

DIGITAL SUNSHINE DETECTOR

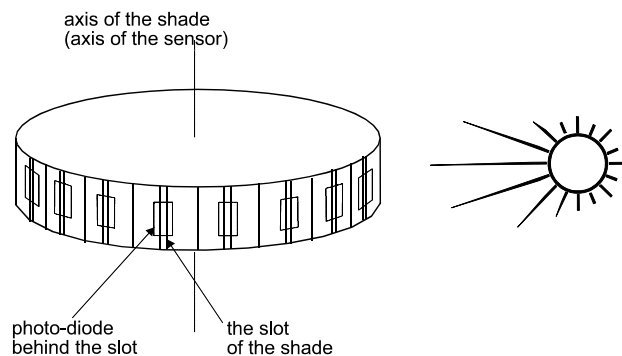
Model GEO-SD6



The GEO-SD6 digital detector is intended for indication of direct sun radiation up from the 120 W/m² limit of radiation power striking one area unit.

The measurements are done on the optical principle. The basic part of the sensing unit is a circular shade. There are 16 slots evenly distributed along the shade perimeter. Behind the slots, screened photosensitive elements (photo-diodes) are placed. During the assembly, the sensing unit shall be oriented so that the axis of the shade runs parallel to the rotation axis of the Earth. The orientation of the sensing unit, evenly distributed photodiodes, and a suitable size of slots in the shade ensure that solar and sky radiation is absorbed at any position of the Sun.

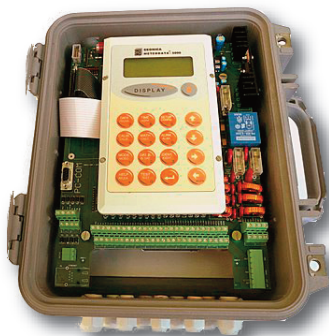
Solar radiation together with sky radiation falls on a glass cupola, goes through the exposed slots and falls on the photodiodes. Each photodiode is connected to the evaluation electronics of the sensing unit. By comparing the intensity of the radiation an executive programme of the detector evaluates if the radiation is scattered (i.e. the Sun is hidden in clouds, fog, etc.) or direct (over 120 W/m²). The output information is a piece of two-state information "YES – NO" (shining – not shining). The detector is designed for connection to a computer. The detector monitors the current status of the sunshine output in a given time interval. In such a way we can obtain information about the character of direct radiation. No part of the detector is mobile, which is a great advantage.





The sensor is heated in order to avoid effects of icing or fogging of the optical system to measurement results.

I GQ/SD6 detector – technical specification	
Incident sun radiation per m ² – range of the measured performance	0 .. 1300 W/m²
Pre-set measuring interval	< 1 s
Spectral sensitivity of the measuring elements - range	λ_{0.5}= 600 .. 1050 nm
Maximum spectral sensitivity	λ_p= 900 nm
Supply voltage	10 .. 24 VDC
Current consumption at 12V	23 .. 40 mA
Output – current loop	- 0 .. 14 mA current loop (in case of sunshine, electric current flows into the output). Voltage of the open loop equals to supply voltage. - At the request, the producer is able to provide the negative output logic of the sensor.
Output - relay	the contacts separated from the sensor in a galvanic way Maximum switched current 0.5A Maximum switched voltage 100V
Heating of the sensor - Voltage for heating	12 .. 48V AC/ DC (36 ... 48 V AC/DC recommended, then heating is regulated to provide constant heating output)
- Current	1.1 .. 0.5 A
Body of the sensing unit - material	stainless steel
Dimensions (diameter x height)	Ø 92 mm x 195 mm (without holder)
Mounting	by using the adjustable holder with base
Weight	930 g (without holder)
Protection	IP 68
Operating temperature	- 40.. + 60 °C
Accessories (optionally)	the holder with lugs for mounting on Ø 25 ..35 mm tube the possibility to increase the heating power for extreme temperature conditions



*METEODATA-2000/3000
Data Logger/Transmitter Unit
(GSM/GPRS, Radio or Satellite)*