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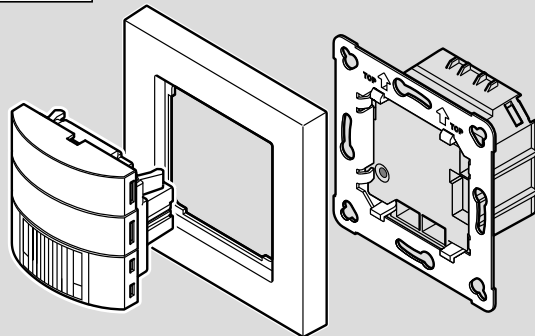
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IR 180 UNIVERSAL

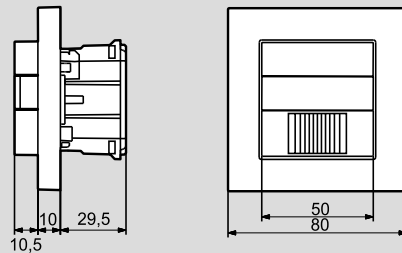


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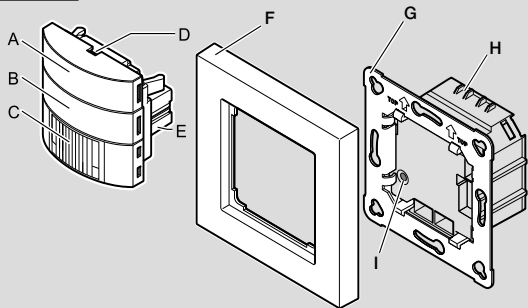
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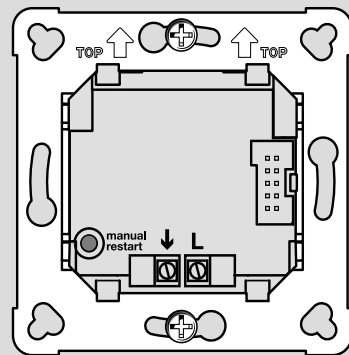
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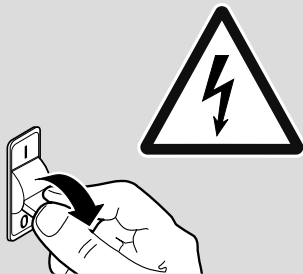
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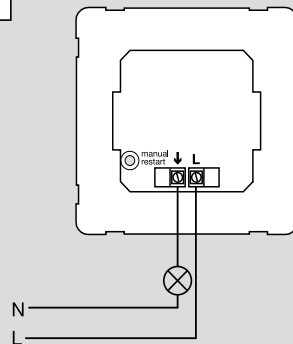
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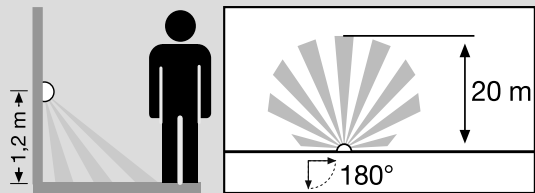
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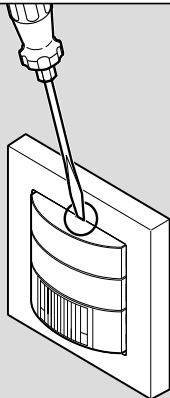
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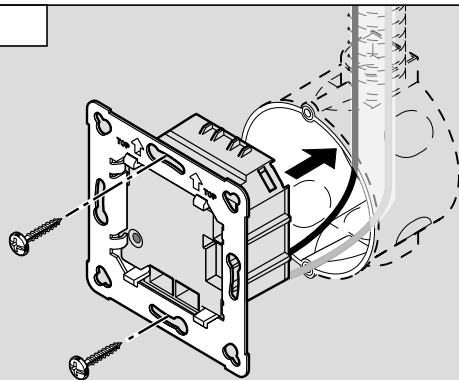


