DGOZ-SEN-LL65
RAPIX DALI-2 IP65 Outdoor Light Level Sensor

Suitable for direct connection to a DALI line for outdoor weatherproof light level measurement. Built-in Application Controller allows sensing, switching, dimming, timing, group and scene control and similar functions.

Product summary and capabilities

This product acts as a light level sensor and is powered directly from the DALI line.

The sensor works with DALI-2 Application Controllers and exposes 1 instance. The sensor can also act as a RAPIX DALI Application Controller and can perform sensing, switching, dimming, timing, group control, scene control and similar functions.

The sensor is commissioned using any DALI-2 commissioning software that supports instance type 4. For the higher resilience of RAPIX and to set up the built-in Application Controller, use *RAPIX Addressing* or *RAPIX Integrator* software. These software packages are available at no charge from ozuno.com

This sensor is a sealed enclosure and has an IP65 or higher rating when suitable care is taken with mounting and electrical connection.

Important notes and safety information

WARNING – Electric shock may result in serious injury or death. Follow all warnings in this guide and on the product. Work in accordance with the latest electrical safety practices.

- This Sensor is powered only from DALI line.
- DALI system wiring is only single insulated from mains. Treat DALI wiring the same as mains wiring.
- There are **no user serviceable parts** inside the Sensor. Do not attempt to disassemble or operate the device with any covers removed.

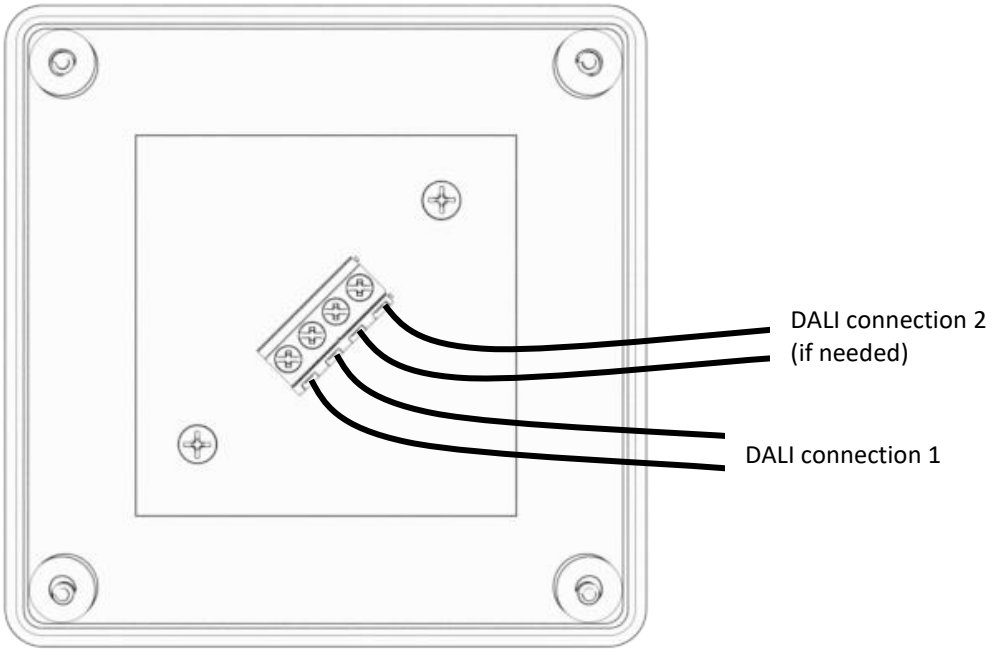
Indicators

An indicator is located on the main PCB. This will flash green when DALI-2 or RAPIX commissioning software activates the identification function. This allows physical location of the sensor after it has been installed. This indicator will be best viewed in low ambient light levels.

This indicator will also light solid green (no flashing) to show that the sensor has not been commissioned using DALI-2 or RAPIX commissioning software or the RAPIX Zero-Commissioning processes.

Terminals

The DALI line connection terminals are access on the main PCB when the front cover is removed.



Mounting

This sensor can be mounted to walls and bulkheads.

The recommended method of electrical connection is using conduit.

The sensor includes threaded conduit connections and screw covers.

WARNING – The IP rating of this sensor is only as good as the weakest part.

Any holes made in the enclosure will allow entry of water or moisture.

Take great care with mounting holes and cable entry. The guidance given here should help to prevent problems caused by entry of water into the product enclosure.

