

Instruction for Use

021431/12/04

Pyranometer GSM 10.7

Order-No. 7.1415.05.0xx



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1 Models

Order- No.	Meas. range	Elect. output	Operating Voltage
7.1415.05.040	0 ... 1300 W/m ²	0 ... 20 mA	9 ... 24 V DC
7.1415.05.041	0 ... 1300 W/m ²	4 ... 20 mA	12 ...30 V DC (2-leads-circuit s. diagram)
7.1415.05.051	0 ... 1300 W/m ²	0 ... 5 V	9 ... 24 V DC
7.1415.05.061	0 ... 1300 W/m ²	0 ... 10 V	14 ... 24 V DC

2 Application

Global radiation is the sum of direct solar radiation and diffuse radiation reaching the surface of the earth. The spectral range extends from the short-wave-range at 300 nm (UV-B) to the long-wave-range at 5000 nm (IR).

The pyranometer detects almost 100% of the sunlight-spectra in the range from 380 nm to 2800 nm, and thus, comprises the uv-(ultraviolet radiation), vis-(visible radiation), and the part of the ir-(Infrared-radiation) light. The measuring results give information about medical and biological cohesions, compared with other spectral ranges.

The pyranometer can be used in the fields of medical and biological research, with weather information and prognosis systems, in the climatic research, in the field of agriculture, and for the general information of the population.

3 Construction

The pyranometer is a fragile electronic-optical device. The housing is made of anodized aluminium with an uv-transparent glass dome. The instrument is protected against jets of water and rain. A small package of silica-gel serves for drying the inner housing and protects the dome against steaming-up. The results are cosine-corrected.

4 Installation

The mounting shall be effected with greatest care. The pyranometer is fixed with two screws M4 onto a suited holder, and should be exactly in horizontal position. The mounting site should be selected in a way, that the sun radiation reaches the surface of the sensor all day. The pyranometer must have a free horizon into all directions.

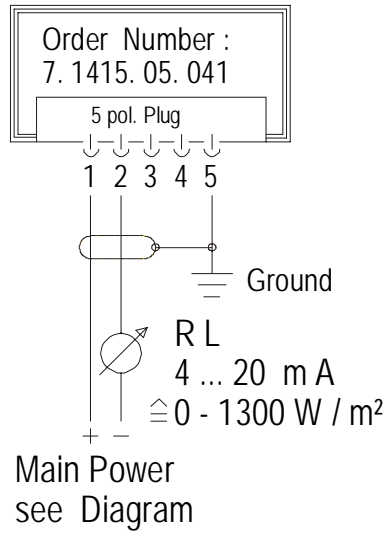
For the data transmission please use the cable available. For the connector pin assignment please refer to chapter 6. When connecting the cable coupling to the pyranometer please take care that the mounting notches of coupling and plug coincide. The cap nut is to be screwed tightly.

5 Maintenance

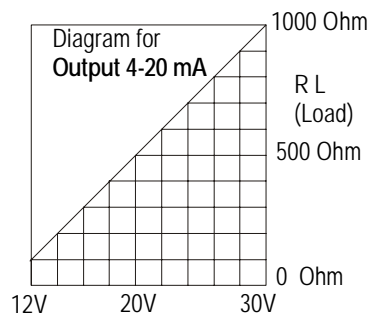
The electronic-optical part of the Pyranometer needs no service. A check of the calibration is possible acc. to the customer's request. The glass dome, and the housing are to be cleaned, if necessary, with a soft and wet cloth twice a year. Please use only liquid cleaning agents without abrasive additives or solvents. The outer cleaning should be done with clear water or possibly with washing-up liquid.

