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***Silicon UVAB Sensor E 1.1***

**7.1416.10.xxx**



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# 1 Model

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Model - No.	Measuring range		Electr. output	Operation voltage
	UV A	UV B		
7.1416.10.040	0...approx. 100 W/m <sup>2</sup>	0...approx. 0.5 W/m <sup>2</sup>	0 ... 20 mA	+10... +24 V DC
7.1416.10.041	0...approx. 100 W/m <sup>2</sup>	0...approx. 0.5 W/m <sup>2</sup>	4 ... 20 mA	+10... +24 V DC
7.1416.10.051	0...approx. 100 W/m <sup>2</sup>	0...approx. 0.5 W/m <sup>2</sup>	0 ... 5 V	+10... +24 V DC
7.1416.10.061	0...approx. 100 W/m <sup>2</sup>	0...approx. 0.5 W/m <sup>2</sup>	0 ... 10 V	+14... +24 V DC

## 2 Application

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In mutual independence the sensor detects the UV- A radiation (refers to the global-curve) and UV- B radiation (refers to the erythem-curve acc. to DIN 5050). They give a clear information on the medically and biologically relevant correlation of these radiation ranges.

## 3 Construction

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The dome consists of uv- transmissive quartz glass, and the case is made of weather-protected, anodized aluminium. Furthermore, the dome protects the sensor from weather influences and, thanks to its geometric form, corrects the Cos-error to the greatest possible extent. The measuring value is delivered as standardized analogue signal, in correspondence with the measuring range.

## 4 Mounting

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Screw the sensor UVAB E 1.1 with two screws M4 onto a plane horizontal ground plate (and/or Traverse and Adapter). Make sure that no shadow is ever cast on the sensor by an obstacle and that the incident light can reach the sensor unimpeded.

Connect the sensor electrically as shown in the wiring diagram. Only the coupling supplied with the sensor may be used for data transmission. Use a 3-core, waterproof cable to lengthen the data transmission cable if required, A cable of up to 50 meters in length is possible for instruments with voltage output. In this case a cable with shielding. is recommended.

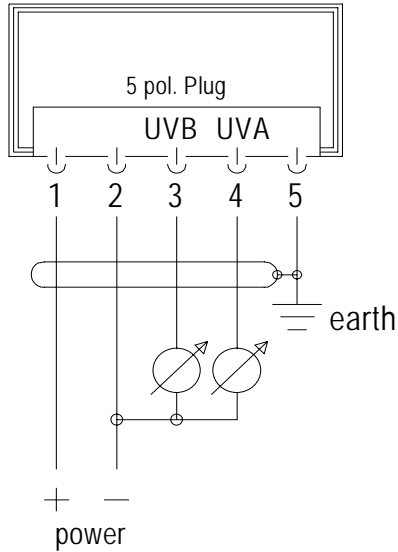
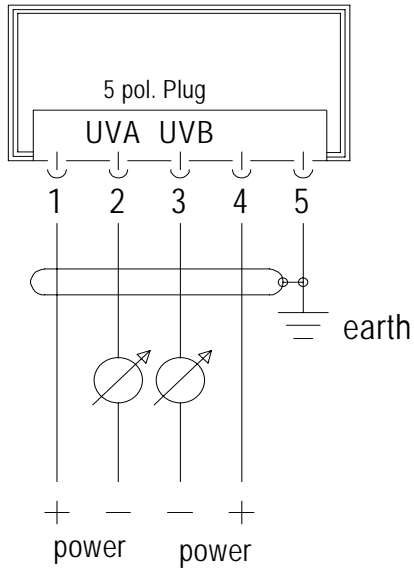
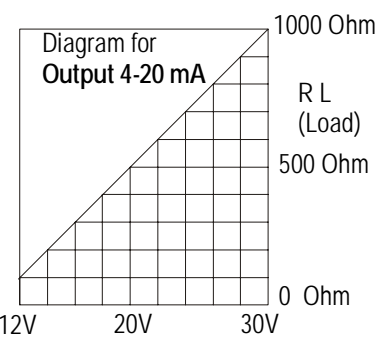
Moreover, in mounting the instrument, make sure that the instrument dome is easily accessible as dirt and impurities influence the measurement results considerably. - Please bear the operating voltage in mind.