Use the following guidance:

1. **After being tightened: any screws used for mounting must be carefully sealed to prevent water entry around screw holes.**

   Apply silicon sealer over and covering screw heads on the inside of the enclosure. Push sealer into place carefully so that no water entry is possible around screw holes and screw threads. Fit the supplied screw covers, pushing into silicon sealer.

2. **Preferable: Connect the sensor to the electrical cabling system using conduit fittings with side entry into the back box.**

   Conduit entry is preferred because it allows better sealing. Conduit fittings must be sealed where conduit enters bulkhead fittings, and around all sides of washers and under nuts, and so on. Apply silicon sealer before doing up nuts. Apply silicon sealer to conduit and into conduit fittings before mating conduit to fittings. Ensure all surfaces to be sealed are covered by sealer.

3. **If cable glands are used:**
   a. **These must sit completely flush.** Carefully check the inside and outside surfaces.
   b. **Additional sealant must be used on all surfaces of all sealing washers (inside and outside) and on the inner nut.** Sealant should ooze out from all parts of washers when the inner nut is tightened.
   c. **ONLY ROUND CABLE CAN PASS THROUGH A CABLE GLAND AND MAKE AN ADEQUATE SEAL. Do not use mains oval-section TPS cable through a cable gland.**
   d. **All grommets and flexible parts of the cable sealing system in the cable gland must be in place and used.**
   e. **Additional sealant around the cable passing through the gland is recommended.** This should ooze out when the cable nut is tightened.

   Cable glands may allow a quick and easy connection, but they are very difficult to properly seal. Use the above guidance to help get good sealing. Preferably – use conduit connection instead.

4. **After any installation using sealant, the sealant must be allowed to properly cure before final assembly.**

   Silicon sealer can give off vapours while curing. A full curing should be allowed before final assembly so that vapours can dissipate. Different sealing compounds have different curing times so read the instructions for the compound being used. If in any doubt allow at least 24 hours curing time.

Commissioning Software

This product can be commissioned using any software that supports DALI-2 Control Devices (IEC 62386-103) Instance Type 4.

For enhanced functions, additional resilience and to use the built-in Application Controller the free RAPIX Addressing or RAPIX Integrator software is available at ozuno.com. This software requires use of a RAPIX USB Interface or RAPIX Zone Controller to connect the commissioning software / PC to the DALI line.

Use in non-RAPIX DALI-2 Systems

DALI standards require that this product is supplied with the built-in Application Controller enabled. The controller is commissioned using RAPIX software.

When used in non-RAPIX DALI-2 systems, use your commissioning software to **disable** the built-in Application Controller.

DALI-2 Instances

This sensor has 1 instance: Instance 0 is Type 4 Light Level.

Sensor Options

Sensor options can be activated by changing the DALI-2 Operating Mode, using the DALI command SET OPERATING MODE. When using RAPIX software, these options are selected by checkboxes during product commissioning. The following options are available by setting the Operating Mode:

Operating Mode	Optional Behaviour
0x00 (0)	Light level range: 0 - 1023 lux (DEFAULT).
0xC0 (192)	Light level high range: 0 – 65535 lux.

Light Level

DALI-2 standards **do not** specify units of measurement for the light level of any light level sensor. Therefore the measured light level of any sensor may need a calibration process by the Application Controller.

This RAPIX DALI-2 Light Level Sensor is factory calibrated to report light level in lux, with the following considerations:

- The light measurement process is approximately matched to human eye response;
- The light source during calibration is approximately 4000 Kelvin;
- The light souce during calibration is diffused and acting mainly on the front light sensing surface.

Standards and compliance

The product is designed to meet/exceed the following Australian and International standards:

