

DALI External Light Sensor (329)

The 329 DALI External Light Sensor, when used in conjunction with a Helvar Lighting Router based controls system, can provide energy savings by adjusting light levels based on the available daylight.

For instance, bright sunlight will raise the overall light level in the rooms of a building. The sensor will detect this, and the system will reduce the energy levels supplied to the lamps. If the day then becomes overcast, the system will respond to the lower levels of ambient light by increasing the energy provided to the lamps. By profiling the building (measuring the daylight contribution per room) the system can be used to maintain an approximate constant light level, and thereby reduce energy use.

The 329 is for mounting outdoors. The unit head assembly is waterproof when correctly installed and mounted vertically, and can tolerate a wide range of operating temperatures and conditions.



1. Assembly and connection

1. Mount the **base assembly** in your chosen outdoor location. See the 'Mounting' section (next page) for details.

2. Fit the (supplied) **cable gland** to the **base assembly** (cable diameter 6 - 12 mm).

The **base assembly** will accept 20 mm conduit as an alternative to the **cable gland**.

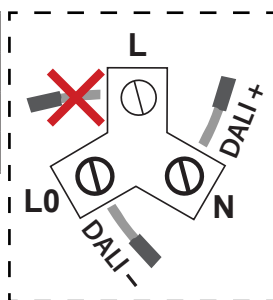
One of these methods (cable gland or conduit) must be used to meet the product's IP 65 rating.

3. Put the **sealing gasket** in place on the **base assembly**.

4. Thread the DALI cable through the **base assembly**, up through the **sealing gasket**.

5. Connect the DALI wires to the connectors of the **socket assembly**:

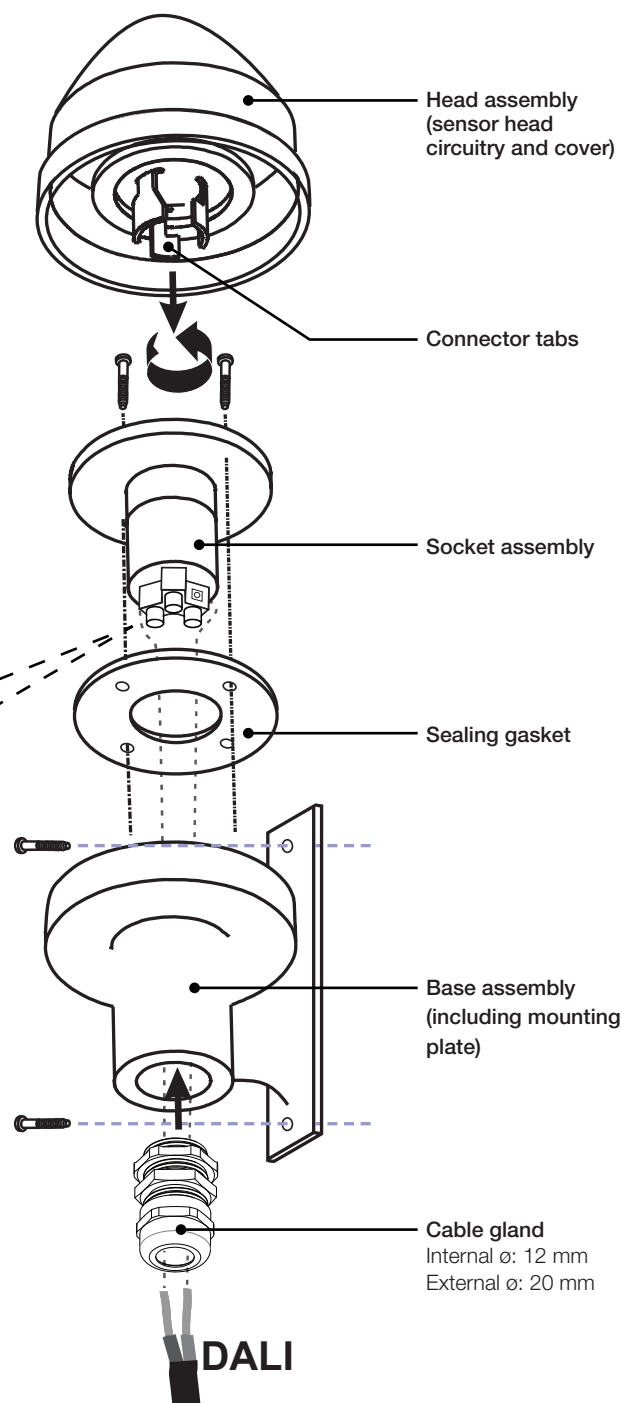
Terminal	Function
N (DA+)	DALI +
L0 (DA -)	DALI -
L	Do not connect.



6. Check that the **sealing gasket** is in position, and then screw the **socket assembly** into the **base assembly** (use the 2 screws supplied).

7. Attach the **head assembly** to the **socket assembly**:

- Align the **connector tabs** with the sockets (note that the 'N' tab is larger than the others)
- Push the **head assembly** down into the **socket assembly**.
- Twist the **head assembly** clockwise to lock it into position.



2. Mounting

WARNING: TO AVOID THE POSSIBLE RISK OF LIGHTNING STRIKES, NEVER INSTALL THE 329 DALI EXTERNAL LIGHT SENSOR AT THE HIGHEST POINT ON A BUILDING.

Mounting position

Mount the 329 DALI External Light Sensor outdoors.

Mount the unit vertically.

Any convenient surface may be used as long as the sensor element has a reasonably unrestricted view of the sky.

Fixing screws

M4 thread or No 8 wood screw: select according to mounting surface.

