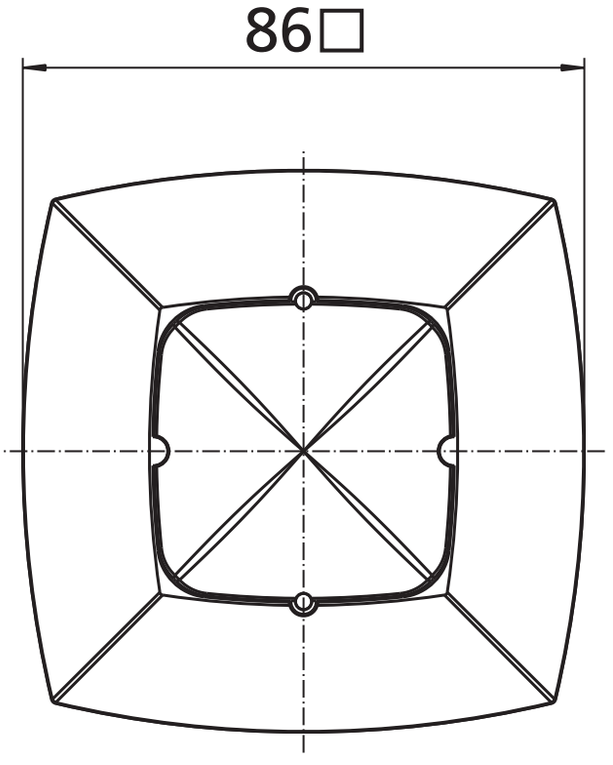
For cases covered by the guarantee, send the device, together with the shipping order and a short description of the problem to the responsible specialised dealer.

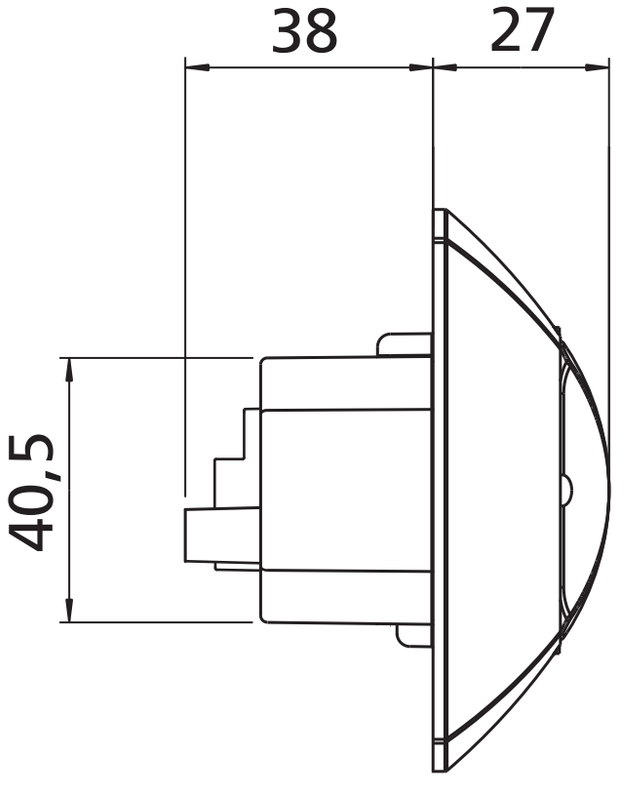
Industrial property rights

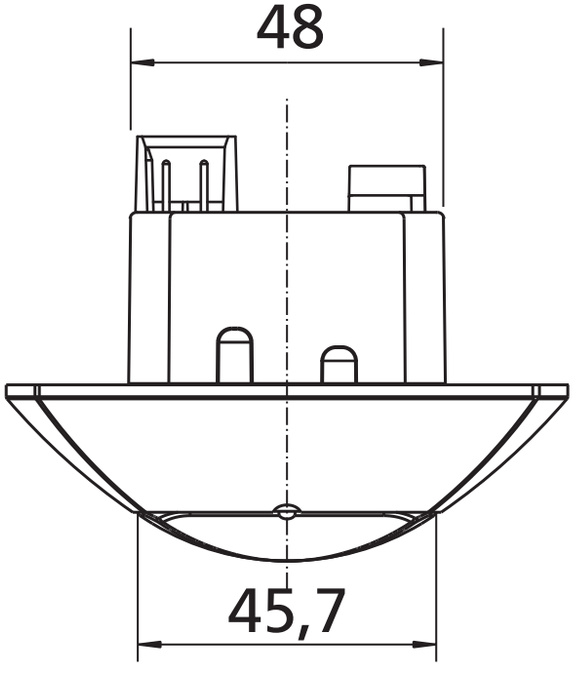
Concept, as well as hard and software of this device are copyrighted.

