

UV Sensor "UV-Arc"

UV sensor for detection of electric arcs between contact wires and pantographs

GENERAL FEATURES



The "UV-Arc" is a G_{3/4}" male threaded waterproof UV sensor for detection of electric arcs between overhead contact wires and pantograph. The sensor measures the intensity and the length of a UV arc event and is used to indicate the quality of the contact between a pantograph and the contact wire. This allows a location of defects at the wire within a rail network. It complies with EN 50317. The UV-Arc sensor contains a very sensitive photodiode with an additional filter to suppress solar UV radiation. The time constant is 30µs and is adjusted to the typical arc length.

The sensor provide a high EMC safety and is configured with a cable according to the fire protection requirements in rail vehicles subject to the EN 45545 standard. A calibration on a 222nm USHIO CARE excimer source is available on request.

GENERAL SPECIFICATIONS

<i>FIXED SPECIFICATIONS</i>	Parameter	Value
	Dimensions	Please refer to drawing on page 2.
	Field of view	Please refer to graph on page 2.
	Weight	195 g
	Temperature coefficient (30 to 65°C)	0.05 to 0.075%/K
	Operating temperature	-20 to +80°C
	Storage temperature	-40 to +80°C
	Humidity	< 80%, non condensing
	Time constant	30µs +/-20% - other time constants on request, device has 1st order low pass characteristics
	Spectral sensitivity	UVC
	Measuring range	400nW/cm ² to 400µW/cm ²
	IP protection class	10 bar water pressure proof at window side, 5 bar water pressure proof at cable side, IP67 at plug side

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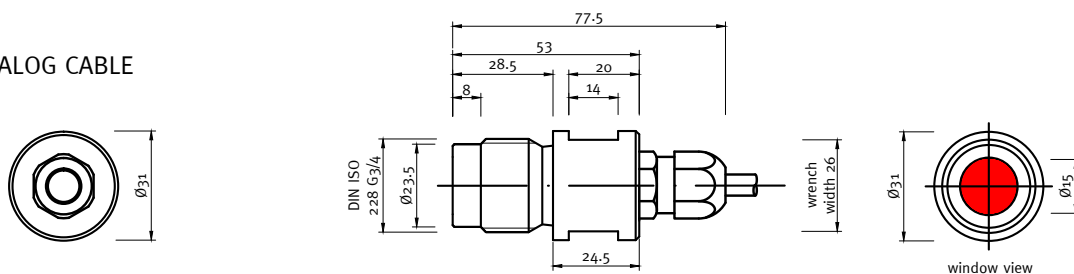
▶ SIGNAL OUTPUT SPECIFICATIONS

Signal Output 0 to 5 V	0 to 5V voltage output proportional to the irradiance
Supply voltage	7.5 to 24 VDC (0 to 5V output)
Current consumption	< 30mA
Connections	cable & gland according to EN 45545: wires: V+=1, GND=2, V _{OUT} =3, shield=silver, 2m cable length, other lengths available (max. 20m)
Dark offset voltage	< 3 mV
Measurement range	3 orders of magnitude

Signal Output 4 to 20 mA	4 to 20mA current loop for PLC controllers - The current is proportional to the irradiance.
Supply voltage	24 VDC +/-10% (down to 12V possible if compliance voltage and loop resistance is considered)
Current consumption	=signal out
Connections	cable & gland according to EN 45545: wires: V+=1, GND=2, shield=silver, 2m cable length, other lengths available (max. 20m)
Measurement range	3 orders of magnitude
Sensor compliance voltage	8.5 V
Max. loop resistance	645 Ohm @ 24V and 145 Ohm @12V
offset	4 mA +/- 0.01 mA

▶ DRAWING (values in mm)

