thebenHTS

307021

EN Motion detector

theMova P360-100 UP WH
1030600
theMova P360-100 UP GR
1030601

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1. Product characteristics

- Passive infra-red motion detector for ceiling installation
- Circular detection area 360°, up to Ø 24 m (452 m^2)
- Restriction of detection area with cover clips
- Automatic motion and brightness-dependent control for lighting
- Mixed light measurement suitable for fluorescent lamps (FL/PL/ESL), halogen/incandescent lamps and LEDs
- Channel A light: relay, 230 V
- Operation as fully automatic device
- Brightness switching value configurable, teach-in function
- Pulse function for staircase light time switch
- Time delay configurable
- Detection sensitivity configurable
- Ready for immediate use due to factory presetting
- Test mode for checking function and detection area
- Ceiling installation in flush-mounted socket
- Ceiling installation possible with back box, IP44 (option)
- User remote control „theSenda S" (option)
- Management remote control „SendoPro" (option)

- Installation remote control „theSenda P" (option)

2. Safety

WARNING

Danger of death through electric shock or fire!

➢ Installation should only be carried out by a qualified electrician!

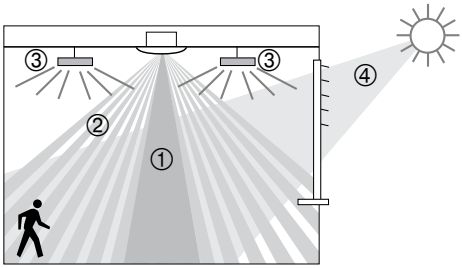
- Work on electrical systems may only be carried out by electricians or by instructed persons under the leadership and supervision of an electrician in accordance with the technical regulations applying to electricity!
- Comply with the country-specific safety regulations for work on electrical systems! Ensure absence of voltage in the cable before installation!
- The device is maintenance-free. If the device is opened or penetrated with any objects the guarantee lapses.

3. Proper use

The motion detector is intended for interior installation. The motion detector is exclusively intended for the use as contractually agreed between the manufacturer and the user. Any other use is considered to be unacceptable. The manufacturer does not accept liability for any resulting damages.

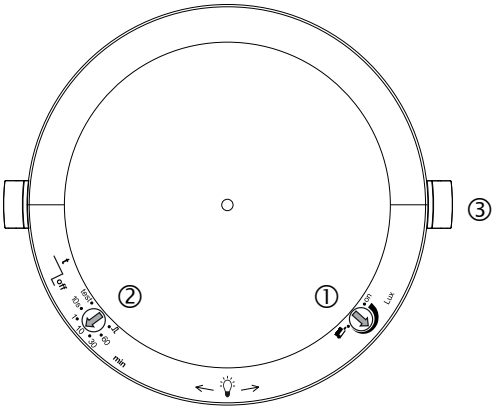
4. Function

The motion detector is used primarily in passage ways such as corridors, staircases, entrance halls, warehouses, sports halls and garages for the convenient and energy-efficient control of lighting. The switch contact „light" switches lighting on with presence and insufficient brightness, and off with absence.



Function description

① Mixed light measurement
② Motion detection
③ Artificial light
④ Incident daylight



Settings on theMova P360-100

① Brightness set point value (lux)
② Lighting time delay
③ Mechanical safety lock

Channel A light

The switching response is controlled by presence and surrounding brightness. The switch contact for Channel A light closes during darkness and when someone is present. It opens with a delay once the room is vacated after the set time delay.

Time delay

The time delay enables delayed switching off of lighting after the room is vacated. The time delay is adjustable in a range of 10 s to 60 min.

Fully automatic device

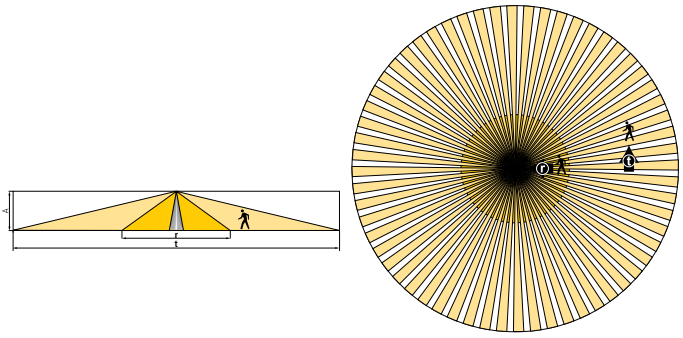
Lighting control of the motion detector operates fully automatically for increased comfort. As „fully automatic device", it switches the lighting on and off automatically.

