



SMART Sensor 5D 19f
Ambient light sensor for lighting control

Product description

- Optional ambient light sensor for PCA EXCEL one4all, PCA ECO and PCA BASIC devices from the xitEC II generation
- With ambient light dependent control
- Easy setting of the set-point via integrated momentary-action switch at the sensor
- Compact dimensions for luminaire installation
- Simple cable connection to the ballast via SMART interface
- Power supply via ballast
- Max. installation height 5 m
- 5-year guarantee

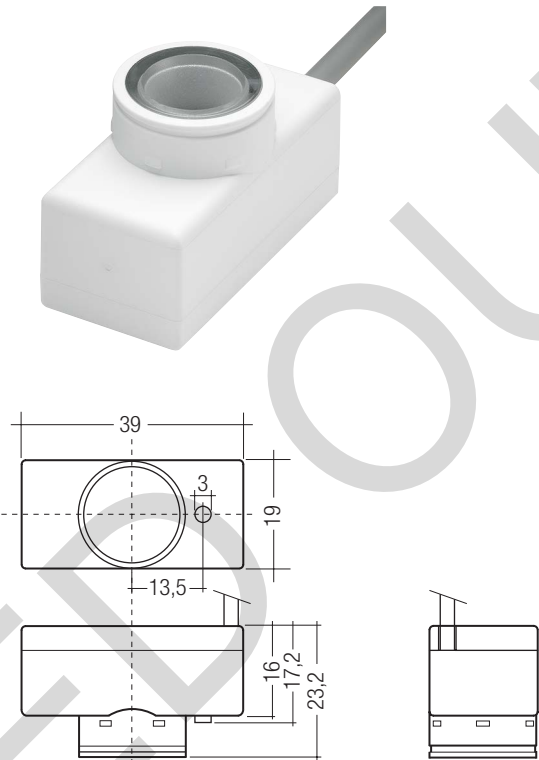
Technical data

Power supply via	SMART interface
Current draw	1 mA from SMART interface
Operating temperature	0 ... +70 °C
Storage temperature	-20 ... +75 °C
Type of protection	IP20
Max. casing temperature tc	73 °C



Standards, page 4

Wiring diagrams and installation examples, page 5, 6



Ordering data

Type	Article number	Packaging, carton	Weight per pc.
SMART Sensor 5D 19f	28000888	20 pc(s).	0.025 kg

Specific technical data

Type	Detection			Max. cable length	Control output (devices)
	Light detection angle symmetric	Light measurement at the sensor head ^①	Illuminance (factory default) ^②		
SMART Sensor 5D 19f	42°	40 – 1,000 lx	500 lx	0.8 m	1

^① The measured value at the sensor head corresponds to approx. 60 to 3000 lux on the surface measured.

^② The illuminance is set for a room defined by Tridonic. Depending on the actual room (reflectance) the measured illuminance may deviate from this value. The illuminance should therefore be checked in the installation and adjusted if necessary.

ACCES-
SORIES

SMART Sensor T5 Clip + Cap

Product description

- Clip for mounting the sensor directly to the lamp and cover to protect against indirect light



Ordering data

Type	Article number	Packaging, bag	Packaging, carton
SMART Sensor T5 Clip + Cap	86459499	10 pc(s).	200 pc(s).

ACCES-
SORIES

SMART Sensor T8 Clip + Cap

Product description

- Clip for mounting the sensor directly to the lamp and cover to protect against indirect light



Ordering data

Type	Article number	Packaging, bag	Packaging, carton
SMART Sensor T8 Clip + Cap	86459500	10 pc(s).	200 pc(s).

