Sunshine Indicator SDE

Instruction for Use 7.1420.00.000

1. Range of Application

The **Sunshine Indicator SDE** serves for the measurement of the sunshine duration and the global radiation. The global radiation is the sum of direct solar radiation and diffuse radiation.

The threshold of sunshine duration is stated by the German Weather Service (DWD) with 120 W/m² (direct radiation), and is delivered as Yes-No-information.

2. Set-Up and Mode of Operation

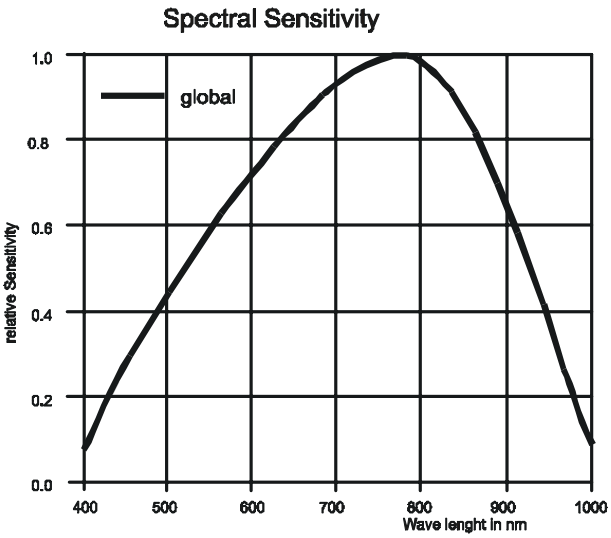
The dome is made of glass and serves as spectral band-pass filter, facilitating the total solar spectrum to reach the sensor. Moreover, it protects the sensor from weather influences, and its geometrical form allows a cos-error correction to the greatest possible extent.
The glass dome is very delicate to strokes and scratches.

According the measuring range the measuring value is delivered as standardized analogue signal.

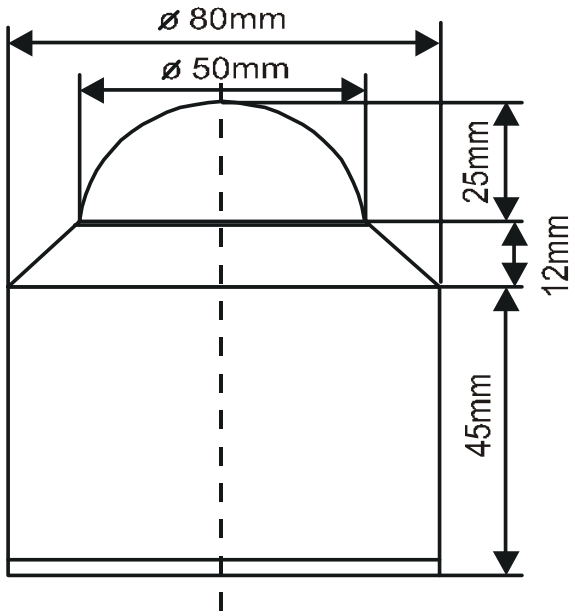
Delivery of the **Sunshine indicator** includes a calibration certificate.

3. Technical Data

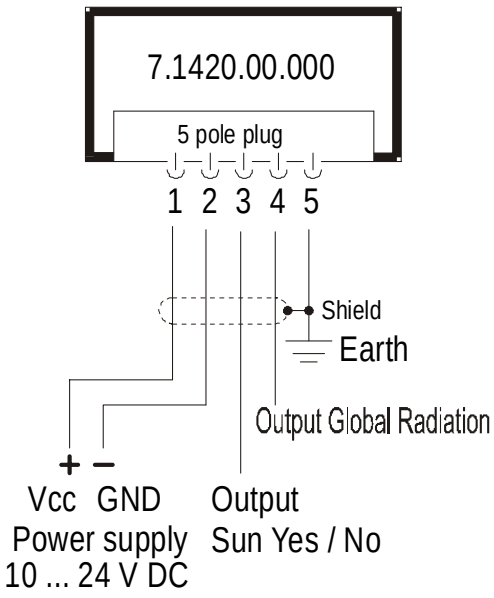
Meas. range global	:	0 .....ca. 1300 W/m²
Electr. output (global rad.)	:	0 ... 5 V
Sunshine yes	:	4,5 ... 5,0 V
Sunshine no	:	0 ... 0,6 V
Spectral sensitivity	:	0,38 ... 1,1 µm
Max. spectral sensitivity	:	0,78 µm
Cos – correction	:	error f2 < 3 %
Linearity	:	< 1 %
Threshold –direct radiation	:	120 W/m²
Operating voltage	:	10 - 24 V DC
Direction of shadow bow	:	north resp.. south see item. 4 mounting
Diffuser	:	PTFE
Dome	:	glass
Ambient temperature	:	-30 ... +60 °C
Connection	:	5 pole plug connection with cable 5m long
Weight	:	0,30 kg



Dimensional Drawing



Circuit Diagram



4. Mounting

The **Sunshine Indicator SDE** is fastened on a plane surface with 2 screws.
Make sure that there no objects in vicinity of the sensor side which could lead to shading. The alignment of the *shadow bow* must guarantee a permanent shading in direction to the *bow half side* up to the margin of the diffuser .
The optimum alignment of the shadow bow depends on the geographical position of the location.
An optimum measurement for the Northern hemisphere is achieved by aligning the bow to North, for the Southern hemisphere, however, by South alignment of the bow.

The electrical connection is to be carried out in accordance with the circuit diagram. For data transmission please use only the coupling delivered with the instrument. The cable to data transmission must be a 5-core watertight cable. Possible cable length for instruments with voltage output is up to 50 m. It is recommendable to use a *shielded* cable .

The instrument should be easily accessible for cleaning of the instrument dome, as dirt and pollution can considerably falsify the measuring results. - Please pay attention to the operating voltage!

5. Maintenance

The opto-electronic part of the **Sunshine indicator SDE** is maintenance-free. Glass dome and housing should be cleaned carefully with a soft moist cloth, at least once in a month – depending on local conditions. Please use a solvent-free light cleaner without scrubbing alloy.

6. Warranty

The warranty does not comprise damages caused by improper use, or broken glass .The right to claim under guarantee expires in case that the instrument has been opened.

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