ANALOG CABLE

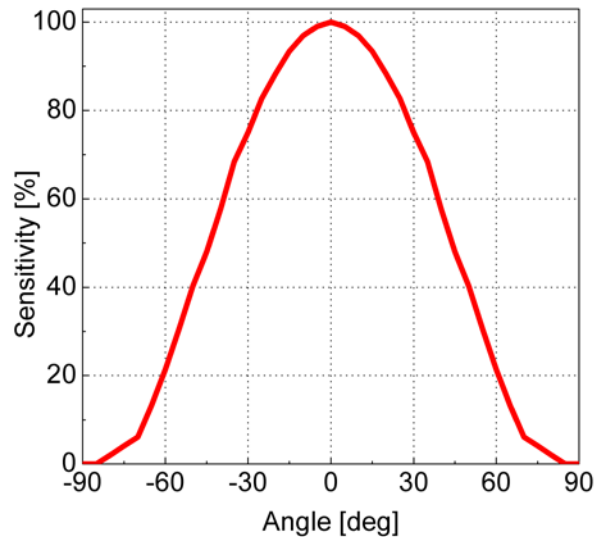


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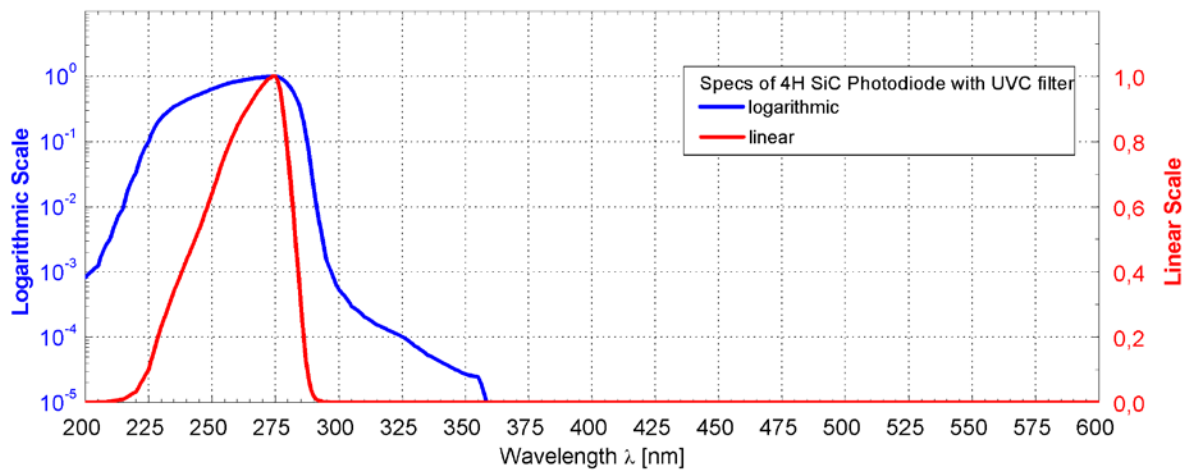
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FIELD OF VIEW

3/3



NORMALIZED SPECTRAL RESPONSIVITY



Sensor Probes Overview

LABORATORY & EXPERIMENTS



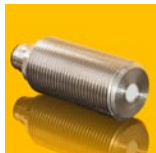
UV-Surface

Universal radiometric UV sensor for calibration and reference measurements, cosine correction. Often used with radiometer SXL55.



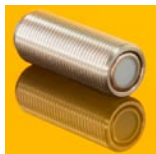
UV-Cosine

Waterproof dirt repellent UV sensor for outdoor measurement, cosine field of view. Also available as UVI sensor (ERYCA), M20x1.5 thread.



UV-Air

Axial measuring screw-in UV sensor very good EMC properties, M22x1.5 thread.



TOCON-Probe

Miniature UV sensor with 0 to 5 V voltage output, M12x1 thread.

SPECIAL APPLICATIONS



UV-Arc

Waterproof UV sensor for measurement of electric arcs between overhead contact wires and pantograph, complies with EN 50317, G3/4" thread.



sglux ERYCA

high accuracy UV-Index sensor, measurement uncertainty is <5%. The sensor complies with ISO 17166, M20x1.5 thread.



UVI-Solo

like sglux ERYCA but configured as a ready-to-mount system (available for pole or railings assembly).



UvLink One

wireless UV sensor with a display unit for intensity and dose measurement.

DUTY SENSORS MONITORING

UV DISINFECTION OF AIR, SURFACES AND WATER



UV-Sanitize

UV sensor for monitoring of air and surface UV disinfection systems, configurable for monitoring of Hg low pressure lamps, excimer lamps or xenon flash lamps, M20x1.5 thread.



UV-Water-G3/4

UV sensor for operation in pressurized water (10 bar), for Hg medium and low pressure lamps.



UV-Water-PTFE

PTFE UV sensor for operation in pressurized water (10 bar), only for Hg low pressure lamps or LEDs, G1/4" thread.



UV-ÖNORM / UV-DVGW

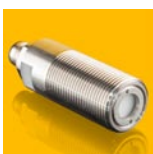
UV sensor for DVGW(160°) and ÖNORM certified water purifiers, also available as UV-DVGW (40°). The sensors comply with ÖNORM M5873, DVGW W294(06), DIN19294



UV-Radial

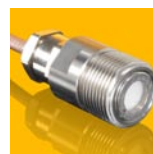
Waterproof side looking UV sensor for monitoring of lamp bundles, for operation in a cladding tube or directly in water, M20x1.5 thread.

HIGH UV RADIATION



UV-Cure

UV sensor for high irradiance (> 100mW/cm²) for LED curing or cooled medium pressure lamps, M22x1.5 thread (temperature sensor available).



UV-Cure_HT

Like UV-Cure but for temperatures up to 170°C, e.g. for uncooled medium pressure systems, M22x1.5 thread.