Pulse function

Time delay can be set to pulse for controlling existing staircase light timer switches. To do so, the light output produces a pulse of 0.5 seconds duration every 10 seconds if people are present or it is dark.

5. Detection area

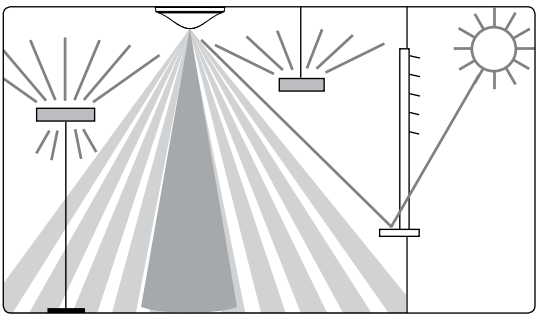
The circular detection area of theMova P presence detector covers a large detection area, and permits a complete room coverage with many applications. Note that moving persons can be detected in differently-sized areas. The recommended installation height is 2.0 m – 6.0 m. As installation height increases, the sensitivity of the presence detector decreases. The extent and distance between the active and passive zones of the motion detector also increases. The detection range is reduced as temperatures increase.



Instal-lation height (A)	Moving persons Frontal (r)		Moving persons Across (t)	
2,0 m	28 m^2	Ø 6 m	380 m^2	Ø 22 m
2,5 m	38 m^2	Ø 7 m	415 m^2	Ø 23 m
3,0 m	50 m^2	Ø 8 m	452 m^2	Ø 24 m
3,5 m	50 m^2	Ø 8 m	452 m^2	Ø 24 m
4,0 m	50 m^2	Ø 8 m	452 m^2	Ø 24 m
5,0 m	50 m^2	Ø 8 m	452 m^2	Ø 24 m
6,0 m	50 m^2	Ø 8 m	452 m^2	Ø 24 m
10,0 m	50 m^2	Ø 8 m	491 m^2	Ø 25 m

Brightness measurement

The motion detector measures the surrounding brightness below the detector. The light measurement area maps a rectangle of about 2 x 3.5 m at table height. The installation location is a reference point for the lighting level. The light measurement is switched off when the light relay is switched on. If the brightness measurement is deactivated, the Channel A light only switches depending on the presence (brightness switching value set to „measurement off" or potentiometer brightness switching value set to „on" via the remote control).



Suitable lamp loads

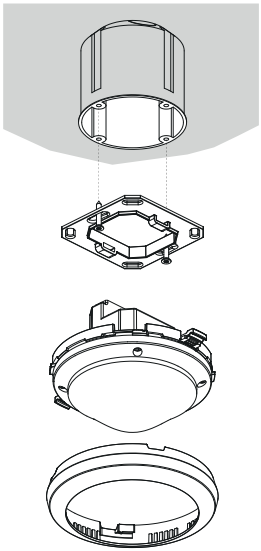
The motion detector is designed for the operation of fluorescent lamps, compact fluorescent lamps, halogen / incandescent lamps and LEDs. The maximum number of switchable lights is restricted due

to the high inrush current levels of the EBs and LED drivers. The use of an external contactor helps with large loads. All switched loads must be properly suppressed.

6. Installation

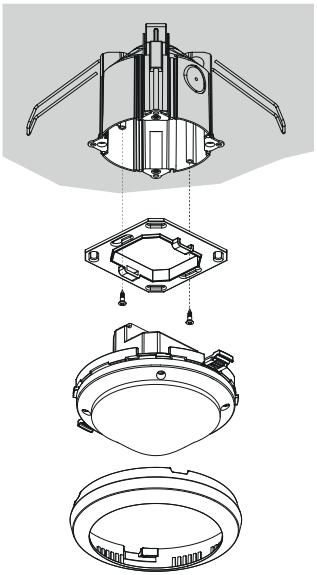
Flush-mounted installation

The motion detector is flush-mounted using a size 1 standard flush-mounting installation socket.



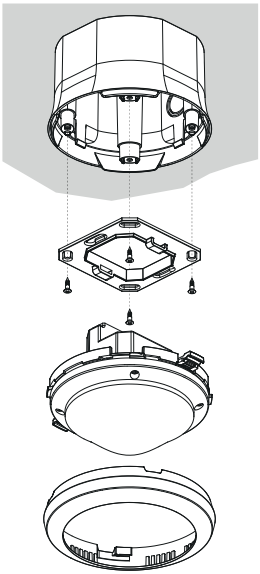
Ceiling installation

A ceiling installation unit 73A is available for simplified ceiling installation of the motion detector (see accessories). This also ensures cord grip and contact protection. The installation diameter is 72 mm (drill diameter 73 mm).



