

RDM Light Level Sensor (Part Number: PR0193)



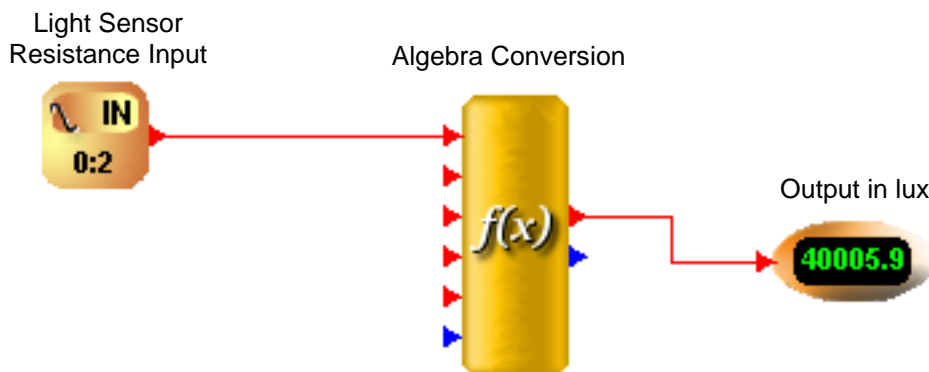
Features

- Robust Water Resistant Housing
- No Power Supply Required
- Simple 2 Wire Connection
- Reliable and Secure Push Terminals
- Low Cost
- Single Mounting Point

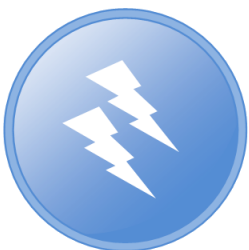
The Resource Data Management light level sensor consists of a light dependant resistor (LDR) housed in a clear water resistant enclosure with two spring loaded connections on the underside. The unit is intended for use with an RDM Data Manager, Intuitive controller or Plant controller range using a TDB application.

The resistance measured across the terminals will vary depending on the light level. This can be easily converted into a lux reading, for example, and used to switch lighting on and off when a particular light level is reached.

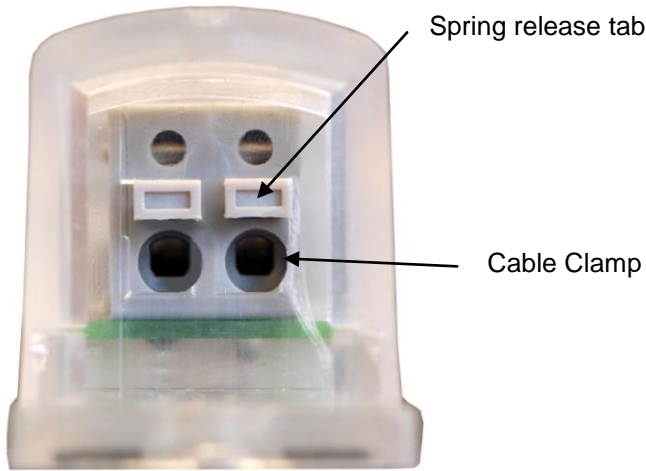
Resistance measured by the sensor can be converted to lux by using the following equation in a TDB algebra block, $\exp((\ln(\$1)^{-1.2117})+12.9756)*10.76$ where \$1 is the resistance, an example is shown below.



The probe input block probe type should be set to raw to read resistance.



Connections



The light sensor is fitted with spring loaded connections which are less prone to shaking loose than standard screw terminals.

Using an object such as a small terminal screwdriver, push on the spring release tab, this will open up the cable clamp inside the connector. With the tab still pressed down, insert the stripped cable. Release the tab to clamp the cable.

A waterproof sealant can be applied to the terminals if the sensor is being fitted in a particularly harsh environment.

The cable can be removed by pushing down and holding the spring release tab and pulling out the cable.

The light sensor connections have no polarity. The sensor should be mounted with the terminals facing downwards to prevent water ingress.

Ordering Information

Description	Part Number
Wall Mountable Light Sensor	PR0193
Wall Mountable Light Sensor (Box of 10)	PR0194
Wall Mountable Light Sensor (Box of 100)	PR0195

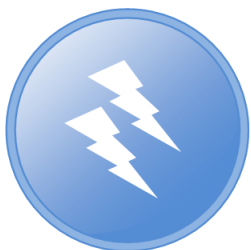
Specification

Resistance Range:	36 Ohm (very bright light) to 350kOhm (darkness)
Measurement Range:	0.8 lux to 60,000 lux
Storage Temperature:	-40°C to + 75°C
Operating Temperature:	-40°C to + 75°C
Protection Rating:	IP64
Dimensions:	56mm (H) x 24mm (D) x 21mm (W)
Mounting Hole:	4mm diameter
Maximum Cable Size:	2.5mm (14awg)

Typical Resistance and Lux Levels

Resistance	Illuminance (lux)	Typical Conditions
350kΩ	0.8 lux	Nighttime with a clear sky and full moon
300kΩ	1 lux	Nighttime with minimal street lighting
114kΩ	3.4 lux	Twilight with a clear sky
7105Ω	100 lux	Daytime, cloudy and overcast in a shaded area
2263Ω	400 lux	Daytime, sunset on a clear day
338Ω	4000 lux	Daytime, Indoors well lit room
158.8Ω	10,000 lux	Daytime, midday scattered cloud
50.5Ω	40,000 lux	Direct sunlight

Note: due to the nature of LDR technology, resistance values from one sensor to another can vary, including sensors from the same manufacturing batch, even when exposed to similar lighting conditions. For this reason calibration may be required during the commissioning process on a site by site basis.

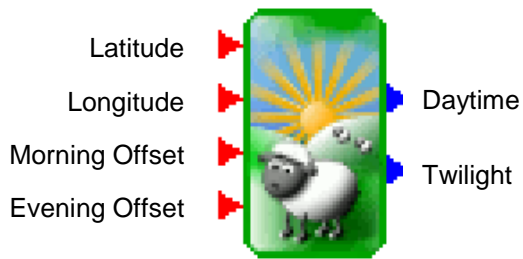


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TDB Daylight Block



The TDB software application has a daylight block which can be used in conjunction with the light level sensor. By entering the latitude and longitude of any location the Daylight block can be used to provide an indication of daylight and twilight hours for a given geographical location.

Incorporating this block into any TDB program will provide a backup to the light sensor should there be a wiring fault or a sensor failure.

Disclaimer

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