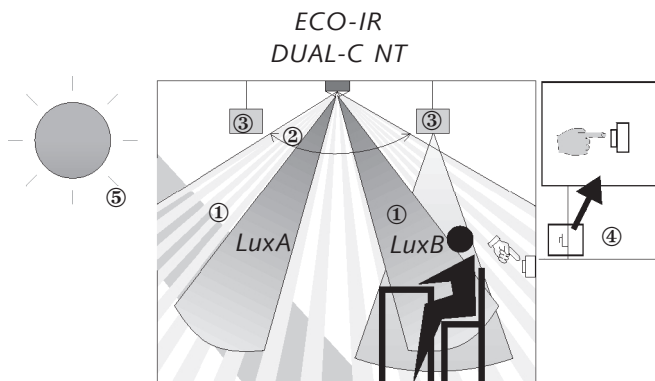
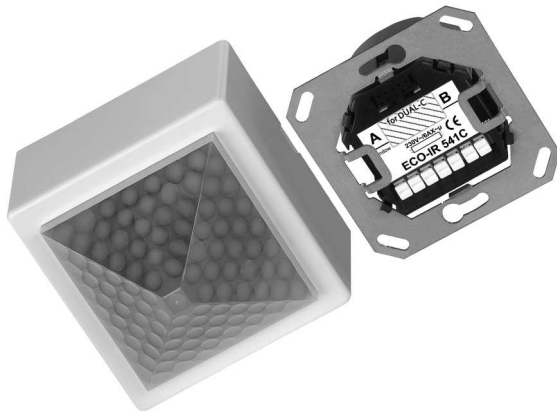
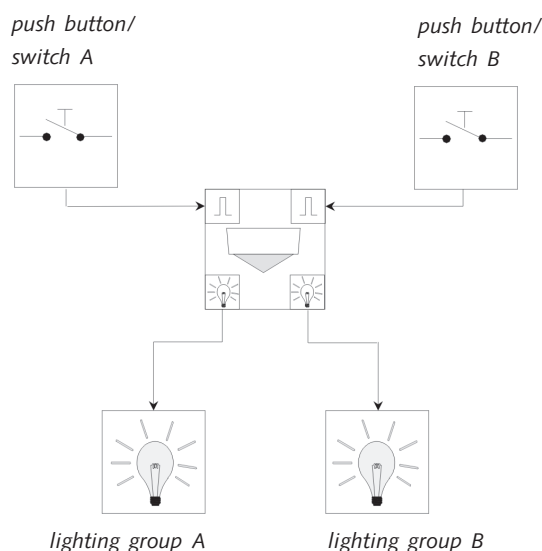


Presence Detector ECO-IR DUAL-C NT



- ① True daylight measurement LuxA and LuxB
- ② Presence detection
- ③ Artificial light
- ④ Two push buttons/switches for manual lighting control
- ⑤ Incident daylight



Product Features ECO-IR DUAL-C NT

- ◆ Passive infrared presence detector for ceiling mounting
- ◆ Square 360° detection range
- ◆ Automatic control over two lighting groups
- ◆ Dual real daylight measurement
- ◆ 2 switched outputs for light (relay, 230V)
Continuously-adjustable switch-off delay and brightness threshold value
Self-learning switch off delay time
Fully or semi-automatic operation switch-selectable
Inrush current limitation for electronic ballasts
Push button or switch connection for manual control of the lighting groups
- ◆ Service remote control QuickSet (option)
- ◆ User remote control clic (option)

Two Zones Daylight Measurement for the Control of Two Lighting Groups

The ECO-IR DUAL-C NT presence detector allows rooms to be divided into two independently controlled lighting zones (A=window, B=inner zone). The detector has two directional light measurements, LuxA and LuxB, which permanently measure the daylight intensity in each zone. A separate brightness threshold may be set for each zone.

Presence Detection

In contrast to the daylight measurement, occupancy is detected for both halves of the room together.

