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theMova S360-100 Motion Detector Daylight Sensor User Manual

Contents

theMova

theMova S360-100 Motion Detector Daylight Sensor

Product Information:

Motion Detector/Daylight Sensor

- The Mova S360-100 is a motion detector/daylight sensor with multiple product variants including DE WH, FLAT DE WH, AP WH, AP GR, AP BK, and AP SF. It is designed for convenient and energy-efficient control of lighting by detecting motion and ambient brightness. The switch contact allows for the automatic switching on of lights with presence and insufficient brightness, and off with absence. The device has a time delay feature that enables delayed switching off of lighting after the room is vacated, which can be adjusted in a range of 10 seconds to 60 minutes. The motion detector operates fully automatically for increased comfort and has a pulse function that can be set to pulse for control the existing staircase light timer switch.
- The device is designed for use with fluorescent lamps, compact fluorescent lamps, halogen/incandescent lamps, and LEDs, but the maximum number of switchable lights is restricted due to the high inrush current levels of the electronic ballasts and LED drivers. It requires a clear line of sight to people and should be installed at a height of no less than 1.7 meters and no more than 4 meters. Assembly and installation should only be carried out by a qualified electrician.

Product Usage Instructions

Motion Detector/Daylight Sensor

1. Before installation/disassembly, disconnect the supply voltage and ensure that the parts are no longer live.
2. Choose the appropriate variant of the Mova S360-100 for your installation needs.
3. Have a qualified electrician assemble and install the device.
4. Ensure that the device has a clear line of sight to people and is installed at a height of no less than 1.7 meters and no more than 4 meters.
5. Connect the device to compatible fluorescent lamps, compact fluorescent lamps, halogen/incandescent lamps, or LEDs. Note that the maximum number of switchable lights is restricted due to the high inrush current levels of the electronic ballasts and LED drivers. The use of an external contactor helps with large loads.
6. Adjust the time delay feature to enable delayed switching off of lighting after the room is vacated, which can be adjusted in a range of 10 seconds to 60 minutes.
7. Set the device to fully automatic mode for increased comfort.
8. Use the pulse function to control existing staircase light timer switch.
9. Prior to start-up and using the product, read and observe all the operating instructions provided in the user manual.

MODELS

Motion detector/Daylight sensor

- **theMova S360-100 DE WH** 1030560
- **theMova S360-100 FLAT DE WH** 1030540
- **theMova S360-100 AP WH** 1030550
- **theMova S360-100 AP GR** 1030551
- **theMova S360-100 AP BK** 1030552
- **theMova S360-100 AP SF** 1030553

Product characteristics

- Passive infra-red motion detector for ceiling installation
- Circular detection area 360°, up to Ø 9 m (64 m2)
- Daylight sensor mode for brightness-dependent control of the lighting, switchable via app
- Mixed light measurement
- 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
- Installation in false ceilings with springs, type DE
- Surface mount on ceiling, type AP
- User remote control theSenda S (option)
- Management remote control SendoPro (option)
- Service remote control theSendaP (option)
- App remote control theSenda B (option) and corresponding app theSenda Plug (iOS/Android)

Safety

- Assembly and installation should only be carried out by a qualified electrician, somebody who has completed appropriate professional training and has the knowledge and experience necessary to be able to recognise and avoid the potential dangers posed by electricity.
- Before installation/disassembly, disconnect the supply voltage and ensure that the parts are no longer live.
- Prior to start-up and using the product, read and observe all the operating instructions.
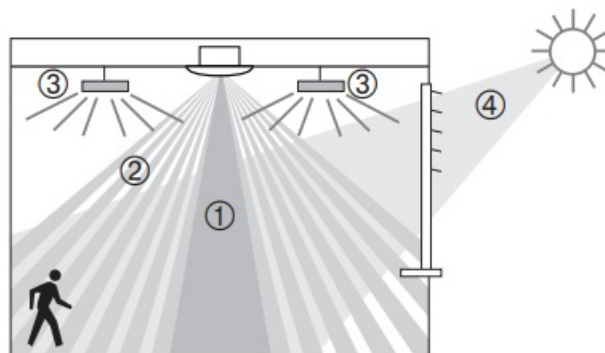
Intended use

- The motion detector controls the lighting depending on motion and brightness.
- It is designed for ceiling installation indoors, e.g. in corri-dors, staircases, basements, garages, etc.