ACCESSORIES

SMART Sensor Cap

Product description

- Cover to protect against indirect light



Ordering data

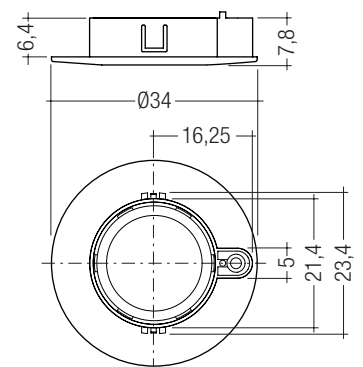
Type	Article number	Packaging, bag	Packaging, carton
SMART Sensor Cap	86459501	50 pc(s).	500 pc(s).

ACCESSORIES

SMART Sensor Cover Frame

Product description

- Cover frame for attaching the sensor directly to the luminaire casing



Ordering data

Type	Article number	Packaging, bag	Packaging, carton
SMART Mounting Ring 5DP(P)	86459427	50 pc(s).	200 pc(s).

1. Standards

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

2. Common

In combination with the PCA EXCEL one4all, PCA ECO and PCA BASIC ballasts, based on the xtec II platform, SMART Sensor 5D 19f provides the basis for an easy-to-use and cost-effective lighting system. The sensor detects the available ambient light and uses this for controlling the lighting system to achieve a constant light value.

As the amount of natural ambient light changes the illuminance from the artificial lighting system is adjusted.

With a SMART Sensor 5D 19f installed, PCA EXCEL one4all, PCA ECO and PCA BASIC, based on the xtec II platform, can be switched on and off via DSI signals, switchDIM or the mains. With PCA EXCEL one4all and PCA ECO it is possible to switch on and off via DALI signals too.

With the sensor installed the set point value (dimming) can be temporarily changed by means of DALI or switchDIM.

Set point can be changed and set via integrated momentary-action switch on the sensor.

3. Installation



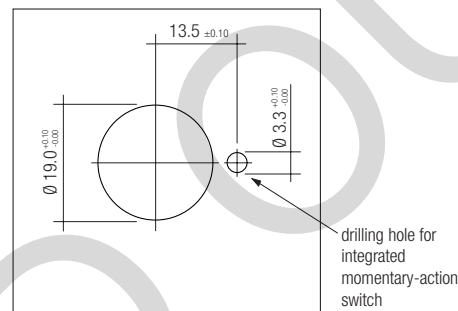
- Before connecting / disconnecting the sensor to / from the SMART interface the power supply has to be switched off
- Only for the use of ballasts with xtec II label
- The SMART Sensors have to be connected only to the SMART interface of PCA EXCEL one4all, PCA ECO and PCA BASIC, based on the xtec II range
- The SMART interface is not SELV.
The installation instructions for mains voltage therefore apply.
- Please ensure that the detection range of the sensor lies in the lighting area of the controlled luminaires.
- Please ensure that the detection ranges of the sensors do not overlap. This may have influence to the lighting control.
- To avoid false readings, the sensor should be installed so there is no direct light from the lamp in the detection zone.
- To avoid false measurements caused by the light from other luminaires we recommend that the sensor should be located centrally in the luminaire.
- 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.
- Application wiring and functionality see separate user manual smartSENSOR.
- Avoid direct illumination of the light source on the sensor including housing.

3.1 Mounting with cams at the sensor housing:



On the housing of the sensor are fixing cams integrated. With this cams the sensor can be mounted directly in the luminaire housing.

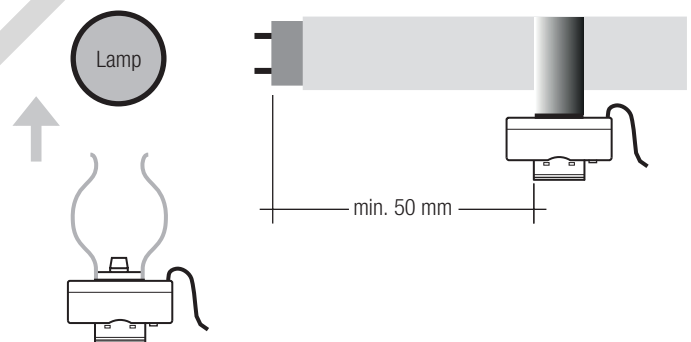
Size of the sheet: 0.8 – 1.2 mm



3.2 Mounting with lamp clip directly on the lamp:

SMART Sensor T5 clip + Mounting Flange (art.no. 28000903)