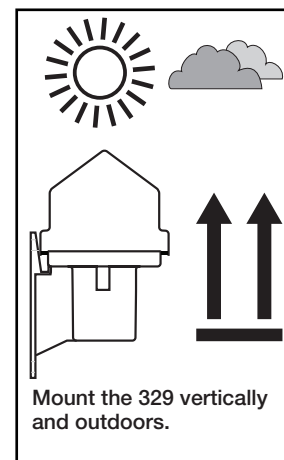
Use round-head or cheese-head screws. Do not use counter-sunk type screw heads.

Procedure

1. Drill and prepare the screw fixing holes as shown in Fixing Centre Locations diagram in the **Technical Data** section.
2. To access the top mounting screw, remove the 329 Head assembly, by twisting the head assembly anti-clockwise and lifting it.
3. Screw in the fixing screws.
4. With the bracket located under the top screws, secure the lower screw.

NOTE

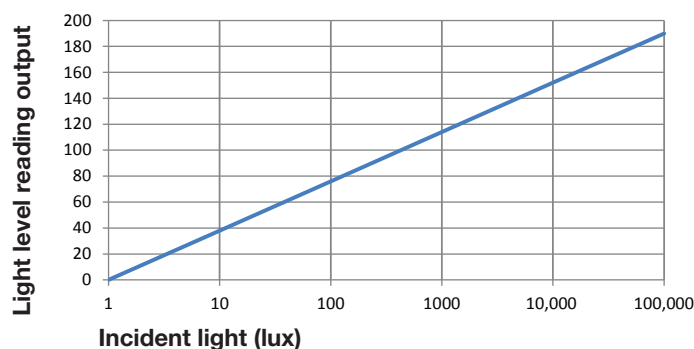
Avoid over-tightening the screws as this may weaken or break the bracket material.



3. Operation

Light level output

The external light sensor is calibrated to provide a scaled light level output of 0 to 200 covering the full range of daylight. The sensitivity of the external light sensor is factory-set and no adjustment is required.



Incident Light (lux)	Light Level Reading Output Value	Equivalent To
≤1	0	Darkness
2	11	
5	26	
10	38	Twilight
20	49	
50	65	
100	76	Dark day
200	87	
500	102	
1,000	114	Overcast day
2,000	125	
5,000	140	
10,000	152	Full daylight
20,000	163	
50,000	178	
100,000	190	Bright sunlight

Cleaning the sensor head cover

A build-up of dust and dirt on the clear cover of the sensor head may reduce the efficiency of the light sensor unit. We recommend that the cover is examined periodically and, if necessary, cleaned with a soft damp cloth. Use a mild detergent for stubborn marks.

Light sensing angle

Vertical plane: unrestricted viewing angle of 170°.
Horizontal plane: 360° viewing angle.



4. Technical Data

Connections

DALI: Wire size: 1.0 mm² - 2.5 mm²
2-core solid, flexible or stranded
Max. length: 300 m @ 2.5 mm²
(part of DALI subnet)

Connector type: Screw terminals:
N: DALI +
L0: DALI -
L: Do not connect.

Power cable rating: All cables must be mains rated

Power

DALI power supply: 13 - 22 V

DALI consumption: 10 mA

Sensor

Sensor element: Photodiode matched to human eye response

Light sensing angle: When mounted vertically:
85° from vertical;
Horizontal plane: 360°.

Working light range: 1 - 100,000 Lux

Light level reading output: 0 - 200

Mounting

Mounting angle: Vertical (clear sensor head at top)

Mounting points: 2 x M4 (No. 8 woodscrew) (for fixing centres see Fig. 2)

Mechanical Data

Overall dimensions (mm): 148 (H) x 82 (W) x 87 (D)

Materials:

Base & mounting bracket Black ABS

Socket & sensor ass'y Black glass-filled nylon

Sensor cover Toughened acrylic (UV stable)

IP rating: IP 65

Weight: 250 g

Operating Conditions

Ambient temperature: -35°C to +70°C

Relative humidity: Max 90%, non-condensing

Storage temperature: -35°C to +70°C

Conformity and Standards

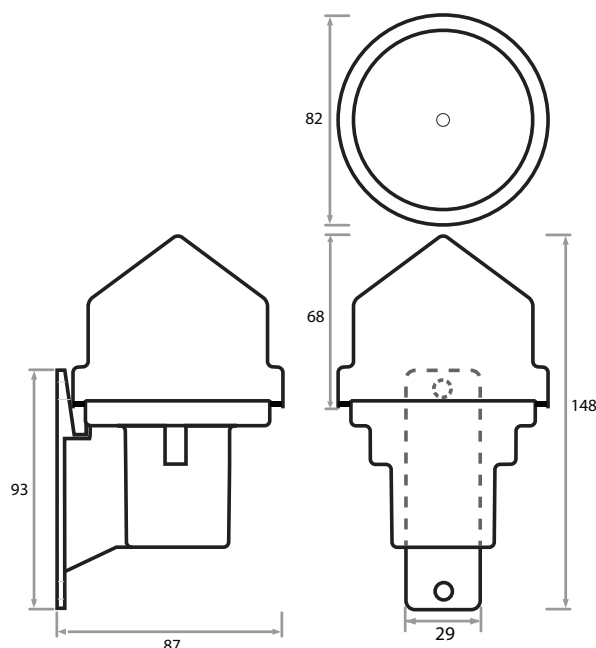
EMC: Emissions EN 55015

Immunity: EN 61547

Safety: EN 60950

Environment: Complies with WEEE and RoHS directives

Dimensions (mm)



Fixing centre locations

(Dimensions in mm)