EMC and Electrical Safety Frameworks and Standards

IEC/EN 55015, AS/NZS CISPR 15, AS CISPR 15
EN 55032, AS/NZS CISPR32
EN 55035
EN 61547
EN 62368-1

DALI Standards and Compliance

IEC 62386-101
IEC 62386-102

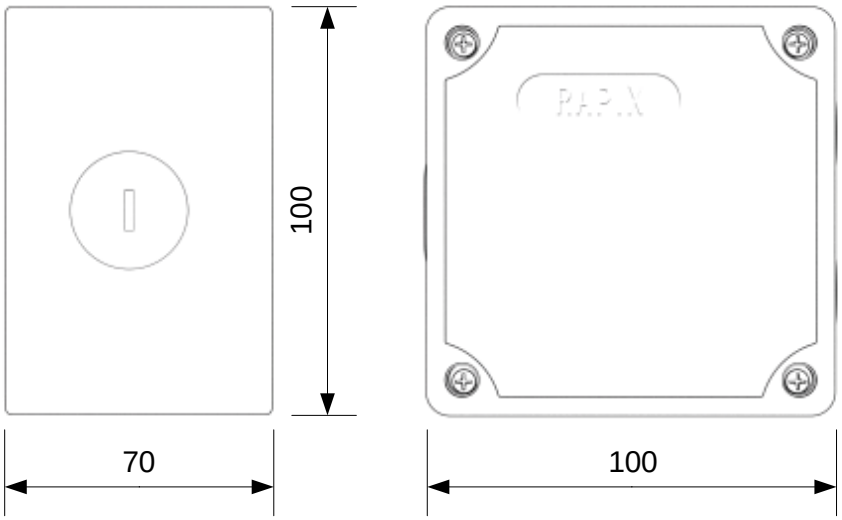
EC Council Directives

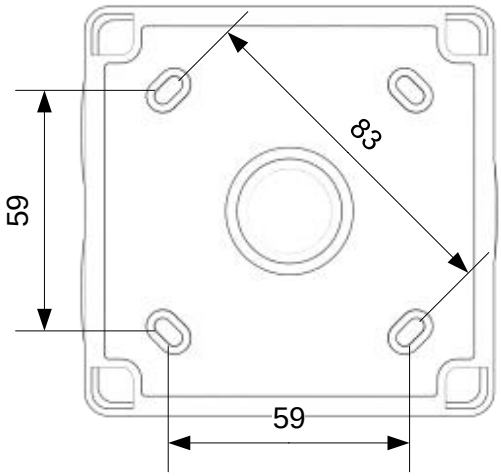
2014/35/EU	Low Voltage
2014/30/EU	Electromagnetic Compatibility (EMC)
2015/863	Restriction of Hazardous Substances (RoHS) in Electrical and Electronic Equipment

Specifications

Sensor	
Light Level Measurement Range	0 – 1023 lux (default). DALI Operating Mode allows optional high range: 0 – 65000 lux
Power Source	DALI line
Compatibility	DALI and DALI-2
DALI Line Capacity	Connects to 1 DALI line
DALI Operating Voltage	16 V dc (nominal), operation from 9.5 V – 22.5 V
DALI Line Current Draw	2 mA
Mains Tolerance	DALI input is mains voltage tolerant
DALI Connection	4 Tunnel Terminal block Each tunnel suitable for 1 x 2.5 mm^2 or 2 x 1.5 mm^2 wires
Indicators	Identification: green, visible in low light only, through front diffuser
Ambient Operating Temperature	-30 to 70° C
Ambient Storage Temperature	-40 to 100° C
Humidity	0% to 95% RH non-condensing
Ingress Protection	IP65, when suitable care is taken with mounting and cable entry
Conduit Entries	Left: 1 x 25 mm. Right: 2 x 25 mm. Back: 1 x 20/25 mm
Materials	Enclosure – UV stabilised PC
Weight	250 g
DALI Addresses Used	One DALI-2 Control Device Short Address, no Control Gear Short Addresses
DALI Addressing types supported	Short Addresses, Group Addresses, Scenes, Broadcast
RAPIX Application Controller DALI addressing types supported	Control Gear Short Addresses, Group Addresses, Scenes, Broadcast
Additional Addressing Types*	RAPIX Zones, RAPIX Flags, RAPIX Operating Properties
DALI Addresses Used	One DALI-2 Control Device Short Address, no Control Gear Short Addresses
Approvals	DALI 2, RoHS COMPLIANT
*	RAPIX features and additional addressing types work with other RAPIX products.

Product dimensions & Mounting Centres

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Warranty

This product has a TWO YEAR warranty against manufacturing defects. The warranty applies from the date of purchase.

The warranty does not cover product damage due to installation that allows entry of water into this sensor product.

Refer to ozuno.com for the full conditions for warranty and returns process. A summary of the process:

1. Contact the seller of the goods, or in their absence contact Ozuno to request a return goods authorisation.
2. When a return is authorised, the goods must be returned to Ozuno at the owners expense for technical evaluation.
3. The warranty claim will be evaluated by Ozuno and accepted if the goods are found to be faulty, or rejected if the fault was caused by conditions beyond the responsibility of Ozuno. Considerations of installation, removal, return, freight and testing are not the responsibility of Ozuno.

The Australian Consumer Law requires the inclusion of the following statement with this Warranty:

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

Sales: Ozuno Trading Pty Ltd
ABN: 96 621 194 483

Support Contact
support@ozuno.com

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