PCell SSI 31 PC DA2 SA
D4i light sensor for street lighting

Bottom view

Product description
_ Monitoring of ambient light for standalone and connected applications
_ Ready for Zhaga Book 18 Ed. 3 receptacle for easy and flexible installation to luminaire
_ Provides accurate light measurements between 0.2 and 20,000 Lux
_ Designed to be mounted on top or bottom of luminaire
_ DiiA/Zhaga connectivity extensions DT49, DT50, DT51, DT52
_ 5 years guarantee (up to 8 years guarantee in combination with Tridonic LED driver PRE3)
_ Lifetime up to 100,000 h at tc = 60 °C

Housing properties
_ Casing: plastic, grey
_ Lens: plastic, smoke grey
_ Type of protection up to IP66
_ Impact protection degree IK09

Benefits
_ Innovative: Developed to work with Tridonic Outdoor PRE3 D4i LED drivers, simple commissioning for standalone applications via sensorMODE, plug & play interface
_ Efficient: Upgrade your D4i luminaire to switch on/off following ambient light levels or activate chronoSTEP3 profiles
_ Reliable: Highest outdoor requirements tested

Typical applications
_ Ideal for standalone street light applications in combination with Tridonic Outdoor PRE3 D4i LED drivers featuring sensorMODE. Enables innovative and hassle-free outdoor lighting applications reducing light pollution while saving energy
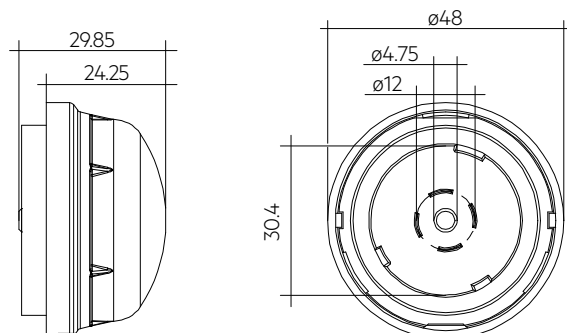
Website
http://www.tridonic.com/28003310

PCell SSI 31 PC DA2 SA
D4i light sensor for street lighting

Ordering data

Type	Article number	Suitable for	Packaging, carton	Weight per pc.
PCell SSI 31 PC DA2 SA	**28003310**	Street & Road lighting	10 pc(s).	0.025 kg

Technical data

Sensor type	Light sensor
Supply via	DALI
Supply voltage [1]	9.5 – 22.5 V
Current consumption (no LED)	max. 9 mA
Current consumption (with LED)	max. 10.1 mA
Starting time	≤ 5 s
Supported operating modes	0 or 128 (default)
Mounting height [2]	4 – 8 m
Mounting hole	acc. to Zhaga Book 18 Ed. 3
Type of installation [3]	Zhaga Book 18 Ed. 3 socket
Detection angle for light measurement	150°
Detection range for light measurement [4]	0.2 – 20,000 lx
Ambient temperature ta [5]	-25 ... +50 °C
tc point	60 °C
Storage temperature ts	-25 ... +60 °C
Humidity	0 ... 90 %
Dimensions Ø x H	ø 48 x 30 mm
Housing material body	PBT
Housing material lens	PC
Housing colour body [6]	Grey
Housing colour lens	Smoke grey
UV resistance	f1
Type of protection	IP66
Impact protection degree [7]	IK09
Lifetime	100,000 h
Guarantee (conditions at www.tridonic.com)	5 Year(s)

Approval marks

Di DALI EAC CE RoHS

Standards

EN 61347-2-11, EN 55015, EN 61547, EN 62386-101, EN 62386-103, EN 62386-304, EN 62386-351

[1] Uin acc. IEC 62386-101.
[2] With vertical mounting in streetlight application.
[3] Device must be installed on top of the luminaire.
[4] The measured value at the sensor head corresponds to 20 – 90 % of the lux value measured on the surface located below the sensor, if the sensor is mounted on the bottom of the luminaire.
[5] Correct sensor operation can not be guaranteed if operated outside this ta window.
[6] Technical colour specification = 7040, optical colour specification = 9007.
[7] It is essential to mount the plug connection (AZU Z18 Set) and sensor correctly to achieve the full IK rating.