Surface-mount installation

A back box 110A, protection rating IP44, is available for surface mount installation (see accessories).

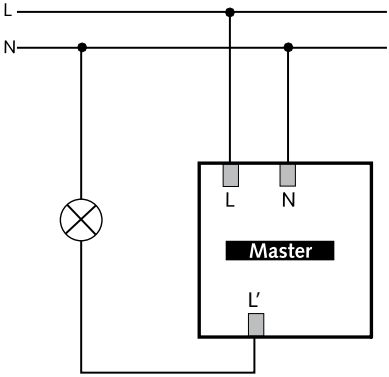


7. Switching

The motion detectors are operated as a master in individual switching. With parallel switching of the light outputs (L'), it must be ensured that all detectors connected in parallel are connected to the same phase.

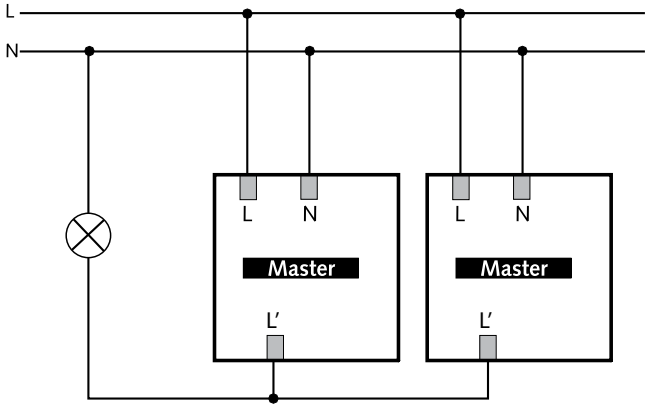
Individual switching

In individual switching, the motion detector as master detects presence and brightness and controls lighting.



Parallel switching of several motion detectors

- Connect switch contacts of several detectors directly.
- Set brightness switching value and time delay on all detectors.
- The permitted overall load is not increased.



8. Settings

The motion detectors are supplied with basic settings ready for operation. The specifications are guidance values. The „SendoPro 868-A" and „the-SendaP" remote controls are optionally available for start-up. They enable remote setting of all required settings.

Settings Channel A light

Potentiometer brightness switching value „lux"

The required brightness switching value can be set via the lux potentiometer. The setting range is

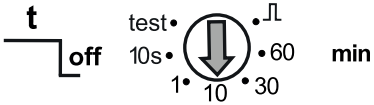
around 30 to 1000 lux. The factory presetting is 300 lux.
Brightness switching values from 30 to 3000 lux can be set via the management remote control „SendoPro 868-A".

Teach-in : When the LUX potentiometer is moved to the teach-in position, the LED starts flashing for 20 seconds. As soon as the LED stops flashing, the current measured brightness value is accepted as the brightness switching value. When the teach-in position is exited, the set value on the LUX potentiometer is accepted as the new brightness switching value.
Teach-in can also be carried out using the „SendoPro 868-A" and „theSenda P" remote controls. In this case, the current measured brightness value is immediately accepted as the brightness switching value.
The brightness measurement is deactivated at potentiometer setting „on". The channel light then switches only depending on presence.

Potentiometer lighting time delay

The following guidance values have proved themselves in practice and are recommended as settings:

- Transit zones (no work area) approx. 5 min
- Work areas (office, halls) approx. 10 min
- ⎍ „Pulse“: Control staircase light timer switch (0.5 s „on“ / 10 s „off“)
- „test“: Test presence



Parameters via remote control

The following parameters can be queried or changed via the remote control for support during installation as well as for servicing:

Parameter	Description	Can be queried SendoPro 868-A	Can be changed SendoPro 868-A	Can be changed theSenda P P
Brightness switching value Channel A light	Value range in lux	x	x	x
	Measurement off	x	x	
Brightness actual value Channel A light	Value range in lux	x		
Time delay Channel A light	Value ranges in seconds / minutes		x	x
	Pulse		x	x
Detection sensitivity (PIR)	Value range in increments		x	x
Group address Channel A light	All / I / II / III		x	
LED display motion	Off / On		x	

The parameters are sent to the motion detector with the „SendoPro 868-A" management remote control or with „theSenda P" installation remote

control via infra-red. Changed parameters are immediately applied and used by the detector.

With the „SendoPro 868-A" management remote control, parameters can be queried by sending values level-by-level to the detector. If the sent values are below the set parameter, the LED illuminates briefly. If the sent values are equal or above the set parameter, the LED flickers for 2 seconds.