Function

The motion detector is used for convenient and energy-efficient control of lighting. The switch contact „light" switches lighting on with presence and insufficient brightness, and off with absence.

Functional description

1. Mixed light measurement
2. Motion detection
3. Artificial light

4. Incident daylight

Channel A light

- Switching response is controlled by presence and ambient 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.
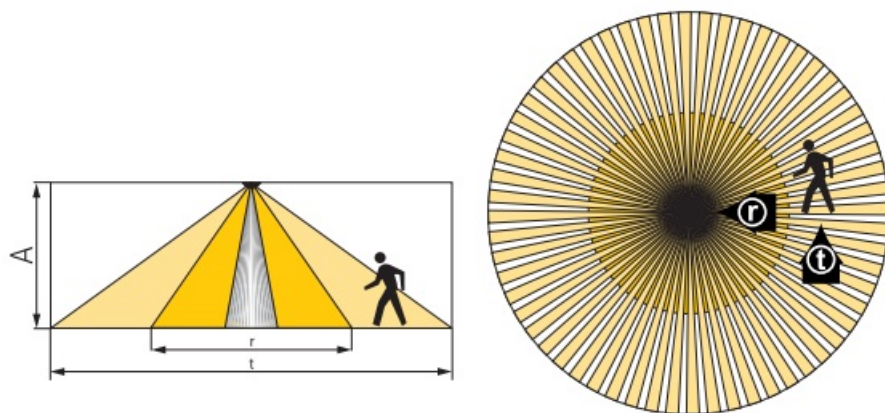
Fully automatic

- Lighting control of the motion detector operates fully auto-matically for increased comfort. In „fully automatic" the lights switch on and off automatically.

Pulse function

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

Detection area

- The circular detection area of theMova S motion detector covers an average detection area.
- **Note** that moving persons can be detected in differently-sized areas.
- The recommended installation height is 2.0 m – 4.0 m. As installation height increases, the sensitivity of the motion 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.
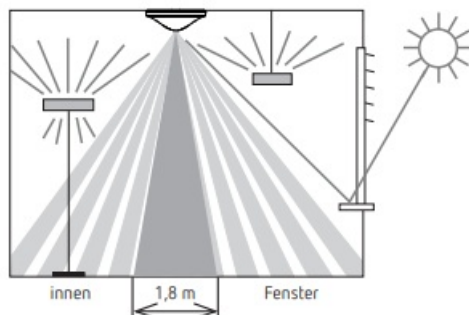
Installation height (A)	Moving persons Frontal (r)		Moving persons Across (t)	
2.0 m	5 m2	Ø 2.5 m	38 m2	Ø 7 m
2.5 m	7 m2	Ø 3 m	38 m2	Ø 7 m
3.0 m	13 m2	Ø 4 m	50 m2	Ø 8 m
3.5 m	13 m2	Ø 4 m	50 m2	Ø 8 m
4.0 m	13 m2	Ø 4 m	64 m2	Ø 9 m

All figures are guidance values (detection areas according to sensNORM IEC 63180, see datasheet).

