

smartSWITCH 5DP 14f

Automatic switching based on presence and light level

Product description

- Motion detector for luminaire installation
- For automatic on/off switching of luminaires with electronic ballasts and LED Drivers
- Bright-out function: luminaire is not switched on if there is adequate brightness
- Maximum of 1 sensor possible
- Low-profile casing (21 x 30 mm)
- For a maximum of 2 LED Drivers
- Delay time and light value for the bright-out function can be set via 2 potentiometers
- Nominal life-time up to 50,000 h
- 5-year guarantee



Wiring diagrams and installation examples, page 3



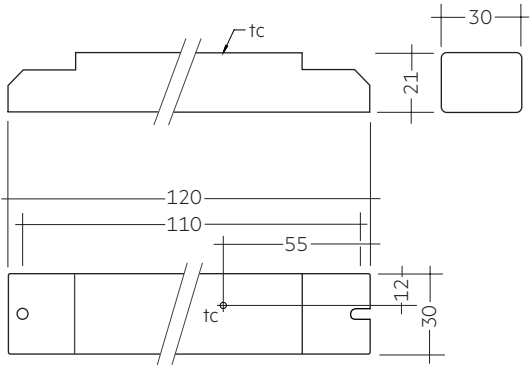


smartSWITCH 5DP 14f

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Technical data

Rated supply voltage	220 – 240 V
Mains frequency	50 / 60 Hz
Power (output on)	0.6 W
Output, standby (output off)	0.35 W
Max. smartSWITCH sensors	1
Sensor cable length	0.54 m
Max. number of switched Drivers	2
Max. Inrush current of the load (peak / duration)	55 A / 400 µs
Typ. number of switching cycles ^①	50,000
Max. resistive load	500 W
Max. inductive / capacitive load	200 VA
tc	63 °C
Ambient temperature ta	0 ... +60 °C
Life-time	up to 50,000 h



Ordering data

Type	Article number	Packaging carton	Weight per pc.
smartSWITCH 5DP 14f	28001538	10 pc(s).	0.057 kg

^① See data sheet 4.2 Switching cycles.

ACCESSORIES

5DPI 14f Mounting Kit

Product description

- Mounting frame for attaching all 5DP 14f sensor directly to the luminaire housing
- Shutter for preventing movement detection in one direction
- Glow wire test with 750 °C according to EN 61347-1



Ordering data

Type	Article number	Packaging carton	Weight per pc.
5DPI 14f mounting kit	28001558	100 pc(s).	0.004 kg
5DPI 14f mounting kit black	28001575	100 pc(s).	0.004 kg

1. Standards

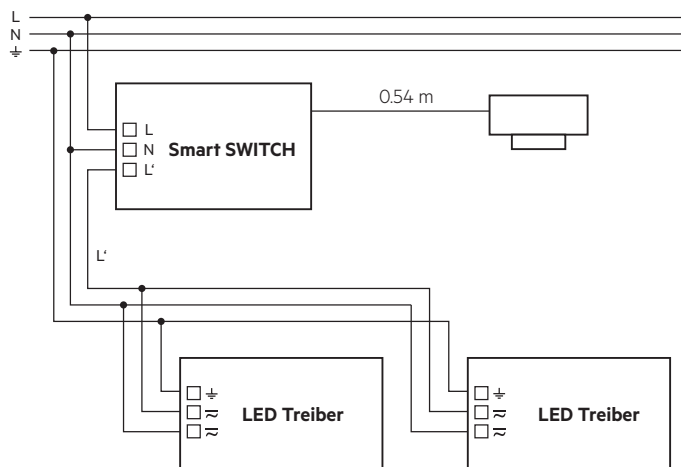
EN 61347-1
EN 61347-2-11
EN 61000-3-2
EN 61547
EN 55015

2. Installation



- Not for use with phase cut dimmers
- The sensor must protrude over the light sources
- The power supply must be disconnected before installation
- Suitable for installation only in indoor luminaires (e.g. corridors and closed parking garage) without vibration
- Opening angle of the sensor: must be guaranteed
- Avoid direct illumination of the light source on the sensor including housing.
- Sensor wires must be routed separately from the lamp wires and mains cables otherwise the lighting control system may malfunction.
If separate routing is not possible (for reasons of space) shielded lamp wires and mains cables must be used.
- Sensor must be installed according to the installation instructions to ensure the IP protection.
- Sensor head is not UV resistant.