Control commands via remote control

Control command	Description	Can be triggered Sendo-Pro 868-A	Can be triggered the-Senda P
Teach-in Channel A light	The currently measured brightness value is accepted as the brightness switching value. Values outside the permitted range will automatically be set to the appropriate limit value.	x	x
Switch light on/off	Lighting group can be switched on and off.	x	x
Test presence	On / Off	x	x
Restart	Restart detector	x	x
Factory settings	Set all parameters and settings to factory setting.	x	

Brightness switching value Channel A light

The brightness switching value defines the minimum desired brightness. The currently prevailing brightness is measured below the motion detector.

If the prevailing brightness is below the switching value, the light switches on as soon as motion is detected.

Value range

Lux values with „SendoPro 868-A" management remote control The „theSenda P" installation remote control offers the following values (The currently measured brightness value (lux) can be adopted with the „SendoPro 868-A" management remote control, with the teach-in control command or with the „theSenda P" installation remote control via the teach-in button.) Values outside the permitted range will automatically be set to the appropriate limit value.	30 - 3000 Lux 30, 300, 500, 800 lux
- Deactivating the brightness measurement (the brightness has no influence) - Channel A light always switches with presence / absence. „SendoPro 868-A" Management remote control, „theSenda P" installation remote control	Measurement off Button

Time delay Channel A light

Value range

Adjustable values with „SendoPro 868-A" management remote control	10 s - 60 min
In the „theSenda P" installation remote control, the following values are available	10 s, 30 s, 60 s, 2 min, 10 min, 20 min, 60 min

Control for staircase light timer switch (0,5 s «on» / 10 s «off»)	
„SendoPro 868-A"	Pulse
„theSenda P"	Button ⎍ 1

Detection sensitivity

The detector has 5 sensitivity increments. The basic setting is the middle increment (3).
By selecting the test presence operation mode, the set sensitivity increment is not changed.
With the „SendoPro 868-A" management remote control, levels 1 to 5 can be selected and sent to the detector.
With the „theSenda P" installation remote control, the sensitivity can be reduced or increased by one level with every button press.

Incre-ment	Sensitivity
1	very insensitive
2	insensitive
3	standard
4	sensitive
5	very sensitive

Group address Channel A light

This parameter is applied when using the „the-Senda P" user remote control.
A group address can be assigned to the Channel A light.
The „SendoPro 868-A" or „theSenda S" can be used to program the group addresses in the detector.

Group address value range

Adjustable values „SendoPro 868-A"	I, II, III, All
Adjustable values „theSenda S"	I, II

LED display motion

The motion detection can be displayed via the LED.

Value range

No display of motion detection.	Off
The LED is switched on when motion is detected, otherwise switched off.	On

Adjustment possible only with „SendoPro 868-A".

Factory settings

The theMova P360-100 motion detector is supplied with the following parameter values:

Parameter	Value
Brightness switching value Channel A light	300 Lux
Time delay Channel A light	10 min
Detection sensitivity (PIR)	Stage 3
Group address Channel A light	I
LED display motion	Off

9. Start-up

Switching behaviour

Every time the power supply is switched on, the motion detector first runs through a start-up phase of 30 s, and then switches to normal operation. An LED displays the current status:

1. Start-up phase (30 seconds)

- The red LED flashes at one second intervals, the switch contact is closed (light on). The wiring is therefore also checked automatically.
- The detector does not react to some remote control commands.
- When no one is present, the switch contact opens after 30 seconds.

2. Operation

The detector is ready for operation (LED off).

Test presence

The test presence operation is used for checking the detection area. The test presence operation can be activated with the „SendoPro 868-A" management remote control and with the „theSenda P" installation remote control or via the lighting time delay potentiometer.

Setting test presence operation with the remote control

- The detector goes directly into test operation when the test operation is set via the remote control:
  - Every movement is indicated by the LED.
  - The light switch contact closes upon motion.
  - When no one is present the light switch contact opens after 10 seconds.
  - Brightness measurement deactivated, detector does not react to brightness.
  - Teach-in cannot be activated in test operation.
- Test operation ends automatically after 10 min. The detector performs a new start (see switch-on behaviour).