Brightness measurement

The motion detector measures artificial light and daylight that is reflected below the detector. The light measurement area maps a rectangle of about 1.8 x 3 m at table height. The installation site 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" via the remote control)
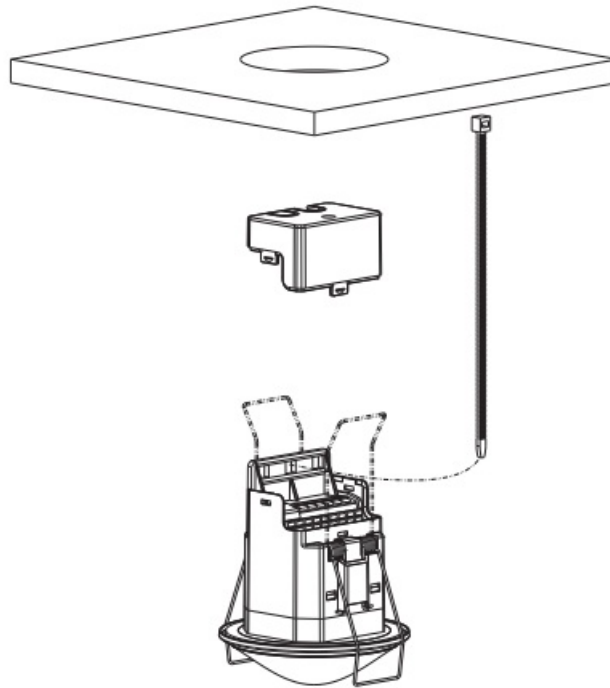

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Suitable lamps loads

- 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.

Installation

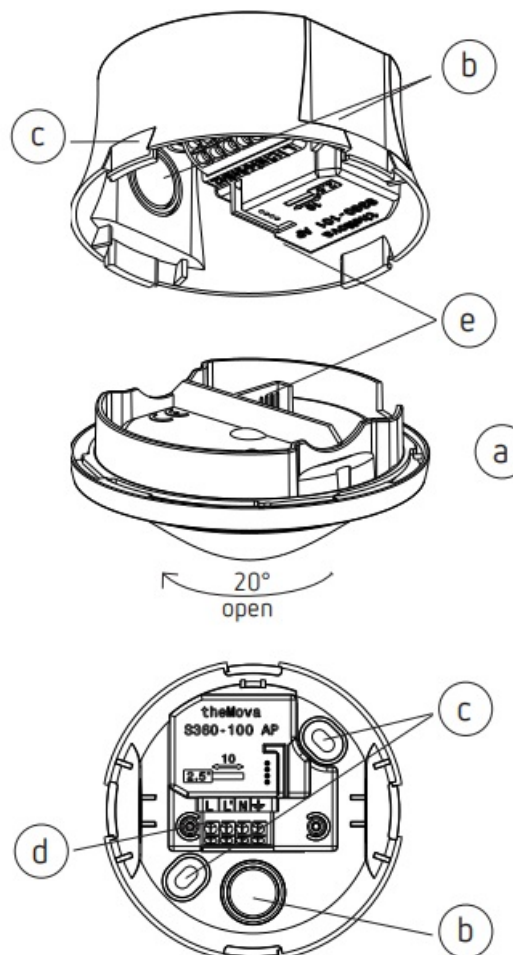**Ceiling installation**

- The detector requires a clear line of sight to people. The installation height must not be less than 1.7 m and should not exceed 4 m.
- Installation in false ceilings for ceiling thicknesses of 0.5 mm to 3 cm.
- The diameter of ceiling cutouts must be between 62 mm and 70 mm.
- The cable strain relief is with using a cable tie (width: 3.5 – 4.8 mm).
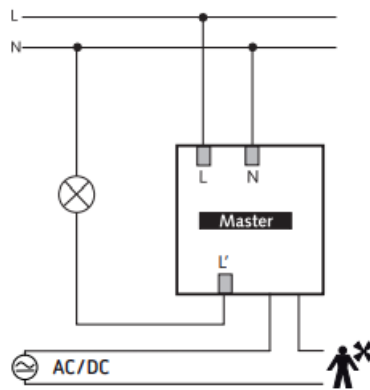
Surface mount on ceiling

- Rotate sensor (a) assembly approx. 20° anticlockwise until it clicks.
- Detach sensor assembly.
- Open knock-outs (b) as needed to feed wires through.
- Mount power assembly (c) on ceiling via the fixing holes (d).
- Connect wiring according to markings on push-in terminals; conductor cross-section 0.25 – 2.5 mm2.
- Attach sensor assembly (a), taking care to insert plug-in connector (e).