## 5 Maintenance

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The electronic-optical part of the sensor head is maintenance-free. The dome and the case - depending on the local conditions - should be cleaned gently at least once a month with a soft moist cloth. Please use residue-free liquid cleansers without scouring additives and without solvents.

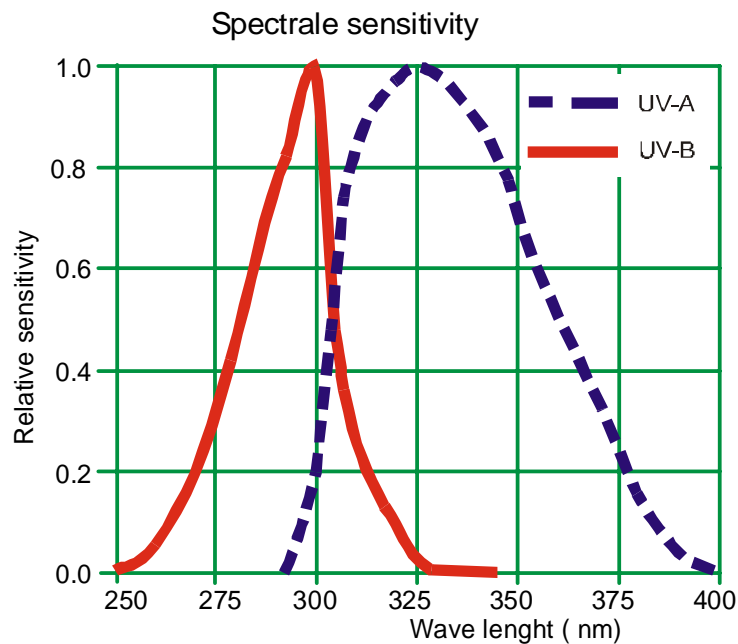
## 6 Connecting Diagram

<p>7.1416.10.040 7.1416.10.051 7.1416.10.061</p>	<p>1: Vcc 2: GND 3: Output UV- B 4: Output UV- A 5: Housing</p>	
<p>7.1416.10.041</p>	<p>1: Vcc / UV- A 2: GND / UV- A 3: GND / UV- B 4: Vcc / UV- B 5: Housing</p>	 <p>RL- Function of the Main Power</p>  <p>Diagram for Output 4-20 mA</p>

power supply and output see “configurations” and test certificate.