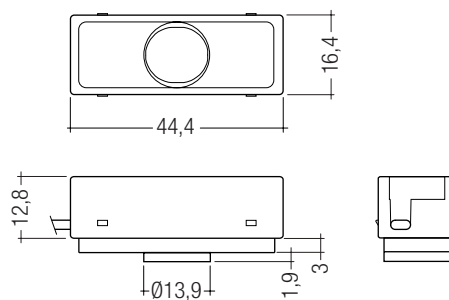
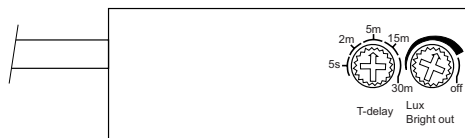
2.1 Wiring diagram



Connect max. 2 LED Drivers, please note the max. load and inrush current, see page 2.

2.2 smartSWITCH Sensor

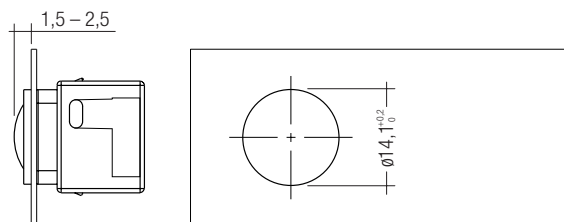
cable entry point on the side



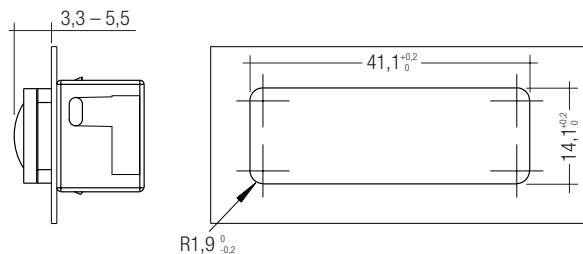
Ultra-compact luminaire mounted sensor for ambient light and detection of movement.

2.3 Mounting variants luminaire housing:

Size of the sheet: 0.8 – 1.8 mm



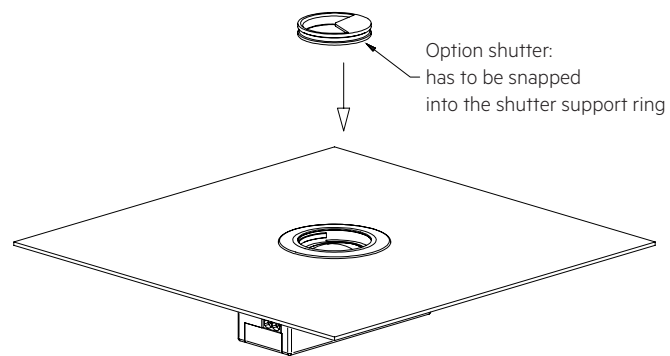
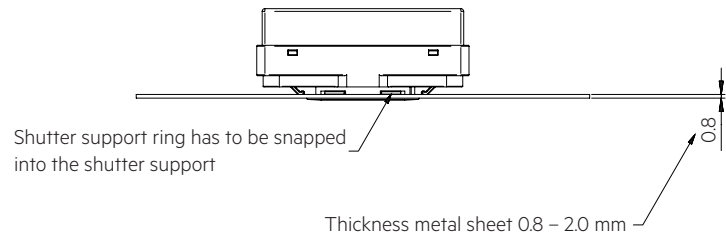
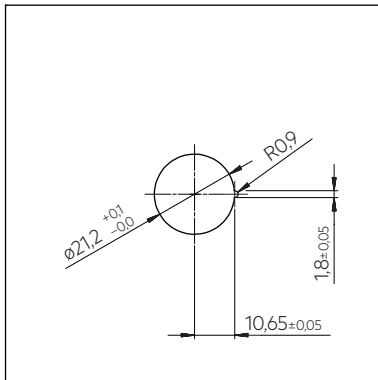
Size of the sheet: 0.8 – 3.0 mm