Two Switching Contacts «Lighting»

The switching behavior is controlled by presence and brightness. The contact closes in case of darkness **and** presence, and opens in case of brightness **or** absence (see "Fully or Semi-automatic Operation" below).

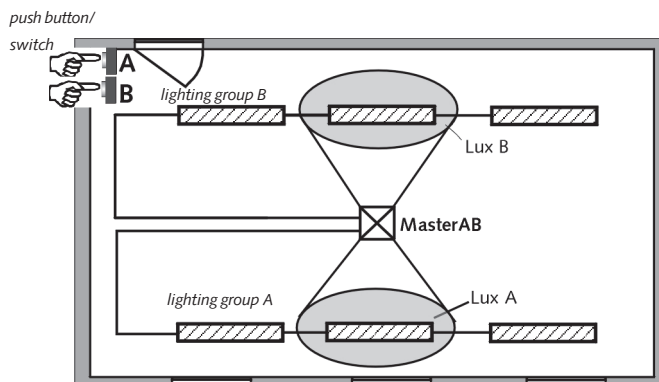
The minimum switch off delay time (10s - 20min) and the desired brightness switching threshold (10-1500Lux) are adjustable. The switch-off delay time automatically adapts to the occupant's behavior (self-learning characteristic), i.e. the unit is able to automatically extend the switch off delay time to max. 15min or reduce it to the minimum set time. The switch-off delay time will not be changed if it is set to 2min or less.

Fully or Semi-automatic Operation

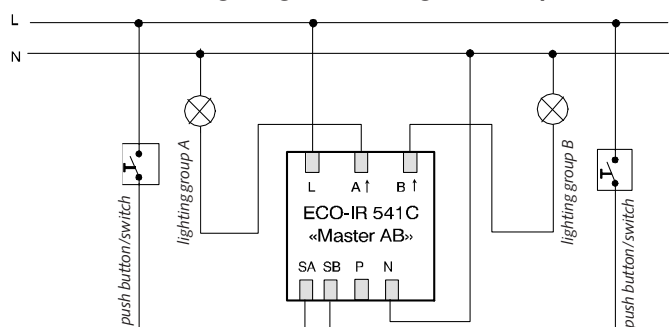
The ECO-IR DUAL-C NT optionally allows fully automatic lighting control for more convenience, or semi-automatic control for better energy-saving results. In the "fully automatic" operation mode, the lighting is switched on and off automatically depending on the presence and brightness in the room.

In the "semi-automatic" operation mode, the light must always be switched on manually. Switching off however, is done automatically. In both operation modes, the light can always be switched manually by means of push buttons (or switches). Multiple push buttons can be connected to one control input (illuminated push buttons may only be used with neutral conductor connection).

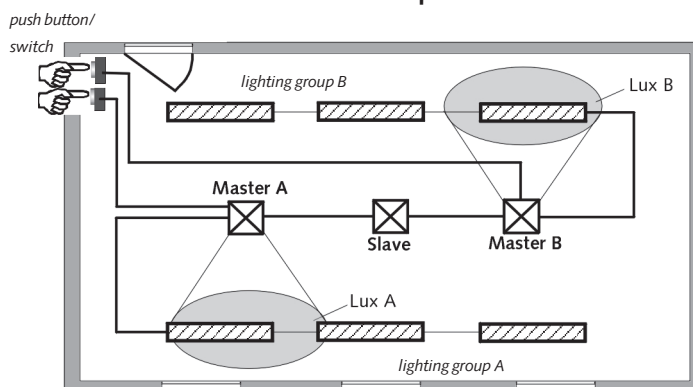
Single Unit Operation



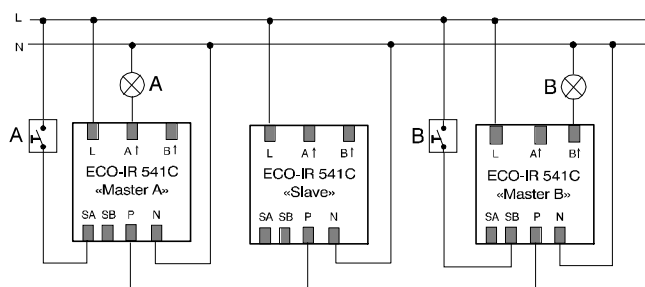
Schematic Wiring Diagram for Single Unit Operation



