UV Sensor "UV-Water-PTFE"

10 bar water pressure proof UV sensor with G1/4” thread

GENERAL FEATURES

Properties of this sensor

The "UV-Water-PTFE" is a waterproof (10 bar or 145 psi) sensor with a G1/4” thread to be used in pressurized water systems. The sensor housing is made of Teflon (PTFE). The sensor is suited for low pressure lamps. The sensor contains integrated electronics and is shielded against electromagnetic interference. Sensor configuration options are spectral response, signal output type and measuring range. The signal output is either a voltage of 0 to 5 V, a current of 4 to 20 mA, CAN bus interface or USB. The UV sensor is available with a NIST or PTB traceable calibration.

The measuring range of analog sglux UV sensors is 3 orders of magnitude corresponding to 5 mV to 5 V or 4.02 mA to 20 mA output. The highest sensitivity range is 1 nW/cm² to 1 µW/cm². The lowest sensitivity range is 20 mW/cm² to 20 W/cm². The digital sglux UV sensors contain an integrated microprocessor that converts the UV radiation into 125kbit/s digital CAN bus data. A large dynamic range of 5 orders of magnitude allows to measure low radiation and strong radiation without changing the probe. Customers may specify any range between the mentioned limits.

Page 3 of this datasheet allows to enter requirements of the needed sensor. After selection you may forward this document to factory or agent, or alternatively use the sensor probe online configurator at www.sglux.com. Please contact us for assistance.

SPECIFICATIONS

Fixed Specifications

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions</td>
<td>please refer to drawing on page 2</td>
</tr>
<tr>
<td>Weight</td>
<td>60 g</td>
</tr>
<tr>
<td>Temperature Coefficient (30 to 65°C)</td>
<td>0.05 to 0.075%/K</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-20 to +40°C</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-40 to +80°C</td>
</tr>
<tr>
<td>Humidity</td>
<td>&lt; 80%, non condensing, on request: 100% submersible</td>
</tr>
</tbody>
</table>

Configurable Specifications

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value (page 3 shows more detailed information)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spectral Sensitivity</td>
<td>Broadband UV, UVA, UVB, UVC, UV-Index, Bluelight and UV+VIS</td>
</tr>
<tr>
<td>Signal Output</td>
<td>0 to 5 V or 4 to 20 mA or CAN bus signal (125kbit/s) or USB</td>
</tr>
<tr>
<td>Current Consumption</td>
<td>for 0 to 5 V = &lt; 30 mA / for 4 to 20 mA = signal out / digital = &lt; 17 mA</td>
</tr>
<tr>
<td>Connections</td>
<td>cable = 2 m cable with tinned leads on free end plug = 5 pin male connector with 2 m cable with tinned leads on free end CAN = 2 m cable with 8 pin male connector (to converter or else) USB = with 1.5 m cable with USB-A plug</td>
</tr>
<tr>
<td>Measuring Range</td>
<td>between 1 nW/cm² to 1 µW/cm² and 20 mW/cm² to 20 W/cm² for analog or 100 µW/cm² to 20 W/cm² for digital sensors (see questionnaire sheet)</td>
</tr>
</tbody>
</table>
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10 bar water pressure proof UV sensor with G1/4" thread

FIELD OF VIEW

DRAWING

ANALOG CABLE

ANALOG PLUG

DIGITAL

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Rev. 4.1 Due to our strive for continuous improvement, specifications are subject to change within our PCN policy according to JESD46C.
UV Sensor "UV-Water-PTFE"

Requirements questionnaire sheet

STEP 1  →  Configuration of Normalized Spectral Responsivity

![Normalized Spectral Responsivity graph]

Please select
- Broadband UV (SiC)
- UVC (SiC)
- UVB/Erythema (SiC)
- UVA (SiC)
- Blue (GaP)
- UV + VIS (GaP)

STEP 2  →  Signal Output Type Selection

Please tick your selection. The pin configuration is shown in drawings on page 2.