Connection

- The motion detectors are operated as a master in individual circuits.
- With parallel connection 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.

settings

Motion detector theMova S does not have a setting poten-tiometer. The motion detector is supplied with a basic set-ting ready for operation. The reference values for the basic settings are optimised for typical applications.Management remote control SendoPro 868-A, service remote control the-Senda P and app remote control theSenda B (with theSenda Plug app) are available for start-up. They allow the remote adjustment of the setting values.

Parameters via remote control

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

Parameter	Description	Can be queried by SendoPro 868-A/ the Senda B (app)	Can be changed by SendoPro 868-A/ the Senda B (app)	Can be changed the Senda 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		

Parameter	Description	Can be queried by SendoPro 868-A/ theSenda B (app)	Can be changed by SendoPro 868-A/ theSenda B (app)	Can be changed theSenda P
Lighting time delay	Value ranges in seconds and minutes		x	x
	Pulse		x	x
Detection sen- sitivity (PIR)	Value range in increments and changeover to daylight sensor mode		x (without change- over to daylight sensor mode with SendoPro 868-A)	x (without change- over to daylight sensor mode)
Group address channel A light	All / I / II / III		x	
LED display motion	Off / On		x	

The parameters are sent to the motion detector via infra-red by using the SendoPro 868-A management remote control, the theSenda P service remote control, or theSenda B app remote control (with theSenda Plug app). Changed parame-ters are immediately applied and used by the detector.

With the SendoPro 868-A management remote control, as well as with theSenda B app remote control (with theSenda Plug app), 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 by SendoPro 868-A/ the Senda B (app)	Can be triggered the Senda P
Teach-in channel A light	Activate	x	x
Switch lights on/ off	Lighting group can be switched on and off.	x	x
Test detection area	On / Off	x	x
Restart	Restart detector	x	x
Factory regulations	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 current 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

Adjustable values SendoPro 868-A/theSenda B (app)	30–3000 lux
Adjustable values the Senda P	30, 300, 500, 800 lux

Deactivation of brightness measurement (brightness measurement has no effect) The light channels only switch according to presence and absence.	
SendoPro 868-A/theSenda B (app)	Measurement off
theSenda P	Button

Teach-in channel A light
During teach-in, the currently measured brightness value is accepted as brightness setpoint value A. Values outside the permitted range will automatically be set to the appropriate limit value.

SendoPro 868-A/theSenda B (app)	Teach-in
the Senda P	Button ⦿

Time delay channel A light

Value range

Adjustable values SendoPro 868-A/theSenda B (app)	10 s–60 min
Adjustable values "the Senda P"	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/theSenda B (app)	Pulse
theSenda P	Button ⎍

Detection sensitivity

- The detector has 5 sensitivity increments. The basic setting is the middle increment (3).
- With the SendoPro 868-A management remote control, as well as with the Senda B app remote control (with the Senda Plug app), increments of 1 to 5 can be selected and sent to the detector.
- With the theSenda P installation remote control, the sensitivity can be decreased ⋀⁻ or ⋀⁺ increased by one increment each time the button is pushed.

Level	Sensitivity
1	very insensitive
2	insensitive
3	Standard
4	sensitive
5	very sensitive
6	Daylight sensor mode

Daylight sensor mode

- With this setting, the detector does not switch the lighting depending on motion, but only depending on brightness.
- If the brightness is below the set brightness setpoint A, the lighting will be switched on. To prevent short brightness disturbances caused by clouds, glare from windows, etc. from switching on and off unnecessarily, the brightness must remain below the brightness setpoint A for a certain time. This time depends on the lighting conditions.
- If the brightness exceeds the set brightness setpoint A with a defined hysteresis and remains above the brightness setpoint A + hysteresis for at least the set time delay, the lighting will be switched off. The time delay can be set from 2 – 60 min.

