UV Sensor "UV-Arc"

water proof UV sensor with G3/4“ thread for pantograph arc detection

GENERAL FEATURES

Properties of this sensor
The UV-Arc is a waterproof sensor with a male threaded body (G3/4“) to be used on trains to measure intensity and length of pantograph arcs according to EN 50317. This indicates the quality of the contact between a pantograph and the contact wire and allows a location of defects at the wire within a rail network. The UV-Arc sensor is configured for this special application. It contains a very sensitive photodiode with an additional filter to suppress solar UVB sensitivity. The time constant is adjusted to the typical arc lengths and the metal housing provides high EMC safety.
The sensor is configured with a cable according to the fire protection requirements in rail vehicles subject to the regulation EN 45545.

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>195 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 +80°C</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-40 to +80°C</td>
</tr>
<tr>
<td>Humidity</td>
<td>&lt; 80%, non condensing</td>
</tr>
<tr>
<td>Spectral Sensitivity</td>
<td>UVC+</td>
</tr>
<tr>
<td>Measuring Range</td>
<td>up to 400 μW/cm²</td>
</tr>
<tr>
<td>Connections</td>
<td>cable according to EN 45545</td>
</tr>
<tr>
<td></td>
<td>(2 m cable with tinned leads on free end)</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>Signal Output</td>
<td>0 to 5 V or 4 to 20 mA</td>
</tr>
<tr>
<td>Current Consumption</td>
<td>for 0 to 5 V = &lt; 30 mA / for 4 to 20 mA = signal out</td>
</tr>
</tbody>
</table>
UV Sensor "UV-Arc"

water proof UV sensor with G3/4" thread for pantograph arc detection

FIELD OF VIEW

![Graph showing the field of view with angles and intensity values.]

DRAWING

ANALOG CABLE

![Diagram of an analog cable with dimensions and window view.]

sglux GmbH I Richard-Willstätter-Str. 8 I D-12489 Berlin I Tel. +49 30 5301 5211 I welcome@sglux.de I www.sglux.de

Rev. 4.2 Due to our strive for continuous improvement, specifications are subject to change within our PCN policy according to JESD46C.
UV Sensor "UV-Arc"
Requirements questionnaire sheet

STEP 1  ➔ Configuration of Normalized Spectral Responsivity

![Normalized Spectral Responsivity Graph]

STEP 2  ➔ Signal Output Type Selection
Please tick your selection. The pin configuration is shown in drawings on page 2.

| Output Type | Description | Connection = "cable"
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></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>$V_i = 2$, $V_i = 1$, $V_{in} = 3$, shield = black</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>$V_i = 2$, $V_i = 1$, shield = black</td>
</tr>
</tbody>
</table>
Sensor Probes Overview and Accessories

**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 (40º) certified water purifiers
Complies with standard DVGW294-3(2006), suited for certified water purifiers.

**UV-DVGW-160**  → UV sensor for DVGW (160º) and OENORM certified water purifiers
Complies with standard DVGW294-3(2006) and OENORM 5873, suited for certified water purifiers with 160º FOV.

**UV-Cure**  → Sensor for strong UV irradiation, working temperature up to 170º (338ºF)
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

**RADIKON**  →
Converter box and measurement controller

**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 / WINx60**  →
Measurement window acc. to DVGW 294-3 / OENORM M5873