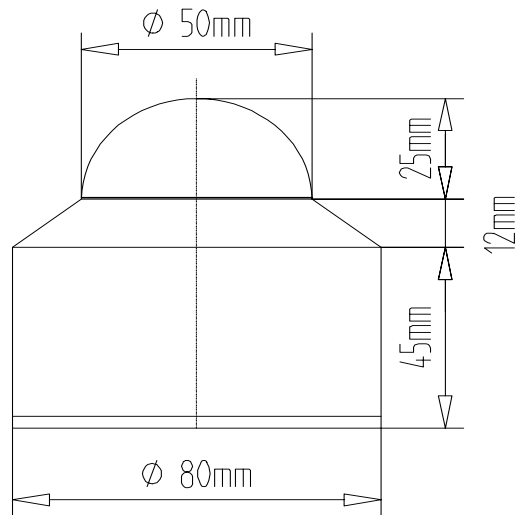
## 7 Technical Specifications

	UV-A	UV-B
Measuring range	0 ...ca. 100 W/m <sup>2</sup>	0...ca. 0,5 W/m <sup>2</sup>
Spectr. range	310... 400 nm	265... 315 nm
Max. spectral sensitivity	335 nm	297 nm
Operating temperature	-20°C - +60°C	
Output	Electr. Output:	Load:
7.1416.10.040	0 ...20 mA	see RL- Diagram
7.1416.10.041	4 ...20 mA	see RL- Diagram
7.1416.10.051	0 ... 5 V	>1MΩ
7.1416.10.061	0 ...10 V	>1MΩ
Power supply	Operation voltage:	Power consumption:
7.1416.10.040	10 ...24 V DC	typ. 3 mA + I out / max. 6 mA + I out
7.1416.10.041	10 ...24 V DC , 2- leads - circuit	I out (4-20 mA)
7.1416.10.051	10 ...24 V DC	typ. 3 mA / max. 6 mA
7.1416.10.061	14 ...24 V DC	typ. 3 mA / max. 6 mA
Switch-on delay	< 1 sec	
Switch-off delay	< 12 sec	
Sensor type	Silicon photo diode	
Dome	Quartz glass	
Cos - Correction	Error f2 < 3 %	
Linearity	< 1%	
Abs. fault	< ±10%	
Installation	2 screws M4 in the ground of housing	
Kind of connection	Plug with 5 m cable	
Weight	approx. 0.3 kg	



## 8 Dimensional drawing

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## 9 Guarantee

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Broken glass or damage resulting from improper handling is not included in the guarantee. The guarantee expires immediately if the instrument is opened.

# 10 EC-Declaration of Conformity

Document-No.: 000319

Month: 06 Year: 08

Manufacturer: **ADOLF THIES GmbH & Co. KG**

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Description of Product: **Pyranometer; Silicon Pyranometer; UVAB Sensor; UVB Sensor; Silicon-Sensor PAR; Sunshine Indicator**

Article No.	<b>7.1415.05.040</b>	<b>7.1415.05.041</b>	<b>7.1415.05.051</b>	<b>7.1415.05.061</b>
<b>7.1415.09.040</b>	<b>7.1415.09.041</b>	<b>7.1415.09.051</b>	<b>7.1415.09.061</b>	<b>7.1416.10.040</b>
<b>7.1416.10.041</b>	<b>7.1416.10.051</b>	<b>7.1416.10.061</b>	<b>7.1416.20.040</b>	<b>7.1416.20.041</b>
<b>7.1416.20.051</b>	<b>7.1416.20.061</b>	<b>7.1418.00.040</b>	<b>7.1418.00.041</b>	<b>7.1418.00.051</b>
<b>7.1418.00.061</b>	<b>7.1420.00.000</b>			

specified technical data in the document: **021430/12/04; 021006/07/01; 021052/11/03; 021054/05/02; 021051/01/06; 021049/05/04**

The indicated products correspond to the essential requirement of the following European Directives and Regulations:

- 2004/108/EC DIRECTIVE 2004/108/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 15 December 2004 on the approximation of the laws of the Member States relating to electromagnetic compatibility and repealing Directive 89/336/EEC
- 2006/95/EC DIRECTIVE 2006/95/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 12 December 2006 on the harmonisation of the laws of Member States relating to electrical equipment designed for use within certain voltage limits
- 552/2004/EC Regulation (EC) No 552/2004 of the European Parliament and the Council of 10 March 2004 on the interoperability of the European Air Traffic Management network (the interoperability Regulation)

The indicated products comply with the regulations of the directives. This is proved by the compliance with the following standards:

Reference number	Specification
IEC 61000-6-2: 2005	Electromagnetic compatibility Immunity for industrial environment
IEC 61000-6-3: 2006	Electromagnetic compatibility Emission standard for residential, commercial and light industrial environments
IEC 61010-1: 2001	Safety requirements for electrical equipment for measurement, control and laboratory use. Part 1: General requirements

Place: Göttingen

Date: 26.06.2008

Legally binding signature:

issuer:

.....  
Wolfgang Behrens, General Manager

.....  
Joachim Beinhorn, Development Manager

This declaration certifies the compliance with the mentioned directives, however does not include any warranty of characteristics. Please pay attention to the security advises of the provided instructions for use.



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