Group address channel A light

- This parameter is applied when using the theSenda S user remote control.
- A group address can be assigned to channel A light.
- The group addresses can be programmed with the following remote controls:

Group address value range

Adjustable values SendoPro 868-A	I, II, III, All
Adjustable values the Senda B	I, II, III
Adjustable values the Senda Plug	I–VIII, All
Adjustable values the Senda S	I, II

LED display motion
The motion detection can be displayed via the LED.
Value range (only with management remote control SendoPro 868-A/theSenda B (App)

No display of motion detection.	Off
The LED switches on when motion is detected, otherwise swit-ches off.	On

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
Lighting time delay	10 min
Detection sensitivity (PIR)	Stage 3
Group address channel A light	T
LED display motion	Off

Start-up

Switching behavior
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. A LED displays the current status:

Start-up phase (30 seconds)

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

Operation

- The detector is ready for operation (LED off).

Presence test mode

- The test mode detection area is used for checking the detec-tion area. Presence test mode can be activated with SendoPro 868-A management remote control, with theSenda B app remote control (with theSenda Plug app) and with theSenda P installation remote control.

Setting test mode detection area with remote control

- The detector goes directly into test mode when the test mode 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.
- rightness measurement deactivates, detector does not react to brightness.

- Teach-in cannot be activated in test mode.
- Test mode ends automatically after 10 mins. The detector performs a new start (see switch-on behaviour).

Technical data

Operating voltage	230 V AC, +/– 10 %
Frequency	50 Hz
Upstream protection device:	13 A
Power consumption	approx. 0.5 W
Type of installation	Ceiling installation
Recommended installation height	2.0 – 4.0 m
Minimum height	> 1.7 m
Detection area horizontal	360°
Maximum range	Ø 4 m (Mh. 3 m) / 13 m2 radially moving Ø 8 m (Mh. 3 m) / 50 m2 tangentially moving
Setting range brightness switching value	30 – 3000 Lux
Lighting time delay A light	10 s – 60 min / Pulse
Channel A light	Relay 230 V / 10 A, µ-contact
Max. switching capacity cos j = 1 resistive	2300 W
Max. switching capacity cos j = 0.5	1150 VA
Max. switching capacity LED Guide values	< 2 W: 25 W /> 2 W: 250 W (see manufacturer concerning cos j)
Guidance value max. inrush current level	400 A / 200 µs
Maximum number EBs T5/T8	10 x 54/58 W, 16 x 35/36 W 5 x 2 x 54/58 W 8 x 2 x 35/36 W

Connection type	Screwless terminals
Max. cable cross-section	max. 2.5 mm²
Protection rating: theMova S360-100	IP 20 (IP 54 installed)
Ambient temperature	−15 °C to +50 °C
CE Declaration of Conformity	This device conforms to the safety regulations of the EMC directive 2014/30/EC and of directive 2014/35/EC.

Product Overview

Type of installation	Channel	Operating voltage	Color	Type	Item No.
Ceiling installation	Light	230 V AC	White	theMova S360 -100 DE WH	1030560
Ceiling installation	Light	230 V AC	White	theMova S360- 100 FLAT DE WH	1030540
Ceiling installation	Light	230 V AC	White	theMova S360 -100 AP WH	1030550
Ceiling installation	Light	230 V AC	Grey	theMova S360 -100 AP GR	1030551
Ceiling installation	Light	230 V AC	Black	theMova S360 -100 AP BK	1030552
Ceiling installation	Light	230 V AC	Special color in accordance with customer information	theMova S360 -100 AP SF	1030553

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 spontane- ously 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