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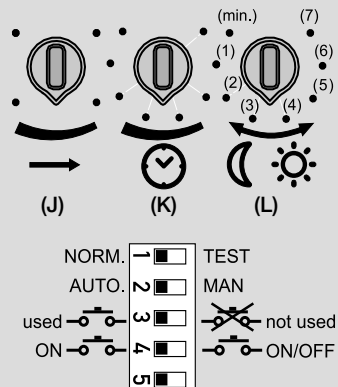


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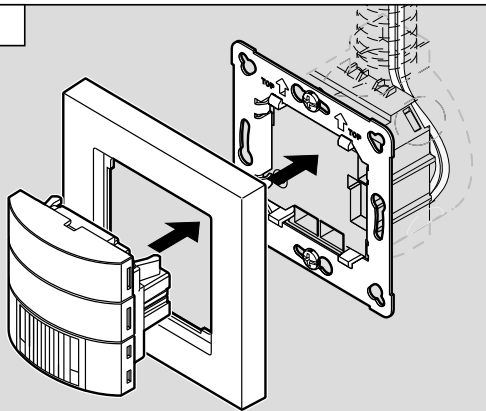


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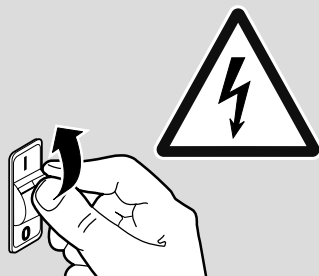


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5.5



5.6



## 1. About this document

### Please read carefully and keep in a safe place.

- Under copyright. Reproduction either in whole or in part only with our consent.
- Subject to change in the interest of technical progress.

### Symbols



Hazard warning!



Reference to other information in the document.

## 2. General safety precautions



**Disconnect the power supply before attempting any work on the unit.**

- During installation, the electric power cable to be connected must not be live. Therefore, switch off the power first and use a voltage tester to make sure the wiring is off-circuit.
- Installing the sensor involves work on the mains power supply. This work must therefore be carried out professionally in accordance with national wiring regulations and electrical operating conditions.
- Only use genuine replacement parts.
- Repairs must only be made by specialist workshops.

## 3. IR 180 UNIVERSAL

### Proper use

- Sensor switch suitable for indoor wall-mounting.
- Intelligent sensor technology automatically switches any type of lamp ON when the room is entered and OFF again after the preset time.

## IR 180 UNIVERSAL

The infrared sensor switch IR 180 UNIVERSAL in a 2-wire design makes it possible. It can be installed with conventional 2-wire cables, making it a real sensation. The integrated SuperCap, which feeds the sensor switch in the event of a power interruption, ensures perfect operation thanks to the zero-watt standby mode consumption. This means it can switch every lamp on and off, making it a future-proof investment. The IR 180 UNIVERSAL comes in a completely new design and can be installed quickly and easily in all existing walls.

### SuperCap charging behaviour

The integrated energy storage system is always charged when lighting is switched ON. If lighting is switched OFF, the sensor operates on the energy contained in the integrated storage system. In a room used for an average period of time with lighting of average output and moderate stay-ON time, the light's ON duration is sufficient to charge the energy storage system for the remaining operating time.

In rooms used for very short periods of time with very low output lighting, the IR 180 UNIVERSAL may not be able to store sufficient energy during ON phases for the OFF phases. In such cases, the IR 180 UNIVERSAL will switch lighting ON to charge the integrated energy storage systems even if no movement is being detected.

If the energy storage system's state of charge is very low, lighting cannot be switched OFF manually either in such instances until a minimum charge level is reached. Otherwise there is a risk of the energy storage system discharging completely, preventing the IR 180 from operating reliably.

Package contents (Fig. 3.1)

Product dimensions (Fig. 3.2)

Product components (Fig. 3.3)

- A** Rocker switch
- B** Cover
- C** Lens
- D** Removal slot
- E** Sensor module
- F** Surround
- G** Metal frame
- H** Load module
- I** Manual reset (emergency start button)

## 4. Installation

- Switch OFF power supply (Fig. 4.1)

The mains connection terminal is designed for a maximum of 2 x 2.5 mm<sup>2</sup>.

