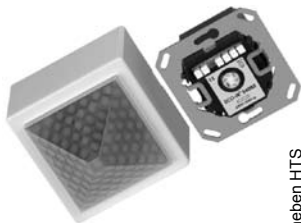


Presence detector
ECO-IR 180-24V
ECO-IR 360-24V

Art. Nr. 202 4 050

Art. Nr. 202 4 000

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Presence detector**ECO-IR 180-24V****ECO-IR 360-24V**

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

1. Safety

DANGER !

Any work on electrical systems must exclusively be carried out by qualified electricians or instructed persons under the direction and supervision of a qualified electrician in accordance with the relevant electrotechnical rules! Any national safety regulations regarding the manipulation of electrical systems must be observed! **The voltage supply must be disconnected prior to installation!**

CAUTION !

The device is maintenance-free. The warranty terminates if the device is opened or entered with any kind of object.

Designated use

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 characteristics

2.1 Presence detection

High-sensitivity PIR sensors and an intelligent lens system provide complete coverage.

2.2 Integrated daylight measurement

Measures the exact amount of daylight independently of the artificial lighting conditions. The measurement is performed in the viewing direction of the device. Delayed response to brightness changes to prevent unnecessary activation/deactivation.

2.3 Switching contact «Light»

The switching contact closes if the brightness level is too low and if the presence of a person is detected. It opens if the brightness level is adequate or if no presence is detected. The switch-off delay time and desired switching value can be defined as required.



The ECO-IR is designed for use in combination with fluorescent lamps (FL operates with standard ballasts) and energy saving lamps (PL). Incandescent or halogen lamps may interfere with the operation of the detector.

With indirect lighting, ensure that the main part of the light from these lamps is not directed at the detector as this affects the daylight measurement.

When using suspended lighting, we recommend that you integrate the detector directly in the lamps or provide a sufficient lateral clearance. When using suspended lighting, note that the detection range may be shaded.

2.4 Switching contact «HVAC»

A potential free relay connects loads up to max. 100 W. The loads are only connected if a person is detected, independent of the incident daylight. The contact is closed if persons are detected.

2.5 Switch-off delay time «Light»

You can set the minimum duration to between 2 and 15 minutes. The ECO-IR can extend this time setting (by max. 15 minutes) or reduce it to the minimum value, depending on the frequency of movement (self-learning effect). When set to 2 minutes, the switch-off delay is fixed.

2.6 Switch-off delay time «HVAC»

You can set the duration steplessly to between 1 and 60 minutes. Unlike the «Light» switch-off delay time, the «HVAC» switch-off delay time is not adjusted by the ECO-IR.

The switch-off delay times are restarted each time a movement is detected.

3. Detection Range

3.1 Detection Range ECO-IR 180-24V for wall mounting

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

M'height	Seated persons	Walking persons
2,2m	8,0m x 4,0m	approx. 8m radial distance

Due to the horizontal orientation of the ECO-IR 180-24V, the detection range is very large. The sensitivity decreases by increasing distance.

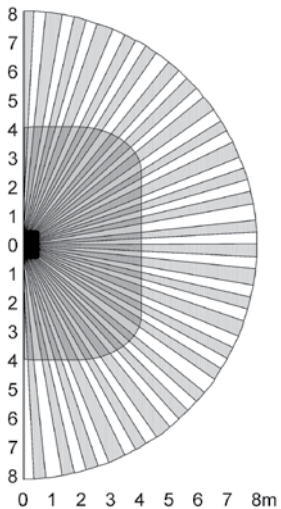
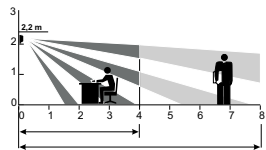
3.2 Detection Range ECO-IR 360-24V for ceiling mounting

The ideal mounting height is 2,0 - 3,5m.

