

Presence detector ECO-IR DUAL-C NT

Art. Nr. 202 0 401

D	Bedienungsanleitung	2
F	Notice d'utilisation	22
GB	Installation manual	42
E	Manual de instrucciones	62
I	Istruzioni per l'uso	82
NL	Gebruikershandleiding	102

**Presence detector
ECO-IR DUAL-C NT****Table of contents**

1. Safety	43
2. Function and performance characteristics	44
3. Location / Installation	45
4. Start-up	49
5. Additional wiring examples	52
6. Test mode	54
7. Technical specifications	55
8. Warranty declaration	57
9. Troubleshooting	58

Thank you for purchasing an 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

The presence detector ECO-IR DUAL-C NT detects persons within a room on account of slightest movements. Simultaneously, its two light sensor measure the brightness in two different zones of the room (A = window zone, B = inner zone) and compare them to the preset brightness thresholds.

Two relays serve as switching outputs. ECO-IR DUAL-C NT is used preferably in large rooms in which several lighting groups must be switched after different brightness values. A mechanical safety lock protects the detector against unauthorised removal.

Two switching contacts A and B «Light» switch on the lighting in case of presence **and** insufficient brightness, and off in case of absence **or** sufficient brightness. In addition, the lighting can be switched manually by means of push-buttons.

- 2 switching contacts Light: relay 230V
- Double real daylight measurement
- Manual control by push-button or switch
- Semi or fully automatic operation
- Adjustable brightness threshold and switch-off delay
- Suitable for fluorescent lamps and compact energy saving lamps
- Inrush current limitation for electronic ballasts
- QuickSet plus service remote control (option)
- clic user remote control (option)

3. Location / Installation

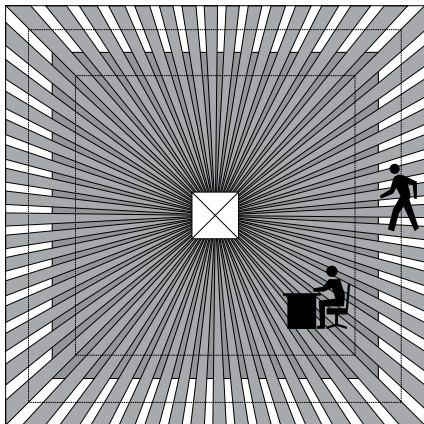
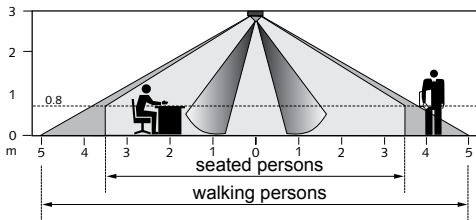
3.1 Presence detection

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 DUAL-C NT requires an unobstructed "view" of the persons. Office equipment, plants, suspended lamps etc. may affect the presence detection (shading).

H. mont.	Personnes assises	Personnes marchant
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

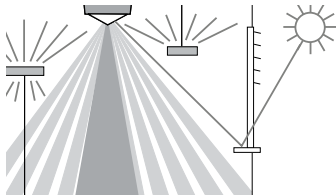
Detection range (mounting height 3,0m)



3.2 Light measurement

The ECO-IR DUAL-C NT is designed for use with fluorescent lamps. It is particularly suitable for switching electronic ballasts. Incandescent or halogen lamps may interfere with the operation of the detector.

With indirect lighting, ensure that the light from these lamps is not directed at the detector, as this would affect the daylight measurement.

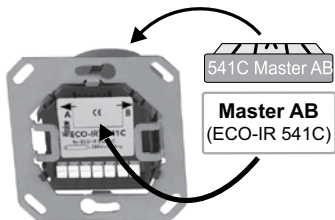


3.3 Connection

The presence detector ECO-IR DUAL-C NT must be flush mounted into a concealed housing. A suitable frame for surface mounting is also available. Please pay attention to the orientation of the device when assembling: A=window zone, B=inner zone.

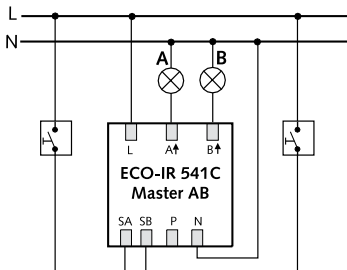
3.4 Coding

Before use, the ECO-IR DUAL-C NT has to be configured as «Master AB», «Master A», «Master B» or «Slave» with the enclosed code keys.



3.5 Single Unit Operation

The ECO-IR DUAL-C NT is configured as a «Master AB» and thus is able to control two lighting groups. To get a «Master AB», the corresponding code key has to be inserted into the power module ECO-IR 541C. Stuck the corresponding sticker «Master AB» onto the power module.



4. Start-up

The detectors are supplied ready for operation with a factory setting of standard values. QuickSet plus service remote control for starting-up is optionally available, which allows to set all potentiometer values from a distance.