ACU Z18 G2 Set

Accessory

ACU Z18 REP 4PIN G2

ACU Z18 CAP IP66 G2

ACU Z18 REP 4PIN + ACU Z18 CAP IP66

Product description
_ Set consisting of receptacle, lock washer and mounting nut (ACU Z18 REP 4PIN G2)
_ Designed for street lighting control
_ Double connector terminal for an easy through wiring to two DALI nodes simultaneously
_ Colored dots for a quick and failure free assembly (matching with LCO PRE3 and LCO 2 channel outdoor driver terminals)
_ Compliant with Zhaga Book 18 Ed. 3
_ UL UV-f1 rated for outdoor use
_ IK09 high impact resistant

Housing properties
_ Colour: dark grey (RAL 7043)
_ Casing receptacle: PBT
_ Type of protection IP66

Note
_ Please consider correct placing of the gasket lip in the gasket seat. For details refer to data sheet chapter „Gasket varification"
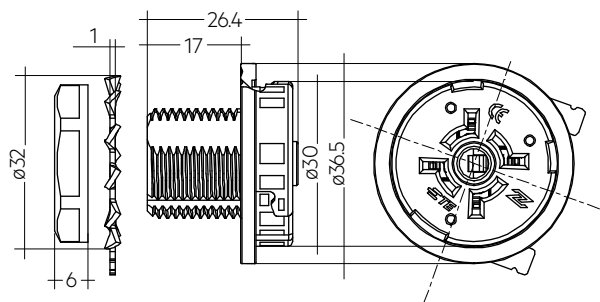
Interfaces
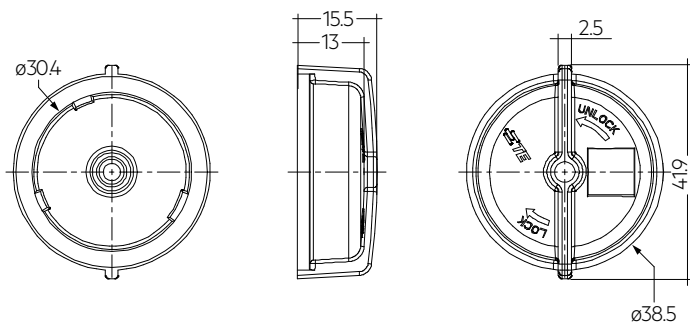_ Supplies Zhaga Book 18 Ed. 3 contact system

Website
http://www.tridonic.com/28005366

ACU Z18 REP 4PIN G2

ACU Z18 CAP IP66 G2

Ordering data

Type	Article number	Packaging, carton	Packaging, bag	Weight per pc.
ACU Z18 REP 4PIN G2	**28005366**	200 pc(s).	–	0.027 kg
ACU Z18 CAP IP66 G2	**28005374**	400 pc(s).	100 pieces	0.009 kg

Approval marks

CE RoHS

ACU Z18 Set

Accessory
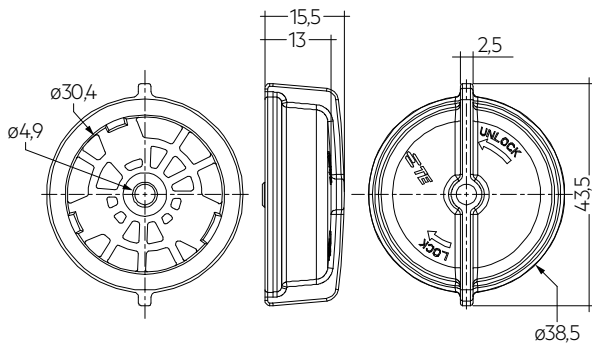
Product description

_ Set consisting of receptacle, lock washer and mounting nut (ACU Z18 REP 4PIN)
_ Designed for street lighting control
_ Compliant with Zhaga Book 18 Ed. 3
_ Optional IP66 with sealing cap (ACU Z18 CAP IP66)
_ UL UV-f1 rated for outdoor use
_ Impact protection degree IK09
_ For more details see data sheet ACU Z18 Set

Housing properties

_ Colour: dark grey (RAL 7043)
_ Casing receptacle: PBT
_ Type of protection IP20

Interfaces

_ Supplies Zhaga Book 18 Ed. 3 contact system

Website

http://www.tridonic.com/28003209

Ordering data

Type	Article number	Packaging, bag	Weight per pc.
ACU Z18 REP 4PIN	28003209	100 pieces	0.021 kg
ACU Z18 CAP IP66	28003208	100 pieces	0.020 kg

Approval marks

CE RoHS

1. Standards

EN/IEC 61347-2-11
EN 55015
EN 61547
EN 62386-101 Ed.2
EN 62386-103 Ed.1
EN 62386-304
EN 62386-351

1.1 DALI note

⚠ Sensor only applicable for DALI installations according to EN 62386-101 Ed.2.

1.2 D4i note

D4i luminaire-mounted control devices (part 351) = Type B

1.3 Glow wire test

according to EN 61347-1 passed with 850 °C.