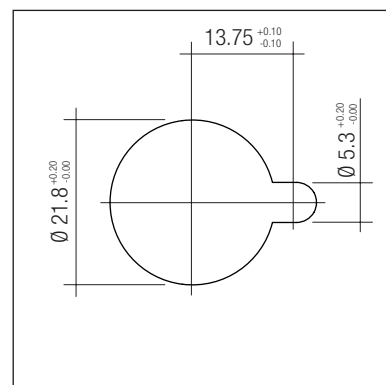
SMART Sensor T8 clip + Mounting Flange (art.no. 28000903)



3.3 Mounting with cover frame in luminair housing:

SMART Mounting Ring 5D(P) (art.no. 86459427)

Size of the sheet: 0.8 – 1.2 mm

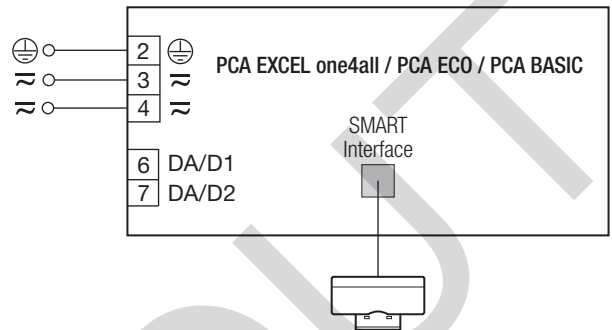


3.4 Set-up

Note: To ensure that the sensor is recognised by the ballast it must be connected to the SMART interface of the ballast before input voltage is applied to the ballast.

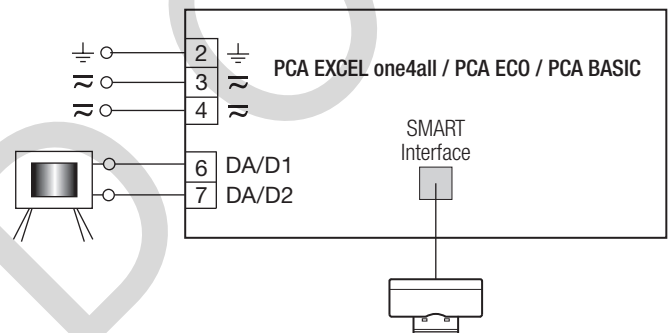
3.4.1 Switch ON/OFF via mains voltage

Soft start of PCA EXCEL one4all, PCA ECO and PCA BASIC is followed by automatic adjustment to the light level set on the sensor.



3.4.2 corridorFUNCTION with external motion sensor

The corridorFUNCTION is activated when a standard motion sensor is connected to the central interface (D1, D2). If movement is detected by the motion sensor the PCA EXCEL one4all, PCA ECO and PCA BASIC ballasts switch on; if no movement is detected they switch to the “absence value” after the delay time on the motion sensor. Only the “presence value” is constant light controlled.

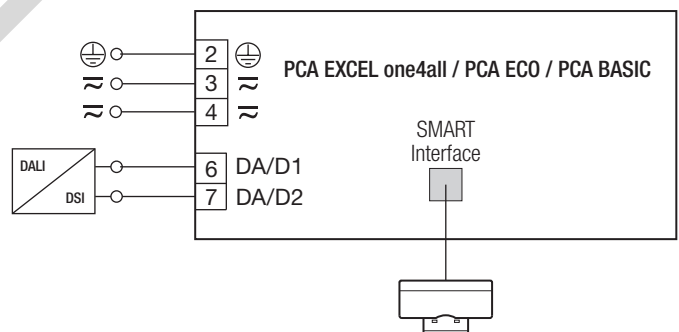


3.4.3 DSI

Switch ON/OFF via DSI command. DSI command = 0 zero-power switch OFF, DSI command > 0 switch ON.
ON means activation of lighting control by sensor.