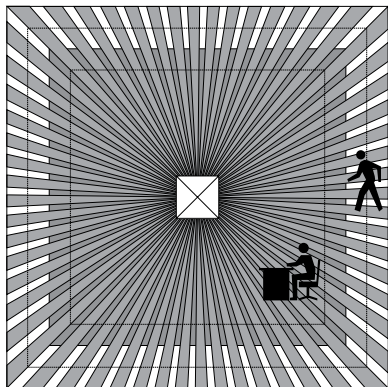
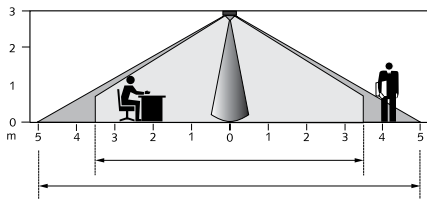
The sensitivity of the detector decreases with increasing mounting height. In order to ensure proper detection of persons, the ECO-IR 360-24V requires an unobstructed "view" of the persons. Office equipment, plants, suspended lamps etc. may affect the presence detection (shading).

M'height	Seated persons	Walking persons
2,0m	4,5m x 4,5m	6,0m x 6,0m ± 0,5m
2,5m	6,0m x 6,0m	8,0m x 8,0m ± 0,5m
3,0m	7,0m x 7,0m	9,0m x 9,0m ± 0,5m
3,5m	8,0m x 8,0m	10m x 10m ± 1,0m
4,0m	---	11m x 11m ± 1,0m

ECO-IR 180-24V:



ECO-IR 360-24V:



GB

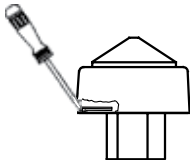
4. Mounting and connecting the device

4.1 Type of mounting

Both ECO-IR models must be mounted in housings (surface-mounted or concealed installation, single housing). Suitable hollow-wall housings must be provided for mounting the devices in suspended ceilings.

4.2 Preparations

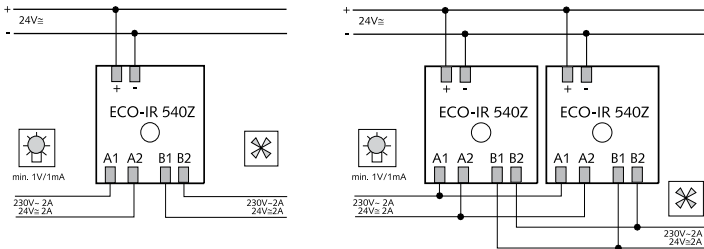
First pull out the left and right-hand safety locks up to the limit stop using a screwdriver to separate the sensor head from the power section.



Remove the sensor head from the power section.

4.3 Connecting the ECO-IR

Connect the power section of the ECO-IR 540Z as shown in the diagram:



All of the ECO-IR units connected in parallel must be connected to the same mains phase. The overall permissible load as a result of the parallel connection is not higher.

4.4 Stepping switch/time switches

The ECO-IR must not be used to trigger stepping switches. The unit may only be connected in parallel to time switches.

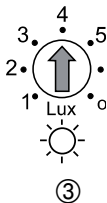
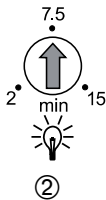
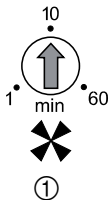
4.5 Inductive loads

Inductive loads must be interference-suppressed with suitable spark extinguishers (e.g. RC combination)

5. Start-up

5.1 Settings

Set the unit as shown on the rear of the disassembled sensor head. Note the setting guidelines in the following tables for defining the default settings.



① Switch-off delay time «HVAC»

Set the desired switch-off delay time for the „HVAC“ switching contact on the potentiometer. The preset values remain unchanged (no self-learning effect)

- Switch-off delay time depending on application and load 1 - 60 min.

② **Switch-off time delay «Light»**

Set the desired minimum switch-off delay time for the «Light» switching contact on the potentiometer.

- Transfer zones approx. 5min.
- Working areas approx. 10min.

The setting corresponds to the minimum value. The effective switch-off delay time varies between the set value and the maximum value of 15 min. (self-learning effect). When set to 2 min., the switch-off delay is fixed.

③ **Brightness threshold «LUX»**

Scale

- Transfer zones (no working area) approx. 2
- Working areas (offices, conference rooms) approx. 4
- Activities requiring good visibility (laboratory, drawing) > 5
- Deactivation of brightness measurement «on»

Depending on the installation location, natural light intensity, furniture, reflection characteristics of the room and the furniture it may be necessary to correct the settings by 1-2 steps on the scale.