The mains power supply lead is a cable with at least 2 conductors:

**L** = phase conductor (usually black, brown or grey)

**↓** = switched phase conductor (usually black, brown or grey)

### Note:

The mounting location should be at least 1 m away from any lights because heat radiated from these may activate the system.

Connecting the IR 180 UNIVERSAL mains power supply lead (Fig. 4.2)

Wiring diagram (Fig. 4.3)

### Connecting in parallel

Several IR 180 UNIVERSAL units can be connected in parallel via the connecting terminals. When doing so, make sure that the maximum connectable load is not increased but that the minimum connected load is increased by the factor of the parallel-connected sensors. It must also be noted that the unit can only be started manually at the button (I) if all other sensors are switched OFF.

### Button for starting manually:

In exceptional circumstances, the sensor may not be able to switch ON automatically as a result of an empty energy storage system.

To switch the IR 180 UNIVERSAL on in such cases, remove the sensor module, press the button (I) on the load module until lighting switches ON and then re-fit the sensor module. Lighting can now not be switched OFF again until a minimum state of charge has been reached, see SuperCap charging behaviour.

## 5. Mounting

- Check all components for damage.
- Do not use the product if it is damaged.
- Select an appropriate mounting location, taking the reach and motion detection into consideration (Fig. 5.1)

### Mounting procedure

- Separate the sensor and load module (Fig. 5.2)
- Switch OFF power supply (Fig. 4.1)
- Connect to mains power supply (Fig. 4.2 / 4.3)
- Fit load module (H) into the flush box (Fig. 5.3)
- Screw to support ring with box fixing screws (Fig. 5.3)
- Select control dial and DIP switch settings on the sensor module (E) (Fig. 5.4) (→ "6. Function")
- Fit the sensor module (E) into the surround (G) and press together with the load module (H) (Fig. 5.5)
- Switch ON power supply (Fig. 5.6)

## 6. Function

### Factory settings for control dials

Reach setting (J): 20 m

Time setting (K): 30 s

Twilight setting (L): daylight mode

### Reach setting IR (Fig. 5.4 / J)

Adjustable in stages

- Control dial set to maximum = max. reach (approx. Ø 20 m)
- Control dial set to minimum = min. reach (approx. Ø 5 m)

### Time setting (Fig. 5.4 / K)

Adjustable in stages.

The required Stay-ON time is selected as the minimum Stay-ON time. A setting of 30 s to 15 min may be selected. If the integrated energy storage system runs down to a low state of charge, the selected stay-ON time will be automatically extended to recharge the energy storage system. If an energy storage system is over-discharged and a connected load very low, the stay-ON time will be extended to as long as 3 hours. When the brightness threshold is exceeded, (presence logic), the sensor switches OFF after the stay-ON time expires.

### Twilight setting (Fig. 5.4 / L)

The chosen response threshold can be set in stages from 2-1000 lux.

- Control dial set to ☾ = twilight mode (approx. 2 lux)
- Control dial set to ☀ = daylight mode (approx. 1000 lux)

→ "Example applications" table, p. 24

### DIP switch factory settings

DIP 1 – DIP 5 = OFF

#### DIP 1 – Normal/test mode (NORM/TEST) (Fig. 5.4)

Test mode has priority over all other settings on the sensor switch and is used for verifying proper working order as well for testing the detection zone. Irrespective of the ambient light level, the sensor switch activates the light to stay ON for approx. 5 s in response to movement in the room. All user-selected potentiometer settings apply in normal mode (control dials). The DIP-switch test mode does not end automatically.

#### DIP 2 – Semi-automatic mode (MAN) / fully automatic mode (AUTO) (Fig. 5.4)

##### Semi-automatic mode: (MAN)

The light only switches OFF automatically. Light is switched ON manually, request light via the switch. It remains ON for the stay-ON time selected.