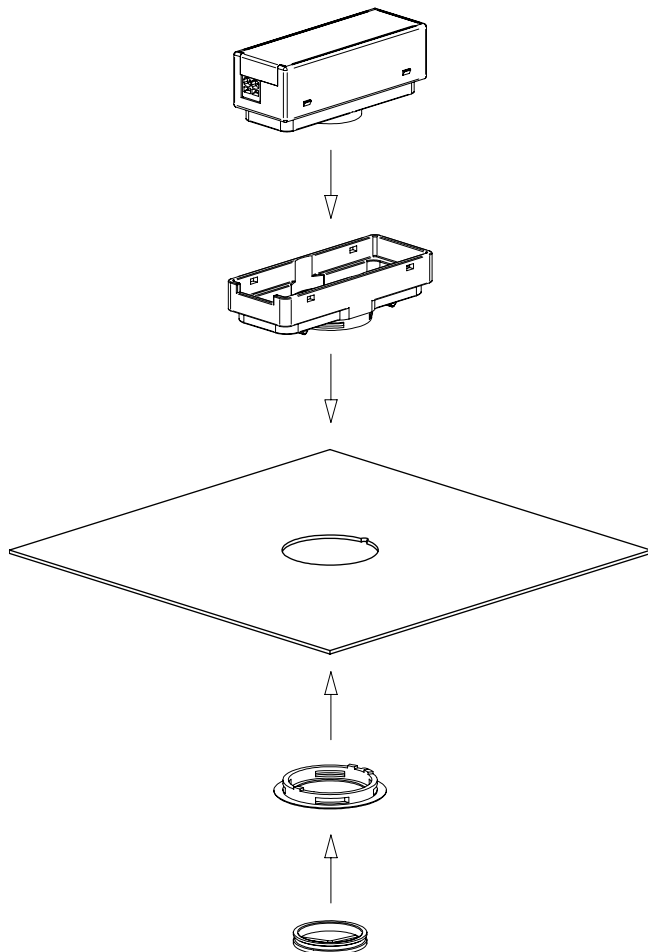
2.4 Mounting in luminaire housing with Mounting Kit:

Size of the sheet: 0.8 – 2.0 mm

Dimension drawing for needed mounting opening

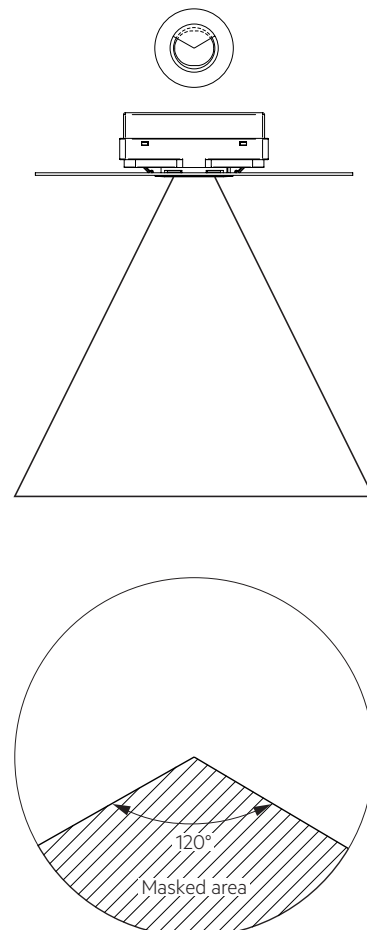


2.5 Mounting Kit mounting



2.6 Mounting Kit Shutter

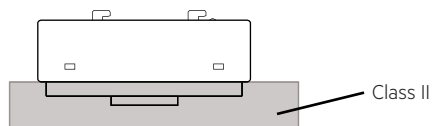
Area which is masked by the shutter.



2.7 Mounting in class II luminaire

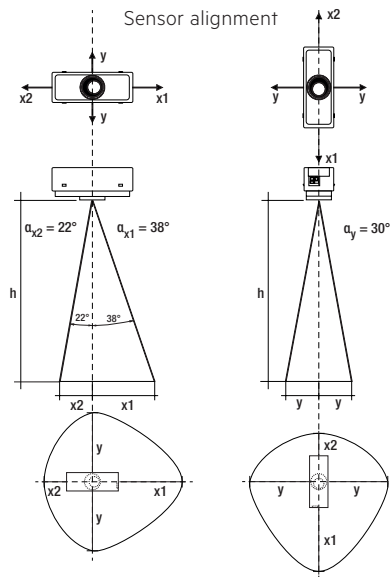
The Sensor provides basic insulation as required by IEC 62386-101 and defined in IEC 61347-1.