4.1 Settings for switching contacts A, B «Light»

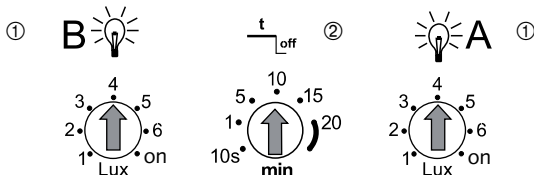
Potentiometer

① Brightness threshold «LUX»

Scale

- Transfer zones (no working area) approx. 2
- Working areas (office, conference room) approx. 4
- Activities requiring good visibility (laboratory, drawing, etc.) > 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.



For ease of setting up, we recommend the service remote control QuickSet plus.

② Switch-off delay time

- Transfer areas approx. 5min.
- Working areas approx. 10min.
- In the range between 2 - 15min the switch-off delay varies according to its self-learning behavior.
- The set values <2min or >15min remain fixed.
- The switch-off delay time applies to both switching outputs together.

DIP switch

③ Fully / Semi-automatic mode

auto  man

- «auto»: Fully automatic mode. The lighting is switched on automatically.
- «man»: Semi-automatic mode. The lighting must be switched on manually by push button or switch.

④ Push-button/Switch control



- Optional push-button or switch operation.
- Multiple push-buttons on one control input possible.
- Use illuminated push-buttons with PEN conductor connection only.

4.3 Behaviour on switching on

Whenever the sensor module is plugged onto the power module or the unit is energised, the detector goes through three phases which are indicated by an LED.



Fast blinking (4x per second) means the code key is not recognized.

1. Start-up phase (30sec)

- LED flashes every second, both contacts are closed (light and presence on)
- In case of absence, both contacts open after 30sec.

2. Service phase (10min)

- The «Light» contact reacts instantaneously on brightness in order to check the brightness threshold.
- If the brightness is insufficient the lighting is switched on (LED on), and if the brightness is sufficient the lighting is switched off (LED off).
- During the service phase, switching of the lighting occurs fully automatically (no semi-automatic mode).
- The service phase terminates earlier by actuating the push-button or the remote control.

3. Operation

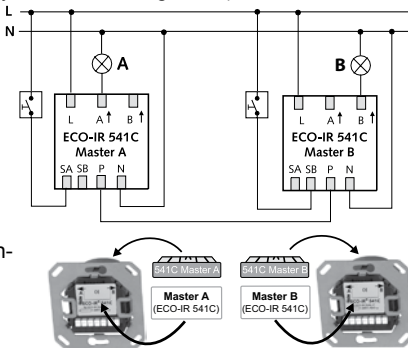
- The detector is ready for operation (LED off).

5. Additional wiring examples

5.1 Parallel circuit operation with two detectors: Master A - Master B

Two detectors are required for the desired room size.

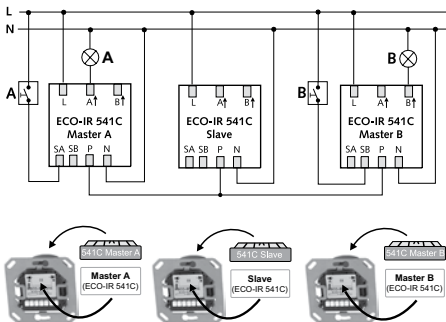
- The coding of the detector («Master A» or «Master B») is set by means of a code key on the power modules
- Stuck the corresponding sticker («Master A» or «Master B») onto the power modules
- Each Master is responsible for measuring the daylight intensity in one half of the room («Master A» in zone A, «Master B» in zone B)
- Presence detection is done by all detectors together (the P-contacts are tied together)
- Set the potentiometer and DIP switches on both detectors
- Note: the settings of the potentiometer LUX is effective only with the appropriate master.
- Max. 10 detectors can be connected in parallel
- Use the same phase for all detectors




5.2 Parallel circuit operation with more than two detectors: Master A - Master B - Slave

More than two detectors are required. Two Masters and one or more Slaves are connected.

- The coding of the detector («Master A», «Master B» or «Slave») is set by means of a code key on the power modules
- Stuck the corresponding sticker («Master A», «Master B» or «Slave») onto the power modules
- Each Master is responsible for measuring the daylight intensity in one half of the room («Master A» in zone A, «Master B» in zone B)
- Presence detection is done by all detectors together (the P-contacts are tied together)
- Set the potentiometer and DIP switches on all detectors
- Note: the settings of the potentiometer LUX is effective only with the appropriate master.
- Max. 10 detectors can be connected in parallel
- Use the same phase for all detectors



6. Test mode

The test mode serves to check the presence detection and the wiring (Master-Slave parallel circuit operation). run  test

6.1 Setting the test mode with DIP-Switch

- Set DIP switch to «Test» (on all detectors in parallel circuit operation).

1. Start-up phase (30sec)

- Both contacts are closed for 30sec. (LED 20s «on», 10s «off»)
- The blinking pattern of the LED indicates which coding has been set in the detector:

2 pulses = Master AB; 3 pulses = Master A;

4 pulses = Master B; 5 pulses = Slave

Fast blinking (4x per second): the code key is not recognized!