##### Fully automatic mode: (AUTO)

The light automatically switches ON in response to movement and OFF as ambient brightness increases as well as after the stay-ON time elapses. Light can be switched ON and OFF manually at any time. This temporarily interrupts the automatic switching function.

#### DIP 3 switch active/inactive (Fig. 5.4)

Selecting the "used" setting activates the integrated rocker switch (A). Selecting the "not used" setting deactivates the integrated rocker switch (A) and is therefore without any function.

#### DIP 4 switch ON/ON-OFF (Fig. 5.4)

In the ON-OFF setting, the light can be switched ON and OFF manually at any time. In the ON setting, light can no longer be switched OFF manually. The stay-ON time starts from the beginning again each time the button is pressed.

#### Switch for light function

The switch function depends on sensor configuration as well as the current operating situation.

→ "Light function" table, p. 24

## 7. Warranty

As purchaser, you are entitled to your statutory rights against the vendor. If these rights exist in your country, they are neither curtailed nor restricted by our declaration of warranty. We guarantee that your STEINEL Professional sensor product will remain in perfect condition and proper working order for a period of 5 years.

We guarantee that this product is free from material-, manufacturing- and design flaws.

In addition, we guarantee that all electronic components and cables function in the proper manner and that all materials used and their surfaces are without defects.

### Making Claims

If you wish to make a claim, please send your product complete and carriage paid with the original receipt of purchase, which must show the date of purchase and product designation, either to your retailer or directly to us at **STEINEL Vertrieb GmbH - Reklamationsabteilung - Dieselstrasse 80-84, 33442 Herzebrock-Clarholz, Germany.**

For this reason, we recommend that you keep your receipt of purchase in a safe place until the warranty period expires. STEINEL shall assume no liability for the costs or risks involved in returning a product.

For information on making claims under the terms of the warranty, please go to [www.steinel-professional.de/garantie](http://www.steinel-professional.de/garantie)

If you have a warranty claim or would like to ask any questions regarding your product, you are welcome to call us at any time on our **service hotline +49 (0) 52 45 / 448 - 188.**

**FUNCTIONAL**

**5 Year**

**WARRANTY**

Twilight setting	
Example applications	Light-level settings
Twilight operation	min
Corridors, foyers	1
Stairs, escalators, moving walkways	2
Washrooms, toilets, switchrooms, canteens	3
Sales floor, kindergartens, nursery school rooms, sports halls	4
Work rooms: offices, conference and meeting rooms, precision assembly activities, kitchens	5
Working areas requiring good light: laboratory, technical drawing, precision work	>=6
Daylight operation	max

**Note:** Depending on the mounting location, this setting may need correcting. The light level is measured at the sensor.

Light function			
DIP switch 2 mode	Switch configuration DIP switch 4	Status	Switch function
Fully automatic mode (AUTO)	-	Lighting is switched OFF	Lighting is switched ON for the stay-ON time selected
Fully automatic mode	ON-OFF	Lighting is switched ON	Lighting is switched OFF for the stay-ON time selected and re-triggered on detecting movement (inverse mode / presentation mode)
Fully automatic mode	ON	Lighting is switched ON	The stay-ON time selected is re-triggered.
Semi-automatic mode (MAN)	-	Lighting is switched OFF	Lighting is switched ON for the stay-ON time selected.
Semi-automatic mode	ON-OFF	Lighting is switched ON.	Lighting is switched OFF until it is next activated.
Semi-automatic mode	ON	Lighting is switched ON	The stay-ON time selected is re-triggered.