2. Common

PCell SSI 31 PC DA2 SA is one of the first light sensors, which was specially developed on the basis of Zhaga to fit perfectly in urban outdoor applications. The light sensors work with Tridonic D4i LED drivers out of the box, an additional application controller is not necessary. Upgrading existing luminaires and installing new luminaires is easy and cost-effective.
By using PCell SSI 31 PC DA2 SA, it is possible to save energy and improve user comfort at the same time.
By supporting the Zhaga Book 18 Ed. 3, the innovative platform design of the sensor enables simple plug & play. The associated software was developed in accordance with the latest DALI-2 standard, is flexible and covers a wide range of use-cases in installations where an application controller is used.
Due to the robust design, a long service life and the protection class IP66, PCell SSI 31 PC DA2 SA is also very well protected against harsh external conditions.

3. Installation

- The Sensor must not be connected to mains. It is supplied directly via the DALI power supply.
- Make sure the used Power supply provides enough energy to power the Sensor.
- DALI is not SELV. The installation instructions for mains voltage therefore apply.
- Correct sensor operation can not be guaranteed if operated outside his ta window.
- Make sure the sensor is mounted correctly and locked in place.
- If the lens is covered by dirt or other pollution the sensor may not be able to work sufficient. Make sure the lens is cleaned in a regular interval.
- Other light sources, such as nearby buildings, can cause light pollution and contribute to the sensor measuring too high light value and the lights not switching on.
- Avoid direct illumination of the light source on the sensor.

3.1 Wiring

OTD system overview:

Sensor is optimized to be used in combination with Tridonic D4i LED driver portfolio with internal power supply and sensorMODE. The Dimming behaviour of the driver in sensorMODE can be configured in the Tridonic companionSUITE or masterCONFIGURATOR.

companionSUITE: masterCONFIGURATOR:
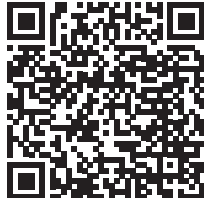
Following illustration visualizes the wiring of the components inside the luminaire.
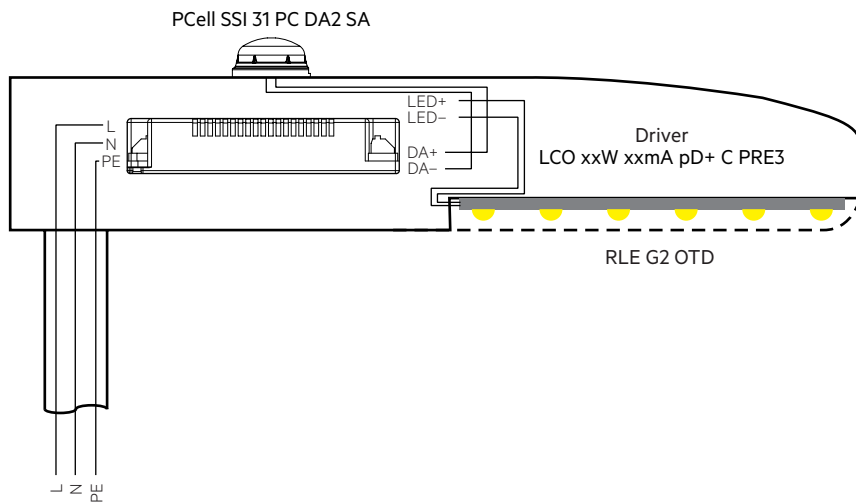
The sensor supports the Zhaga connectivity standard for Plug and Play luminaire extensions. This allows a toolless and flexible integration in luminaires. The connection interface is designed according to Zhaga Book 18 Ed. 3.

Pin assignment PCell

Pins	Assignment
Pin 1	Not connected
Pin 2*	Negative Pole of DALI (DA-)
Pin 3*	Positive Pole of DALI (DA+)
Pin 4	Not connected

* The polarity is not mandatory for function of the sensor, but is mentioned because the receptacle has to be designed according to Zhaga Book 18 Ed. 3 and inside the luminaire the polarity has to be wired correctly.