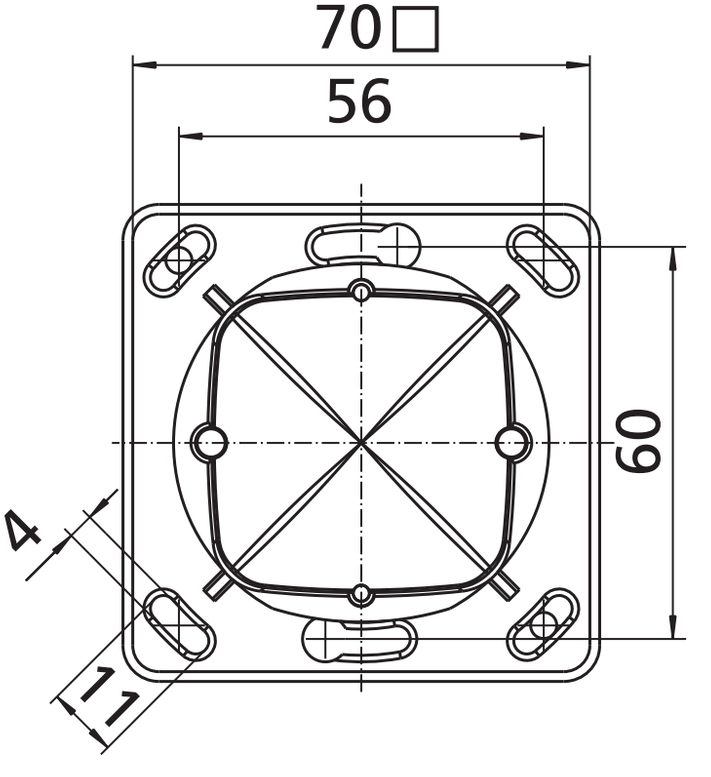
Article numbers		
PresenceLight 180 PLLON WH, white		200 9 150
PresenceLight 180 PLLON BK, black		200 9 151
PresenceLight 180 PLLON SR, silver		200 9 152
PresenceLight 360 PLLON WH, white		200 9 100
PresenceLight 360 PLLON BK, black		200 9 101
PresenceLight 360 PLLON SR, silver		200 9 102
Surface frame 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
theSenda S, user remote control		907 0 911