8. Technical specifications	
Dimensions W x H x D	80 x 80 x 50 mm
Supply voltage	220-240 ~V / 50/60 Hz
Sensor system	Passive infrared (IR)
Reach	max. 20 m
Angle of coverage	180°
Capacity, switching output 1	<b>Relay 230 V</b> max. 200 W resistive load (cos $\phi$ = 1) max. 6 fluorescent lamps / LED lamps C < 132 $\mu$ F max. 100 VA (cos $\phi$ = 0.5)
Minimum connected load	3.5 W
Light-level setting	2-1000 lux, $\infty$ / daylight
Time setting	30 s - 15 min
Mounting height (minimum)	1.1 m
IP rating	IP20
Temperature range	0°C to +40°C

9. Troubleshooting		
Malfunction	Cause	Remedy
Light does not switch ON	<ul style="list-style-type: none"> <li>■ No supply voltage</li> <li>■ Lux setting too low</li>   <li>■ No motion being detected</li> </ul>	<ul style="list-style-type: none"> <li>■ Check supply voltage</li> <li>■ Slowly increase lux setting until light switches ON</li> <li>■ Ensure unobstructed sensor vision</li> <li>■ Check detection zone</li> </ul>
Sensor responds when it should not	<ul style="list-style-type: none"> <li>■ State of charge not sufficient</li> </ul>	<ul style="list-style-type: none"> <li>■ With a very low state of charge, lighting is switched ON irrespective of movement, see SuperCap charging behaviour</li> </ul>

<b>Malfunction</b>	<b>Cause</b>	<b>Remedy</b>
Light does not switch OFF	<ul style="list-style-type: none"> <li>■ Lux setting too high</li> <li>■ Stay-ON time still effective</li> <li>■ Interfering heat sources: e.g. fan heater, open doors and windows, pets, light bulb / halogen floodlight, moving objects</li> </ul>	<ul style="list-style-type: none"> <li>■ Reduce lux setting</li> <li>■ Wait until stay-ON time elapses; reduce stay-ON time if necessary</li> <li>■ Use stickers to mask out stationary sources of interference</li> </ul>
Sensor switches OFF despite persons being present	<ul style="list-style-type: none"> <li>■ Stay-ON time too short</li> <li>■ Light-level threshold too low</li> </ul>	<ul style="list-style-type: none"> <li>■ Increase stay-ON time</li> <li>■ Change twilight setting</li> </ul>
Sensor does not switch OFF quickly enough	<ul style="list-style-type: none"> <li>■ Stay-ON time too long</li> </ul>	<ul style="list-style-type: none"> <li>■ Reduce stay-ON time</li> </ul>
Sensor does not switch ON quickly enough when approached from the front	<ul style="list-style-type: none"> <li>■ Reach is reduced when approached from the front</li> </ul>	<ul style="list-style-type: none"> <li>■ Install additional sensors</li> <li>■ Reduce distance between two sensors</li> </ul>
Sensor does not switch ON when persons are present despite it being dark	<ul style="list-style-type: none"> <li>■ Lux setting too low</li> </ul>	<ul style="list-style-type: none"> <li>■ Sensor deactivated by switch/button?</li> <li>■ Semi-automatic mode?</li> <li>■ Increase light-level threshold</li> </ul>
Switch not working	<ul style="list-style-type: none"> <li>■ Switch deactivated?</li> </ul>	<ul style="list-style-type: none"> <li>■ Check DIP switch 3 setting</li> </ul>
Stay-ON time is longer than set	<ul style="list-style-type: none"> <li>■ Energy storage system's state of charge is not sufficient</li> </ul>	<ul style="list-style-type: none"> <li>■ The minimum stay-ON time selected is extended to charge the energy storage system, see Stay-ON time / Super-Cap charging behaviour</li> </ul>
Sensor will not switch ON	<ul style="list-style-type: none"> <li>■ Energy storage system is empty and relay in OFF position</li> </ul>	<ul style="list-style-type: none"> <li>■ Start manually, see Button for starting manually</li> </ul>
Lighting is suddenly switched OFF	<ul style="list-style-type: none"> <li>■ Connected load too high</li> <li>■ Temperature of IR 180 too high</li> </ul>	<ul style="list-style-type: none"> <li>■ Reduce connected load in compliance with technical specifications</li> <li>■ Let the IR 180 cool down and reduce connected load</li> </ul>