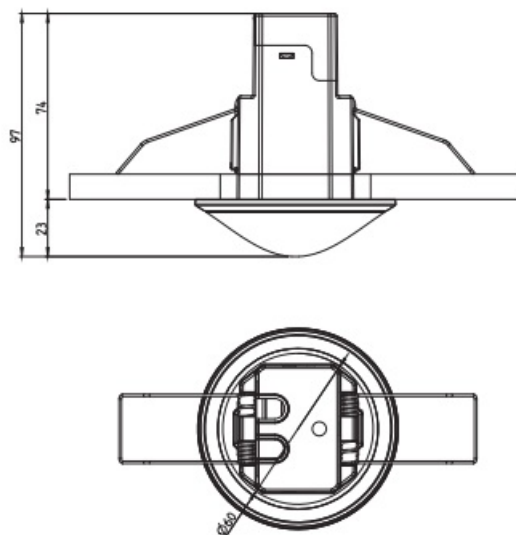| LED	Description
Blinking in 1 second cycle	The motion detector is in the start-up phase.
Flickering for 2 s	The command sent from the remote control via infrared was accepted by the motion detector.
Lights up briefly	The command sent from the remote control via infrared was rejected by the motion detector. The command is not valid. Check the selected detector type or parameters on the SendoPro or in the app.
Fast blinking	Error blinking; the motion detector has found an error.
Lights or flickers irregularly	The motion detector is in detection area test mode or "LED display movement" is activated. The LED displays detection of movement.

Cleaning and service

- Only use a dry, soft cloth to clean the device surface.
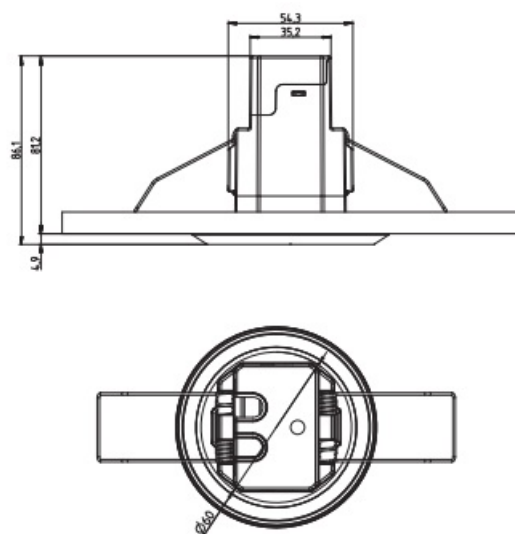- Do not use any cleaning agents or solvents.

Disposal

- Dispose of device in environmentally sound manner (electronic waste).
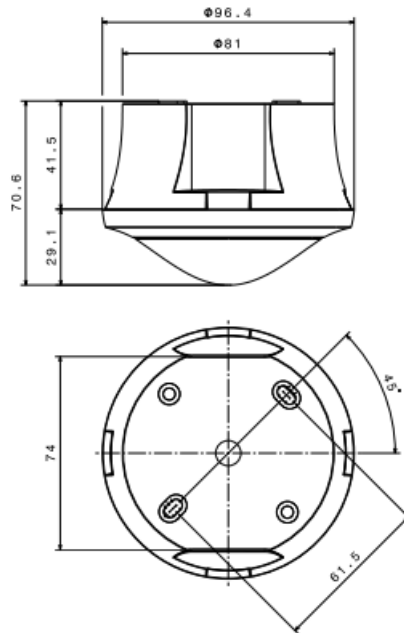
Dimensional drawings

theMova S360-100 DE WH

theMova S360-100 FLAT DE WH

theMova S360-100 AP

Accessories

the Senda B

- **Item No.:** 9070985

the Senda S

- **Item No.:**9070911

the Senda P

- **Item No.:** 9070910

Cover 85

- Bezel frame in grey or black for theMova DE
- **Cover 85 GR:** Item number: 9070594 (grey)
- **Cover 85 BK:** Item number: 9070852 (black)

Cover FLAT 85

- Bezel frame in grey or black for theMova S60 FLAT DE WH
- **Cover FLAT 85 GR:** Item number: 9070597 (grey)
- **Cover FLAT 85 BK**: Item number: 9070853 (black)

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Documents / Resources

theMova S360-100 Motion Detector Daylight Sensor [pdf] User Manual
S360-100 Motion Detector Daylight Sensor, S360-100, Motion Detector Daylight Sensor, Detector Daylight Sensor, Daylight Sensor

References

- **t Theben AG - KNX, DALI, Zeitschaltuhren, Bewegungsmelder, Smart Home | Theben AG**