10. Technical data

Operating voltage	110-230 V AC + 10 % / - 15%
Frequency	50-60 Hz
Upstream protection device:	13 A
Power consumption	approx. 0.1 W
Type of installation	Ceiling installation; Flush / surface mounted or ceiling installation
Installation height	2.0 – 10.0 m
Minimum height	> 1.7 m

Detection area horizontal vertical	 360° 150°
Maximum range	Ø 8 m (Mh. 3 m) / 50 m² radially moving Ø 24 m (Mh. 3 m) / 452 m² tangentially moving
Setting range brightness switching value	30 – 3000 lux
Lighting time delay	10 s – 60 min / Pulse
Channel A light	Relay 230 V / 10 A, µ-contact
Max. switching capacity cos φ = 1 resistive	2300 W / max. 10 A
Max. switching capacity cos φ = 0.5	1150 VA / max. 5 A
Max. switching capacity LED Guide values	see manufacturer concerning cos φ < 2 W : 60 W / > 2 W : 180 W
Guidance value max. inrush current level	800 A / 200 µs
Maximum number EBs T5/T8	16x 54/58 W, 24x 35/36 W 8x 2x 54/58 W 12x 2x 35/36 W
Connection type	Terminals screws
Max. cable cross-section	max. 2 x 2.5 mm²
Flush-mounted socket size	Size 1, Ø 55 mm (NIS, PMI)
Protection rating	IP 40 (installed)
Ambient temperature	-15 °C – 50 °C

CE Declaration of Conformity	This device conforms to the safety regulations of the EMC directive 2004/108/EC and of NSR 2006/95/EC.

Product overview

Type of installation	Channel	Operating voltage	Colour	Type	Item number
Ceiling installation	Light	110-230 V AC	White	theMova P360 -100	1030600
Ceiling installation	Light	110-230 V AC	Grey	theMova P360 -100	1030601
Ceiling installation	Light	110-230 V AC	Special colour in accordance with customer information	theMova P360 -100	1030603

Troubleshooting

Fault	Cause
Light does not switch on if presence is detected and in darkness	Lux value is set too low; light was switched off via theSenda S; person not within detection area; obstruction(s) interrupting detection; time delay set too short
Light does not switch off and/or light switches on spontaneously when no one is present	Wait for time delay; Thermal sources of interference in the detection area: fan heaters, incandescent lamps/halogen spotlights, moving objects (e.g. curtains hanging in an open windows); Load (EBs, relays) not cleared!
Error flashing (4 x per second)	Error in self-test; Device not properly functional!

LED display

LED	Description
Flashing at one second intervals	The motion detector is in the start-up phase.
Flickering for 2 s	The command sent from the remote control via infrared was accepted by the motion detector.
Lights up briefly	The command sent from the remote control via infrared was rejected by the motion detector. The command is not valid. Check the detector type or parameter selected in the SendoPro.

LED	Description
Fast flashing	Error flashing; The motion detector has found an error.
Flickering for 20 s	Teach-in via potentiometer is activated.
Lights or flickers irregularly	The motion detector is in test presence operation or "LED display movement" is activated. The LED displays detection of movement.

Guarantee

ThebenHTS motion detectors are manufactured with the utmost care and using state-of-the-art technology and are quality-tested. ThebenHTS AG therefore guarantees perfect operation when used correctly. Should a fault occur, however, ThebenHTS AG will fulfil the guarantee within the scope of the general terms and conditions.
Please note in particular:

- that the guarantee period lasts 24 months from the date of manufacture.
- that the guarantee is invalidated if you, or a third party, make changes or undertake repairs to the devices.
- that, insofar as the motion detectors is connected to a software-controlled system, the guarantee for this connection is only valid when the indicated interface specification is complied with.

We undertake to repair or place as quickly as possible all components of the delivered device that have become defective or unusable through demonstrably poor material, faulty construction or incomplete delivery up to the end of the guarantee period.

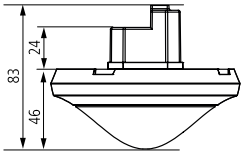
Returns

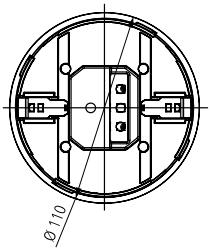
In the event of a guarantee claim, please return the device to the relevant dealer together with the delivery note and a brief description of the fault.

Industrial property rights

The design as well as hardware and software of these devices are protected by copyright.

Dimensions diagrams





11. Accessories

Back box 110A WH
Item No. 9070912
Details> www.theben.de/www.theben-hts.ch

Back box 110A GR
Item No. 9070913
Details> www.theben.de/www.theben-hts.ch

DE (ceiling installation) box 73A
Item No. 9070917
Details> www.theben.de/www.theben-hts.ch

Covering clip for area restriction
Item No. 9070921
Details> www.theben.de/www.theben-hts.ch

SendoPro 868-A
Item No. 9070675
Details> www.theben.de/www.theben-hts.ch

theSenda S
Item No. 9070911
Details> www.theben.de / www.theben-hts.ch

theSenda P
Item No. 9070910
Details> www.theben.de / www.theben-hts.ch

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