DALI

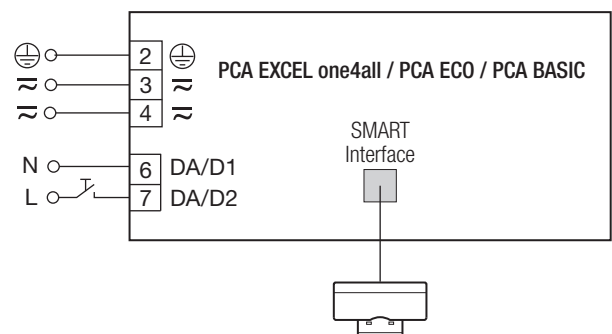
Switch ON/OFF via DALI commands.
Control possible via DALI commands.
For more information see the Xitec II documentation.



* no DALI

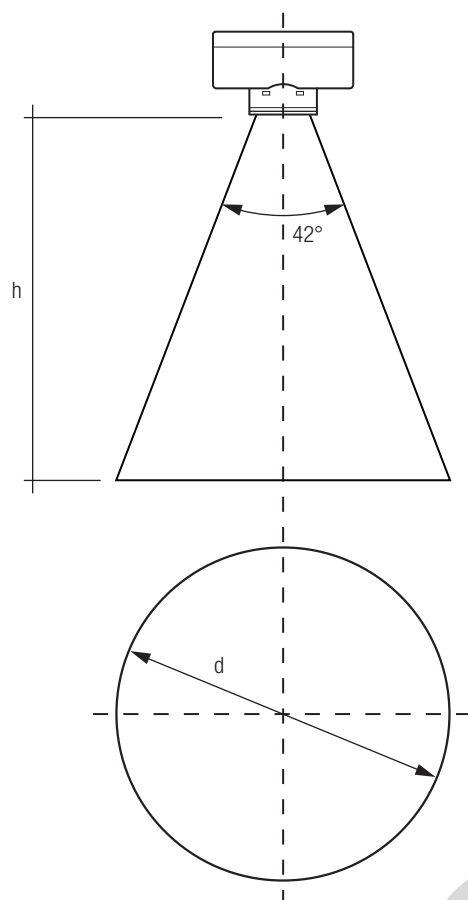
3.4.4 switchDIM

PCA EXCEL one4all, PCA ECO and PCA BASIC with switchDIM function can be switched ON/OFF by a short key press. By dimming up and down with a long press the set-point of the lighting control can be changed temporarily. After switching OFF and ON again the set point is set back to the previous value.



4. Sensor functions

4.1 Light detection



h	d
1.5 m	1.2 m
2.0 m	1.5 m
2.5 m	1.9 m
3.0 m	2.3 m
3.5 m	2.7 m
4.0 m	3.1 m
4.5 m	3.5 m
5.0 m	3.8 m

Calculation of the diameter:
 $d = 2 \times \tan(0.5 \times \alpha) \times h$

The sensor detection zone is dimensioned so that the entire work area is covered and evaluated, not just a single point. This ensures that false readings are not made as a result of moving objects across the work surface such as white paper, which would otherwise lead to a sudden change in the brightness level.

The absolute value depends on the luminaire used and the reflectance in the room. The rate at which the dimming value is changed is dynamically linked to the overall lighting level.

4.2 Permanent change of light control set point

By a long press on the integrated momentary-action switch the set point of the light control can be changed. The value is stored around 5 seconds after the pushbutton is released to allow the user to move out of the detection range of the sensor. The light source indicates that the value has been stored successfully by flashing once.

In DALI operation the set point can be adjusted also with the masterCONFIGURATOR (version 2.02 or higher). The DALI "RESET" command restores the default value set at the factory.

5. Miscellaneous

5.1 Disposal of equipment



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

5.2 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.