Master-Slave Parallel Circuit Operation



Schematic Wiring Diagram for Parallel Circuit Operation



Switching Behavior in Fully-automatic Mode

If the lighting is switched on manually, it remains on for at least 30min if persons are present and is automatically switched off afterwards if the brightness is sufficient. If the room is vacated (earlier) the light is definitely switched off after the set switch-off delay time. The lighting can always be switched off manually. The light remains off as long as persons are present in the room. If the room is vacant for a longer period (switch off delay time elapsed) the manual off status is deactivated, and the lighting returns to automatic switching.

Switching Behavior in Semi-automatic Mode

The behavior in semi-automatic operation is basically the same as in fully automatic operation, except for the fact that the lighting is never switched on automatically, i.e. it must always be switched on manually.

Interconnection

In the scope of supply of the presence detector are four code keys. For single unit operation and parallel circuit operation, the detector can be configured as «Master AB», «Master A», «Master B» and «Slave». To get the suitable device, the corresponding code key has to be inserted into the power module ECO-IR 541C.

Single Unit Operation

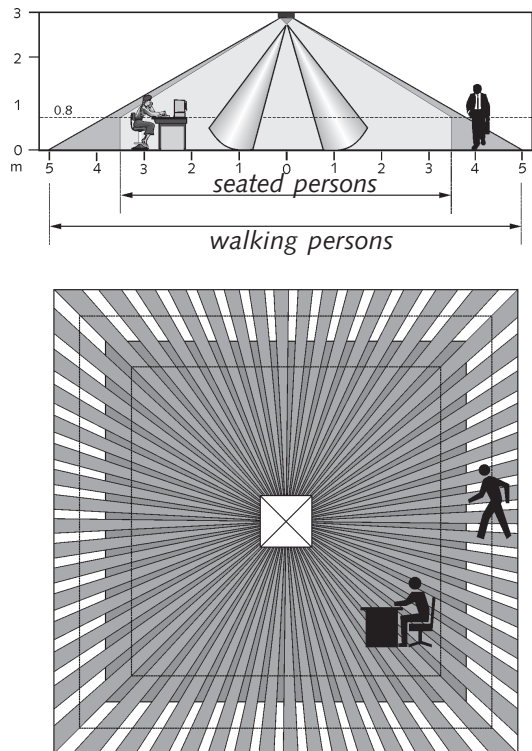
The ECO-IR DUAL-C NT is configured as a «Master AB» and thus is able to control two lighting groups. It is set up to detect presence in the room and measures brightness in both parts of the room.

Parallel Circuit Operation Master-Slave

If the detection range of one detector is insufficient (e.g. in case of very large rooms) up to 10 detectors can be connected in parallel by interconnecting the P-terminals of the detectors. The controlling of lighting is based on a common presence detection of all detectors, which still control two lighting groups.

One ECO-IR DUAL-C NT is referred to as «Master A», the other as a «Master B». Both «Master» measure the brightness in their part of the room, process the push buttons and switch their lighting group. Depending upon requirement, further detectors, configured as «Slaves», are needed. The «Slaves» do not measure brightness but only detect the presence of people.

Detection Range (Mounting height 3,0m)



The detection range in side view (top) and top view (bottom).

Seated Persons:

The values given refer to the restricted detection range for movements taking place at table height, i.e. approx. 0.80m above the floor. From a mounting height of > 3.5m, the sensitivity of the detector is limited, and more distinct movements are required for detection.

Walking Persons:

For walking persons, the entire detection range is valid with a small tolerance in the fringe zone (+/- 0.5m).

