

# DATA SHEET

**Brightness converter with switchable measuring range:  
1,000 Lux, 10,000 Lux, 100,000 Lux  
Output signal 0...10V; Art.-No.: 0555 3005**



## Description



## Technical data

Brightness sensor with transducer	
Measuring range (selectable via DIP switch)	0...1,000, 0...10,000, 0...100,000 Lux
Spectral sensitivity	Corresponds to the sensitivity of the human eye, with a maximum at 550 nm
Output supply	0...10 V DC, linear scaling
CE-Conformance	Yes
Accuracy	<± 10% FS at vertically incidence of light
Operating temperature	-20...+75 °C
EMV-Noise emission	DIN EN 61000-6-3 2022
EMV-Noise withstanding	DIN EN 61000-6-1 2019
Protection	IP65
Power supply	12...24 V AC/DC
Current consumption	13,0 mA
Connection	Cable Connection M16 x 1,5, clamping range: 4,5...10,0 mm
Dimensions (B x H x T) without cable gland	59,3 x 65,7 x 40,5 mm
Material	PA6 30% GK

## Performance features

- Analogue output 0 to 100% of the measuring range corresponds to either 0-10 V (default setting) or 0-5 V
- Three measuring ranges selectable via DIP switch
- Measuring range 0...1,000 Lux mainly suitable for indoor use for measuring artificial light
- Measuring range 0...10,000 Lux mainly suitable for industrial applications with very intense artificial light
- Measuring range 0...100,000 Lux mainly suitable for measuring solar radiation
- High long term stability
- Analogue output for controlling LED controller, invertible
- Switching output with solid-state relay. The output switches when a brightness level selected via potentiometer is exceeded
- High-quality plastic casing (IP65)

## Application areas

- Building automation, lighting control
- Brightness sensor for rain-protected weather stations
- Brightness sensor for switching of appliances in applications with solar panels
- Control of shading systems
- Agricultural technology, brightness measurement in greenhouses

## Description

The brightness sensor is a light sensor for the building automation. It is protected against overvoltage and transients and is suitable for continuous operation.

Further aspects are the possible choice between AC or DC supply and the output of the measurement as a 0...10 V standard signal.

A variety of possible applications result from the determination of the brightness for the dynamic control of devices - like a sun sensor - in the home and building automation.

For the measurement of the illumination level a precise and long-term stable brightness sensor with industrial performance data is used. The high sensitivity in a wide range of luminance intensity makes it possible to use the sensor under very bright lighting conditions.

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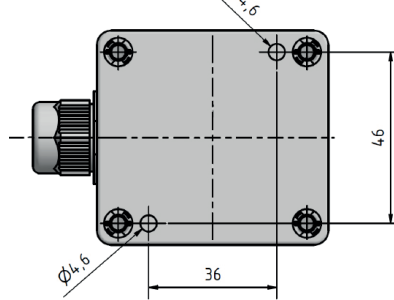
## Installation of the brightness sensor

The brightness sensor can be mounted on a surface with two screws. For this purpose, two holes with a diameter of 4.6 mm are located on the underside of the device. The holes are accessible when the housing cover is removed. The housing has IP65 protection when the cover is closed.

In order to guarantee tightness even after prolonged use, it is recommended to mount the device with the cable gland facing downwards.

Note: As the sensor is located in the housing directly below the lens, you should ensure that the light falls vertically. Please avoid contamination. A simple damp cloth is suitable for cleaning the lens.

Drilling template

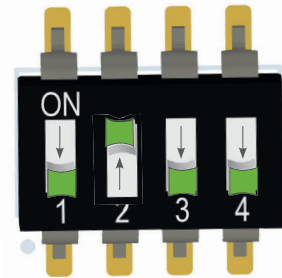


## Output scaling

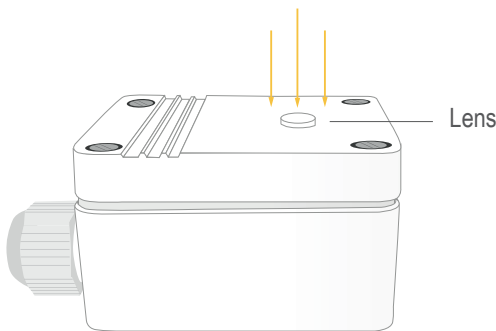
The measuring range, voltage range and output type can be configured using the DIP switches on the circuit board. The default settings are when delivered: 0...100.000 Lux for the measuring range, 0...10 V for the output and non-inverted mode.