5.3 Behaviour on switching on

- After you have defined the settings, connect the upper part to the power section. Ensure that the labelling is aligned on both parts.
- Each time the sensor head is attached to the power section or after the power supply is connected, a startup phase (90 sec.) followed by a service phase (10 min.) is initiated on the sensor. The sensor then switches to normal operation automatically.



Avoid using force when assembling the unit. Ensure that the two parts are aligned correctly.

- Do not press on the lens. Hold the upper part at the white edge only.
- The two switching contacts are closed for approx. 90 sec. after the unit has been assembled (startup phase).
- The lighting system lights up continuously and the ventilation system is in operation.
- In the subsequent service phase, the ECO-IR responds immediately to changes in brightness in order to test the set brightness switching value (Lux) quickly.
- If the room is darkened (e.g. by closing the blinds), the lighting system is switched on when the switching value is reached. The lights can be switched off by „blinding“ the sensor with a torch.

- The service phase is completed automatically after 10 minutes.
- Repeat the setting procedure if it is necessary to modify one of the three variables.
- Push the safety lock inwards as far as possible after the test (between the sensor head and the power section). The detector is then ready for operation.

5.4 Disassembling/readjusting the unit

- If you want to disassemble the head section or change the settings, first open the safety locks by pulling out the two locks with a screwdriver.

6. Technical specifications

Sensor module ECO-IR 180-24V		
Detection range	horizontal	180°
Recommended mounting height		ca. 1,6m - 2,2m
Maximum range		< 10m
Daylight measurement Light measurement deactivated		ca. 50 - 1600Lux „on“
Switch-off delay time for light		2min. - 15min.
Switch-off delay time for presence / HVAC		1min. - 60min.

Sensor module ECO-IR 360-24V		
Detection range	horizontal vertical	360° 120°
Recommended mounting height		2,0m - 3,5m
Maximum range		8 x 8m (Mh. 2,5m) 9 x 9m (Mh 3,0m)
Daylight measurement Light measurement deactivated		ca. 50 - 1600Lux „on“
Switch-off delay time for light		2min. - 15min.
Switch-off delay time for presence / HVAC		1min. - 60min.

*) Eine Belastung des Schaltkontakts mit mehr als 60V bzw. 100mA (max. 1.5W) verändert die Eigenschaften des Schaltkontakts dauerhaft, die Spezifikation der minimalen Last von 1V/1mA kann nicht mehr garantiert werden.

Common power module ECO-IR 540Z	
Nominal voltage	24V AC/DC \pm 10%
Switching contact A	«Light»
Contact design, potential free	24V @ 2A μ , 230V~2A μ
Switching capacity *)	minimal maximal
	1V / 1mA 50W / 460VA
Switching contact B	«HVAC»
Contact design, potential free	24V @ 2A μ , 230V~2A μ
Switching capacity *)	minimal maximal
	1V / 1mA 50W / 460VA
Mounting depth	35mm
Mounting diameter	55mm
Mounting plate (integrated)	70x70mm
Screwless terminals (rigid connectors)	max. 1.5mm ²
Size of concealed housing	Size 1, (NIS, PMI)
Ambient temperature	0° to 50° C
Degree of protection	IP 40
Article numbers	
ECO-IR 180-24V	202 4 050
ECO-IR 360-24V	202 4 000
Surface frame ECO-IR 180	907 0 511
Surface frame ECO-IR 360	907 0 512

7. Warranty declaration

Theben HTS presence detectors are manufactured and quality-tested with the utmost care using state-of-the-art technologies. Theben HTS therefore guarantees perfect function, provided the detectors are used as intended. However, should a defect occur, Theben HTS offers the following warranty within the scope of its General Terms and Conditions of Business:

Please bear in mind the following points:

- The warranty period is 24 months, commencing from the manufacturing date.
- The warranty becomes null and void if you or third parties undertake alterations to the units.
- If the presence detector is connected to a software-controlled system, the warranty for this connection is only valid provided the stated interface specification is adhered to.

We undertake to repair or replace as quickly as possible all supplied components which have become defective or unusable as a result of demonstrably bad material, faulty design or defective workmanship up to the expiry of the warranty period.

Returns

In the event of a warranty claim please send the unit together with the delivery note and a brief description of the fault to the dealer concerned.