If the sensor is built in to a class II luminaire, which has to provide double or reinforced insulation, it has to be considered that the Sensor is not a class II device. Still the Sensor can be used for such projects as the front of the sensor is tested to fulfill the class II requirements for double or reinforced insulation.

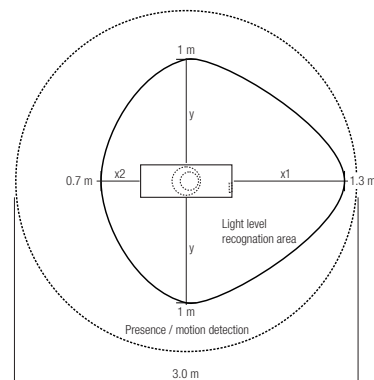


3. Sensor functions

3.1 Light level recognition area



Example for light and motion detection area at height of 1.7 m:



h *	x1	x2	y	d
1.7 m	1.3 m	0.7 m	1.0 m	3.0 m
2.0 m	1.6 m	0.8 m	1.2 m	3.6 m
2.3 m	1.8 m	0.9 m	1.3 m	4.1 m
2.5 m	2.0 m	1.0 m	1.4 m	4.5 m
2.7 m	2.1 m	1.1 m	1.6 m	4.9 m
3.0 m	2.3 m	1.2 m	1.7 m	5.4 m
3.5 m	2.7 m	1.4 m	2.0 m	6.3 m
4.0 m	3.1 m	1.6 m	2.3 m	7.2 m

* The recommended maximum room height for office applications is 3 m and for corridor applications for example 4 m. Up to 2 m mounting height presence is detected and over 2 m motion is detected.

Calculation of the diameter (light area):

$$x1 = \tan(\alpha_{x1}) \times h$$

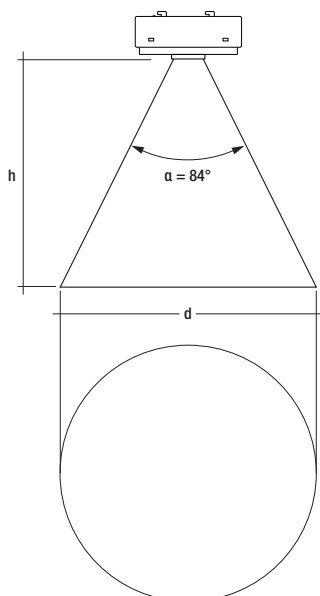
$$x2 = \tan(\alpha_{x2}) \times h$$

$$y = \tan(\alpha_y) \times h$$

Calculation of the diameter (motion area):

$$d = 2 \times \tan(0.5 \times \alpha) \times h$$

3.2 Presence / motion detection



3.3 Adjustments

Potentiometer times = 5 s, 2 m, 5 m, 15 m, 30 m, default = 5 s

(Note: Only discrete steps are selectable, no intermediate values)

Potentiometer lux = 50 – 500 lx, default = off

Bright-out:

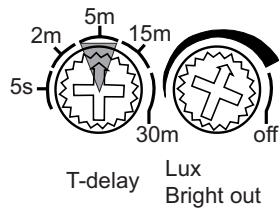
Bright-out will be activate if position off is not selected.

No adjustable parameters:

Switch OFF light level: 250 % of the adjustable switch ON light level

Bright-out delay time: 10 min.

Power up behavior: When power up, the smartSWITCH will switch ON



In the example above the 5 minute range is selected.

4. Miscellaneous

4.1 Disposal of equipment



Return old devices in accordance with the WEEE directive to suitable recycling facilities.

4.2 Additional information

Additional technical information at www.tridonic.com → Technical Data

Guarantee conditions at www.tridonic.com → Services

Life-time declarations are informative and represent no warranty claim.
No warranty if device was opened.

4.3 Switching cycles

The number of switching cycles is directly related to the level and duration of the inrush current. To increase the number of cycles either LED drivers with lower inrush current (e.g. Tridonic Industry LED Drivers) or an additional external relay can be used.