### Note:

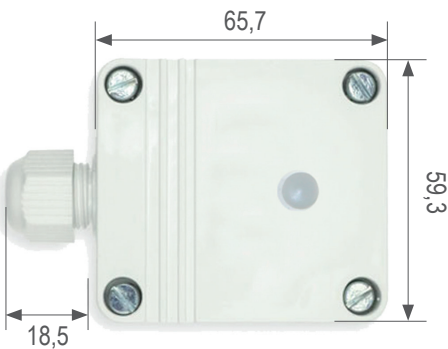
Factory settings are highlighted in green in the picture and are marked with a ● in the tables.



Vertical incidence of light



## Dimensions



## Selection of the measuring range

Range / DIP switch	SW1	SW2
0...1,000 Lux	OFF	OFF
0...10,000 Lux	ON	OFF
● 0...100,000 Lux	ON/OFF <small>(both possible)</small>	ON

## Selection of the output voltage range

Output voltage / DIP switch	SW3
● 0...10 V	OFF
0...5 V	ON

## Analog output characteristics

Behavior / DIP switch	SW4
● NOT inverted (V-Out increases with increasing illuminance)	OFF
Inverted (V-Out increases with decreasing illuminance)	ON

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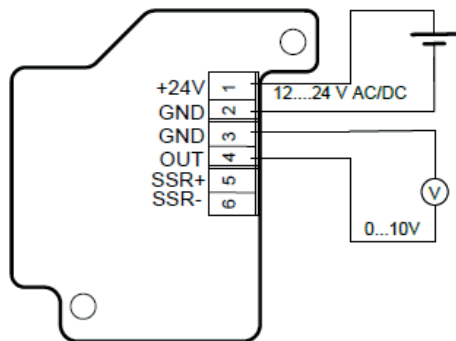
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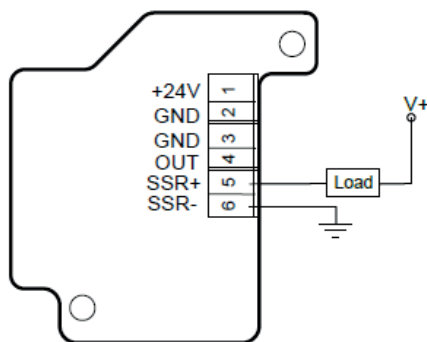
## Terminal blocks

Terminal	Function	Description
1	+24 V	Operating voltage 24 V AC/+DC
2	GND	0-Volt of the operating voltage
3	GND	0-Volt of the output signal
4	OUT	Analogue output signal 0-10 Volt
5	SSR +	Switching output positive connection
6	SSR -	Switching output negative connection

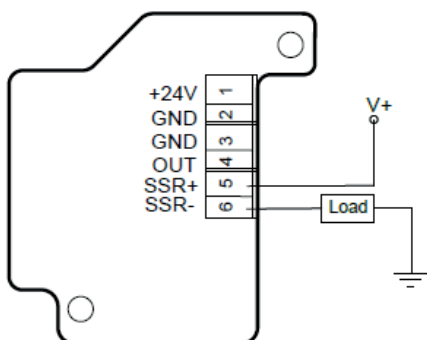
## Power supply



SSR load to voltage (V+), max. 100 VDC / 100 mA



SSR load to GND (≡), max. 100 VDC / 100 mA



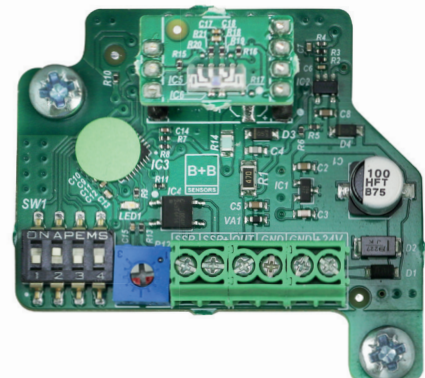
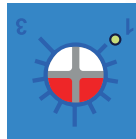
## Potentiometer

The potentiometer is used to set the switching threshold of the switching output (SSR). The potentiometer position from the left stop to the right stop corresponds to a switching threshold based on the measuring range selected by the DIP switch. As soon as the brightness falls below this value by 10% the switching output is blocked. The switching hysteresis is 10%.

The output side is unidirectional, meaning current flows in one direction from SSR+ to SSR-

- Blocking voltage (MAX voltage): 100 VDC
- On-Resistance: 4 Ω at 300 mA load current
- Continuous load current 100 mA
- Off-State leakage current: 1 µA at 100 VDC

⚠ Designed for low-voltage DC applications NOT for AC applications



## Attention

Please avoid extreme mechanical and inappropriate exposure. The device/product is not suitable for potential explosive areas and medical-technical applications.