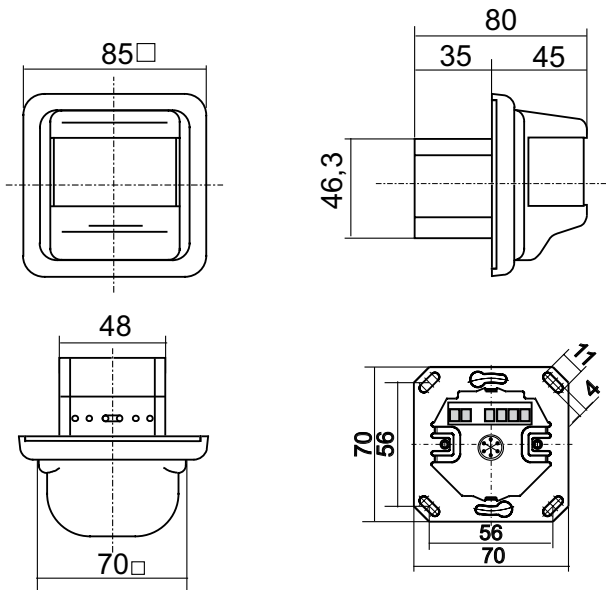
Industrial property rights

The concept including hardware and software of these units is protected by copyright.

8. Troubleshooting

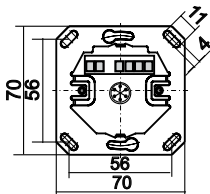
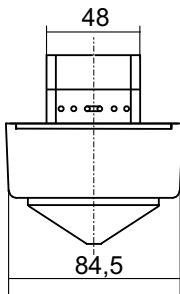
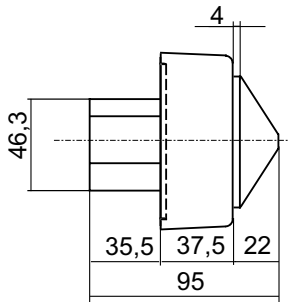
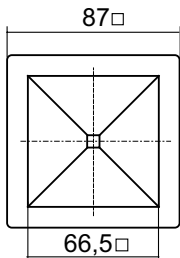
Fault	Cause	Remedy
Lighting on after the detector is connected.	Both outputs are closed for 90 s after the detector has been connected (test phase)	Wait for 90 s. The device then responds immediately to changes in brightness for 10 minutes.
Immediate response to change in brightness	The device is in service phase (10 min.). This phase is used to adjust the brightness setting	After the service phase, the response to a change in brightness is delayed to prevent sudden switching.
Lights never switched on, despite presence of persons and little daylight	<ol style="list-style-type: none"> 1. Lux value too low. 2. Detection zone does not cover the entire room. Vision may be impaired. 	<ol style="list-style-type: none"> 1. Increase Lux value. 2. Change mounting location or remove obstacles in detection range.
Lights flash constantly («blinking»)	<ol style="list-style-type: none"> 1. Halogen or incandescent lamps triggered by ECO-IR. 2. Direct illumination from fluorescent lamps too high. 	<ol style="list-style-type: none"> 1. Set Lux value to „on“ or replace incandescent lamps with FL/PL lamps. 2. check arrangement of detector with regard to lamps.
Lights on continuously / detector switches without reason	<ol style="list-style-type: none"> 1. Lux value too high. 2. Other movements have been registered. 3. External contactor or relay triggered 4. Several detectors connected in parallel 	<ol style="list-style-type: none"> 1. Decrease Lux value. 2. Devices with instant heat emission (e.g. heater), moving objects (curtains, etc.) or domestic animals? 3. Fit inductive loads with spark extinguishers (e.g. RC element). 4. Check Lux setting on detectors
Lights extinguish despite presence of persons	Minimum switch-off delay time too low	Check recommended settings, increase switch-off delay time.
Detection zone is smaller than specified	<ol style="list-style-type: none"> 1. Objects in visibility range 2. Detector positioned incorrectly 	<ol style="list-style-type: none"> 1. Remove obstacles, replace detector 2. Check detection range

Dimensions ECO-IR 180-24V



Subject to change without prior notice. Errors and omissions excepted.

Dimensions ECO-IR 360-24V



GB

Declaration of CE conformity

This device complies with the protection regulations of the EMC directive 2004/108/EC and of the Low Voltage directive 2006/95/EC.



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