Location

Detection Range

The square detection ranges ensure a safe and simple planning. Connected in parallel, they allow the entire room to be covered. Please note that the detection range for seated persons and walking persons differ in their extension.

The recommended mounting height is 2,0m - 3,5m. The sensitivity of the detector decreases with increasing mounting height. From a mounting height of 4m walking movements are required for detection, and the detection ranges of multiple detectors should overlap in their fringe zones. Maximum range approx. 15 m.

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 ± 1m
4,0m	- - - - -	11m x 11m ± 1m

Brightness Measurement

The ECO-IR DUAL-C NT presence detector is equipped with a real daylight measurement which is not influenced by artificial light. For indirect lighting the brightness on the site of installation must not exceed the desired nominal light intensity. If the brightness threshold value is set to „on“, the brightness measurement is deactivated (no influence by brightness desired).

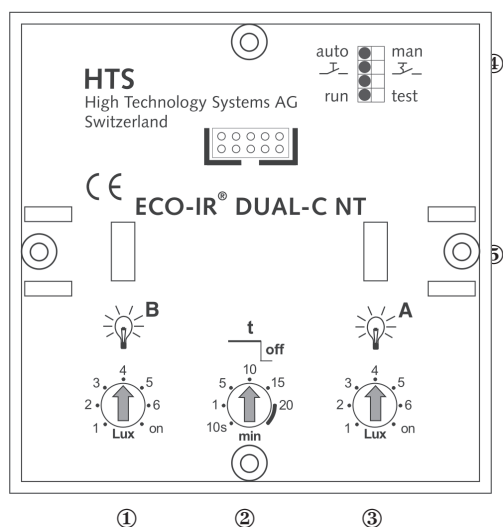
Suitable Lamps

The ECO-IR DUAL-C NT presence detector is designed for use with fluorescent lights (FL/PL). Halogen/ incandescent lights may disturb the operation of the presence detector. All loads switched must be provided with adequate interference suppression.

Inrush Current Limitation

The inrush current limitation ensures the ECO-IR DUAL-C NT is especially suitable for switching of electronic ballasts. The inrush current limitation reduces the high inrush currents during the starting-up of electronic ballasts.

Sensor Module - Rear Side



Settings on the ECO-IR DUAL-C NT (see figure above)

- ① Brightness threshold LuxA
- ② Switch-off delay for light
- ③ Brightness threshold LuxB
- ④ DIP switches:
 - DIP1 Lighting control
fully/semi-automatic
 - DIP2 Push button/switch control
 - DIP4 Operation mode: normal operation/test
- ⑤ Mechanical safety lock
The mechanical lock serves to secure the sensor module firmly on the power module.

Accessories

QuickSet Service Remote Control

For the start-up procedure, the QuickSet service remote control is available for the installation personnel or the technical service. It allows convenient remote adjustment of all potentiometer values. Manual adjustment of the potentiometers directly on the device remains possible at all times.

Clic User Remote Control

The clic user remote control is available for the user enabling product-spreading, individual switching of up to two lighting groups. The user can choose between two programmable scenes. Adjoining groups can be demarcated from each other.

Surface Frame

A suitable frame for surface mounting is also available.

QuickFix

For installation in suspended ceilings, the installation set QuickFix allows an invisible ceiling mounting.

Technical Specifications of Presence Detector ECO-IR DUAL-C NT

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

Depth	35mm
Diameter	55mm
Mounting plate	70 x 70mm
Terminals without screws	max. 1,5mm²
Size of concealed housing (for flush-mounting)	Dim. 1, (NIS,PMI)
Ambient temperature	0° - 50°C
Degree of protection	IP 40
Article numbers	
ECO-IR DUAL-C NT complete	202 0 401
• Sensor module ECO-IR DUAL-C NT	
• Power module ECO-IR 541C	
Surface frame for ECO-IR DUAL-C NT	907 0 512
Service remote control QuickSet	907 0 532
User remote control clic	907 0 515

This device complies with the protection regulations of the EMC directives 89/336/EEG and NSR EWG 73/23.