TSL200
1-Wire ambient light sensor

Short description

The TSL200 is a high-precision ambient light sensor designed for 1-Wire communication. It features a high dynamic range and a spectral response closely matching the human eye, thanks to its advanced infrared (IR) filtering.

The sensor can measure light levels up to 83,000 lux with automatic full-scale adjustment and a 23-bit effective dynamic range. Built-in digital signal processing and full factory calibration ensure long-term measurement stability and accuracy, eliminating the need for additional user-side calibration.

The light sensing element is mounted on the internal PCB. A circular aperture in the enclosure, positioned directly above the sensor, defines the effective field of view to a ±45° angle from the sensor's normal axis.

Each sensor includes a unique internal ID number, making it ideal for use in multi-sensor environmental monitoring systems.

For easy wiring in daisy-chain configurations, the TSL200 includes two RJ11 connectors on its panel, simplifying integration into 1-Wire bus networks.

Technical parameters

Supply voltage range (via 1-Wire bus)	4.5 to 5.5 V
Maximum supply current (via 1-Wire bus)	4 mA
Illuminance measurement range	0 to 83000 lux
Resolution	1 lux
Accuracy	±5 %
Optical field of view (FOV)	±45° from normal, defined by enclosure opening
Measurement drift (with temperature)	0.01 %/°C
Operating temperature range	0 to +40 °C
Operating relative humidity range	5 to 95 %RH (non-condensing)
Ingress protection	Ip30
Dimensions	85 x 35.1 x 23.5 mm

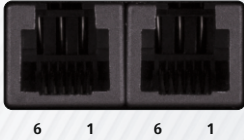## Usage

Compatible with the following TERACOM controllers:

- TCW241   - TCW220   - TCG140-4

Pinout

Pin	Description	Corresponding UTP wires color
1	1-Wire GND	White/Brown
2	1-Wire GND	White/Green
3	1-Wire Data	Green
4	1-Wire GND	White/Orange
5	1-Wire +VDD	Orange
6	1-Wire +VDD	Brown

6   1   6   1

LED indicator

The device status is indicated by a single LED located on the front panel

- Blinks every 1 second: Sensor is operating normally;
- Blinks every 3 seconds: No communication with the controller;
- No blinking (LED off): No power supply.

Sensor connection

It is strongly recommended to use only UTP or FTP cables.
For installations with multiple sensors, a daisy-chain (linear) topology should be used, with a total cable length not exceeding 30 meters.

TCW241

TSH206   TSL200

1-Wire Bus

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