Dimensions PresenceLight 360 PLLON

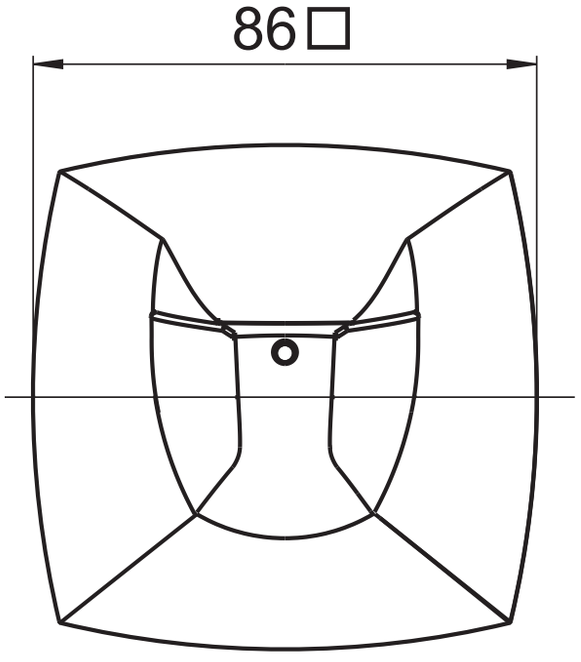


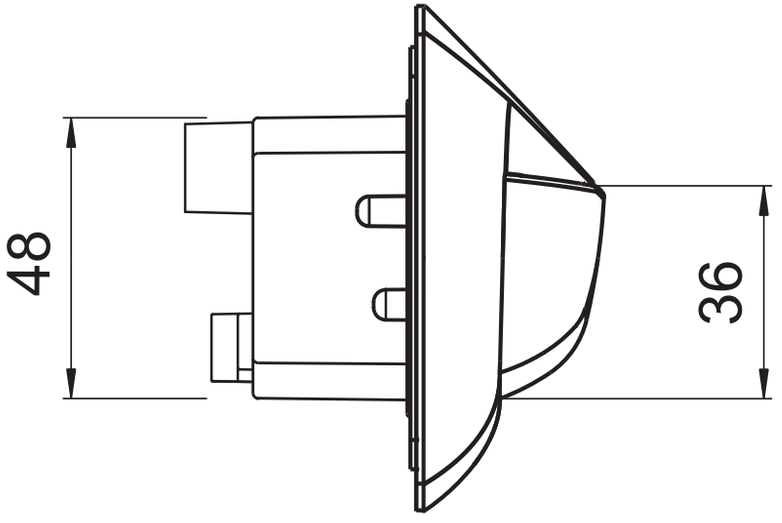


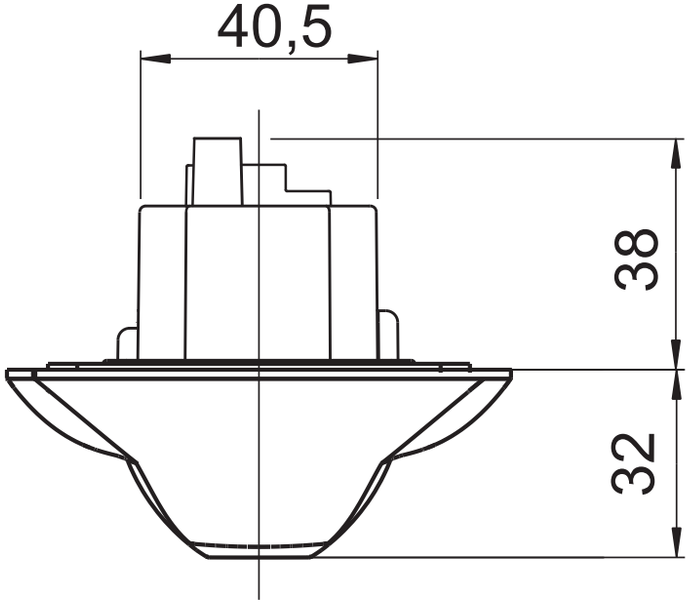


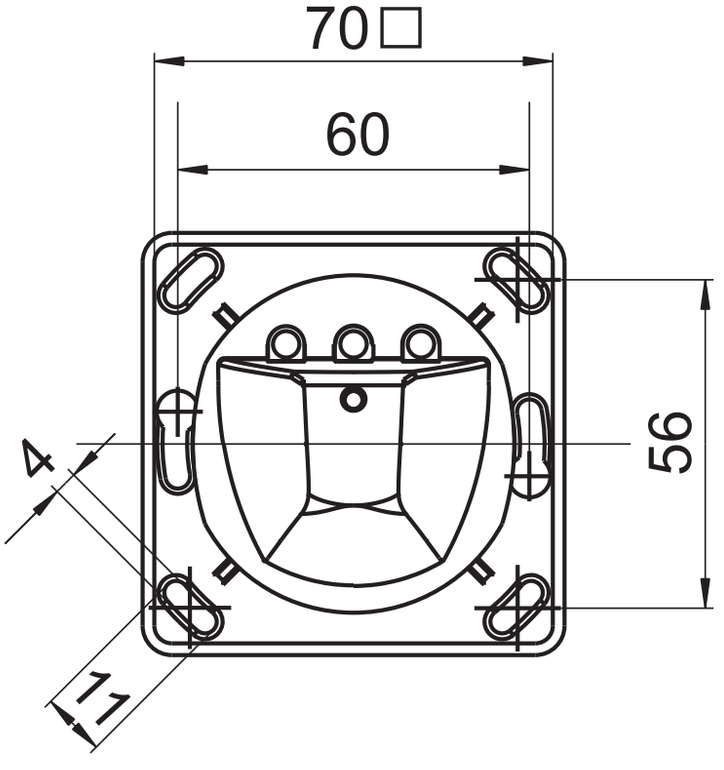


Dimensions PresenceLight 180 PLLON

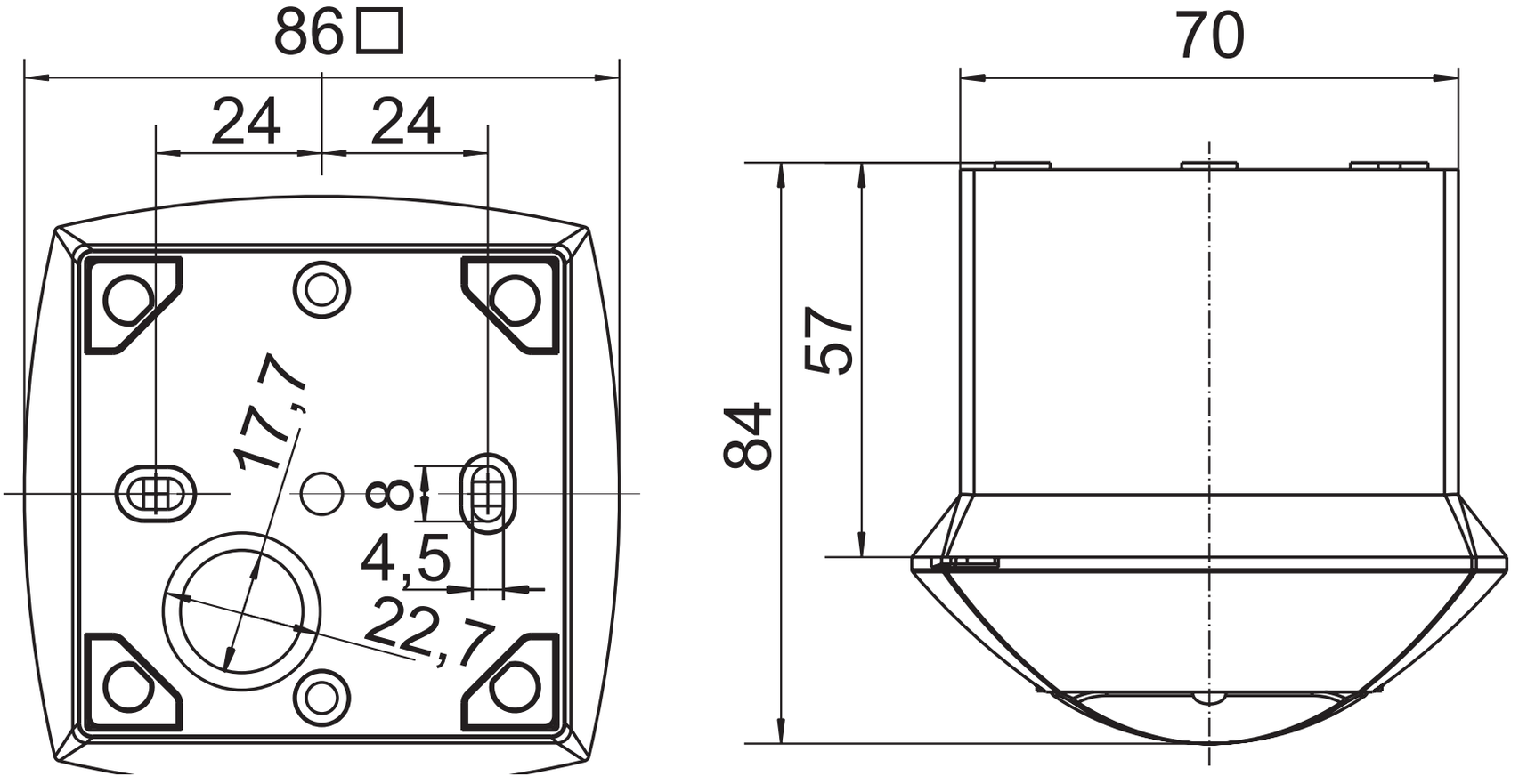








Dimensions surface Frame for PresenceLight 180 / 360 PLLON



CE declaration of conformity

This device conforms with the provisions of the EMC Directive 2014/30/EU

Subject to alteration and printing errors.

N402

thebenHTS

Theben AG
Hohenbergstrasse 32, DE-72401 Haigerloch
Tel. +49 (0) 74 74 692 - 0
Fax +49 (0) 74 74 692 - 150

Hotline
Tel. +49 (0) 74 74 692 - 369
Fax +49 (0) 74 74 692 - 207
hotline@theben.de

Theben HTS AG
Im Langhag 7b, CH - 8307 Effretikon
Tel. +41 (0)52 355 17 00
Fax +41 (0)52 355 17 01
www.theben-hts.ch

Please find the contact addresses for additional countries on www.theben.de