<table>
<thead>
<tr>
<th>Output Type</th>
<th>Description</th>
<th>Connection = &quot;cable&quot;</th>
<th>Connection = &quot;male plug&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 5 V</td>
<td>0 to 5 V voltage output proportional to radiation input. Supply voltage is 7 to 24VDC, current consumption is &lt; 30 mA.</td>
<td>V_+ = brown, V_− = white, V_out = green, shield = black</td>
<td>V_+ = 1, V_− = 4, V_out = 3</td>
</tr>
<tr>
<td>4 to 20 mA</td>
<td>4 to 20 mA current loop for PLC controllers. The current is proportional to the radiation, supply voltage is 24VDC.</td>
<td>V_+ = brown, V_− = white, shield = black</td>
<td>V_+ = 1, V_− = 4</td>
</tr>
<tr>
<td>CAN bus signal</td>
<td>VSCP protocol according to the following specifications:</td>
<td>Pins 1 &amp; 7 = CAN low</td>
<td>Pins 3 &amp; 8 = CAN high</td>
</tr>
<tr>
<td></td>
<td><a href="http://download.sglux.de/probes-digital/vscp-protocol/">http://download.sglux.de/probes-digital/vscp-protocol/</a></td>
<td>Pins 2 &amp; 4 &amp; 5 = GND</td>
<td>Pins 2 &amp; 4 &amp; 5 = GND</td>
</tr>
<tr>
<td>USB</td>
<td>The signal is transmitted via standard USB-A plug to a computer. Software and 1.5 m cable are included.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

STEP 3  →  Measurement Range Selection

Please mark your approx. max. UV intensity to be measured. The dynamic range for analog UV sensors is 3 orders of magnitude and for digital UV sensors it is 5 orders of magnitude.

<table>
<thead>
<tr>
<th>max. UV intensity</th>
<th>1µW/cm²</th>
<th>10µW/cm²</th>
<th>100µW/cm²</th>
<th>1 mW/cm²</th>
<th>10mW/cm²</th>
<th>100mW/cm²</th>
<th>1 W/cm²</th>
<th>10 W/cm²</th>
<th>20 W/cm²</th>
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**SENSOR PROBES OVERVIEW**

**UV-Surface** → Top looking surface-mount UV sensor
For UV radiation reference measurements of radiation exposed to a surface (diameter 38 mm).

**UV-Air** → Threaded body UV sensor
With M22x1.5 thread for many mounting possibilities i.e. inside UV radiation chambers.

**UV-Cosine** → Waterproof cosine corrected UV sensor for outdoor use
Stain repellent for outdoor or in-water measurements. Particularly suited for UV-Index measurements.

**UV-Water-G3/4** → 10 bar water pressure proof UV sensor with G3/4" thread
Used in pressurized water systems. Suited for low and medium pressure lamps.

**UV-Water-PTFE** → 10 bar water pressure proof UV sensor with G1/4" thread
Used in pressurized water systems. Suited for low pressure lamps.

**UV-DVGW** → UV sensor for DVGW (40°) certified water purifiers
Complies with standard DVGW294-3(2006), suited for certified water purifiers.

**UV-DVGW-160** → UV sensor for DVGW (160°) and OENORM certified water purifiers.
Complies with standard DVGW294-3(2006) and OENORM M5873, suited for certified water purifiers with 160° FOV.

**UV-Cure** → Sensor for strong UV irradiation, working temperature up to 170° (338°F)
To control curing processes or other high temperature operations where strong UV light is present.

**TOCON-Probe** → Miniature UV sensor
Miniature UV sensor in M12x1 housing. Available with 0 to 5 V voltage output.

**ACCESSORIES FOR ANALOG SENSOR PROBES**

**Sensor Monitor 5.0**
measuring and control module

**ACCESSORIES FOR DIGITAL SENSOR PROBES**

**UVTOUCH** → digital multi-channel UV radiometer

**DIGIBOX** → CAN-to-USB converter

**Control Pad** → windows 8 based 10.1" tablet computer display unit

**WINDOWS**

**WIN294** → measurement window acc. to DVGW 294-3 and OENORM M5873