6 Connecting Diagram

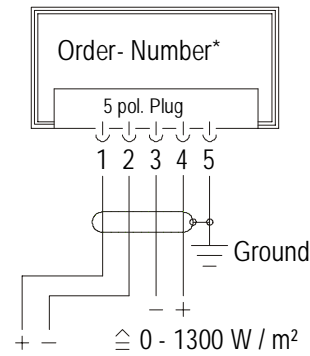
Order – No.
7.1415.05.041



RL- Function of the Main Power



Order – No.
7.1415.05.040
7.1415.05.051
7.1415.05.061



Power	Output	*Order Number
9 ... 24 V DC	0 ... 20 mA	7.1415.05.040
9 ... 24 V DC	0 ... 5 V	7.1415.05.051
14 ... 24 V DC	0 ... 10 V	7.1415.05.061

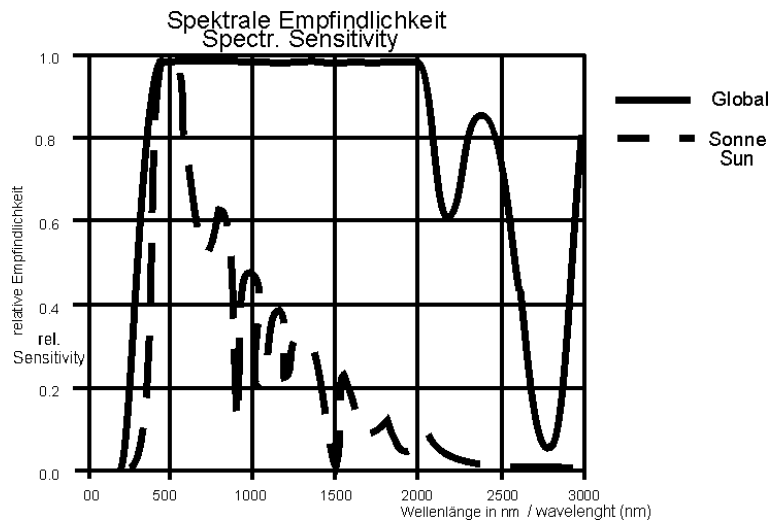
7 Technical Data

Description

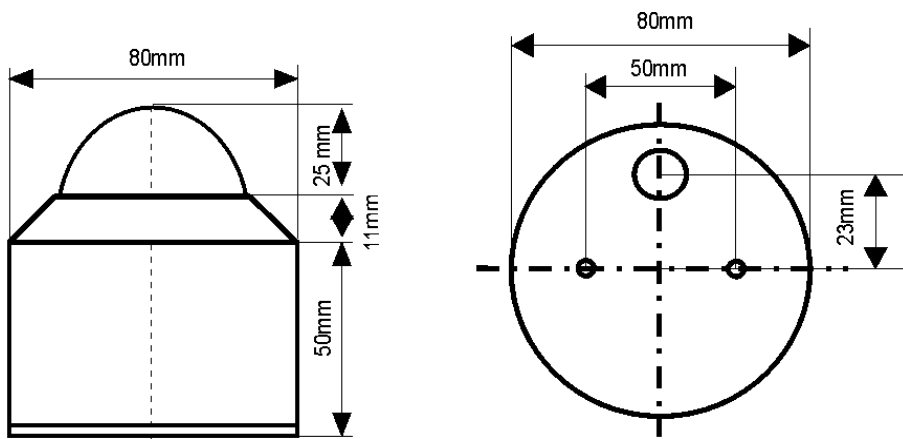
Global measuring range	0 – 1300 W/m ²
Spectr. sensitivity	380 nm – 2800 nm
Max. spectral sensitivity	380 nm – 2500 nm
Operating temperature	-20°C - +60°C
Signal output	7.1415.05.040 0 ... 20 mA ; max. Load: 300 Ω at 12 V DC 7.1415.05.041 4. .20 mA 7.1415.05.051 0 .. .5 V 7.1415.05.061 0 ... 10V

Power supply	7.1415.05.040 9 ... 24 V DC 7.1415.05.041 12. 30 V DC , 2-leads-circuit (see diagram) 7.1415.05.051 9 ... 24 V DC 7.1415.05.061 14 ... 24 V DC
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Installation	2 screws M4 in the ground of housing
Connector cable	downward
Diffuser material	PTFE
Dome material	Opt. Glass
Cosine correction	fault f2 <3%
Linearity	< 1%
Abs. fault	< 10%
Weight	ca. 300g
Cable	5 m



8 Dimension diagram



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