⚠️ The Zhaga connector pins mounted in the luminaire, have to follow the same pin assignment as described in Zhaga Book 18 Ed. 3!
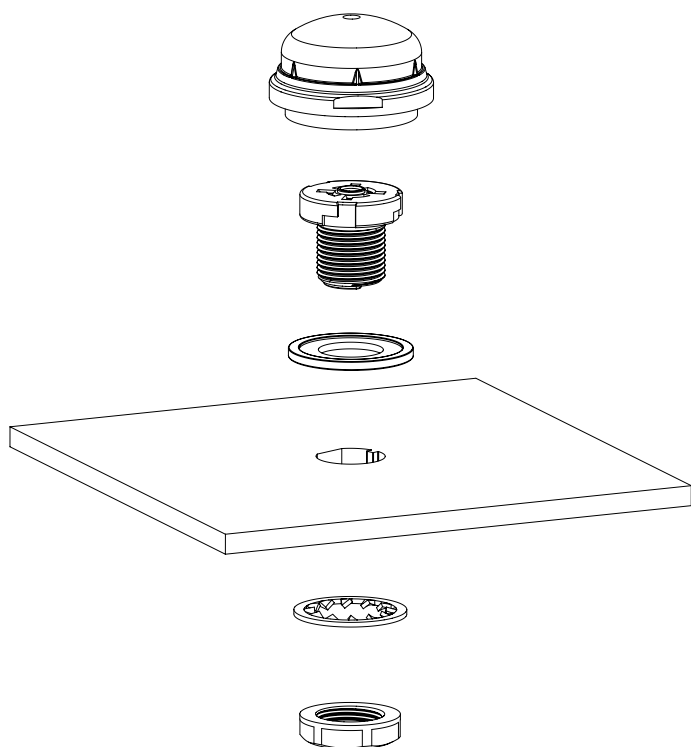
DALI-2 Systems:

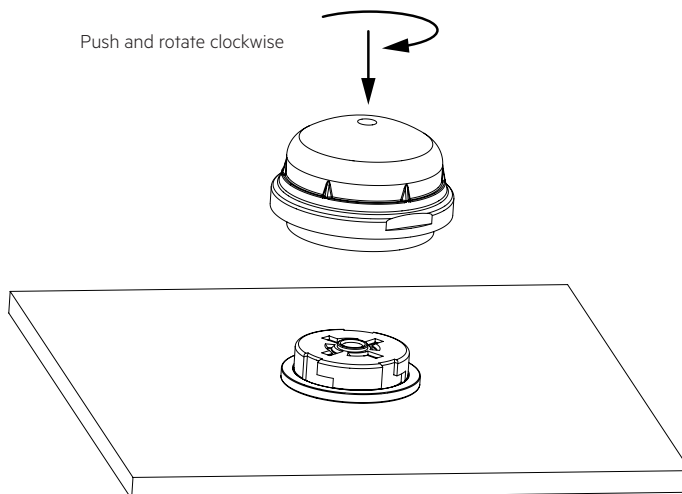As the Sensor is a DALI-2 device it can also be used in Standard EN 62386-101
Ed. 2 systems.
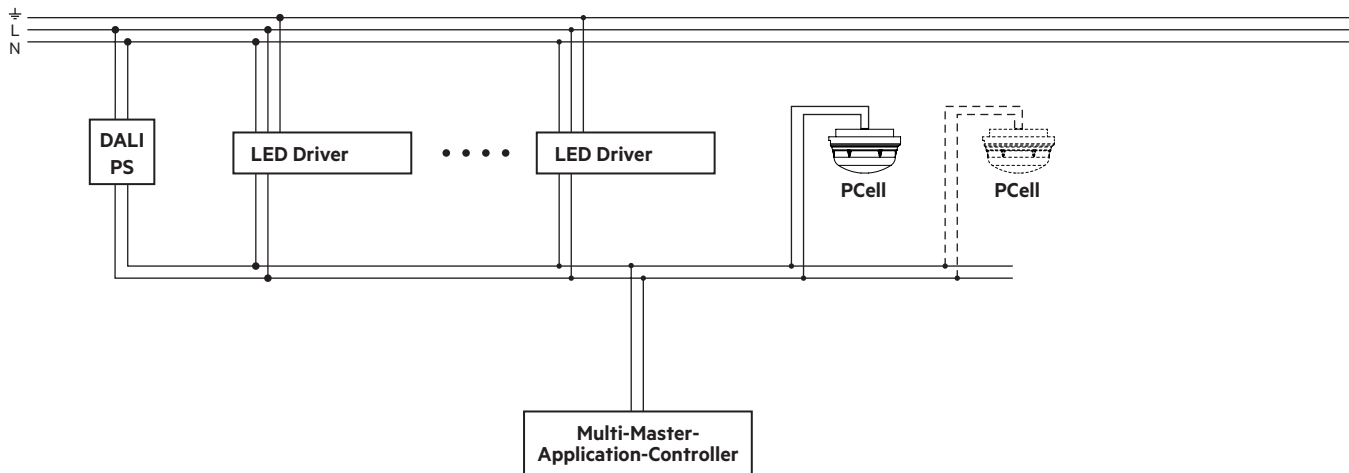
3.2 Mounting instructions

Assembly visualization:

Installation on luminaire:

Push and rotate clockwise

The sensor must lock in place.