2. Test mode

- In case of movement (LED on), both contacts close
- In case of absence (LED off), both contacts open after 10sec.
- NOTE: no brightness measurement, detector always in fully automatic mode
- The detector remains permanently in the test mode

6.2 Setting the test mode with QuickSet plus

- While setting the test mode with QuickSet plus, the detector jumps the start-up phase and changes directly into the test mode.
- Test mode ceases automatically after 10 minutes. The detector performs a reset (see section 4.3).

7. Technical specifications

Sensor module		ECO-IR DUAL-C NT
Detection range:	horizontal vertical	360° 120°
Recomm. mounting height (Mh)		2,0m - 3,5m
Maximum range		8 x 8m (Mh. 2,5m) 10 x 10m (Mh. 3,5m)
True daylight measurement Light measurement deactivated		approx. 10 - 1500Lux „on“
Switch off delay for „light“		10s - 20min.
Power module		ECO-IR 541C
Mains voltage		230V± 10%, 50 Hz
Relay output A for light		with initial current limitation
Nominal voltage		230V ± 10%
Max. switching capacity Total of the two switching contacts		1400VA / 6AX~μ
Max. number of electronic ballasts *) A relay or contactor must be connected in case of more powerful devices		16x (1x 58W); 8x (2x58W) 24x (1x36W); 12x (2x36W) 24x (less than 36W)

*) Use of T5-FL: When using T5-FL lamps with a comparable wattage, the same number of electronic ballasts may be connected to the detector's switching contact as for the T8-FL. When using the 80W-FL, the number should be halved in comparison to the 58W-FL.

Depth	35mm
Diameter	55mm
Mounting plate	70 x 70mm
Terminals without screws	max. 1.5mm ²
Size of concealed housing (for flush-mounting)	1 (NIS,PMI)
Ambient temperature	0° - 50°C
Degree of protection	IP 40
Article numbers	
ECO-IR DUAL-C NT	202 0 401
Surface frame for ECO-IR 360	907 0 512
QuickSet plus service remote control	907 0 532
cllic user remote control	907 0 515

CE Declaration of Conformity



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

8. 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

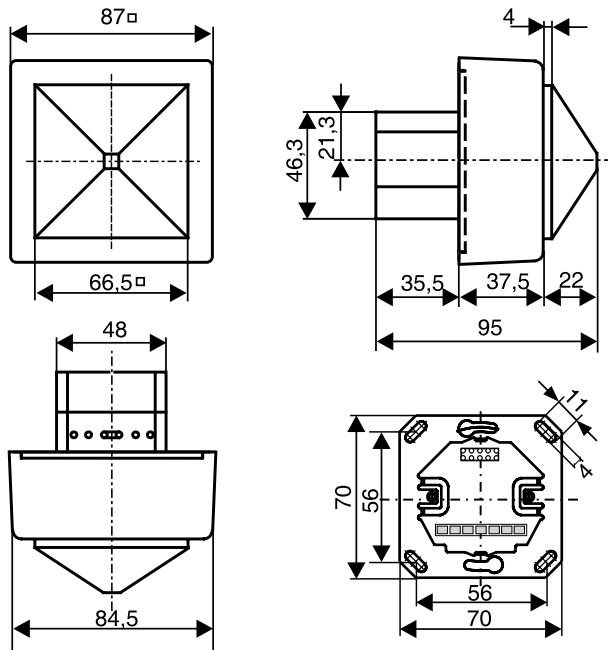
The concept including hardware and software of these units is protected by copyright.

9. Troubleshooting

Fault	Cause
Lighting does not switch on or switches off in case of presence and darkness	Lux value setting is too low; Detector is in semi-automatic mode; Lighting was switched off manually; Person is outside the detection range; Detection is disturbed by obstacle(s); Set switch-off delay setting is too short.
With persons present, the lighting is on although the brightness is sufficient	Lux value setting is too high; The lighting has been switched on manually with clic recently (wait for 30 min); Detector is in test mode.
Lighting does not switch off or switches on spontaneously in case of absence	Wait until the switch-off delay time has elapsed (self-learning effect); Disturbing heat sources within the detection range (heaters, incandescent lamp/halogen lamp, moving objects (e.g. curtains due to open windows); Load (el. starter devices, relay) has no interference suppression.
Light keeps switching on and off („blinking“)	Incandescent lamps or halogen lamps controlled via ECO-IR, deactivate Lux measurement, swap incandescent lamps with PL lamps. Direct shining of FL lamps on the sensor is too high. Check detector arrangement in relation to lamps.
Push-button does not work	Device is still in start-up phase or an illuminated push-button without PEN conductor connection is used; Push-button is not connected to the master.
Error blinking (4x per sec.)	Code key missing or not recognized. Failure during self test; Device not working.

Dimensions ECO-IR DUAL-C NT

GB



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

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