If the lens is covered by dirt or other pollution the sensor may not be able to work sufficient, make sure the lens is cleaned in a regular interval.

3.3 QR Code

On the bottom of the sensor a QR Code is printed directly to the Label. The QR Code can be scanned with Tridonic Service App and will provide additional Information about the Sensors like e.g. Batch Number.
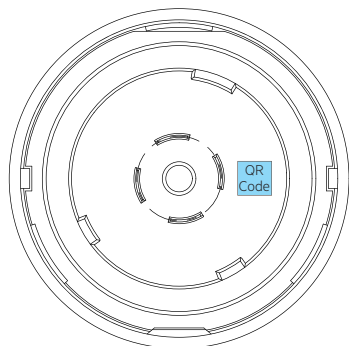
4. Sensor function

4.1 Sensor configuration

The default Sensor operating mode is mode 128. In this mode the sensor is prepared to work out of the box with Tridonic D4i LED drivers in a stand alone system.
Tridonic D4i drivers need to be configured so that they are in the sensorMODE mode to be able to evaluate the sensor values.
Tridonic D4i drivers can be easily configured via the Tridonic software tools, see chapter 3.1. More information about the configuration of the Tridonic D4i LED drivers and the Tridonic software tools can be found in the corresponding documentation.

⚠️ If the Sensor is connected to an standard EN 62386-101 Ed. 2 system with an application controller active the chance is high that the application controller will change the default values. If this is the case the Tridonic D4i LED drivers will not be able to evaluate the sensor values. If you have such an Sensor then it is important to reset the values of the Sensor to default. If you have such a case please contact your local Tridonic support. We will provide you a solution.

4.2 Light measurement

The light measurement is detected in an angle of 150°.
The light sensor is located behind the lens.
Sensor can be mounted on top or bottom of the luminary.
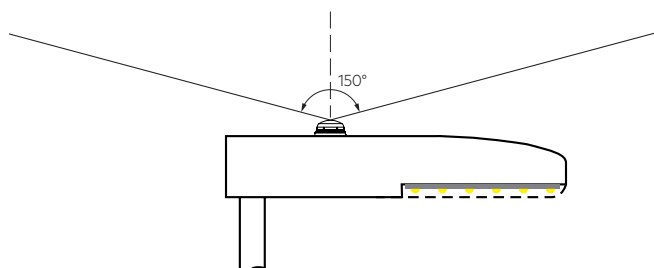
4.2.1 Light measurement default operation

Out of the box the sensor is optimized to work with Tridonic D4i LED drivers and provides accurate light measurements between 0.2 and 20,000 Lux.
The accuracy of the measured lux level is different for different Lux levels.

1 – 4,000 lx ≤ ±10 %
0.2 – 20,000 lx ≥ ±10 %

4.2.2 Light value format

The default operating mode is 128.
The Sensor is optimized to work together with already programmed Tridonic D4i drivers in this mode. This allows an easy out of the box implementation in D4i Luminaries without the need of additional programming.
In addition to operation mode 128 also operating mode 0 is implemented.
In operating mode 0 the fixed point values are supported for the light measurement values.
Resolution for fixed point and floating point = 1/64 Lux

The measurement range in operating mode 128 is between 0.2 and 20,000 Lux measured at the sensor head.

⚠️ To be able to measure values < 5 lx in an accurate way it is needed to set integration time of light sensor to 800 ms or more. 800 ms is the default value for this sensor.
For values > 5 lx integration time can be set below 800 ms.

4.3 Start up behavior

If the DALI line is switched on when the sensor is mounted, the green LED in the sensor flashes for 5 seconds with 0.5 second pulse duration to signal the installer that the sensor is ready for operation.

4.4. Use in standard EN 62386-101 Ed. 2 systems

In addition to the Default mode 128 in which the sensor is configured to work out of the box with Tridonic D4i LED drivers the Sensor provides also mode 0. In mode 0 the Sensor can be used in standard EN 62386-101 Ed. 2 systems where an application controller is active. It is important that the used application controller does support mode 0 for light sensor input devices as described in EN 62386-304.

4.4.1 Instances supported

The Sensor provides 4 instances of type 4 per default instance numbers 0, 1 and 2 are deactivated, instance number 3 is active.
If the Sensor is connected to an application controller and the default values are reset the default, values will be overwritten with the reset values.
After a reset all 4 instances are active.

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

Lifetime declarations are informative and represent no warranty claim.
No warranty if device was opened.